

# **The Impact of Enterprise Social Networks on Information Exchange in Supply Chain Management**

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## Abstract

**Purpose:** This research aims to understand how ESNs influence information exchange and the development of relationships and trust amongst stakeholders in supply chain management. Information exchange in the supply chain, highly influenced by the exchange beliefs, trust, and relationships among the partners, has increased in volume and complexity with the development of social media. The privacy and security concerns led organisations to adopt ESNs to enable collaboration and information exchange and establish relationships and trust with internal and external supply chain partners. This study also explores the type of information, the extent to which information is exchanged, and the antecedents and consequences of using ESNs in the context of SCM.

**Design:** The study uses a qualitative approach employing netnography, with a triangulation of methods involving open-ended email questionnaires, focused interviews, and netnographic observation of ESN conversations.

**Findings:** The main findings include the nature of relationship and trust, the nature and extent of information exchanged, and the degree of understanding among the supply chain partners, which is positively influenced by the length of online collaborative interactions through ESNs. They exhibited self-disclosure and risk-taking behaviour, as well as the sharing of confidential information. Individuals' use of ESNs depends on their previous online experience, interests and organisations' capabilities and support. Strategic and operational information is exchanged, and the prolonged use of ESNs moderates the reluctance to share information.

**Implications:** This research contributes to the scholarly body of SCM and ESN, identifying the influence of long-term ESN usage on relationships, trust, and information exchange and its variation in different organisational settings, identifying the opportunity for future research. Organisations and supply chain practitioners get fresh insights into the role of ESNs in enabling information exchange and building relationships and trust and present a conceptual model that guides them in adopting ESNs.

**Originality:** A netnographic analysis of ESN conversations reveals the nature and degree of information shared, the nature of relationships and trust, the behaviour exhibited by supply chain practitioners due to ESN, and the factors that promote using ESN in the SCM context.

**Keywords:** Information Sharing in ESNs, Relationships and trust, ESNs in supply chain management, Netnography.

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# Chapter 1 Introduction

## 1.1 Introduction

This introductory chapter provides the background to this research (1.2), followed by the aim of this research and the list of research questions (1.3). Section 1.4 provides the thesis structure and a short description of each constituent chapter, followed by the conclusion (1.5).

## 1.2 Research Background and Focus

Supply Chain Management (SCM) is the management of the flow of materials, money and information from the point of origin of a product to the point of consumption. Supply chain management has been facing significant challenges due to the increase in globalisation, cross-border business, the pandemic, geopolitical issues and shifting demand, which has created unprecedented complexities and uncertainties in supply chain networks (Chang et al., 2020). Inevitably, supply chain managers must work in an integrated manner to bring creative processes and techniques to streamline supply chain and logistics operations to improve efficiency. A collaborative approach with an effective exchange of strategic information and the existence of relationship and trust is crucial for an integrated supply chain. Advances in information and communication technology (ICT) and the evolution of Enterprise Social Networks (ESNs) have enabled real-time information exchange and stakeholder collaboration, improving relationships and trust (Ellison and Boyd, 2013; Ellison et al., 2015).

This study intends to explore and generate an understanding of the role of ESN in building relationships and trust among supply chain stakeholders and the influence of relationships and trust on strategic information exchange in supply chain management. The subsequent sections present the background and focus of the research in three parts, namely 1) need for information exchange in SCM, 2) relationships and trust in SCM, and 3) Enterprise Social Networks in SCM.

The existing literature on supply chain management and ESNs has alternatively used the terms ‘Information exchange’ and ‘information sharing’. This thesis has used both terms depicting the same meaning, with ‘information sharing’ used majorly.

### 1.2.1 Need for Information Exchange in SCM

Examining the history and evolution of supply chain management through the lens of various scholars shows the consensus on the importance of a ‘total integrated’ approach, information

technology, availability of information, and collaborative relationships (with internal and external partners) for effective supply chain management, all through the development of SCM discipline (Battaglia, 1994; Lee and Billington, 1995; Lummus and Vokurka, 1999; Rodrigue, 2020; Stevens and Johnson, 2016). The SCM professionals are embracing the extended supply chain network to meet the objectives of SCM. This entails supply chain partners operating in an integrated fashion (Saban et al., 2017), and information exchange is a significant enabler of internal and external supply chain integration (SCI), leading to substantial benefits to organisations (Lotfi et al., 2013). Information sharing leads to improved coordination between supply chain members (Jarrell, 1998), reduces total costs, enhances service levels (Zhao and Xie, 2002), and mitigates uncertainties associated with demand, technology and product (Khan et al., 2018), thereby improving the supply chain performance (SCP). Reduced cycle time and stable supply chain outcomes are other benefits of information sharing (Small, 1999; Small and Yasin, 1997). The widened scope of SCM objectives includes sustainable developments that focus on environmental, economic, and social factors. An integrated view of all dimensions of sustainability and enhanced communication could contribute towards sustainable development (Carter and Rogers, 2008; Seuring and Müller, 2008; Tseng et al., 2019). Information exchange in SCM has a significant role in achieving sustainable competitive advantage (Kumar and Pugazhendhi, 2012; Tseng et al., 2019).

However, information exchange between supply chain participants is not always practical due to several reasons that disrupt the information flows throughout the supply chain (Lee and Ha, 2018; Li et al., 2014; Zhou and Benton Jr, 2007). Some of the reasons include a lack of strong relationships and trust, the gap in organisational culture, confidentiality concerns, perceived complexities, risks, and costs, due to which managers are sceptical about information sharing (Fawcett et al., 2007a; Grant, 2016; Ishak, 2017; Manatsa and McLaren, 2008; Zhou and Benton Jr, 2007). The developments in ICT allow supply chain executives to increase the volume and complexity of information exchanged (Evangelista et al., 2012), notably impacting SCP and effectiveness. It allows firms to make better decisions in both strategic planning and operational activities (Prajogo and Olhager, 2012).

Despite the technological advances and the perceived benefits of information sharing, several barriers hinder the smooth flow of information. These barriers are due to managerial, organisational, financial, technological, individual and social-cultural issues (Khurana et al.,

2011). Lack of trust, absence of long-term relationships and the unwillingness to share are a few reasons behind these barriers (Fawcett et al., 2008; Khurana et al., 2011).

### **1.2.2 Relationships and Trust in SCM**

According to Mentzer et al. (2001), relational factors such as trust and commitment are essential in SCM, and a fruitful supply chain should aim for long-term strategic partnerships. To compete in the global market and its supply chain partners, a firm must align itself with the right mentality and strategic direction, display trust and commitment and demonstrate transparency in its transactions (Spekman et al., 1998). An effective long-term relationship among supply chain partners is believed to provide improved SCI levels and significant improvement in performance (Benavides et al., 2012).

Empirical research shows that a true partnership is characterised by relationships that exhibit mutual trust and shared risks and rewards, making the channel more efficient (Lambert et al., 1996). Long-term relationships can also boost collaborative practices, which is significant for effective information integration (Prajogo and Olhager, 2012) and serve as the critical factors for establishing trust and commitment (Tsanos and Zografos, 2016). Many organisations struggle with the soft aspects of information integration (Kanda and Deshmukh, 2008), which suggests that firms need to connect socially (Prajogo and Olhager, 2012). The extant literature has focused mainly on the technical aspect of information sharing and has largely ignored the social and cultural facets (Prajogo and Olhager, 2012).

### **1.2.3 Enterprise Social Networks in SCM**

Enterprise Social Media are social media platforms that organisations use for communication and collaboration with internal and external stakeholders, which management approves (Ellison and Boyd, 2013; McAfee, 2009). Enterprise Social Networks (ESNs) enable employee engagement, collaboration, Information sharing, work coordination, problem-solving, organisational updates, and networking with colleagues, external stakeholders and customers (Archer-Brown, 2012; Richter and Riemer, 2013; Wehner et al., 2017b). ESN is considered to be the use of social media extended to the workplace, with several functions and features that mimic public social media.

Many organisations are increasingly adopting social media to allow enhanced sharing of knowledge and resources among the participating members (Archambault and Grudin, 2012; Lee et al., 2014; Storey et al., 2014). The use of social media has resulted in significant

achievements in the field of software engineering, in developing online communities, creation and diffusion of crowd-sourced content and formation of ecosystems, which often results in increased transparency and self-reinforce individuals to participate (Storey et al., 2014). It is cheaper than traditional mass media to share ideas in all aspects of software engineering (Storey et al., 2014). Social media has benefited the supply chain industry in different ways; the information gathered by supply chain partners through social media can provide an understanding of various events, issues, competition and recent trends in the supply chain (Rusch, 2014; Sinha, 2015). It can gather information from the crowd to mitigate some potential distortions of information in supply chain networks (O’leary, 2011). It helps find new ideas and market trends, capture best practices, mitigate risks, and increase efficiencies, and it helps build and maintain relationships in the supply chain among its participants (Sinha, 2015). However, the security concerns associated with public social media have initiated organisations to implement ESN platforms for workplace collaboration and communication (Kane, 2015; Leonardi et al., 2013; Ulmer and Pallud, 2014).

ESNs replicate most of the functions and features of social media, and organisations adopting ESNs can benefit from these functionalities. Existing studies show that ESNs support cross-enterprise collaboration and building organisational relationships (Cui et al., 2018; Skopik et al., 2011). ESNs can provide insights into supply chain issues through the availability of a wide range of external and internal information on the supply chain processes, which can give organisations the capacity to rapidly handle market changes and supply of products and services, maximising organisational benefits (Dwivedi et al., 2022; Hamidreza and Sajjad, 2020). Supply chain organisations are increasingly embracing ESNs for collaboration, information sharing, relationship building, networking and the identification of new partners, consequently creating increased visibility of the entire supply chain and understanding one’s position in the industry crowd-sourcing of ideas and teamwork (Caron-Fasan et al., 2020; Cui and Idota, 2018; Cui et al., 2018; Giermindl, 2018b; Hargreaves et al., 2022; Ma et al., 2021; Meske and Stieglitz, 2013; Nivedhitha and Sheik Manzoor, 2020; Nordström, 2019; Riemer and Richter, 2012; Wu and Tian, 2021).

SCM is falling behind in utilising contemporary technologies to resolve business problems, and ESNs have a very low penetration in the supply chain industry (Markova and Petkovska-Mirčevska, 2013; Meske and Stieglitz, 2013; Wehner et al., 2017a)). A survey by IDG Research Services reveals that 57% of the respondents refrain from using any type of social

media within their supply chain activities (Sinha, 2015). Adopting ESN is challenging due to individual and organisational factors and the perceived benefits of using ESNs against their investment (Meske and Stieglitz, 2013; Wehner et al., 2017a). The reluctance to adopt these platforms in their business is due to their misperception of ESN affordances. Nevertheless, understanding the role of ESNs in SCM can help supply chain managers overcome the primary obstacle (Gonzalez, 2013). ESN in the context of this research is examined in section 2.3.2.2.

### 1.3 Research Aims and Research Questions

This research aims to understand how Enterprise Social Networks influence relationships and trust amongst supply chain participants and its impact on information exchange in supply chain management. This study is also interested in the type of information, the extent to which information is exchanged through these platforms in the context of supply chain management, and the antecedents and consequences of using ESNs in supply chain organisations. In that respect, this work first carried out a comprehensive literature review, which informed the formulation of the four Research Questions (RQs) to be addressed, as follows.

- RQ1: Explore the nature of relationships and trust among supply chain participants through Enterprise Social Networks.
- RQ2: What is the nature and extent of information exchange among supply chain participants through Enterprise Social Networks?
- RQ3: What are the antecedents of using Enterprise Social Networks in supply chain management?
- RQ4: What are the consequences of using Enterprise Social Networks in supply chain management?

Thus, the objective of this research is to observe and describe the behaviours of supply chain participants by observing their ESN conversations to identify elements of long-term relationships and trust and how such relationships and trusts can enhance information exchange, therefore supporting decision-making. For this, the study intends to explore the meanings and languages used by supply chain participants during ESN conversations and uncover the extent to which information is exchanged through ESN using a netnographic approach, besides interpreting and extracting communication patterns and codes of conduct, to evaluate the resulting implications.

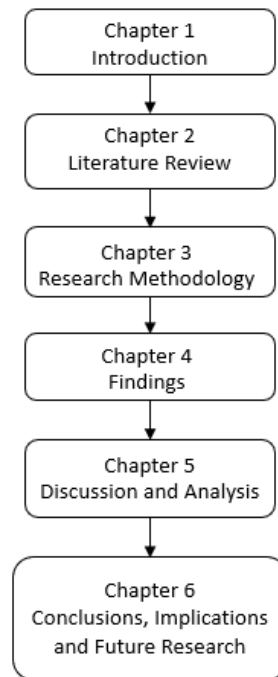
The study intends to provide academics and practitioners with more insights into the role of ESNs in building long-term relationships and trust and to observe if such relationships enable strategic information exchange, leading to improved firm performance. The originality of this study is that the issues mentioned above have not been studied together. The existing scholarships on the role of ESNs in information sharing and collaboration failed to examine it within the SCM context, and observing ESN conversation using a netnographic approach to address the research questions is novel. This work adopts an investigative approach to develop in-depth knowledge of the issues examined.

#### **1.4 Sign Postings**

The overall structure of the thesis is illustrated in figure 1.1. Following the introduction, Chapter 2 presents the synthesis of the comprehensive literature review performed by the author in three main sections: supply chain management, social media and enterprise social networks, followed by the identification of research gaps and formulation of research questions.

Chapter 3 discusses this research's ontological and epistemological position, and then examines the research methodologies, data collection and analysis techniques. It leads to the development of the research design adopted in this study to address the research questions, explaining the research methods of this study, including the data collection and analysis techniques used.

Chapter 4 presents the findings of this research. Firstly, it presents the findings of the online questionnaire phase, which has contributed to the design of the subsequent phases. Subsequently, the findings of the interview phase, itemised by the respondents, are presented. The netnographic observations of the ESN conversations gathered from two organisations are detailed, and insights are provided to address the research questions of this study.



*Figure 1.1: Structure of the thesis*

Chapter 5 focuses on integrating the findings and relates them to the existing scholarship. It discusses the findings and insights itemised by the research questions of this study.

Chapter 6 summarises the main contributions of this research set out in this thesis. It identifies a few suggestions for supply chain practitioners on adopting ESN platforms in their organisation and continues to provide a conceptual model to guide ESN adoption. Finally, the limitations of the work are highlighted, leading to several suggestions for future research.

### **1.5 Chapter Conclusion**

This chapter set down the foundation of this research work and the structure of the thesis. It briefly introduced the research background and context, presented the research problem and the questions to be addressed, followed by the approach to uncover the phenomenon being investigated, which is briefly described and will be explored further in Chapter 3. Finally, the thesis layout is presented. The next chapter proceeds with the author's detailed review of extant literature based on the foundations presented in this chapter.



## Chapter 2 Literature Review

### 2.1 Introduction

Chapter 1 presented the background and objectives of this research and introduced the concepts of ‘information exchange’ and ‘relationships and trust’ in supply chain management. Investigating information exchange in supply chain management and developing relationships and trust among supply chain partners through Enterprise Social Network (Wiesneth, 2016) should be progressed by identifying the activities that need to be investigated and how they can be measured. The literature review set out in this chapter consists of the main sections: 1) Supply Chain Management (2.2) and 2) Social Media and Enterprise Social Networks (2.3) examining Social Media (2.3.1), Enterprise Social Networks (2.3.2) and ESN in Supply Chain Management (2.3.3). Relationships and Trust are examined in the context of SCM (2.2.8), social media (2.3.1.8) and ESNs (2.3.2.5.3), leading to the development of the research questions (2.4) followed by a conclusion (2.5), shown in figure 2.1.

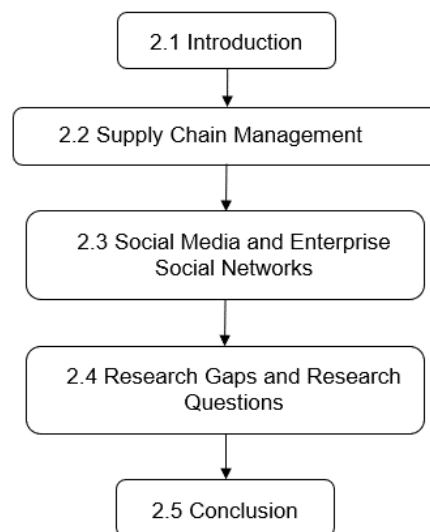
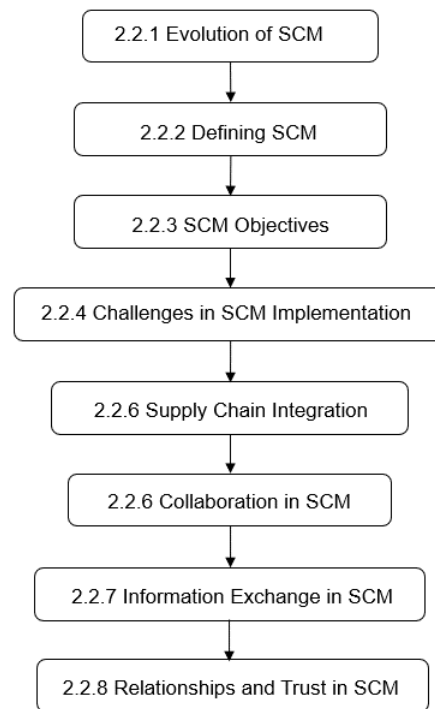


Figure 2.1: Main sections of the literature review

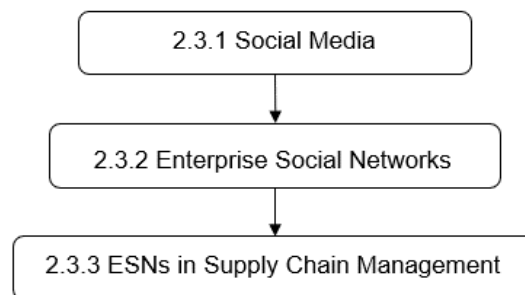


*Figure 2.2: Structure of literature review on SCM*

The first main section (2.2) describes SCM and starts with the evolution of SCM (2.2.1), subsequently, a discussion on the widely cited definitions (2.2.2) presenting the objectives of SCM (2.2.3), followed by the challenges in the implementation of SCM (2.2.4). To achieve the objectives of SCM, the supply chain needs to function in an integrated manner; hence, the next section (2.2.5) examines supply chain integration (SCI). Collaboration in SCM (2.2.6) is key to an integrated supply chain and information exchange. Next, the significance of information exchange in SCM (2.2.7) is examined, followed by Relationships and Trust in SCM (2.2.8). The literature review on SCM is laid out in figure 2.2.

The next main section lays out the literature review on social media and Enterprise Social Networks (2.3) and the importance social media and ESNs pose in organisational communication and collaboration to establish relationships and trust, especially in the backdrop of SCM. The background of web2.0 (2.3.1.1) followed by the definitions of social media (2.3.1.2), computer-mediated communication (2.3.1.3), functional representation of social media (2.3.1.4), social media classification (2.3.1.5), social media collaboration (2.3.1.6), information sharing on social media (2.3.1.7), building relationships (2.3.1.8) and social media in business (2.3.1.9) are examined.

As this research intends to examine the influence of ESNs in supply chain management, it is essential to understand how ESN is being adopted in organisations, its implications, and further in the SCM context, this literature further presents the topic Enterprise Social Networks (2.3.2) section, the definition (2.3.2.1) and ESN in this research (2.3.2.2) are discussed followed by the benefits (2.3.2.3), barriers (2.3.2.4), and ESNs in Organisation (2.3.2.5) are examined. Finally, ESNs in SCM (2.3.3) are examined. The literature on social media is laid out in figure 2.3.



*Figure 2.3: Structure of literature review on Social Media and ESNs*

This research intends to explore the significance of long-term relationships and trust in information exchange in the SCM context; the review examines the literature on relationships and trusts in SCM (2.2.8) and subsequently explores social media and ESNs in enhancing relationships and trust (2.3.1.8, 2.3.2.5.3) and its consequences in the SCM backdrop (2.3.3).

Further, this chapter presents the research gaps and development of research questions to set the research agenda (section 2.4) before the conclusion (2.5). The topics for the literature review were chosen based on the relevance of this research and the context of social media and ESN in information sharing. In this research, ‘information exchange’ is used interchangeably with ‘information sharing’.

The relevant literature identified for this review was carefully selected from academic journals retrieved from major databases, including Science Direct, EBSCO, Emerald Insight, IEEE, and Wiley online library. The keywords used for the literature search include ‘supply chain management’, ‘supply chain integration’, ‘supply chain collaboration’, ‘supply chain relationships’, ‘information exchange’, ‘Social Media’, and ‘Enterprise Social Networks’. These keywords were used individually and in combination for the search. To further identify more specific studies, a literature search was done on ‘trusts and relationships’ in the context

of SCM, Social Media, and Enterprise Social Networks combined with the terms 'organisation' and 'supply chain'. The various software tools used in the course of this research include:

- Microsoft Excel for project planning
- Microsoft Word's 'spell check and grammar' and 'Grammarly' for proofing
- Microsoft Teams for transcribing the interviews
- NVivo and Microsoft Excel for data analysis and coding
- Endnote for citations and referencing

## **2.2 Supply Chain Management**

### **2.2.1 Evolution of SCM**

Supply chains have existed throughout human history, with their principles supporting the adequate flow of materials and information to meet customer requirements. Modern-day logistics and supply chain management can be attributed to the military (Christopher, 2016). The supply chains have always been critical; for example, during the American War of Independence, the defeat of the British army was greatly ascribed to inadequate vital supplies to the troops positioned overseas. World War II played a pivotal role in the history of logistics and the foundation of successful supply chain management. The 'Allied forces' displayed a very skilled logistics practice to provide supplies to the war front at strategic times (Christopher, 2016). David Dworak, a retired US Army colonel and academic administrator, discusses the complicated logistical challenges of the century in his book 'War of Supply: World War II Allied Logistics in the Mediterranean' (Dworak, 2022).

Although the significance of logistics has been well known from the earliest times, it is only recently that many organisations have recognised the importance of logistics and supply chain management. The terms "supply chain" and "supply chain management" were first articulated by the British logistics consultants Keith Oliver and Michael in 1982 (Oliver and Webber, 1982). Since then, the adoption of SCM practices in industries has gradually increased (Shukla et al., 2011), and SCM started gaining significance in the late 1990s (Ross, 1998). Many companies are now adopting SCM to increase supply chain efficiency and focus on core competencies (Shukla et al., 2011). The following sections describe some key concepts and models that signify integrated supply chain management.

2.2.1.1 Evolution of Integrated Supply Chain

Battaglia’s (1994) model of ‘logistics evolution to supply chain management’ is characterised by the increasing integration of its component activities from the 1960s to date. In the 1960s, the logistics activities were highly fragmented, making it a critical area for future improvements. During the 1970s and 1980s, the logistics tasks were consolidated into distinct functions related to physical distribution and materials management. As noted by Rodrigue (2020), in the 1990s, globalisation caused the move from a highly fragmented system to an approach of ‘Total Integration’, and further, the concept of SCM improved with the idea of collaborative relationships. Battaglia’s (1994) model adopts an integrated approach by widening the SCI with internal and external partners, subsequently by using information and communication technologies, and by the emergence of supply chain management. With the emergence of SCM, integrated management and control of the flow of goods, finance and information led to various production and distribution systems. Recent trends, such as the adoption of Information technology, digitalisation, and a push towards automation of supply chains, are notable developments in SCM (Rodrigue, 2020).

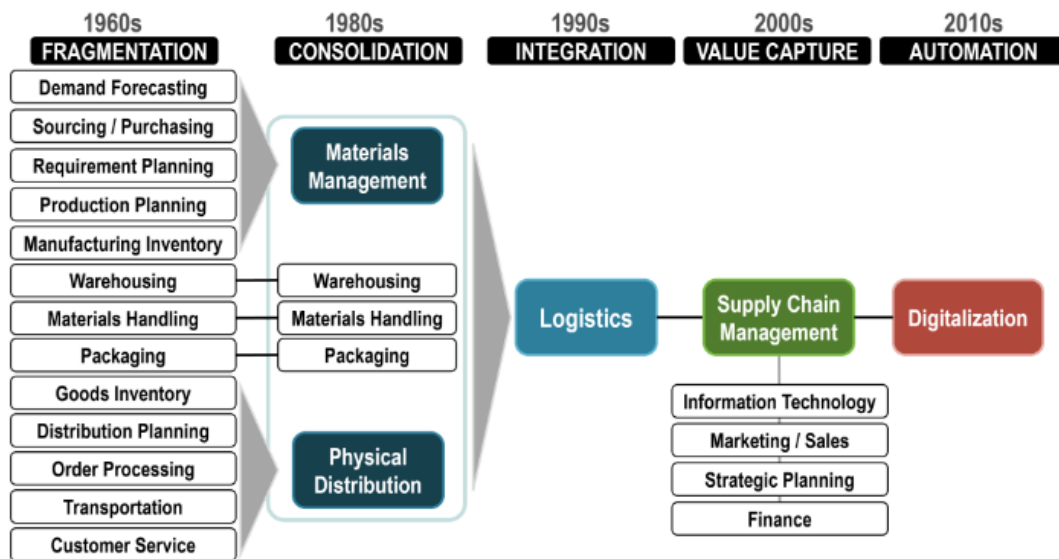


Figure 2.4: The Evolution of Supply Chain Management

Source: (Rodrigue, 2020)

The Hewlett-Packard integrated model is another notable model. In the late 1980s, Hewlett-Packard (Hewage) faced issues due to escalating inventories and dropping customer satisfaction (Lee and Billington, 1995). The top management identified this issue’s resolution

as the crucial objective and accomplished it through effective SCM (Lee and Billington, 1995). The strategic planning and modelling (SPaM) team, staffed with industry and technology experts, set out to investigate the issue, identifying the linkages and interrelationships of the critical components of the HP supply chain. SPaM worked with academic experts to collect and analyse data from the company’s personal computer (PC) and desk jet printer divisions, primarily from materials and manufacturing groups within the PC supply chain. The vital data collected helped redesign the supply-chain model, which later expanded, integrating the wider supply-chain partners and extending to other product lines of the organisation. Lee and Billington (1995) highlight the importance of the collaborative effort and availability of vital information that caused the resolution of HP’s supply chain issue. HP’s supply chain evolved from fragmented to ‘total integrated’, further extending to collaboration and relationship-building. Figure 2.5 shows the phases of supply chain management development developed by Stevens and Johnson (2016).

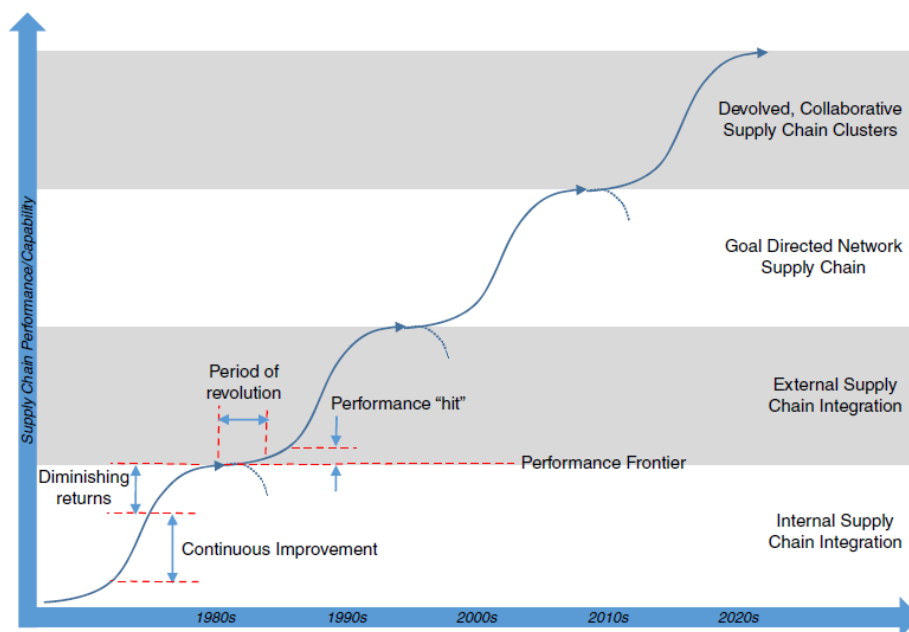


Figure 2.5: Phases in supply chain management development

Source: (Stevens and Johnson, 2016)

The evolution of supply chain management examined above focuses on the importance of a ‘total integrated’ approach, information technology, availability of information, and collaborative relationships with internal and external partners for effective supply chain management. Next, we will examine some of the widely cited definitions of supply chain management available in the literature and what they mean in the context of this research.

## 2.2.2 Defining SCM

Since the term 'supply chain management' appeared in the literature circa 40 years ago, it has developed into a complex series of functions aimed at value capture and competitiveness. Ever since, numerous academics, practitioners, and professional organisations have offered definitions through scientific enquiry and practitioners' experiences. However, supply chain management does not have a standard definition in literature or across the industry (Kuegler et al., 2015). Supply chain practitioners and academics have come up with many descriptions and interpretations of SCM to formulate an all-inclusive definition (Sweeney et al., 2018). Some of the commonly cited definitions are consolidated in table 2-1.

*Table 2-1: Definitions of SCM*

*Source: (Christopher, 2016; Cooper and Ellram, 1993; Cox et al., 1998; Lambert and Cooper, 2000; Lambert and Enz, 2017; Monczka et al., 1998; Shukla et al., 2011; Stevens, 1989)*

Author	Definitions
Cooper and Ellram, 1993	A function integrated through planning, coordination and control to manage the total flow of goods, information and money over the distribution channel from supplier to the final customer.
Monczka et al., 1998	Integrated SCM is concerned with managing all activities horizontally, required to provide value to the end customer. They believe that it is the supply chains that compete, not organisations, and the strongest competitors provide management and leadership capabilities to a fully integrated supply chain that includes a different tier of suppliers and external customers.
Stevens, 1989	The scope supply chain involves a connected series of activities, including planning, coordinating and controlling information flow from suppliers to customers. Supply chain management is concerned with managing suppliers, purchasing, materials and information flow, and customer service. This model does not consider the bidirectional flow of materials and information flow.
Christopher, 2016	SCM is a linkage of mutually dependent businesses working collectively to establish bidirectional relationships with the aim of creating high standard customer value. The term demand chain management is used as the supply chain is driven by demand in the market.
Cox et al., 1998	The definition of SCM in the APICS Dictionary is The design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronising supply with demand, and measuring performance globally.
Lambert and Cooper, 2000	SCM demands working in coordination to enhance the flow of commodities and resources from the point of origin up to the point of consumption in the supply chain
Shukla et al., 2011	SCM is about building relationships and creating value through effectiveness in the process and much more
Lambert and Enz, 2017	Considers SCM as the management of relationships.

Christopher (2016) represents SCM as a linkage of mutually dependent businesses working collectively to establish bidirectional relationships and believes that the focus of SCM should be on relationship management, emphasising creating customer value, cost advantage, value advantage, and, consequently, competitive advantage. Figure 2.6 shows the scope of the supply



chain with bidirectional material and information flow. Although Christopher ignores SCM's strategic viewpoint, this is well addressed in many other studies (Cox, 1999; Houlihan, 1985; Mentzer et al., 2001).

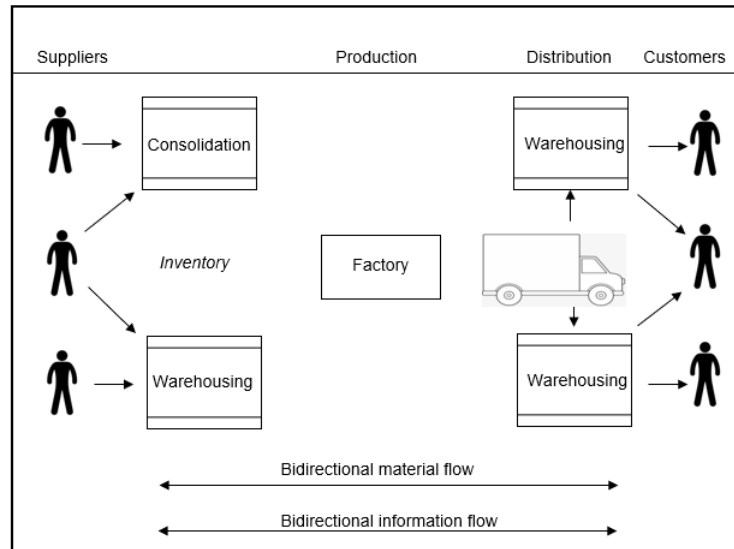


Figure 2.6: The Scope of the Supply Chain

Source: (Stevens, 1989; Sweeney, 2011)

Several academics have provided valuable reviews of SCM definitions. By examining at least 50 existing SCM definitions, Bechtel and Jayaram (1997) deduced five schools of thought, identifying functions and processes and developing a framework for supply chain analysis. Cooper et al. (1997b) reviewed over 13 early definitions of SCM and argued that SCM and logistics are non-identical. The conceptual framework developed by these authors consists of the management elements, business practices and the supply chain composition. Mentzer et al. (2001) analysed over 20 SCM definitions and claimed that the existing definitions have tried to address SCM and supply chain orientation (SCO). Although the authors provided a comprehensive SCM definition and model, they failed to achieve a consensus definition of SCM. Although a plethora of beliefs and definitions exist, there is a lack of common understanding of SCM; in addition, its relevance in representing the SCM today is arguable.

The SCM definitions discussed above fail to consider the impact of reverse logistics. Larson and Rogers (1998) review some of the early definitions of SCM and argue that most SCM definitions focus on the flow of goods from manufacturer to consumer, neglecting the reverse logistics system. Tibben-Lembke (1998) argues that reverse logistics significantly impacts the Total Cost of Ownership (TCO), and an effectively managed reverse logistics technique



involving people, processes, computer hardware and software, and transport providers can reduce TCO and make a supply chain more competitive.

The SCM definitions presented in table 2-1 present various aspects of SCM. Cooper and Ellram (1993) and Monczka et al. (1998) discuss integrated SCM, and Christopher (2016), Lambert and Enz (2017) and Shukla et al. (2011) discuss the management of relationships for creating value. Sweeney's (2011) consensus definition is presented as the 'the four fundamentals' and highlights the importance of an integrated supply chain, a holistic approach to managing the integrated supply chain and managing relationships. Sweeney (2011) argues that a common understanding is inevitable for a successful SCM thought process and proposes a unified narrative definition of SCM through the four fundamentals construct that emphasise effective planning, integration, putting plans to practice, and healthy supply chain relationships as shown in (figure 2.7). The significance of SCM as an "integrating function" and a "management of relationships" is notable for this study.

Thus, from the definitions that have been examined here, it can be deduced that the main objective of SCM is to achieve sustainable competitive advantage by creating value, reducing cost and high customer satisfaction, and these studies stress the importance of maintaining healthy relationships among supply chain partners (Christopher, 2016; Cox, 1999; Mentzer et al., 2001; Shukla et al., 2011; Sweeney, 2011).

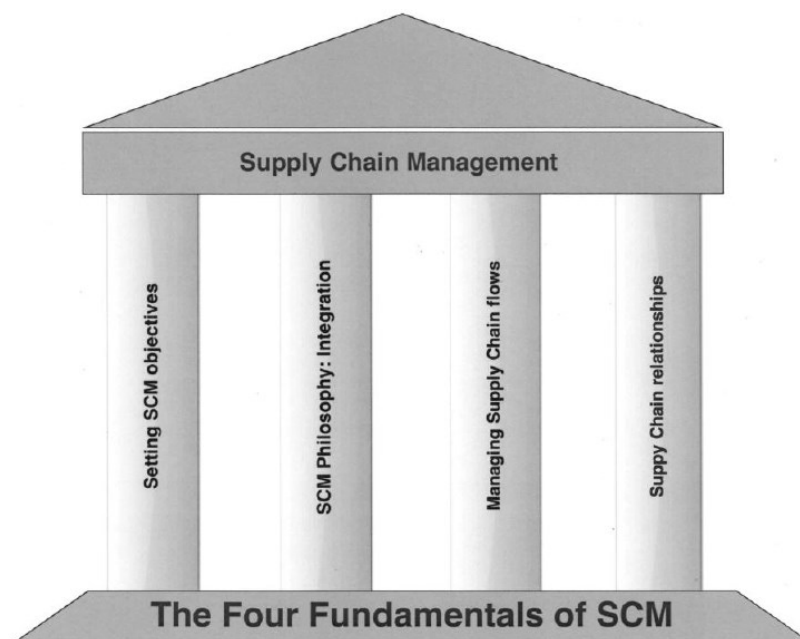


Figure 2.7: The four fundamentals of SCM

Source: (Sweeney, 2011)

Studies suggest that setting clear SCM objectives provides more focus towards achieving long-term relationships and sustainable competitive advantage, which can distinguish organisations in terms of cost and value advantage (Christopher, 2016; Sweeney, 2011). Thus, organisations need to engage with a "total systems perspective" (Mentzer et al., 2001), signifying the need for both internal and external integration (Sweeney, 2011). This approach can lower various operational costs and improve managerial efficiencies, which may create structural changes in the organisation, resulting in new supply-demand networks (Lambert et al., 1996; Sweeney, 2011).

### **2.2.3 SCM Objectives**

The objective of supply chain management is to align consumer needs with the flow of materials from suppliers, which balances with the goals of good customer service, low inventory investment, and low unit cost. The various objectives of SCM noted in previous studies include improved customer service, optimised costs, enhanced quality of products and services, integrated process flows, reduced cycle time, reduced risks and improved sustainability (Beamon and Ware, 1998; Kshetri, 2018). Achieving key objectives such as meeting customer demand/service levels and optimising supply chain costs and investment can create a competitive advantage; achieving sustainable and defensible competitive advantage is the primary objective of SCM (Christopher, 2016; Sweeney, 2011).

#### **2.2.3.1 The Concept of Total Systems Perspective**

The SCM concept insists that organisations engage with a 'total systems perspective', integrating and managing internal and external functions and flows to create long-term relationships (Mentzer et al., 2001). On a similar note, Monczka et al. (1998) allude to the use of total systems viewpoint across various functions and activities and different tiers of suppliers in the context of material management, referring to internal and external integration. The SCM objective aims to synchronise customer requirements with material flow from suppliers to balance differing intentions and lower inventory management and unit cost (Stevens, 1989). As noted by (Lambert and Cooper, 2000), the radical changes in the recent business management model have shifted the competition between individual organisations to competition between supply chains. It requires organisations to work towards achieving supply chain objectives rather than individual objectives, i.e., to create value for the extended supply

chain network creating an extended value chain. The subsequent section examines some of the key objectives of SCM.

#### 2.2.3.2 Customer Service

One of the key objectives of an efficient and effective supply chain is to satisfy or exceed the required customer service (Beamon and Ware, 1998; Ellram and Cooper, 1990; Kent Jr and Flint, 1997). Customer service is increasingly used in various industries as a significant differentiator or order-winning factor (Christopher, 2016). Increased levels of customer service can be achieved through the timely delivery of products in the right quality and quantity at an optimised cost (Beamon and Ware, 1998; Sweeney, 2011). A clear understanding of the customer expectations in the target market and meeting the expectations are the key roles of customer service in SCM (Sweeney, 2011). Customer service of a firm should be viewed as the responsibility of the entire firm rather than considering it the responsibility of only the marketing department, and a clear understanding of the expectations of the target market (Lambert et al., 1998), effective collaboration and coordination of information flow can create distinctive customer value (Mentzer et al., 2001; Ross, 1998).

According to (Stevens, 1989), providing a higher service level intends to coordinate material and information flows to balance conflicting goals (low inventory investment and low unit cost) and requires a single integrated chain rather than focusing on distinct functional areas. According to (Sweeney, 2011), it is vital to identify the customer service requirements during the supply chain design process, which sets the requirement for an integrated approach to SCM. This section evinces the need for integrated SCM and coordinated efforts to achieve customer service levels.

#### 2.2.3.3 Supply Chain Costs and Investment

According to (Sweeney, 2004), optimising supply chain investments is an SCM objective like optimising supply chain costs. Many studies observe that many regular indirect costs are hidden from budgets, which is considered overhead (Ellram and Cooper, 1990). Sweeney (2011) argues that a substantial part of companies' expenditures is in their supply chain; therefore, there should be an increased focus on optimising the 'total supply chain costs'. Optimising total supply chain cost directly impacts the company's overall profitability (Sweeney, 2004). Similarly, optimising supply chain investment directly impacts the return on capital employed (Lotfi et al., 2013; Sweeney, 2004). Unlike the traditional costing models (*direct product*

*profitability (DPP) and activity-based costing (ABC)* (Lalonde and Pohlen, 1996), the total cost of ownership (TCO) seeks to identify all the direct and indirect costs (like warehousing, quality issues and delivery failure) (Sweeney, 2011).

Ellram and Cooper (1990) suggest that economic risks can be reduced by sharing some of the standard supply chain costs (like the cost for integration) among partners who are in long-term relationships. Alliances with key supply chain partners help in organising inventory amongst the members of the supply chain to reduce inventory buffer, reducing total costs involved in product deliveries, providing more visibility on product availability, and generating improved quality, consequently reducing the overall supply chain costs (Lambert and Cooper, 2000; Lambert et al., 1998). A dedicated information system can reduce time and costs and improve accuracy (Ellram and Cooper, 1990; Lambert and Cooper, 2000). By understanding the exact customer requirements and focusing on the significant service areas, a balance must be considered between customer service quality and cost reduction (Sweeney, 2011).

#### 2.2.3.4 Sustainable Competitive Advantage

Michael Porter introduced the revolutionary concept of competitive advantage by establishing three new concepts – five forces, generic strategy, and value chain (Porter, 1985). Achieving a sustainable competitive advantage is the prime focus of every SCM professional, which can be derived from either cost or value advantage or a combination of both (Christopher, 2016; Cooper et al., 1997b). Competitive advantage is the organisation's ability to distinguish itself positively from the customer and its competitors by operating at a lower cost and increasing value, hence achieving a more significant profit (Christopher, 2016). (Lambert et al., 1996) emphasise competitive advantage as an outcome of effective partnerships. Competitive advantage is one of the outcomes of 'total systems' thinking and can only be achieved by working in an integrated manner (Sweeney, 2011). (Mentzer et al., 2001) note the importance of strategic alliances and partnerships between supply chain partners, which can provide a competitive advantage by creating customer value. The above studies indicate that SCM aims to improve efficiency (cost reduction) and effectiveness (customer service), thus creating customer value and satisfaction through integrated SCM to achieve a competitive advantage, ultimately creating profitability.

#### 2.2.4 Challenges in SCM Implementation

This section attempts to discuss challenges in SCM. Due to its complex nature, the successful implementation of a supply chain demands that the management understand the issues that may arise during the implementation. A supply chain consists of different but interrelated firms, and conflicts in the supply chain can adversely affect the supply chain wide performance (Simatupang and Sridharan, 2002). The authors note managerial inertia and opportunistic behaviour as factors that inhibit supply chain members from working effectively. The study lists the sources of managerial inertia as follows.

- i. Inappropriate performance measures – focus on individual cost or performance optimisation instead of the supply chain wide performance to maximise value to end customers.
- ii. Outdated policies – obsolescence of existing processes and lack of coordination, which affects inter-organisational relationships and decision-making capacity. Varying situations in the supply chain mean the policies are obsolete. Individual members show opportunistic behaviour to maximise their own benefit based on the terms in the policies.
- iii. Asymmetric information – firms lacking information on each other's plans and unwillingness to share information due to a lack of trust and economic value of information, which results in sub-optimal decisions and opportunistic behaviour. Lack of supply chain wide visibility, inconsistent perceptions of market requirements and supply chain wide performance measures, and distorted information result in biased decisions providing non-optimised solutions to the supply chain. For example, a manufacturer uses order information from the retailer instead of sales information from the retailer to calculate future demand, causing a bullwhip effect (Simatupang and Sridharan, 2002). Figure 2.8 shows the various sources of asymmetric information leading to poor supply chain performance.

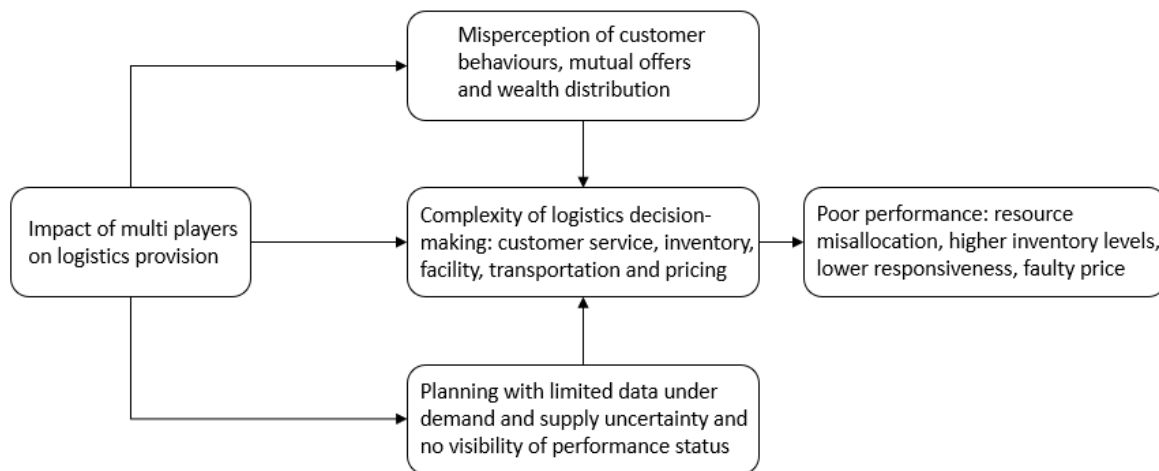


Figure 2.8: Different Sources of Asymmetric Information Contributing to Poor Supply Chain Performance.

Source: (Simatupang and Sridharan, 2002)

- iv. Incentive misalignment – firms are making decisions contemplating their own benefits and demand, hindering the overall supply chain wide profitability. Not willing to flow the incentives received to other supply chain partners, including the supplier and customers. Showing opportunistic behaviour such as forward buying during the promotion period to stockpile for future demands, creating incorrect demand forecasts at the supplier end.

Several studies have noted the managerial complexities at the supply chain level as a barrier to SCM implementation (Fawcett et al., 2008; Shukla et al., 2011). Similarly, lack of common understanding of SCM and SSCM, poor supply chain wide cooperation and communication, lack of vision, improper planning, and absence of proactive initiatives are noted as factors that affect SCM implementation (Mentzer et al., 2001; Seuring and Müller, 2008).

#### 2.2.4.1 Supply Chain Integration Issues

The significant paradigm shift in SCM that companies do not compete anymore as single autonomous entities but compete as supply chains (Lambert and Cooper, 2000; Spekman et al., 1998; Sweeney, 2011) requires successful SCM to have both cross-functional and inter-organisational integration, and the obstacle is to demonstrate how successfully the integration of activities with prime supply chain process can be achieved (Lambert and Cooper, 2000). It involves managing the supply network structure with appropriate management of relationships among participants across the supply chain (Christopher, 2016; Lambert and Cooper, 2000). (Lambert and Cooper, 2000) argue that identifying the primary supply chain members, key

process links, and the type/level of integration that applies to each process link is essential. According to (Singla, 2016), the unique challenge SCM executives face is integrating supply chain strategies with organisational strategies. Due to globalisation, process efficiency on a global scale has become a requisite to optimise business operations.

#### 2.2.4.2 Uncertainties in Supply Chain

Several uncertainties in the supply chain among its partners are another critical issue that can create sustainability issues in the supply chain (Arıkan et al., 2014; Khan et al., 2018). Organisations face challenges due to the high rate of demand uncertainty due to the expanding markets, increasing power and growing customer expectations (Millet et al., 2009; Sridharan and Simatupang, 2009). The demand uncertainty causes the bullwhip effect (Forrester, 1958), causing supply chain inefficiencies (Bray and Mendelson, 2012). Similarly, technological uncertainty in a supply chain can adversely impact cost, quality and cycle time (Ragatz et al., 2002). (Mentzer et al., 2000) highlights the need for coordination in a supply chain as the demand and technological uncertainties increase in the sustainable supply chain. Several studies have demonstrated that the adverse impact of demand and technology uncertainties in the supply chain can be mitigated through improved coordination between supply chain partners (Arıkan et al., 2014; Fynes et al., 2004).

#### 2.2.4.3 Fluctuations in Global Supply Chain

Increasing competition and shifting towards supply chain level competition necessitates achieving sustainability goals, which requires supply chain firms to coordinate with their broader performance goals (Gold et al., 2010; Millet et al., 2009). The issue of sustainability includes economic, environmental, and social problems, the three dimensions of the triple bottom line (TBL) (Seuring and Müller, 2008). As studies suggest, economic influence is addressed through decision-making (Sarkis, 2003), cost management (Seuring, 2001), and performance (Rao and Holt, 2005). Changing regulations and increasing customer expectations have pressured firms to improve environmental performance and stay competitive (Gladwin et al., 1995; Pagell et al., 2007). Firms are extending their relationships with key suppliers to meet environmental objectives, which may be formed through collaborative partnerships (Preuss, 2005). Shaharudin et al. (2018) argue that firms should adopt appropriate SCM strategies relevant to the supply chain environment's changing needs and dynamic characteristics. Preuss (2005) suggests leveraging technical capabilities for a collaborative partnership because



collaboration may provide an environmental advantage, cost reduction, and increased competitiveness (Lippman, 2001).

In a survey conducted to identify the significant challenges faced by supply chains in 2017 and 2018, the main issue for global supply chain practitioners was visibility, which is 21.8%. Supply chain professionals also face fluctuating consumer demand and demand management (see section 2.2.4.2), which are 19.7% and 1.3%, respectively (Placek, 2022b). Several other issues revealed through the survey are illustrated in figure 2.9.

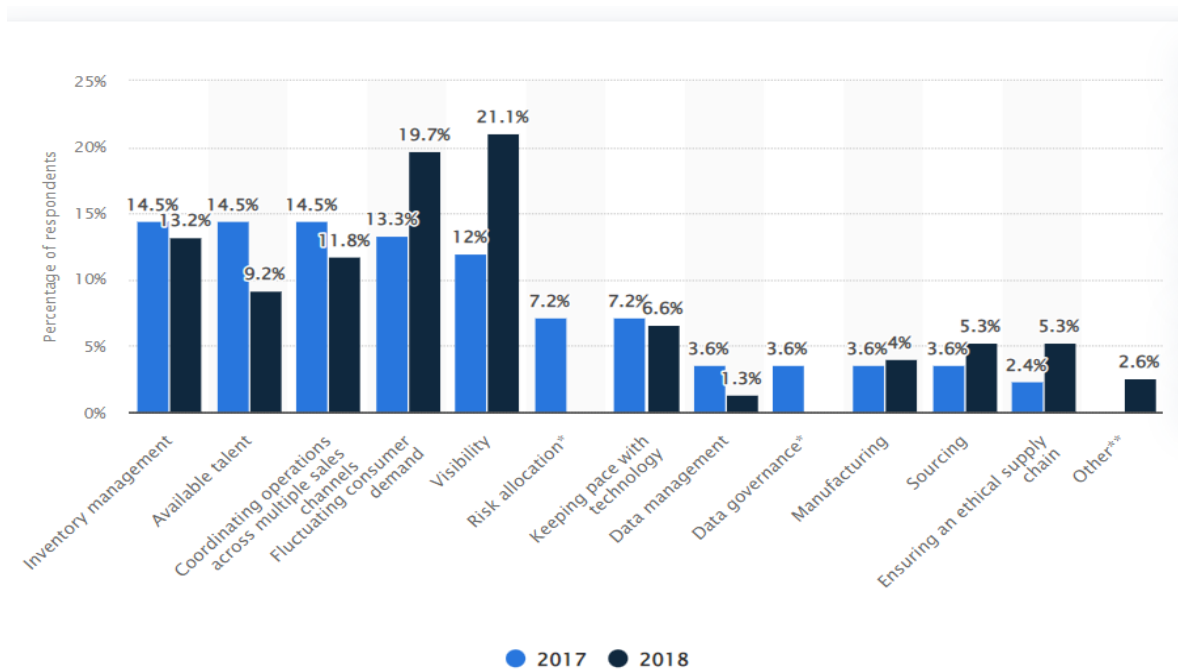


Figure 2.9: Key global supply chain challenges

Source: (Placek, 2022b)

#### 2.2.4.4 Insufficient Relationships and Trust

Another issue in SCM is establishing trust and long-term relationships within the sub-systems and with supply chain partners, extending it beyond the arm’s-length (Shaharudin et al., 2018; Singla, 2016; Tan, 2002). Supply chain partnerships with different interests fail to achieve mutual benefits, as each member focuses on individual profitability. The narrowed focus of supply chain members results from mutual distrust and relationship difficulties, which impede the effort of supply chain members to achieve overall supply chain performance and shared goals (Simatupang and Sridharan, 2002). Companies must operate as extended enterprises establishing supply chain wide relationships, i.e., between the ‘point of origin’ and ‘point of



consumption'. The past few decades have witnessed the increased importance of relationship management as one of the key objectives of SCM, and several studies have newly proposed or modified existing definitions emphasising relationships (Lambert and Enz, 2017; Sweeney, 2011).

#### 2.2.4.5 Lack of Information Flow

Information sharing, the key characteristic of an integrated supply chain (Koçoğlu et al., 2011), is effective only if a 'willingness to share' exists, which requires long-term and trusted relationships (Fawcett et al., 2007b; Prajogo and Olhager, 2012). (Khan et al., 2018) show that information sharing has a direct impact on trust as well as sustainable SCM. He also argues that long-term relationships can mitigate risks associated with demand uncertainties and reduce costs. A lack of trust is believed to cause severe challenges in the decision-making process (Kwon and Suh, 2005). In addition, there is an increased need to improve collaboration and knowledge management among supply chain partners to mitigate adverse impacts due to uncertainties (Khan et al., 2018). The type and amount of information sharing indicate the trust level, contributing to partners' participation in complex supply chain business processes (Lai et al., 2015). Spekman et al. (1998), in their study, examined 22 supply chains to assess the information flow among partners. His empirical study proves that sustainable relationships are essential and that regular communication between supply chain partners provides a high level of connection between business parties. He also comments on technology as a facilitator of collaboration.

The points raised by Simatupang and Sridharan (2002) and Varma et al. (2006) and the supply chain issues discussed subsequently provide a rationale for the requirement of an integrated and collaborative supply chain. The crucial barriers to successful SCM implementation suggested by current literature are formulation and integration of supply chain strategies, demand and technological uncertainties in the supply chain, achieving the sustainability goals, lack of long-term relationships and trust, and effective information sharing. This research will focus on addressing the issues related to information sharing, long-term relationships, and trust, as the aim is to explore and understand the role of ESNs on the phenomena under investigation.

#### **2.2.5 Supply Chain Integration**

The idea of an 'integrated supply chain' is commonly understood by academics and supply chain executives in the present-day SCM scenario (Christopher, 2016; Closs et al., 1996; Millet

et al., 2009; Porter, 1985). The previous section (2.2.4) underlined the need for an integrated supply chain. Globalisation, expanding markets, rising competition, and growing customer expectations have forced supply chain organisations to improve their integration with their supply chain partners (Prajogo and Olhager, 2012). Cooper et al. (1997a) claim that SCI is blended with the SCM concept and must integrate all business functions. For example, product development needs to consider all aspects of the business, including marketing, research and development, actual product design, manufacturing and logistics capabilities, and finance. In addition, external organisations such as suppliers and customers should be included in product development to reduce time-to-market. By itself, SCM is about meeting the objectives (improving efficiency through cost reduction, effectiveness by creating customer satisfaction and value) through integrated supply chain management to create competitive advantage, eventually making profitability.

#### 2.2.5.1 Internal and External Integration

Past studies identify different levels of integration based on the level of integration that can be achieved in a supply chain: internal function level, dyadic, chain level or network-wide (Ellram and Cooper, 1990; Fawcett and Magnan, 2002; Harland et al., 1999). Sweeney (2011) suggests that firms must improve their integrated network to include customers and suppliers and form an extended supply chain. The study provides a more detailed description of internal and external integration by specifying them as the second fundamental of SCM philosophy. The study emphasises internal integration as the criterion for external integration and proposes the concept of a semi-integrated supply chain. The extent of relationships and integration in the supply chain can vary in different areas of SCM based on the requirement to achieve better performance in an area.

#### 2.2.5.2 The Holistic View

Christopher (2016) states that the real competition is not between individual companies but between supply chains, highlighting the significance of integration in the supply chain. The consequence is that any inadequacies in any part of the supply network can cause the whole supply chain to fail to achieve its objective (Sweeney, 2011). Inter-organisational friction can cause wastage of resources (Lambert et al., 1998) and stresses the need to replace 'fragmentation' with 'integration' and supply chains to interact seamlessly as a network of organisations with total systems perspective across multiple functions and multiple levels of

suppliers and customers (Houlihan, 1988; Monczka et al., 1998; Sweeney, 2011). (Lambert and Cooper, 2000) interpret that the structure of activities within and between organisations leads to improved profitability, competitiveness and supply chain performance (SCP), which indicates that both internal and external integration is key.

### 2.2.5.3 Need for Collaboration

Conventional supply chains tend to work in a disconnected mode that is inclined to optimise individual functions' performance, resulting in buffered inventory, long lead times, low responsiveness, and high total costs (Christopher, 2016). Christopher highlights that the supply chain needs to be connected by information sharing to have network-wide visibility and transparency, which demands a higher degree of collaboration (Christopher, 2016). According to him, the interfaces in the conventional supply chain are broken with little visibility of the chain, resulting in low responsiveness and high costs. A synchronised supply chain with high visibility and transparency requires a high level of process alignment and collaborative work. The conventional supply chain and synchronised supply chain are illustrated figure 2.10.

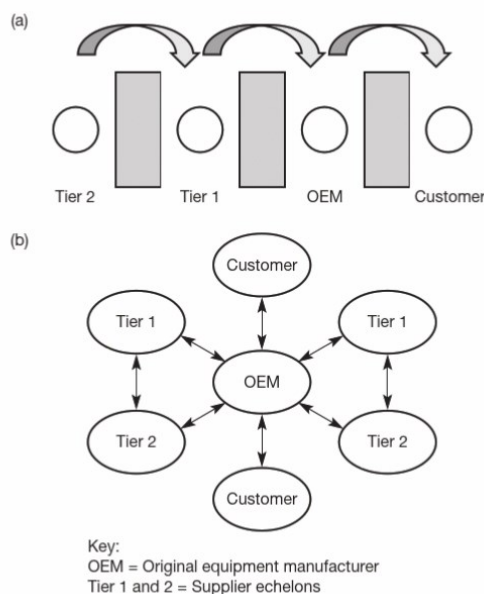


Figure 2.10: Conventional supply chain and synchronous supply chain

Source: (Christopher, 2016)

SCI focuses on improving the chain's performance through various coordinated activities, thus streamlining various flows towards achieving a collaborative relationship (Stevens and Johnson, 2016). Managers must consider implementing collaborative practices with their

supply chain partners, as supply chain collaboration (SCC) contributes towards improving TBL (Gimenez 2012).

#### 2.2.5.4 Information integration

Information and communications technology (ICT) has enabled effective SCI, and many suppliers and manufacturers are adopting ICT to integrate traditional services to achieve effective SCI (Evangelista and Sweeney, 2006). Several studies discuss the consequences of integrated SCM. Lambert et al. (1996) claim that the integration of activities can lower various operational costs and hence improve managerial efficiencies. However, achieving a high level of integration would result in changes to organisational structure and new supply-demand networks (Sweeney, 2011). Organisations must consider approaches that could eliminate such challenges extended supply chains face. Increasing the supply chain's comprehensive visibility through improved integration, communication, and information sharing is one such approach (Katunzi, 2011).

Increasing supply chain dynamics have increased supply chain uncertainties, posing more significant risks to companies (Prajogo and Olhager, 2012). As firms focus on core competence, operational activities become more fragmented, giving away non-core activities to other partners across geography. This drift insists on the need for solid information integration fortified by accurate and timely exchange of information (Prajogo and Olhager, 2012). Information integration is effective only when the exchanged information is understood correctly, and this can be acquired through the learning process over a more extended period. However, studies have shown that many organisations struggle with the soft aspects of information integration (Kanda and Deshmukh, 2008). This suggests that firms must connect socially with long-term relationships to encourage collaborative practices because a strong relationship beyond a normal transactional relationship is essential for information integration (Prajogo and Olhager, 2012).

#### **2.2.6 Collaboration in SCM**

The previous section discussed the need for collaboration for an integrated supply chain. With today's supply chain's increasing complexity and interconnectedness, collaboration has become a central factor in managing the supply chains (Wu et al., 2014). Today's supply chains are more vulnerable to catastrophic interruptions, whether minor occurrences like delivery or weather delays or more significant disruptions like pandemics, cyberattacks, or natural

catastrophes (Singh et al., 2018). Supply chain management must improve its cooperation skills to withstand supply chain disruptions and prioritise supply chain resilience (Chen et al., 2017).

Collaboration in the supply chain emerged in the form of collaborative planning, forecasting and replenishment (CPFR). Prior forms of collaboration existed as vendor managed inventory (VMI) and continuous replenishment programmes (CRP) (Barratt, 2004; Ireland and Bruce, 2000; Panahifar et al., 2015). Simatupang and Sridharan (2002) defines collaborative supply chain as:

*"two or more independent companies working jointly to plan and execute supply chain operations with greater success than when acting in isolation."*

Many scholars have proposed definitions for the collaborative supply chain, highlighting the need for enhanced supply chain flow and timely delivery (Mofokeng and Chinomona, 2019). Lambert et al. (1999) emphasise on the degree of relationships among the supply chain members to share rewards and risks to achieve higher performance instead of competing individually. Bowersox (1990) uses the term ‘*logistics alliances*’ to create opportunities to enhance customer service by reducing operating costs for distribution and storage. Saban et al. (2017) suggest that SCC is achieved when an organisation’s people, process and technology are successfully integrated (figure 2.11).

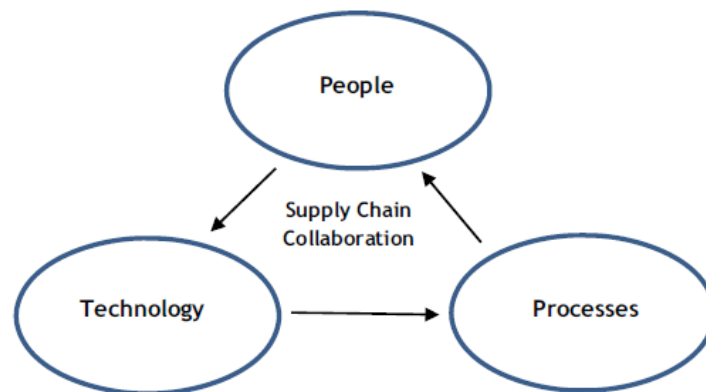


Figure 2.11: An integrated approach to supply chain collaboration

Source: (Saban et al., 2017)

Several studies argue that collaboration is challenging to implement due to over-reliance on technology, lack of clarity on whom to collaborate with, and lack of trust among partners (Barratt, 2004; Ireland and Bruce, 2000; McCarthy and Golicic, 2002; Sabath and Fontanella, 2002). However, in contemporary SCM, collaboration is adopted from a strategic perspective,

necessitating a high level of information sharing, trust, and commitment by the supply chain management to work together recursively to achieve shared goals (Liao et al., 2017; Spekman et al., 1998).

#### 2.2.6.1 Internal and External Collaboration

Although organisations have been focusing on improving the internal supply chain efficiency for many years, the focus was predominantly on individual functional areas, resulting in a mismatch between demand and supply both within the organisations as well as their partners (Ellinger, 2000; Fawcett and Magnan, 2002; Ireland and Bruce, 2000). Barratt (2004) observed that the supply chains that integrated supply and demand through collaboration achieved significant performance gains. He consolidates several issues in SCM that are due to either lack of collaboration or collaboration confined to within organisational functions, such as:

- 1) Unrelated planning, forecasting and production schedules between internal functions.
- 2) Poor communication and the existence of functional silos.
- 3) Poor visibility to organisation-wide processes.
- 4) Performance measures that create conflicting behaviour with internal and external partners lead the supply chain in conflicting directions.
- 5) Lack of reliable information leads to poor decision-making.
- 6) Lack of clarity on whom to collaborate with.

Given the above issues, Barratt highlights the need for more clarity on collaborative initiatives and internal and external collaboration. The collaboration categorised based on the scope of the supply chain are vertical collaboration (internally across functions and with external stakeholders), horizontal collaboration (with competitors to share resources), lateral collaboration (merging vertical and horizontal) and supply chain alliances (a partnership) (Barratt, 2004; Simatupang and Sridharan, 2002) shown in figure 2.12.

Zhang and Cao (2018) have examined how SCC covers all the supply chain functions, such as purchase order procedures, prediction, capacity preparation, and quality management, which considers channel-wide collaboration. By leveraging collaboration tools to share data by adopting correct procedures, organisations can manage inadequacies and orchestrate the supply chain to ensure a seamless flow of goods, data, and materials (Alzoubi et al., 2020).

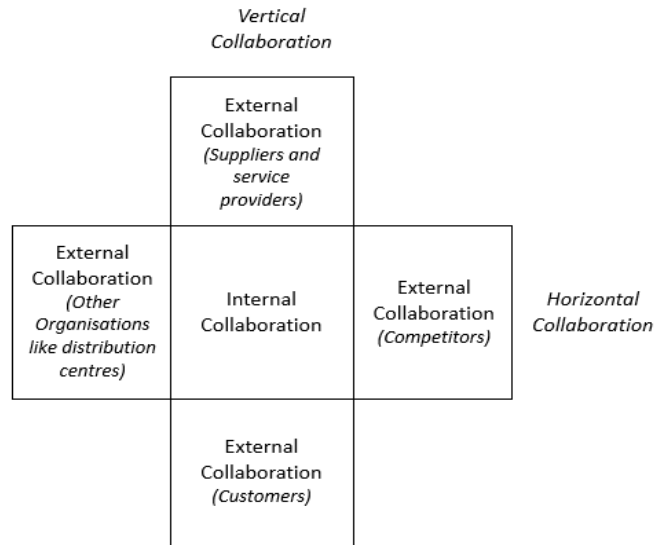


Figure 2.12: Scope of supply chain collaboration

Source: (Barratt, 2004)

### 2.2.6.2 Elements of Supply Chain Collaboration

Past studies on SCC focus on inter-organisational processes combined with information systems enabling supply chain participants to deliver goods to customers efficiently and at a low cost (Lee et al., 1997). This view fails to identify the vital elements of collaboration that affect the participants' behaviour, which may adversely affect the success of collaboration (Narus and Anderson, 1996). Simatupang and Sridharan (2002) introduce the concept of design for collaboration (DfC) by identifying the critical elements of SCC. The subsequent sections present some of the key elements of collaboration.

#### 2.2.6.2.1 Interdependence

Interdependence is a crucial element of collaboration that allows coordinated problem-solving and decision-making, and the quality of a collaborative process can be measured by the partners' lived interdependence (Bouwen and Taillieu, 2004; Crook and Combs, 2007; Lee et al., 2003; Parker, 1999). Interdependence is the extent to which individuals depend on one another to perform their tasks (Van De Ven et al., 1976), which relates to the degree of collaboration positively and is required by the individuals to produce an outcome (Mohr, 1971). (Lazega and Pattison, 1999) emphasise that collaborative exchanges occur due to interdependence, and the form of these interdependencies is likely to depend on the types of resources and constraints involved in the exchange. The exchanges include providing answers, knowledge sharing, advice-seeking and informal exchanges such as co-workers' goodwill,



advice, and friendship. The author suggests that higher-order (extra-dyadic) interdependencies help to achieve broader collaboration. According to Bernstein et al. (1999), dependencies in the supply chains can be between different tasks (planning and forecasting, ordering, replenishment, distribution, pricing, and customer service), tasks and resources or between resources (inventory, funds, capacity and capabilities). Demand planning by the supplier and retailer together is an example of interdependence.

#### *2.2.6.2.2 Resource Sharing*

Some studies have noted that resource sharing is an antecedent of SCC (Fawcett et al., 2011; Min et al., 2007; Wu and Chiu, 2018). According to Fawcett et al. (2011), SCC depends heavily on sharing resources or vital information to achieve productivity and meet customer expectations. Simatupang and Sridharan (2002) claim that forward and backward information flows facilitate better supply chain visibility within and external to organisations and enable collaboration. Information sharing helps cope with ambiguity, demand uncertainties, complexity in decision-making, and the vulnerabilities of opportunistic behaviours. Similarly, Chae et al. (2005) recognise that successful SCC is associated with high-level information and resource sharing. Sharing behaviour between partners underpinned by relational behaviours such as trust and commitment between partners facilitates collaborative partnerships in a supply chain (Wu and Chiu, 2018).

#### *2.2.6.2.3 Incentive Alignment*

The process of allocating costs, risks, and rewards among the collaborating members that motivate the members to create value for all is referred to as incentive alignment and is characterised by the high-level commitment of the participant members in the supply chain. Incentive alignment aims to realign benefits and burdens incurred due to process changes within the supply chain (Simatupang and Sridharan, 2002; Simatupang and Sridharan, 2008). The benefits and penalties are based on performance, so members will likely act consistently with their strategic goals, sharing confidential information and decision-making. For instance, if the collaborative objective is to create profit and lower total costs, the supply chain members can work towards this objective, influencing collaboration success (Narus and Anderson, 1996). The authors outline the three different incentive alignments that motivate the participants' collaborative behaviour: productive behaviour, pay-for-performance and equitable compensation (Narus and Anderson, 1996; Simatupang and Sridharan, 2008).



Effectively designed and implemented incentive alignment positively affects collaboration, including employee motivation, productivity, effective decision-making, and support to overcome the obstacles to change (Simatupang and Sridharan, 2008).

#### 2.2.6.2.4 Information Sharing

Information sharing is another crucial aspect that encourages collaboration. The seminal work by (Simatupang and Sridharan, 2008) on the design of SCC claims information sharing as one of the five elements of the architecture of the collaborative system. To collaborate effectively, organisations need to share valuable information in real-time with their supply chain partners, which leads to enhanced knowledge through the supply chain, helping to achieve various benefits. Duong and Chong (2020) studied collaboration in the context of supply chain disruptions and said that Information-sharing practices provide pertinent and precise information and enhance supply chain collaboration. Information sharing, the foundation of collaboration, enables learning from past experiences, assessment of risks and evaluation of relationships (Cao and Zhang, 2010; Chen et al., 2017). The information exchanged within a supply chain enhances coordination between supply chain activities depending on the structure of the supply chain, permits material flow, and saves inventory costs (Shahbaz et al., 2018).

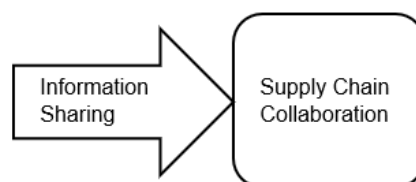


Figure 2.13: Information sharing enhances supply chain collaboration

An alternate view in the literature suggests that collaboration enhances information sharing, and information sharing is one of the activities of collaboration (Moshtari, 2016; Wagner and Thakur-Weigold, 2018). Collaboration offers real-time data sharing and analysis, which helps the company connect supply chain peers, break silos, communicate seamlessly, and accomplish the collaboration goals efficiently (Wankmüller and Reiner, 2020). Collaboration, Information sharing, and resource sharing are intertwined (Kumar et al., 2016). Cao and Zhang (2010) considered information sharing, resource sharing, and joint knowledge creation to be activities of collaboration that create consensus among all the supply chain partners.

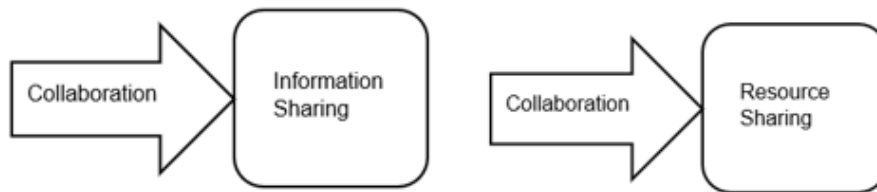


Figure 2.14: Collaboration enhances information and resource sharing

#### 2.2.6.2.5 Trust and Relationships

Several studies have stated trust as a factor that influences and drives collaboration (Dubey et al., 2019; Duong and Chong, 2020; Panahifar et al., 2018; Prajogo and Olhager, 2012) and highlights the importance of social relationships in a partnership. An increased level of trust results in improved collaborative relationships, leading to better supply chain performance (Eftekhar et al., 2017; Li et al., 2019; Prasanna and Haavisto, 2018). Trust is a crucial element that serves as the foundation for collaboration among supply chain partners (Ghosh and Fedorowicz, 2008) and fosters information sharing (Min et al., 2005), information transparency (Akkermans et al., 2004) and commitment (Kwon and Suh, 2004). Matopoulos et al. (2007) claim that trust in collaboration is a critical element that affects supply chain relationships and collaboration and is likely to limit collaboration's depth and width (intensity), which means increased trust enhances collaboration.

Looking at the relationship aspects, SCC helps participants work together to achieve greater supply chain clarity and maintain a better relationship among the partners (Kumar and Anbanandam, 2020). A strong relationship with supply chain partners such as suppliers and customers is based on open communication lines and upfront clarification of the conditions, techniques, and processes for collaborating (Shahbaz et al., 2018). According to Lambert et al. (1999), collaboration is an evolving process within a non-friendly relationship between channel partners that helps to improve relationships. Past studies show that collaborative practices such as CPFR and VMI have provided benefits to supply chain partners, such as improved forecasting accuracy, enhanced customer service quality and more robust relationships between partners (Panahifar et al., 2018). Koçoğlu et al. (2011) argue that the collaborative activities in SCM have become increasingly important to create improved value-based relationships in the supply chain network, which can help businesses achieve their objectives that might be challenging for companies to achieve alone. Supply chain partners making

significant and joint gains through collaboration and significant investments might create an inter-organisational relationship (Dyer and Singh, 1998).

This section examined that an increased level of trust creates improved collaboration, further enhancing trust and building relationships that can lead to supply chain performance, which means collaborative activities indicate evidence of relationship and trust.

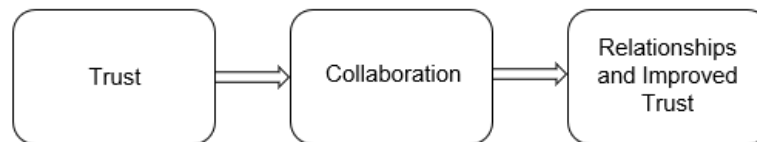


Figure 2.15: Trust drives collaboration, which in turn improves relationships and trust

### 2.2.7 Information Exchange in SCM

For supply chains to survive in today's competitive environment, the availability of up-to-date information is crucial (Lotfi et al., 2013). Lack of appropriate information can result in inefficiencies in supply chain management, and many of the supply chain issues are attributed to a lack of information sharing (Li, 2002). Similarly, lack of information sharing across organisations create hurdles to efficiently planning the activities of the organisation's various functions.

Forrester (1958) explains how the amplification of information distortions in each stage of the supply chain can negatively impact inventory levels (bullwhip effect) and operational performance. A lack of awareness of information flow can cause costly errors in the decision-making process, and the availability of timely and quality information provides better control over multiple organisational activities. (Dell and Fredman, 2002) demonstrate in their study that the bullwhip effect can be kept away if demand and production forecast data is available among supply chain participants.

Betz et al. (2020) stated that data exchange among supply chain companies, individuals, and technology is information sharing. Information sharing in the supply chain encompasses data collection, processing, interpretation, storage and dissemination of various data, including logistical, commercial, tactical and strategic information. Information shared among supply chain players include market demand, end-to-end inventory status and locations, order data, sales and forecasting, cost-related data, product capability data, updates on freights, terms and

conditions among supply chain partners and performance status (Cui and Idota, 2018); Nakasumi, 2017; Nazifa and Ramachandran, 2019; Simatupang and Sridharan, 2008).

Koçoğlu et al. (2011) emphasise the significance of bidirectional information sharing on supply chain effectiveness, allowing firms to make better decisions in strategic planning and operational activities. The efficiency of information sharing in supply chains has recently improved due to the worldwide acceptance of long-term collaboration and coordination, making use of technology to employ data analytics for decision-making.

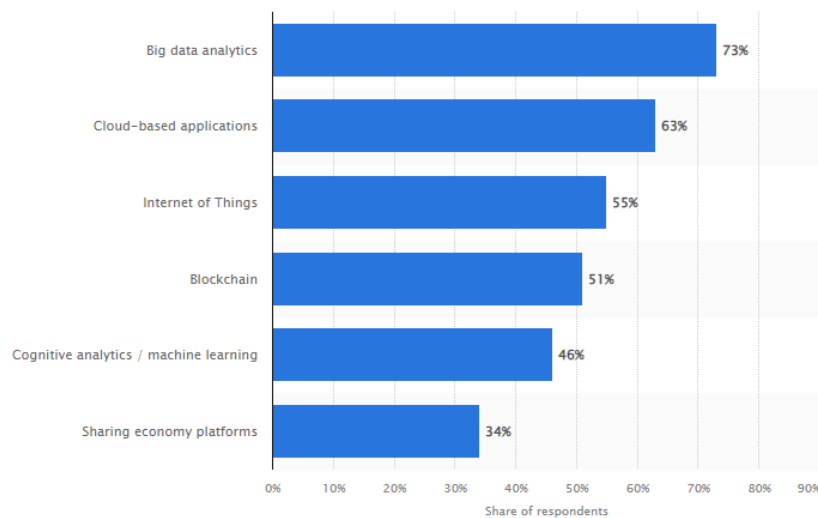


Figure 2.16: Information technologies for supply chains worldwide 2018

Source: (Placek, 2022a)

Figure 2.16 shows some of the prominent technologies organisations can use for supply chain efficiency, and this shows that big data analytics is supported by 73% of the population, which requires information sharing.

### 2.2.7.1 Significance of Information Sharing

The information exchange within the supply chain can improve coordination between supply chain members, connecting them with various stakeholders such as suppliers, business partners and customers (Sundram et al., 2020). It enables the chain members to ensure effective decision-making. They could gain adequate supply chain wide visibility to monitor and control the progress of the material flows in the supply chain. Thus, information sharing becomes vital for business sustainability and allows supply chain integration (SCI) (Betz et al., 2020).

The benefits of information exchange can be achieved if strategic information is exchanged (Prajogo and Olhager, 2012), which depends on the willingness to share (Fawcett et al., 2007b).

Willingness to share information is indicated by the quality (i.e., timeliness, accuracy, completeness, adequacy, and reliability of the exchanged information), combined with the range of information shared and degree of coordination, which governs the nature of decision-making in firms (Du et al., 2012). Studies reveal that willingness to share occurs when a partnership exists with a long-term strategic relationship, trust, and commitment (Cagliano et al., 2003; Du et al., 2012). Consequently, supply chain members tend to share operational and strategic information promptly, which helps reduce inventory costs, decrease the order cycle, and improve supplier service (Kanda and Deshmukh, 2008). Studies have proved that information sharing helps supply chain partners achieve several objectives, including the TBL's environmental aspect and significantly impacts sustainable supply chain performance in the service sector (Khan et al., 2018; Lai et al., 2015).

#### 2.2.7.2 Use of Technology in Information Sharing

The rapid development of information technology (IT) has created improved visibility of the whole supply chain, providing opportunities for continuous improvement. It enables organisations to share real-time information, improving cooperation among the internal and external supply chain members (Huo et al., 2021; Huo et al., 2015; Li et al., 2019). Adopting IT in the logistics and supply chain sector allows supply chain partners to increase the volume and complexity of information exchange, which can create a competitive advantage, causing a steady influence on a firm's performance (Evangelista et al., 2012). Information exchange powered by IT allows the real-time flow of information for decision-making in a supply chain (Prajogo and Olhager, 2012), lowering costs by limiting inventories and shortages (Lee et al., 2000). Although several companies have invested in IT, such as ERP and EDI, to enable information integration (Devaraj et al., 2007; Li et al., 2019), internet-based technologies can accelerate information integration by providing reliable, accurate and timely information to organisations leading to performance improvement. For example, sharing information with suppliers and customers can help suppliers improve the forecasting to provide timely supplies, resulting in favourable consequences (Chae et al., 2005; Li et al., 2019).

Many managers consider information sharing a technological issue and believe that technological innovation can drive collaboration; subsequently, they tend to invest in information technologies but fail to achieve the desired information sharing capabilities and collaboration (Fawcett et al., 2007b). Nevertheless, some companies treated information sharing as closely linked with behaviour and organisational culture, focusing on creating better

relationships to raise information exchange levels (Fawcett et al., 2007a). Studies show that significant IT investments could fail due to the lack of willingness to share, which requires long-term and trusted relationships (Fawcett et al., 2007a; Prajogo and Olhager, 2012).

### 2.2.7.3 Barriers to Information Sharing

Information sharing enables effective responses to rapid changes and faster decision-making, so organisations invest heavily in IT to improve information and knowledge management across the supply chain (Mendelson, 2000; Ofek and Sarvary, 2001; Tushman and Nadler, 1978). However, many organisations fail to harness the potential of information sharing to enhance supply chain performance due to several misconceptions about information sharing.

Many supply chain managers and academics have focussed on the technological side of information sharing (Fawcett et al., 2007b; Frohlich, 2002; Lee et al., 2000). Fawcett and Magnan (2001) argue that the inappropriate focus is due to a lack of organisational support that promotes cultures of information sharing, whereas the willingness to share information and technical capability should jointly support enhancing the quality of information sharing. Information technology enables enhanced connectivity across functional, organisational and geographical boundaries, providing relevant, accurate and timely information and enabling seamless interaction among the communication parties (Chesbrough and Teece, 2009). Even if connectivity enables information sharing, many individuals hesitate to share information, perceiving that their organizations may be at a competitive disadvantage. The unwillingness to share information can adversely affect investments in technology. An individual's willingness to share' is influenced by the organisation's culture, their decision on when and what to share, and openness to share pertinent information regularly and honestly, eventually governing the extent of information sharing (Fawcett et al., 2007a; Lee et al., 2000; Mendelson, 2000).

Lotfi et al. (2013) highlight the barriers to information sharing in SCM as confidentiality and information privacy, lack of incentives, reliability and accuracy of data, cost incurred, anti-trust regulations, the timelessness of the shared information, lack of organisational capabilities to utilise the information effectively, employees lacking skills and absence of trust. (Kembro and Selviaridis, 2015) identified several factors that must be addressed to enhance information sharing, including information quality, costly and inadequate information systems, power asymmetry, governance/dominant player, benefits allocation, confidential information, trust and shared goals and performance metrics.

## 2.2.8 Relationships and Trust in SCM

The previous sections (2.2.5.3, 2.2.5.4, 2.2.6) examined SCC as crucial for an integrated supply chain through information integration. Effective collaboration between the supply chain partners develops through the sharing of vital information, which cannot occur without a favourable relationship among the partners. Hence, an effective long-term collaborative relationship improves SCI and, subsequently, SCP (Benavides et al., 2012). Trust is essential in any relationship, and several scholars have studied interpersonal trust in business relationships (Doney and Cannon, 1997; Mo, 2004; Nicholson et al., 2001). According to Wu et al. (2014), relationships and trust are vital in identifying partners' beliefs in building an alliance. This section examines relationships and trusts in an SCM setting, followed by identifying the determinants or elements of relationship and trust.

Existing studies closely associate SCM with partnerships, strategic associations, and corporative ties with supply chain partners, emphasising the relational factors in SCM, where all parties benefit mutually (Mentzer et al., 2001; Sweeney, 2011). An improved competitive advantage can be achieved through effective partnerships; hence, many firms are embracing supply chain partnerships to achieve SCM objectives (Lambert et al., 1996). Sweeney (2011) suggests that inter-firm relationship management is essential to achieve the supply chain management objectives, which include integrated behaviour and collaboration among the supply chain partners, mutual information sharing, risk and rewards, common goal, emphasis on customer service, and unifying processes. He recognises the need to reassess relationships between suppliers and customers, examining the different natures of relationships (e.g., full partnership, partial alliance, long-term contract) and suggests that choosing the appropriate one based on the situation is vital.

According to Mentzer et al. (2001), supply chain partners involved in relational exchanges and collaborative relationships increase SCI, creating substantial performance improvements. Partnership relationships based on mutual trust, transparency, and shared risks and rewards make the channel more efficient and can yield a much better business performance than when firms perform individually (Lambert et al., 1996). Tsanos and Zografos (2016) suggest that supply-chain relationships emerge only when supply-chain partners collaborate in a mutually beneficial manner, exhibiting reciprocity, so that trust and commitment are established between them. Reciprocity is a social concept of responding to a positive action with another similar action, which means a positive and friendly action is responded to in a positive, rewarding



action; conversely, the response to unfriendly actions is a negative reply (Fehr and Gächter, 2000). A fruitful supply chain should aim at long-term strategic partnerships (Mentzer et al., 2001).

Wu et al. (2014) argue that relationships and trust are Social Exchange Theory (SET) based issues (section 2.5.3.1) and suggest that initially, supply chain members should attempt to integrate resources through voluntary, casual, and mutual bonds and further enhance the commitment to establish a stable relationship which will motivate partners to collaborate. However, it is crucial to identify the factors contributing to the exchange beliefs of the allies (Myhr and Spekman, 2005; Sheu et al., 2006). According to SET, social interaction is based on the expectation of reward and assumes that attitudes and behaviours can be evaluated by the difference between the 'rewards of interaction' and 'cost of the transaction' (Wu et al., 2014). For example, in a supply chain, the supplier contributes to the manufacturer and expects the manufacturer to make their turn of contribution later in time (Narasimhan et al., 2009).

Studies propose the key subjects in SET for retaining relational strength in supply chain relationships as trust, commitment, reciprocity, power and justice (Hallen et al., 1991; Kwon and Suh, 2005; Wu et al., 2014; Yang et al., 2008). This study focuses on trust, commitment, and reciprocity themes of SET with respect to long-term relationships. *Trust is the willingness to take risks* (Johnson-George and Swap, 1982; Mayer et al., 1995) and exists when partners have confidence in each other's reliability and integrity (Morgan and Hunt, 1994). Commitment is "*an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is, the committed party believes the relationship endures indefinitely*". Studies propose that trust is the primary determinant and prerequisite of commitment (Dyer, 1996; Kwon and Suh, 2004; Morgan and Hunt, 1994).

Successful SCM results from high trust and commitment among the partners in a supply chain underpinned by information sharing. Kwon and Suh (2004) reported that many strategic partnerships were unsuccessful due to a lack of trust among partners, as information exchange involves confidential data (financial, strategic, and operational) (Bowersox and Closs, 2000). A lack of trust between supply chain partners can generally increase the transaction cost due to additional effort to verify trading partners' authenticity, thereby degrading efficiency, effectiveness, and productivity in SCM. The trust that one's supply chain partner behaves consistently and the commitment displayed contribute towards confidence among the supply



chain partners, creating a long-term and sustainable relationship (Heide and John, 1990; Lee and Billington, 1995).

Coherent decision-making aids in settling conflicts among the supply chain members, which can handle many cases of future uncertainty (Kanda and Deshmukh, 2008). Decision-makers tend to spend considerable effort analysing partners' credibility and trustworthiness instead of optimizing their operations. If supply chain partners exchange information openly with a long-term perspective on the trusted relationship, opportunistic behaviours may be reduced (Cooper et al., 1997a; Ellram and Cooper, 1990).

Mo (2004) points out that trust is a vital element in any relationship and can have cross-cultural influences. A behaviour acceptable in one region may be perceived as dishonest in another, and there is a greater chance of misunderstanding due to varying expectations of the stakeholders in a business relationship across cultural boundaries. This discrepancy demands a greater understanding of the cross-cultural similarities and differences in interpersonal trust among business people (Huan et al., 2004; Mo, 2004).

Trust reduces transaction costs associated with information sharing (Laaksonen et al., 2009) and improves the quality of interactions, cooperative involvement, and commitment to a relationship (Kwon and Suh, 2005). Dwyer et al. (2007) note trust as a critical factor for information sharing and developing new relationships and is strongly associated with information disclosure (Metzger, 2004). Studies provide evidence of trust between Facebook members, whereas developing new relationships was prominent among MySpace members (Dwyer et al., 2007).

Gassenheimer et al. (1996) investigate interdependence's influence in developing and maintaining long-term, ongoing relationships among manufacturers and distributors. The authors argue that dependency is moulded by exchanging resources (information, services) among the partners, which can create a differential advantage in the relationship. The strength of dependency is driven by the perceived quality of the manufacturer's services to support the distributor's operations and create subsequent financial and performance impacts. The two approaches to assess the relationships are called behavioural and economic approaches. While the behavioural approach is viewed as a power struggle by each party to control the decisions of others, the economic approach assumes distributed responsibilities to minimize cost,

maximise profit and achieve shared goals. (Mo, 2004) argue that strong business relationships would be interdependent.

Drawn from past studies (Kwon and Suh, 2004; Lee et al., 2014), some of the factors that indicate the presence of trust are 1) an action that results in positive outcomes for the partner firm, 2) not taking unexpected actions that result in a negative outcome, open communication, 3) willingness to take a risk, 4) honesty and benevolence and 5) absence of behavioural uncertainty. Studies of interpersonal exchange situations confirm that trust is a prerequisite of self-disclosure, as it reduces apparent risks associated with revealing private information (Metzger, 2004). Similarly, inter-organisational trust encourages positive attitudes and behaviours among business partners (Ireland and Webb, 2007), an essential element of social capital.

### **2.3 Social Media and Enterprise Social Networks**

The previous section (section 2.2) examined supply chain management, starting with the evolution and definition of SCM, as well as the objectives and challenges, including key concepts such as integration, collaboration, and information sharing in SCM. This research started with exploring social media and gradually evolved with its focus on Enterprise Social Networks (ESNs). This section discusses the concept of social media, its definition, and its significant features, such as collaboration, information sharing and relationship building, followed by concepts, definitions and features of Enterprise Social Networks (ESNs). Social media technologies have promoted communication and collaboration, encouraging information sharing, long-term relationships and trust. Due to the privacy issues associated with public social media, many organisations have adopted ESNs that are used in private spaces.

#### **2.3.1 Social Media**

Social media have transformed how people interact and communicate with organisations, allowing individuals and businesses to connect, share and collaborate (Hanna et al., 2011). It displays a participatory culture through its various features: 1) cheaper and easier usage, 2) reduced barriers to expression and participation, 3) increased transparency, and 4) self-supporting the member's feelings, thus bringing in new forms of value (Storey et al., 2014). Dijkmans et al. (2015) point out that the essential outcomes of social media engagement are building relationships and improving reputation. As a result, companies increasingly carry out social media activities to enhance brand attitude, build relationships and trust, have online

discussions with consumers, and create a positive perception of the company's reputation (Dijkmans et al., 2015). Similarly, companies are creating comprehensive social media strategies to integrate and collaborate with business partners to expand their business and network (Hines, 2018).

The idea of social media possibly originated towards the end of the 1950s when 'Open Diary' was created to bring online diary writers together in one community (Kaplan and Haenlein, 2010). The beginning of the contemporary social media landscape can be traced back to the late 1990s when the social networking site (SNS) called 'Six Degrees' allowed users to create profiles and list friends and families, though it failed to sustain itself. Although various social networking platforms emerged after this, most failed to achieve popularity. Later, multiple platforms such as Facebook, MySpace, LinkedIn, YouTube and Friendster emerged, significantly influencing the cultural, business, and academic landscape (Boyd and Ellison, 2007). The widespread use of weblogs became a significant source of public opinion, and lately, microblogging gained significance with its focus on real-time updates (Kietzmann et al., 2011).

The use of social media is ever-increasing, and the scope and functionalities of social media vary; for example, Facebook and MySpace are for networking, LinkedIn for professional networks, YouTube for shared videos and Flickr for sharing photos (Mangold and Faulds, 2009). In 2018, the reported number of social media users worldwide was 3.196 billion, with a global increase in usage of 13% since January 2017 (Chaffey, 2018). Based on the report by Statista, in October 2018, there were 2.2 billion Facebook users, 1.9 billion YouTubers, 1 billion Instagram, 175 million Pinterest and 335 million users of Twitter (Statista, 2019), indicating the global reach and engagement the social media could have in people's life. According to Kaplan and Haenlein (2010), web2.0 and user-generated content (UGC) have enabled the evolution of social media.

#### 2.3.1.1 Web2.0 and User-Generated Content

The expression 'web2.0', introduced by Atkinson and Dougherty (2006), defines how organisations use the World Wide Web as a platform to connect people and "harness collective intelligence" (O'Reilly, 2005). It allows ongoing modification of online content simultaneously by individuals in a collaborative fashion and signifies the development of a 'web of documents' to a 'web of data' enabling mass contributions from users (Bria, 2013).

The term ‘user-generated content’ signifies how people engage social media and describes various publicly available media content created by end users (Kaplan and Haenlein, 2010). Vickery and Wunsch-Vincent (2007) state the requirement for content to be UGC as 1) should be available on the public internet or SNS accessible to selected groups, 2) excludes email or instant messages, 3) should display creative effort, and 4) should be created outside of professional practices without any commercial context.

#### 2.3.1.2 Defining Social Media

Although there is a basic understanding of social media among academics, there exists a lack of commonly accepted definitions of social media in both theoretical and functional aspects (Carr and Hayes, 2015). Kaplan and Haenlein (2010) note that there is only a limited understanding of the exact meaning of ‘social media’, that it is internet-based applications that use the foundation of web2.0 and the concept of UGC. O’Reilly (2005) considers web2.0 as social media, while McAfee (2006) considers it as enterprise2.0. McAfee (2006) used enterprise2.0 to emphasise social platforms used within enterprises specifically. Past studies have offered several emerging definitions, which are examined in the subsequent paragraph.

Neti (2011) describes social media as a medium to socialize and observes that it can turn communication into a conversation. Several other studies describe them as highly interactive platforms enabling individuals and communities to share, co-create, discuss, and modify UGC utilising mobile and web-based technologies (Kaplan and Haenlein, 2010; Markova and Petkovska-Mirčevska, 2013). One of the most widely cited definitions of social media is.

*“Social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content (Kaplan and Haenlein, 2010).”*

Drawn from the extant definitions of social media and its subcategories, Carr and Hayes (2015) provide a new definition of social media, assuming it to be sufficient and relevant until 2035. The much simpler and rephrased version of the social media definition formulated by Carr and Hayes (2015) states that:

*“Social media are Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others.”*

Social media, enabled by information technology, allows users to collaborate (McKinsey, 2013), create communities with similar interests, play games (Kaplan and Haenlein, 2010), co-create information, discuss and modify UGC, and build relationships (Kietzmann et al., 2011). Social media has transformed people from content readers to contributors (Neti, 2011), providing opportunities for firms to collaborate and improve their operations by various means (Kaplan and Haenlein, 2010).

Social media can create a positive impact on businesses. For example, Dell achieved a \$1 million incremental revenue from its sales alerts through Twitter, a microblogging application (Kietzmann et al., 2011). Social media can create negative publicity as well. For instance, Dave Carroll created a YouTube video to publicise his miserable experience with United Airlines when his guitar broke. The video went 'viral' and became a crisis of brand and publicity for United Airlines (Kietzmann et al., 2011), indicating that social media can snowball and is very powerful (Bria, 2013).

#### 2.3.1.3 Computer-Mediated Communication

Several studies suggest that technologically driven communications are 'computer-mediated communication' (CMC), which occurs through computer-mediated formats such as instant messaging, online forums, and social media platforms. CMC is viewed as fostering positive change in organisations due to its quick dissemination, user-friendliness, reduced costs and ability to promote new work practices that provide employees with the opportunity to connect with people having common interests, overcoming limitations of location and time (Nederman et al., 1998; Rheingold, 2000).

Not knowing what others in the organisation do (work invisibility) can cause distrust among co-workers, duplicate errors, and create hurdles to innovation (Leonardi, 2014). CMC provides communication visibility, a distinctive feature (Treem and Leonardi, 2020), which enables effective coordination, knowledge distribution, increased awareness of co-workers (Leonardi, 2015; Van Zoonen et al., 2022) and efficient approaches to knowledge and working (Leonardi, 2014). Technology and contemporary communication methods such as collaboration tools, social networking sites (SNS), decision support software, and instant messaging have increased visibility as the contributor can disseminate information to the target audience through bulk communication features (Leonardi, 2014).

### 2.3.1.3.1 *The Social Media Language*

Mobile communications and social media have drastically changed how people communicate, and emojis (the new generation of emoticons) and short texts are increasingly being used in communication language (Heid, 2017). Social media platforms have caused the emergence of new language styles without proper spelling or syntax (Crystal, 2006) and increased use of abbreviations and summarised writing, neglecting grammar (Ramanathan et al., 2017). The emojis display facial expressions, articulation and human gestures, adding contextual or emotional meanings to the communication and are often used to express emotions or moods through computer-mediated communications effortlessly and automatically (Klostermann et al., 2018; Vidal et al., 2016). “An emoji is a graphic symbol, ideogram, that represents not only facial expressions, but also concepts and ideas, such as celebration, weather, vehicles and buildings, food and drink, animals and plants, or emotions, feelings, and activities” (Kralj Novak et al., 2015). The short texts people use in messages are known as text speak, which is common in social media communication. For example, using ‘txt’ for ‘text’ and ‘b4’ for ‘before’ (Heid, 2017). Ayan (2020) refers to this linguistic style of messaging as logographic (e.g., “smiles”) and phonographic (e.g., “acronym: b4”).

Organisations also have adapted their digital messages to include communication styles such as emojis, causing a positive effect on building interpersonal relationships, marketing and improving brand value (Arya et al., 2018; Casado-Molina et al., 2022; Hede and Watne, 2013). For example, companies use customised emojis for their brand advertisement, which can affect consumer purchase intentions (Das et al., 2019). However, emojis and phonographics are not evident in organisations’ business communication.

### 2.3.1.4 Functional Representation of Social Media

Kietzmann et al. (2011) claim that there is a lack of understanding of social media and its characteristics, and to understand its characteristics better, Kietzmann et al. (2011) present the honeycomb structure (figure 2.17) of social media functionalities and the implication of social media activities. The functionalities include identity, reputation, relationships, presence, sharing, conversations and groups.

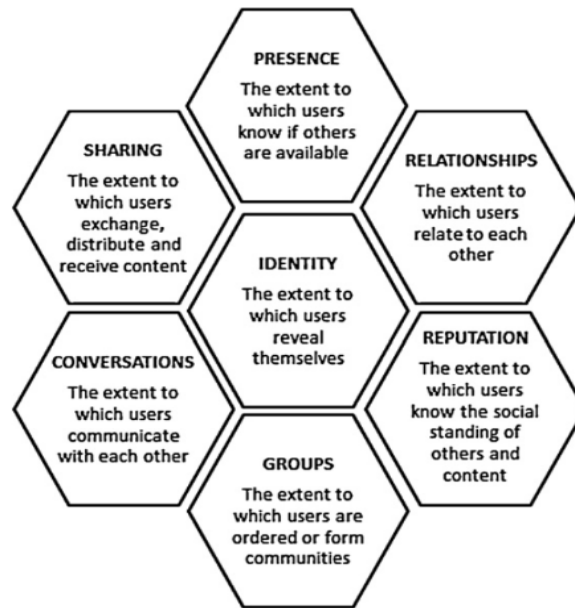


Figure 2.17: Social Media Functionality

Source: (Kietzmann et al., 2011)

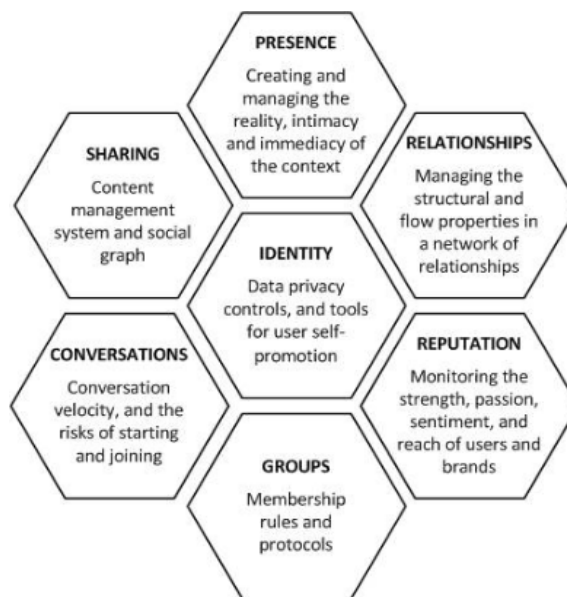


Figure 2.18: Implications of Functionality

Source: (Kietzmann et al., 2011)

Kietzmann et al. (2011) also discuss the implications of social media activities with another honeycomb structure, as shown in figure 2.18. Although many researchers consider social media as internet-based applications to socialize (Kaplan and Haenlein, 2010; Kietzmann et al., 2011), Boyd and Ellison (2007) clearly distinguish SNS and emphasise ‘relationship’ with the term ‘networking’.



2.3.1.5 Social Media Classification

Based on the ‘social presence theory’ and ‘media richness theory’ from the area of media research and the two social processes - self-disclosure and self-presentation, Kaplan and Haenlein (2010) categorise social media as shown in table 2-2. Other forms of social media identified in extant literature are internet forums, message boards, weblogs, wikis, podcasts, content generation and sharing sites (Baruah, 2012; Neti, 2011), social networking sites, social media applications, collaboration tools, multimedia hosting and sharing sites and social review sites (Lai and Turban, 2008). A recent study included professional network sites and social/casual games (Carr and Hayes, 2015).

Table 2-2: Classification of Social Media

Source: (Kaplan and Haenlein, 2010)

		Social Presence/ Media Richness		
		Low	Medium	High
Self-Presentation/ Self-Disclosure	High	Blogs	social networking sites	virtual social worlds
	Low	Collaborative projects	content communities	virtual game worlds

According to Boyd and Ellison (2007), the term ‘networking’ emphasises initiating a connection, a unique feature of Social Networking Sites (SNS), used to meet new people, connect with existing relationships and gather information on casual links (Ellison et al., 2015; Joinson, 2008). It provides visible profiles, which include basic details, interests, location, and gender (Baruah, 2012); for example, some of the commonly used public networking sites are Facebook, MySpace and Twitter (Leonardi et al., 2013). SNS displays an ‘articulated list of friends’ (different from the familiar term ‘friends’) and their social networks (Boyd and Ellison, 2007). Although different types of social media applications are identified in various studies, both the public and academics use many terms to describe various social platforms and networking experiences (Jussila et al., 2011; Kaplan and Haenlein, 2010; Osatuyi, 2013; Van, 2009), these terms are not accurately defined and can have different meanings in different contexts for different users (Boyd and Ellison, 2007; ClearSwift, 2007b; Van, 2009).

Social networks provide a massive amount of actual behavioural data, which can be gathered through automated collection techniques for analysis and research purposes (Boyd and Ellison, 2007). Golder et al. (2007) studied millions of messages from Facebook to understand the



messaging activities, and Lampe et al. (2007) studied the relationship between friendship links and profile elements. However, there are privacy concerns associated with the public social media. The profile information, such as date of birth and social security number, may be found in user profiles and visible to others (Boyd and Ellison, 2007) due to the unawareness of the public nature of the internet (Barnes, 2006). Sometimes, privacy options provided by social media do not have enough flexibility for users to handle their profiles (Preibusch et al., 2007). Privacy is associated with users' ability to manage and control social contexts (Boyd and Ellison, 2007).

The benefits of internet technologies and the proliferation of social media platforms in the public domain have caused large organisations to implement social media platforms designed for internal purposes (Wehner et al., 2017b), leading to another social media category. Such platforms are similar to public social media but used within organisations and support the organisations by fostering collaboration, social connection, situation awareness and facilitating innovation and knowledge management (Holtzblatt et al., 2013; Kane, 2015; Koch et al., 2015; Leonardi et al., 2013; Tierney and Drury, 2013). Different academics have used different terminologies to represent the social media platform organisations use for internal communication and interaction with external business stakeholders. The terminologies used include Enterprise Social Network (ESN) (Riemer and Richter, 2012; Wehner et al., 2017b; Zribi et al., 2015), Enterprise Social Media (ESM) (Leftheriotis and Giannakos, 2014; Leonardi et al., 2013), Enterprise Social Software Platform (ESSP) (Kügler et al., 2012), Enterprise 2.0 Applications (Wang et al., 2013), Enterprise 2.0 (Denyer et al., 2009; McAfee, 2006, 2009; Steinhuser et al., 2011) and Enterprise Social Software (Matuszak, 2007; McAfee, 2006).

#### 2.3.1.6 Social Media Collaboration

According to (Markova and Petkovska-Mirčevska, 2013), collaboration is the most critical social-business building block that occurs obviously in a community in favourable circumstances and states that:

*Collaboration is a key inflection point in the realization of a vibrant community and the port of entry for true social business (Markova and Petkovska-Mirčevska, 2013).*

The wide acceptance of social media has allowed individuals to encourage creativity and generate ideas and solutions among communities Haefliger et al. (2011). For example, a blog post can be construed differently by each reader through their comments, and bloggers

sometimes adapt their concepts based on suggestions from the audience (Markova and Petkovska-Mirčevska, 2013). Social media is increasingly used for collaboration in the workplace, education and research, business management and healthcare through its focus on forming communities (Anikeeva and Bywood, 2013; Cardon and Marshall, 2015; Ford et al., 2011; Keckley and Hoffmann, 2010; Thornton and Holloway, 2016; Yu et al., 2022; Zaffar and Ghazawneh, 2012). The activities in social media support interaction and could stimulate others to participate in discussions and knowledge sharing. According to Hyde et al. (2012), sharing content alone does not indicate social media collaboration; it also requires coordination. The idea of social constructivism depicts knowledge construction as a social process that occurs through connectivity and collaboration with others. The learning processes may occur through complex interactions such as games, conversations, case-based work and collaborations with colleagues and friends.

Collaboration leads to knowledge construction, where knowledge is co-created through synchronous and asynchronous collaboration in computer-mediated communication (Mondahl and Razmerita, 2014). Collaborative learning has gained increasing attention due to the significance of teamwork and networks in solving complex problems (National Research Council, 2011). Many accounts demonstrate the benefits of effective collaboration and social communication on productivity in the workplace and academics, highlighting the need for integrating activities to promote collaborative learning (Dawson, 2008).

Collaboration can create an increased sense of community, creative potential, critical thinking, academic performance and integration into learning communities (Dawson, 2008; Dawson et al., 2011; Garrison et al., 2011; Haythornthwaite, 2002; Joksimović et al., 2016).

According to McAfee (2006), Social Media can stimulate collaboration beyond organisational boundaries, such as academic research communities, which may influence organisational innovation more than corporate research (Kehl, 2017). Social Media enables discussion and collaboration, which helps accumulate ideas, observations, responses, and views, connecting knowledge and experience to facilitate collective decision-making (Kehl, 2017). Li et al. (2014) note that social capital facilitates collaboration in the relationships between people at work. Social capital includes all resources (information, emotional or financial support) from social networks that people can access (Bourdieu P, 1992; Huang and Liu, 2017). The existence of social capital means mutual dependence and the exchange of privileges (Huang and Liu, 2017; Lin et al., 2001). According to existing studies (Griffin et al., 2012; OECD, 2013), the

two key dimensions of collaboration are social and cognitive. The cognitive domain is related to problem-solving and self-regulated learning, which includes task regulation and knowledge building. The social domain is focused on the processes needed for productive collaboration, which include participation, perspective-taking, and social regulation.

#### 2.3.1.6.1 Social Capital Theory

The social capital theory sheds light on the importance of the relationships between individuals or social units and the resources embedded within them. Social capital is the valuable resources available through social interactions (Polyviou et al., 2019). These assets include economic and psychic returns derived from the network of relationships (Lin et al., 2001). In the organisational context, social capital explains why business individuals should enhance their personal and business networks and relationships. (Payne et al., 2011). Bourdieu P (1992) define social capital as

*“the sum of the actual or virtual resources that an individual or group accrues by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition”.*

(Putnam, 2015) defines it as

*“features of social organisation such as networks, norms, and social trust that facilitate coordination and collaboration for mutual benefit”.*

The three components of social capital are structural, relational, and cognitive. The former introduces the social navigation mechanism for finding relevant members and content (Parise, 2009). The second one concentrates on “who knows who” (Fulk and Yuan, 2013), while the latter fosters the development of the social cognitive theory and reflects the values, attitudes, interests, and emotions that keep members together and motivate them to contribute to knowledge creation and sharing (Jones et al., 1997). The social capital theory is frequently used to explain how knowledge sharing occurs in online and offline environments (Berraies, 2019; Heimbach et al., 2015), and it is based on the idea that social structures facilitate action (Coleman, 1988).

#### 2.3.1.6.2 Social Cognitive Theory

Albert Bandura proposed the Social Cognitive Theory (SCT) to explain psychosocial operation (Bandura, 1986; Schunk, 2012). It is widely used in various studies from different sectors,

including psychology, health promotion, application in organisations, mass communication and lately, studies on social media use and behaviour. SCT has been used to understand better people's motivations and actions in various circumstances. According to (Bandura, 1986), interactions between a person's cognition and the social environment produce the individual's behaviours (Kwahk and Park, 2016). In other words, when learning and sustaining a particular behavioural habit, people are influenced by their unique and intrinsic cognitive characteristics, immediate social context, and external social influences (O'kelley, 2019). SCT specifically emphasises self-efficacy, the individual's belief in their ability to succeed in a specific situation. The theory also factors in an individual's past experiences, which influence the extent to which one would engage in an activity and the reasons behind those actions (O'kelley, 2019). Yoon and Tourassi (2014) emphasise that the attitude of people around them influences the individual's ability to achieve efficiency and that social networking can positively influence individuals by providing motivation and the ability to complete tasks and achieve goals.

#### 2.3.1.7 Information Sharing on Social Media

Social media has advanced as a critical driver for sharing and obtaining information and has transformed how people access information (Bashir et al., 2021; Osatuyi, 2013). It helps people from diverse backgrounds interact and exchange information about economic, political, and social happenings around the globe, making them part of the global community (Bashir et al., 2021; Koranteng and Wiafe, 2019; Pew Research Center, 2019). Social media users present information about them to give others a positive impression (Dunne et al., 2010; Pai and Arnott, 2013; Trammell and Keshelashvili, 2005; Zhao et al., 2008), which helps to develop relationships and enhance self-esteem (Birnie & Horvath, 2002; Boyd & Ellison, 2007; Greenwald et al., 1988; Green and Pearson, 2005; Meishar-Tal and Pieterse, 2017; Park et al., 2009).

Social media allows enhanced sharing of knowledge and resources among members (Lee et al., 2014) and can gather information from the crowd (collective intelligence), which can mitigate any potential distortions in information (O'leary, 2011). The functional representation of social media presented by Kietzmann et al. (2011) allows firms and individuals to monitor and analyse the identity, presence, networks and relationships, reputation and social media activities of individuals and businesses, which can enable information sharing. Existing studies reveal the effect of social media on knowledge sharing and note that relational factors drive knowledge exchanges in social media (Beck et al., 2014; Leonardi, 2015).

The importance of information sharing depends on what information is shared and when and how it is shared. The content and quality of information shared are crucial (Li and Lin, 2006). Researchers and practitioners have identified numerous considerations that affect information sharing, including trust, commitment, ambiguity of the environment, and technology, which are culturally social and related to social relationships. (Ha et al., 2011; Li and Lin, 2006; Olorunniwo and Li, 2010; Paulraj et al., 2008; Sheu et al., 2006; Siegfried, 2013; Zhou and Benton, 2007). Social capital is considered an antecedent of information sharing. With more significant social capital, the members are more likely to behave in a manner that benefits other members to maintain the relationships in their social network. The social capital theory is often used effectively to examine the perspective of social relationships (Lawson et al., 2008; Li et al., 2014; Matthews and Marzec, 2012). The literature on organizational research has also acknowledged social capital as a valuable asset to gain access to resources and the value of social capital theory in describing social relationships and activities (Lawson et al., 2008; Matthews and Marzec, 2012; Nahapiet and Ghoshal, 1998). Although social media use for sharing information and networking has positive outcomes, several uncertainties are associated with their use. The most significant uncertainty is the credibility of the information shared and the information source, which is called the dual information credibility problem (Osatuyi, 2013).

#### 2.3.1.8 Building Relationships

Building relationships is one of the affordances of social media, represented by Kietzmann et al. (2011) in their honeycomb structure of social media functionalities. (Boyd and Ellison, 2007) use the term ‘networking’ instead of ‘relationship’, emphasising connecting with people to establish and maintain relationships. Users can communicate with each other, share content, comment, repost or like others’ content and message others directly. Sharing information or posting activities on social media encourages people to increase online communication. The extent of communication between individuals on social networks is helpful to identify the relationship. Social networks make the ties and connections that bind people together more noticeable; those ties and connections were less noticeable before social networks (Abbas et al., 2022). Social media improves connectedness and develops common interests (Castillo et al., 2019; Gao and Feng, 2016). Freeman and Acena (2021) established that social media is used to develop interpersonal relationships and maintain existing relationships. The authors

noted that the relationships naturally emerged through connections and interactions similar to the face-to-face interactions in the offline world.

Organisations increasingly use social media to create and maintain customer relationships (Mangold and Faulds, 2009). Companies use social networks to contact customers and build long-term relationships with consumers through dialogue-oriented forms of communication and to achieve public relations (PR) objectives. For example, Agnihotri et al. (2009, 2016) demonstrate that social media usage positively affects information communication, improves salesperson responsiveness, and positively influences customer satisfaction.

#### 2.3.1.9 Social Media in Business

Several studies present the advantages of adopting social media by companies for various objectives such as marketing, information sharing, relationship building and understanding customer behaviour (Kaplan and Haenlein, 2010; Leonardi et al., 2013; Kirchner et al., 2021; Kozinets, 2002; Pitafi et al., 2018; Shareef et al., 2020). It is assessed that most large businesses use social media platforms to connect with customers for promotion, brand building, information gathering, receiving feedback and providing after-sales support, as social media allows two-way communication between the customer and company (Aichner et al., 2021; Baird and Parasnis, 2011; Lyon and Montgomery, 2013; Oncioiu et al., 2021).

Social media is considered an effective tool for companies to draw closer to customers to receive accurate and timely information, control the flow of information, and simultaneously link the customer towards the brand. Many academics have emphasised the need to efficiently manage customer relationships through social media with modern, connected, and empowered customers (Agnihotri, 2020; Baird and Parasnis, 2011; Malthouse et al., 2013; Itani et al., 2020). Social networks allow companies to build stronger relationships with customers and improve brand loyalty, which are crucial for companies to stay competitive (Lyon and Montgomery, 2013; Sundaram et al., 2020). Active engagement of companies through social media with their customers can create online communities and positive word-of-mouth, becoming brand advocates (Malthouse et al., 2013; Pan and Chiou, 2011). Social media also provides options for companies to improve their internal operations and communicate with other businesses and suppliers in new ways (Culnan et al., 2010).

Social media is adopted in the supply chain and logistics sector (Berak, 2016; Computereconomics). In supply chain management, social media has been used during

emergencies and disaster recovery to share information on various issues and supply food and medicines (Reuter et al., 2018; Saroj and Pal, 2020; Sharma et al., 2021; Yan and Pedraza-Martinez, 2019). Weaver (2013) points out that those organisations that have adopted social media have achieved significant gains compared to non-adopters, such as reduced stock-out rates and improved delivery timeliness through social networking. For instance, through social media, FIFA and Adidas have had outstanding achievements in their supply chain (Hines, 2018). To manage the demand for match ball supplies for FIFA World Cup matches, Adidas utilised the power of Twitter to manage their business units across the globe to meet the supply requirements. Adidas launched new campaigns to engage their customers and create long-term visibility. In addition, Adidas employed social media to liaise with factory workers to link any gaps between management and workers and to ensure transparency.

A survey reveals that 45% of the respondents believe the supply chain process can become competent, receptive and valuable for money, 30% agreed that social media could bring revolutionary changes to the supply chain, 6.7% of respondents think that social media will have a negative effect and 18.4% had a neutral view on the social media effects on the supply chain (Gonzalez, 2013). It appears that most supply chain managers are reluctant to adopt social media due to the perception that it is a tool to socialize, causes additional work and lacks the context of supply chain and logistics. Change management, lack of policies, governance and management support, the unwillingness of external partners to practice social media and inexperience add to this struggle (Gonzalez, 2013). The most prominent obstacle is noted as a failure to visualize the benefits.

Social media can make an organisation's SCM more intelligible in many ways, such as monitoring customer feedback and complaints, real-time communication with business partners, predicting demands, communicating details about stock, tracking shipping status, tracing products, networking with new business partners such as suppliers and logistics providers, establish sustainable communication and ethical sourcing and finally cost efficiency by effectively managing daily operations (Natoli, 2013; Smith, 2017). Social platforms allow supply chains to reach people irrespective of geography or time zones and enable them to enhance communication, create communities, and collect helpful information (Chin et al., 2015b; Gonzalez, 2013).

Section 2.3.1.5 examined the classification of social media and discussed the social platforms used in organisations, represented ESN in this study, which is subsequently examined.



### 2.3.2 Enterprise Social Networks

The communication habits of Generation Y and the use of social media in their workplace resulted in large corporations implementing social media platforms specifically designed for internal purposes (Wehner et al., 2017b). ESN is considered the use of social media extended to the workplace. The security concern associated with public social media is another reason that has caused organisations to implement such platforms for workplace collaboration and communication (Kane, 2015; Leonardi et al., 2013; Ulmer and Pallud, 2014). ESNs support employee communication, organisational awareness and event updates, information storage, problem-solving, employee engagement, status updates and work coordination (Richter and Riemer, 2013; Wehner et al., 2017b). They support knowledge-sharing practices in an organisation and are vital in influencing social dynamics (Ellison et al., 2015). ESNs, originally content-based, have recently shifted their focus to collaboration due to the changing knowledge management strategies, subsequently bringing attention to the user potential to supply and demand the knowledge essential for the decision-making process and task completion (O’leary, 2015). However, adopting ESN is still challenging due to individual and organisational factors and the perceived benefits of using ESNs against their investment (Meske and Stieglitz, 2013; Wehner et al., 2017a).

#### 2.3.2.1 Definition

The wide acceptance and usage of social networks by individuals have brought the trend of establishing social networking platforms in the corporate world, broadly identified as ESNs (Zribi et al., 2015). ESN is a variant of social networking platforms used internally by organisations formally authorised by management (Ellison and Boyd, 2013; Ellison et al., 2015) and often mimic and combine the features of public social technologies, such as wikis, blogs, microblogging and social networking (Leonardi et al., 2013). Richter and Riemer (2013) define ESN as “*The result of applying technologies that emerged on the public Internet within organisations as a way of facilitating workplace communication and collaboration.*” According to Altimeter Group (2012), ESN can be a standalone solution such as Yammer, Chatter, and Google+, which can operate independently of other applications and be integrated via APIs. The study also describes ESN as a feature of an existing collaboration platform which can be enabled (Jive) and the ESN functionality can perhaps be facilitated to existing enterprise applications to provide a social layer (IBM Connections, Salesforce).



Leonardi et al. (2013) use the term Enterprise Social Media (ESM), and according to the authors, it is irrational to distinguish between the various tools used within organisations, such as microblogging, networking, content management and social tagging, but consider them part of an integrated Enterprise Social Networking system. Drawing from Leonardi et al. (2013), ESM are *web-based platforms that let the employees communicate with a specific colleague or to all in the organisation, explicitly or implicitly reveal communication partners, manage and sort texts and files, and view messages and files managed by others in the organisation at their convenient time*. According to Archer-Brown (2012), enterprise-level social software allows employees to develop personal networks of colleagues, partners or customers and collaborate with formal knowledge management systems. The author referred to this software as enterprise social media, which is a corporate social media network within or between companies, their partners, and customers that facilitate business processes.

McCafe (2006) used the term Enterprise 2.0 for platforms that companies can acquire or develop to generate, share, and refine information among employees and make the practices and outputs of their knowledge more visible. According to the author, it is the version of Web 2.0 technologies used within the organisation for collaboration (McCafe, 2006, 2009). Such platforms make the existing resources more searchable, navigable, and analysable in large organisations, making it easier for employees to precisely discover what they are looking for. Riemer et al. (2012) have theorised that enterprise social networks are the second generation of social technology which present an interactive, collaborative digital space emphasising social relationships, communication, conversation and ad-hoc sharing” (Riemer and Scifleet 2012). Richter et al. (2011) define an enterprise social network as a social networking phenomenon in an enterprise context.

Mathiesen and Fielt (2013) follow the ESN definition, *the phenomenon of social networking in an enterprise context* by Richter et al. (2011) and have grouped ESN into three archetypes: i) Consumer model, which is community-driven and provides access to either open or private networks and can be standalone or integrated with consumer applications; ii) Corporate model, which is more traditional, organisationally supported and endorsed by senior management and IT departments. These applications are tightly integrated with existing technologies and organisational practices and primarily focused on the employee; iii) Hybrid model, which applies both the corporate-focused business model and the consumer model. This category blends community-driven benefits with transitioning to a more robust, corporately appealing

ESN instance. Examples of ESNs listed by the author include Yammer, Chatter, SharePoint, Connections and Jive.

ESN applications can be categorised as a consumer-based approach targeted at people in the broader community, where ESN adoption is expected to appear at the individual level of the organisation. The adoption of ESN applications in organisations is occasionally driven by opportunity or requirement rather than management policy or corporate directive (Mathiesen and Fielt, 2013). This belief is supported by the transformation of these applications from personal use to enterprise-wide technology (Mergel et al. 2012). The consumer applications are generally low-cost or freemium and are usually chosen and adopted promptly, without the due diligence required if the application was adopted enterprise-wide. On the other hand, genuine corporate ESN products frequently require an account manager to support the implementation of the platform. For example, Yammer, WhatsApp, and WeChat can be considered consumer-type applications, and Microsoft SharePoint is more corporate in style.

The features of ESN depicted by Chin et al. (2015b) are depicted in Figure 2.19. The various features include the social profile of the participant, activities through feeds, short messages that can be shared by the participants, creating groups and communities with teammates and stakeholders to collaborate and share information, tagging on contents/participants highlight or track content, instant messaging and participant visibility, central repository to store, organise and manage documents and its version, ability to search information and to share opinions, evaluate and rate contents. Some leading ESNs the organisations use include Yammer, Jive, IBM Connection, Tibbr, WhatsApp, Slack and Chatter (Drakos et al., 2014; Eriksson and Chatzipanagiotou, 2020; Stray et al., 2019; Sugiyantoro et al., 2022).

From the above definitions and section 2.3.1.5., it can be noted that different academics have used different terminologies to represent the social media platforms used internally by organisations for employee communication, collaboration and information sharing. These platforms include Enterprise Social Network, Enterprise Social Media, Enterprise Social Software Platform, Enterprise 2.0 Applications, Enterprise 2.0 and Enterprise Social Software. Despite the several terminologies used in various literature for social platforms used in organisations, Chin et al. (2015b) considered all these platforms as Enterprise Social Networks (ESNs) in their study that explored influencing factors to use ESNs in organisations.

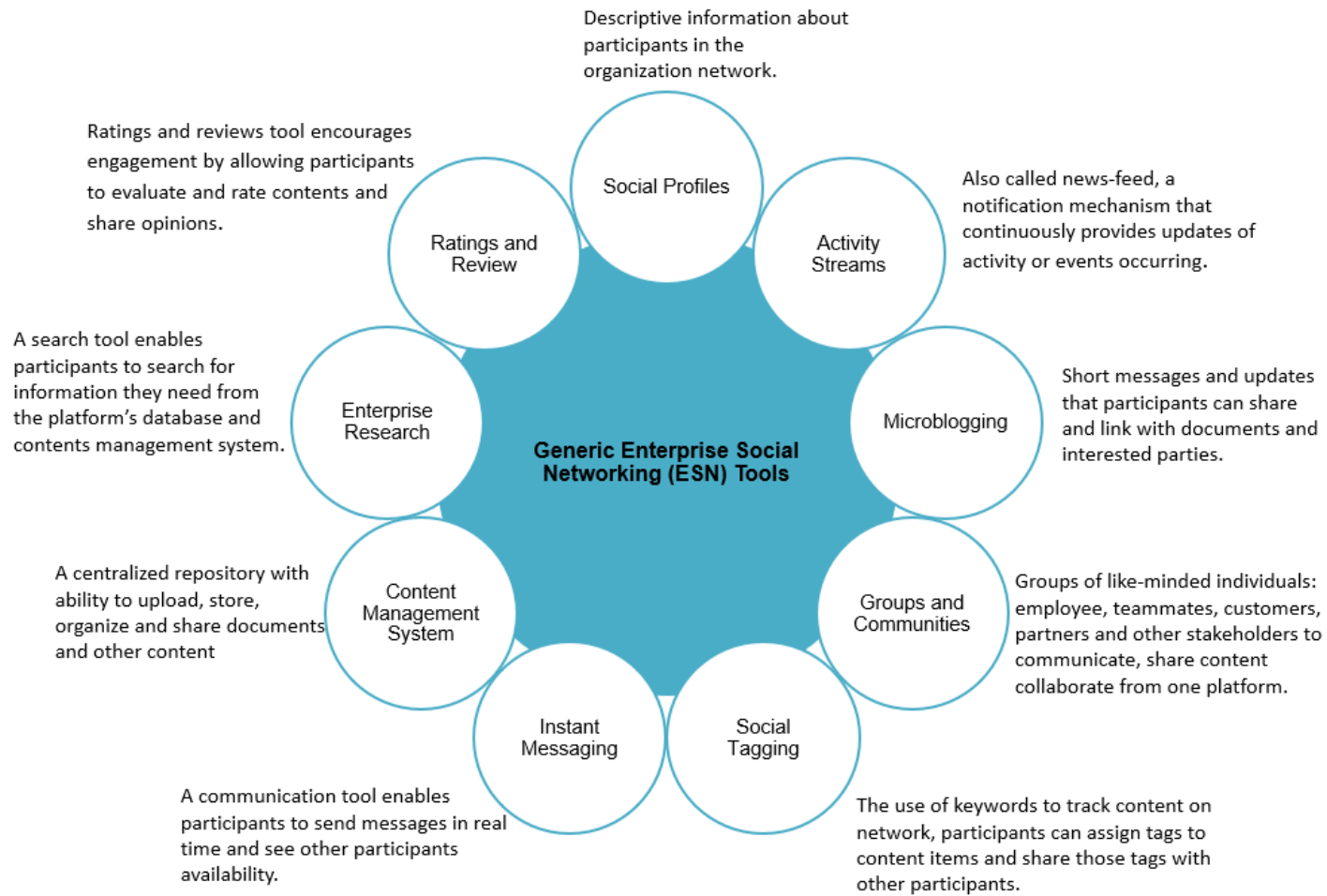


Figure 2.19: Enterprise Social Network tools

Source: (Chin et al., 2015a)

### 2.3.2.2 ESN in this Research

The previous sections (2.3.1.2, 2.3.1.5, 2.3.2) examined various forms of social media, such as social networking sites, social media applications, collaboration tools, enterprise social media and enterprise social networks and noted that ESNs mimic SNS and exist in various forms (sections 2.3.1.5 and 2.3.2.1). Although several definitions and terminologies are used, the definition of ESNs highlights the function of ESNs such as facilitating workplace communication and collaboration (Richter and Riemer, 2013), sharing information and files (Leonardi et al., 2013), establishing social connections, facilitating knowledge management (Wehner et al., 2017b), the creation of conversation groups, relationship building, information exchange, issue resolution, project management and task coordination within teams (Gonzalez, 2013; Kirchner et al., 2021; Riemer and Richter, 2012). It also highlights the ESN functionality to develop personal networks of colleagues, partners, or customers within or between companies and their partners and customers to facilitate business processes (Archer-Brown, 2012). Different scholars have addressed ESNs differently, for example, ‘*social and collaboration tools*’, ‘*enterprise social systems*’, ‘*enterprise social media platforms*’, ‘*Enterprise social media*’ and ‘*Enterprise social networks*’ (Alimam et al., 2015; Caron-Fasan et al., 2020; Fulk and Yuan, 2013; Kalra and Baral, 2020; Kirchner et al., 2021; Leonardi and Treem, 2012; Richter et al., 2016; Sun et al., 2020; Turban et al., 2011; Yee et al., 2021). Dwivedi et al. (2022) used the term ‘enterprise social media’ and claimed it to be a broad term indicating organisations’ use of social media networks to achieve numerous business objectives, such as information sharing, communication, and collaboration. Chin et al. (2015b) identify the social platforms used for workplace collaboration as ESNs, Although they are known by various terminologies discussed above (2.3.2.1).



Figure 2.20: ESN platforms

This research considers the term ‘Enterprise Social Networks’ to refer to social platforms used in the workplace, and the term ‘Enterprise Social Networks’ or ESN is majorly used throughout this thesis. Related terms such as ‘social media’ and ‘enterprise social media’ may be used interchangeably in the literature.

This research intends to investigate information sharing and building relationships and trust, focusing on enterprise social networks, which allow several collaborative features discussed in this literature review. Examples of such platforms are shown in figure 2.20, and some of the platforms are listed throughout the literature review section. The prominent platforms that were used during the data collection were Microsoft Teams, Slack, and WhatsApp (see Appendix).

### 2.3.2.3 Perceived Benefits

The core idea behind ESN deployment in an organisation is to provide improved ways of communication, collaboration, and information sharing amongst the employees, establishing a social connection within the organisation and facilitating knowledge management (Wehner et al., 2017b), thus gaining business benefits such as improved employee productivity and enhanced problem-solving (Chin et al., 2015a). Figure 2.19 shows the various characteristics and benefits of ESNs drawn by Chin and fellow researchers. ESNs enable the creation of conversation groups, relationship building, information exchange, issue resolution, project management, and task coordination within teams (Gonzalez, 2013; Riemer and Richter, 2012). ESN is differentiated from conventional organisational IT because it is more flexible regarding content generation, parity of use, and low governance, and it is highly insightful (Chatterjee et al., 2021). Top organisation management must encourage sharing, capture knowledge, enable action and empower employees to mitigate this issue.

The perceived benefit of using ESN is based on various factors such as technological, organisational, sociotechnical, task, social and individual (Chin et al., 2015b; Riemer and Richter, 2012). The organisational factors include the structure and size of the organisation, the context of using ESN in the organisation, and management support. Chin et al. (2015a) argued that there is no direct relation between organisational size and structure and is attributed to the country’s culture (social networking tools banned in the workplace), temporal (time zone differences), and geographical distances leading to the use of traditional communication channels such as emails. Chin and his fellow researchers (2015) have discussed that, to activate and accept the ESN platform, its purpose as a utilitarian (significant value to the user) and

hedonic (pleasing user experience) value should be identified. All the significant factors, namely organisational, individual, task, social and technological, should be identified simultaneously. According to Thom-Santelli et al. (2011), employees working from geographically distant locations benefit from consuming content in an enterprise setting where social ties are weaker and diverse, and cultural differences exist. The employees benefit from work productivity and understanding the organisation's culture.

According to Leonardi et al. (2013), ESNs increase communication visibility by allowing employees to communicate with specific colleagues or to all in the organisation, designate certain colleagues as communication partners, share and format artefacts created by themselves or others, and view the information, networks and artefacts shared by others in the organisation at any point in time. ESN provides a public forum for employees to communicate with each other, and employees tend to maintain a connection with colleagues with whom they may not interact regularly or whom they do not know (Dimicco et al., 2008). The rich contact list created by the organisation would provide a highly conducive environment for workers' growth as they can approach the right people at the right time (Kalra and Baral, 2020). The study noticed that management could have the advantage of complementary gains, supportive resources, and identification from top-level management to reinforce the benefits of using the ESN.

#### 2.3.2.4 Barriers

Although social networks have become extremely popular, they have significantly changed human working and lifestyles, provided organisations with potential benefits of commercial opportunities, and boosted productivity to a great extent. Nevertheless, they are sometimes considered time-consuming, and security-related issues emerge (Turban et al.). The study suggests that organisations should consolidate the issues to develop a suitable framework by adopting the ESN technology while ensuring an appropriate viability model to mitigate time consumption and security issues.

Rahman (2020) highlighted the necessity of organisational heads monitoring employees' ESN usage for inappropriate use. While they facilitate information sharing with co-workers and complement each other in difficulties, it can result in excessive information sharing, which may be potentially non-usable, and employees might waste their time interpreting redundant information. In addition, Rahman notes that the confidentiality of the information shared is

another challenge, and any mismanagement of the information can prove detrimental to the functioning and reputation of the organisation.

Although ESNs support organisations and employees in various tasks, sometimes it is hard to perceive the platform's usefulness due to the difficulty in calculating the return on the investment made to establish this tool (Azaizah et al., 2018).

Although ESNs target sharing and collaboration, and most technology providers strongly perceive that ESNs can provide value to organisations through improved collaboration and knowledge flows, there seems to be a concern about the sustainable adoption of ESNs (Riemer and Richter, 2012). This is due to several factors, such as the decline of ESN usage due to 1) lack of harmony and linkage between members, 2) strong adoption of ESN only in specific departments, 3) cultural confusion and lack of administrative engagement, and 4) lack of social business maturity (Riemer and Richter, 2012).

#### 2.3.2.5 ESNs in Organisation

Existing studies have addressed the adoption of ESN in organisations due to the potential benefits of ESN in the corporate world, which include the development of relationships among employees, problem-solving, expert opinions, work coordination, sharing of ideas and beliefs and creating a collective knowledge base (Brzozowski, 2009; DiMicco et al., 2009; Richter and Riemer, 2013; Thom-Santelli et al., 2011; Sundaresan and Zhang, 2020). Several organisations have started adopting ESNs to strengthen collaboration, communication and information sharing (Aral et al., 2013; Cetto et al., 2016). Meske et al. (2019) consider ESN as a digital infrastructure of improvements as they are work-oriented and information-oriented, which can be modified and re-designed based on the user experience, making the user an essential and inseparable part of the infrastructural design. For example, in a case study where a company in Germany introduced Confluence as an ESN in 2013, each employee maintained a personal profile on the network, which supported the employees in various tasks (Azaizah et al., 2018).

Montrief et al. (2021) present ESN as explicitly designed to support organisations in managing productivity, improving efficiency, sharing institutional knowledge, and fostering collaboration. They noted the successful use of Slack by clinical groups for clinical operations communication and in higher education for academic productivity in curriculum development,



research and engagement among educators and learners. Examples of ESNs listed by the authors include Basecamp, Microsoft Teams, Google Hangout and Slack.

Lacosta and Thomas (2020) have discussed that ESN technologies are open to everyone and provide visibility to the person behind the content. The ESN tools have seemed to encourage trust in a collective way of functioning compared to the previous tools in which dyadic trust was promoted. Hence, these tools have significantly contributed to enabling users to access their virtual colleagues and establish professional ties. According to the authors, ESN technologies are evidence of the development of information management that could be mobilised to support the digital transformation of organisations and encourage productive interactions to create competitive advantage in the increasingly developing and dynamic market (Wehner et al., 2017b). Jussila et al. (2011) present performance impacts and associated benefits of social media use in organisations and the increased opportunities for business-to-business innovation. Skopik et al. (2011) discuss ESNs and the ‘cross-enterprise collaboration’ notion that effortlessly supports relationships across organisations.

#### *2.3.2.5.1 Collaboration*

According to McAfee (2009), Enterprise 2.0 platforms are being deployed by leading organisations to stimulate collaboration beyond organisational boundaries, which include academic research communities. McAfee presents the fundamental features of Enterprise 2.0 as ‘keyword search’, ‘web page links’, ‘authorship’, ‘content tagging’, ‘page preference extensions’, and ‘content update signalling, and discusses that as more people engage in these activities, the emergent structure becomes more and more fine-grained. Such platforms may influence organisational innovation more than corporate research, enabling discussion and collaboration, which helps accumulate ideas, observations, responses, and views, connecting knowledge and experience to facilitate collective decision-making (Kehl, 2017). Riemer et al. (2011, 2012) have comprehended that enterprise social networks present an interactive, collaborative digital space emphasising social relationships, communication, conversation, and information sharing among employees.

Muller et al. (2012) acknowledge that enterprise social networks provide a different perspective of community interaction compared to public social networks. It provides a shared context, contributing to trust and common understanding, leads to more business-focused content and discussion styles, and the authenticated access and use of real names eliminate anonymity,



providing greater transparency. The authors revealed that using ESNs allows for combining human action, expressing business needs through shared resources and accumulating social connections among employees and communities, resulting in stronger social ties, which translate to human capital, intellectual capital and relational capital.

Ellison et al. (2015) established that ESN has been initiated to support collaboration, foster situational awareness, and facilitate knowledge management. ESN technologies are characterised by the social aspect of being based upon collaboration. According to them, ESN offers the best combination of information storage and encourages supporting social ties, which are crucial for the overall development of the corporate world (Richter and Riemer, 2013). Azaizah et al. (2018) highlighted how the ESN platform encourages team members to share their expertise and thought processes, making the knowledge searchable and available. It helps the employees to reduce the interruption that could be caused by colleagues with their routine enquiries, and hence, if an answer to a particular problem is not found, the enquiry is posted quickly in an informal way without causing disruption. The development of ESN has hence supported the trust factor and has also eased the mental pressure on the new employees who can get the information readily.

#### *2.3.2.5.2 Information Sharing*

The adoption of ESNs in the workplace has enabled knowledge sharing, allowing strategic business decisions to be made based on the information shared by more experts in the corporate world (Ellison et al., 2015; Sundaresan and Zhang, 2020). Information sharing between employees within and between firms benefits from innovative performance and can increase trust and relationship quality between members (Cui and Idota, 2018). ESNs have increasingly been used by organisations for problem-solving, discussing work-related issues, exchanging ideas, managing tasks, and direct messaging, thus catering to the information needs of employees (Mäntymäki and Riemer, 2016). ESNs facilitate the accumulation and management of collective knowledge through employees sharing knowledge with colleagues and the organisation's knowledge systems (Razmerita et al., 2014).

ESNs can create a positive impact on the sharing of internal and external information and their influence on the various aspects associated with the organisation, such as employee productivity (Ferreira and Du Plessis, 2009). This is because of the social context that presents the identity and network and the work-related details like office location and project history of

individuals (Ellison et al., 2015). Aboelmaged (2018) highlighted in his study that knowledge sharing creates upstream motivational and downstream impact, boosting employees' productivity with the help of a frame of reference that can provide valuable feedback and information to employees.

ESNs help in the wider and more powerful distribution of information, affecting the information flow within the organisation. For example, the use of Beehive in IBM enabled employees to access profile information, which made them feel closer to each other, leading to effective interpersonal interactions (Dimicco et al., 2009). The author assumes that beehive is used mainly for work-related information sharing.

Despite the impressive proliferation of ESN and their contribution to information sharing and productivity improvement, there is minimal research on whether implementing ESN leads to enhanced productivity and performance in the organisation (Giermindl, 2018a). Giermindl conducted a survey study on various global organisations that introduced ESN for innovation, collaboration, and productivity enhancement, and it revealed that plenty of information is shared amongst the employees. Although it has strengthened their knowledge base and developed a collaborative and trustworthy attitude, they face the burden of information overloading, occasionally making it difficult to set priorities and distinguish which information is beneficial and which should be ignored.

#### *2.3.2.5.3 Building Relationships and Trust*

ESNs are adopted by organisations to improve communication, collaboration, information sharing, social connections, and relationships, mimicking public social networks (Gonzalez, 2013; Riemer and Richter, 2012). The significance of building relationships in the business setting is extensively studied in academic literature using the concept of social capital. The social capital theory highlights the importance of the relationships between individuals or social units and the resources embedded within them. Social capital is the valuable resources available through social interactions Polyviou et al. (2019). These assets include economic and psychic returns derived from the network of relationships (Lin et al., 2001). In the organisational context, social capital explains why business individuals should enhance their personal and business networks and relationships (Payne et al., 2011). The social capital concept has been traditionally used to explain relationships between organisations or individuals and identify the valuable assets created through relationships, such as ideas,

knowledge, skills and expertise leading to improved decision-making and business performance, helping to achieve competitive advantage (Bourdieu, 1977; Coleman, 1988; Cross and Katzenbach, 2012).

Section 2.2.6 examined that collaboration requires a high level of information sharing, resource sharing, trust, and commitment by the supply chain management, and increased trust enhances collaboration (Chae et al., 2005; Liao et al., 2017; Matopoulos et al., 2007; Spekman et al., 1998). The sharing and relational behaviours between partners (trust and commitment) facilitate collaborative partnerships in a supply chain (Wu and Chiu, 2018). Sharing real-time data and analysis helps organisations to connect with supply chain peers, break silos, communicate seamlessly, and accomplish their collaboration goals efficiently (Wankmüller and Reiner, 2020). This literature review examined how social media enables real-time information sharing and improved collaboration (section 2.3.1.6, 2.3.1.7), and companies have increasingly adopted social media to enhance brand attitude and build relationships and trust to create a positive perception of the company's reputation (Dijkmans et al., 2015).

Organisations have adopted ESNs to extend the capabilities of social media for organisational communication. According to existing literature, ESNs can positively impact internal and external information sharing, leading to innovative performance and employee productivity increasing trust and relationship quality between members (Cui et al., 2018; Ferreira and Du Plessis, 2009; Gonzalez, 2013). Studies reveal that willingness to share occurs when a partnership exists with a long-term strategic relationship, trust, and commitment (Cagliano et al., 2003; Du et al., 2012). Having visibility of what co-workers do (work visibility) can eliminate duplication errors and innovation and create trust among employees. As noted by Treem et al. (2020), computer-mediated ESN communication can provide communication visibility, enabling effective coordination, knowledge distribution, and increased awareness of co-workers (Leonardi, 2014; Leonardi, 2015; Van Zoonen et al., 2022). On a similar note, (Lacosta and Thomas, 2020) have discussed that ESN technologies are open to everyone, provide visibility to the person behind the content, and seem to encourage trust in a collective way of functioning, significantly contributing to access to their colleagues virtually and establishing professional ties. Further, ESN encourages team members to share their expertise and thought processes, making the knowledge searchable and available so that employees can search for available information or quickly post an enquiry informally without disrupting others, hence supporting the trust factor (Azaizah et al., 2018).

### 2.3.3 ESNs in Supply Chain Management

Supply chain and logistics sector organisations are adopting ESNs to enable internal communication between employees and share information irrespective of their position, department or geographic location (Hamidreza and Sajjad, 2020). The authors revealed that ESNs provide insights into supply chain issues and decision-making through features such as the availability of a wide range of external and internal information on the supply chain processes and suggest that organisations must invest in ESNs for up-to-date to have the ability to deal with the market changes and supply products and services quickly. On a similar note, Dwivedi et al. (2022) point out that organisations use ESNs internally between employees and externally with a partner, and a combination of data from both public (external) and private (internal) data can perhaps maximise the organisation's benefits. Casemore (2012) have summarized five significant benefits of social media in the supply chain, which can be extended to organisations using ESNs.

- Obtain real-time information from both internal departments and external partners.
- Reliable information for quicker decision-making.
- Ability to provide required platforms for prompt access to information;
- Transparency in business makes supply chain relationships closer to maintaining constant innovations and competitive advantage and
- Stimulate creativity and supply chain innovation.

The Covid-19 outbreak has caused substantial changes in the way organisations work. Organisations implemented ESNs for internal and external collaboration, and employees could work remotely from anywhere (Nugraha et al., 2021). For example, NHS organisations implemented Microsoft Teams to assist in the covid-19 response across all NHS organisations (Hargreaves et al., 2022; Mehta et al., 2020b). Digital technologies such as ESNs can bring several advantages to the supply chain (Chen et al., 2017), especially in disruptive situations. However, the role of role of ESNs in the SCM during covid-19 has been researched insufficiently (Martincevic and Kozina, 2022). To the author's best knowledge, there exists little peer-reviewed literature on the use of ESNs in supply chain management; however, a range of grey literature (Fournier, 2015; Gonzalez, 2013; Hines, 2018; Todaystrucking, 2010; Weaver, 2013) establishes the benefits of ESNs in supply chain management, calling for increased research in this area.

The next section examines the research gaps and formulation of this study's research questions.

## **2.4 Research Gaps and Research Questions**

The literature review in this chapter presented a detailed overview of SCM (2.2), the evolution (2.2.1), definition (2.2.2) and objectives of SCM (2.2.3), the need for SCI (2.2.5) to view supply chain from a total systems perspective and the challenges in SCM implementation (2.2.4). Subsequently, the literature articulates the significance of collaboration (2.2.6) and information exchange (2.2.7) in SCM. The next main section examined Social Media and Enterprise Social Networks (2.3), starting with the overview of social media (2.3.1), definition (2.3.1.2), social media for collaboration (2.3.1.6), information sharing (2.3.1.7), relationships building (2.3.1.8) and social media in a business context (2.3.1.9). Subsequently, the literature review examines ESNs (2.3.2), their definition (2.3.2.1), ESNs in organisations (2.3.2.5) by discussing collaboration (2.3.2.5.1), Information sharing (2.3.2.5.2) and building relationships and trust (2.3.2.5.3). Finally, ESNs in Supply Chain Management (2.3.3) are presented.

The benefits of social media in business are discussed in section (2.3.1.9), signifying the importance of social media as an enabler of SCI through strategic information exchange, relationships and trust. Section 2.3.2 examines ESNs, their use in organisations and their significance in relationships and trust (2.3.2.5.3). Several grey literature exist on the use of ESNs in SCM, which indicates that this is clearly an interesting and important topic in practical aspects, and there is a lack of academic research in this area, which is a gap in the body of knowledge. Section (2.3.1.9) indicates that most supply chain practitioners may not understand the role of social media, as there is a failure to visualize its benefits.

The next section presents the development of research gaps and research questions.

### **2.4.1 Development of Research Gaps**

This study started by examining the role of social media in information sharing, collaboration, and building relationships, as well as their use in business scenarios and SCM. As the study progressed and evolved, it focused on social media used by organisations for internal and external business-to-business communications, which is majorly referred to as ESN in this thesis. Social media research is significant in this study because ESN is a class of social media used by organisations and inherits most of the social media features, with some extended features. The literature carefully chosen is classified and summarised into three main subject areas: 1) information sharing/exchange in SCM, 2) social media in the organisational context,

and 3) study on social media data analysis. The summary of these studies is presented in table 2-3, table 2-4, table 2-5 and table 2-6, respectively.

*Table 2-3: Key studies on information exchange in the supply chain*

Reference	Study
(Chae et al., 2005; Prajogo and Olhager, 2012)	Investigates the role of information sharing and long-term relationships in SCI and SCP.
(Khurana et al., 2011; Kumar and Pugazhendhi, 2012; Lotfi et al., 2013; Vanpoucke et al., 2017; Zhou and Benton Jr, 2007)	Investigates the efficacy of information sharing in SCM and its impact on firm performance. Identifies the benefits and barriers of information sharing.
(Wu et al., 2014)	Investigates the basics for implementing information exchange and collaborative behaviour in enabling SCP based on participants’ exchange beliefs in view of SET.
(Khan et al., 2016)	Investigates the impact of information sharing in reducing supply chain costs for sustainable supply chains.
(Koçoğlu et al., 2011)	Investigate how SCI influences information sharing and SCP.
(Klein, 2007)	Examines the relationships, information exchange behaviour and trust levels among supply chain members in customising eBusiness solutions. Also examines the effect of having real-time information on performance outcomes.
(Singh and Teng, 2016)	An empirical investigation using survey methods on how the benefits of the five partnership resources (Information Technology Integration, Inter-organisational Trust, Relational Governance, Transaction Cost, and SCP) affect supply chain outcomes.
(Du et al., 2012; Fawcett et al., 2007b)	Studies the factors influencing the willingness to share, the extent of information sharing, and its impact on operational performance.
(Kembro and Selviaridis, 2015)	Explores information sharing type and intensity related to demand in the extended supply chain. Identifies information sharing barriers specific to multi-tier supply chains.
(Kembro et al., 2017)	A delphi study that empirically explores enablers of information sharing in a multi-tier supply chain and provides an understanding of the relational, behavioural, and structural challenges in a multi-tier setting.

Table 2-3 summarises the studies in the context of information sharing in the supply chain. Most studies presented here focus on the technological aspect of information sharing, relationships, and trust in SCI and performance, while few studies have considered the relational, trust, and behavioural factors among supply chain partners and largely ignore the social aspects of information sharing. Also, these studies fail to consider the benefits of social media.

Table 2-4: Studies on Social Media usage in the organisation

Reference	Study
(Dwivedi et al., 2022)	Studies on operational and social performance during disruptions
(Agnihotri et al., 2022)	Explores the impact of social media in the digitalized supply chain context in a B2B setting
(Cheng and Krumwiede, 2018)	Studies on the moderating role of social media in new product development reveal that organisations can increase innovation performance with supplier participation.
(Dijkmans et al., 2015)	Investigate how customers' online activities through social media are beneficial for corporate reputation.
(Bak, 2007; Zhang and Cao, 2018)	Studies the effect of collaborative culture and use of collaborative tools in supply chains.
(Nyaga et al., 2010; Itani et al., 2020)	Examines collaborative activities from buyers' and suppliers' perspectives to determine the economic and relational factors influencing satisfaction and performance and the effect of information sharing, relationships and dedicated investments on trust and commitment.  Examines the technology-behavior relationships between buyers and sellers to understand the influence of social media and CRM technology on buyer-seller information exchanges.
(Carlson et al., 2018; Chirumalla et al., 2018; Trainor et al., 2013; Markova and Petkovska-Mirčevska, 2013; Misuraca et al., 2019; Neti, 2011; Ramanathan et al., 2017)	Studies on social media in B2C for marketing, brand awareness and promotion, customer feedback, customer satisfaction, CRM and studying customer behaviour.
(Agnihotri et al., 2012, 2016; Chaker,2022; Kärkkäinen et al., 2011; Rodriguez et al., 2012; Wang et al., 2016)	Social media use in B2B for sales, customer communication, knowledge management, and business performance improvement.
(O'leary, 2011)	Studies social media to capture supply chain events and build relationships among supply chain participants by examining limited applications. It provides an overview of various benefits but lacks focus on relationships and trust, the nature of information sharing and empirical evidence.
(Burgess and Singh, 2012)	Evinces that the use of social systems can achieve organisational performance in the supply chain. Studies from a technological angle.
(Culnan et al., 2010)	The factors that allow supply chain firms to gain an advantage and develop strategies due to the adoption of social media in a B2C environment.
(Gligor and Autry, 2012; Krause et al., 2007; Yim and Leem, 2013)	Studies related to social media, social capital accumulation, relationships, trust and commitment and the effects on organisational communication and performance.



Table 2-4 summarizes the studies on the affordances of social media in organisations, of which few are in the supply chain context. While some studies explore the relationship between various parameters due to the affordances of social media and the impact on organisational performance, few studies focus on marketing, promotion, and customer relationships in the B2C context, and few focus on B2B scenarios examining sales and organisational performance. However, the studies presented here largely ignore social media’s effect on information sharing, focusing on relationships and trust. Also, studies specific to the use of social media in the supply chain context either focus on the technology aspect or lack focused investigation of social media data or empirical evidence.

*Table 2-5: Studies on Social Media data analysis*

Reference	Study
(Swain and Cao, 2013)	Analyse the impact of social media usage by supply chain partners on SCP, drawing on social capital theory. Sentiment analysis on data gathered from online forums, blogs, and Twitter messages. Does not consider relational and cultural aspects.
(Chae, 2015)	Provides a framework for Twitter analytics, which includes descriptive analytics, content analytics, sentiment analysis, and network analytics. Mentions the strong sentiments in tweets and highlights the role of Twitter’s various supply chain practices.
(Jansen et al., 2009)	Microblog posts are analysed to understand the linguistic pattern of tweets in the context of customer word of mouth and organisations’ marketing strategy.
(Java et al., 2007)	Observe the microblogging phenomenon to understand user intentions at a community level and how users connect.
(Quinton and Wilson, 2016)	Netnographic analysis of social media data to uncover the opportunity for building business relationships, development of trust and the idea of sharing and reciprocity with respect to competitive advantage. Specific to the wine industry and LinkedIn, and no focus on information exchange.
(Jones, 2019)	Netnographic analysis of Twitter data to uncover motivations and behaviour of consumers complaining behaviour to provide a customer service recovery model.
(Ibrahim and Wang, 2019a; Ibrahim and Wang, 2019b)	Social media data analysis to uncover customers’ concerns and sentiments.

Table 2-5 presents a few studies that have used social media data analysis to uncover various phenomena, but most of them do not emphasise the evolution of relationships and trust through social media. One study which examines the development of trust and relationships does not focus on information sharing in the SCM context.



*Table 2-6: Studies on ESNs in the organisational context*

Reference	Study
(Leonardi et al., 2013)	Illustrate the significance of ESN inside the workplace, its influence on organizational communication, knowledge sharing and management, forming relationships and building social capital, based on the literature review
(Richter and Riemer, 2013)	Examines existing case studies of organisations using ESN to identify the behaviour in the different organisational contexts and provide a better picture of the possibility of ESN usage in organisations.
(Caron-Fasan et al., 2020; Hargreaves et al., 2022)	Examines the characteristics of IT innovation in ESN adoption on a technological background
(Wehner et al., 2017b)	Examines existing studies to identify the focus of ESN research, such as individual, technical and organisational focus and sets agenda for future research
(Nordström, 2019)	Netnographic observation to examine the relationship between organisational culture and collaboration tools. Focuses on internal integration and technological aspects.
(Ma et al., 2021; Meske and Stieglitz, 2013; Nivedhitha and Sheik Manzoor, 2020)	Quantitative study on organisations' relationship capital and innovation culture, hedonic motivations to use ESN, ESM and cyberslacking
(Giermindl et al., 2018; Millard et al., 2013; Ulmer and Pallud, 2014; Wu and Tian, 2021)	Examine the factors that influence the behaviour of ESN usage.
(Aboelmaged, 2018; Agnihotri et al., 2022; Archer-Brown and Kietzmann, 2018; Azaizah et al., 2018); (Eriksson and Chatzipanagiotou, 2020; Nugraha et al., 2021; Richter et al., 2016; Rode, 2016)	Examining the determinants/drivers of ESN usage for collaboration/ knowledge sharing/learning/change process in organization

Table 2-6 presents studies on ESNs in the organisational context and most of the studies focus on the knowledge-sharing aspect of ESNs. Some of the studies focus on the drivers behind adoption, the usage behaviour and the relationship between various technical parameters due to ESN usage. Some studies have touched upon the social aspects, such as culture and relationship capital; however, looking at the technical parameters are quantitative studies.

Although the extant literature outlaid in table 2-3, table 2-4, table 2-5 and table 2-6 provides isolated proofs of the benefits and significance of information sharing in the SCM context and

ESN usage in organisations, it is evident that there is a lack of extensive study on the influence and consequence due to the use of ESNs on information exchange in SCM from a relational angle. The nature of information sharing, the extent of information shared among the supply chain participants using ESNs, and the antecedents and consequences of ESN usage in SCM are not addressed through empirical evidence. This presents the gap in literature where information exchange, ESN and SCM have not been studied in a business cultural setting to understand the development of long-term relationships, trust, and decision-making behaviour among supply chain partners. Thus, this study will provide a novel contribution to the academic literature by addressing the research questions (listed in chapter 1 ) formulated based on the research gaps mentioned below.

- There is a lack of knowledge of ESN’s influence on the nature of relationships and trust in the SCM context.
- Lack of research examining the meanings and languages of the social conversation in a business cultural setting to unearth the attitude and decision-making behaviour of participants
- Lack of understanding of the nature and extent of information exchanged in ESNs.
- There is a lack of understanding of the antecedents and consequences of using ESNs in SCM through empirical evidence.

This interdisciplinary research combines SCM and ESN, employing a netnographic observation of conversations, thus contributing to a relatively new research method thus aiming to contribute from a methodological angle. Although netnography is increasingly used in social media research (3.3.4), the topics ‘SCM’ and ‘ESN’, considering the relational aspects, have never been studied using this approach. The research view in figure 2.21 shows the main disciplines in this research, presenting the overlap in the two subject areas.

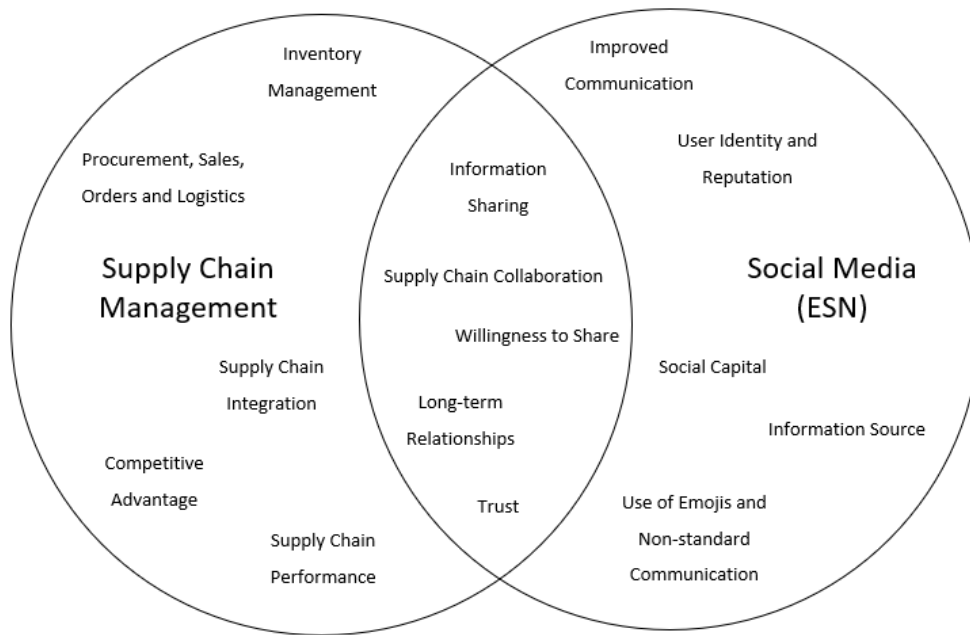


Figure 2.21: Research view

Though this paper presents a more significant gap in the context of the usage of ESNs in information exchange in SCM, to present the research questions, the focus will be on the social aspects of information exchange, relationships, and trust, especially in the business cultural backdrop. The development of the research question is as follows.

#### 2.4.2 Development of Research Questions

The use of social media in B2C scenarios for promotion, marketing, and customer service has proven successful in establishing relationships between organisations and their customers (Arora and Sharma, 2013). Similarly, B2B organisations use ESNs to manage their internal functions, coordinate daily tasks, and share knowledge (Riemer and Richter, 2012). Such collaboration, coordination and information sharing fosters relationships and trust between employees within the organisation and with external stakeholders (Ellison et al., 2015). The essence of this literature review suggests that ESN fosters relationships and trust (Gonzalez, 2013; Lacosta and Thomas, 2020; Riemer and Richter, 2012). The fact that strategic information exchange requires intense communication (Kwon and Suh, 2004) and ESN is a platform for powerful communication, enabling relationships and trust, forms the basis of the first research question. The collaboration and communication feature of ESNs encourages trust and long-term relationships between the supply chain partners (Ellison et al., 2015). Thus, the first research question is presented.

#### 2.4.2.1 RQ1 - Relationships and Trust

*Explore the nature of relationships and trust among supply chain participants through Enterprise Social Networks.*

As presented in the literature review (section 2.2.6), an integrated supply chain is one of the vital objectives for the effective implementation of SCM, which demands supply chain organisations and practitioners to work collaboratively with increased levels of relationships and trust (sections 2.2.6.2.5 and 2.2.8). The various definitions of SCM examined in section 2.2.2 signify the importance of supply chain integration and the management of information and relationships. Studies suggest trust and long-term relationships are crucial factors for the open exchange of strategic information, resulting in SCI and SCP (Mentzer et al., 2001; Sweeney, 2011). Further, the literature review presents social media as an enabler of collaboration and information sharing, leading to the development of relationships and trust, specifically ESNs in the organisational context (sections 2.3.1.6, 2.3.1.7, 2.3.1.8, 2.3.2.5.1, 2.3.2.5.2 and 2.3.2.5.3). Most existing research on ESNs focuses on knowledge management in organisations and the education sector or emphasises the technological side of ESN usage and information sharing, largely ignoring the social aspects (see table 2-6). Section 2.3.3 examined the use of ESN in the SCM context, examining the relationships and trust that have not been addressed by existing studies. This gap frames the first research question to explore the nature of relationships and trust through ESNs in a supply chain setting.

#### 2.4.2.2 RQ2 – Information Exchange

*What is the nature and extent of information exchange among supply chain participants through Enterprise Social Networks?*

Prajogo and Olhager (2012) argue that the degree of information sharing is dependent on the degree of strategic relationships and claim that firms being technically connected does not mean that they are also socially connected. Studies reveal the benefits and barriers of information exchange in an SCM context, especially its effect on the SCM objectives (Lotfi et al., 2013; Prajogo and Olhager, 2012), and a few factors that contribute to information exchange, but not in a supply chain context (Kanda and Deshmukh, 2008; Prajogo and Olhager, 2012). Most studies have explored the impact of ICT on information exchange, relationships and SCP (Evangelista 2012), i.e., on the technological aspect; nevertheless, the social aspect is largely ignored (Prajogo and Olhager, 2012), especially the social and behavioural aspects due

to ESN in an SCM context. Some studies suggest the types of data that can be part of the supply chain's transactional and strategic information flow (Klein, 2007). However, there is little evidence on the flow of such information in the ESN backdrop, examining the nature and the extent to which such information is shared. This gap frames the second research question.

#### 2.4.2.3 RQ3 - Antecedents

*What are the antecedents of using Enterprise Social Networks in supply chain management?*

The literature review examined the benefits of ESNs for collaboration (2.3.2.5.1), information sharing (2.3.2.5.2) and building relationships and trust (2.3.2.5.3). Although there are many studies on public social media in supply chain management that focus on marketing and customer service, there is a dearth of peer-reviewed knowledge on ESNs in SCM (2.3.3). The study on ESNs in an organisational context majorly focuses on knowledge sharing or the technical parameters of ESN adoption. Existing studies on the drivers or determinants of ESN usage also mostly focus on knowledge sharing or the technical parameters of ESN adoption. To the author's best knowledge, no peer-reviewed study exists that examines the antecedents of ESNs' usage in organisations for internal and external collaboration in the SCM context. This problem presents the gap leading to the third research question.

#### 2.4.2.4 RQ4 - Consequences

*What are the consequences of using Enterprise Social Networks in supply chain management?*

Subsequent to formulating the third research question, existing studies on the benefits or affordance of ESN usage mostly focus on knowledge sharing or the technical parameters of ESN adoption. To the author's best knowledge, there is no peer-reviewed study examining the consequences of ESN usage in organisations for internal and external collaboration in the SCM context. This problem presents the gap leading to the fourth research question.

By addressing the research questions, we intend to achieve the research objectives: 1) to observe and describe the behaviour of supply chain participants from their ESN conversations to identify elements of long-term relationships and trust, 2) the type and extent of information exchanged through ESN, 3) the factors that influence the use of ESN applications, and 4) consequences of using social networking applications in SCM.

## **2.5 Chapter Conclusion**

This chapter presented a detailed literature review of relevant topics (SCM, social media, ESN and Relationships and Trust) and the significance of ESN in building long-term relationships and trust in the context of information exchange in SCM, which allowed the identification of gaps and the development of relevant research questions. Based on the aim and research questions, the next chapter provides a detailed description and justification of the philosophical standpoint of this research and the research methodology to be adopted.

## Chapter 3 Research Methodology

### 3.1 Introduction

It is evident from the aim of the research and research questions presented in the ‘literature review’ chapter that this is an exploratory research aiming to explore and understand the influence of ESN on relationships and trust amongst supply chain participants and its impact on information exchange in supply chain management. A clear understanding of the different philosophical perspectives is essential to formulate the views and expectations that serve the research strategy (O’gorman and Macintosh, 2015).

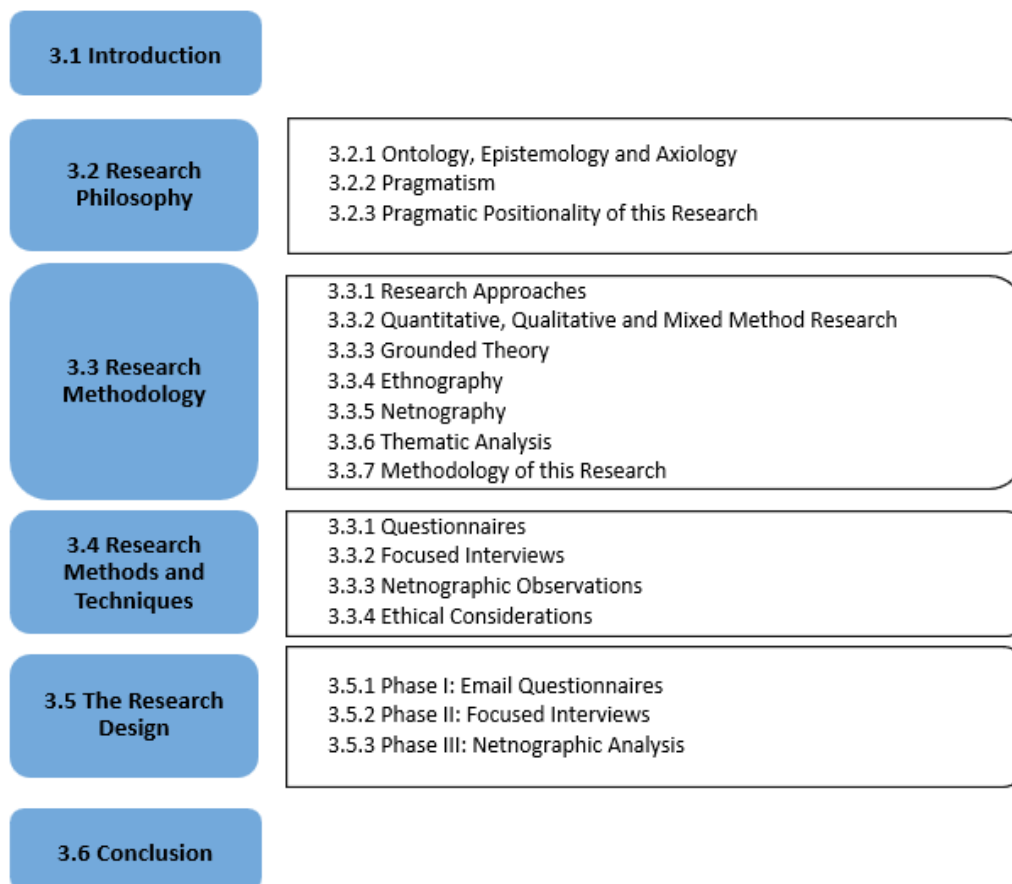


Figure 3.1: Structure of this Chapter

This chapter examines the research paradigms, ontology, and epistemology to consider the different world views and discusses the researcher’s philosophical stance. Subsequently, this leads to the methodological choice of this study and presents the research strategy and design with the justification of the choices made. The structure of this chapter is laid out in figure 3.1.

### 3.2 Research Philosophy

Research philosophy formulates how research is carried out and refers to "a system of beliefs and assumptions about the development of knowledge" (Saunders et al., 2016). The nature of reality, nature of knowledge and the investigator's value signify the researcher's viewpoint of the world. The ontological (assumptions on the nature of reality), epistemological (assumptions on how to inquire into the nature of the world) and axiological (assumptions on the values within the research process) positions made in the research will underpin the methodological choice (how to go about the research), research strategy, data collection techniques, and the analysis procedures of the research (Easterby-Smith et al., 2012; Saunders et al., 2016). The research philosophy is strictly associated with the researcher's paradigmatic choices that inevitably shape the entire research process and how the findings are interpreted (Crotty, 1998; Saunders et al., 2016).

First, this section discusses ontology, epistemology, and axiology, along with the paradigmatic choices made by the researcher in this study. Subsequently, the researcher justifies the choices by relating them to the existing body of literature on supply chain management and social media (ESN) research. Finally, the researcher's paradigmatic preferences and philosophical standpoint in addressing the research questions are set out.

#### 3.2.1 Ontology, Epistemology and Axiology

Different research philosophies are distinguished by considering the variations in the assumptions made within each philosophy. This section examines the different types of philosophical assumptions: ontology, epistemology, and axiology.

##### 3.2.1.1 Ontology

The phrase ontology is derived from the Greek words 'Ontos' meaning 'being' or 'reality' and 'logos' meaning 'study of', which implies ontology is the study of being or reality (O'gorman and Macintosh, 2015). Several scholars refer to ontology as "philosophical assumptions about the nature of reality" (Easterby-Smith et al., 2012; Saunders et al., 2016). The concept of ontology aims to answer the question, "what is there in the world?" (Eriksson and Kovalainen, 2015). The authors explain that ontology revolves around the existence and relationship between people, society, and the world. In a similar line, Bell and Bryman (2007) observe that ontology has a specific orientation to the nature of social entities.



The assumptions of ontology are broadly classified as objective and subjective. From an objective point of view, reality comprises measurable and testable objects without direct experience or perception (O’gorman and Macintosh, 2015). Eriksson and Kovalainen (2015) assume that in objectivism, the existence of social reality is independent of people and their activities and has an independent existence outside the researcher. In the subjectivist view, the reality for a researcher is the output of a social cognitive process, which means that the researcher’s views and understanding of social reality can change through interaction (Eriksson and Kovalainen, 2015). Saunders et al. (2016) suggest that "social reality is made from the perceptions and consequent actions of social actors (people)". The central idea of the subjectivist view is that reality is always about the individuals’ and groups’ interpretations (Blaikie, 2007).

### 3.2.1.2 Epistemology

Epistemology is a branch of metaphysics concerned with the nature of knowledge, its assumptions and principles, mainly concerning the scope and validity of knowledge (O’gorman and Macintosh, 2015; O’gorman, 2008). The authors point out that epistemology derives from ‘Episteme’, meaning knowledge, which means its study of knowledge. Eriksson and Kovalainen (2015) suggest that epistemology deals with the questions "What is knowledge?" and "What are the sources and limits of knowledge?".

Several scholars have similarly defined epistemology; for instance, (Collis and Hussey, 2013) define it as related to what is accepted as knowledge; Easterby-Smith et al. (2012) define it as a set of assumptions for investigating the nature of reality; (Burrell and Morgan, 2017) define it as "assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how knowledge can be communicated to others".

Epistemology also has objectivist and subjectivist views, representing two different schools of thought about knowledge. In an objectivist view of epistemology, the world is external and theory-neutral (Eriksson and Kovalainen, 2015), where ‘physical phenomena exist independently of individuals’ (Saunders et al., 2016). Objectivists pursue truth through observable and measurable facts, which can represent law-like generalisations around the general social reality (Saunders et al., 2016). In the subjectivist view of epistemology, access to the external world cannot exist beyond human observations and interpretations (Eriksson and Kovalainen, 2015). Social reality is what is being experienced (Lee and Lings, 2008).

Subjectivists focus on various opinions and narratives that comprise different social realities of various social actors (Saunders et al., 2016).

### 3.2.1.3 Axiology

Axiology refers to “the role of values and ethics” (Saunders et al., 2016). Tracy (2019) defines axiology as “a discipline dealing with the values associated with an area of research and theorising”. It concerns the extent to which values are incorporated during the research process and how the researcher deals with their values and that of the researched community (Saunders et al., 2016).

Axiologically, objectivists believe that values could bias their findings and try to remain detached from values throughout the scientific research process (Saunders et al., 2016). The subjectivists are value-bound. Therefore, they acknowledge, reflect and question their values, incorporating them within the research (Saunders et al., 2016).

The different ontological, epistemological and axiological assumptions of research philosophy are summarised in Table 3.1. This report does not aim to explain each philosophical approach in detail. Therefore, this table provides a snapshot of the most common research philosophies and different assumptions extracted from (Lee and Lings, 2008; Marsh and Furlong, 2002), and (Saunders et al., 2016) in summary. Each research philosophy and paradigm mentioned here imparts unique and valuable ways to business and management research, representing diverse and distinctive ‘way of seeing’ organisational realism (Morgan and Hunt, 1994).

### **3.2.2 Pragmatism**

Pragmatism originated as a response against the traditional dominating paradigms of positivism and interpretivism that have complementary views (Maxcy, 2003; Remenyi and Sherwood-Smith, 1998). According to Kelemen and Rumens (2008), pragmatism is "a reality that is in the making", focusing on the practical consequences of social reality. The pragmatists believe that knowledge is acceptable only when it is valid and has a practical meaning (Kelly and Cordeiro, 2020). It attempts to synthesize contextualized experiences and considers knowledge in terms of practical consequences, enabling actions to be carried out successfully (Saunders et al., 2016).

Table 3-1: Research Philosophies

Source: (Lee and Lings, 2008; Marsh and Furlong, 2002; Saunders et al., 2016).

Research Philosophy	Positivism	Critical Realism	Interpretivism	Postmodernism	Pragmatism
<b>Ontology</b> (Nature of reality)	One true reality (universalism) Real, external, independent	Structured and layered (the empirical, the actual and the real) External, independent and intransient	Complex, rich Co-constructed multiple realities Socially constructed through culture and languages.	Nominal Complex, rich Socially constructed through power relations	Complex, rich, external Practical consequences of ideas
<b>Epistemology</b> (What forms acceptable knowledge)	The only knowledge is scientific knowledge. Observable and measurable facts and regularities	Epistemological relativism. Knowledge historically situated and transient.	Theories and concepts too simplistic	Findings approximate truth. Truth and knowledge are decided by dominant ideologies	Practical meaning of knowledge in specific contexts
<b>Contribution</b>	Causal explanation and prediction	Historical causal explanation	New understanding and world views	Exposure of power relations and challenge of dominant views	Problem solving and informed future practice
<b>Axiology</b> (Role of values and ethics)	Value-free research Researcher maintains objective	Value-laden research	Value-bound research	Value-constituted	Value-driven research
<b>Methodology</b> (How to examine what is real)	Usually deductive and quantitative. Highly structured	Abductive Range of methods (qualitative and quantitative)	Inductive Often qualitative and/or quantitative	Typically, qualitative methods of analysis	Qualitative and quantitative Emphasis on practical solutions and outcomes

As a paradigmatic position, pragmatism offers researchers freedom of choice of the methodological combinations to address the research questions (Greene and Caracelli, 2003; Robson, 2002; Tashakkori and Teddlie, 2009). Researchers often use an intermix of interviews, observation and document analysis methods. Many studies employ a combination of qualitative and quantitative data to address their research objectives (Kaushik and Walsh, 2019; Patton, 2002). The researchers address their research questions based on the pragmatist belief of "what works" and "what works best" approach (Plath, 2006; Tashakkori et al., 1998).

### **3.2.3 Paradigmatic Positionality of this Research**

This research takes on the pragmatic philosophical approach. This research aims to ‘explore’ and ‘understand’ the phenomenon and explain the observations made on data to generate new concepts. As noted in the literature review (2.6), the reluctance towards the wide acceptance of ESNs in the SCM context is primarily due to the need for more understanding of the perceived benefits of ESNs. Consequently, there is an adverse impact on the ‘willingness to share’, affecting the strategic information exchange between supply chain participants and resulting in several uncertainties (Lotfi et al., 2013). This research aims to provide supply chain professionals with an opportunity to understand the potential of ESN, focussing on making a difference in organisational practice. Considering the complexity of the study and the practical meanings this research will provide, pragmatism has been adopted.

The pragmatic philosophical stance drives the methodological choice that will be adopted to answer the research questions. This research adopts a qualitative approach with data triangulation (3.3.2.2). Figure 3.2 shows the approach followed in this research and the three phases of data collection, which employ an online questionnaire, a focused interview, and a netnographic analysis. A thematic analysis is used to analyze data to accomplish the research objectives.

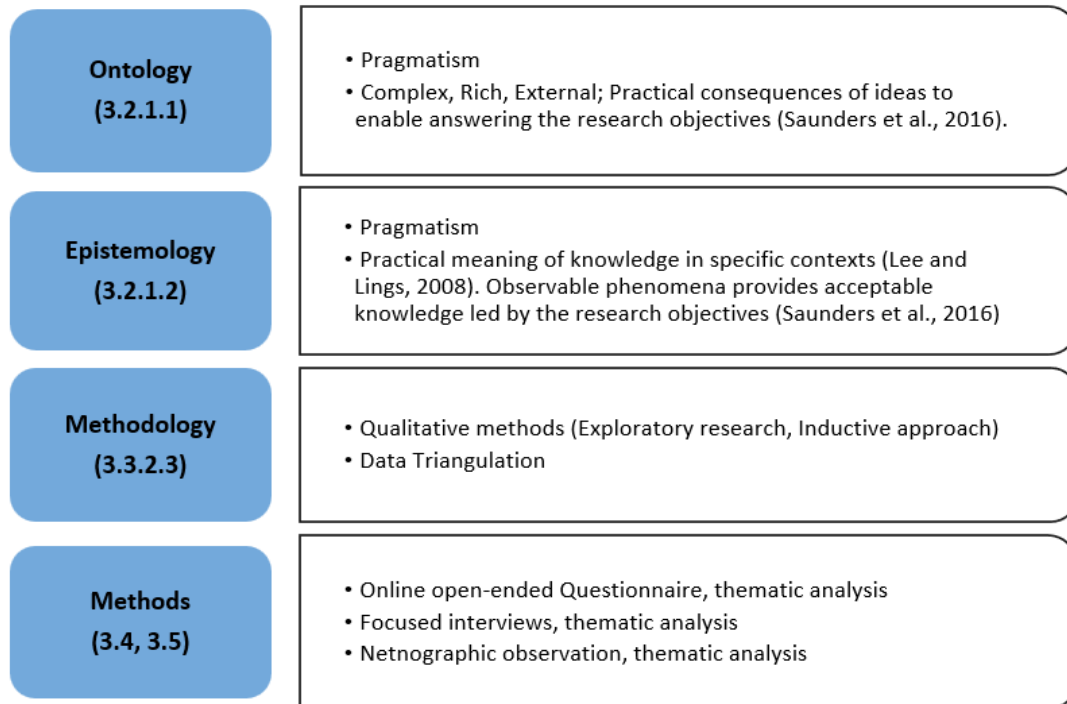


Figure 3.2: Philosophical and methodological positionality of this research

### 3.3 Research Methodology

According to (Saunders et al., 2016), research methodology is a theory that suggests how research should be managed. The methodology sets the research framework and helps decide the different methods and tools that can be adopted to answer the research questions. The methodology must be carefully chosen to reflect the philosophical assumptions of the research paradigm (Collis and Hussey, 2013). Subsequent sections examine the various research approaches, research methods and techniques.

#### 3.3.1 Research Approaches

Research can be classified as exploratory, explanatory, descriptive or predictive based on the purpose of the study. Similarly, based on logic and theory development, it can be classified as deductive, inductive and abductive (Collis and Hussey, 2013). Saunders et al. (2016) provide a detailed description of each type of research based on purpose. The key points on these research types and the descriptions are extracted from Saunders et al. (2016) and presented in table 3-2. Some research may combine more than one type, which is achieved by the use of mixed methods (Saunders et al., 2016).

### 3.3.1.1 Exploratory Study

It is apparent from the research questions that this research aims to study people and organisational behaviour by observing and analysing ESN communication in the SCM context. Exploratory research is appropriate for questions intended to understand the happenings and seek new insights into the research topic (Saunders et al., 2016). Thus, an exploratory study is best suited to explore new insights into the perceived benefits and challenges of using ESNs by supply chain professionals. The focus of this research is rooted in experience and beliefs from the practitioners' viewpoint.

*Table 3-2: Types of research based on purpose*

*Source: Adapted from (Saunders et al., 2016)*

Type of research	Description
Exploratory	<p>Exploratory studies are done when there has been zero or very few research about the issue under investigation.</p> <p>Looks for patterns, ideas or hypothesis.</p> <p>Focus on gaining insights and rigorous investigation at a later stage.</p> <p>Observation or experienced-based data for empirical evidence</p>
Descriptive	<p>Describes a phenomenon that exists.</p> <p>Identify and obtain information on a problem.</p> <p>More detailed investigation of a problem</p>
Analytical (Explanatory)	<p>It can be a continuation of descriptive research.</p> <p>Describes and measures causal relations among the phenomena.</p> <p>Statistical analysis of data</p>
Predictive	<p>Predicts the likelihood of occurrence of a situation</p> <p>Aims to generalize based on analysis by predicting a phenomenon based on hypothesized general relationships.</p>

### 3.3.1.2 Reasoning Types

Next, this report presents the reasoning types and the process of concluding based on existing knowledge. The three methods of reasoning are inductive, deductive and abductive.

In the inductive approach, the conclusion is underpinned by the observations made (Ketokivi and Mantere, 2010). The procedure starts by collecting and analysing data to explore the experiences to generate or build a theory, explanation or form a conceptual framework, generalising from specific to general (Saunders et al., 2016).

In the deductive approach, conclusions are derived from prior assumptions (Ketokivi and Mantere, 2010; Patton, 1990). The procedure starts with theory. Subsequently, data collection is used to test the theory, generalising from general to specific (Saunders et al., 2016).

The abductive approach begins with a 'surprising fact' being observed (Mantere and Ketokivi, 2013), which is the conclusion. Subsequently, the possible premises are determined to explain and justify the conclusion. Data is collected to explore the situation, identify themes, and explain patterns to generate or modify theory, and subsequently, this is tested through additional data collection (Saunders et al., 2016).

This research follows an inductive approach to meet the research objectives of exploring the topic and developing the theoretical explanation, i.e., generalising from specific to general. Data will be collected and analysed to explore the role of ESNs in developing long-term trust and relationships among supply chain participants and to understand how this impacts information exchange in the SCM context.

### **3.3.2 Quantitative, Qualitative, Mixed Method Research**

The research philosophy and the theory development approach determine the methodological choice of the research, i.e., quantitative, qualitative or mixed methods (Collis and Hussey, 2013). Examining and distinguishing between the design and process of various research methods is useful here.

The quantitative method uses highly structured data collection involving numeric data collection (such as surveys) and analysis techniques (graphs or statistical analysis), and it follows deductive reasoning for drawing conclusions. The qualitative method involves non-numeric data collection (such as interviews) and analysis techniques (coding data) and follows an inductive approach to draw conclusions (Saunders et al., 2016). Following either quantitative or qualitative methods may not be sufficient to meet the research objectives of business and management research, and therefore, a mixed-method approach is commonly adopted (Myers, 2009; Saunders et al., 2016).

The mixed method involves integrating qualitative and quantitative methods in a sequence within the study (Creswell and Creswell, 2017) to develop a comprehensive understanding based on combining both approaches in data analysis (Venkatesh et al., 2013). Several variations of mixed methods research have emerged based on the order of methods: concurrent,

sequential exploratory, sequential explanatory and sequential multi-phase (Creswell and Clark, 2011; Creswell and Creswell, 2017).

Table 3.3 provides a summary of qualitative and quantitative techniques based on the description provided by Saunders et al. (2016). The quantitative method is generally associated with positivism, and the qualitative method is associated with interpretivism. Nevertheless, interpretive research can use quantitative and qualitative analysis (Collis and Hussey, 2013; Saunders et al., 2016). A qualitative method, the choice of this research, is explored further in section 3.3.2.1.

*Table 3-3: Qualitative and quantitative methods*

*Source:(Saunders et al., 2016)*

Method	Descriptive
Quantitative	<ul style="list-style-type: none"> <li>• Associated with positivism.</li> <li>• Examines relationships between variables.</li> <li>• Measured numerically and analysed using statistical and graphical techniques.</li> <li>• Data collected in a standard manner</li> </ul>
Qualitative	<ul style="list-style-type: none"> <li>• Associated with interpretivism.</li> <li>• Studies participants’ meanings and the relationships</li> <li>• Characterised by methodological variations.</li> <li>• Methodological rigour and theoretical contribution</li> <li>• Data is collected in a non-standardised manner.</li> <li>• Naturalistic and interactive</li> <li>• Physical access to participants may be required</li> </ul>

### 3.3.2.1 Qualitative Research

Qualitative analysis allows the development of more profound insights into the research problem (Creswell and Clark, 2011; Creswell and Creswell, 2017; Easterby-Smith et al.) by investigating the subjects in their natural settings in an attempt to make sense of phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 2008). Qualitative research usually emphasises words rather than quantification in data collection and analysis (Bryman, 2016). It fits in studies where the explanation and understanding of behaviour or activities are more important than specific measurements (Cohen and Manion, 1980). The emphasis is on understanding ‘how’, ‘why’ and ‘in and in what context’ the phenomena occur and the factors influencing such phenomena (Carson et al., 2001). In this research, an in-depth analysis of data (i.e. experiences and perceptions of key respondents and the ESN conversation data of organisations) can be achieved through qualitative techniques described by Judge et al. (2001).



Qualitative research may use a ‘mono method study’ involving a single data collection technique or a ‘multi-method study’ involving more than one data collection technique. Tashakkori and Teddlie (2009) point out that combining more than one technique in a single research brings together the advantages of breadth and depth associated with the techniques adopted. The subsequent section examines the multi-method adopted in this study.

#### 3.3.2.2 Multi-Method Research or Triangulation of Data

A multi-method study can be either quantitative, qualitative, or a combination of both (mixed method) involving more than one data collection technique (Saunders et al., 2016). Data triangulation is multi-method research that confirms the credibility of data, analysis, and findings.

According to Lincoln and Guba (1985), a single source of information, unless from an elite and unquestionable source, cannot be considered valid if not triangulated. Triangulation provides a means to enhance the validity of the interpretation and findings of the research (Lee and Lings, 2008). The different modes of triangulation include using multiple sources of data, methods of investigation, theories and investigators to focus on the research objectives (Lincoln and Guba, 1985).

In this study, data triangulation is achieved by using multiple data sources for analysis to answer the research questions. The data collection can vary across time, space, or people, adding depth, breadth, complexity, and richness to the research (Denzin and Lincoln, 2008; Saunders et al., 2016).

#### **3.3.3 Ethnography**

Netnography, the approach of this research, is grounded in ethnography; hence, an understanding of it is helpful. Ethnography is a qualitative research approach that studies cultures and groups in their natural setting (Gummesson, 2000; Saunders et al., 2016). Ethnography is derived from the Greek words *ethnos* (people) and *graphei* (to write) (Reeves et al., 2013). Collis and Hussey (2013) state that it is a “methodology in which the researcher uses socially acquired and shared knowledge to understand the observed patterns of human activity”. According to (Lee and Lings (2008), ethnographic research is based on experiencing the culture from a first-hand experience of the world.

It is one of the most in-depth methods that rely heavily on participant observation, and the researcher immerses into a particular community to closely observe their behaviours and interactions. It implies that personal engagement with the research subject is crucial in understanding the specific culture or social background (Hobbs, 2006; Hogan et al., 2009). The terms “ethnography” and “participant observation” are often used interchangeably (Bell and Bryman, 2007). Ethnographic researchers often combine other research methods, such as interviews, surveys and focus groups, to increase understanding (Bryman, 2008).

Ethnographic techniques and approaches require subtle, metaphorical and hermeneutic interpretation, which displays the linguistic skills of the researcher. In the ethnographic process, the researcher must undertake an immersive, prolonged engagement with the community and represent the findings as thick, detailed and culturally grounded interpretations and descriptions of the social world (Lee and Lings, 2008). For this, the ethnographers have established specific guidelines and procedures. First, the research must be planned for required field work, after which the researcher needs access to the study site called *entrée*. The next step is to gather data from the social world, which will then be subject analysis and interpretation. The ethnographer must adhere to ethical standards and procedures, and finally, the findings must be recorded, representing the study and the community.

The approach to ethnography is continually evolving to suit different research preferences and scenarios. The ethnographic method is increasingly used in business and management studies to obtain a deep understanding of organisational culture and a broader context within which people work, as it provides rich insights into human, social and organisational aspects (Eberle and Maeder, 2011; Eriksson and Chatzipanagiotou, 2020; Yanow et al., 2012).

Ethnography can be adapted to explore and understand social groups and cultures online, but a physical distance can exist between the researcher and participants (James and Busher, 2009). The rapid technological change has caused the emergence of online spaces and impacted how people interact with others. Hallett and Barber (2014) argue that ethnographic researchers in the cyber era must consider the internet and computer-mediated communication while designing the research.

### **3.3.4 Netnography**

Netnography is a qualitative research method introduced by Kozinets about 25 years back. Since its introduction, netnographic studies have focused on virtual communities and culture

(Heinonen and Medberg, 2018). Kozinets's (1997) influential study on the online fan communities of the television series 'X-Files' and the culture surrounding it has highlighted the online community as a valuable source of data on consumers' culture. Kozinets (2002) introduced netnography as an online marketing research method to provide insights into consumer behaviour.

#### 3.3.4.1 Definition of Netnography

Netnography is a qualitative, explanatory research methodology that reshapes ethnographic techniques to conduct studies on the Internet. 'Netnography' is a portmanteau drawn from the words 'internet' and 'ethnography'. Kozinets' consensus definition of netnography follows.

“Netnography is the name given to a specific set of related data collection, analysis, ethical and representational research practices, where a significant amount of the data collected and participant-observational research conducted originates in and manifests through the data shared freely on the Internet, including mobile applications.”  
(Kozinets, 2015)

Other scholars define netnography as the cultural study of human relations through digital technology, which fits into the category of digital anthropology (Boellstorff, 2015).

The researcher's investigation, interaction, and immersion are treated precisely within netnography (Kozinets, 2019; Kozinets, 2015). This technique involves practices like locating societies and themes, interviews, data scraping, archival work, online observation, refining data, handling and analysing a large set of digital data, visualization, thematic analysis, field-level rhetorical representation, and navigating complex online ethical matters and research procedures (Kozinets, 2019). According to Kozinets (2002), netnography is quicker, inexpensive, and much easier than traditional ethnography. Netnography has its own challenges, discussed in section 3.3.4.4 of this thesis.

Whilst Kozinets developed netnography focusing on consumer research, this method gained wide acceptance within business research and is spreading to other fields, such as computer science, media anthropology, culture studies, health sector, education, tourism, travel, hospitality, education, geography and sociology (Kozinets, 2019). Table 3-4 summarises studies using netnography, though this may not present an exhaustive list.

With netnography, internet research can be carried out by actively participating with community members or passively monitoring the community and integrating the information, knowledge, and ideas gathered (Ahuja and Shakeel, 2017).

*Table 3-4: Summary of studies using netnography*

<b>Author</b>	<b>Field of research and details</b>
(Guo, 2018)	Accounting - to explore how people develop the professional identity of being an accountant using an online forum.
(D'Ambra 2017)	To understand how the use of e-books changed readers' experience of reading
(Palo and Manderstedt, 2017)	Used a diverse range of messages from different social media platforms to understand how textual features are understood by engaged child readers.
(Cronin 2014)	Sociology - to examine discussions of over-consumption of food and alcohol and then illustrate and develop a theory of their 'carnavalesque' qualities.
(Moreillon, 2015)	Library and Information Studies - to study how librarians use Twitter and hashtags as a cultural tool and affinity space to gain and build a sense of professional identity and to promote professional development.
(Roland 2017)	Social network analysis and netnography to study Twitter hashtag-based online community dealing with health care.
(McVeigh 2016, p. 1)	Pharmaceuticals - how online communications are used to share knowledge about dangerous practices and drugs.
(Gün and Şenol, 2019)	Health care. Analysis of public social media data and website data
(Toledano, 2017)	Public relations. Analysis of public social media data and website data
(Laroche 2013; Edelman, 2010; Tynan 2010; Rosenthal and Brito, 2017; Colliander and Hauge Wien, 2013; Hollebeek and Chen, 2014)	Branding. Analysis of public social media and website data (sports business)
(Fenton and Procter, 2019; Keeling and Laing, 2015; Langer and Beckman, 2005; Liang and Scammon, 2011; Moraes 2014; Rollins 2014)	Social media / digital marketing. Analysis of public social media and website data (sports business)
(Jeacle, 2021)	Accounting. TripAdvisor data
(Björk and Kauppinen-Räsänen, 2012; Hsu 2009; Koubaa and Jallouli, 2019; Mkono 2013; Rageh 2013; Woodside 2007)	Tourism. Analysis of public social media and website data
(Bhattacharyya and Dash, 2021; Karen, 2019; Waqas, 2020)	Customer experience
(El Hilali and Azougagh, 2021; Lestari 2020; Macharia 2021; Rambe and Mkono, 2019; Stephan 2021; Udenze and Ugoala, 2019; Udenze and Bode, 2020)	Investigation of WhatsApp groups to study various communities and behaviour. (ethnic communities, farmers, parental behaviour of sharing children's photographs, citizens' perception of smart cities)
Del Vecchio 2020	Analysis of social data from Facebook, Instagram, Twitter and LinkedIn to identify the process of value creation on customer relationship management and customer knowledge management

### 3.3.4.2 Types of Netnography

Kozinets (2015) identifies four ideal types of netnography, which indicate different research directions in terms of research focus and data collection and analysis approach, shown in Figure 3.3.

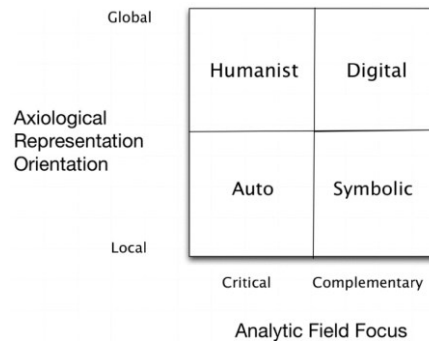


Figure 3.3: Four different netnographies represented as the intersection of Axiological representation and analytic field focus

Source: (Kozinets, 2015)

**Symbolic netnography:** This is the most generally used form of netnography, and the key concept is the discourse, where the meanings are translated as values, practices and online rituals of the online communities. In symbolic netnography, the researcher narrates in a specialized view, rhetorically using a human role, emphasising words and social structures. The online social experience and interactions are represented in a detailed narrative textual format (Kozinets, 2015).

**Digital Netnography:** Computer-aided methods provide netnography with a more structural aspect in data analysis besides human-centric participant observation and data interpretation. Using technological voice and specialized software for analysis and interpretation allows researchers to study an immense amount of data (Kozinets, 2015). However, this approach provides a bird’s eye perspective and fails to provide in-depth details like meanings, values and deeper understandings of the online community. Integrating digital netnography with symbolic netnography can complement each other and provide symbolic meanings, logical structures and statistical descriptions (Kozinets, 2015).

**Auto-Netnography:** This approach highlights the researchers’ online experiences, where the researcher becomes part of the virtual world (Kozinets and Kedzior, 2014). It records these experiences through the observation of netnographers' participation in the online community and contains autobiographical elements, which include reflective fieldnotes and a first-person

image (Kozinets and Kedzior, 2014). The netnographer must reflect on their position in technologically mediated communication and display data through their identity (Kozinets, 2019). The study is presented in a first-person narrative (Kozinets and Kedzior, 2014).

**Humanist Netnography:** Humanist netnographers emphasise human involvement with technology in the present-day landscape and adopt a spirit towards the betterment of self and society. Humanist netnography is the most challenging in terms of representation and seeks rapport, credibility and polyphony in representation. Humanist netnographers seek reformative ways to represent their findings through dramatizations, poetry, videography, social media, curations, etc.

### 3.3.4.3 Netnographic Procedures

Kozinets (2002) extends the ethnographic procedures (see section 3.3.3) to frame the participant observation in netnography. The various phases include planning and preparation, cultural entrée, data collection and analysis, reliable interpretation, ethics and member checks (opportunity for feedback), as shown in figure 3.4. These steps guide the researcher in rigorously applying the netnographic method to their research.

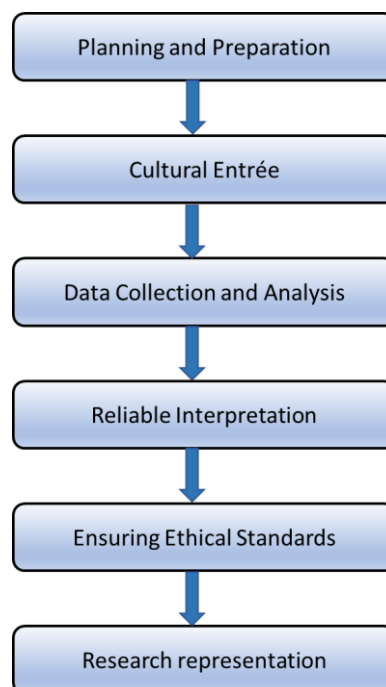


Figure 3.4 Procedures in netnography

Source: Author, adapted from (Kozinets, 2002; Kozinets, 2010)

#### *3.3.4.3.1 Planning and Preparation*

The planning and preparation include considering ‘what will be studied and how?’, ‘what makes up the data?’, ‘how the data will be collected and analysed?’, ‘how the project can be handled ethically’, ‘how the results will be represented?’ and ‘what are the benefits and risks?’ Poor planning and preparation may result in negative responses (Kozinets, 2015). Kozinets (2015) identifies 12 stages of the netnographic research process to guide the researcher in achieving their objectives. These guidelines and the planning phase enable the researcher to develop the right research focus on investigating the research questions appropriately.

#### *3.3.4.3.2 Cultural Entrée*

Entrée is the preparation stage in the netnographic method, which includes formulating research questions, identifying suitable online platforms and communities, and better understanding the online community they wish to study. When choosing an online forum, several factors must be considered, such as the research question, the volume of postings, the number of discrete message posters, the availability of detailed data, and the nature of participant interactions (Kozinets, 2010). Kozinets (1998) notes that online forums may also provide access to participants, which may be later translated to one-to-one interviews for enhanced data collection.

#### *3.3.4.3.3 Data Collection and Analysis*

The data, using a netnographic approach, are computer-mediated communications of the online community and the observations, interactions, and meanings gathered by the researcher. Compared to ethnography, netnography incurs relatively lower data collection costs due to abundant data (Kozinets, 2019). Netnographers must carefully choose the data used for the research to avoid data overloading. The research question guides the choice of data. In netnography, the specific ties within the online community and the depth of communication can lead to valuable conclusions. Hence, reflective field notes are invaluable in the process. Unlike ethnography, the netnographic procedure can be based on observation only, without including any field notes.

#### *Data Collection Operations:*

Kozinets (2019) identifies three procedures for data collection in netnography – investigative, interactive and immersive.

Investigative data are collected by choosing selective information from social media communication available from archives and real-time recordings of conversations, and they are created without any intervention from the researcher. The investigative data is formed by the netnographer's interests, verdicts, views and observer effects. Kozinets (2019) identifies this as 'observational netnography'. For example, Schuman et al. (2019) studied combat-related trauma, where the narratives of experiences, associated themes and video blogs formed the data for the study.

In an interactive approach, the conversation is created due to researcher interference, such as online interviews, posting questions, comments, or direct messaging. The interactive data carries traces of questions and can be related to an offline interview or survey-based methods. For example, Victoria Diniz et al. (2018) studied how certain patients used dedicated Facebook pages by specialized physicians. The researchers combined online observations with a web-based survey.

Immersive data collection is more selective regarding choices and focuses on detailed or descriptive data. The original context of data is taken care of as much as possible by recording detailed descriptions in the netnographer's immersion journal. The process followed, and the thought process of the investigator is included in the immersion journal. Kozinets (2019) identifies such operations as reflective and contextual by recording the research experiences. The immersion journal allows the researcher to record feelings, thoughts, and meanings of observations, ideas, and concerns. Kozinets (2001) used an immersion journal to record his emotional experiences of 20 months of fieldwork at the Star Trek fans club.

The different data collection operations are used on their own or can be combined in netnographic research, known as 'triangulation' within methods, where multiple techniques are used within a methodology to collect and interpret data (Jick, 1979; Kozinets, 2019).

This research combines all three approaches. Scraping ESN conversations from organisations follows an investigative approach. The interviews with key informants would carry the traces of data collection themes and questions prepared for the study, making it interactive. Recording the research practices, thought processes, reflections, and justifications for doings and decisions would be an immersive operation, providing more subjective meanings to the researchers' experiences, attitudes, and identities.



*Data Analysis:*

In netnographic data analysis, the collected data, including computer-mediated communication, field notes and observations, are synthesised to build a research representation (Kozinets, 2015). The data analysis operations in netnography are collating, coding, combining, counting and charting (Kozinets, 2019). The data is prepared for coding and then broken into parts to assign meaningful codes. Next, related codes are combined to generate patterns and then quantified to compare various elements identified in the qualitative data. Finally, the transformed data is used to gain insights and draw research conclusions.

Netnography embraces various analytic techniques, including computer-assisted methods and humanist forms. Netnographers use software tools such as 'NVivo' and 'Atlas.ti' for coding to classify and contextualize the data. Although these tools can expedite the data analysis, combination, representation and conclusions (Paccagnella, 1997; Richards and Richards, 1994), the symbolic richness of social media data can pose challenges to the process (Van Maanen, 2011). Humanist forms provide a more naturalistic understanding of the research (Kozinets, 2015).

Netnographic data analysis generally follows inductive processes. Thematic analysis is well suited to analysing qualitative data to answer what, how and why questions (see section 3.3.5) and is based on interpretive approaches.

*3.3.4.3.4 Reliable Interpretation*

Netnographic researchers should be conscious that the data they observe is just a communicative act, unlike the complete observation data in ethnography. Kozinets (2002) notes that netnographic conversations differ from traditional ethnography because they are computer-mediated, publicly available, and in written format. Netnographic researchers must follow specific procedures to produce reliable outcomes (Kozinets, 2002; Lincoln and Guba, 1985; Wallendorf and Belk, 1989).

Netnographic analysis is mainly based on the observation of textual discourse generated through computer-mediated communication; hence, it is hard to determine the identity of participant members, although direct misrepresentation is considered an offence in many online forums (Kozinets, 2002). Referring to Wittgenstein (1968), Kozinets argues that posting computer text is a social action, and the content can be trustworthy. Triangulation of data collection using other methods like interviews, focus groups, or surveys, along with the

netnographic data, to validate the evidence may be helpful in generalization. As a responsible researcher, it is also essential to reflect on the limitations of the netnographic data and the technique.

#### *3.3.4.3.5 Ensuring Research Ethics*

Conducting ethical social science research on the internet is a much-debated topic and is complex in netnographic research (Kozinets et al., 2014). Getting informed consent and considering potential benefits, privacy of individuals, and risks and harm to target individuals and communities are the main principles behind ethical research (Kozinets et al., 2014). The main concerns that arise in this respect are 1) are online forums private or public 2) what exactly does informed consent mean in the internet space (Kozinets, 2002) 3) the identity of the online representation 4) ownership of the online content/ platform 5) social media policies of the organisation or community.

One of the main privacy concerns that arise during a netnographic study is using data from 'semi-private' web platforms concerning the identity of participants (Sandlin, 2007). It also depends on the 'terms of use' agreement, the user's expectation of privacy and any privacy restrictions stipulated by the group or organisation representing the community. Usually, the groups that anyone can join are considered public. However, quoting directly from online sources may pose ethical issues because re-publication or citation in an academic article may have unforeseen consequences for the individual or community (Kozinets et al., 2014).

Another concern is related to anonymity and confidentiality. In addition to privacy issues, copyright laws also come into the picture while using online resources. Netnographers should take the most care about such issues and need to deal with them on a case-by-case basis.

Some researchers approach the identity concern by formally requesting legal names and signed consent (Kozinets et al., 2014). The consent must be obtained in detail, such as seeking permission to use data or photographs in academic articles and thesis. Xun and Reynolds (2010) suggest that consent can be obtained electronically. According to King (1996), the responsibility of protecting the identities lies with the researcher. If required, netnographers must employ anonymization by following the ethnographic practice (Kozinets et al., 2014).

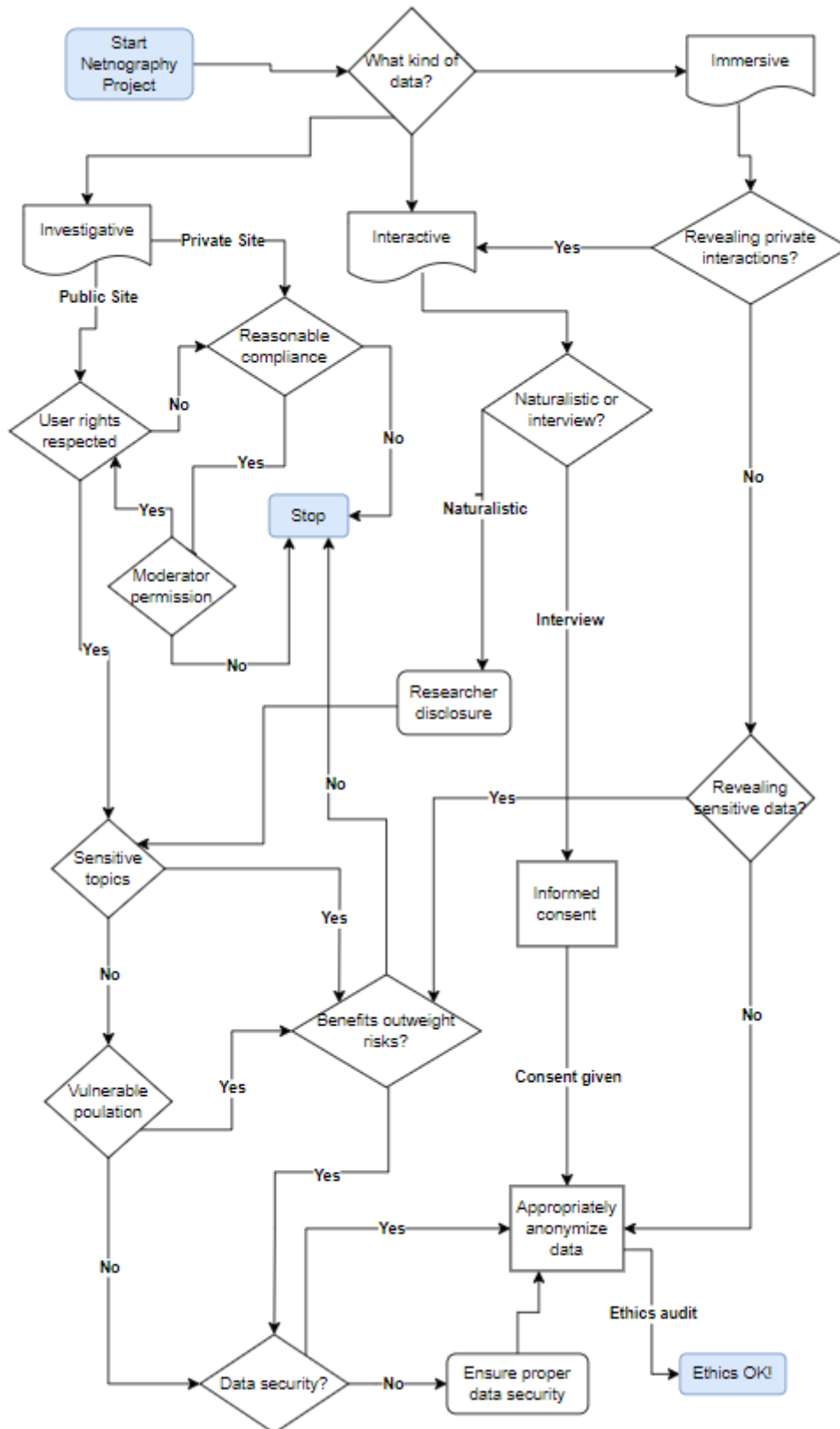


Figure 3.5: A research ethics process flowchart for netnography

Source: (Kozinets, 2019)

Netnography has been used covertly and unobtrusively to study sensitive research topics. Here the authors argue that conducting a covert study on such sensitive issues is legitimate and ethical, which can help to gain a deeper understanding of the participants' opinions, motives, worries and concerns (Langer and Beckman, 2005).

Kozinets's (2019) ethics process flowchart (figure 3.5) helps researchers decide on ethical considerations in their netnographic research. In this process, ethical concerns are considered for each type of data collection operation (investigative, interactive, and immersive).

#### *3.3.4.3.6 Member Checks*

All the research findings are presented to the participants to solicit their comments (Arnould and Wallendorf, 1994; Hirschman, 1986; Lincoln and Guba, 1985). The researcher gets more insights from the participants to improve, and the participants get practical benefits from the study (Kozinets, 2002).

#### 3.3.4.4 Challenges in Netnographic Research

Kozinets (2019) presents various challenges of netnographic research. One of the disadvantages of netnography is that it largely depends on the observations and interpretive skills of the researcher. The lack of participants to gather specific data details creates difficulty in finalising the results, which can be mitigated by employing multiple methods for triangulation.

The research space for carrying out netnography and the varying perceptions of the scholars are other challenges. While some scholars argue that the online setting significantly differs from the real-world setting (Hine, 2000; Lysloff, 2003), others say that the online world is a different social setting from the real world (Lyman and Wakeford, 1999; Ruhleder, 2000).

Udenze and Ugoala (2019) point out that the rapid changes and emerging new features in the online space create challenges for researchers regarding how research methods can be applied. The ethical concerns surround two main issues: the private/public status of the social media site being investigated and what includes informed consent (Kozinets, 2019). A clear consensus is required on challenging ethical questions and must be handled diligently.

### 3.3.5 Thematic Analysis

Thematic analysis is used in narrative analysis to examine various aspects of the narrative (Maitlis, 2012; Riessman, 2006). The thematic analysis identifies themes within the narrative or the conversation, emphasising ‘what’ it is about and ‘how’ it is constructed (Saunders et al., 2016). According to Given (2008), the thematic analysis answers the how and why questions. This method is primarily used in qualitative data to identify, analyse, and report recurring patterns to develop explanations. It involves choosing priority codes and constructing themes while interpreting the data (Braun and Clarke, 2006).

Thematic analysis is essentially independent of paradigmatic positioning and is used in positivist, critical realist and constructivist approaches (Braun and Clarke, 2006). The steps of thematic analysis resonate with ethnography (also netnography) and any qualitative methods that rely on coding and identifying themes (Kiger and Varpio, 2020). According to Braun and Clarke (2006), the six steps of thematic analysis include (1) data familiarization, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes and (6) producing the report. Thematic analysis is a powerful method to understand experiences, thoughts, and behaviours by investigating the data (Braun and Clarke, 2012). While thematic analysis is a systematic and analytic method, it is not rigid in coding. New categories and codes can emerge through data investigation during the study (Altheide and Schneider, 2012).

### 3.3.6 Methodology of this Research

As presented in section 3.2.3, the ontological and epistemological positioning of this research is methodological pragmatism. This exploratory research (see 3.3.1.1) uses inductive reasoning (see 3.3.1.2) and subsequently adopts a qualitative methodology employing a multi-method or data triangulation approach (see section 3.3.2). Figure 3.6 shows the methodological choice of this study, indicated by red dashed lines.

The data collection and analysis followed a systematic and iterative approach using thematic analysis to allow the emergence of rich findings closely tied to data (Dey, 2003; Myers, 2009; Saunders et al., 2016). This exploratory research intends to generate fresh insights into the phenomenon under investigation. After the initial literature search, phase I of data collection asked open questions through email and web-based questionnaires, allowing the participants to express their views independently of bias. According to Charmaz (2014), cited in (Saunders

et al., 2016), it is undeniable to conduct data collection without some presumptions drawn from the literature review. Hence, the phase I outcome and further literature review informed the data requirements and design for the subsequent phase, in-depth interview, and the development of ‘p priori’ codes or themes for subsequent data analysis. During data analysis, constant comparison between the data and themes and searching literature in an iterative fashion was adopted.

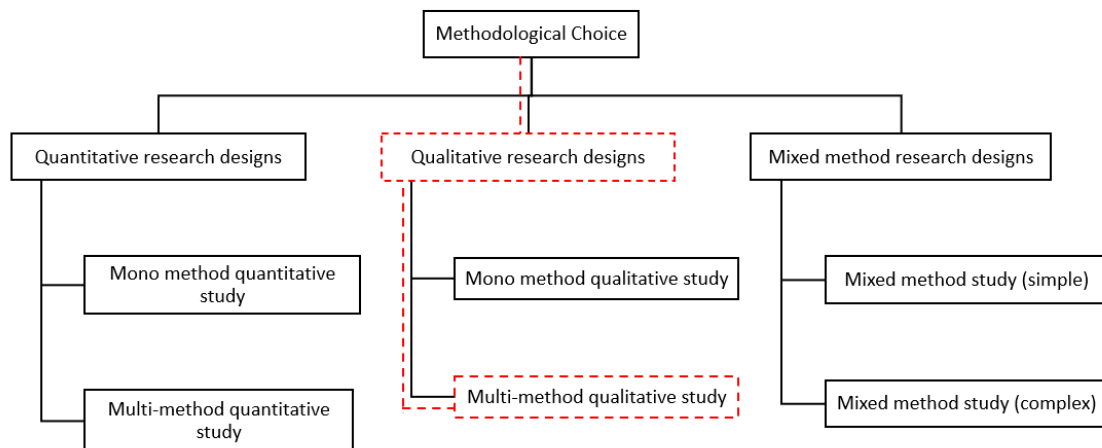


Figure 3.6: Methodological choice of this research

### 3.4 Research Methods and Techniques

The previous section stated that this research adopts a qualitative approach with data triangulation, which will be done in three phases: online questionnaire, focused interview, and netnographic analysis of conversation (see figure 3.2).

Considering the nature of the research questions, the experiences of supply chain professionals using ESN must be gathered in detail. The initial questionnaire phase intends to gather the perceptions of supply chain practitioners on using ESNs. Subsequently, semi-structured interviews (focused or in-depth interviews) are used to capture the understanding of the practitioner’s viewpoint on information sharing and how they perceive and develop ESN capabilities in the SCM context (Fawcett et al., 2007b). These interviews allow focusing on the topic with explanations and personal views and can emphasise contemporary events (Li et al., 2014).

Further, netnographic observation is adopted as it allows the data to be investigated considering the cultural surroundings of the data. Netnography combines the rich data available through online interactions and thematic analysis, which can reveal the subjective description

behind the topic to address the research phenomenon (Kozinets, 2015). Hence netnography is well-suited for this research.

### 3.4.1 Questionnaires

A questionnaire is a research instrument consisting of a list of questions with instructions on recording the answers. It is mainly designed to be completed by the respondents themselves (self-administered). There are two types of questionnaires: open-ended and close-ended. While close-ended questions discover spontaneous responses limited to the alternatives offered, open-ended questions allow respondents to express opinions without bias from the researcher (Reja et al., 2003).

Open-ended questions are used when an objective response is unsuitable for the study. They capture detailed information from the participants through text and are not susceptible to information bias. However, it might increase the burden on the participants. Further, the researcher has to subsequently review and assign one or more codes to categorise them before analysis (Edwards, 2010).

Closed-ended questions are suitable where a factual response is suited and used in quantitative research. The response options, which can be mutually exclusive or multi-select responses, are offered to the participants, and clear instructions on answering the questionnaire are included. The answers to closed-questionnaire are affected by the values chosen by the research in each response category (Armstrong, 1996) cited in (Edwards, 2010).

Questionnaire surveys can have conditional branching, directing the respondents to skip specific follow-up questions based on the answers to previous questions. Such questions can confuse respondents, creating unreliable responses (Dillman, 2000; Messmer and Seymour, 1982). Branching off or conditional branching is used to develop subsidiary questions based on the answers to primary questions, which can provide better outcomes (Edwards, 2010; Lazar and Preece, 1999). Although questionnaires with conditional branching give better responses, they can create cognitive complexity to produce an optimised branching in the questionnaire design (Norman et al., 2001).

Web-based and email questionnaires have become increasingly popular, requiring the participants to respond electronically (Watson et al., 2008). The web-based questionnaires are self-administered and flexible and can be designed to filter subsequent questions automatically

based on the participants' responses. Navigating through the questions can appear smooth, reducing the burden on the participants (Edwards, 2010; Reja et al., 2003).

### 3.4.2 Focused Interviews

Interviews allow detailed data collection in which participants (interviewees) are probed to get responses about what they do, think, or feel about a subject (Collis and Hussey, 2013). Interviews are widely used in business management research to gather rich data from interviewees' experiences to get a holistic picture of the subject's world (Myers, 2009). There are three types of research interview approaches based on the types of interview questions.

A structured interview, also called a positivist interview, is based on pre-prepared questions, either closed questions with a predetermined set of answers or open questions where the interviewee provides a detailed response (Collis and Hussey, 2013; Eriksson and Kovalainen, 2015). The aim is to set the same context for questioning the interviewees. They tend to be inflexible and are usually suited for quantitative research (Bryman, 2008).

Unstructured interviews are 'constructionist' interviews focussing on the themes emerging from the conversation between the interviewer and the interviewee (Eriksson and Kovalainen, 2015). The questions are often exploratory and emergent based on the interviewer's ideas, allowing the interviewee to respond freely about their experiences and beliefs. Such interviews can often result in the interviewee driving the conversation and the researcher being required to ask a few questions and hardly any prompts (Saunders et al., 2016).

Semi-structured interviews (or focussed interviews) are called subjectivists, combining the advantages of structured and unstructured interviews. The interviewer has a list of themes or questions, and some questions evolve during the interview based on the responses provided by the interviewee (Collis and Hussey, 2013). They are usually done without setting the thoughts of the key informant (Judge et al., 2001). The researcher would never offer any examples or pointers, providing an opportunity to capture the participant's point of view (Cohen and Crabtree, 2006). The interview plan prepared as part of semi-structured interviews also helps the researcher stay focused during the interview session without deviating from the subject (Latif Shabgahi, 2015).

Past studies have shown that interviews could provide an understanding of the participants' world, their views, beliefs and emotions and reveal the significance of interviewee perception (Hove and Anda, 2005; Patton, 2002). In this research, the interviews would allow the



participants to provide in-depth information about the benefits and risks they perceived when using ESNs and how ESN media has influenced or can influence long-term relationships and trust among supply chain participants. Thus, conducting interviews is highly important in this research as it can provide in-depth details on the phenomenon under investigation.

### **3.4.3 Netnographic Observation**

Section 3.3.4.3 provided a detailed examination of netnography as a research method, discussing the different types of netnographic and the various procedures that must be followed to conduct netnographic research.

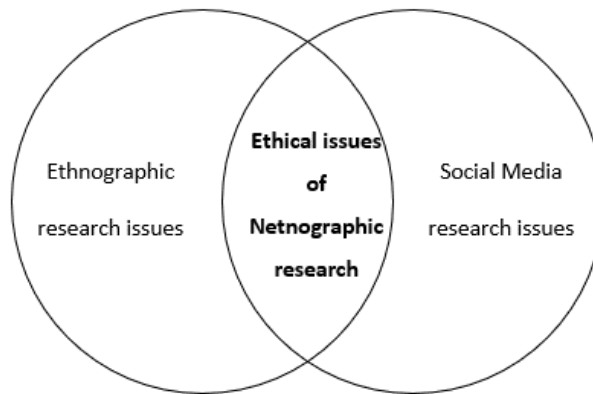
As Kozinets (2015) propose, netnography is a specific set of research practices rooted in participant observation., and the research experience is less intrusive than ethnography as it focuses on observational data. This study has holistically considered the data collection, analysis, research ethics, and representation. A significant amount of data gathered in this research originated through digitally occurring conversations. The conversations happened in the past, and the interactions and experiences manifested are independent of researcher bias. This study used thematic analysis methods based on interpretive approaches, which involve scanning and analysing the data to discover themes (Bryman, 2008) (see sections 3.3.5 and 3.5.3.3).

The previous phases (1 and 2) of this study enabled data triangulation to ensure trustworthiness, one of the principles of netnography (sections 3.3.4.3.3 and 3.3.4.3.4). The design and execution of the netnographic observation in this research are examined in section 3.5.3.

### **3.4.4 Ethical Considerations**

Ethical considerations are crucial in research, and the consequences are double-edged. Conducting ethical research shows the researcher's responsibility and creates research that is influential, valuable, and beneficial to the society targeted by the study (Shumar and Madison, 2013). Greenwood (2016) states that ethical principles allow honesty and protect research against forging and information theft. While ethical considerations are important, they raise the concern that the ethical rules can hinder the researcher's academic freedom, and the data collection can be challenging (Hedgecoe, 2016; Parker, 2007). Ethical discussions can become complicated as no general rules or guidelines apply to all research scenarios (Parker, 2007; Sormanen and Lauk, 2016). Consequently, researchers struggle to find a balance in conducting accurate, valuable, non-exploitative research that respects participant rights (Shumar and Madison, 2013).

Ethics in netnographic research lies between the complex ethical issues of traditional ethnography and social media research, represented in figure 3.7. It gets complicated by the scale and anonymity of online data (Kozinets, 2019). Ethical considerations of netnographic research are examined in section 3.3.4.3.5.



*Figure 3.7: Ethical issues of Netnography*

*Source: (Kozinets, 2019)*

Kozinets (2019) argues that strict adherence to ethical guidelines is a central requirement of the netnographic method. These guidelines include: 1) not to do any activity that might bring harm and disgrace upon the researcher, the work and the institutions, 2) handle the identities of participants with utmost concern and care, 3) always respect the rights of participants and use of good practices for data security, 4) disclosure of researcher's identity, getting informed consent and informing how the project will proceed, and 5) treat the persons behind the data with dignity and handle their data with respect (Kozinets, 2019). While these ethical guidelines may be generally acceptable to qualitative studies, netnographic researchers may not agree with them completely (Anne-Marie et al., 2017). Hence, the researcher needs to identify what is righteous for their research on a case-to-case basis. The major ethical concerns in netnographic research are privacy concerns and informed consent, presented in section 3.3.4.3.5.

From an academic point of view, most universities have their ethical committees, such as the University Research Ethics Committees (URECs) at Aston University, which create ethical guidelines and standards providing governance to the researchers to ensure that ethical standards and rules are observed. This research in social sciences involving human subjects (i.e. interview participants) and social media communication faces ethical issues (Bryman, 2008). The ethical issues of this study are assessed per the 'guidelines on research ethics' by UREC at Aston University (Astonuniversity; Astonuniversity).

### 3.5 The Research Design

As noted in section 0, this research adopts a pragmatic philosophical positionality. This exploratory research uses a qualitative method with data triangulation and an inductive approach (section 3.3.6). The research questions set out in section 2.4.2 are shown in table 3-5, and the research design chosen uses a range of techniques associated with a qualitative methodology. The various methods employed in this study are shown in figure 3.8.

The data collected for this study was intended to provide pertinent information required to address the research questions. As mentioned in section 0, the three phases of data collection and analysis are online questionnaires, focused interviews, and netnographic analysis. Figure 3.9 shows how each data collection phase informed the subsequent data collection and analysis phases.

Table 3-5: Research questions

<p><b>RQ1:</b> Explore the nature of relationships and trust among supply chain participants through enterprise social networks.</p> <p><b>RQ2:</b> What is the nature and extent of information exchange among supply chain participants through enterprise social networks?</p> <p><b>RQ3:</b> What are the antecedents of using enterprise social networks in supply chain management?</p> <p><b>RQ4:</b> What are the consequences of using enterprise social networks in supply chain management?</p>
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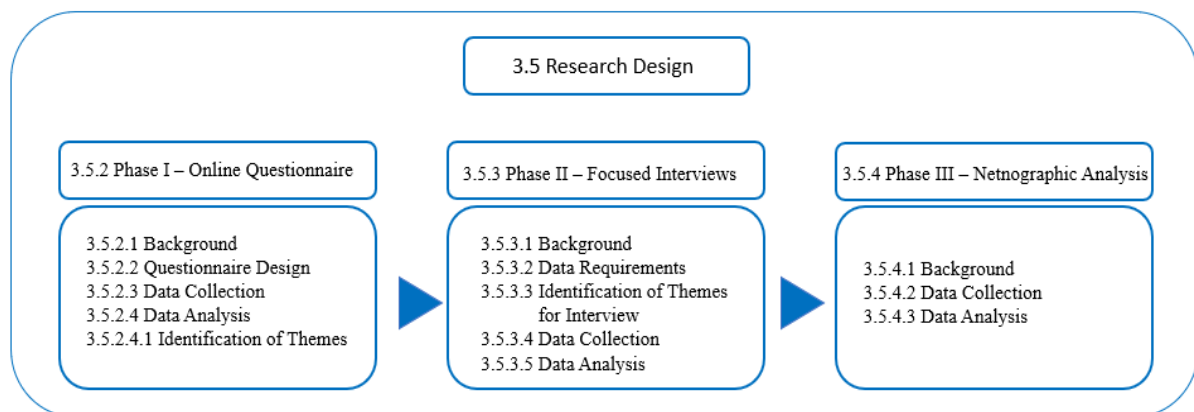


Figure 3.8: Structure of research design section

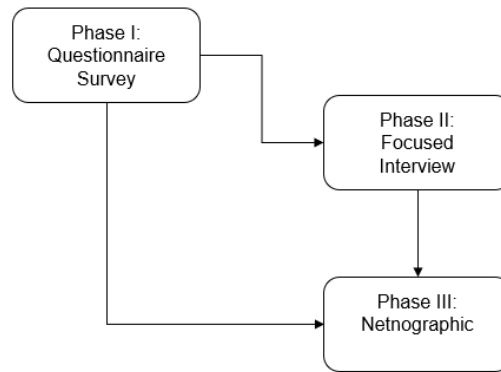


Figure 3.9: Phases informing subsequent data collection phases

### 3.5.1 Phase I: Online Questionnaires

#### 3.5.1.1 Background

As noted in the literature review (section 2.3.3), the supply chain and logistics companies are falling behind in using ESN. The initial informal discussion of the researcher with a few supply chain professionals revealed that they either have a narrow view of ESNs, are aware of public social media only or cannot distinguish electronic data interfaces and ESNs. So, phase one was conducted as a pilot phase to understand the perception of supply chain professionals on using ESNs from an adopter or non-adopter view.

The online questionnaires were devised to solicit responses from experienced supply chain professionals. They were chosen as the research tool for insightful assessment of the phenomena, given that the respondents have the capability to express their views in written words (see section 3.4.1). Considering that the SCM professionals contributing to this study have the necessary skill set to respond, the questionnaire approach was most suitable.

#### 3.5.1.2 Questionnaire Design

The questionnaire design depends on how it is completed and delivered. An open-ended online questionnaire was used in this research with different sets of questionnaires for adopters and non-adopters, with four questions each. The questionnaires shown in table 3-6 for adopters (set 1) and table 3-7 for non-adopters (set 2) aimed to gather responses to describe:

- 1) The purpose of using ESN by supply chain professionals in their professional practice.
- 2) The advantages of using such platforms in SCM.
- 3) The disadvantage of using ESN platforms.
- 4) The barriers to adopting ESN platforms.

Table 3-6: Set 1 - Questionnaire for ESN adopters

Q#	Question	Research Question(s)
1	Which ESN platforms have you used at work for supply chain related communications, and how long have you been using this platform? What is the nature of usage and extent to which the platform is used?	Partially answers RQ2 (antecedents of using ESNs), RQ3 (nature and extent of information exchange) and RQ4 (Consequences of using ESNs)
2	What are the benefits of using this platform in business or stakeholder communication? Relate this to the scenario when the platform was not used.	Partially answers RQ2 (antecedents of using ESNs) and RQ3 (nature and extent of information exchange)
3	What are the platform's limitations (features/functionality)? Please explain the issues and concerns while using this platform and any specific scenario you have encountered.	Partially answers RQ2 (antecedents of using ESNs) and Partially answers RQ4 (Consequences of using ESNs)
4	Do you have any other information to share?	Q4 was asked as a general-purpose question to seek additional information and may not address the RQs.

Table 3-7: Set2 - Questionnaire for non- adopters of ESN

Q#	Question	Research Question(s)
1	Do you plan to use any ESN platforms in future in your organisation for Supply Chain Management communications? If yes, please explain which platforms, the purpose, the time scale and the motivation behind the possible future adoption.	Partially answers RQ2 (antecedents of using ESNs)
2	What are the impediments to adopting the ESN platform in your organisation for Supply Chain Management communications?	Partially answers RQ2 (antecedents of using ESNs) and Partially answers RQ4 (Consequences of using ESNs)
3	If you were to implement a platform like this, what would the pros and cons be?	Partially answers RQ2 (antecedents of using ESNs) and Partially answers RQ4 (Consequences of using ESNs)
4	Do you have any other information to share?	Q4 was asked as a general-purpose question to seek additional information and may not address the RQs.

### 3.5.1.3 Data Collection

#### 3.5.1.3.1 *Choice of Participants*

Purposive sampling was adopted, using the author's judgement to select the participants. The participants are experienced SCM professionals irrespective of the sector in which they work. Participants with at least five years of experience were considered. However, all participants have over ten years of experience. During the selection of participants, the organisation's size was not considered a filter criterion. A relatively small sample of approximately 10 participants was proposed for the questionnaire response, with at least seven adopters and three non-adopters. The small sample chosen mirrors the approach (Lummus et al., 2001) used and provides an opportunity for further in-depth enquiry and validation in the subsequent stages (Crouch and Mckenzie, 2006). Further, in-depth enquiry (focused interview in this research) "generates data which give an authentic insight into people's experiences" (Silverman, 2013).

#### 3.5.1.3.2 *Questionnaire Piloting*

Piloting is testing the questionnaires and revising and refining them iteratively (Edwards, 2010). An initial draft of the questions was reviewed by asking other researchers in a similar field. The revised questions were pre-tested with a non-expert group of research students, family and friends following the pragmatic approach proposed by (Robson, 2002). Colleagues with research experience further reviewed the questionnaires, and the questions were revised based on the valuable feedback received.

A formal pre-test conducted as a small-scale form of the actual data collection reflected the suggestions of Robson (2002). The revised questions were piloted with actual participants, and further follow-up was needed on the responses of piloted participants to seek further clarification. Subsequently, the questionnaires and instructions were amended to fix the gap.

#### 3.5.1.3.3 *Distribution Method*

The questions were distributed through email and web-based mode. The target participants are supply chain management professionals with an email Id and basic computer skills who can provide the responses in English and send them back electronically. The participants were initially contacted to ask if they used ESN in their professional practice. The adopters were sent the 'set 1' questionnaire, and non-adopters were sent the 'set 2' questionnaire. A project information sheet supported the questionnaires to provide the participants with an overview of the study and a consent form.

Participants who preferred the web-based mode were provided with a URL (Microsoft forms were used to prepare the web-based questionnaire) to respond. In this mode, instead of having two sets of questions and asking the participants if they used ESN or not, the ‘branching off’ approach was used (see section 3.4.1). The initial question with a ‘yes’ or ‘no’ response was used to display appropriate questions to adopters and non-adopters based on their responses. The web form included an introduction section with a project information sheet and a consent section for the participants to read and provide consent. This approach encouraged the researcher to keep the number of questions minimum for each type of participant (Hill, 1953).

#### *3.5.1.3.4 Data Collection Process*

Supply chain management professionals from various companies were contacted through LinkedIn and direct email to check their willingness to participate in the study. The choice of participants was based on section 3.5.1.3.1. An invitation to participate in the survey, a participant information sheet (see appendix 1), and a consent form (see appendix 2 for template) were sent via email. The project information sheet and consent for the web-based questionnaire were included in the online form (see 3.5.1.3.3). The participants could proceed to the questionnaire only if they provided consent. Although 26.04% of the contacted individuals responded positively to survey participation, only 10.06% (17 responses) answered the questions, of which 13 were adopters and four were non-adopters. Most of the responses received were in much detail in written text format, while one response was accepted as a voice recording, which was transcribed later.

#### *3.5.1.4 Data Analysis*

A systematic thematic analysis is considered the best approach for this study as it allows the investigator to delve deeper into the data. The thematic analysis enables much flexibility in interpreting the data, including the key informants’ views, ideas or experiences (Braun and Clarke, 2012). Nevertheless, this subjective analysis method highly depends on the researcher’s judgement and should be carefully approached while making choices and explanations (Braun and Clarke, 2006). According to Braun and Clarke (2006), inductive thematic analysis involves coding the data without attempting to fit them into a priori codes or the researcher’s analytic biases”. Given that this phase of the study intends to explore and develop an awareness of ESNs, the inductive approach is adopted to identify the relevant themes from the data. A latent approach is considered while analysing the data, i.e., the analysis



not only focuses on the stated opinions of the key respondents but also looks at uncovering the inherent concepts, assumptions and social context within the texts (Terry et al., 2017).

#### *3.5.1.4.1 Identification of Themes*

Initially, familiarization of data was done by generally looking at the data, reading through the text, and taking preliminary notes to develop a sense of the 'whole'. Next, the 'parts' – phrases or sentences were extracted to produce meaningful 'codes' that describe the data (Miles and Huberman, 1994; Tuckett, 2005). The researcher identified as many potential codes as possible, considering the data surrounding each 'part'. Further, the codes generated through open coding were examined to identify patterns and, subsequently, to identify the themes in which one or more codes were combined. The themes were then compared with data to verify if they accurately represent the data and make improvements to make them more valuable and accurate in an iterative process. Next, the themes were defined to formulate what each theme means to represent the results accurately. The findings of this phase and a summary of themes are detailed in section 4.2.3.

A purely inductive approach was used in this phase, and all codes emerged. It was later reviewed with literature to identify related themes that informed the subsequent phases' design and analysis (figure 3.9).

### **3.5.2 Phase II: Focused Interviews**

#### **3.5.2.1 Background**

Following phase I, focused interviews were carried out to obtain detailed responses from supply chain professionals in an effort to address the research questions. This phase aims to develop insights into the use of ESN platforms in the SCM context based on practitioners' experience.

#### **3.5.2.2 Data Requirements**

The interview questions asked dynamically during the interview were framed from the themes generated based on the data requirements to address the research questions. The 'themes' summarised in table 3-8 were generated from the literature review and outcome of phase I.



*Table 3-8: Themes for the semi-structured interview*

<b>Q#</b>	<b>Themes for Interview</b>	<b>Objective and related RQ</b>
1	Job role, responsibilities, activities and involvement in the logistics and supply chain sector, including management and operations	General purpose question to get an overview of the participant's professional practice in the supply chain sector.
2	The different platforms used. If it is used for internal, external or both	RQ2 and RQ3: To understand the scope and extent of using the platform
3	Motivation to use the platforms	RQ3: Identify antecedents and address RQ3
4	The role of ESN (specifically focusing on the platforms the participant uses) is to establish business contacts, internal and external networks and build relationships.	RQ1 and RQ3: To identify the role of ESN in relationships. This question may reveal antecedents.
5	Business interactions and day-to-day activities before and after using the platforms	RQ2, RQ3 and RQ4: To understand how ESNs have affected various activities in actual practice. This question may provide both positives and negatives and inputs to potentially answer all four RQs depending on each participant's response
6	Role of ESN in achieving shared strategies, goals, or business operations along with stakeholders	RQ1, RQ2, RQ3 and RQ4: To identify the elements of relationships and trust; it may also reveal information sharing and antecedents of ESN usage. It may also reveal the consequences of using ESNs
7	Influence on decision making	RQ1, RQ2 and RQ4: Identify elements of trust and information sharing. It may also reveal the consequences of using ESNs
8	Type of information shared, the comfort level and to whom.	RQ2: Identify the type and extent of Information shared
9	Confidence in sharing information, especially business critical Information. Level of active communication	RQ1 and RQ2: Identify elements of trust and the extent of information sharing.
10	Managing relationships and trust. Has the platform strengthened relationships and trust?	RQ1 and RQ4: To understand participants' views on relationships and trust through ESN. It may also reveal the consequences of using ESNs
11	Any concerns or issues while using the platforms	RQ4: To understand any negative consequences or barriers, if any
12	Any additional information	General purpose question to gather any additional information the participant may want to reveal.

### 3.5.2.3 Data Collection

#### 3.5.2.3.1 *Choice of Participants*

Similar to the previous phase, purposive sampling was adopted, where the researcher made a deliberate choice based on the participant's qualities. It involves identifying capable and knowledgeable individuals about the phenomenon under investigation (Creswell and Clark, 2011). As Bernard (2017) suggested, individuals must be knowledgeable and willing to share information. Considering the research objectives and data requirements (section 3.5.2.2), the criteria chosen in this study were individuals with substantial experience in supply chain management and logistics who are using ESN platforms.

#### 3.5.2.3.2 Data Collection Process

The interview was carried out in three steps. In an introduction, the purpose of the research was explained, and interviewees were asked to describe their jobs briefly, the platforms they used and their communication habits using ESNs. This conversation helped to establish a friendly atmosphere. Further, the participants were asked to detail their experience using the ESN platforms in practice, focussing on the themes identified in section 3.5.2.2. Finally, in conclusion, the participants were asked if they had any other views on using ESN in the supply chain management context not already covered in the interview, followed by a friendly windup of the session.

The participants were interviewed between February 2021 and August 2021. Although 12.43% of the contacted individuals responded positively to being interviewed, only 7.69% (13 responses) were interviewed, of which three were discarded due to insufficient information. Several scholars recommend collecting data until data saturation when the additional data collected generates any new insights (Guest et al., 2006; O'Reilly and Parker, 2013; Saunders et al., 2016). As per Saunders et al. (2016) guidance, the number of interviews suggested is between 4 and 12 for a homogeneous group (in this study, the participants are experienced individuals from the supply chain and logistics sector using ESN, hence homogeneous group) and between 12 and 40 for a heterogeneous group.

All the interviews were conducted online through video calls using Microsoft Teams, Skype or WhatsApp. The interviews were recorded where possible with the interviewee's consent and later transcribed by the researcher (see appendix 6 for a sample transcript). Any further clarification or follow-ups on the interview responses were obtained through emails.

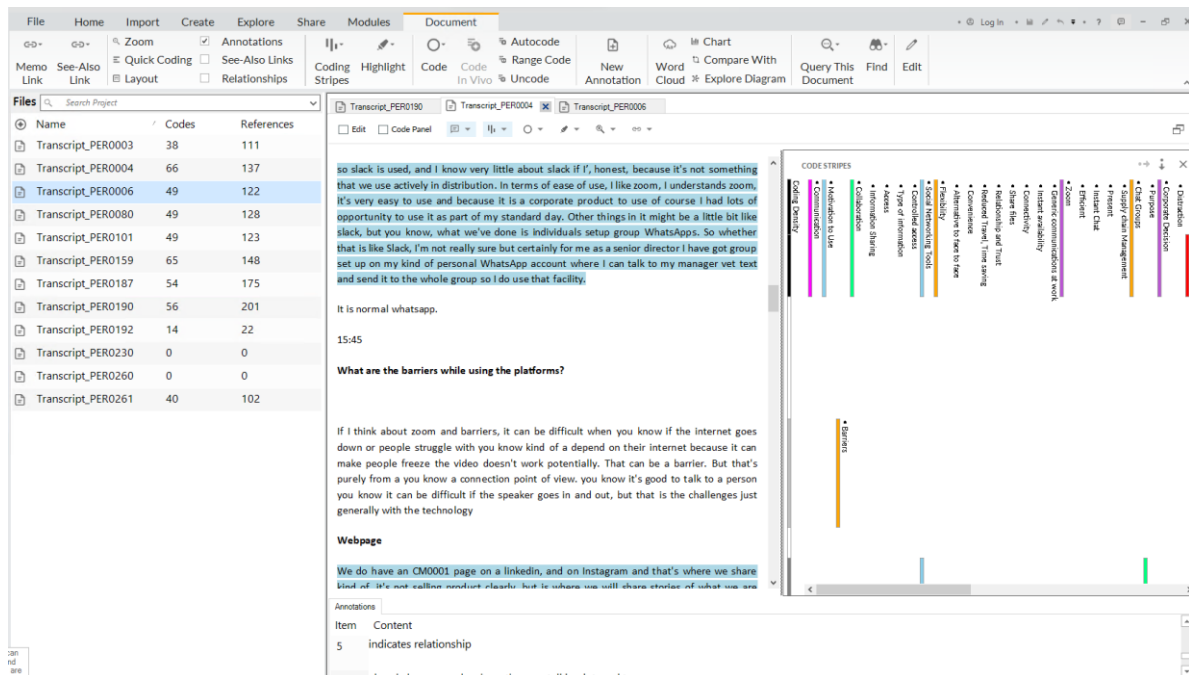
#### 3.5.2.4 Data Analysis

A thematic analysis was adopted to analyse and code the interview responses (see section 3.3.6), and the identification of themes or codes was made through careful data observations (Rice and Ezzy, 1999). Coding allows for capturing the meaning of a text and then building a meaningful conclusion from the data (Lee and Lings, 2008). Initially, each interview transcript was disaggregated into conceptual units and subject to open coding using the NVivo tool (see figure for open coding example), generating the preliminary set of codes called subcategories. Subsequently, the sub-categories were grouped into categories or themes based on the focused coding (Charmaz, 2014) cited in (Saunders et al., 2016).

According to Koch (1994), interpretive research must demonstrate rigour and credibility in the research process. Hence, this study adopts a hybrid approach of both inductive and deductive code generation to use in thematic analysis. The priori codes were generated before the in-depth data analysis based on research questions and literature review, following the approach outlined by (Crabtree, 1999). The inductive coding process involves describing the important text from the data with high-level codes and interpreting and encoding the data to develop themes (Boyatzis, 1998; Miles and Huberman, 1994). In this study, the emergent codes were generated from the previous phase of this research and emerged through the analysis of interview transcripts.

The researcher and supervisor observed the same texts from the data to create codes, which were then compared, and any differences were reconciled to create a consolidated and finalised code list. Further, the researcher independently coded the initial data, and the researcher and supervisor verified the reliability of the coding accomplished.

Table 3-9: NVivo screenshot shows open-coding



In this highly iterative process of thematic analysis, each theme was associated with various related instances within the data (Urquhart et al., 2010). During the process, the principle of constant comparison was followed, systematically comparing each response text with earlier ones to rightly categorise them (Bouty, 2000). Further, the conceptual description was developed based on the categories and detailed analysis of the response texts (Glaser, 1992).

The multi-step and multi-method analysis approach ensured that the data analysed was systematic and rigorous.

### **3.5.3 Phase III: Netnographic Analysis**

#### **3.5.3.1 Background**

As mentioned in section 3.3.6, a systematic and iterative approach was followed in this study's data collection and analysis. According to Lincoln and Guba (1985), the data triangulations ensure the research's validity. Similarly, netnographic principles allow the combination of data collection operations for reliable interpretation (sections 3.3.4.3.3 and 3.3.4.3.4). Following the data triangulation (section 3.3.2.2), the third phase of this study gathers ESN conversations between supply chain practitioners in their professional settings. These conversations generated through computer-mediation communication are observed and analysed to generate insights to answer the research questions.

#### **3.5.3.2 Data Collection**

##### *3.5.3.2.1 Choice of participants*

In this phase, convenience sampling was adopted to choose participants who could provide data generated through ESN conversations. Convenience sampling is a nonprobability or non-random sampling where the target population meets specific, pragmatic criteria such as accessibility, ease of availability, geographical proximity, or the willingness to share information relevant to the purpose of the study (Dörnyei, 2007; Given, 2008). Although convenience sampling can save time and money, the recruited participants may not necessarily reflect the population being studied (Given, 2008).

In this study, the participants of phase II (interview) who acknowledged their extensive use of ESN in professional practice, have access and authority to provide data in their capacity and are willing to give the ESN data have been identified to participate. The convenience sampling of phase 3 is done from a set of participants who fit the criteria of this study in previous phases and reflects the population being studied. Two participants provided consent to provide data for phase 3.

##### *3.5.3.2.2 Data Collection Process*

As Kozinets (2010) proposed, *entrée* is the preparation stage in which the researcher explores and familiarises themselves with the online phenomenon they intend to study. Both phase 3

participants were asked to provide sample data of their ESN conversations for the researcher to familiarise with them. It included the Slack conversation given by Participant 1 and the WhatsApp conversation given by Participant 2. The data was examined manually, analysed, and coded using inductive and deductive codes. The supervisor independently coded the data and compared it with the researcher's analysis to eliminate possible biases.

The researcher gathered a general overview of the ESN platforms, and the data was analysed from the internet. In addition, the researcher collected information such as the participants' organisation profiles from the internet, their roles and responsibility (from the interview) and detailed insights into their use of ESN platforms, which served as synonymous to 'field notes' and 'observation' in the netnographic research.

Following the entrée, further data was collected from the participants. Unlike the researcher scraping data from the public platform, the participants provided the data due to access restrictions. Participant 1 shared 110 conversations from three different groups in Slack that occurred between February 2021 and October 2021. The conversations were provided in a word document without any images or files. However, the placeholder of pictures and files, their names and any URLs used in the conversation were included. Participant 2 provided 47 WhatsApp conversations from two groups, and a one-to-one conversation occurred between March 2021 and October 2021. In addition, both participants provided screenshots of the apps, including images that were shared. All data collection activities commenced after the participants received the project information sheet for phase 3, and informed consent was obtained.

### 3.5.3.3 Data Analysis Considerations

A thematic analysis was carried out to analyse and code. In thematic analysis, the categories must be defined clearly enough so that different researchers using them on the same body of content obtain the same outcomes (Berelson, 1952). It is meant to eliminate any bias during analysis, and only those parts in the content which fit this study are chosen and discussed in detail in this thesis. According to Poole and Folger (1981), the coding scheme is a translation mechanism that organises data into categories and involves systematic, logical and scientific processes and rules of data analysis (Hsieh and Shannon, 2005).

Netnography, an extension of ethnography, follows an iterative approach that requires a detailed description, analysis, and understanding of the data being analysed. So, a detailed

subjective analysis that highly depends on the researcher's judgement is inevitable, and it needs to be carefully handled while making choices and explanations. A blend of symbolic netnography and digital netnography (see section 3.3.4.2) was used because an integrated approach can provide detailed symbolic meanings, logical structures and descriptions of data.

In the analysis process, the researcher manually examined the ESN conversation data collected from the two companies (3.5.3.2.2), breaking them into small conversations for coding. Further, these conversations were coded based on the themes identified in different stages, including the deductively generated codes or *priori* codes developed from the literature review and inductively generated codes or emergent codes from the findings of this study. In generating the emergent codes, the researcher and supervisor reviewed the same content of data to develop codes and then compared them to reconcile any differences to produce a consolidated and refined set of codes. Further, the codes were reduced to eliminate duplication and ensure codes were mutually exclusive and as collectively exhaustive as possible. The researcher used the refined code list to apply codes to the data, which was further reviewed to check the reliability of the coding.

A combination of NVivo and Excel spreadsheets was used for data analysis and coding. Although NVivo was used for initial coding, a more detailed analysis was required for this study to uncover the assumptions and social context within the conversations.

#### **3.5.4 Ethical Process Followed in this Research**

This research underwent an ethical application process with the University Research Ethics Committee. A clear description of the participant recruitment criteria and the data requirements for this study was needed. Several factors were considered and discussed as part of the ethical application process, which helped the researcher reach a consensus on what is righteous for this study. Most ethical considerations were regulated by Aston University's University Research Ethics Regulations and Procedures guidelines.

In the case of ESN data collection, the ethical discussions involved: 1) the type of data collected, 2) how the data will be collected, 3) the public/private nature of social media platform, 4) different ownership scenarios of social media account, 5) the organisation's social media policies and terms and conditions of usage and 6) the level of consent required to gather, analyse and use the data. The ethical considerations for interview data collection included



discussions over the type of information gathered, what the questionnaire intends to address, the recording of interview responses and consent procedures.

Invitation letters, project information sheets (PIS) and consent forms were created for each data collection scenario as part of this process. These documents were to be shared with the participants ahead of time. The PIS detailed the purpose of the research and information on what data will be collected, how it will be used, and the measures taken by the researcher to protect their identity and confidentiality of data, to ensure that the participants are aware of the process and make an informed decision to take part in the study. The participants were made clear that their participation in the study was voluntary, and they may withdraw if they wish to in the future. The consent form contains each consent scenario, which the participant can tick mark before signing the consent. For example, some interview participants may not prefer their conversations to be recorded or may provide consent to use quotes in the thesis directly.

The data collected were transcribed and anonymized for the privacy protection of the participants. The direct identifiers were replaced with pseudonyms/codes or generic descriptors. Indirect identifiers such as employment information, financial information, specific activities, etc., which, when combined with other information, make the participant or organisation identifiable, were redacted so that information is preserved and data privacy is protected. No raw data or confidential or identifiable information can be disclosed or shared during or after the study if a participant expresses a high interest in the research and is involved in discussions or asks about the progress. Any updates or results can be provided as an executive summary only.

As the interviews contain the experiences and viewpoints of the participants, the interview notes and audio recordings may have identifiable information, which needs to be handled carefully to protect the security and privacy of participants. All data collected is held confidential and stored in a secure locker (physical records) in the researcher's office, which can be accessed only by the members of this project. Recordings and digital data collected are saved in a password-protected computer server or cloud storage until they can be destroyed. All interviews and audio recordings will be transcribed, anonymized, and logged against the participants' pseudonyms. Once this is validated, the original raw data (non-anonymized) will be securely destroyed as specified. The anonymized datasets could be shared for the future benefit of the research community.

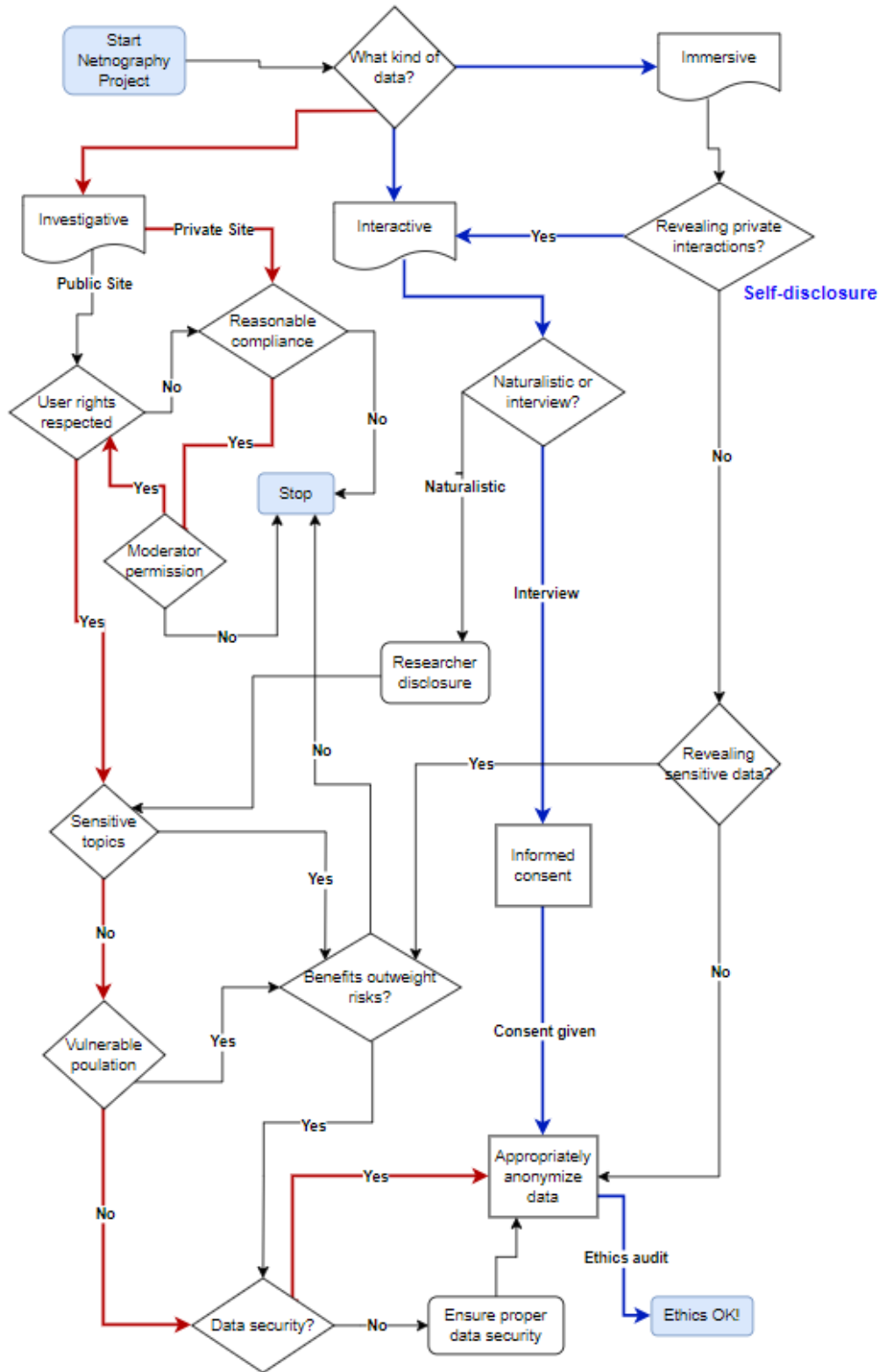


Figure 3.10: Adaptation of Kozinets Flow chart in the case of this research

Individuals may feel obliged by the organisation’s management to participate in the study, though the individual does not wish to do so. The researcher should carefully ensure that 1)



participation is not forced, 2) there is no risk to the individual's position within the organisation because he is not happy to participate, and 3) to avoid any incomplete information given by the individual. For example, the participants can be asked if they are happy to participate in the study; if not, their data can be excluded. During the interviews, the participants may divulge business intelligence or any confidential or controversial information about the organisation. Such information shared by the participant, if known to the management as risky, may threaten the participant's position within the organisation. Any such data should be handled conscientiously to safeguard the confidentiality of data and the interests of the participants.

This research's ethical considerations and outcomes are represented by the red and blue paths in the flowchart by Kozinets (2019), as shown in figure 3.10. This study intends to investigate private sites, and permission was obtained from the participants who represent the organisation. The data security, confidentiality and anonymization that the researcher must follow are indicated in the red path. The interaction with key participants through interviews requires informed consent and data anonymisation, which is indicated in the blue path. The nature of field notes and self-disclosure by the researcher does not intend to capture any sensitive data.

Aston University has guidelines for 'the Safety of Social Researchers' to be followed during fieldwork to record any incidents with the safety officers at Aston University. It includes updating the supervisor on the details of the data collection schedule, like a travel itinerary, appointment schedules, location address, name and contact details of the participant, any changes in the plan or schedule of the fieldwork, and the time entry and exit at the research location.

### **3.6 Chapter Conclusion**

This exploratory study aims to investigate the nature of relationships and trust among supply chain stakeholders through ESNs, the nature and extent of information exchanged and the impact of using ESNs on supply chain management. The chapter provided an overview of the research philosophy, methodology, and methods relevant to this study. Further, the ontological and epistemological position of this research project was discussed. Subsequently, the methods and techniques used in this research were discussed, followed by the design of this research. The research design examined in detail the strategies behind each choice made by the researcher in carrying out data collection and analysis and presenting the results of each phase of this study. The next chapter sets out the findings of each phase of the research.

## Chapter 4 Research Findings

### 4.1 Introduction

Following the methodology and design of this research explained in chapter 3, this chapter details the findings of all phases of this study. Figure 4.1 shows the structure of this chapter. After the introduction, this chapter looks at the first phase of the research conducted to gather the views of supply chain practitioners on Enterprise Social Networks (ESNs) based on a small-scale online questionnaire. Next, this chapter presents the analysis of supply chain practitioners' interview responses and the findings based on the themes that emerged from the analysis. The subsequent section presents a netnographic analysis of the conversations created through the ESNs of two companies. The nature of information exchanged and the presence of relationship and trust displayed in the conversation are examined. Finally, the summary and concluding comments are made in section 4.5. Note that all respondents and their organisations are given pseudo-names. Social media and ESN-related terms such as social media, social platform, ESNs, and collaboration tools may be used in this chapter as the participants used a mix of terminologies in their responses.

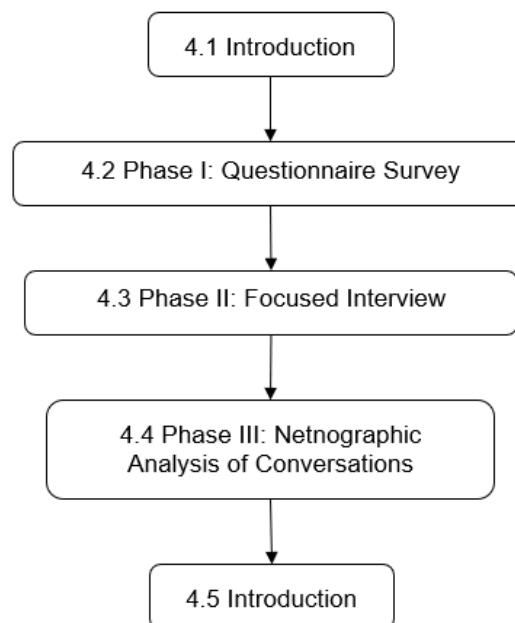


Figure 4.1: Structure of the Chapter

### 4.2 Phase I – Online Questionnaire

This phase of the study, using an online questionnaire, aims to understand how supply chain professionals perceive the adoption and usage of ESN in the context of supply chain

management. The intent is to explore the purpose of ESN usage, as well as the advantages, disadvantages, and barriers to adoption from the adopter’s viewpoint. The study also looks at the non-adopters view (4.2.2) of using such platforms, including the perceived benefits and barriers to adopting these platforms. Among the 17 respondents in this phase, 13 are ESN adopters, and 4 are non-adopters. The subsequent section examines the adopters’ point of view.

#### 4.2.1 Adopter’s View

The questionnaire responses facilitated the identification of various Enterprise Social Networking platforms or applications used by the adopters. The respondents of this study have used one or more platforms. Table 4-1 summarises the platforms identified from the responses and the count of respondents using the tool. It indicates that Microsoft Teams is used the most. The other commonly used platforms include Slack, Yammer, Skype, and custom-built intranet platforms, where Microsoft Teams replaces Skype. An overview of the most used platforms is presented in appendix 4. Table 4-2 summarises the various platforms used by each respondent, as shown against their pseudo names. Findings from the analysis of the questionnaire responses are detailed further.

The responses were coded and analysed using an Excel spreadsheet following the inductive approach (section 3.5.1). Various themes identified from the responses were grouped into sub-categories and then combined to determine the purpose, advantages and disadvantages of ESN usage and barriers to ESN adoption.

*Table 4-1: Summary of platforms used in count*

ESN Platform	Count
G-Suite \ Google apps	2
Wrike	1
Monday	1
Custom App\Intranet Platform	4
Skype	4
SharePoint	2
Yammer	4
Zoom	2
Facebook Workplace	3
Slack	4
WhatsApp	2
Microsoft Teams	8

Table 4-2: Summary platforms used by the respondents of Phase I

	Facebook Workplace	Google Hangout	G-Suite	Intranet	Monday	Microsoft Teams	SharePoint	Skype	Slack	WhatsApp	Wrike	Yammer	Zoom
Liam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Emma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Michelle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alex	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rob	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
John	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Francis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
David	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sean	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Susan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Anya	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### 4.2.1.1 Purpose of ESN Usage

In this section, the themes identified from the data analysis and coding of the responses from each participant that refer to the purpose of using ESN are discussed, and the list of findings is presented.

##### 4.2.1.1.1 Collaboration

All respondents acknowledged that collaboration is the most significant purpose of using ESN platforms. It includes collaborating with internal (intra-organisational) and external (inter-organisational) stakeholders. The internal stakeholders are within the organisation across departments, functions, sites and countries. The external stakeholders are those external to the organisation spread across geographies. Team collaboration is also evident from Adam’s response, where the employees communicate various tasks, updates and issues with team members in different warehouses. Communication happens between teams positioned in different geographies, which indicates cross-boundary collaboration. The collaboration types identified from the questionnaire responses are:

- Internal collaboration
- Team collaboration
- External collaboration
- Cross-boundary collaboration

*Excerpt 4.2.1*

*Liam: We use a mixture of Teams (external preference of most our customers) and Zoom for any internal calls. The nature of the use centres around customer project meetings where there will be multiple participants from various functions/sites attending.*

*Excerpt 4.2.2*

*Adam: Major communications between warehouse and offshore team regarding purchases/orders/deliveries happen through Slack as it's much easier to send updates much easier than through emails. Any delivery issues or new products etc. can be send as photograph or video through Slack. G-suite is mainly used for emails, chats and also screen sharing. Wrike is mainly used for project management work especially based on specific tasks. These platforms are extensively used to communicate between teams who are based in different locations.*

The analysis of responses identified several collaborative activities, including internal conferences, virtual meetings, customer project meetings, video calls, screen sharing, direct messaging, group chats, communication between teams, information sharing, day-to-day conversations, project updates, and time and resource management directly or indirectly. Although none of the respondents explicitly mentioned knowledge transfer or raising organisational awareness, few respondents have agreed that their organisations use these platforms for corporate announcements, service updates, and publishing news of the broader supply chain.

*Excerpt 4.2.3*

*Liam: The nature of the use centres around customer project meetings where there will be multiple participants from various functions/sites attending*

*Excerpt 4.2.4*

*Alex: I am a freelance supply chain specialist who is working continuously with customers that use this platform for meetings, communications, archiving common files, group chats.*

*Excerpt 4.2.5*

*Sean: Type of communication content used is wider organisational announcements, specific geographic content relating to service and generally what's happening around the wider supply chain.*

Even though most ESN platforms allow direct or instant messaging features, external stakeholders are not always allowed to use the instant communication facility due to the organisation's access restrictions, as Sean acknowledged. John mentioned that in their organisation (Ryder Logistics), external stakeholders are allowed instant messaging access on a need basis, which indicates controlled access to external stakeholders.

*Excerpt 4.2.6*

*John: This enables us to get instant coms with our teams across all branches and cuts down on phone and email traffic which is best used to serve our customers. Our customers can also if they need to message us on teams. We allow our customers to message us if they need to.*

*Excerpt 4.2.7*

*Sean: This (tool) is for internal consumption and not shared to the external market place/stakeholders.*

#### 4.2.1.1.2 Information Sharing

Many respondents commented that information sharing is a reason for using these platforms. Document sharing, distribution, and archiving of standard files, as well as day-to-day updates on tasks and operational information, are normally shared, as identified from the responses. The information shared includes details of purchases, customer orders and deliveries, photographs and videos of products and new product launches.

Michelle has highlighted that the history of chats and documents shared are retained in these platforms (Microsoft Teams), which helps to track previous conversations. On a similar note, Francis mentioned that their platform allows messaging, video calling, and data sharing and enables communication through a single platform across the organisation, resulting in the use of this platform for an average of 6 hours daily. Alex stated that “*fast oral and written information exchange between company personnel or business relations*” is a feature of using such platforms.

Anya informed that the ABC supply chain uses intranet social pages and custom-developed applications for collaboration. The primary intention is to share news and updates with various teams, sharing best practices, updates on new business, and achievement stories with the broader organisation. Managers used the chat feature to share the news and updates with their

teams remotely. The respondent acknowledges that “as a business we’ve learned so much about our employees and what’s happening at a site level. We’ve been able to use that as content for news stories, magazine features and even videos”.

*Excerpt 4.2.8*

*Michelle: Teams is use to share documents, group chats, project reminders and video calls.... Easy to share information and documentation.... It keeps track of historical communication and chats.*

*Excerpt 4.2.9*

*Adam: to give update to various tasks/events in Organisation. Major communications between warehouse and offshore team regarding purchases/orders/deliveries happen through Slack as it’s much easier to send updates much easier than through emails. Any delivery issues or new products etc. can be send as photograph or video through Slack.*

*Excerpt 4.2.10*

*Sean: Type of communication content used is wider organisational announcements, specific geographic content relating to service and generally what’s happening around the wider supply chain.*

*Excerpt 4.2.11*

*Francis: The consolidation of messaging, video calling and data sharing into a single secure platform which can interact across organisationally with ease.... Microsoft Teams is used for all video calls/conference calls and workshops for sharing data, information insight and communication within the organisation. This has resulted in me spending on average over 6 hours a day using the platform.*

#### 4.2.1.1.3 Operational: Tasks and Updates

Some respondents use ESN platforms for operations management and detailed tracking of projects and tasks. The respondent, Emma, from a major retail chain in the UK, informed that Slack is used for real-time actions and updates in retail and is primarily used by the store management team as a communication and action tool. Other respondents have mentioned using it for project management, tracking, and keeping up-to-date information.

*Excerpt 4.2.12*

*Mark: Organized communication, updated speed of communication, projects managed and kept up to date.*

*Excerpt 4.2.13*

*Sean: Fantastic for raising levels of engagement across the supply chain, specifically linking engagement to operational performance.*

*Excerpt 4.2.14*

*Adam: We use mainly Slack, G-suite & Wrike etc. for project management and tracking also to give update to various tasks/events in Organisation. Major communications between warehouse and offshore team regarding purchases/orders/deliveries happen through Slack as it's much easier to send updates much easier than through emails. Any delivery issues or new products etc. can be send as photograph or video through Slack.... Wrike is mainly used for project management work especially based on specific tasks.*

*Excerpt 4.2.15*

*Anya: Yammer is used as a cross-divisional tool so that we can collaborate and share best practice with any other colleagues in the group. It's used to different extents in difference divisions and countries. For example, in Germany it is used extensively by the head office functions/teams. In the UK it is used on a limited basis and has never really 'caught on' as a social network tool. As a business we've learned so much about our employees and what's happening at a site level.*

Anya, the respondent from a major logistics company, acknowledges that different divisions of the organisation use Yammer differently. For example, in the UK, the use of Yammer is minimal, and people tend to use SharePoint and Skype for day-to-day actions, while in Germany, it is extensively used by head office and function teams. However, these platforms have enabled management to learn more about the employees and their activities at the site level.

#### *4.2.1.1.4 Support During Covid -19*

The covid-19 pandemic has caused an increase in organisations' use of ESNs. Many respondents have acknowledged that these platforms have played a significant role during covid-19, exhibiting an increased frequency of usage at this time. The restrictions on travel and physical interactions created a strong need for digitally supported communication and remote



collaboration. Professionals consider interactions through ESNs to be an alternative to face-to-face interaction in order to maintain vital connections with internal team members and customers.

Oliver from Pizza Logistics mentioned that ESN is essential in the covid-19 situation and valuable in scenarios when physical interaction is not possible or cost-effective. John used ESN during lockdown to connect with seven of the Ryder Logistics' offices across the UK, and their team used ESN daily during the lockdown. Similarly, Anya's organisation utilised these platforms for employee engagement when many staff members were furloughed. The employees could communicate with the organisation and their colleagues, and managers could share news and updates through ESN platforms.

The covid-19 crisis enabled individuals to explore various functionalities of such tools, increasing their usage. Organisations have realised the cost advantage and time savings achieved by using such platforms. Susan thinks the connection through ESN will remain even after the pandemic because organisations are moving away from going to the office five days a week.

While the use of ESNs such as Microsoft Teams, Zoom, and Slack has increased, the use of some other tools has decreased (yammer, workplace). The increased usage is mainly because of the platforms' features and flexibility, especially the ability to video call, share documents, and integrate with internal digital systems.

*Excerpt 4.2.16*

*Liam: Due to COVID-19, these have increased in frequency. Face to face meetings are difficult to do in current situations but it is vital for our interactions with customers and members of our teams, that we try and maintain some 'face to face' time via Teams or Zoom.*

*Excerpt 4.2.17*

*Oliver: Essential in the current (Covid) climate, valuable going forward for when it's not possible or cost effective to meet physically.*

*Excerpt 4.2.18*

*Alex: The covid19 crisis has accelerated the use and also the deepness of the use (more functionalities) the advantage is that the tool can be used if working at distance*

*Excerpt 4.2.19*

*John: We use Microsoft Teams across all UK offices 7 in total. This has been extremely useful during lockdown and is used daily by all our teams.*

*Excerpt 4.2.20*

*Susan: We have been much more using Whats.App communications this virtual meetings, virtual connections, but still seeing each other with camera ons and rather than yammer. I think this is something that probably what we are saying is we will see a change after the pandemic, people would like to be connected like this. We are not going to the office anymore 5 days a week. So, the home office is there to stay.*

*Excerpt 4.2.21*

*Francis: The environmental restrictions created by the Covid Pandemic, which has created a strong and immediate need for digitally supported remote communication and collaboration.*

*Excerpt 4.2.22*

*Anya: It's been particularly useful during COVID where some colleagues were furloughed. They were able to keep in touch with the company news and their colleagues. Managers used the chat feature to share news with their teams remotely.*

#### *4.2.1.1.5 Cultural Aspect*

Some respondents have mentioned that their organisation started using or accelerated the usage of ESN to support their culture of face-to-face/physical interactions, which was hindered due to the restrictions imposed during the pandemic. Michelle from Nut Logistics said that Microsoft Teams allows the team to be in touch with everyone and is quick, lively and easy to get over the traditional way of communication. In addition, videos allowed them to get a friendly face to create better interactions during calls. It is observed that some of the professionals (Alex from Blaze Consultants) have incorporated the culture of using these platforms to work continuously with their customers for meetings, communications, archiving of standard files, and group chats.

ABC supply chain has invested in building and promoting the online culture, where organisational announcements, news, success stories and best practices are shared through their bespoke content-sharing platform, Social Wall. During critical incidents and disruptions, any information shared through the platform can be picked by anyone who can volunteer to act.

Evidence from Anya's response indicates that these platforms have been used to coordinate resource sharing (example below).

*Excerpt 4.2.23*

*Anya: Examples of best practice*

*Golden Hour Process – if a driver has an accident they need to call a telephone number to report the incident within the first hour so it can be investigated by our safety teams. This is in addition to normal reporting like roadside assistance, insurance etc. A driver reported that he'd had issues with the number, it wasn't a free number to call, and it had taken too long to get a response vehicle he was waiting by the side of the road. As a result of his feedback (he posted it on the Social Wall) we were able to escalate to the team responsible and improve the process so that now the telephone number is free, and also trimmed some red tape out of the process to make the response time quicker.*

*Site Leaders use it to ask for help with resource or trailers – and one time a leader asked for help getting some stock to Europe. Another site was able to offer space on a load that was going over so that we didn't have to pay for a 3<sup>rd</sup> party provider to take the stock for us.*

In addition, the organisation has created an application for employee collaboration, which allows direct messaging and group conversations. Unlike Social Wall, which is not accessible through most handheld devices, this new application can be accessed from desktops, laptops and handheld devices, allowing wider use. In January 2021, over 50% of the employees were registered to the application. The organisation's communication team has continued promoting the abovementioned platforms to bring in a solid online culture.

#### *4.2.1.1.6 Other Observations*

Respondents have revealed that their organisation uses a combination of ESNs for different purposes. For example, Adam mentioned that Exela Services uses Slack, G-suite and Wrike for project management and tracking and Slack for regular communication between workforces in various locations for collaborative outcomes and for sharing documents, images and videos. They use WhatsApp to communicate with the internal team during Slack server downtime and WhatsApp and WeChat to communicate with customers and suppliers. Similarly, other respondents have confirmed that they use multiple platforms. The ones used for internal collaboration may differ from the ones used for external collaboration or information, document and media sharing.

Liam confirms that Microsoft Teams and Zoom had helped them carry out vital interactions with customers and team members when physical interactions were impossible. The respondent

alludes that this format facilitates better personal discussion and supports influencing situations with clients, which requires trust.

*Excerpt 4.2.24*

*Liam: We use a mixture of Teams ( external preference of most our customers ) and Zoom for any internal calls.*

*Excerpt 4.2.25*

*Adam: We use mainly Slack, G-suite & Wrike etc for project management and tracking also to give update to various tasks/events in Organization. Major communications between warehouse and offshore team regarding purchases/orders/deliveries happen through Slack as it's much easier to send updates much easier than through emails.*

*Excerpt 4.2.26*

*Anya: Colleagues instead tend to use SharePoint for project work, Skype for day to day conversations and our internal intranet to keep up to date with news and post comments.*

*Excerpt 4.2.27*

*David: Yammer - Using approx. 4 yrs, Nature of usage: For collaboration and information sharing. Microsoft Teams - Using approx. 6 months, Nature of usage, projects, meetings..... as the main meeting/communication tool in the organisation. Used every day for meetings. Using it more to store and share files.*

Although white-label apps are available for customised and self-branded communication platforms that can be used in the B2B context, none of the respondents used a white-label app. Some participants mentioned that their organisation uses custom-built applications within its private network. Nevertheless, examining white-label apps and the type of enterprise social platform used by the supply chain professionals/organisations is not the scope of this study.

#### 4.2.1.2 Advantages of ESN Usage

This section presents the various advantages of ESNs identified from the adopters' questionnaire responses.

##### 4.2.1.2.1 *Improved Communication*

Based on the responses, ESN facilitates improved communication and enables effective collaboration. Liam acknowledges that using ESN has encouraged more personal discussions

and supported influencing situations with clients. Liam has conducted project meetings with clients from across functions and sites, and the frequency of such communications has increased using ESNs. Michelle says using ESN is faster than traditional calls. She acknowledges that, in the absence of ESN, the communication would have been much slower and less effective with reduced quality of communication.

Similarly, Alex mentions that faster information sharing is possible between persons or businesses. According to him, increased usage of Microsoft Teams in his organisation has enabled more extended periods of communication flow, and without using these platforms, communication would be slow. Instant communication is an advantage of using ESNs, as noted by John. Similarly, Anya also mentions using the chat facility.

Improved communication with stakeholders spread across geography is an advantage. The responses of Susan, Sean, Anya Francis and Liam agree that they can connect remotely with people who are spread across functions/sites/geographies. Sean emphasises that the communication is more cohesive and holistic, inviting participation from a wider geography and demography of the population. He informs that the mobile nature of the platforms has caused communication to reach all levels of employees in the organisation. Francis has mentioned that it allows clear and secure communication.

Anya says that the employees of her organisation were able to keep in touch with the company and colleagues during the pandemic. Managers shared news and updates with their teams remotely, and the management was able to learn more about the employees and the happenings at a site level. Information regarding the broader organisation is shared, which was only possible by using ESN. Employees could ask questions and get responses to their queries. The improved communication caused the sharing of best practices, resulting in improved processes.

*Excerpt 4.2.28*

*Liam: This format facilitate better, more personal discussion and support influencing situations with clients....The nature of the use centres around customer project meetings where there will be multiple participants from various functions/sites attending..... these have increased in frequency.*

*Excerpt 4.2.29*

*Michelle: It is live, quick and easy cutting through the traditional calls.... If we want back to not using this platform, the rate of communication would be far slower and less personal effectively the quality of the communication.*

*Excerpt 4.2.30*

*Alex: Fast oral and written information exchange between company personnel or business relations. More and more people are using this software which makes it easier to use it as meeting platform or to keep a communication flow during a longer periods archived and in a chronological order. If Platform was not used: Slower communication flow.*

*Excerpt 4.2.31*

*John: This enables us to get instant coms with our teams across all branches and cuts down on phone and email traffic which is best used to serve our customers.*

*Excerpt 4.2.32*

*Sean: More cohesive/holistic communication getting to a wide geographic/demographic population, due to the mobile nature of the platform comms are now reaching down to the lowest common denominator in the organisation.*

*Excerpt 4.2.33*

*Susan: I think this is very punctual when we look at a longer term, it makes a lot of sense, it can connect people with different distances.*

*Excerpt 4.2.34*

*Francis: Clear and reliable access to secure communications ... MS Team is very effective at bringing remote individuals together as a team*

*Excerpt 4.2.35*

*Anya: They were able to keep in touch with the company news and their colleagues. Managers used the chat feature to share news with their teams remotely. The Social Wall has been amazing. As a business we've learned so much about our employees and what's happening at a site level. We've been able to use that as content for news stories, magazine features and even videos – something we weren't able to do before. It's really given us a window into what's going on the ground (speaking from a head office perspective). Colleagues have been able to ask questions and get their comments answered. We've even seen examples of best practice/sharing and we've been able to improve processes as a result.*

#### 4.2.1.2.2 Real-Time Collaboration

The responses reveal that ESNs allow individuals to connect with their colleagues and stakeholders to communicate and collaborate through real-time messaging, share and edit documents, evaluate information, and develop enhanced management processes. ESN facilitates instant conversations, enabling real-time collaboration, which is evident from the responses. Real-time collaboration avoids too many emails and potential communication delays, creating effectiveness.

While Alex comments on faster information sharing, Mark highlights the speed of communication and ability to maintain up-to-date project management, which indicates real-time collaboration. John says using the ESN platform has enabled them to communicate instantly with their teams across other branches. It has reduced phone and email traffic, enabling better customer support.

Emma has acknowledged that Click Logistics uses Slack for real-time actions and updates, enabling real-time collaboration. Adam uses the term 'real-time collaboration', saying that it avoids too many emails and any possible communication delays. He notes that important topics are resolved immediately by the team across geographies. Adam uses multiple ESNs, and the cross-platform availability of these apps makes issue resolution instant and real-time. According to him, real-time collaboration and instant issue resolution would have been impossible with the old email and telephone methods, which are not helpful for real-time collaboration or quick resolution. Real-time communication and issue resolution indicate a faster turnaround time, resulting in efficient coordination and reduced transaction costs.

##### *Excerpt 4.2.36*

*Alex: Fast oral and written information exchange between company personnel or business relations.*

##### *Excerpt 4.2.37*

*Mark: Organised communication, updated speed of communication, projects managed and kept up to date.*



*Excerpt 4.2.38*

*John: This enables us to get instant coms with our teams across all branches and cuts down on phone and email traffic which is best used to serve our customers.*

*Excerpt 4.2.39*

*Adam: The main benefits is real time collaboration and communication and avoiding too many emails and possible delays in communications. Important matters are resolved in minutes between teams who are in different countries. More importantly these apps are available in mobile as well, so monitoring issues and resolution is happens almost instant. If these platforms are not used, the old way of email and telephone options which are not helpful in collaboration or quick resolution.*

#### 4.2.1.2.3 Convenience

The cross-platform availability, instant communication capability and several other functionalities of ESN have made it a convenient tool for collaboration. The ability of many ESNs to integrate easily with the organisation's digital systems is advantageous. For example, Francis has mentioned that aligning Microsoft Teams with diary details is a convenient option and helps manage schedules. Also, consolidating multiple functionalities such as direct messaging, video calling, and data sharing into a single platform has enabled Francis to interact much more easily with the wider organisation. Rob thinks it is effortless to use Slack because of its instant messaging feature and wide organisational usage.

Asynchronous communication is another advantage of using ESNs. Even if the other team members are offline, one could communicate over the channel for others to pick up later when they are online. It helps communicate without disturbing others outside of office hours. ESNs keep track of historical communications, allowing individuals to be updated on the happenings that occurred while they were offline at a later time. This feature is helpful, especially when team members work from various time zones. According to Alex, retaining track of past communication and chats allows one to communicate faster without disturbing the person you are communicating with because offline messages are available when they are active again.



*Excerpt 4.2.40*

*Francis: Alignment with diary details so movement through the MS Office environment to MS Team is seamless.... The consolidation of messaging, video calling and data sharing into a single secure platform which can interact across organisationally with ease.*

*Excerpt 4.2.41*

*Alex: advantage is that it keeps track of historical communication and chats and you can fast communicate without disturbing the person you are communicating with. Even offline messages are kept till you are active again. ... easy to share information and documentation. you can communicate individually in a chat (written). assist to meetings with different partners at different locations. the advantage is that the tool can be used if working at distance.... More and more people are using this software which makes it easier to use it as meeting platform or to keep a communication flow during a longer periods archived and in a chronological order.*

*Excerpt 4.2.42*

*Rob: Slack: Easy to use (like a DM) – can be specific to individuals and focussed groups. Widely used within the organisation.*

#### 4.2.1.2.4 Structured Communication

ESNs can be used to organise and structure communication in a sensible manner. Mark comments that he uses Microsoft Teams, Slack, and Monday in his organisation, which allows organised and faster communication, helping project management stay up to date. In agreement with this, Alex says that without ESNs, sharing too much information and documentation via email is less structured, causing additional effort to track and maintain them. Unstructured communication can cause a loss of information. Alex informs that ESNs maintain the communication flow in chronological order. However, the duration of preserving history depends on the configuration of ESN maintained by the organisation.

The responses show that the effective use of ESNs depends on the specific platforms used, the level of understanding of the platform’s functionalities, and the context of usage. The affordances depend highly on how an individual or organisation manage various communication channels within the ESN platform. For example, multiple chat groups with

different participants can be created in Microsoft Teams, each channel for various purposes such as project management, new production discussion and regular task updates.

*Excerpt 4.2.43*

*Mark: Organised communication, updated speed of communication, projects managed and kept up to date.*

*Excerpt 4.2.44*

*Alex: If Platform was not used: Loss of communications or documentations as to be replaced with a lot of email traffic which is less structured and needs a lot more effort to keep all the information tracked and archived....More and more people are using this software which makes it easier to use it as meeting platform or to keep a communication flow during a longer periods archived and in a chronological order.*

#### *4.2.1.2.5 Collective Resources*

The resources gathered using ESN are collective intelligence through information sharing and information repository through retaining the information. Section 4.2.1.1.2 already examined information sharing through ESN. The excerpts of responses displayed below evince information sharing, including documents, media files, data, several information insights, and updates on tasks and projects.

The information shared through ESN by internal and external parties to the organisation, located at various functions, sites, and geographies, provides various insights to help decision-making. ESNs cause people to work together to share information, insights and ideas, which can create enhanced collective intelligence. Similarly, the conversations occurred through ESNs, the information shared, and the files uploaded from various sources are retained in a structured manner in chronological order. It serves as a repository of data, which can create a collective store of information or a shared information repository.

*Excerpt 4.2.45*

*Alex: the covid19 crisis has accelerated the use and also the deepness of the use (more functionalities).... easy to share information and documentation... advantage is that it keeps track of historical communication and chats and you can fast communicate without disturbing the person you are communicating with.... More and more people are using this software which makes it easier to use it as meeting platform or to keep a communication flow during a longer periods archived and in a chronological order.*

*Excerpt 4.2.46*

*Francis: MS Team is used for all video calls/conference calls and workshops for sharing data, information insight and communication within the organisation... Sharing data collaboratively on screen and using the files/folders for storing multiple access data points.*

*Excerpt 4.2.47*

*David: Teams - IT has replaces Skype as the main meeting/communication tool in the organisation. Used every day for meetings. Using it more store and share files.*

*Excerpt 4.2.48*

*Michelle: Teams is use to share documents, group chats, project reminders and video calls*

*Excerpt 4.2.49*

*Adam: Major communications between warehouse and offshore team regarding purchases/orders/deliveries happen through Slack as it's much easier to send updates much easier than through emails. Any delivery issues or new products etc can be send as photograph or video through Slack. G-suite is mainly used for emails, chats and also screen sharing.*

*Excerpt 4.2.50*

*Anya: Within the App there are different features – a news channel, information pages, Social Walls, links to external sites, a chat function and more. They definitely do use it to share work related information within groups.... Then the Social Walls also act as ways to share news within groups. For example we have a group just for 'leaders' in our business and we give them a heads up when to expect emails, remind them about meetings/webinars, promote projects/topics etc. Things like Diversity & Inclusion, Wellbeing, Safety Updates and so.*

#### 4.2.1.2.6 Support During Covid-19

The responses indicate that the covid-19 pandemic has influenced how people work, including remote offices and the use of social networks. During the pandemic, many organisations started using or increased their use of ESN, which was one of the primary means of communication during this period.

Liam and Alex acknowledged the increased usage of these platforms during the pandemic. Susan and her team widely used Microsoft Teams during covid-19, although an additional effort was involved during the initial stages to enable effective communication. Susan states that they have been using WhatsApp for virtual meetings/connections, and the pandemic caused a structured way of implementing Microsoft Teams as a communication channel.

According to Francis, the restrictions imposed during the pandemic created an immediate need for digitally supported collaboration. He reflects that the supply chain would only have sustained the intensity and quality of the response to the pandemic using ESNs, especially Microsoft Teams. Anya points out that ESN was helpful, especially during covid-19 when employees were furloughed. The management could contact the employees regularly and share news and updates using the Connect App and its chat feature.

*Excerpt 4.2.51*

*Liam: The nature of the use centres around customer project meetings where there will be multiple participants from various functions/sites attending. Due to COVID-19, these have increased in frequency.*

*Excerpt 4.2.52*

*Alex: the covid19 crisis has accelerated the use and also the deepness of the use (more functionalities)....*

*Excerpt 4.2.53*

*Susan: It is a good tool because it sends out notes out to people, especially during this pandemic..... I've a team around 4500 people and I made the leaders which is a community around 100 to120 leaders. Every single month, and at the beginning of the pandemic I did it twice a month..... We have been much more using WhatsApp communications this virtual meetings, virtual connections, but still seeing each other with camera on.*

*Excerpt 4.2.54*

*Francis: The environmental restrictions created by the Covid Pandemic, which has created a strong and immediate need for digitally supported remote communication and collaboration...On reflection of the last 11 months, I cannot see how the our supply chain could have sustained the intensity and quality of our response to the Covid Pandemic without using ESN/ESMP's specifically Microsoft Teams.*

*Excerpt 4.2.55*

*Anya: It's been particularly useful during COVID where some colleagues were furloughed. They were able to keep in touch with the company news and their colleagues. Managers used the chat feature to share news with their teams remotely*

*4.2.1.2.7 Reduced Use of Resources*

Michelle acknowledged that the use of ESNs has significantly reduced travel time and costs associated with it. However, other respondents have yet to reflect on this aspect. She says it is

a real benefit to people as it reduces travel and has a positive environmental impact in terms of reduction in carbon footprint.

*Excerpt 4.2.56*

*Michelle: The reduction in travel time, face-to-face meeting due to using ESN is dramatic so there are some real benefit to people and our environmental impact by reducing the need for face-to-face on large businesses.*

#### 4.2.1.3 Disadvantages of ESN Usage

Despite the many advantages and rising popularity of ESNs highlighted by most respondents, there are many disadvantages and limitations while using these platforms, as informed by the respondents.

##### 4.2.1.3.1 *Cultural Issues*

Firstly, from a cultural aspect, individuals have fewer physical interactions with clients and staff and fewer opportunities to meet the wider team and see the facilities. This situation can be interpreted as created due to the pandemic and not due to the use of ESN. ESN has provided the flexibility of a home office and additional means of collaboration at the office. However, many organisations are reducing physical interactions and travel post-pandemic to minimise cost and time, impacting organisational culture. Susan highlights that physical interactions are embedded in their regional culture, and ESNs have provided an alternative way of face-to-face interaction during lockdown; however, she thinks that the online mode of interaction has its limitations and would like to go back to the old way of interaction when the pandemic situation is back to normal.

Alex considers the social pressure to use the camera a disadvantage. During video conferences, the workplace location, especially the home office, and the appearance of an individual in the video (which can depend on the lighting and surroundings) can lead to a judgement by the other party in the call, which can influence their mindset. However, most ESNs provide features to change the background image or blur the background, which mitigates this problem.

*Excerpt 4.2.57*

*Alex: Disadvantages: social pressure to use the camera. Working space location is visible and can lead to a judgement from your colleague or business partner if not corresponding to his expectations also the clothing, your visual presence can have an influence on the mindset of your colleague of business partner.*

#### 4.2.1.3.2 Technology and Access Limitations

Cross-platform compatibility issues, integration issues with internal systems, application downtime, usability shortcomings, and different levels of access restrictions are the limitations identified from the responses. The responses indicate that some organisations are continuously improving to minimise the limitations experienced using these platforms.

On the cross-platform compatibility issue, Emma declared that the intranet platform for actions used by ‘Click Logistics’ could not be accessed on a handheld device. Although Click Logistics uses several ESNs for collaborative working, different service lines use different ESNs. For example, Slack is used in retail for real-time actions and updates but not in the distribution network. Similarly, the intranet page for actions is available only for part of the business. There exists a non-uniformity in the adoption of these platforms across the organisation.

Some organisations enforce access restrictions when using these platforms, preventing their use fully or partially by external stakeholders. Some organisations allow restricted access upon request on a need basis. Francis mentions that although Microsoft Teams provide a convenient way to collaborate with the team, there are limitations due to the non-uniformity in the configuration of different individuals and groups.

*Excerpt 4.2.58*

*Emma: Slack is used in retail but not in the distribution network.... For me it's only available for part of the business, ALS use a web based page for actions that can't be seen on a hand held device.*

*Excerpt 4.2.59*

*Francis: MS Team is very effective at bringing remote individuals together as a team, however there are limitation depending on the configuration of the individuals and groups.*



Anya recognises that one platform they use in ‘ABC Supply Company’ can be accessed only by desktop users with an email address. However, ABC Supply Company developed their bespoke collaboration application that can be used on handheld devices and has better collaboration features. It still has limitations like restrictions on the number of users that can be part of a chat group and its ability to integrate with other organisational digital systems. The organisation suggests using a different intranet application to collaborate with larger and smaller groups.

While ESNs such as Slack and Microsoft Teams can integrate with other internal systems, some ESNs may not integrate well with the internal systems. ABC supply company’s ‘Connect App’ is designed as a standalone application for security reasons and cannot integrate with the organisation’s internal systems, making users maintain information and access in two different places. Nevertheless, the organisation’s management has taken the initiative to resolve this issue and provide a cohesive collaboration system.

*Excerpt 4.2.60*

*Anya: The chat feature has a maximum ‘group’ limit of 118 which means that managers can’t set up chat groups for numbers bigger than this. But to be honest, that’s what the Social Wall is for. We encourage the chat groups to be used for smaller teams....The App also doesn’t currently connect to the internal ABC systems. It’s a standalone App for security and so that we can get non-email users onto the App. So this means for editors we have to load to the App as well as the intranet to maintain data in two places. However, this is being fixed later this year and it will become one system.*

Other usability issues faced by the respondents were identified from the responses. During conference calls, all participants may not be visible due to the screen width limitation, as John highlighted. It can be more challenging if a handheld device is used. Francis raises a similar issue, who adds that having several individuals in a virtual meeting makes it difficult to ensure everyone participates. Susan highlights a different problem, which is the audio quality issue. According to her, the audio quality in Microsoft Teams is poor and impractical using a computer or laptop, while using a mobile application is better.

*Excerpt 4.2.61*

*John: The only issue would be conference calls where there is a limited amount of screens to see the participants*

*Excerpt 4.2.62*

*Susan: One of the things that is not useful is that cannot send audio. Audio in Microsoft Teams is quite poor. You can do it, of course you can but it is quite limited and not very practical to use with a computer, better with a mobile app, but with a computer, it's not that good.*

*Excerpt 4.2.63*

*Francis: When communicating between individuals using collaborative workshop, instant messaging and conference calls with camera's enabled the platform performs very well, however if you have a number of individuals involved in a call with a meeting room full of people it can be very difficult to ensure that everyone remains included.*

Even though many respondents have conveyed several disadvantages and limitations of using these platforms, some have acknowledged that they have never faced any hurdles. For example, Sean from 'Ally Associates' says that he has not experienced any limitations while using 'Workplace' and the custom-built applications accessible within the private network of their organisation. Although these platforms are not configured for external communication, Sean has not acknowledged it as a limitation. The platform's functionalities are sufficient for the purpose Sean uses it for.

Rob acknowledges that Slack has no known limitations, as it appears to be standalone, maintaining its identity. However, he mentions that the platform is not used for sharing attachments. This statement contradicts Adams's comment that Slack is sometimes unavailable, and they use Slack to share documents and media files.

The perception of using ESNs highly depends on the purpose one uses them for and the available functionalities one wants to use, indicating that the affordances of Enterprise Social Networks can vary depending on the context and purpose of usage.

#### 4.2.1.3.3 Distraction

Using ESNs may cause individuals to be distracted from work in several ways. Francis highlights that in large meetings, individuals may feel excluded from the conversation and engage in a side conversation with other members in the forum via instant messaging functionality. It may result in them having a parallel discussion via messaging, which all members in the meeting may not be reading. Francis notes that whilst this is a meeting management etiquette, it easily becomes a barrier to effective communication.

##### *Excerpt 4.2.64*

*Francis: For example, I have been involved in large board room style meetings with 5 people dialled individually from home interacting with 10 people who are in the same room sharing a single access point to the session. It was very easy for the "individual callers" to struggle to get a voice within the group room, this caused: 1) The group room to engage better with each other than with the individuals on the platform, ultimately excluding them and resulting in "side" conversations occurring within the room. 2) The individual callers, due to feeling excluded started to communicate to each other via the instant message functionality which resulted in not all of the group room being able to read the messages. Whilst this is a matter of meeting/workshop management and etiquette, it is very easy using Microsoft Teams in this type of setting to become a barrier to effective communication*

#### 4.2.1.3.4 Security Concerns

Some of the respondents have raised security and confidentiality concerns. Anya says her colleagues think the company might observe their conversations and have security concerns. However, according to Anya, it is just their perception, and it confirms that the platforms they use within the private network are secure and maintain information confidentially. Alex also raises confidentiality concerns and any potential downtime of the platform due to technical issues or a security threat as a weakness of these platforms.

Susan of 'Moon International' emphasises that Yammer is not a confidential tool, and strict rules are maintained while communicating via this platform. Yammer is used to post content related to the supply chain and those beneficial for the community. A consensus exists among Moon International employees that confidential content cannot be shared. The organisation's communications team monitors the platform to guarantee that no information that is not

allowed is shared. However, she acknowledges that they use Microsoft Teams for internal communication and private messaging, including confidential information. They also use this platform to collaborate with external suppliers who use Microsoft Teams in their organisation and as a means of communication for stakeholders who cannot use Microsoft Teams.

*Excerpt 4.2.65*

*Anya: Some colleagues have expressed concerns about the security of the App and whether or not the company is 'spying on them'. It's completely secure and their information confidential so this is just a perception rather than a fault with the system.*

*Excerpt 4.2.66*

*Susan: Of course, we are very much aware that this is not a confidential tool. So, we keep strict rules of using it just to share things that are meaningful for the whole community, not only supply chain. It is used by the whole company, but we are very much aware, and people know that we cannot post a confidential issue, and this is one of the limitations I would point out as a tool. This is something that we need to control also. As every social media but it is not that close to the world. So, we need to be extremely careful on how to use it.... The things that we use in Yammer, so is usually kind of showing good practices, sharing a prize that you have won in something, presenting results of one of the visits, not confidential, never confidential..... Microsoft Teams is used also for communications with suppliers that use the same platform, so the ones that don't use, we usually communicate through other means. But most of them are also using Microsoft Teams too, for their internal communications. So, we used to communicate with them as well this way. And the private chatting mainly on teams.*

*Excerpt 4.2.67*

*Alex: disadvantage – Confidentiality, Dependency, if the platform is not working or hacked that you lose the information that is present*

Although many respondents have raised security issues, these issues may be limited to specific platforms only. Also, the security concern while communicating through ESNs within the organisation's private network could be a perception of the people. Specific platforms are considered secure for confidential communication, and the responses reveal that supply chain

professionals use many platforms for collaboration, information sharing and operational purposes.

#### 4.2.1.3.5 Cost Implications

Among the adopters, only one respondent (Adam) raised concern about cost issues, especially for micro-organisations. Using an unpaid version of the platforms may result in limited functionalities and support. Adam uses multiple platforms for different scenarios. For example, different platforms are used during technical issues with any of the tools or to use certain functionalities that may not be available with some platforms. Similarly, a specific tool may be used to communicate with external stakeholders in a particular region. For example, Adam's company was forced to use WeChat with Chinese suppliers because most ESN platforms were not allowed in that region.

##### *Excerpt 4.2.68*

*Adam: These platforms are costly for Micro organizations also over dependence of any platform is an issue as some time the server might go offline especially this happened with Slack which don't send messages some time. Hence, we have WhatsApp business or Emails help us in backup scenario.*

#### 4.2.1.3.6 Work-Life Balance Issues

The responses indicate that most of these platforms are available on handheld devices. Sometimes, people's obsession with checking their phones and laptops after working hours may lead to people extending their work beyond working hours, impacting their work-life balance. While using these platforms, the availability status of individuals is known, which can heighten people's expectation of faster responses from others irrespective of the time of the day. As Michelle notes, the continuous communication and people's increased expectation of more immediate responses can increase workloads and affect the work-life balance.

##### *Excerpt 4.2.69*

*Michelle: The limitations are that constant communication and expected short time responses can affect people's workloads and heighten expectations. It can also effect work life balance as you become 24/7 available.*

#### 4.2.1.4 Barriers to Wider Adoption

The factors that can adversely impact the wider adoption of ESNs include training issues, lack of understanding, technology adoption challenges, reluctance to change, security concerns, and reliability issues, which were identified from the analysis of the responses.

##### 4.2.1.4.1 *Training and Lack of Understanding*

The additional cost, time and resources involved in ESN adoption can be a potential barrier to its adoption in the organisation. Mark highlights training as a vital issue while the organisation adopts new platforms. David of Argon Nutrition uses Microsoft Teams for meetings but is still learning the system. Argon Nutrition already conducted training on the usage of this tool during its initial rollout, and further training to enable employees to exploit the full functionalities of the tool has been arranged.

###### *Excerpt 4.2.70*

*David: I am relatively new to Teams and I'm still learning the system. The initial roll out and training focused on using Teams as meeting tool. We have follow up training over the coming months to allow the team fully exploit the functionality of teams.*

###### *Excerpt 4.2.71*

*Mark: Training is always a key issue in new platforms and staff are not happy with new changes in platforms.*

Lack of knowledge can be another barrier to the adoption of ESNs. Rob acknowledges that he is new to using Microsoft Teams and lacks knowledge or experience. Rob does not use the platform to share attachments, which is associated with his lack of knowledge and experience in using the platform.

Anya recognises that several of her colleagues are concerned about the confidentiality of shared information and the possibility of the organisation observing their conversations. Being from the communication teams, Anya assures that this is not the case and is just some employees' perception. It can be observed that the employees need to gain an understanding of the confidentiality policies while using the application.

#### *4.2.1.4.2 Technology Adoption and Reluctance to Change*

Reluctance to change is another important barrier to adoption. Mark mentions that employees are not happy with the new changes on the platforms. This hesitation could be associated with training issues. In addition, there is a learning curve which may cause some hindrances. The effort involved in adopting the platform and promoting employees to use the platform can cause significant effort and resources.

Susan highlighted the additional effort involved in enabling her wider team of 4500 employees to use Microsoft Teams more effectively. Yammer, which was already used, was ineffective during the pandemic, and its usage decreased. There was hesitation in using such platforms because people were too busy and saturated being online most of the time. Susan mentions that her company, Moon International, adopted Microsoft Teams, and the activities for enabling employees to use the platform involved creating connection periods where people can talk, creating community leaders within the team and scheduling meetings within the communities for open conversations, which proved to be effective in sharing information. Small and micro-organisations may need more resources to afford such learning and adoption curves, causing a barrier to adoption.

Similarly, Anya mentions the roll-out of their internally built collaboration platform, 'Connect App'. Although the organisation has 500K employees worldwide, in January 2021, only 81K employees registered worldwide, of which 19K users were from the UK base. Although the initiative started in October 2017, the application gained traction only in the early month of 2020, and employees began registering and using it. Anya says the increased interest in using this platform could be due to the covid-19 outbreak. Anya acknowledged that a year later, in January 2021, ABC supply company achieved 50% of platform usage.

#### *4.2.1.4.3 Reliability issues*

The use of ESN heavily depends on internet speed and availability. Any internet downtime or downtime of the ESN platform due to the providers' server issue can cause hindrances in smooth communication. Adam highlights that he has faced server downtime issues while using Slack. He uses alternate options such as WhatsApp business during unforeseen situations to ensure the work is not interrupted. Adam uses multiple ESN platforms in his organisation to create more accessible alternatives. However, organisations adopting single platforms may face work disruptions during downtime. Many small organisations may be unable to afford the cost



implications of adopting multiple platforms. None of the other adopters has informed about such reliability issues that could be a potential barrier to ESN adoption.

*Excerpt 4.2.72*

*Adam: Over dependence of any platform is an issue as some time the server might go offline especially this happened with Slack which don't send messages some time. Hence, we have WhatsApp business or Emails help us in backup scenario.*

#### *4.2.1.4.4 Diminished Usage*

A decline in usage of some platforms after they have been used for a while has been observed. From the questionnaire responses, the drop in usage can be attributed to several factors, such as ESN not having the functionalities to support the perceived purpose of use, the ESN's features not being suitable for the organisation's environment (David's response), cross-platform compatibility issues (being available only on specific devices) or lack sufficient interaction through the platforms as the employees did not feel the absolute need to use some of these platforms. The pandemic caused many organisations to adopt ESNs with several advanced features that enable efficient and effective collaboration, leading to the dwindling usage of specific platforms.

During the pandemic, the adoption of new platforms with better collaborative features and focused objectives is one of the reasons that have caused the diminished usage of some of the platforms, as evidenced by the responses of Susan, Rob, and David. Susan highlights that people are saturated with increased screen time, leading to reduced usage. Finally, Anya, David, and Rob mentioned that specific platforms failed to achieve the perceived benefit, causing the user to experience a downturn.

*Excerpt 4.2.73*

*Susan: People are too busy to browse around this type of social network, during the pandemic especially, people are online most of the time and they are a little bit saturated with this. So, using another platform to communicate it is not being something that is very effective. I think during this pandemic time yammer has gone down a lot. So, what we have been doing is create connection periods with people where we can talk with each other, although virtually but using the platforms, as teams for instance, and Zoom at the beginning, but Zoom is also not confidential at all. So, we are using teams to connect with each other and has this frank and open conversations. This proves to be a lot more effective than exchanging experiences in yammer.*

*Excerpt 4.2.74*

*Anya: Yammer – we've had this at least 6 years. It's a tool that's used globally in the organisation but only desktop users (those with email access) are able to log in and use it. Little benefit realised in the UK & Ireland. It's just not used widely enough for us to have any measurement*

*Excerpt 4.2.75*

*Rob: Have used: Workplace - Used for 3 years as a means of internal communication by the business. Large uptake to start with (novelty of Facebook at work) but lost its appeal through time with little interaction.*

*Excerpt 4.2.76*

*David: Yammer - Using approx. 4 yrs, Nature of usage: For collaboration and information sharing. No benefits. I don't know anybody in the organisation who uses Yammer. Microsoft Teams has replaced Skype as the main meeting/communication tool in the organisation. Use every day for meetings. Using it more store and share files.....None of my team bought into it and the team are mainly based in one location, so there was no need for global co-ordination.*

The subsequent section reviews the non-adopters point of view on ESN adoption.

#### **4.2.2 Non-Adopter's View**

This section describes the non-adopters viewpoint on the advantages and disadvantages of ESN and the barriers to adopting these platforms in their professional practice. It is observed that all

non-adopters, except Oliver, have little or no clue about ESN as a platform for internal collaboration or the benefits that can be achieved by using ESN in their organisation, which can be observed from the details presented in further sections. The pseudo-names of non-adopters are Andrew, Ben, Oliver and Simon.

#### 4.2.2.1 Purpose

The purpose of ESN usage identified from the responses includes virtual meetings during covid-19 climate, collaboration with supply chain stakeholders and employee engagement. Oliver has noted the different types of collaboration, such as internal, external and cross-boundary collaboration. Simon thinks collaborating with external stakeholders is a purpose; however, he does not appreciate what an ESN is and refers to it as a marketplace.

##### *Excerpt 4.2.77*

*Oliver: In clients' business I see the use of Teams / Zoom / Skype almost universally and irrespective of business size to enable virtual meetings. Where companies have to deal with suppliers / customers that are geographically remote this is essential to maintain contact. Beyond this facility to essentially replace conference calls there is significant variation, with larger (more employees) business making use of more ESNs, probably to maintain employee engagement.*

##### *Excerpt 4.2.78*

*Simon: Useful for connecting to new contacts and potential customers. A customer marketplace.*

#### 4.2.2.2 Perceived Advantages

The respondents who are non-adopters of ESN have provided their views on the perceived advantages of using these platforms. According to Oliver, cost-effectiveness, reduced travel time, improved efficiency and effectiveness with reduced idle time are the advantages. Andrew thinks that ESN makes communication smoother. However, these responses indicate they have yet to understand ESN's wider benefits and possibilities, especially in the SCM context.

*Excerpt 4.2.79*

*Oliver: The use of virtual meeting software should reduce / eliminate travel time making employees more efficient / effective with less dead time.*

*Excerpt 4.2.80*

*Andrew: Pros it will make communication faster and smooth*

#### 4.2.2.3 Perceived Disadvantages

Some of the perceived disadvantages of ESNs identified from the responses of non-adopters are listed here. According to Simon, using ESN is time-consuming, and the resources required for its adoption are difficult to identify. He thinks the random nature of the posts and communications could also be time-consuming to interpret. Andrew's point of view is that ESNs may be used for fun, which could impact performance at work. Oliver points out the digital exhaustion caused by people using ESNs as a drawback. It is evident that neither of the aforementioned respondents has much understanding or knowledge of the ESN platforms.

*Excerpt 4.2.81*

*Simon: Time consuming. The random nature of the posts and communications.... Time and understanding how much resource to put into the ESN I guess.*

*Excerpt 4.2.82*

*Andrew: cons some people will use it for fun*

#### 4.2.2.4 Barriers to Adoption

In addition to the disadvantages identified from the non-adopters responses, the barriers identified are listed in this section.

Oliver thinks organisation size is one of the barriers. He believes that for small organisations with limited geographical spread and employee size, ESNs may not be necessary, which is perhaps a misconception.

Another point raised by Oliver is about the return on investments, especially for small and medium-sized organisations. The investment of resources required for ESN can become expensive. Technological advancements have made ESN platforms much more affordable and easier to implement. Nonetheless, the scepticism among the non-adopters is likely due to the need for more understanding of ESNs.

Another issue observed from the response is the hesitation towards change due to a lack of understanding. According to Ben, adopting ESN in his organisation may depend on the scale of operations and client demand. He thinks ESN is unnecessary and unwilling to embrace it, which shows a solid hesitation to change. Simon expressed his need for better clarity on the time and understanding of the resource requirement in implementing ESN platforms in his organisation. Similarly, Andrew expresses his lack of knowledge of ESN and never had the idea of adopting them. He is unsure if using ESNs could add any value to practice. If so, he could consider it. Oliver does not see the existence of a problem that necessitates using ESNs and thinks there needs to be more motivation to use these platforms.

Oliver raises another point about the organisation's digital capabilities and technology readiness to adopt such platforms. He believes that in a less sophisticated organisation, ESN is unnecessary, and he asks if such platforms require too much input and maintenance for their benefits.

Finally, according to Oliver, the culture of retaining physical interaction is a barrier to ESN adoption. He prefers face-to-face interactions in business dealings.

In summary, organisation size, geographic spread, cost and resource affordability, technology readiness, concerns over return on investments, hesitation to change, potential digital exhaustion, lack of understanding, lack of motivation and cultural reasons are the identified barriers from the non-adopters viewpoint.

*Excerpt 4.2.83*

*Oliver: For smaller / less geographically spread / less sophisticated organisations this is less necessary, and it is difficult to see how any cost of implementing ESNs would be paid back given close proximity of employees..... Any cost for smaller / some medium size businesses (where's the payback ?).....A culture that prefers to retain physical interaction....What is the ESN trying to achieve / deliver and can objectives be delivered / achieved more easily. Is some software trying to solve a problem that does not exist ? Does some software require too much input and maintenance for the benefits it provides ?..... Are people "digitally exhausted" ? In some organisations that use, for example, Yammer, several employees in those organisations ignore it completely. If you're used to dealing with social media in your life outside work that probably makes you more receptive to using it in work – but maybe less motivated to use it at work given how much it is used personally?*

*Excerpt 4.2.84*

*Ben: Depends on the scale of operations. If our clients insist that we adopt, we will adopt. We are ourselves not keen at this point.*

*Excerpt 4.2.85*

*Simon: Time and understanding how much resource to put into the ESN I guess.*

### 4.2.3 Summary of Online Questionnaire

Section 4.2 presented the analysis of adopters and non-adopters views on using ESNs. The adopters' view discussed both the pros and cons of using ESNs. The findings reveal that although certain disadvantages and barriers are raised, the respondents use these platforms in their supply chain management profession. Some adopters use them more effectively and extensively for collaboration and operations management. Similarly, the non-adopters have provided their views on the positives and negatives of using ESN, although the latter is minimal. Despite not using these platforms, they have commented on the advantages and disadvantages.

Based on the analysis presented in section 4.2, the primary use of ESN is collaboration and information exchange in the context of supply chain management and operations. However,

the relationship and trust elements were not identified in the responses except for an indication from Liam’s response, where he mentions that using ESNs promoted personal discussions and provided support during influencing situations with clients. The main themes identified from the findings are summarized in table 4-3.

Table 4-3: Summary of Phase I findings: Categories and Themes

Category	Subcategory/ Themes
Purpose	Collaboration Information sharing Operational: tasks and updates Support during covid-19 Cultural aspect
Advantages	Improved communication Real-time collaboration Convenience/ease of use Structured communication Collective resources (Intelligence and memory) Support during covid-19 Reduced use of resources
Disadvantages	Cultural issues Technology limitations Access limitations Distractions Security concerns Cost implications Work management issues
Barriers	Training Lack of understanding Technology adoption curve Reluctance to change Reliability issues Diminished usage. Lack of motivation Digital exhaustion Cultural reasons

The outcome of this phase provided inputs to identify themes for the interview phase design, described in the research methodology chapter. In addition, this phase provided insights that can contribute towards answering research questions RQ3 and RQ4. The following section in this chapter examines the findings from the semi-structured interviews.

### 4.3 Phase II - Interviews

The second phase of the research aims to gain deep insights into supply chain professionals’ use of Enterprise Social Networks in practice. The section describes the findings from each supply chain practitioner’s semi-structured (focussed) interviews, focussing on the relevant themes to answer the research questions. Note that pseudo-names have been used for all



interviewees and their organisations, as listed in table 4-5, to summarise the various platforms used by each respondent, as shown against their pseudo-names.

Table 4-4: Pseudo names of interview participants and company

Pseudo Name	Company Pseudo Name
Graeme	CraftTex manufacturing
Adam	Exela Services
Emma	Click logistics, UK
Michelle	Nut logistics, UK
Chris	Argon nutrition
Richard	ABC Supply Chain
Anya	ABC Supply Chain
Oliver	Pizza logistics, UK
Steven	Parsley Consulting
Kathryn	ABC Supply Chain

Table 4-5: Summary platforms used by the respondents of Phase II

	Zoom	Skype/ Business	Microsoft Teams	WhatsApp/ Business	Slack	Intranet	Yammer	Twist	WeChat	Google Meet	Amazon Chime
PER0003 - Oliver	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0004 - Emma	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0006 - Michelle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0060 - Adam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0101 - Chris	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0159 - Richard	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0187 - Anya	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0190 - Graeme	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PER0230 - Steven	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PER0261 - Kathryn	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 4.3.1 Interview1 - Graeme

Graeme is a supply chain professional with nine years of experience in different manufacturing industries, including textiles, electronics, and home furnishings. The primary responsibility of his current role involves procuring raw materials for the fabric manufacturing company that manufactures finished garments for customers in the UK (90%) and Europe (10%). Although the company has no local customers, most of the suppliers are local. Based on future orders, procurement of raw materials, production, packing and shipping of finished products to the customers is coordinated collaboratively. The organisation uses Microsoft Teams, Email, WhatsApp, Skype, and WeChat for supplier communication and internal collaboration.

#### 4.3.1.1 Interdependence

Graeme has used Microsoft Teams, WhatsApp, and WeChat to seek a variety of information from both internal and external stakeholders. He is part of the WhatsApp groups of several supply chain associations and societies and has used the platforms to find new stakeholders, such as suppliers and freight forwarders, which helped him with the procurement activity in his new company. Any queries raised in the group are responded to by someone or the other, and all are ready to help each other. Graeme is confident that he can depend on the participants of these groups in case of any issues, which shows a strong dependence.

#### 4.3.1.2 Collaboration

Graeme acknowledged using multiple ESN platforms for internal, external and cross-boundary collaboration. He used Microsoft Teams, Skype and WhatsApp to interact with different departments of his company, such as the marketing, accounts, and production teams. Multiple user groups were created on WhatsApp with other teams for various purposes. These groups were used to share information, solve issues, and seek responses and clarifications on various business activities.

##### *Excerpt 4.3.1*

*I am using both, WhatsApp business and normal WhatsApp. I am a supply chain professional. I have to deal with Marketing team. I have to deal with production team. I have to deal with accounts group. So we can meet the group. We can share the information with a common group. We can make common group. Whatever problem comes to us we shared in common platform and get a reply.*

Graeme has used Microsoft Teams and WhatsApp to communicate with customers in the UK and Germany. Even with significant experience in procurement in different sectors, all the suppliers were new in his newly joined company. He utilised the different associations' chat groups to gain better insights and details on suppliers in the sector, which helped him with the procurement activity.

The platform was used to identify freight forwarders and other stakeholders. The amount of collaboration is high by using these WhatsApp groups. With these ESN experiences, Graeme is more confident about working in a changing and challenging work environment and with new stakeholders.

*Excerpt 4.3.2*

*All suppliers are new to me. But I am not afraid anymore. I have WhatsApp groups. Whenever I ask a questions, definitely I get a reply. My previous data also there. It is easier and convenient to me.*

In addition, Graeme has used public social media platforms such as LinkedIn and Facebook to connect with suppliers, verify information and understand people's profiles. However, for business deals, he is involved in private communication through ESNs. Internal, external and cross-boundary collaboration is evidenced in this scenario.

#### 4.3.1.3 Information Sharing

Graeme has used the ESN platforms primarily for procurement activities, and most of the information shared is procurement. Product catalogues, prices, price quotes, negotiations and proforma invoices (PI) were shared through WhatsApp and WeChat. Although these communications were not considered official before the pandemic, ESN was considered an official communication channel due to the pandemic.

He mentioned that the videos of production running statuses shared through WhatsApp provided better visibility and confidence for the organisation to plan its future productions. Similarly, images and videos of products have been shared to finalize the products and establish a deal. Sharing this information with internal departments also happened through one of the ESNs they use.

Information on factory closure and opening times during covid-19, communication with freight forwarders on statuses, delivery schedules, and any contingencies were quickly shared through WhatsApp and WeChat. The ESN platforms have allowed Graeme to engage with stakeholders with increased transparency, resulting in a performance increase.

*Excerpt 4.3.3*

*After confirmation from the user end, then go for final purchase. This video or pictures from supplier's from the market can help other stakeholders also. Thus we can check the right requirement, make engage of maximum people that requires, got involvement of each party, Transparency increased, thus performance increase.*

#### 4.3.1.4 Operational Purpose

Graeme has used all the platforms he uses for operations, including purchasing products and raw materials, for status updates, handling approvals, assigning tasks and tracking closures, and handling several transactions with suppliers and other organisational functions. His response evinces that these platforms are highly used at the operational level.

#### 4.3.1.5 Support During Covid-19

Graeme says that the pandemic has caused increased usage of social media platforms and ESN. Skype was already in use. However, Microsoft Teams was adopted during the pandemic. According to Graeme, Initially, the usage of Microsoft Teams was only 20%, but the use and cross-functional teams started using the platform. Similarly, the use of WhatsApp increased, and HR started using Microsoft Teams and WhatsApp to interview candidates as part of recruitment. Graeme says that Microsoft Teams is used for all urgent internal meetings and meetings with top management.

Due to the travel restrictions, Graeme was forced to use WeChat to communicate with Chinese suppliers as an alternative to travelling to the supplier location. Graeme managed to maintain the raw material stock levels even in adverse situations by using WeChat for timely procurement. Sharing product catalogues, placing orders, and getting them delivered directly to the company warehouse were all managed through this ESN application.

#### *Excerpt 4.3.4*

*We are thinking how our stock will be becoming less in two or three months and what can we do. Then I communicate with them via we chat and they share all their catalogue, management select things and we procure things from China directly to our warehouse in Bangladesh. That is how we managed during pandemic. This is my own experience. With China it is WeChat. Email communication is not okay with China.*

Although ESNs were used before the pandemic to communicate with suppliers, they were considered unofficial, and further email communication was required to make it official. However, Graeme acknowledges that during the pandemic, a change in the mindset of management resulted in the decision to make communication through ESN official. Microsoft Teams gained more importance during this time for internal purposes. For example, the

proforma invoice provided by the supplier through WhatsApp was considered official by both parties.

*Excerpt 4.3.5*

*Now they are convinced and aware that if something comes through WhatsApp it is not just chatter, but official thing. The mindset of people are changing. ...the platforms are getting popular than previous.... System takes some time to accept change. But whenever supplier communicate via WhatsApp or WeChat, or they give the PI, means official document. WhatsApp or WeChat, all these are acceptable by the management.*

*Excerpt 4.3.6*

*previously it was considered as the gossiping or time passing using messaging. But people are, management and other people have considered, all these platforms can be used for official purpose also and they are considered as official. The scenario is changing.*

Graeme says that, during the pandemic, the use of ESNs accelerated in such a way that the usage for business interactions achieved towards the end of 2021 would have been achieved only after five years without the pandemic. It is interesting to note that the organisation considered ESN to be an official communication channel and continued this after the pandemic as well.

#### 4.3.1.6 Improved Communication

Graeme said that using WhatsApp and Microsoft Teams to communicate with internal and external stakeholders makes it much more manageable. The suppliers shared videos of the ongoing production of semi-finished products much easier through WhatsApp, avoiding physically visiting the supplier's manufacturing plant. He mentioned that the live production over video shared by the supplier over calls allowed the company to understand the production statuses and be confident of the availability of the products to plan for making garments.

*Excerpt 4.3.7*

*It helps me to communicate more easily, .... I think I can convey the message*

Graeme thinks all the platforms he uses are communicable and easy to receive responses to. He uses WhatsApp, Skype and Microsoft Teams to communicate with internal stakeholders such as accounts, finance, marketing, production and top management. There have been critical situations where final approval from top management was required before finalising a deal, and the management needed more time to check emails. Instant approval was obtained through WhatsApp during urgent situations, allowing work to be done faster. Graeme asserts that such platforms have made the processes much smoother and quicker, providing a competitive edge.

*Excerpt 4.3.8*

*So works are getting faster. If there is no WhatsApp, Skype, WeChat or teams, then we had to go to office, all the approval process, all the meeting will be delayed. Now this is not happening. Now we are one second away to them. If there is an important meeting, I can remind them by WhatsApp, there is a meeting or sir there is an approval. The process is very very smoother than the previous. All these network gives us the competitive edge, beneficial to the business.*

#### 4.3.1.7 Establishing Relationships

According to Graeme, using ESNs helped establish a good relationship with stakeholders and identify people with common interests. Communicating through ESNs bypasses the organisational hierarchy. He says that people are light-minded, engage in open conversations, and share their thoughts much more quickly, enabling others to act or share their views without distance barriers. It is easier to acknowledge any queries, even if the responses are provided at a later point in time.

*Excerpt 4.3.9*

*Regarding supplier, they are like one second away from me*

#### 4.3.1.8 Trusted Behaviour and Decision Making

The communicable nature of the platforms has made it easy to receive responses to queries. Because other stakeholders are available on these platforms, Graeme is confident they can be reached anytime if he has an issue, increasing his trust. He thinks people's presence in group chats and fast responses make them more reliable.

According to Graeme, video communication or sharing videos creates more trust because of its improved visibility. Before the pandemic, the procurement manager had to physically go to the overseas supplier location to finalise the products and establish a deal. Not physically visiting the supplier factory for procurement was not considered a trusted behaviour by both parties. During the pandemic, mutual trust was established by the use of ESN. Recordings of Zoom video conferences with suppliers and the product videos provided by the suppliers helped to finalise the purchase deals and seek approval from top management, after which a letter of credit was issued. Graeme has done all consultation and procurement using Zoom, WhatsApp, and WeChat, and he assures us that mutual trust has increased in this way.

*Excerpt 4.3.10*

*Video communication of statuses create more trust.*

#### 4.3.1.9 Confidentiality

Graeme is very confident in sharing business-critical information with stakeholders through these platforms. He has not experienced any situation where information has been lost or leaked. He said that, although there was some speculation in the past on the confidentiality issue of these platforms, he believes they are just rumours and there are no security or confidentiality issues.

*Excerpt 4.3.11*

*We are very much confident on the security, we have not faced issue where we passed message with the supplier and the message has not reached, or the message has leaked.... I just want to say, everything goes fine. There is no security issues till now. Sometimes we had that something is coming, WhatsApp is keeping all of our information. But that is all the rumour actually. That is not happened till now. We all are using all these platforms without any security issues. This is 100% feasible.*

#### 4.3.1.10 Shared Objectives

Graeme used the platform to work collaboratively with the supplier to ensure the products and raw materials required for making garments are manufactured in a factory that is certified as per the retailer's (customer) approved standards. Here, sustainability goals are shared objectives of Graeme's company and the customer, achieved using ESN platforms. All the



stakeholders in this supply chain are spread across geography. Figure 4.2 shows the supply chain links of Graeme’s company in both directions. Although Graeme does not directly communicate with the Tier 2 supplier, he could achieve the shared objective through constant WhatsApp communication.

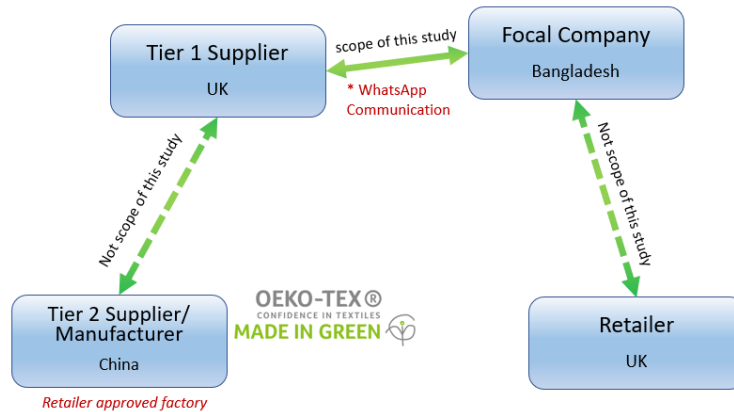


Figure 4.2: Achieving shared objectives

4.3.1.11 Friendliness in Communication

Before the pandemic, when email was considered official, these ESN platforms were highly used to establish connections and informal communication. Graeme informed that when he joined his current organisation, all external stakeholders were new, and he could understand people’s profiles and establish casual conversations before initiating the business deal.

*Excerpt 4.3.12*

*I have to ask how r u? (casual communication), product prices, etc through WhatsApp. But they are not official. I bargain the price, the negotiation happens and closed and the he give me the PI and we open it and receive email.*

4.3.1.12 Achieving Efficiency

Graeme has acknowledged that he achieved efficiency by using various ESN platforms. Transparency in communication has helped improve decision-making in the procurement process. He has used the ESNs, especially WhatsApp, for internal and external stakeholder communications, tracking and updates, a faster approval process and video sharing for visual updates, resulting in improved planning and increased productivity.

#### 4.3.1.13 Culture

According to Graeme, the use of ESNs has become a new normal. Although the organisation used ESNs well before the pandemic, its adoption was slow. Graeme recalls that using ESNs to interact with suppliers, share information, including videos and images, negotiate deals, and seek approval from the manager has become the organisational culture.

##### *Excerpt 4.3.13*

*This is now common habit in manufacturing industry in Bangladesh. WhatsApp group is common, Viber group was common. Teams is very new but WhatsApp, viber and Skype is very popular in Bangladesh. People are very much fond of WhatsApp. Whenever any communication required 80 percent, people are communicating through WhatsApp. If I ask to check the message, they check WhatsApp first.*

The specific platforms Graeme's organisation uses highly depend on the organisation's requirements and the platform the supplier and customers use. For example, Graeme uses WhatsApp with most suppliers and supply chain associations, Microsoft Teams with UK customers, and WeChat and Zoom with suppliers in certain regions. For internal communication, he uses Microsoft Teams, Skype, and WhatsApp.

#### **4.3.2 Interview2 – Adam**

Adam is the senior manager of a micro-organisation in an online retail business that also provides 3PL services to its customers. He coordinates various stakeholders within and outside the company, including the internal team and external stakeholders such as suppliers, logistics companies, service providers and business customers. He oversees various activities in the business, such as operations, marketing and procurement, and focuses on the company's profitable growth and on bringing strategic change to the company.

He uses ESN tools such as Slack, Twist, WhatsApp and WeChat. Previously, he used Zoom and Google Meet, which have been reduced due to the adoption of other collaborative platforms.

##### 4.3.2.1 Collaboration

Adam uses ESN platforms such as Slack, Twist, and WhatsApp to collaborate with the internal team. He has been using WeChat to collaborate with Chinese suppliers as other social platforms

are restricted in China. Slack and WhatsApp are used to communicate with suppliers and service providers in other geographies. Although a lot of supplier communication happens through emails, Adam uses ESN tools for close coordination with highly valued suppliers. Here, internal collaboration, team collaboration, external collaboration and cross-boundary collaboration is evidenced.

*Excerpt 4.3.14*

*For close coordination we use collaboration tools especially with our high value suppliers. With our UK suppliers we use WhatsApp, and with Chinese suppliers we use WeChat and with Indian suppliers we use Slack and WhatsApp.*

#### 4.3.2.2 Information Sharing

Adam says the internal team uses ESN tools to communicate and coordinate the daily operations and logistics. The procurement team uses it to finalise purchase orders. The information shared includes details for finalising purchases, invoices, customer order details, regular updates, delays in any part of the process and shipment statuses. The team shares video files and images to provide better clarity on issues and use the platforms for large file sharing.

*Excerpt 4.3.15*

*Normally Operation team and marketing communicates coordinates the operations & logistics part through these*

*Excerpt 4.3.16*

*For Sourcing team mainly its finalizing purchase orders. To the vendors it's the communication of final purchase orders, or communicating about delays or asking for shipment information etc.*

#### 4.3.2.3 Improved Communication

Adam's response denotes the improved communication achieved by using ESNs. He says the ESN tools are used to get a quick update on important matters and for direct interaction. Although email is used often for focused communication, he says it can be missed in the volume of emails any supplier can get. So, these platforms are used to address important issues much faster with supporting information such as videos or images. Unlike emails, these

platforms provide the convenience of quick communication and the sharing of large media files. Adam acknowledges that sharing media files would have been challenging without these platforms, and an alternative option, such as a photo or video-sharing tool, was required.

*Excerpt 4.3.17*

*We use other tools to get a quick update on important things where these tools offers a direct interaction unless like email where it can missed in the volume of emails of any supplier can get.*

*Excerpt 4.3.18*

*Using these tools few important issues can be addressed very fast with the support of photos/videos etc. Sending large photos and Videos over emails are still not a preferred way.*

#### 4.3.2.4 Relationships and Trust

Adam says communicating through ESNs provides a personal touch in the conversation with suppliers, which is highly important in establishing relationships. He acknowledges that this is true with people who have never met personally. The collaborative tools provide more confidence to the stakeholders located overseas due to the frequent interactions.

*Excerpt 4.3.19*

*It gives a personal touch than through an email or phone which is important to build relationship between the suppliers and also among the people who never met personally.*

*Excerpt 4.3.20*

*These social media collaborative tools give more confidence to suppliers/vendors and also for the teams who working from different countries.*

#### 4.3.2.5 Confidentiality

Adam is not concerned about the security and confidentiality of the information shared. He thinks that it has the same security level as using emails. The added advantage of ESNs is that the information shared accidentally can be deleted, unlike emails.

*Excerpt 4.3.21*

*From security and confidential point of view these tools offers almost same level as that of email. Hence, there is not much concerns.*

*Excerpt 4.3.22*

*We have the option to delete the information we shared in Slack or Twist at a later stage if at all any information is shared accidentally. In email communication once the email is received there are limited option to remove it from the recipient.*

#### 4.3.2.6 Barriers

The barrier highlighted by Adam is the difficulty in organising information due to its continuous flow. For this, he has adopted another platform called Twist, which allows for better organisation of information.

*Excerpt 4.3.23*

*Slack is more like a free flow of information so organizing the data and finding later is a difficult task. Hence we use Twist to address that information.*

#### **4.3.3 Interview3 – Emma**

Emma is one of the three senior directors at Click Logistics, the supply chain branch of a major retail chain in the UK. She has over 19 years of experience in the logistics service sector and has worked in several roles, predominantly in distribution, managing 11 distribution sites in the north of England, Scotland and Northern Ireland. Her previous roles include front-line manager of stock and systems, operations manager, project lead and general manager at Click Logistics. Emma is also responsible for profit and loss, site operations, communication, employee safety, and addressing grievances in her current role.

Emma’s organisation uses Zoom, WhatsApp, Microsoft Teams, shared drive for sharing and storing files, Slack in retail operations, intranet webpages, and a collaborative platform.

#### 4.3.3.1 Collaboration

Emma mentioned that Zoom, WhatsApp, and Microsoft Teams are used for internal communication and collaboration in her organisation, as well as sites across the UK. They use shared drives that integrate with Microsoft Teams for sharing and storing files. In addition, there is a collaborative intranet social platform for employees to engage. Although Slack is used in the organisation, it is predominantly in the retail sector and not the distribution network.

Microsoft Teams is used for meetings with people external to the organisations, although it is less frequent. During the covid-19 outbreak, Emma collaborated with Public Health England to provide vaccination sites and used WhatsApp groups to communicate with managers.

The intranet platform is used for general updates and daily actions, communicating companywide changes that need to be actioned by managers and updating the completion status of tasks. She thinks Slack works similarly in retail, where managers update daily actions. Internal, team and cross-boundary collaboration using ESN platforms are commonly observed, and a small amount of external collaboration is required.

##### *Excerpt 4.3.24*

*Yes, it does, yes, you can chat to anybody, so you can be online like this, but I can also be in a chat conversation with anybody as long as they see it. And So, what I do with Zoom is, I have it on my phone as well as a remote app, so if I'm not logged on here it automatically jumps onto my phone, so when people runs Zoom they can whether you, there is a round green dot your own like a desktop such as this, but when this is logged off of my laptop it'll look like a mobile sign so people will know I can still send a text if they are on a laptop by Zoom and actually I will text through to my phone.*

#### 4.3.3.2 Information Sharing

Emma uses Microsoft Teams predominantly for information sharing, including sharing files. Information such as training schedules, regular manager communications, daily actions and updates relating to supply chain functions, other organisation-wide communications, and operations-related information is shared. Files shared include business presentations, training and learning resources, and policy documents.

#### 4.3.3.3 Cross Platform Compatibility

Emma says the chat facility and cross-platform availability of Zoom allowed direct messaging, which has helped her to converse with anyone at any time, even when she is in meetings. The platform shows the appropriate availability status when she is logged on to the handheld device. All these platforms are available on handheld devices (cross-platform compatible) and convenient to use.

#### 4.3.3.4 Corporate Decision

Emma acknowledged that the main reason for using these platforms is because the corporate team decided to implement them for intra-organisational collaboration. It included using Zoom for meetings, Microsoft Teams for file sharing and external communication, and Slack for retail.

##### *Excerpt 4.3.25*

*It is a corporate decision. So, our corporate decision with conferencing is, you know kind of, I create an email now it'll give me an opportunity to create a video conference and it's more corporate position decision to use Zoom as the conferencing facility.*

The access to the various functionalities of the intranet application is controlled by access. The organisation decides which role has what access, and Emma said she has the most access compared to most of her colleagues. Microsoft Teams was adopted in the organisation during the pandemic, and its ability to integrate with other systems in the organisation is very convenient. Colleagues are increasingly using teams.

#### 4.3.3.5 Operational Purpose

Emma has used different ESN platforms to communicate daily actions and get status updates, and other functions in her organisation use them for operational purposes. For example, Slack is used in retail operations. The intranet platform is used to post actions that managers pick and acknowledge completion. For instance, during the Christmas opening time, the management wants to ensure that the distribution sites are closed on time, ensuring safety during closure. The site managers were informed through the intranet platform to ensure everything was done right before they left.



*Excerpt 4.3.26*

*there isn't on the Click logistics format but it is a daily action and you know it is a daily task for a general manager to complete it, that he goes on and checks out any daily actions and actions them.*

#### 4.3.3.6 Support During Covid

Emma's organisation implemented Microsoft Teams during covid-19 for internal collaboration during the lockdown. She talked about using Zoom and Microsoft Teams as tools for focused communication during the lockdown, and she thinks these platforms are a blessing while remote working continues.

*Excerpt 4.3.27*

*To be fair, and especially in lockdown the biggest communication tool that we have used is Zoom, we do have teams, but we use teams more to share information*

*Excerpt 4.3.28*

*I have to say it's been just a godsend while we're in this remote working.*

#### 4.3.3.7 Improved Communication

Emma mentioned that she used the chat facility of Zoom for direct messaging, which has helped her to make conversations with anyone at any time. The availability of these platforms on handheld devices has made them easier to use, making the status of a person visible if they have logged in from a mobile device or computer. She thinks that communication has improved and is much easier now. She acknowledged that a better understanding of ESN has made her communication more effortless, and she uses it regularly. Emma uses WhatsApp groups to communicate with managers via text.

*Excerpt 4.3.29*

*I understands Zoom, it's very easy to use and because it is a corporate product to use of course I had lots of opportunity to use it as part of my standard day.*

*Excerpt 4.3.30*

*certainly for me as a senior director I have got group set up on my kind of personal WhatsApp account where I can talk to my manager via text and send it to the whole group so I do use that facility.*

Emma mentioned that the asynchronous communication feature of ESNs has enabled her to contact colleagues irrespective of their online status (status showing green, red or amber). Even if they are busy showing a red status, she has communicated so they can respond once they are available. Whilst on a video call, she has been able to message other colleagues, allowing her to multitask. She also mentioned that using ESN probably made no difference compared to doing her work face-to-face. Instead, it has provided advantages by saving travel time and is convenient.

*Excerpt 4.3.31*

*Using these tools that allowed me to, be more present. So, as an example right now and again it's the covid world, you know a lot of my work's been done from home so I kind of get up at eight o'clock in the morning then be down here and logged on where as outside of covid probably four days out of five I'd be travelling from say seven AM in the morning till maybe nine o'clock to get into you know one of my sites.*

#### 4.3.3.8 Establishing Relationships

Emma acknowledges that using ESN platforms has improved relationships and made communications more accessible.

*Excerpt 4.3.32*

*I think it's improved it and it's made communication much easier.*

#### 4.3.3.9 Decision Making

Emma believes there has been no change in her decision-making due to the use of ESNs. Nevertheless, she acknowledges that these tools have allowed her to be more present. Emma has faced influencing situations while in a group call. Colleagues have used chat facilities for private messaging to ask specific questions, provide suggestions, and remind you of things you tend to forget in the meetings. Such a situation provides information support and may have influenced the situation. Although she says that there is no difference in decision-making, there is possibly some influence that is not explicitly mentioned.

#### 4.3.3.10 Collective Resources

Emma noted that Microsoft Teams and shared drives are used to store and share files that team members can access based on permissions, and they serve as information stores. The intranet portal has several sections that help the employees with all sorts of information related to work, policies, and safety, which is persistent.

##### *Excerpt 4.3.33*

*so there is teams and we have our own shared drives and that we use on our services, so multiple people can access, you know, certainly communications sales presentations etc*

#### 4.3.3.11 Confidentiality

Emma agrees that she has not shared confidential or critical information through any ESN platform she has used. She thinks that other colleagues may be using Microsoft Teams much more than she uses, and usage is role-based, depending on their activities. However, she considers Microsoft Teams reliable because the shared document can be restricted with access, and she feels comfortable sharing the information.

##### *Excerpt 4.3.34*

*I think it's very reliable because you can document you can assign who can see it's not just out there for everyone to see. So, you can critique you know the users that can access it. So, I'm quite comfortable with who can see and what's on there, supposed to be my point view.*

#### 4.3.3.12 Sustainability Aspects

Emma says that ESN is a viable solution and will change the face of communication and office work. She has learned to use these platforms to operate between locations without needing to travel. Emma acknowledges that from a sustainability angle, it takes miles off the road due to reduced travel and saves time.

##### *Excerpt 4.3.35*

*I think this is been a viable solution and I do think you know it will change the face of communication or office working.*

##### *Excerpt 4.3.36*

*if we think about our sustainability, taking miles off the road and all of that, I think we've all learned a lot because of covid and using technology like this so that I think is the first thing.*

##### *Excerpt 4.3.37*

*so using tools such as these has really saved more time because I've been able to work from home and actually where I've been having, when you call it downtime, but wasted time not being productive in my job because of driving much beyond available on the laptop.*

#### 4.3.3.13 Culture

Emma's organisation uses multiple platforms for different purposes. Although these platforms were adopted during the pandemic, Emma and her colleagues continue to use Microsoft Teams for collaboration due to the various benefits achieved by using them. Using these platforms has created an online collaborative culture in the organisation. Similarly, in retail, people use Slack to coordinate tasks and actions. ESNs and working home offices are now embedded into the work culture.

#### 4.3.3.14 Barriers

Emma says that she understands Zoom, but due to her lack of understanding of Slack, she hesitates to use the platform, although it is adopted in the retail function of the organisation.

Another issue she has mentioned is any downtime on the internet, which can make communication difficult and a technological challenge.

*Excerpt 4.3.38*

*it can be difficult when you know if the internet goes down or people struggle with you know kind of a depend on their internet because it can make people freeze the video doesn't work potentially. That can be a barrier. But that's purely from a you know a connection point of view. you know it's good to talk to a person you know it can be difficult if the speaker goes in and out, but that is the challenges just generally with the technology.*

One more issue pointed out by Emma is the time taken for adaptation. Initially, Zoom was used in the organisation, and when Microsoft Teams was introduced, it took more than six months for more colleagues to adopt it. Emma's activity on Microsoft Teams was very low as she was very used to Zoom. There is a reluctance to change.

Emma highlights some disadvantages of using ESNs as they are intrusive and expect one's availability round the clock because they are very contactable. Sometimes, these platforms can be a distraction. Emma pointed out that, for instance, during a training course, an urgent task popping up through Microsoft Teams can be challenging, and they may need to fix that urgently, causing a distraction to the training.

*Excerpt 4.3.39*

*Yeah it comes with the disadvantages so maybe it's too intrusive.*

*Excerpt 4.3.40*

*Yeah it goes back to that your available twenty-four seven.*

The barriers identified are lack of understanding, technological issues, reluctance to change and work-life balance.

#### **4.3.4 Interview4 – Michelle**

Michelle is a contract manager at Nut Logistics, a 3PL company operating all over the UK. She has over nine years of experience in the supply chain and logistics sector. In her current role, she is responsible for the transport network, managing distribution on behalf of the customers.

Michelle mentioned that Microsoft Teams, WhatsApp Business, Yammer and intranet platforms are used in her organisation for collaboration.

#### 4.3.4.1 Collaboration

Michelle says she uses Microsoft Teams to communicate with customers and internal team members through chat and video conferencing. Yammer and WhatsApp Business are also used internally. There are several groups on Yammer for various purposes. For example, Michelle is part of diversity campaigns around women in logistics and uses the Yammer group a lot. The organisation has its internal web platform to post internal and external announcements. However, she says it is outdated, non-user friendly, and seldom used.

Michelle's response evinces internal, team and external collaboration. The organisation is located across the UK, and customers are placed in different locations. Collaboration between various sites or locations happens, so cross-boundary collaboration exists.

##### *Excerpt 4.3.41*

*so in terms of talking to the customer we also use teams.*

##### *Excerpt 4.3.42*

*so we now can access external people on our team so I can message people have teams meetings use with people external to people from customer.*

##### *Excerpt 4.3.43*

*Other one that we use is I think it's called yammer where we put in things that we got different cohorts, for example I'm part of our diversity campaign so we've got a lot around females in logistics so we use a lot for that.*

##### *Excerpt 4.3.44*

*We have our own little group on that but really I would say internally we tend to use teams or WhatsApp groups is mainly what we tends to use.*

#### 4.3.4.2 Cross Platform Compatibility

Michelle says she can use the ESN platforms on her phone and laptop, which makes it accessible anywhere, which is a great feature. However, she raises safety concerns about confidential information being shared through the platform, which will be presented in the ‘barriers’ section (4.3.4.18).

##### *Excerpt 4.3.45*

*I would say Microsoft Teams, I can get it on my personal phone, my work phone, I can get it on any laptop I go to, So I can access it anywhere which is great, but in terms of management information or the sharing information it also means that you know if I was a company I can access all of that information without even doing any remote login.*

#### 4.3.4.3 Corporate Decision

Adopting ESNs at Nut Logistics was a corporate decision, especially regarding the intranet social pages, Yammer, and Microsoft Teams. Michelle highlighted that only those with an organisational email Id could access Yammer and intranet platforms. Yammer has restricted access to groups; for example, only selected members have access to the women in the logistics group.

##### *Excerpt 4.3.46*

*but there's certain groups that are restricted so, for example the female one I talk about is it is only a select few in there so no one else can come in unless we allow them access.*

The organisation has full ownership of the data and is responsible for archiving all information upon closure of the project. The company does not have any specific policies on using these platforms. However, there are guidelines on not disclosing confidential data on social media or sharing information that could disrepute the company.



*Excerpt 4.3.47*

*I think what usually tends to happen is that projects file will stay open for probably appeared of time after go live and then it will eventually just get closed and that information usually gets archived from the change management team.*

*Excerpt 4.3.48*

*We have one like code of conduct policy that loosely references what you shouldn't disclose, confidential things on social media but it is probably only a couple of sentences we don't have a policy in its own right and I think the only thing we've got in our terms and conditions just don't bring the company into disrepute*

4.3.4.4 Operational Purpose

Michelle uses Microsoft Teams predominantly for project management and actioning business deals. Given her role, she is not involved in transaction-level activities.

4.3.4.5 Support During Covid

Michelle mentions that they got into teams with covid. Before covid, she mostly did face-to-face interactions and Skype occasionally. The pandemic has accelerated the use of Microsoft Teams, which is easier to use and integrated into other internal systems such as calendars. Michelle says the platform made it convenient for people so they did not need to travel.

*Excerpt 4.3.49*

*we got into teams with Covid*

*Excerpt 4.3.50*

*So people can dial in so it's kind of making it okay for people not to travel in the pandemic*

4.3.4.6 Information Sharing

Michelle says she uses Microsoft Teams mainly for project work to share files and for collaborative editing of documents and version control. For example, with one of the customer's new distribution centres, all information was available in the Microsoft Teams project group.

*Excerpt 4.3.51*

*So in terms of a project we've got a shared group on teams and then we've also got all of the shared files on teams so you've got instant access to the whole team*

The shared information includes files such as the design parameter document, new bid for businesses, and solution document, which contains the commercials, contract links, operational solutions, and invoices.

#### 4.3.4.7 Improved Communication

Michelle acknowledges that people use instant chat to communicate where an urgent response is expected. She thinks email communication is less urgent, as people may not check emails often. People use teams for meetings or instant chats because they are quick and provide statuses. For example, it indicates if someone has read the message, making one aware that the other person sees it. Also, Michelle admits that there is a perception that if a request is sent over via Microsoft Teams, it is urgent. Using ESNs makes communication much faster and more convenient.

*Excerpt 4.3.52*

*I think a lot of people use teams so like instant chat instead of emails because people get drowned in emails and there's a less you know there's a less of an urgency.*

*Excerpt 4.3.53*

*I think if someone's sending an email you're expecting a reply in two three hours now most people are in meetings or calls so people don't check their emails regularly.*

*Excerpt 4.3.54*

*So I think the main reason people use teams either to call or for like an instant message is because it's quick. You can see when someone reads it so you know that they at least been informed if you didn't want a response.*

Microsoft Teams is used for sharing project-related files instantly accessible by the project team and for collaborative editing and better version control. She says that in the past, this was

done through emails, where people updated the document and resent it, resulting in several emails and complexities with version control.

*Excerpt 4.3.55*

*So I would say actually teams is really changed the way that we operate. So in terms of a project we've got a shared group on teams and then we've also got all of the shared files on teams. So you've got instant access to the whole team, you can message and any documents throughout a call to the whole group, which we do a lot, and we also all have access to shared files instantly which is in part of that team's group.*

*Excerpt 4.3.56*

*Before that we used send countless emails with various different versions like version control was a nightmare because you know every time someone updated it sent out to another group so if you match the project plan we probably had in a standard project out about fifty emails a project plans where everyone's updating and resending it.*

*Excerpt 4.3.57*

*Now it's here's the live link, it's on your team's files, go and do it. So I think version control and access is a lot better now it's on teams.*

The instant chat facility with customers has made them much more accessible, making work more manageable with the free flow of information.

*Excerpt 4.3.58*

*So I can instant message an external customer or my team's chat so it just makes you a lot more accessible.*

*Excerpt 4.3.59*

*So it just makes work a lot quicker and it just has a more of a free flow*

#### 4.3.4.8 Establishing Relationships

Michelle says people can make more contact with each other using these platforms because they have more time. The instant messages make the conversations more personable, and she thinks these conversations and prompt information sharing have built many relationships. Further, these platforms helped to bridge gaps between the company's traditional systems and its customers. A lot of Michelle's role involves developing relationships and improving productivity. She highlights that using ESNs has provided better availability and accessibility to external stakeholders, making work quicker with the free flow of information.

##### *Excerpt 4.3.60*

*By using these platforms and especially Microsoft Teams, it's brought in video calling. A lot of people got video cameras and making more contact within the group because people have more time.*

##### *Excerpt 4.3.61*

*I think having something where you can instant message people and goes a long way to being a lot more personable.*

##### *Excerpt 4.3.62*

*So someone says that I'll send that document straight away, they can send it on the group forum of teams. So I think that's built a lot of relationships, built a lot of productivity.*

##### *Excerpt 4.3.63*

*It bridges the gap, so for example like a simple things is we use outlook and customer used Gmail, so there's always a natural clash of systems which the Microsoft team system, it bridges the gap.*

##### *Excerpt 4.3.64*

*So it just makes you a lot more accessible. It makes your lot more available you can see when people are active and not active. so you can choose to call them at the appropriate time so it just makes work a lot quicker and it just has a more of a free flow*

#### 4.3.4.9 Shared Objectives

Michelle says she has used the platform to work with customers and wider stakeholders on the shared objective of diversity goals. It ensures a diverse workforce and promotes women in the logistics workplace. Michelle acknowledges that multiple teams, including her organisation, customers, and broader stakeholders, worked collaboratively in the campaign, showcasing both the company and the customer as diversity champions.

##### *Excerpt 4.3.65*

*So I would say the best example is probably so both customer and the company and the wider stakeholders wanted to do a diversity goal to make sure we had a diverse work force.*

#### 4.3.4.10 Trusted Behaviour

Michelle says using ESN platforms has built trust because people interact directly on teams, and more communication occurs, which is more amiable and informal than sending an email or escalating an issue. According to Michelle, the increased conversation, which is personable, builds trust.

##### *Excerpt 4.3.66*

*I think it has built trust in the sense of I think instead of people sending emails highlighting or escalating things people go direct people on teams before it becomes something you need to report so there's a lot more communication trust through that and I think it's it helps build it on teams because it's much more personable.*

#### 4.3.4.11 Decision Making

Michelle says that the interactions through Microsoft Teams have helped her in decision-making. When urgent approval is required, or urgent work needs to be done, ESN interactions have made them much faster, enabling quicker decision-making. She thinks there is a consensus that if someone approaches you over Microsoft Teams instant messaging, it needs to be looked at urgently, whereas email responses may be delayed. In addition, the availability of prompt information allows for better decision-making.

*Excerpt 4.3.67*

*I think it helps so if I need it so there's almost like an unwritten understanding if you need something done now you call someone or message them on team if it can wait to the end of the day and it's not so urgent you put it on email so it's almost like a different priority list.*

*Excerpt 4.3.68*

*So for example someone messaged me on teams I will instantly look at it regardless if I'm in a meeting or not and whether emails people just leave and hold. So if I need something urgently approved, like I said something around payroll before I need to ask my manager I message you on teams and they get approved in minutes if I put an email take hours and just because of the different priorities people lead on different social media platforms so I definitely think it is helps the work force*

#### 4.3.4.12 Friendliness Communication

Michelle acknowledges that using the instant communication facility has made conversations with stakeholders more friendly. The video calling facility of Microsoft Teams is key as the others in the call can be seen, and the instant messaging allows them to communicate informally. She says if it was an email, many formal things such as “I hope you’re well” or “I trust this finds you well” were often used. On teams, people message with a “hi” and reply with smileys and speak familiarly, which Michelle thinks is more effective, friendly and informal. She recollects an incident where she interacted with her new manager, whom she had never met because of the pandemic. The video calls over Microsoft Teams were amicable and casual, which helped to build more rapport. Michelle recognises that using Yammer is limited because it is unfriendly while communicating.

*Excerpt 4.3.69*

*I think it is the real key things that you know you can see someone's face when they're calling you*

*Excerpt 4.3.70*

*You can add instant message people you know they tend to be a lot more informal*

*Excerpt 4.3.71*

*On teams you know people usually reply hi smiley face what's the day and have you got that information yet so it is instantly a lot more punchy and a more personable a lot more informal and that just builds trust because you're seeing a person asking you for the information not a signature on an email chasing you for something.*

*Excerpt 4.3.72*

*So I think the hindrance of Yammer it is not very well known it is not very well used it's a very professional not very personable and so I think though by default it gets used less.*

*Excerpt 4.3.73*

*So if I give you an example I had a new boss during the pandemic that I haven't even met everything's been over teams which is highly unusual but you know he's such shows me around his house to show me like pictures of his children and stuff which you would never do face to face. I think it shows you much more into someone's personal life because they are in their home and it builds a lot more rapport.*

#### 4.3.4.13 Collective Resources

The project groups and channels created in Microsoft Teams hold all project-related information, and the members have instant access to all information, including previous versions of files shared. Here, the platform serves as the information store during the project execution. Similarly, the organisation archives all information, including conversations, associated with a project after its closure and is handed to the business team. The information is available with the organisation if needed for future reference.

*Excerpt 4.3.74*

*So it almost holds everything you need to do with that project and you can see clearly who was responsible for what and etc.*

4.3.4.14 Confidentiality

Michelle and her team have used Microsoft Teams to share confidential documents that contain business-critical information such as bids for new businesses, details of commercials, contract links, and operational solutions, which, if leaked to anyone outside, could be detrimental to the company. Further, Michelle’s team shares invoices with external customers. Although Michelle is relaxed about sharing the information over Microsoft Teams, she thinks that perhaps more business-critical information is shared than what is meant. She is sceptical about sharing too much confidential information.

*Excerpt 4.3.75*

*So we have something that we call a DPD which is the design parameters document.*

*Excerpt 4.3.76*

*So when we bid for new businesses we build a solution a document that details commercials, contract links the operational solution, so not something we want to get in the hands of anyone outside of the company and but we share that regularly.*

*Excerpt 4.3.77*

*We share invoices that again we want to get in the hands of customer regularly.*

*Excerpt 4.3.78*

*so we share probably too much than what we should*

*Excerpt 4.3.79*

*So my comfort level was pretty relaxed about it, but again I'm not sure if that's the right idea or not*



#### 4.3.4.15 Sustainability Aspects

Michelle informed that using these platforms has reduced considerable travel time across the team, saving resources and time. Less travel makes it environmentally friendly by reducing the carbon footprint, which means the use of ESNs has contributed to sustainability.

#### 4.3.4.16 Achieving Efficiency

Before using ESNs, Michelle used to do face-to-face project meetings, and everyone was expected to travel to a central location. Michelle travelled four hours to attend a one-hour meeting, which she thinks is inefficient. The platform has allowed her to interact more with the stakeholders during and after conference calls and share files instantly, which makes it more productive. For example, she messages people about actions during conference calls and sometimes does it jointly over the call instead of taking them back and doing it later in multiple iterations of activities.

##### *Excerpt 4.3.80*

*By using these platforms and especially as teams it's brought in video calling.*

##### *Excerpt 4.3.81*

*we've never ever done video calling before in Wincanton. Just to give you a bit of context Wincanton's culture is face to face*

##### *Excerpt 4.3.82*

*So if we had a project meeting for two hours they would still expect everyone to drive to the central point. So regularly for my job I would travel four hours for a one hour meeting.*

##### *Excerpt 4.3.83*

*As we started using more of these platforms, we now only have a one hour teams meeting a lot of people got video cameras a lot of people's making more contact within that group because people have more time and it's become a new culture that that's how we do it now you know we do things a lot more remotely whether previously was face to face.*

*Excerpt 4.3.84*

*you would be on a conference call about something and I'll be messaging at the people on the call going let's do this that send the file let's just do it now so it's become a lot more productive.*

As mentioned in section 4.3.4.8, ESN has helped bridge the gaps during customer interaction. She thinks the clash of systems when she and her customer use different providers for email communication no longer exists when using ESN. The instant messaging feature makes customers a lot more accessible, allowing them to get to work quicker with a free flow of information and making it efficient.

*Excerpt 4.3.85*

*So I can instant message an external customer or my team's chat so it just makes you a lot more accessible.*

*Excerpt 4.3.86*

*So it just makes work a lot quicker and it just has a more of a free flow.*

#### 4.3.4.17 Culture

The organisation's culture was face-to-face; everyone was expected to be physically present for meetings. Michelle says that when ESNs were adopted, people started using video calls instead of face-to-face interactions, saving travel time. Michelle acknowledges that the remote way of working has become a new culture.

*Excerpt 4.3.87*

*Nut logistics' culture is face to face so if we had a project meeting for two hours they would still expect everyone to drive.*

*Excerpt 4.3.88*

*It's become a new culture that that's how we do it now you know we do things a lot more remotely*

#### 4.3.4.18 Barriers

Michelle says one of the disadvantages of using multiple platforms to communicate is that it is challenging to ensure that all of them are ticked off. For example, she uses Microsoft Teams, emails, WhatsApp Business, and Yammer; sometimes, the same communication can be repeated on multiple platforms. Although sharing a screen over video calls is good, too much information may be complex for other participants to process. Also, people may not want to query during the call.

##### *Excerpt 4.3.89*

*People use multi method to communicate, I think the only thing I struggle with is you have an email about something ,you have a Microsoft Teams call about something, you have a Microsoft Teams message about something and sometimes you even have a WhatsApp. So sometimes it's quite difficult to make sure that you've ticked all of them off and even though it's the same thing so that can be too much.*

##### *Excerpt 4.3.90*

*I think you know that the joy of sharing screens on teams is really good but I have noticed you know you can tell that you lose some participants if you put too much information on there.*

##### *Excerpt 4.3.91*

*so it can be a lot of information to process it once and people don't naturally want to query things on calls*

Michelle has raised security concerns because the platforms can be accessed on any device, and the confidential information shared over these platforms may potentially be breached.

##### *Excerpt 4.3.92*

*It also means that you know if I was a company I can access all of that information without even doing any remote login. So whatever's on my teams App, for example someone sent me a confidential document on teams and someone could hack my teams and get in to get out information.*

Michelle highlights the downtime of using ESNs as an expectation of increased availability beyond office hours. If she sees a message on Teams, she thinks it needs to be responded to immediately, while if it is an email, it can be responded to the next day. According to Michelle,

receiving messages outside of office hours means an instant response is expected and is intrusive. She highlights that the line between work-life balance is blurring.

*Excerpt 4.3.93*

*I think with teams, in terms of a downside which I've noticed is, where emails there always seems to be an expectation. Someone emails you five six seven o'clock at night you've got to the next morning to reply. I think with teams being so easily available where as I can see a move to people becoming more twenty four seven on it. For example I've got my director message at seven / eight o'clock at night on teams which I find a lot more intrusive teams because you know it is an instant messages expected replying. Email you wait and then you go the next day.*

*Excerpt 4.3.94*

*I can see it blurring the lines between work life balance and I think this is the only downside I see*

### **4.3.5 Interview5 – Chris**

Chris is a procurement category manager at Argon Nutrition, a global health nutrition company with offices located across the globe. He has over 15 years of experience, deals directly with planning and warehousing, and interacts closely with the quality, regulatory, finance, procurement and R&D teams. The organisation primarily uses Microsoft Teams, intranet applications, and Yammer for internal communication. Chris uses Microsoft Teams for external communication as well.

#### **4.3.5.1 Collaboration**

Chris uses Microsoft Teams to Interact with both internal and external stakeholders. It is mainly for meetings with external stakeholders, and with internal stakeholders, it is used for meetings, sharing files, quick information and seeking clarification. Chris also uses the platform for regular stand-up calls, where participants are from different teams in the quality, procurement, regulatory, finance, suppliers, and top management sectors. The platform integrates with other applications of the Microsoft suite and allows collaborative planning, project management, and tracking. Chris and his team use project groups on Microsoft Teams to share files and collaboratively edit them. These files are restricted to users added to the project group.

Internal, team and external collaboration are displayed in the response, while cross-boundary collaboration was not identified. Argon nutrition is spread across geography. So, considering that Chris interacts with several departments and external stakeholders, the researcher interprets that these stakeholders are spread across geography, and cross-boundary collaboration exists.

*Excerpt 4.3.95*

*Monday we have a call where there is planning, procurement, R&D, quality and also there is a ...project managers... so there is project manager who leads all those projects that I bring or quality would bring or R&D, related to sourcing ingredients and packaging.*

*Excerpt 4.3.96*

*so we use the Ms teams for that call. So during the call, so there are files which are being shared during the call and also their files attached on that project on Ms Teams, where you could see what are the tasks required and you can update the tasks and mark them as completed etc. So you can use. I would say I'm not sure how is it called in MS suite, but it's like planning add-on on the MS suite to follow different projects.*

*Excerpt 4.3.97*

*So I deal with quality for any quality related questions I deal with R&D for any new product development. Or maybe we can source some ingredients or anything related to what they do. So I need them involved in order to approve any alternative sources. So I deal with finance because I have a P&L responsibility for my role. I deal with regulatory and the change in regulation from an EFSA perspective. so we follow mainly EFSA which is the European Food Safety Authority. So this is for regulatory. Then I deal with my suppliers. With them I deal with, you know, commercial directors, CEOs or commercial managers on big companies. I deal with also their people, their quality people. Sometimes their R&D people.*

#### 4.3.5.2 Information Sharing

Chris says he has used Microsoft Teams to share information, such as project-related files, screen sharing, various statuses, seeking clarification on project-related tasks, and procurement. Although he has not used the platform extensively, recently, he has started to share more information, like raising purchase orders with suppliers. In addition, Chris uses SharePoint to store documents, the access to which can be controlled based on the project roles.

Chris mentioned that the intranet portal has many downloadable applications that the different department uses for collaboration and information sharing; nevertheless, he does not use any of them either because it is not required for his role or hesitation to change.

#### 4.3.5.3 Corporate Decision

Chris mainly uses ESN platforms, especially Microsoft Teams, because it is a corporate decision during the pandemic. He also uses the platform for external communication, but the organisation has placed restrictions on using the chat feature with external parties.

##### *Excerpt 4.3.98*

*So we don't use chat facility for external communication. I don't believe it's activated on our business and I'm not aware of other businesses allowing their people chatting with other Corporation. I'm not aware of that. Maybe it exists, but I haven't seen it. in three or four different companies that they were using the tool they did not allow chat with external people*

The organisation has its intranet and bespoke applications for various departments. Furthermore, SAP Ariba, an ERP system supporting collaboration, is being adopted. SAP Ariba is only set up on a tiny fraction of the supply chain processes. In the longer term, it is being extended to other supply chain management processes, including RFx (request for proposal, request for pricing, request for quotation and request for information).

#### 4.3.5.4 Improved Communication

Chris says he uses the chat facility for quick and short clarifications and to check statuses. If the clarifications are longer, he calls for a meeting. The visibility online status makes one understand who is available, allowing him to check if they are ready for a meeting. He will not disturb anyone if their status is offline. For example, Chris has used direct messaging to track if a purchase order was raised with the supplier and brought it to closure. Chris finds it convenient to use Microsoft Teams for quick turnaround.

Another advantage he mentioned is not having to depend on telephone calls to seek any information quickly.

*Excerpt 4.3.99*

*So if those platforms were not here so I would say I would use the phone to get that information phone call so this is avoiding to. I would say those platforms are mainly used to exchange information quickly that you don't need to entertain a phone conversation.*

Chris says the platforms are improved communication tools; however, he thinks using Microsoft Teams for lengthy discussions is time-consuming. In addition, if he receives any messages when offline, he tends not to respond to them unless they are urgent, and such responses are provided primarily by email.

*Excerpt 4.3.100*

*So at the moment the platforms are communication tools are improved communication tools*

#### 4.3.5.5 Establishing Relationships

According to Chris, ESNs are not tools for building relationships but for the transactional process. He asserts that face-to-face communication is required for building relationships. Using the chat facility of ESN could reduce face-to-face interaction with stakeholders and negatively impact relationships compared to other features, such as video conferencing, which may add to the relationship. However, Chris has maintained relationships using these platforms, ensuring no one is left behind.

*Excerpt 4.3.101*

*I would say chat would have been would have been negatively impacting the relationship, because as I said to you, if people are using a lot the chat piece of the of the tool so that would have less voice, face to face, you know video interaction with the stakeholders, so that would be that would be negative in terms of relationship building than the other aspect of the tool which is video calling.*

*Excerpt 4.3.102*

*so I would say this is the key thing on that side it has kept I would say it has kept the relationships And it has ensured that that Everybody around them are in line when they work on the same project, so ensure that nobody is left behind that would take*



#### 4.3.5.6 Trusted Behaviour

Chris says it is difficult to trust people new to the organisation without meeting them face-to-face. During covid, the re-organisation caused existing people to move out and new people to move in, making it difficult to get the work done. When people repeatedly ask for help from the same person with whom they have little relationship, it causes a detrimental effect on both relationships and trust.

##### *Excerpt 4.3.103*

*Not at all, no trust. I would have no ID of those people really. So, for example, we went through a reorganization at the end of Q1 2020, and some people have been let go. Some people are coming in and I see a lot of people who have started work since COVID and they are really struggling they are really, really struggling and they that it's very difficult for them to get things done.*

##### *Excerpt 4.3.104*

*Because they are humans, so they tend to go to people who they've seen, responded or solved an issue when they had one. In those cases, I would say it would have been detrimental. You know, because people would think, I've helped you the first time because you were new, it wasn't something that I do and now you are coming every time to the same person for the same issue. Then on the contrary it would have affected, I would say the relationship, but I would say from the trust really when you talk about trust with people. Ah, this is not helping at all, I would say.*

Chris questions the integrity of data exchanged using ESNs as they are manually shared. He thinks it should come through an electronic interface due to the possibility of data being manipulated, making it non-trustable.

##### *Excerpt 4.3.105*

*So at the moment the platforms are communication tools are improved communication tools, but the data that is exchanged is sometimes questionable. because you don't know how it has been manipulated in order to arrive to what it is saying. You know, yeah, so I would say that we are in the nation status of those platforms.*

#### 4.3.5.7 Decision making

Chris says that information was shared regularly through Microsoft Teams, especially during conference calls with participants from various departments he has never met. The information shared and clarifications provided have helped in making decisions. He has a mature approach,



not getting pressured to make quick decisions but rather making thoughtful decisions based on the information gathered.

*Excerpt 4.3.106a*

*We have a call every Monday and it's mainly on teams and we use files we use we you know we share files we share information during that call and we are making decision based on that and I haven't seen the people since a year now.*

*Excerpt 4.3.106b*

*No, I would say it would depend on the seniority of the person. I would say a person which is quite senior. I don't believe they do feel any pressure of making decision and maybe other people who wants to make an impression, maybe they would. They would feel that personally when I don't know I would just say I don't know I need time to think about that.*

#### 4.3.5.8 Collective resources

Chris uses SharePoint in conjunction with Microsoft Teams to store and manage files and control access restrictions. In addition, the project groups available in Microsoft Teams are used to upload files restricted to the project team. In both cases, the history persists, including version history and forms the information store.

#### 4.3.5.9 Confidentiality

Chris is very confident in using the tool and sharing information using Microsoft Teams because he knows to whom he communicates and would share files only if required to the right people. Although he has not used the platform to share confidential information, he is confident he can do so if required.

*Excerpt 4.3.107a*

*I would say pretty confident so you would only invite people that you know you are dealing with, so people that you know wouldn't share files or whatever with people, that you don't know.*

*Excerpt 4.3.107b*

*share any critical information like a brief information, Yeah I will. I will share it of course*

#### 4.3.5.10 Sustainability

Chris says that using these platforms has helped the organisation reduce costs, but he thinks using specific ESN features is time-consuming.

##### *Excerpt 4.3.108*

*So this is so all this kind of things on the on the other side have helped to ensure that you communicate with people and also has helped I would say companies to reduce cost because they're using something other than using the phone which is costing money most of the time.*

#### 4.3.5.11 Culture

Chris's organisation started using multiple ESN platforms on various functional groups, including several intranet applications. Specific ESN tools such as Microsoft Teams were adopted during the pandemic; nevertheless, bespoke intranet platforms were already used. The organisation is moving towards a work culture using such communication platforms, as it has long-term initiatives to bring solutions combining ERP and collaboration. Chris has informed that the new ERP or ESN tool is implemented phase by phase, and he is looking forward to using it.

#### 4.3.5.12 Barriers

Chris's response indicates that he does not use the available ESN features. He thinks only face-to-face interaction can establish a relationship and does not trust participants unless physically met. There is hesitation in using the ESN platforms. For example, he mentioned that he has 'never used yammer' and is 'old fashioned', evidencing his reluctance.

He thinks there has been much chaos due to using these platforms when there is a change or introducing new people. It could be due to his perception, lack of understanding, absence of training, and flaws in the organisation's ESN adoption process. However, Chris thinks a platform combining ERP and collaboration would suit remote working and trusted information sharing.

*Excerpt 4.3.109*

*But introducing new people or changing the process in in the same situation, this is catastrophic. This is chaos so I have good example of you know, organizations struggling at the moment because of this and in turn the new people. I hear their feedback.*

Chris has not faced any work overload or privacy intrusion issues using these platforms because he logs off from the platform during out-of-work hours. He acknowledges his colleagues' experiences and that they feel pressure to complete tasks outside of work hours because of using these platforms, which affects their work-life balance. Chris thinks it is about being aware of the process and priorities of what needs to be done and eliminating the pressure element using those tools.

*Excerpt 4.3.110*

*When someone is pretty aware of the process, is pretty aware of priorities and what things has to be done, I don't believe that there is that pressure element using those tools.*

*Excerpt 4.3.111*

*I do turn off this thing when I have to so, but I would say for certain people, from a work life balance perspective, of course, that might cause an issue and mainly new people have started, I could see that. I spoke with few of them and they are spending hours on all those platforms and they feel the pressure coming from other people who are expecting them to complete their task.*

*Excerpt 4.3.112*

*I have suppliers who contacted me on WhatsApp and I've kindly responded them too that I use WhatsApp for privacy and if they have something to tell me they should either send an email or plan meeting with me.*

### **4.3.6 Interview6 – Richard**

Richard is the global head of transport for the ABC supply chain based in the UK, with over 15 years of experience in the logistics industry. He is responsible for the transport product within the company that represents more than a third of the business revenue. ABC supply chain's business is spread across several regions, which include the UK and Ireland, North America (US and Canada), Latin America (Mexico all the way down to the bottom Chile and

Brazil), Europe Middle East and Africa and Asia Pacific region, which is whole of Asia, excluding China.

Richard oversees the growth of the top line of transportation and ensures the bottom-line productivity. He has a small direct team reporting to him and a functional dotted line reporting from the heads of the business in the different regions. Furthermore, his daily activities include engaging with the organisation, talking to customers, and providing leadership and direction. Richard uses Microsoft Teams, WhatsApp Business, Skype, Zoom and custom-built intranet applications.

#### 4.3.6.1 Interdependence

Richard uses the ESN platforms to connect with people and develop relationships with them. Furthermore, he uses these platforms to receive and provide mentoring by talking on video, which indicates interdependence.

##### *Excerpt 4.3.113*

*I've met some new people from that, and I've spoken to them since and developed a relationship with them. That's been really good. I've also managed to connect with some different people in the org to do some mentoring, to receive and provide mentoring and we have connected using some of these platforms talking on video.*

#### 4.3.6.2 Collaboration

Richard agrees that Microsoft Teams is vital to internal collaboration. Although the tool is not being utilized at its full potential, Richard and the team use it for business review meetings, video conferencing, collaborative editing of documents and file sharing. He agrees that it is much more convenient to collaborate on documents using Microsoft Teams rather than sending each other emails, establishing ownership and tracking the latest version. Richard uses these platforms to work with people from different countries and time zones and has used synchronized internal communication. Richard has also mentioned the communication with customers through these platforms, highlighting that external collaboration using ESN is gaining significance. Internal, team, external and cross-boundary collaboration using ESN platforms is observed.

*Excerpt 4.3.114*

*We are just getting rolled out Teams on our business right now. We just had training of teams yesterday, really to explore the potential of the platform because it is really strong in internal collaboration way of doing things is very different, but it is quite powerful.*

*Excerpt 4.3.115*

*I was using it for calls like we are now. Probably not using it at its full potential where you can share documents and you can collaborate on documents using that tool. Now we are starting to do that more and more.*

*Excerpt 4.3.116*

*Previously there were 6 or 7 people working on a document. Previously we had to email it to each other, and it had to establish who is the owner of the document, and who is got the last version etc., But with these platforms we can share them in one space, and you can all jointly update one document, say you just remove this issue of version control.*

*Excerpt 4.3.117*

*I am working with people from different countries obviously, different time zones so we have asynchronized communication between us. We are never going to be together in an office so these kind of platforms are absolutely essential to our job.*

#### 4.3.6.3 Corporate Decision

Richard says he is using the tool because the organisation decided to adopt it as part of its digitalisation programme. He has received training on Microsoft Teams provided by the organisation. The organisation is investing time and money in its digitalisation programme, one of the core strategic initiatives of ABC Supply Chain. They have rolled out intranet platforms such as web pages and Connect App where people can collaborate. Richard says he is forced to use these platforms by his colleagues and company. Although these platforms are used mostly for internal collaboration, external collaboration using ESN platforms is becoming a usual way of doing things in his profession.

*Excerpt 4.3.118*

*We are just getting rolled out Teams on our business right now. We just had training of teams yesterday, really to explore the potential of the platform because it is really strong in internal collaboration way of doing things is very different, but it is quite powerful.*

*Excerpt 4.3.119*

*ABC is investing a lot of time and money into it, because we absolutely know it needs to be part of our digitalisation agenda, it is one of our core strategic initiatives. So, it is definitely here to stay as well. That is internal piece and then externally this collaboration is there, it is also becoming more and more just the normal way we do things.*

*Excerpt 4.3.120*

*But you know everything is available on the platforms, they rolled out recently, there is also an app for people, they call it connect in ABC. It is a kind of social..., it is like Facebook, internal Facebook app which exists on top of the internet.*

*Excerpt 4.3.121*

*This is a direction where I am forced to go by colleagues, and company because the other platforms are just not being used as much and I would eventually be phased out.*

#### 4.3.6.4 Information Sharing

Richard uses Microsoft Teams to share files and collaboratively edit documents, which eliminates multiple emails and makes information sharing much more accessible. His organisation uses SharePoint and OneNote to store and control access to information, although it is in the early stages of adoption. His team uses Microsoft Teams to raise issues, escalate them if required, and resolve them internally. The chat feature of Microsoft Teams enables him to communicate with colleagues privately. Richard believes that using ESNs has increased significantly at the operational level. Besides, he uses the intranet platforms to get information on HR-related topics, clarify payrolls, and determine who to contact for administrative issues. These platforms provide news updates such as organisational announcements, managerial changes and financial results, which is very helpful to the employees.

#### 4.3.6.5 Support During Covid

Richard is in the leadership group that supports businesses adapting to the pandemic, and he thinks these technologies have been vital in making them effective. The platforms allowed them to share information on their current position, progress on various tasks and gather data to understand the most efficient approaches.

Although the organisation was adopting such platforms as part of its digitalization objective, the pandemic caused an acceleration in the usage of ESNs, especially Microsoft Teams. Also, people's perception of using video calls changed, and it became a usual way to connect to people after the pandemic.

##### *Excerpt 4.3.122*

*I think, before the pandemic, people were not really happy to use video, but now, it is normal, it gives a better way to connect with people I think.*

##### *Excerpt 4.3.123*

*I am part of a leadership group that is supporting of our business adapting to the pandemic. And I must say that business is been very effective in doing that. I think using this type of technology has been kind of key to that. So, probably two areas that are probably seeing to be particularly effective. One is visualising what is going on. Using these platforms to share information to share the current picture, how is it changing and things like that, and the second part is we gathering data, so we are able to do that using the collaboration platform to quickly gather data together and be able to understand what is going on very quickly*

#### 4.3.6.6 Improved Communication

Richard says the ESN platforms he uses, especially Microsoft Teams, provide flexibility and speed to do things, reduce steps in the process and are efficient. The supply chain is about people, processes and systems, and the people element is now using the platform to collaborate fast. The platforms have allowed people in different places to work together during remote working, and Richard emphasises that these kinds of platforms are essential for their functioning.

Richard says that knowledge management, a complex topic, is managed very well through the intranet platform. He uses the platform to solve any HR issues or to find contacts to resolve issues.



Using these platforms, he meets and talks to people to keep up to date with news, company announcements, managerial changes and financial results. Richard thinks that these platforms have allowed the workforce to understand more about the face of the management and have created a feeling of belonging to the culture through improved communication.

*Excerpt 4.3.124*

*It is about the flexibility and the speed truly important. Just being able to do things so fast. You can use less steps in a process and it is more efficient.*

*Excerpt 4.3.125*

*They organise events and within those events they give us opportunity to network with people who you may not have a reason to speak to before.*

*Excerpt 4.3.126*

*It is very useful to keep upon news, on what is going on. And obviously company announcements about managerial changes and stuff like that, it comes through this. Financial results share data as well.*

*Excerpt 4.3.127*

*I think that is really good for the workforce to understand more about the people that they are working for right. So, they feel more that they are belonging to the culture.*

#### 4.3.6.7 Establishing Relationships

Richard acknowledges that he has used the various ESN platforms to network with people, maintain connections, and develop relationships internally. The organisation has put together several networking events, allowing employees to connect with people internally, get to know each other informally and develop relationships. He says connecting over video has become routine and a better way to communicate with people.

*Excerpt 4.3.128*

*The company is really good at putting together virtual events, where you have the opportunity to meet different people.*



*Excerpt 4.3.129*

*They organise events and within those events they give us opportunity to network with people who you may not have a reason to speak to before. They organise this concept called Virtual Goldfish Bowl, they throw random people into 1 room and they give you a theme to discuss that is a bit less formal and some of the work topics. That's been really nice actually and I've met some new people from that, and I've spoken to them since and developed a relationship with them.*

#### 4.3.6.8 Shared Objectives

Richard has been working extensively on the marketing campaign that has to be coordinated with global regions. The teams across areas used ESN platforms to arrange meetings, share documentation, and sign documentation, allowing everyone to collaborate and provide input. He thinks the ESN tools have been beneficial throughout the process, making it effective, where the platform has helped to achieve a common objective with other global regions.

*Excerpt 4.3.130*

*We are working extensively on a marketing campaign. And the marketing campaign has to be coordinated with all of the regions globally. We were able to, using these platforms build virtual teams of people who are able to share documentation and we arrange meetings to talk through it. We were able to stakeholders to participate in signing of documentation, so they are happy, and everybody has a chance to collaborate and to give their input to that. So that has been really useful, and I think using these tools make it so much faster to go through the whole process. To do the same job or same type of work that we have to do now, if we had to do it 10 years ago, I think it would be more or less impossible, to be honest.*

#### 4.3.6.9 Trusted Behaviour

Richard's job involves influencing internally, convincing and committing people to his concepts and plans. So, networking with people and creating trust is essential, and this is done through networking, relationship building, and repeated interactions using these platforms.

*Excerpt 4.3.131*

*My job is about influencing internally, about building those relationships is really important because I have a certain amount of power in the organisation. I don't have complete control over what happens in each country, but I have to convince and commit people to what I meant was a good idea. So, you have to build network and trust people.*

#### 4.3.6.10 Problem-Solving

Richard mentioned that the ESN platforms are powerful at the operational level and are used internally to raise and solve issues.

##### *Excerpt 4.3.132*

*It is really great and really powerful, and not necessarily just from the position in the organisation that I have, also in the operational level, be more efficient in terms of how we interact with our customers day to day basis, how we interact with each other internally to raise issues, and escalate and solve them.*

#### 4.3.6.11 Collective Resources

Richard informs us that Microsoft Teams is used to share files and collaborate on editing, eliminating the hassles of version control. The platform is in the earlier stage of adoption, and people use it for information sharing. The platform acts as an information store, retaining the information shared. In addition, the organisation uses SharePoint and OneNote for document storage and controlled access, which is well integrated with Microsoft Teams. Similarly, the information shared through intranet social web pages and the Connect App persists, and employees can access the historical data as needed. The various platforms ABC company uses provide collective intelligence and resources to the employees.

#### 4.3.6.12 Achieving Efficiency

According to Richard, using these platforms has provided flexibility and speed, reducing the steps in a process and making it more efficient. He has been able to work on shared objectives with other global regions, working through the process much faster, which he says would have been impossible without these platforms. He highlights that ESNs allow faster collaboration and provide improvement opportunities. The tools have proven powerful and are used at different organisational levels, making the processes more integrated.

##### *Excerpt 4.3.133*

*It is about the flexibility and the speed truly important. Just being able to do things so fast. You can use less steps in a process and it is more efficient.*

*Excerpt 4.3.134*

*So that has been really useful, and I think using these tools make it so much faster to go through the whole process. To do the same job or same type of work that we have to do now, if we had to do it 10 years ago, I think it would be more or less impossible, to be honest.*

*Excerpt 4.3.135*

*You have to have that people element involved in using these platforms having ways to collaborate so fast now. And we are finding opportunities all time to improve. It is really great and really powerful, and not necessarily just from the position in the organisation that I have, also in the operational level, be more efficient in terms of how we interact with our customers day to day basis, how we interact with each other internally to raise issues, and escalate and solve them. It is really impressive. It has become more and more integrated in the way we do things for sure.*

4.3.6.13 Culture

Although Richard’s organisation used ESNs before the pandemic, people hesitated to use some ESN features. Richard thinks the pandemic has accelerated the usage of ESNs as it provides a better way to connect with people. Internally, online communication has become the standard way of doing things. The organisation has invested much time and money in these platforms to promote the digital culture. Using these platforms has caused the workforce to understand more about the organisation and feel they belong to the organisational culture.

*Excerpt 4.3.136*

*I think, before the pandemic, people were not really happy to use video, but now, it is normal, it gives a better way to connect with people I think.*

*Excerpt 4.3.137*

*ABC is investing a lot of time and money into it, because we absolutely know it needs to be part of our digitalisation agenda, it is one of our core strategic initiatives. That is internal piece and then externally this collaboration is there, it is also becoming more and more just the normal way we do things.*

*Excerpt 4.3.138*

*So, I think that is really good for the workforce to understand more about the people that they are working for right. So, they feel more that they are belonging to the culture.*

4.3.6.14 Barriers

Richard says that using ESNs has caused longer screen times and believes that ESNs are not a substitute for human contact. Another potential issue is exhaustion using multiple platforms and keeping up to speed. People tend to exhibit non-professional communication due to the transient nature of communication. Concerning availability, the expectation of contacting someone is 24 hours a day and seven days a week, affecting work-life balance.

*Excerpt 4.3.139*

*We spent too long in general looking at computer screen.*

*Excerpt 4.3.140*

*I think we shouldn't substitute it for human contact.*

*Excerpt 4.3.141*

*It can cause certain exhaustion, because we have, we might be using teams, we are using emails, we are using Skype, we r using Zoom, using WhatsApp, even LinkedIn. Sometimes colleagues are contacting on LinkedIn. So, it can be a big task to keep up to speed.*

*Excerpt 4.3.142*

*The communication is not professional, yeah, we have groups for our team, where we can talk very quickly and contact each other anytime.*

*Excerpt 4.3.143*

*I guess, the other negative point I should mention then really, if you are looking for any negatives is about the availability right, because the expectation now is that you can be contacted 24 hours a day, 7 days a week.*

*Excerpt 4.3.144*

*Affecting work life balance.*

### 4.3.7 Interview7 – Anya

Anya works in the internal communications department of a large logistics and supply chain organisation (550,000 employees globally and 40,000 in the UK) that functions globally. Anya has over 20 years of experience, and in her current role, she is responsible for introducing and developing various communication channels for the employees.

In her current role, she has been responsible for developing an internal collaborative application called ‘Connect App’ for the organisation. Although she does not work in a supply chain operations setting, she constantly communicates with operational colleagues. The ESN platforms used in the organisation include intranet social pages (Social Wall), custom-built Connect App, Yammer, WhatsApp, Microsoft Teams, SharePoint and Sales Force (to communicate with customers for feedback).

#### 4.3.7.1 Interdependence

Anya has used the Yammer and intranet platform to seek help and solutions to the problems she encountered, for which quick responses were received through Yammer. She tends to use Yammer when specific assistance is required. Anya says that managers use these platforms for operational and resourcing support. Warehouse managers communicate on Social Wall and ask each other for help and advice. It shows evidence of interdependence by using ESN.

##### *Excerpt 4.3.145*

*If I got a problem that I need solving and say I don't know how to do it in the internet can someone tell me how to do this, or I have noticed some issues with it today. If I post in yammer I get a response really quickly. So I tend to go to yammer till I get answers to questions, where I need specific help.*

##### *Excerpt 4.3.146*

*We have got evidence where people have used it to get resource, to fill trailers with goods, try to make business cost efficient something like that.*

##### *Excerpt 4.3.147*

*So, these are operational managers, like a general manager who look after all warehouses and they have their own Social Wall, where they can just communicate with each other through Social Wall and ask each other for help and advice.*

#### 4.3.7.2 Collaboration

Anya says the 'Connect App' is used only for internal purposes, for a cross-business unit, or cross-functional communication. The platform has several internal communication channels, such as providing management information to managers directly and communicating general information and happenings in the business to the employees. Action-specific information to managers about what they need to do in daily operations is also shared using the platform. Each team uses the group chat facility of the app to communicate within the team and share business updates.

The Social Wall is used to post information such as news, updates, policies, guidelines, and work-related information, and it seeks support. The platform has a channel accessed by all, and channels have been created for each functional area, accessible only to restricted members. Managers use Social Wall to work collaboratively on tasks and updates. Anya says the collaboration is cross-business, cross functions and cross-country. Here, internal, team, external and cross-boundary collaboration exists.

##### *Excerpt 4.3.148*

*So we have different internal coms channels, some that directly go to managers, to give management information to those people in terms of what they need to do, but also then, to colleagues about general things that are happening in the business.*

##### *Excerpt 4.3.149*

*So it is a combination of good news stories about what is going on in our business as well as action specific information to managers about what they need to do in a day to day operations.*

#### 4.3.7.3 Cross Platform Compatibility

The Connect App was introduced with the idea that it could be used on both desktop and handheld devices so that people who do not have access to computers or have an email Id could use it on their phone, indicating cross-platform compatibility.

#### 4.3.7.4 Corporate Decision

Anya says the various ESN platforms used by the company are part of their digitalisation agenda, and they have invested a lot of money and effort into it. While the organisation was

using licensed platforms such as Yammer, Microsoft Teams, SharePoint, and Salesforce, custom collaboration tools were developed as part of the digital strategy. At least 75% of the UK workforce did not have access to digital systems, and the Connect App, which resembles WhatsApp, was introduced so that the non-digital workforce could use it on the phone. The platform has a chat function and can be accessed only within the organisation's internal network; however, the Connect App is restricted further and poorly integrated with other internal systems. The organisation is improving the application to integrate with other internal systems.

*Excerpt 4.3.150*

*In the UK, the space where I work in, there is 40,000 people (and Ireland). Only a quarter of that people have digital access to ABC company, so about 10,000 people are at a level where they can access the Intranet and email and thinks like yammer. So that basically meant that we have 30,000 people in our business that do not have any direct access in our business. So what we wanted to do was create an app that anyone in the organisation can access so they had kind of like, when they first envisioned it, it would be light access so kind of like a lighter version of the intranet.*

*Excerpt 4.3.151*

*The app was designed to be a light version for every colleague so they can go in and they could see all company news, there was an ability to chat with managers and give feedback and also share their own stories online on a social wall.*

*Excerpt 4.3.152*

*We have a social media policy and we also have a terms of use.*

*Excerpt 4.3.153*

*It is also about maintaining people's privacy, do's and don'ts of what you can share obviously, because, although it is an internal platform, and the data is secure, we don't obviously want people to share data from there from a data privacy perspective.*

Anya says that their internal platform, Social Wall, resembles Facebook, and any posts can be available to anyone in the organisation. According to Anya, these are used from a business perspective. Social Wall is designed around user groups; several groups exist, for example, for the HR function, warehouse operations, and managers. However, the Social Wall has regional restrictions, i.e., the UK Social Wall cannot be accessed outside the UK.



Anya informs that the organisation has policies and guidelines on using the platforms, and the information shared belongs to the organisation. Also, if employees leave the organisation, their profile is deleted, and all information they have shared or posted in the past through these internal platforms is no longer accessible.

*Excerpt 4.3.154*

*Social Wall is actually a bit like Facebook. So if you are posting on the Social Wall then it is available for anyone to see and from centrally we can both keep a track on what people are saying. So in that we have evidence that people have used it from a business perspective.*

*Excerpt 4.3.155*

*We have several Social Walls, they are all designed around user groups, so we have got one Social Wall that is visible to everybody who works in the UK. So that is the UK Social Wall where if you post in it everybody who use app in the UK can see what you posted and then that we have got some smaller groups for example our HR department have got their own group with around 400 people in it.*

*Excerpt 4.3.156*

*And we have the specific manager wall. So, these are operational managers, like a general manager who look after all warehouses and they have their own Social Wall, where they can just communicate with each other through Social Wall and ask each other for help and advice.*

#### 4.3.7.5 Operational Purpose

Anya says there is evidence that people use Connect App and Social Wall for business purposes. Anya has shared an example of using Social Wall to share resources, such as requesting support with shipment and resourcing for various activities, such as handling goods. Similarly, the HR function has its group used to share business updates with the HR team, and warehouse managers use these platforms to communicate for help and support.

*Excerpt 4.3.157*

*We have evidence that people have used it from a business perspective.*



*Excerpt 4.3.158*

*So the managers are there in Social Wall and they have used it to say, I have got a load, I need to get it over to France. Has anyone got a space on a vehicle where I can use and they will come back to each other and help each other. So they can ask for support with like shipment, to place it, or they can ask for resourcing support as well. We have got evidence where people have used it to get resource, to fill trailers with goods, try to make business cost efficient something like that.*

*Excerpt 4.3.159*

*HR department have got their own group with around 400 people in it. So they use it for social networking, but also to share business updates as well as part of within the HR function.*

*Excerpt 4.3.160*

*So, these are operational managers, like a general manager who look after all warehouses and they have their own Social Wall, where they can just communicate with each other through Social Wall and ask each other for help and advice.*

4.3.7.6 Support During Covid

Anya says that the use of internal platforms increased during the pandemic. In addition to managing work, people used it for internal networking and emotional support during the lockdown. These platforms helped employees on furlough connect to the business and managers to hold weekly calls with everyone and provide business updates. People shared their personal and professional experiences as inspirational stories, keeping their morale up. The pandemic caused a massive boom in usage from 8000 users to 19200 users in 8 months.

*Excerpt 4.3.161*

*In the last couple of months, we've seen an increase in people talking about mental and how they are struggling in lockdown and there are so many colleagues that have supported those people, people that they would have never met before or people who they have never been in contact before, so I definitely think it has helped them.*

*Excerpt 4.3.162*

*I think it is probably less about business, more about social interactions and networking and emotional*

*Excerpt 4.3.163*

*Start of last year, we had like 8000 people on the app at that point. There was interest in it, but it was growing very slowly. When the pandemic happened, we ran out in lockdown in April, we saw a massive boom a peak in the number of people registering for the app.*

*Excerpt 4.3.164*

*When the first lockdown happened, probably about 9000 people were placed on furlough, and they wanted to stay connected with the business and that had a massive impact. So once they went to furlough, all the managers had weekly calls with every single person and during that period they talked to them about staying connected to the app, we will keep u updated we will setup a chat group you can read all news from company and we saw a massive peak.*

#### 4.3.7.7 Information Sharing

Anya says that the ESN platforms are used for sharing a wide variety of information, especially on the Social Wall where all company news and updates are found, managers share changes to safety processes, set various reminders, HR share processes and best practices, and people share their experiences as user stories. Without these platforms, the managers had to cascade the information to people. In addition, files are shared as attachments, including documents, videos, images and posters, and Anya thinks it is an easy way to store documents. It is evident from the response that operations information is also being shared using these platforms.

#### 4.3.7.8 Improved Communication

Nearly 75% of the organisation's UK workforce does not have direct access to the digital systems and the business. The information had to be shared by managers, cascading them through notice boards onsite or physical mailings to their home addresses. Anya thinks that it is not green, is expensive, and is inefficient. The introduction of Connect App and Social Wall has improved communication and provided several employee updates. The new Connect App, which can be used on phones, is an alternative communication method for those who do not have access to digital systems.

*Excerpt 4.3.165*

*We have 30, 000 people in our business that do not have any direct access in our business so the only way that we can get information to those people through reliance on managers cascading information to them, notice boards on site and direct mailings to people's houses which is not very green, not very efficient and it is quite expensive so what we wanted to do was create an app that anyone in the organisation can access.*

*Excerpt 4.3.166*

*The app was designed to be a light version for every colleague so they can go in and they could see all company news, there was an ability to chat with managers and give feedback and also share their own stories online on Social Wall. So that was the driving force really, wanting to make sure that we were able to communicate with everyone and we weren't relying on managers to cascade the information for us.*

Anya says that the ESN platforms have enabled people to communicate at the global and business level, sharing their stories, thus providing visibility to their work and getting more visibility on what is happening in the organisation. It allows people to recognise others.

*Excerpt 4.3.167*

*The app really give them the ability to share their stories. So, it becomes like user generated content, than what we want to share as a business. I think that is really powerful. Because gets the opportunity then to recognize other colleagues and say thank you. They also get to say this is what I have done. People can see what they have done, whereas in the past perhaps they wouldn't have known about it.*

The pandemic caused the acceleration of usage of these platforms, and employees established communication with people they had never met. Anya says it is easy to talk to each other through these platforms, and she witnessed many people interacting, sharing their experiences, and commenting on things. She says colleagues supported each other through these platforms even if they had never met.

*Excerpt 4.3.168*

*It's so easy to talk to other people.*

*Excerpt 4.3.169*

*They have been able to share experiences with other people that they would have never met before and liking, commenting on things.*

*Excerpt 4.3.170*

*Many colleagues that have supported those people, people that they would have never met before or people who they have never been in contact before.*

Anya acknowledges that the ESN platforms have allowed cross-business communication and cross-functions, enabling both group and one-to-one conversations.

*Excerpt 4.3.171*

*So it is cross business unit and cross functions*

*Excerpt 4.3.172*

*So u can have a 1on1 chat with someone if u find their name in the chat.*

#### 4.3.7.9 Establishing Relationships

Anya says the Connect App and Social Wall have helped build relationships because these platforms allow internal networking. People could gather global and business-level information and then share those stories. It allowed individuals with similar interests to collaborate. Anya highlights that the stories created produced user-generated content, which is powerful in providing visibility to what others are doing at work and recognising them. Further, people could see management and functional teams working from head office whom they would never have met before and could learn a lot about business and colleagues.

*Excerpt 4.3.173*

*We gather the information that we want at the global level, and business level and then share those stories with people. The app really give them the ability to share their stories with these very first time we are seeing what is going on. It was going on at site level at what people are interested in and what they wanted to share.*

*Excerpt 4.3.174*

*So, it becomes like user generated content, than what we want to share as a business. I think that is really powerful. Because gets the opportunity then to recognize other colleagues and say thank you. They also get to say this is what I have done. People can see what they have done, whereas in the past perhaps they wouldn't have known about it.*

*Excerpt 4.3.175*

*I think definitely in terms of management teams or functional teams, we have been able to see so much, particularly anyone who works in the head office, we don't very often get out to a site, we have learnt a lot about the business and colleagues have too, they have been able to share experiences with other people that they would have never met before and liking, commenting on things.*

#### 4.3.7.10 Shared Objectives

Anya acknowledges that she has seen examples of people using the platform to achieve shared objectives regarding employee engagement and operations. She says that managers have used the platforms to manage the shipment and resourcing support to carry out specific tasks, trying to make business cost-efficient for both parties.

*Excerpt 4.3.176*

*So the managers are there in Social Wall and they have used it to say, I have got a load, I need to get it over to France. Has anyone got a space on a vehicle where I can use and they will come back to each other and help each other. So they can ask for support with like shipment, to place it, or they can ask for resourcing support as well. We have got evidence where people have used it to get resource, to fill trailers with goods, try to make business cost efficient something like that.*

#### 4.3.7.11 Trusted Behaviour

Anya says that using these platforms has improved people's perception of others and trust in them. For example, the employees were unaware of the executive board and never knew if they visited a site. These platforms offer better visibility, giving leaders more voice and people the ability to comment online. Being visible online has created trust by getting to know them.

*Excerpt 4.3.177*

*We have got obviously a board, an executive board and before they weren't very visible. They may have got out and visited one or two sites, even then, but people didn't necessarily know who they were. And now they have much more visibility. And as leaders in the business they have a voice. And when they are commenting on peoples post and they are liking people's post and saying thank you online, it is visible, and we can create trust in the leadership team as well. Get to know them.*

#### 4.3.7.12 Decision Making

Anya says using these platforms provides many ideas being shared, which can create collective intelligence. Although she is unsure if the platforms help decision-making, she says they have helped improve the process based on the feedback provided by other individuals in the organisation. Further, it has helped to gather feedback around safety aspects to understand the organisation's voice and make improvements. As noted, collective ideas and feedback have enabled the organisation to improve processes, which indicates their influence on decision-making.

##### *Excerpt 4.3.178*

*I am not sure if they can make decisions, may be it can give them ideas. Things that they can do, that is a good idea.*

##### *Excerpt 4.3.179*

*The business can make decisions? yes definitely, so that was one example where we were able to improve our process, because someone gave us the feedback to say that the process doesn't work, and actually you can do something about it, to change some of the process.*

##### *Excerpt 4.3.180*

*Again through covid we had comments or feedback around some of the safety aspects.*

#### 4.3.7.13 Collective Resources

According to Anya's responses, the organisation uses multiple platforms, predominantly Social Wall, Connect App and SharePoint. SharePoint is used to collaborate on files with version management, which forms a store of information. The Social Wall and Connect App are used to share news and updates, attach documents, provide user experiences and many more, which persist. The caveat is that if an employee leaves the organisation, their profile is deleted, and the information is no longer accessible. Files shared as attachments include documents, posters and images, and she finds it easy to store documents. This indicates that these ESN platforms continue to act as information repositories.

Further, Anya's response indicates that the platform is used to share ideas and feedback to improve processes. Anya also mentions the various stories posted by people, naming it 'user-

generated content'. Multiple individuals' ideas, stories and feedback can account for collective intelligence.

#### 4.3.7.14 Confidentiality

Anya says the organisation has policies and guidelines for using social platforms and maintaining people's privacy. She is very confident in sharing information through the platform and thinks that they are secure because it is internal. The Connect App used on the phone is not integrated with other systems. Any information shared on this tool cannot be sent to the external world and remain isolated. She thinks managers could easily share critical information through the platform as it cannot be shared externally and is in a secure environment.

##### *Excerpt 4.3.181*

*We have a social media policy and we also have a terms of use. It is also about maintaining people's privacy, do's and don'ts of what you can share obviously, because, although it is an internal platform, and the data is secure, we don't obviously want people to share data from there from a data privacy perspective.*

##### *Excerpt 4.3.182*

*Very confident. It is really secure, the way they developed the app means that you can't share information outside the app. The way the app works is that it's totally isolated on itself on the phone and you can't get info of it to send to someone else. So you can send info inside the app but can't send it externally.*

##### *Excerpt 4.3.183*

*Yes, they could use it to send safety stats or maybe financial updates or operational performance you know stats but they would not be able to share it externally, so it would be sort of be secure in the environment.*

#### 4.3.7.15 Achieving Efficiency

Anya acknowledges that the ESN platforms have provided a cost-efficient way of communication. For example, she says, Yammer provides cost-efficient collaboration with different business units across geographies. Similarly, Anya has shared instances of achieving operational cost efficiencies by communicating through these platforms (section 4.3.7.5).



#### 4.3.7.16 Culture

Anya says the organisation used ESN as part of its digital strategy before the pandemic. The pandemic has accelerated its usage, and Anya has provided examples of such increased use (see section 4.3.7.6). The organisation has invested a lot of time, effort, and money in these platforms to promote the digital culture, taking into account the non-digital users as well. It has created a new online culture within the organisation, providing employees with a feeling of belonging.

#### 4.3.7.17 Barriers

One of the barriers highlighted by Anya is that only 25% of the UK workforce has digital access, i.e., to company emails or computers, which restricts their access to ESNs. For example, to access Yammer, an email Id is required. The remaining 75% do not have direct access to the business, and the information is shared through reliance on managers cascading information to them. Other options are on-site notice boards and physical mailings to their home addresses. Anya thinks this approach is expensive, inefficient and not green. The Connect App can be used on the phone, although it is isolated from the company's other digital systems. Despite the initiatives made by the organisation's management to address the access issue with the non-digital workforce, many of the old crews are hesitant to use social media, phones or any technology. Some others do not want to use their personal device for work purposes. Anya says circa 60% of the workforce only uses the Connect App, even though it can be used on handheld devices.

##### *Excerpt 4.3.184*

*In the UK, the space where I work in, there is 40,000 people (and Ireland). So that basically meant that we have 30, 000 people in our business that do not have any direct access in our business*

##### *Excerpt 4.3.185*

*So what we wanted to do was create an app that anyone in the organisation can access.*

##### *Excerpt 4.3.186*

*When we deployed it not everyone would want to have access to it, because there some people would say, I don't want work up on my phone. Once I go home I want to swich of, I don't want to be connected on an app.*



*Excerpt 4.3.187*

*We have a really old workforce as well, you know lot of our drivers are older people. Some of them doesn't even get along with social media and technology. Or they don't have phones they don't that they want to use.*

Another barrier is the limitation of these platforms themselves. For example, the Social Wall cannot be used to communicate with other regions. For example, the UK workforce can access only the UK social wall and not Italy's or Spain's. The Connect App allows global communication, but it is a fully isolated application that is not integrated with any internal digital systems.

*Excerpt 4.3.188*

*The Social Wall itself is circled in that country so we can only see, so I can't look at Spain's Social Wall for example or Italy's Social Wall, I can only see the UK Social Wall.*

Another disadvantage highlighted by Anya is word of mouth. People may divulge information, unhappily provide opinions and share their dissatisfaction. While employee feedback can help sort out problems the individuals are facing, it can also create negative impressions.

*Excerpt 4.3.189*

*So if people were unhappy with the business, if they were mistreated in any kind of way, it is obviously the platform where they can share their dissatisfaction and say, they were mistreated, they were not happy with their work and generally put negative comment.*

*Excerpt 4.3.190*

*We can listen to the individual, we can listen to their feedback and sort that out. But that was very much., when we first launched the app, people were very much concerned about what people would say and it could potential be negative, but to be honest we have a had some of that, but we haven't had a lot of it.*

Anya says that the communication on the Connect App is much more regularised. However, on Social Wall, a lot of information flows, and keeping track of the information is quite challenging.

*Excerpt 4.3.191*

*There is a lot in the wall. So I guess, the one thing is it is quiet difficulty to keep track of it because there is a lot.*

#### **4.3.8 Interview8 – Oliver**

Oliver is an independent consultant in the logistics and supply chain sector and has over 30 years of experience in operations management, warehouse management, and transport operations. He interacts with senior management of the client company to provide consultancy services for their supply chain and logistics problems and executes short-term projects for them. Oliver predominantly uses Microsoft Teams, Skype, and Zoom but only has limited usage.

##### **4.3.8.1 Collaboration**

Oliver uses these platforms to communicate with clients precisely and to align with the client's communication requirements. His company has no instant messaging facilities but uses them if the client facilitates them. He says he uses Skype for Business for one of the customer projects where he is provided with a company laptop, and the platform is used within the internal network. The respondent generally uses emails for communication unless a quick update is required.

Oliver mentions using ESN to communicate virtually with the stakeholders in China and America; nevertheless, he rigidly supports the face-to-face communication method. He does not accept ESN as a usual communication method, but only during unavoidable situations such as communication with remote areas. External collaboration and cross-boundary collaboration through ESN are evidenced here.

*Excerpt 4.3.192*

*But I don't have any instant messaging of my own companies*

*Excerpt 4.3.193*

*In effect I have a XYZ Company laptop given to me and that gives me email and it gives me the Skype for business system.*

*Excerpt 4.3.194*

*If it, a very short message, then I would go and use Skype. If it's a longer message where you need to read it properly, then I'd use email, because if in an email you can actually say you might need to do two or three short paragraphs to explain something.*

*Excerpt 4.3.192*

*But I don't have any instant messaging of my own companies*

*Excerpt 4.3.193*

*In effect I have a XYZ Company laptop given to me and that gives me email and it gives me the Skype for business system.*

*Excerpt 4.3.194*

*If it, a very short message, then I would go and use Skype. If it's a longer message where you need to read it properly, then I'd use email, because if in an email you can actually say you might need to do two or three short paragraphs to explain something.*

*Excerpt 4.3.195*

*So, if I was going to go and say give me a quick update on the Morocco project.*

*Excerpt 4.3.196*

*If I was arranging a call with some people in China or people in America the same time then yeah, I'd go and use the virtual method.*

#### 4.3.8.2 Support During Covid

Whilst Oliver used ESNs rarely, the use of these platforms increased massively during covid, inevitably due to the restricted opportunity for physical interactions. He cites working on a supply chain project for a major retail chain in the UK, where 72 out of 75 days were done remotely using Microsoft Teams and Zoom.

*Excerpt 4.3.197*

*I think that COVID has massively increased the amount to which you use teams or zoom or Skype.*

*Excerpt 4.3.198*

*You don't have the same opportunity for physical interaction.*

*Excerpt 4.3.199*

*Last year I did 75 days of work for XYZ Company, on some transport document of those 75 days, 72 were working at home on microsoft teams and zoom meetings.*

#### 4.3.8.3 Information Sharing

Oliver does not use any of the platforms he uses for information sharing. He seldom uses it for short communication, where a brief response is sought. Oliver prefers the conventional email method of sharing information and exchanging documents.

The respondent believes that information exchange in the supply chain happens through electronic data interfaces such as electronic point of sale (EPOS) or an enterprise system. He pointed out the idea of collaborative planning, forecasting, and replenishment systems (CPFR) for the future.

*Excerpt 4.3.200*

*I don't exchange any documents.*

*Excerpt 4.3.201*

*If you've got a question so you want to go and say, can you tell me how the Morocco project is going rather than send an email, I just go and direct message.*

*Excerpt 4.3.202*

*It's easier if I was going to send a document, I'd always send the document by email.*

#### 4.3.8.4 Improved Communication

Oliver acknowledges that ESN offers easier communication. His improved communication is limited to brief communication for quick responses, as mentioned in sections 4.3.8.1 and 4.3.8.3.

*Excerpt 4.3.203*

*Everything it has is it has easier communication. That's what it provides.*

#### 4.3.8.5 Establishing Relationships

According to Oliver, communication through ESN has nothing to do with relationships.

#### 4.3.8.6 Degree of Understanding

The respondent says the understanding gained through virtual communication is shallow as it lacks analysis and thought process while conversing, and there is a chance of missing information.

##### *Excerpt 4.3.204*

*You get a very superficial understanding of what's going on because you don't have time to think and analyse what, what's being bit, what's being said, and I think as well again, you miss out on a number of the aspects of being in a meeting room with someone.*

##### *Excerpt 4.3.205*

*I think that social media allows us to communicate much more. But I question the value of what of that extra communication. My preference would be that you communicate less, but in more depth.*

#### 4.3.8.7 Trusted Behaviour

Oliver claims trust does not happen through communication methods but through the delivery of the agreed-upon services. He mentions that he uses these platforms only for essential and brief communication and does not trust people unless there is face-to-face interaction.

##### *Excerpt 4.3.206*

*Trust doesn't come from communication methods. Trust comes from delivering what you say you're going to go deliver.*

##### *Excerpt 4.3.207*

*I think again I go back to the point whereby if it's a simple short question, then, whoever it is, I'd use it if it's a longer question or more involved, I'd email it.*

#### 4.3.8.8 Confidentiality

Oliver says that the ESN platform he used for a client project was within the client organisation's private network and could be used only from the client's devices, which is secure. Some of his client organisations have imposed restrictions on using specific platforms

due to security issues. Oliver says he cannot comment more on the confidentiality or security aspect of communicating through ESNs due to a lack of knowledge.

*Excerpt 4.3.208*

*I would say for XYZ, for example, XYZ have a very good VPN system on their devices. So, I think communications within XYZ are very secure.*

#### 4.3.8.9 Sustainability Aspects

Oliver talks about reduced travel due to arranging online meetings and eliminating dead time. Reduced travel can result in lowering the carbon footprint.

*Excerpt 4.3.209*

*You don't have to go so you don't have to travel somewhere to go to a meeting and then go and travel back, which is dead time in the day because it's so easy to arrange the meetings.*

#### 4.3.8.10 Barriers

Oliver started using ESNs only because it was unavoidable while working with clients during the pandemic. In the interview response, he expressed reluctance to use the ESN platforms. The hesitation is attributed to his perception that ESN is not a standard communication method at work. Further, he acknowledges that he is not IT literate and does not understand recent digital technologies, including ESN platforms. In his view, the ESN platforms are only a communication method that replaces face-to-face interactions during unprecedented situations such as the pandemic or when communicating with remote areas. He believes a significant change in the supply chain practitioner's attitudes may result in the wide acceptance of ESNs in this sector.

Another barrier highlighted by the respondent is the difficulties faced in inter-organisational collaboration when multiple organisations are involved. The use of varied ESN platforms and the differences in policies and restrictions of the companies can hinder external collaboration; for example, in one of Oliver's collaborative interactions involving two organisations, the first organisation that arranged the meeting used Zoom, which is restricted in the second organisation.

Oliver did not raise any issue related to work-life balance, but he understands the risks of such problems other individuals may face.



#### 4.3.9 Interview9 – Steven

Steven has over 30 years of experience in the supply chain and logistics sector, serving in different roles in multiple sectors, such as retail chains and third-party logistics providers. His previous responsibilities include network strategy and development, central operations, regional management, inbound and outbound transportation, warehouse facilities, reverse logistics, e-commerce fulfilment, and in-store forecasting and replenishments.

Currently, he provides strategic and operational consultancy services to businesses in the retail, e-commerce, food service, logistics, industrial, and technology sectors. He also collaboratively works with other consultancies. The ESN tools he uses to communicate with stakeholders are Microsoft Teams, Zoom, Skype, WhatsApp, Google Meet and Amazon Chime.

##### 4.3.9.1 Interdependence

Steven works as an independent consultant and collaborates with other consultants to meet the client's requirements. Such collaboration becomes valuable when different skill sets are required in the project and team up with other professionals to work together and on each other's strengths. Here, both parties depend on each other for the successful execution of the project and the monetary benefits.

##### *Excerpt 4.3.210*

*I will collaborate and work with other consultants where a client has a requirement that I feel I need to bring a different skill set into the project with me. It's much more of an associate model where there's a need, I'll team up with somebody else and will do the work together, and work to each other strengths.*

##### 4.3.9.2 Collaboration

Steven mentioned using the ESN platforms (included in section 4.3.9) to collaborate with clients and other consultants. He has used it for conferencing, video calls, screen sharing and presentations, and all stakeholders he interacts with are externals. It is observed that Steven does not use many of the features of these platforms, such as file sharing and collaborative editing. The type of collaboration that exists here is an external collaboration.

*Excerpt 4.3.211*

*I will collaborate and work with other consultants where a client has a requirement that I feel I need to bring a different skill set into the project with me.*

4.3.9.3 Support During Covid

Steven says that Covid-19 and lockdowns significantly influenced the use of these platforms. Although he used these platforms for video conferencing, they were extensively used during the pandemic. He says a client who paid for his services felt they were getting value by being visible in the working environment through these platforms, making them comfortable working from home and at a distance.

*Excerpt 4.3.212*

*Covid and Lockdown's had a huge, impact. So, before covid, Video conferencing was used, But not extensively.*

*Excerpt 4.3.213*

*A client of mine wanting to feel the money that they're paying me is getting value through the fact they can see me and being visible and in the working environment.*

*Excerpt 4.3.214*

*Definitely there's been a huge acceleration of the adoption of this technology. there will be some lasting legacies from Covid outside of the health related legacies in the behaviour of society and behaviour of businesses.*

4.3.9.4 Information Sharing

Steven uses the platforms to share information through presentations and seek approval. He informs that the clients he interacts with use it to share project updates and operational process-related data. The platform is used for training and getting training-related information. Although Steven uses the platform for collaboration at work, he does not use ESNs majorly for information sharing.

*Excerpt 4.3.215*

*So presenting is a lot easier now on conferencing because you can share screens and talk the content. So the ability to present Information and get approvals through it. Uh, is it is definitely enhanced as a result of that, that is very helpful.*

#### 4.3.9.5 Improved Communication

Steven uses the ESN platforms in the workplace and says that communication tends to be instant and quick. He highlights the group communication feature that can be set up based on purpose. He has used WhatsApp group with his client, a technology provider, to make specific arrangements, which he thinks is much faster than email, and the communication is instant and shorter.

##### *Excerpt 4.3.216*

*Yeah, so used in a workplace or in a professional environment and that tends to be for very quick, very instant*

##### *Excerpt 4.3.217*

*Communication between a group and that group can be set up for any particular reason. One of my clients is a technology provider. They've got a WhatsApp group and it's just an easy way of and a quick way and a short way of just making arrangements for things bouncing one or two things of each other. That's away from email because people tend to respond faster to it. It's more instant and the length of the communication is shorter.*

The frequency of interactions has increased while the duration of each interaction has been reduced. For example, multiple short-duration meetings are arranged instead of many hours-long meetings, enabling stakeholders to interact more regularly. Steven says that accessing people with these platforms is very easy. He acknowledges that there is a reduction in emails, and the willingness to talk has increased.

##### *Excerpt 4.3.218*

*Actually I would say they have and I think that what's become quickly accepted is the frequency and length of those interactions. So they are more frequent, but they're shorter in length. So rather than what would be the case of building up to maybe a big meeting that would take several hours, there are more just frequent 30 minute or one hour slots where you're interacting on a more regular basis and that's become more accepted.*

##### *Excerpt 4.3.219*

*So it's too easy to get access to people.*

##### *Excerpt 4.3.220*

*On a positive footing I've seen a reduction in the amount of emails. That willingness to talk about something rather than write it down and then send it electronically, has built, and that's good. I like that.*

These platforms allow us to share screens and talk through presentations. For example, Steven's client has demonstrated the functional capabilities of a software application by screen sharing. ESN offers several flexibilities, and Steven's responses indicate that these platforms have improved communication.

*Excerpt 4.3.221*

*Sometimes they used because there's a need to share and talk through a presentation or there's need to do a demonstration of a of a software which I worked with a couple of technology companies and they have they have software applications and they want to demonstrate the functional capabilities of the software applications and they do that over, Yeah they this screen sharing capabilities very helpful.*

#### 4.3.9.6 Establishing Relationships

Steven says these platforms have helped build relationships to some extent due to their interactive nature, unlike impersonal email communication. However, he says that the ability to network, meet people, and make new relationships is limited but not entirely restricted. Sometimes, there could be new people on conference calls, and the opportunity to interact with them on such calls would be limited. Unlike face-to-face interactions, all disappear after the call and only serve the conference's practical purpose. However, he asserts that these platforms help build relationships better than telephonic conversations or emails.

*Excerpt 4.3.222*

*I think it has helped. It has helped because email exchange is, quite impersonal.*

*Excerpt 4.3.223*

*The ability to network, meet people and make new relationships is limited, if it's just done electronically. It's not restricted totally, but it is limited because if you're on a call with I don't know 10 other people, There's a practical purpose for that call and you're focused on that practical purpose.*

*Excerpt 4.3.224*

*You don't have the same ability to build a relationship Than compared with face to face.*

*Excerpt 4.3.225*

*It does definitely help to build a relationship better than it would be over a phone conversation better than it will be over an email conversation, definitely.*

#### 4.3.9.7 Trusted Behaviour

Steven says that the companies and clients he works with have changed their attitude towards using ESN platforms and have visibly developed trust in the quality and quantity of work produced by working at a distance. The use of ESN for collaboration has developed trust and improved productivity.

##### *Excerpt 4.3.226*

*Both my clients and the companies that I work with and the companies I used to work for have all changed their attitudes towards this so obviously trust is built upon the quality and the quantity of output that individuals produce, and a very quick shift to realization of the fact that working at a distance working from home. Is something that can be trusted and, in many ways, can be more productive.*

##### *Excerpt 4.3.227*

*I think trust is definitely something that has built on the back of this without a doubt and that's about attitudes of companies and senior directors and HR departments realizing that you know actually this is good.*

##### *Excerpt 4.3.228*

*I'm not concerned about security. I mean, it's always, but when you dealing with large credible and professional organisations whose business depends upon data protection and security, personally, I've got a high degree of trust.*

#### 4.3.9.8 Sustainability Aspects

Steven says he used to travel 30 to 40 thousand miles per year pre-covid, considerably decreasing to a few 1000 miles. According to him, remote work is accepted as a way of doing business, and businesses tend to use ESNs to interact rather than make phone calls or send emails. The reduced travel helps lower the carbon footprint and aligns with the sustainability goals.

##### *Excerpt 4.3.229*

*From my perspective I would travel 30 to 40,000 miles a year pre-covid. in the last 12 months in pretty much in lockdown, probably a few 1000 Work related miles that at the at the very most, so all of that time that's associated with that travel, I get back.*

Steven says that these platforms have enabled the business to function during difficult periods, i.e., enabled the sustainability of the business itself.

*Excerpt 4.3.230*

*I think, in the way that I've seen it, it's enabled business to function through a very difficult period in time.*

#### 4.3.9.9 Achieving Efficiency

Steven highlights that the reduced travel due to working remotely and collaborating through ESNs has been a productive experience, and able to use the availability of extra time. However, he says it may be too early to provide evidence of any productivity improvement using these platforms.

*Excerpt 4.3.231*

*Is something that can be trusted and, in many ways, can be more productive.*

*Excerpt 4.3.232*

*And that's been a very positive experience for me, and a productive experience in the way that I've been able to utilize that availability of time.*

*Excerpt 4.3.233*

*I think, in the way that I've seen it, it's enabled business to function through a very difficult period in time.*

*Excerpt 4.3.234*

*I think it's too early to have evidence that the productivity improvement of individuals. I think it's too early to say whether or not the productivity of individuals is flowing through into the improvement of the business.*

#### 4.3.9.10 Culture

According to Steven, using ESNs to collaborate with stakeholders has become the accepted way of business. He says his clients' attitude and trust in the new way of working at a distance has changed and has been accepted. People prefer conference facilities through ESNs rather than ringing up on the telephone. The social interaction that takes place in the working environment from a cultural perspective and a personal perspective is changing, although there are limitations to ESN interactions. Steven thinks a balance of face-to-face interaction and ESN interaction is required in the future. The covid-19 pandemic has caused a considerable acceleration in adopting this technology, and there will be some lasting legacies in the behaviour of society and businesses.

*Excerpt 4.3.235*

*It's now an accepted way of doing business. Getting on a Zoom or a Microsoft Teams or a Skype call is the way that the business tends to interact nowadays.*

*Excerpt 4.3.236*

*I'm seeing a seismic shift in attitudes towards the trust of my clients towards me not being present in the workplace and also within companies.*

*Excerpt 4.3.237*

*So generally people are preferring to use the conferencing capabilities that exist today rather than rather than ringing people up.*

*Excerpt 4.3.238*

*So some things are lost with an I think a balance in the future is what's required, not as complete swing to everyone works at home.*

*Excerpt 4.3.239*

*Definitely there's been a huge acceleration of the adoption of this technology, there will be some lasting legacies in the behaviour of society and behaviour of businesses.*

4.3.9.11 Barriers

Although Steven uses multiple platforms to interact with his stakeholders, there needs to be more awareness and understanding of the available facilities. He has newly adopted these platforms as support during the pandemic. One issue highlighted is the cost implications of using these platforms, especially for small players like him. He has to use multiple platforms based on what his clients use and is forced to use the free version of most of these tools. It has imposed limitations on the features available with the free version.

*Excerpt 4.3.240*

*So I just think it's a little bit early to assess whether or not I am actually getting a genuine benefit on my cost lines, on my profit lines on my sales lines, whatever that might be that the success of the business is measured by.*

Steven thinks the social interaction in the work environment is significant from a cultural and personal perspective. The ESN platforms do not provide the same ability to talk and make relationships as face-to-face interactions.



*Excerpt 4.3.241*

*The social interaction that takes place in the working environment from a cultural perspective, and from a personal perspective is very important. The ability to just lean over and talk to someone about something you're not quite sure about is a lot harder when you're all together in an online environment.*

*Excerpt 4.3.242*

*If you're at a big meeting or a seminar or a training event, in the breaks that take place or before or after, there's a personal relationship opportunity that is missed, if you not in there in person. So building relationships is possible without a doubt at a distance, but I think it is diluted at a distance. You don't have the same ability to build a relationship than compared with face to face.*

Steven says these platforms have caused too many interactions. There have been scenarios where clients demanded a meeting, and in the end, he felt it was unnecessary. Also, people contact him through messages and loading with lots of alerts. He says he is overloaded with information.

*Excerpt 4.3.243*

*Too much interaction, so I think that at times I've been on calls when I've had to be on the call because the client wants to call, but actually when the calls completed its clear in my mind, there was absolutely no reason why that was necessary.*

*Excerpt 4.3.244*

*So, whilst we've been talking these things. I knock off all my alerts, can't be doing with all this ping, ping, but there loads on already, you know there's 10 things have come up. But there's too much and it almost encourages too much information to come through.*

According to Steven, different companies have different views on which platforms they want to use and their reasons for using them. He gives an example of his previous company, which hesitated to use the ESN platform provided by the competitors.

*Excerpt 4.3.245*

*I mean different companies will and different IT teams will have different views as to which platforms they want to use for their own reasons.*



#### 4.3.10 Interview10 – Kathryn

Kathryn is an account director at ABC Supply Chain, with more than 20 years of experience in the logistics sector. She deals with customers from the automotive industry (Carson et al.), providing services such as the movement of vehicles, deliveries, rentals and product launches, and looks after the contracts, procurements, business development and renewals, managing existing business and identifying new opportunities with the help of the operations managers reporting to her. She is responsible for commercials and P&L, interacts with the finance team, and is the general manager of the office site from which she works.

The ESN platforms she uses include Microsoft Teams, Skype, WhatsApp and internal platforms such as Connect App and Social Wall.

##### 4.3.10.1 Collaboration

Kathryn acknowledges using multiple platforms for collaboration. Microsoft Teams is predominantly used for internal and external communications, while Connect App and Social Wall are extensively used for internal collaboration and employee engagements. The use of WhatsApp and Skype is comparatively low.

Kathryn uses these platforms for information sharing, presentations, video conferencing, and collaborative work with stakeholders from various locations. She uses the chat facility for focused communication. The platform used for collaboration with external stakeholders depends on what they use. For example, one of her customers is slightly informal and allows WhatsApp for communication, and another customer is very formal and uses Microsoft Teams, and communication is very standard. Some customers have their bespoke version of the tool to communicate. Internal, external and cross-boundary collaboration is evidenced here.

##### 4.3.10.2 Cross Platform Compatibility

Kathryn acknowledges using the platforms to send quick and vital information from her phone. The organisation has developed the Connect App to make it available on phones so most of the employees can use it, even if they do not have digital access to the organisation.

##### 4.3.10.3 Support During Covid

Kathryn had been using these platforms before the pandemic. However, its usage increased during the pandemic. All the business engagements that were done on-site and face-to-face shifted to online. Kathryn says that the lockdown has dramatically changed customer

interactions, making it the online way it is now. Working from home has made ESNs a preferred choice, and increased use of these platforms has improved their confidence. However, there are specific platforms which are considered unsafe, which the organisation avoids.

*Excerpt 4.3.246*

*The lockdown has dramatically changed that interaction with the customers by having to do what we're doing today. We have to have those discussions about launches now around these types of mediums.*

#### 4.3.10.4 Information Sharing

Kathryn uses the platform to share information such as business reports, interactive presentation deliveries, clarifications, business ideas, and best practices, as well as share successes, seek status updates on tasks, and provide business updates. For example, she regularly shares vehicle utilisation reports through these platforms.

She says the platform is used for general communications such as raising awareness on health and safety, updating organisational policies and guidelines, providing education and training, and providing other information beneficial for the employees. Similarly, achievements and accolades are shared to inspire and motivate others.

*Excerpt 4.3.247*

*Going back to the procurement of services, If you're invited to present your presentations, you might be presenting to an audience and audience can't interact with you. So what they will do is they'll ask questions through the chat channels. We have a team that present in the background there would be also a team that are responding to any questions from your presentations that came through the check groups.*

#### 4.3.10.5 Improved Communication

Kathryn's response proves that these platforms have improved communication among employees and stakeholders. For example, during the screen-sharing presentation, while the presenter is busy delivering the presentation, other team members answer the participants' questions through the chat facility, making it more interactive.

Kathryn says she can know the status of colleagues if they are connected to the app or online, which helps her communicate. Similarly, she uses these platforms to send quick and short messages that are important, and that need to be communicated to people quickly.

*Excerpt 4.3.248*

*It will allow you to search to see if the colleague is connected and if they're connected you can send.*

*Excerpt 4.3.249*

*If it's a quick message about something that's important and you want to get to people quickly, you would just send something through on your phone on WhatsApp.*

The employees across the organisation get better visibility of individual and team achievements and appreciate them. People share best practices of their projects, which others can adopt in their business line. The comments and feedback motivate and inspire people who feel connected to the operations even if they work remotely.

*Excerpt 4.3.250*

*I think it gives colleagues within the business group to have a view of what's going on around the business and share ideas. I think when you get a nice piece of customer feedback and you share it on the app, I think colleagues feel more valued because they know that we've been recognized not just within the department but externally. And when somebody puts a comment on there, I think there's been times where we've done some best practice locally and other sites have reached out and said, can you share your best practice?*

*Excerpt 4.3.251*

*I think that the comments and the feedback that they get really do motivate and inspire them, as well as those people that are working from home feeling that they're still connected to the main operation and still part of that team.*

Kathryn says that her colleagues use the Social Wall and Connect App to share events that have occurred. For example, they have shared videos of 'Gemba Walk' aimed at continuous improvements such as a better floor area design and planning arrangement of warehouse objects. The availability of such information provided other teams with knowledge and encouragement to do similar initiatives in their work area.

*Excerpt 4.3.252*

*So for instance, if it's a packing in a warehouse, it could be that you're keeping the Cardboard boxes too far away from the area that you're packing, so one of the results of the Gemba walk, but could be to move your Cardboard box storage closer to where you're doing your packet.*

Kathryn says that her engagement frequency with external stakeholders may not have increased much because of using these platforms. However, at an operational level, the frequency of interactions has increased.

*Excerpt 4.3.253*

*I'm not an operational level where I wouldn't need to speak to the customer day to day. I think for my operatives and for my OPS managers, then yes, I think that that they probably engage more with the customer through these types of mediums.*

#### 4.3.10.6 Establishing Relationships

Kathryn thinks that these platforms have helped establish better relationships with internal colleagues. People get better visibility on what is happening within the organisation, and they can interact with others through comments, feedback and recognition and feel more valued. She points out that the frequency of interactions at an operational level has increased. Likewise, managers do a lot of informal catchups with the employees using these platforms and enquire about their comfort and well-being. These activities help improve relationships.

*Excerpt 4.3.254*

*I think it gives colleagues within the business function to have a view of what's going on around the business and share ideas. I think when you get a nice piece of customer feedback and you share it on the app, I think colleagues feel more valued because they know that we've been recognized not just within the department but externally.*

*Excerpt 4.3.255*

*The meetings that my OPS managers do sometimes they are just catchups. How are you? What you are doing at the weekend or how was your holiday?*

#### 4.3.10.7 Friendliness in Communication

According to her, the platform can be used for formal and informal communication and provides a friendly and personal touch while communicating with colleagues. She has used it for friendly communication with colleagues.

*Excerpt 4.3.256*

*We use a same thing Microsoft Teams and Skype for more intimate conversations. What we also do is use WhatsApp. If it's a quick message about something that's important and you want to get to people quickly, you would just send something through on your phone on WhatsApp. I think it's fair to say that WhatsApp is also, it can be for information, but it can also be like, this morning and I've just put it on a Smiley, it's Friday, everybody, you know that sort of thing, so it's then moving from a business comms tool into more of a social comms tool, if that makes sense.*

She says that her team use these platforms for friendly and informal conversation with customers, although some formalities exist, and the level of formality depends on the stakeholder.

#### 4.3.10.8 Confidentiality and Trust

Kathryn says there are some regulations that everyone in the organisation and the stakeholders agree on while using these platforms. Formally introducing each other, briefing the background and setting the clarity of contexts are all part of developing trust. There are rules everyone agrees to regarding maintaining the confidentiality of the conversations. The organisation uses a secure private network and security policies to ensure the privacy of information shared through ESNs. Kathryn asserts that elements of trust exist, which has enabled her to share information through these platforms.

*Excerpt 4.3.257*

*I mean it has to be a trust. There are elements of that.*

*Excerpt 4.3.258*

*I think when we're doing chat types as well I think that there are permissions that you would need to ensure to make sure that somebody doesn't copy the chat, or if they're going to make a copy of the chat that they let you know that they're going to be making a copy of the chat. So I think there are some formalities that you would agree. I think on a more informal level, there are a list of things that we do like.*

*Excerpt 4.3.259*

*Anything that I do is done through a secure network and we have quite a lot of security policies in terms of what I as an individual can keep on my laptop, ET cetera, ET cetera.*

#### 4.3.10.9 Sustainability Aspects

Kathryn says that using these platforms is better from a go-green perspective. Some of her customer sites are located far away, and she saves much travelling time by using ESN for collaboration. The fuel saving and environmental impact make it cost-effective and environmentally friendly.

##### *Excerpt 4.3.260*

*It's better from a go green perspective, so some of my customers, XXX Group are in the same towns. So that's obviously fine, but YYY for instance is down in Essex. So my time traveling to Essex and the petrol that I'm using and the impact on the environment doesn't make it cost effective. So the online platforms are good for the environment. They're good for your work life balance as well because it means that you can use your journey time to get on and do other things, including spending time with your family. So yes, I think they work really, really well.*

The organisation has green initiatives, and news of such initiatives is posted on the Social Wall, creating more employee awareness. For example, when one of the work sites implemented LED lights, news and pictures were shared to show the impact on the working environment and the green benefit of carbon footprint. Information on training on green initiatives and achievements is posted, encouraging others to do the training.

##### *Excerpt 4.3.261*

*We have quite a lot of stuff on go green so we have some go green training and quite often we will see comments from colleagues that have just done Argo Green certificate and they'll say about how impactful and powerful the go green training is and it will encourage other people to go online and do that training. We at Milton Keynes had some new environmentally friendly LED lights put into our workshop and we posted the pictures of the before and the after so you could see the impact on the working environment and how much brighter it was and also that it was a go green thing to do in terms of our carbon footprint.*

#### 4.3.10.10 Achieving Efficiency

Kathryn mentioned that she could save much time by avoiding travel, which is used to do other tasks and has improved her productivity. Information on the Gemba walk posted on the Social Wall encouraged other teams to adopt similar initiatives for continuous improvement. She acknowledges that process efficiencies can be achieved. Similarly, sharing such experiences provides ideas that other teams can adopt in their practice. Kathryn highlighted an example of

reusing a template. Likewise, comments and feedback can help improve the existing process, making it efficient.

*Excerpt 4.3.262*

*Yeah, and to motivate other people to get involved and join in those activities and to share your results, because if you've done a Gemba walk in one part of the business, seeing the results of your gamble walk might encourage somebody else to do it in another part of the business.*

*Excerpt 4.3.263*

*And quite often you might see ideas on the app that other sites are doing that you think you know what, That's such a great idea. Somebody in Aerospace said, can I have the template 'cause we'd like to do that.*

#### 4.3.10.11 Barriers

One of the barriers Kathryn highlights is the limitation in the number of participants that can participate if there is a large conference and the inability to have face-to-face interaction while using an ESN platform. Another issue she mentions is the platform being intrusive. During video calls, the background of the home or other members in the background can be visible, which can be quite personal. If it is a face-to-face meeting, it happens in a controlled environment. She also mentioned getting messages outside of office hours, which is intrusive.

*Excerpt 4.3.264*

*We were able to get 500 delegates on that conference if it was a face to face conference, We would never been able to engage that many people. And the way in which the conference was set up you were able to engage, just as seamlessly. And you probably it was probably more engaging because you had the audience there in front of you.*

*Excerpt 4.3.265*

*I think the negatives are that you know, like today you can get a snapshot into somebody's home. I think sometimes there is that risk that I was doing some filming yesterday online for some conference feedback and my partner didn't know, when he came in from work. You know and he was in the background and he didn't know that he was being filmed. When you're at work here in a controlled environment.*

#### 4.3.11 Summary of Interviews

The interview responses provide detailed insights into supply chain professionals' experience of using ESN. They use various platforms for varied purposes, and the impact of using ESN is



higher for operations and employee engagement, while at a higher management level, the use is limited. The respondents' views on establishing relationships and trust using ESN varies.

Some respondents have mentioned using social networking sites such as Facebook, LinkedIn, and Twitter for collaboration, information sharing, and marketing. This study does not consider platforms used publicly, and the findings are irrelevant to this study. Platforms are used for customer communication to address complaints and receive feedback, which is also not considered in this study.

#### **4.4 Phase III - Netnographic Analysis of Conversations**

This section presents the final phase of this study, the netnographic analysis of conversations collected from the organisations - Exela Services, CraftTex Manufacturing and Acorn Furniture Group. Further subsections examine the findings of each company's netnographic analysis of conversations. At first, each company section presents a high-level overview of the company and its business. The researcher needed to develop an understanding of the company and its operations to aid the netnographic analysis.

The findings and discoveries presented in this section for each company focus on the research questions. The subsections focused on the Research questions are 1) the nature of Relationships and Trust (RQ1), 2) the nature and Extent of Information Exchanged (RQ2), 3) the antecedents of Using ESN in SCM (RQ3), and 4) the consequences of Using ESN in SCM (RQ4).

##### **4.4.1 Company1 – Exela Services**

Exela Services is a micro-organisation whose primary business is online sales through various e-commerce platforms and the company's website, and the target market is the UK and EU. In addition, the organisation provides packaging and fulfilment services and storage management services to their business clients. Exela services have outsourced some of their operations, which can be handled digitally by their overseas partners. The overseas partners are heavily involved in procurement, inventory management, order management, customer support and other activities that can be handled digitally from a remote location. Their business interactions involve various stakeholders as follows:

- Suppliers in the UK, US, China, and India
- Business customers in the UK (fulfilment and storage management provided)
- Overseas outsourcing partners



- Shippers and Logistics providers
- Online consumers

Figure 4.3 shows the position of Exela Services, the focal company and its stakeholders.

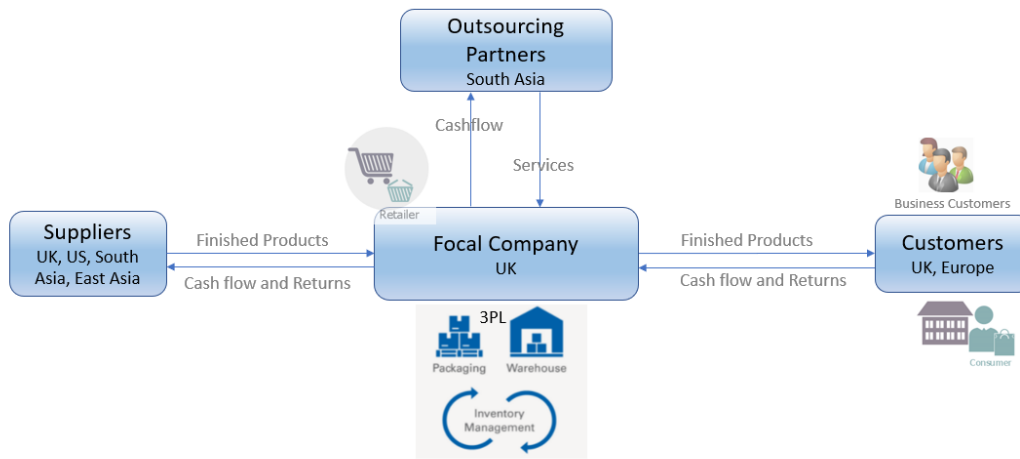


Figure 4.3: Business Interactions of Exela Services

#### 4.4.1.1 Background of ESN at Exela Services

The focal company, Exela Services, was an early adopter of ESN and used platforms such as Slack, WhatsApp, G-Suite, and Wrike for internal collaboration even before the pandemic. The adoption was mainly due to the team structure spread across geographies and time zones. During the pandemic, WhatsApp for business and WeChat were also adopted to communicate with suppliers and logistics providers external to the organisation. The company uses Slack extensively to collaborate, and different communication channels are created to discuss various topics in the business. However, the tool had some limitations in organising the communication channels more effectively and maintaining the document’s history, which is why Twist was adopted. The company uses email, WhatsApp and WeChat to communicate with overseas suppliers for procurement/sourcing activities based on the purpose and context of communication. Only Slack conversations are analysed in this study.

The group conversations from Slack include communication between 1) Company staff located at multiple office\warehouse locations within the UK and 2) outsourcing partners located overseas at a different time zone, which means it is used for inter-organisational communication. These conversations are related to the company’s day-to-day business operations, including management and status updates on various activities such as sourcing, inventory management, picking and packing, shipping, and seeking clarifications.

The participants in the different conversations are Adam (senior manager/director), Kevin (operations manager), Sam (outsourcing partner), Victor (outsourcing partner), Sascha (outsourcing partner) and Will (outsourcing partner). Note that all are pseudo names. Although the conversation participants analysed are from different companies, all participants work as a team to achieve a common objective.

#### 4.4.1.2 Interdependence

Throughout the conversations, the team members seek clarification, provide responses, discuss various opportunities and provide instructions or guidance on performing tasks on the operational front, displaying strong interdependence on each other. Some examples are examined here.

For instance, the focal company member wants to know the economical rate for sending a 5 kg parcel on behalf of their business customer. Information on prices offered by various shipping providers, such as Royal Mail, DPD, Parcel2Go, UPS, and myHermes, are discussed, and URLs are shared so that everyone can explore the competitive rates. Each parcel company has different rates based on size and weight, and the aim is to identify the best competitive rates for each package specification. The information generated in the conversation provided actionable insight into creating an account with the shipping company and configuring shipment collection from the warehouse location. Also, advice on updating the shipment tracking in the order status is provided. Likewise, the discussions involved planning effective shipping strategies, such as generating address labels for bulk shipments and choosing the parcel service based on the package size and the number of boxes in a single shipment. Here, the participants depend on each other for information for smooth operations, as shown in figure 4.4.

The team displayed dependence on each other to manage excess stock in the sales channel for a low-sales product. Sascha notified the team of the stock and sales status of a particular product for which the sales have been low in the past six months, tagging Victor using @mention to solve the issue. He suggested that sales need to be improved using strategies such as coupons, price reduction, and advertisements. Victor took corrective action by linking the product to a parent listing of the product with higher sales, and Sascha ensured that the sales were kept further track of after the change was made (figure 4.5).

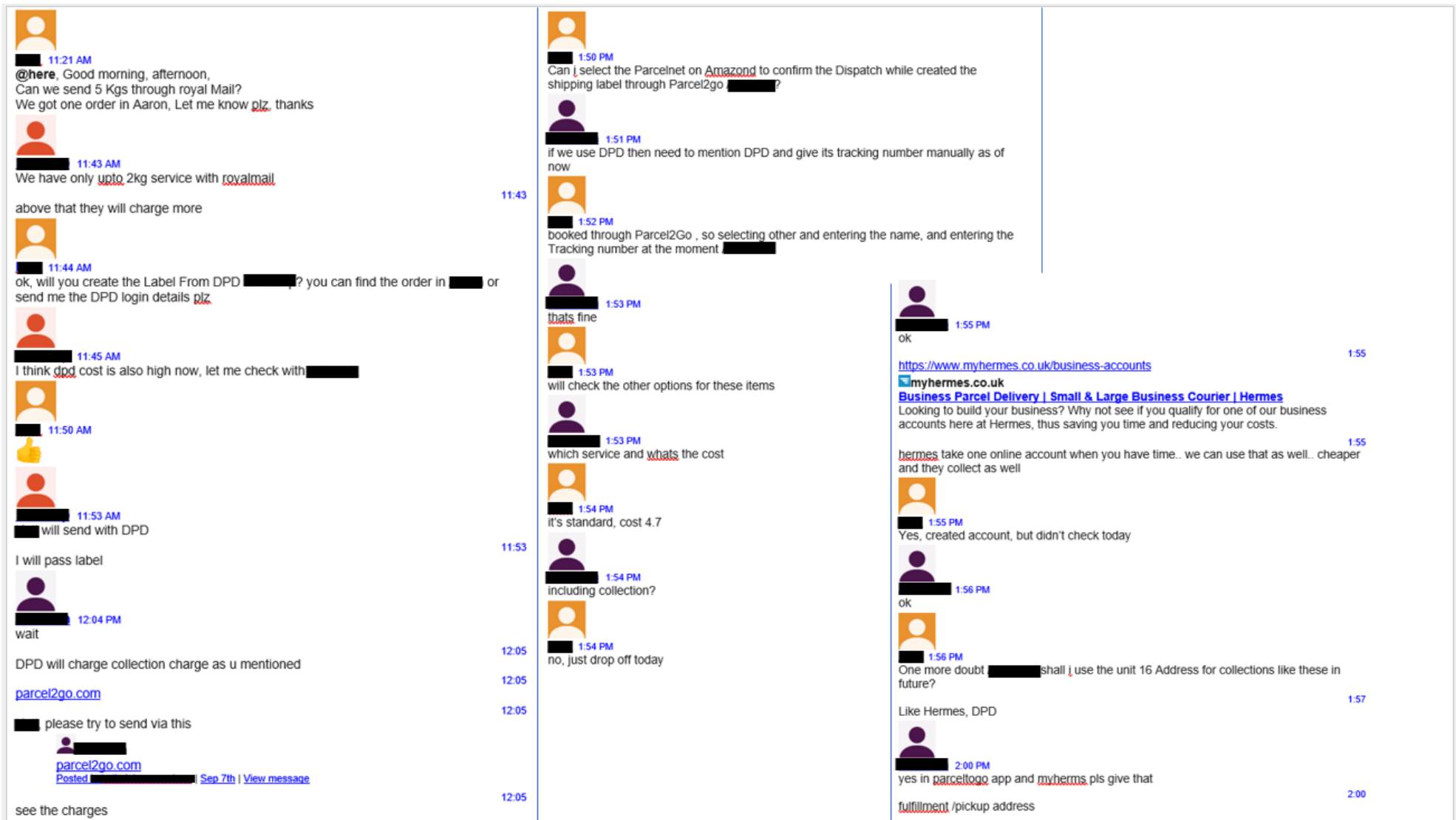


Figure 4.4: Seeking clarification on shipping

**S** [redacted] 9:10 AM  
 @ [redacted] - this one [https://www.amazon.co.uk/dp/\[redacted\]](https://www.amazon.co.uk/dp/[redacted]).. we have around 1200 in stock..and our sales are very bad for the last 6 months, around 25 p/m.. may be we should give some coupons or something? i think we have some room for price adjustments.. can enable ads also

we have around 1500 boxes.. and FBA is already excess

Screenshot 2021-10-29 at 1.41.10 PM.png

[redacted] 9:37 AM  
 was added to export by [redacted]

[redacted] 9:46 AM  
 sandeep also added to this group

[redacted] 9:47 AM  
 👍

9:47  
 9:49

this box was splitted from the parent and we have reattached it , so traffic will come automatically by the other variations. So will wait and green is festive color sales will come

**S** [redacted]  
 @ [redacted] - this one [https://www.amazon.co.uk/dp/\[redacted\]](https://www.amazon.co.uk/dp/[redacted]).. we have around 1200 in stock..and our sales are very bad for the last 6 months, around 25 p/m.. may be we should give some coupons or something? i think we have some room for price adjustments.. can enable ads also  
 Posted in export | Oct 29th | View message

**S** [redacted] 10:10 AM  
 Ok.. 👍 hope it will get cleared.. will have to keep an eye, since its already excess..

Same case with - [https://www.amazon.co.uk/dp/\[redacted\]?th=1](https://www.amazon.co.uk/dp/[redacted]?th=1)? we have 101 in FBA and thats also excess... our sales are around 10 p/m only.. so it will take a long time to clear, atleast a few months?

---

[redacted] 11:07 AM  
[https://www.amazon.co.uk/dp/\[redacted\]](https://www.amazon.co.uk/dp/[redacted]) this is a non-moving item. Stock is 13 and est storage cost is more than the sales price

Abbreviated: estimated

[redacted] 12:10 PM  
[https://www.amazon.co.uk/dp/\[redacted\]](https://www.amazon.co.uk/dp/[redacted]) - This is not moving much and is also in excess inv. Currently 41 nos are in amz - In 12 months only 254 units are sold -

[redacted] 1:08 PM  
 better we clear and discontinue asap this

1:09  
 @ [redacted] pls followup this in a local excel and see whats the status after 10 days

[redacted]  
[https://www.amazon.co.uk/dp/\[redacted\]](https://www.amazon.co.uk/dp/[redacted]) this is a non-moving item. Stock is 13 and est storage cost is more than the sales price  
 Posted in export | Nov 1st | View message

[redacted] 1:22 PM  
 Ok

Figure 4.5: Sorting sales channel stock issue

Similarly, Sascha has notified a few other products with excess stock in the central Amazon warehouse within the ‘fulfilled by Amazon’ category, sharing the screenshots of the product/stock status and tagging (@mention) both Sam and Victor in the message so that either one can resolve the issue. Sam has taken corrective action to either improve sales or take back the stock from the central warehouse to reduce storage costs. Although Sascha provides suggestions to improve sales in both scenarios, he depended on Victor and Sam, who have more experience in this area, to take corrective action that best suits the situation (figure 4.5).

The outsourcing partners worked proactively and collaboratively to identify and resolve issues and discuss strategies to improve sales without any intervention from the focal company. Adam and Kevin from the focal company are highly dependent on the outsourcing partners’ analysis, insights, suggestions and corrective actions, which shows a strong interdependence and commitment, evincing the presence of trust.

Figure 4.6 displays several linkages showing interdependence deduced from a group chat involving participants from the focal company and outsourcing partner.

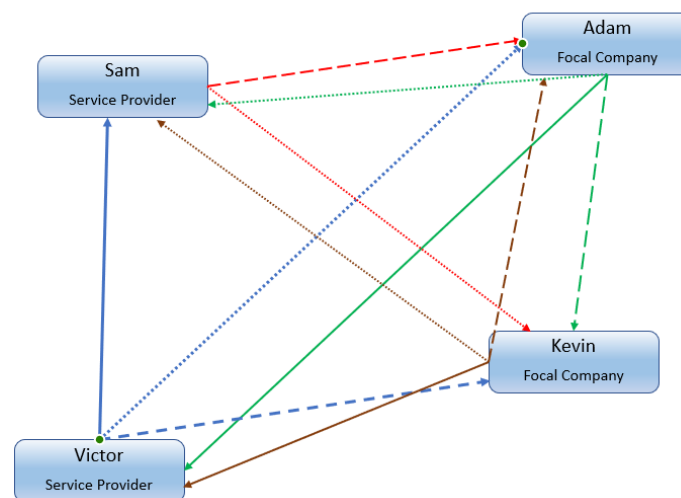


Figure 4.6: Linkages showing the interdependence of the conversation participants

Seeking clarification is frequently observed in the collaborative work adopted by Exela services, which is evident from the group conversations. The team members are quick to ask questions, even trivial or complicated. Quick turnaround of responses is observed, and sometimes multiple responses are received, leading to informed decision-making. Table 4-6 shows a description of examples showing dependence.

Line Indicator	Description
.....→	Adam seeks information from Sam on managing and updating inventory/stock details
---→	Adam requests Victor to review and update legal documentation required for overseas shipment
→	Adam requests Kevin to coordinate with the UPS account manager for a follow-up call to sort account set up issues.
.....→	Kevin depends on Sam to get sales listing details of certain products and their stock status.
---→	Kevin seeks clarification on updating the order with on shipment tracking details
→	Kevin seeks clarification from Victor on the movement of inventory between warehouses in two different locations
---→	Victor seeks update on shipping status from Kevin and to suggests liaise with shipping provider
→	Victor requests Sam to review and verify the billing details of past UPS shipments
.....→	Sam consults with Kevin on legal documentation required for overseas shipment
---→	Sam seeks clarification from Adam shipping cost for a particular shipment is high and if the provider should be used in that instance

Table 4-6: Description of different linkages showing dependencies.

The Slack platform is used to communicate, share information and documents, solve problems, and perform various other purposes, which indicates strong collaboration among the participants. The conversation details that indicate collaborative behaviour and Slack screenshots are examined in the previous and subsequent sections. All these activities are the different elements of collaboration.

The Slack conversation examined here is between the focal company and the outsourcing partner, which is external to the organisation and located in different geographies and time zones. The types of collaboration facilitated by Slack are ‘external’ and ‘cross-boundary’ collaborations from the context of the group conversations analysed.

#### 4.4.1.4 Information Sharing

The Slack groups have been used to share a wide variety of information that helped the functioning of the focal company. The information shared includes product research, procurement and delivery status, inventory management, sales, orders and returns management, shipment details, customer support and other regular tasks. Furthermore, regulatory documents for international trade, other administrative documents, confidential information, policy documents and guidelines related to trade, and IT issues were discussed.

The subsequent sections present the characteristics of information, features of ESN conversation, types of functional information, confidential information and administrative and regulatory information.

#### *4.4.1.4.1 Characteristics of Information*

The qualities of information shared during the group conversation are examined here. The team members have shared relevant, accurate, sufficient and reliable information in a timely and concise manner for the regular functioning of the business and issue resolution.

The UPS billing issue was resolved because the outsourcing partners shared accurate and relevant information on the previously shipped parcel weights, allowing the details to be verified with the details in the UPS invoice. Subsequently, the discrepancies were raised with the UPS account manager, who explained the 'dimensional weight' concept, which was not informed during the UPS account creation. The account manager apologised and increased the weight limit to meet the focal company's shipping needs. The detailed response provided by the UPS account manager was also shared to update everyone in the group chat. The screenshots of the conversation are shown in figure 4.7, figure 4.8 and figure 4.9.

Similarly, providing accurate, reliable, and timely information on sales and stock status of slow-moving products in the group conversation allowed members to promptly take corrective action to improve sales and reduce storage costs (figure 4.5, figure 4.10, figure 4.11). For procurement planning, the outsourcing partners required the current inventory details, including expiry dates. Kevin provided reliable and adequate information that helped Sam and Victor to plan the purchases.

During summer, the shipping of Lindt and caramel chocolates was planned when the temperatures were low. However, Kevin's timely intervention in providing reliable weather information for the upcoming days helped them delay the shipment, avoiding the potential melting of chocolates during shipping figure 4.12.

There are several instances where the team members have shared valuable information, which is evident from the conversation.





Figure 4.7: Solving UPS billing issue 1

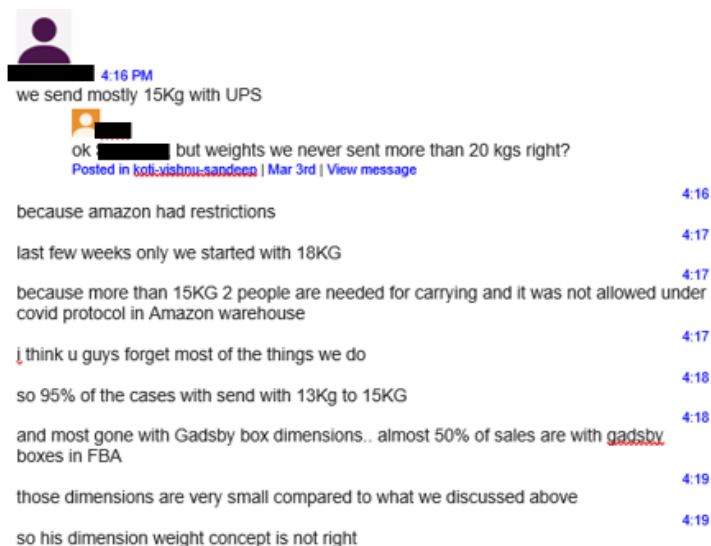




Figure 4.8: Solving UPS billing issue 2



  
[REDACTED] 11:49 AM
   
 \*\*\*\*\*
   
 Just spoke with Our UPS Account manager regarding Parcels in Germany, He is saying that everything is ok, But he will email to the Brokerage in Germany regarding that n will update back to us soon. **Coming to Invoice Pricing:** He said it's due to box Dimensions (Package Size) is more than 300 cms. I calculated and told him that's less than <300
   
 Invoice: [REDACTED], Shipment No: [REDACTED]
   
 For Example: Length + 2x Width + 2x Height
   
 = 62 + 96+ 82
   
 =240 which is less than 300
   
 And weight also mentioned 24.4 Kgs . I told him we never sent more than 18-19 kgs. After that he said, it's on (Dimensional Weight), Which is calculated on different way, as follows=62\*48\*41/5000
   
 =24.4 Kgs , So finally the charges on this weight. He is explaining that on our Account The Dimensional Weight is 20Kgs, so that's the reason it's more cost. I asked him, did you explain all these to Us before? Now you are explaining when we are asked you. He saying i am sorry....I asked him regarding the Billing refund and all, He will contact the Billing department will come back to us **Note:** Now he saying that he will update on our account 25 Kgs Dimensional Weight after discussing with Pricing Team, Anything we need the clarification from him, obviously we are the victims on this


Detailed explanation


  
[REDACTED] 11:52 AM
   
 😞 Dimensional Weight!!! (edited)

11:53

In some cases they marked 30kg+ weights as well



  
[REDACTED] 11:56 AM
   
 ok Sandeep, but weights we never sent more than 20 kgs right?


  
[REDACTED] 11:56 AM
   
 yes

11:56

all are 18kg max

Figure 4.9: Solving UPS billing issue 3


  
[REDACTED] 10:34 AM
   
 Hi [REDACTED]
   
 Can you please update the current wh stock here so we will buy and plan to send for
  
 thanks
   
maltesers and smarties.JPG




Figure 4.10: Asking for stock details 1

 12:07 PM  
[redacted], can you send me this Excel sheet plz 12:09

 12:15 PM  
here it is [redacted]  
Excel Spreadsheet

**Chocolates.xlsx**  
24 kB Excel Spreadsheet  
24 kB — Click to view

 12:27 PM  
Just a min, i will update with Exp dates

 1:08 PM  
Screenshot 2021-02-24 at 13.06.58.png  


Hi [redacted], please check it , i mentioned with Expire dates as well 1:10

 1:11 PM  
ok, thanks koti 1:12

will go through it and order/send fba accordingly

 1:14 PM  
ok, One item Expiry date in next month and one in May,  
Bunny Expiry date 23/01/2022, by mistake i entered 2021, please check it

 1:14 PM  
oh ok, i was about ask that 1:15

thanks for updating

File sharing

Figure 4.11: Asking for stock details 2

11:04 AM  
Not much hot weather today , can pass instructions to pack chocolates plz  
if nothing to pack other things

11:08 AM  
ok, keep those near in a cooling area (edited)

11:16 AM  
Sure, we will keep, just avoid the Lindt & Caramel listings if possible

11:17 AM  
🤔

11:18 AM  
😊😊 i know it's difficult

11:18 AM  
Yes, will check anyway

11:05  
MPEG 4 Video  
Image from iOS  
81 MB MPEG 4 Video  
Click to view details

11:35 AM  
Please check this is the situation at the moment for Lindt

11:36 AM  
🤔

11:36 AM  
That's why i am asking to avoid Lindt & Caramel for the time being

11:36 AM  
🤔

11:40  
We have KID009961 lindt packed and kept as packs in wh, that need to check if melted or not before sending it to FBA (edited)

11:49 AM  
If we left like that until whether cool's down, that's fine  
if we ship them now, definitely a problem

11:50 AM  
yes, ok to anyway  
thanks for Updates 👍

Annotations:  
- Image sharing (points to video link)  
- Use of phonographic (points to video link)  
- Use of acronym (points to 'FBA')

Figure 4.12: Timely information on shipping

#### 4.4.1.4.2 Features of ESN Conversation

Exela services have streamlined Slack conversations through direct messaging and private group chats. The organisation maintains multiple communication channels for various purposes (see figure 4.13), including general discussion, sourcing, export, fulfilment services, own website, stock updates, regular tasks and warehouse communications. Creating channels for each topic allowed for more structured communication, limiting the discussion to the topic.

Images and URLs are shared in the conversation, which, followed by comments, helped convey the message clearly and concisely. For example, figure 4.12 shows an image shared and asks to check Lindt's status. Figure 4.11 shows a scenario where an Excel file is shared asking to update the expiry dates. Website URLs are shared to provide information on guidelines and policies to assist business operations; for example, in figure 4.13, the 'parceltogo' website URL is shared, asking to check the rates.

The use of acronyms and phonographic terms is also observed throughout the conversation. For example, figure 4.12. shows the use of phonographics such as 'plz' for please, 'wh' for warehouse and 'tc' for take care. The acronym FBA, which means 'Fulfilled by Amazon', is used in figure 4.12.

Slack allows features such as tagging individuals in a post or a comment to engage them, assign action, and respond to specific messages (figure 4.14). The communication occurs in synchronous or real-time mode when other group members are available and in asynchronous mode when other parties may be offline. Individuals can pick up the messages received offline when they return online. The feature '@here' is used when only the attention of people actively working in the channel is required (figure 4.15). This feature is excellent when one does not want to notify teammates who are unavailable. The conversations are friendly and informal, as presented in section 4.4.1.9.

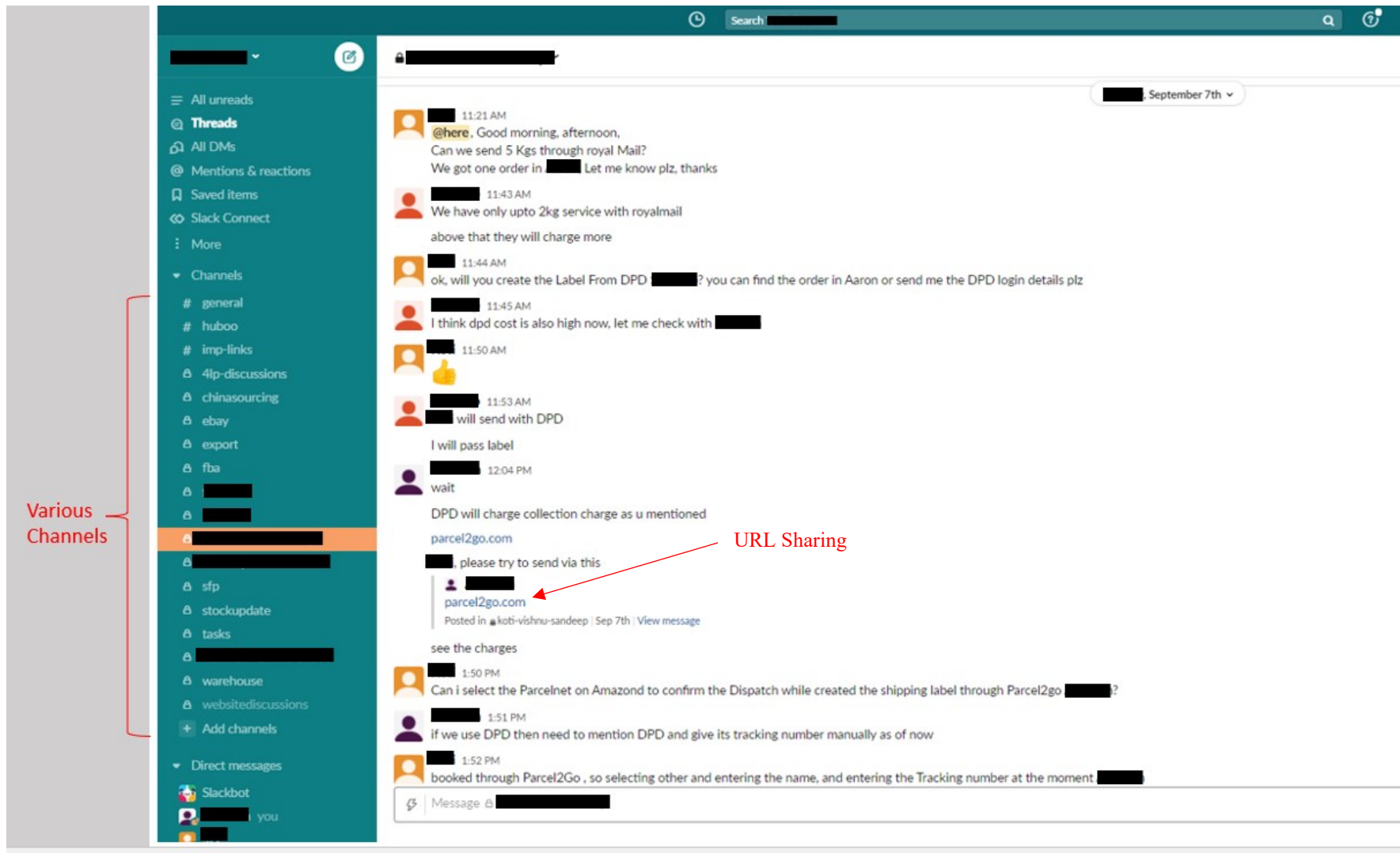


Figure 4.13: Communication channels for various purposes

The group chat shared several texts with detailed guidelines copied from websites or email responses from service providers such as shippers and Amazon help desks.

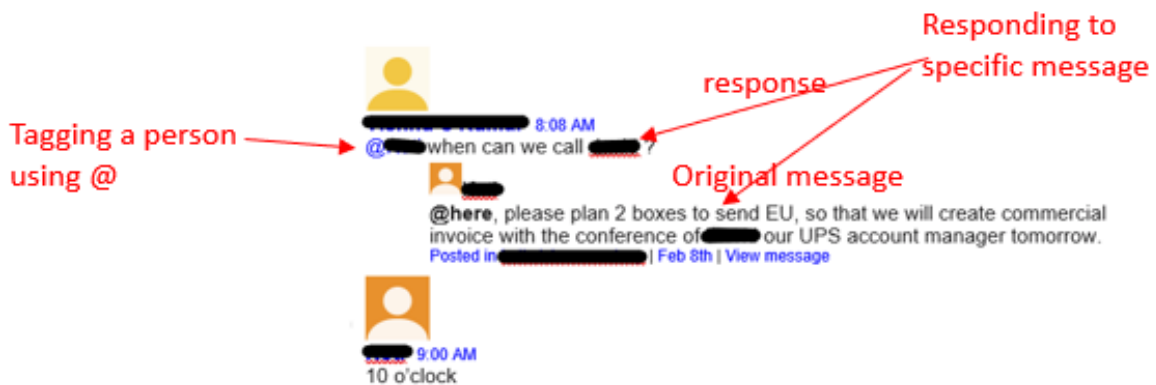


Figure 4.14: Tagging an individual using @mention and responding to a specific message

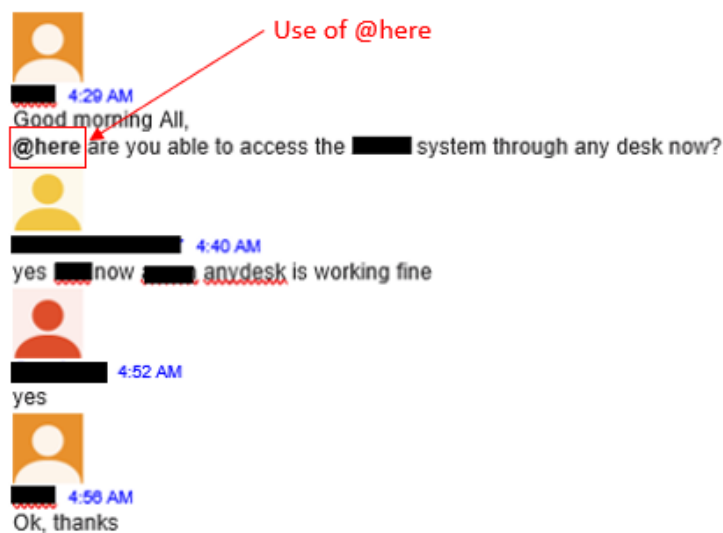


Figure 4.15: Use of @here

The symbol diversity of social media has allowed the broader use of emojis through communication to express emotions and appreciation, which can increase intimacy between the communicating parties. The emojis used include ‘Thumbs up’ to agree or acknowledge one comment (figure 4.16), face emojis used to express happiness, unpleasant situations, annoyance, ease unpleasant situations and applause emoji on accomplishments (figure 4.17, figure 4.18, figure 4.19, figure 4.20).



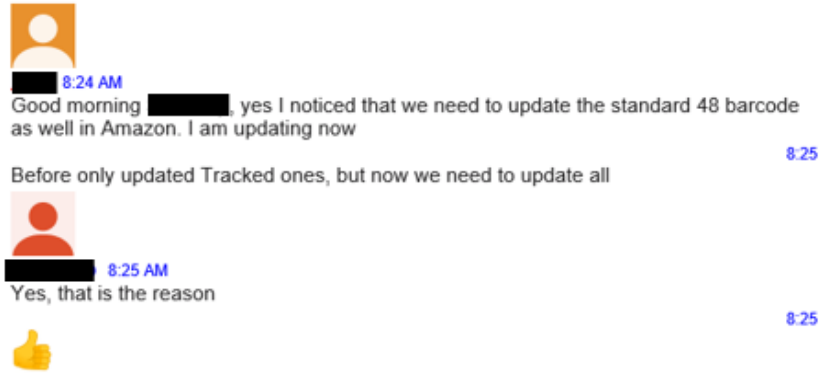


Figure 4.16: Use of emoji - thumps up 1



Figure 4.17: Use of emoji - thumps up 2

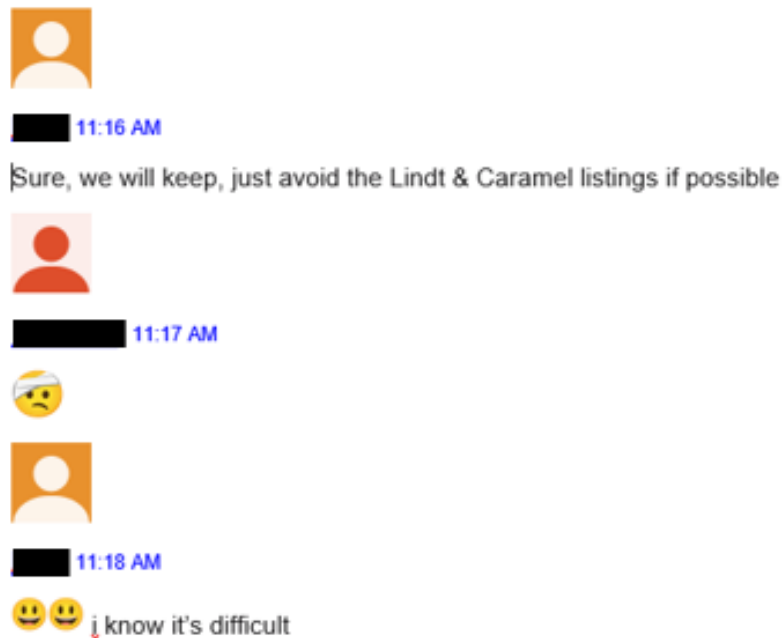


Figure 4.18: Use of Face Emojis 1

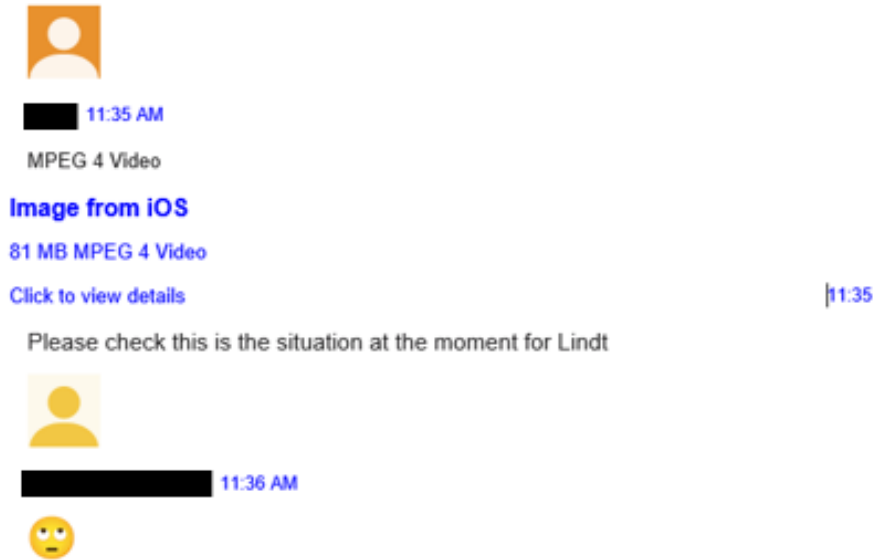


Figure 4.19: Use of Face Emojis 2

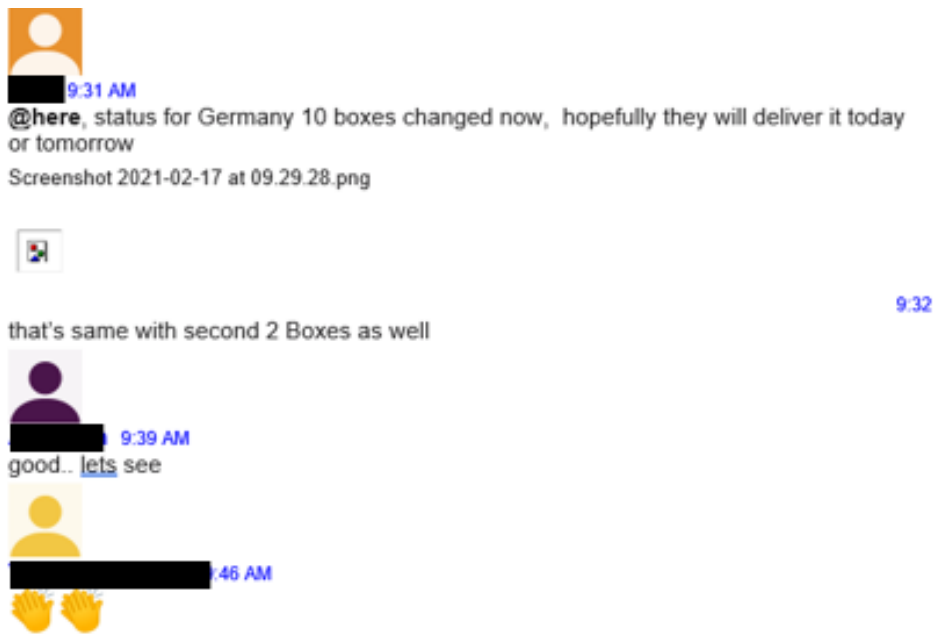


Figure 4.20: Use of Emojis 3

#### 4.4.1.4.3 Types of Functional Information

Through the Slack group chat conversations, the participants shared information relevant to the daily functioning of the business, such as procurement, inventory management, sales planning, order management, shipping and tracking, and status updates.

As part of order management packing instructions, generating shipping labels (figure 4.21, figure 4.22) and status tracking are accomplished. The UK warehouse team prints the shipping

labels provided as PDF files by the outsourcing team to ship the parcels. Additional instructions as required and confirmation of task completion have been provided through the group chat.

The Slack group has been constantly used for online procurement and delivery tracking. For example, Sam provides the products' URLs with the required quantities, and Kevin makes the purchase. The purchase amount and status are updated in the group chat (figure 4.23).

Similarly, information related to inventory management, including stock planning, purchasing, central inventory and updating stock details in specific sales platforms (figure 4.5, figure 4.10, figure 4.11, figure 4.23, figure 4.24) has been shared in the Slack group.

The current sales status with product details has been discussed, and corrective actions were made to either improve the sales or take back the inventory for low-performing products. Replenishments were made for products with positive sales (figure 4.5).

The Slack conversation was used to share information that helped resolve the issue. It includes technical (figure 4.27, figure 4.28) and operational issues. The UPS billing issue was resolved by sharing previous invoice details and shipment weights (figure 4.7, figure 4.8, figure 4.9). Problem-solving is described in section 4.4.1.3.

The platform has been used to seek clarifications related to customer support. One such example is seen in figure 4.25. The platform has been used to share information required to process the return of damaged supplies. When in doubt, Kevin asked for suggestions in the group and got a response from Victor. Later, Kevin updated everyone with the response he received and the subsequent action he would take (figure 4.26)

11:43 AM

3 files

**TNT 6 box & harry 4 Box-DPD labels.pdf**  
314 kB PDF  
314 kB — Click to view

**Harry with pencils 16kit x 27 nos- 4 Boxe-KXP-amazon labels.pdf**  
7 kB PDF  
7 kB — Click to view

**TNT with Pencils 16kit x 24 nos-6 Box-ZP3-amazon labels.pdf**  
10 kB PDF  
10 kB — Click to view

Shipping labels with for various orders to be shipped

hi

10 boxes ddp generated for EU and given in Unit 3 warehouse  
prev sende one checked in EU  
please follow the same procedure like prev time

11:52 AM

Ok, so for each and every box we need to stick the invoice  
No need to hand over to Driver as last time he didn't received  
I will go to Unit 3 with in 1 hr, just instruct them that i will go n show them, thanks

Additional instructions

11:55 AM

ok

12:59 PM

Done the procedure as last time

Confirmation

Ok, so for each and every box we need to stick the invoice  
Posted in [redacted] | Mar 16th | View message

1:42 PM

ok thank you

Figure 4.21: Managing shipping labels

11:04 AM  
Not much hot weather today , can pass instructions to pack chocolates [plz](#) if nothing to pack other things

11:05  
11:08 AM  
ok, keep those near in a cooling area (edited)

11:16 AM  
Sure, we will keep, just avoid the Lindt & Caramel listings if possible

11:17 AM  
🙄

11:18 AM  
😊😊 i know it's difficult

11:18 AM  
Yes, will check anyway

11:35 AM  
MPEG 4 Video  
Image from iOS  
81 MB MPEG 4 Video  
[Click to view details](#)  
Please check this is the situation at the moment for Lindt

11:36 AM  
🙄

11:36 AM  
That's why i am asking to avoid Lindt & Caramel for the time being

11:36 AM  
🙄

11:40  
We have KID009961 lindt packed and kept as packs in [wh](#), that need to check if melted or not before sending it to FBA (edited)

11:49 AM  
If we left like that until whether cool's down, that's fine  
If we ship them now, definitely a problem

11:50 AM  
yes, ok to anyway

thanks for Updates 👍

Asking packing instructions

Discussing weather conditions and items to ship

Figure 4.22: Managing packing.

 <p>8:38 AM</p> <hr/> <p><a href="https://www.foldabox.co.uk/products/pale-pink-a5-deep-gift-boxes-with-changeable-ribbon?variant=31770321682515">https://www.foldabox.co.uk/products/pale-pink-a5-deep-gift-boxes-with-changeable-ribbon?variant=31770321682515</a></p> <p><b>Foldabox UK and Europe</b>  <b>Pale Pink A5 Deep Gift Boxes with changeable ribbon</b>          Wholesale luxury Pale Pink A5 Deep Gift Folding Gift Boxes and hampers with changeable ribbon. Fold flat with magnetic snap shut closure. Ideal keepsake boxes. Matt pink finish throughout. Available in many colours including navy blue, black, red and rose gold from UK stock. Fast delivery. Add your logo from 24 boxes.</p> <p><b>15 nos</b></p> <hr/> <p><a href="https://www.foldabox.co.uk/collections/a5-deep-gift-boxes/products/pale-blue-a5-deep-gift-boxes-with-changeable-ribbon">https://www.foldabox.co.uk/collections/a5-deep-gift-boxes/products/pale-blue-a5-deep-gift-boxes-with-changeable-ribbon</a></p> <p><b>Foldabox UK and Europe</b>  <b>Pale Blue A5 Deep Gift Boxes with changeable ribbon</b>          Wholesale luxury Pale Blue A5 Deep Gift Folding Gift Boxes and hampers with changeable ribbon. Fold flat with magnetic snap shut closure. Ideal keepsake boxes. Pale blue finish throughout. Available in many colours including navy blue, black, red and rose gold from UK stock. Fast delivery. Add your logo from 24 boxes</p> <p><b>15 nos</b></p> <hr/> <p><a href="https://www.foldabox.co.uk/collections/a5-deep-gift-boxes/products/pearl-red-a5-deep-gift-boxes-with-slots-and-ribbon">https://www.foldabox.co.uk/collections/a5-deep-gift-boxes/products/pearl-red-a5-deep-gift-boxes-with-slots-and-ribbon</a></p> <p><b>Foldabox UK and Europe</b>  <b>Red A5 Deep Gift Boxes with changeable ribbon</b>          Red A5 Deep luxury folding gift box with changeable ribbon and magnetic snap shut closures. Wholesale retail display and gift hamper packaging available from stock. Fast delivery. Change the ribbon colour to match your brand or add a unique gemstone closure. Available with custom logo printing from 24 boxes.</p> <p><b>8 nos</b></p>	<p>8:39</p> <p><a href="https://www.foldabox.co.uk/collections/a5-deep-gift-boxes/products/black-a5-deep-gift-boxes-with-slots-and-ribbon">https://www.foldabox.co.uk/collections/a5-deep-gift-boxes/products/black-a5-deep-gift-boxes-with-slots-and-ribbon</a></p> <p><b>Foldabox UK and Europe</b>  <b>Black A5 Deep Gift Boxes with changeable ribbon</b>          Wholesale luxury A5 Black folding Gift boxes with changeable ribbon are ideal gift packaging and keepsake boxes. Concealed snap shut magnetic closure. Available from stock in Black, White, Ivory, Silver, Red, Navy Blue, Rose Gold, Pewter, Copper, Bronze, Natural Kraft and Naked Grey. Add your own logo from 24 boxes.</p> <p><b>10 nos</b></p> <hr/> <p>hi [redacted]          can you place the order for above items</p> <p>cost will be 2017.44 GBP at 75GBP shipping</p> <hr/> <p>          [redacted] 8:54 AM          Good Morning [redacted] sure, i will do now</p> <p>          [redacted] 9:30 AM          @ [redacted] The Above Order is Placed</p> <p>          [redacted] 9:35 AM          thanks [redacted]</p> <p>wat about the previous order is it marked as <u>fulfilled</u> in back end?</p> <p>          [redacted] 9:36 AM          Just got a call from Sales rep, delivery will be tomorrow</p> <p>          [redacted] 9:36 AM          ok 👍</p>
---	--

Figure 4.23: Procurement action

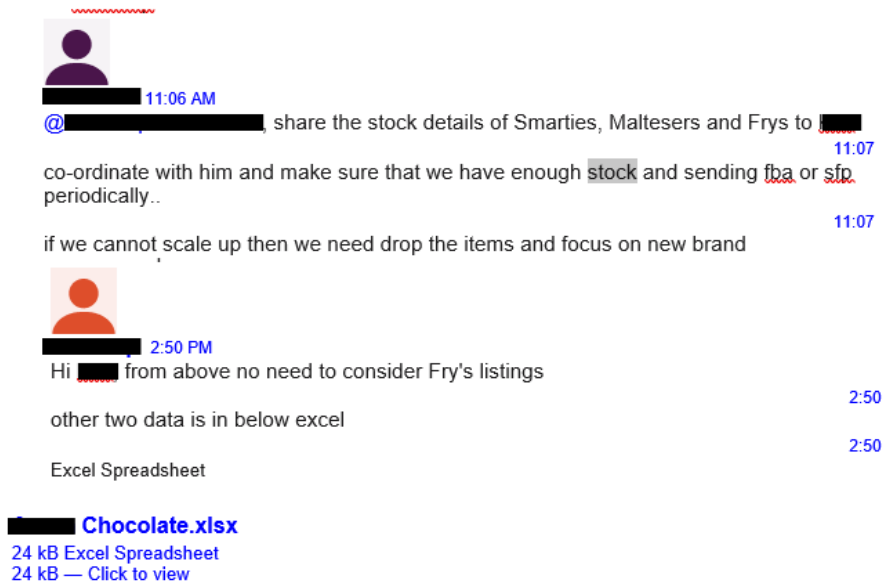


Figure 4.24: Stock updates

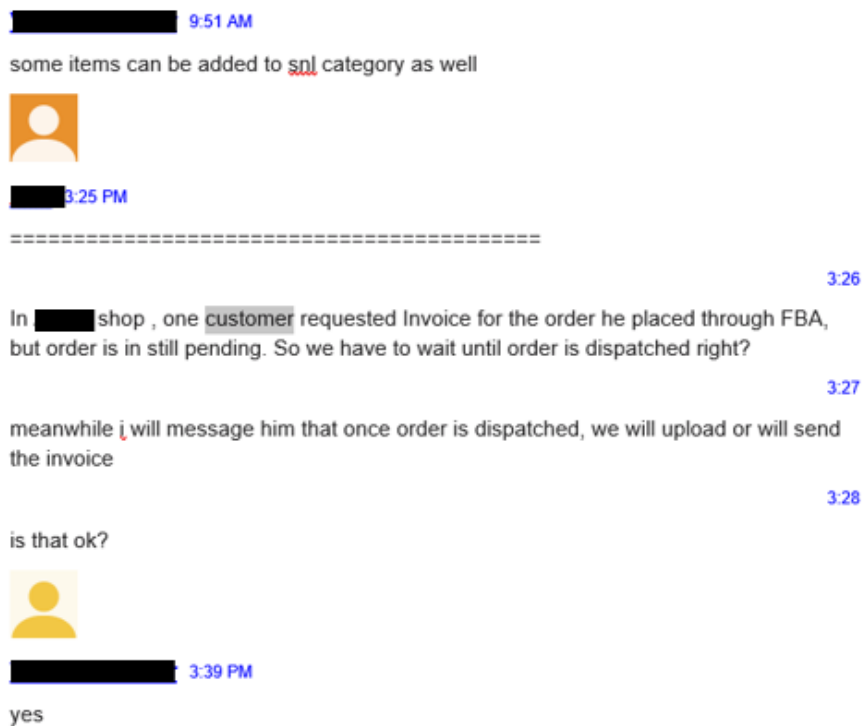


Figure 4.25: Clarifications of customer support



Figure 4.26: Discussion on returning damaged supplies.

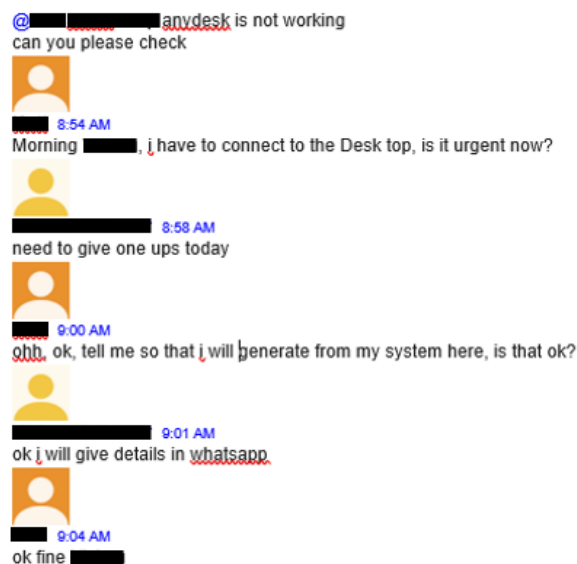


Figure 4.27: Solving Technical Issue 1.



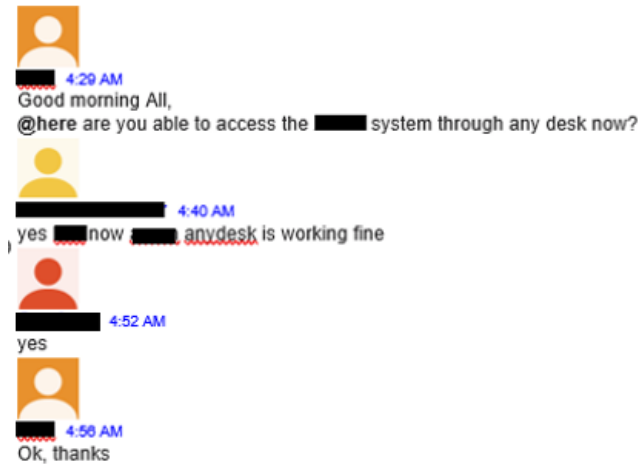


Figure 4.28: Solving Technical Issue 2.

#### 4.4.1.4.4 Confidential Information

The platform has been used to share confidential information. One of the interesting observations is that the focal company shared login credentials with the outsourcing partners in the Slack group chat without hesitation, as shown in figure 4.29. In addition, information such as sales strategies, product sourcing information, key products, and supplier details have been shared on this platform. These are business-critical information, which can adversely affect the business if it is known to competitors.



Figure 4.29: Sharing login credentials.

#### 4.4.1.4.5 Administrative and Regulatory Information

The participants have shared administrative or regulatory documents and information through Slack to coordinate international shipping. Information such as HS Codes (Harmonized System) codes used for the export of goods, EORI numbers (Economic Operators Registration and

Identification number) required for the movement of goods between the UK and EU, VAT numbers and overseas VAT numbers are shared. Documents include the power of attorney, documents to open a shipping account, return request form and email communication from external stakeholders. The group chat is used to discuss and clarify the CE marking requirements (to ensure the product meets EU safety, health or environmental requirements) necessary for EU exports (figure 4.30).

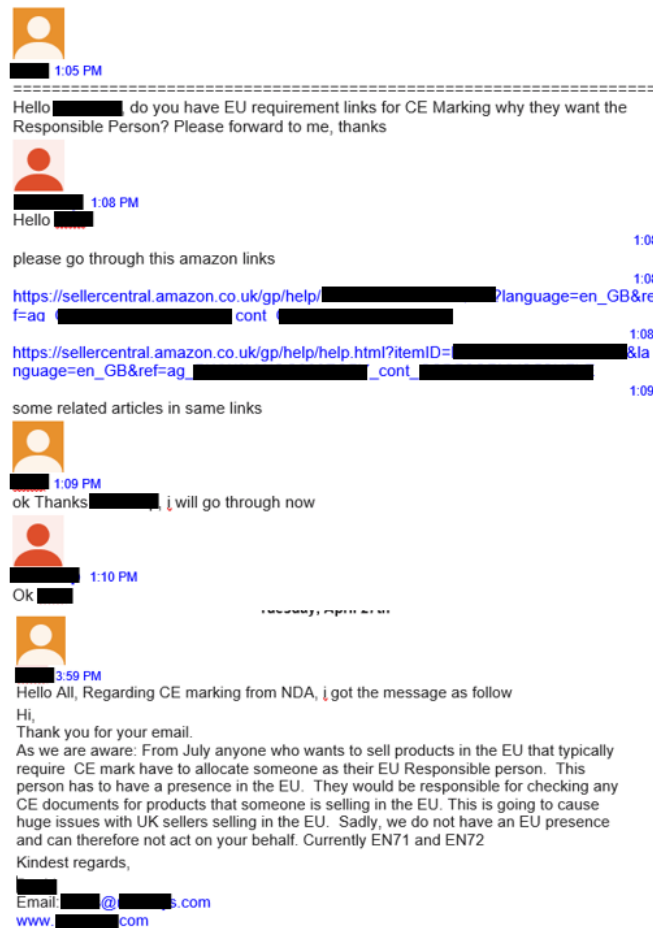


Figure 4.30: Discussion on CE marking

#### 4.4.1.5 Reciprocity

Mutual benefit is achieved by both parties through information sharing, as already discussed in previous sections (4.4.1.2, 4.4.1.3 and 4.4.1.4). For example, the external stakeholders conducted product research to identify the potential sourcing of new products for the focal company. Similarly, handling excess inventory in the Amazon warehouse and raising alerts during non-suitable temperatures to hold shipping of sensitive products are other benefits achieved by the focal company due to the proactive and timely intervention by the outsourcing partner. The

seamless information sharing enabled the outsourcing partners to accomplish their tasks effectively. The outsourcing partners achieved reliability, trust, long-term partnership with the focal company, and monetary benefits.

#### 4.4.1.6 Shared Responsibilities

Stakeholders from the focal company and outsourcing partners share responsibilities in various activities such as product research, order management, stock management, and administrative activities. William has conducted product research and shared various options with website links for further product analysis, as shown in figure 4.31, figure 4.32, and figure 4.33. For one of the suggestions, although Adam comments that it is expensive, he encourages William to share ideas like this.

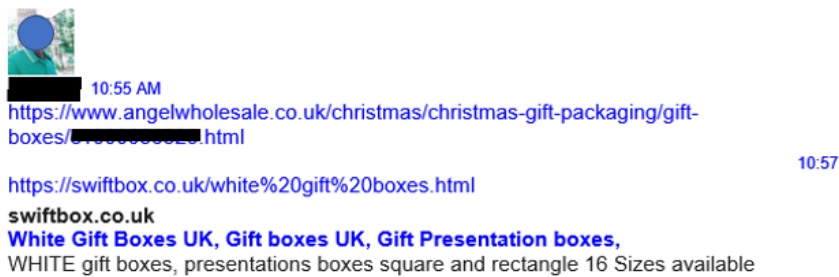


Figure 4.31: Product Research 1

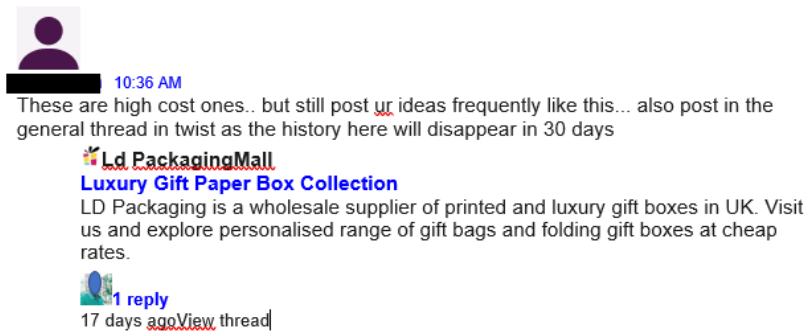


Figure 4.32: Product Research 2

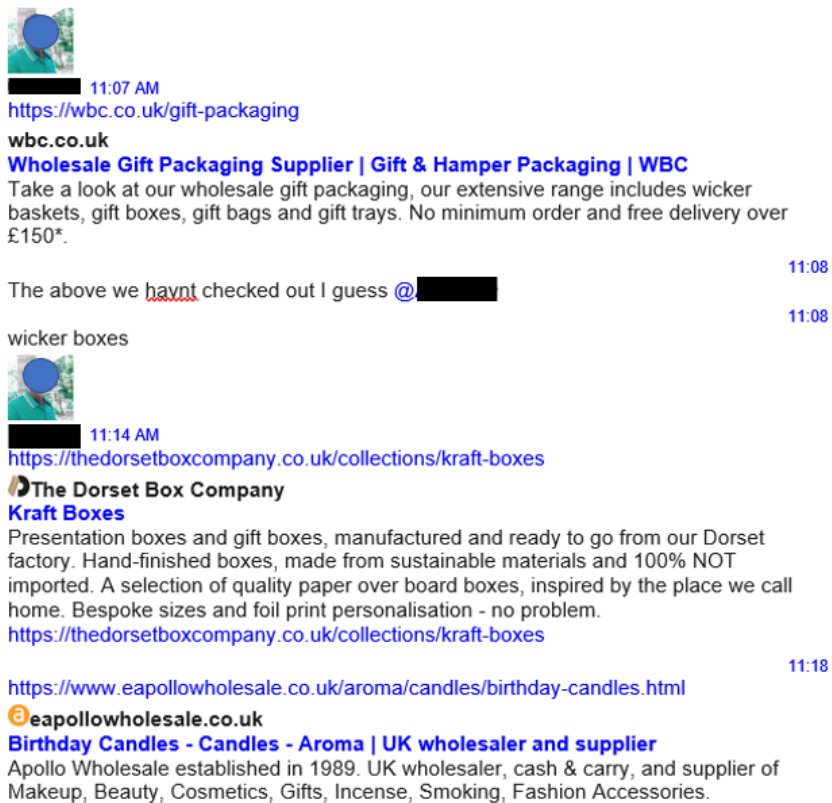
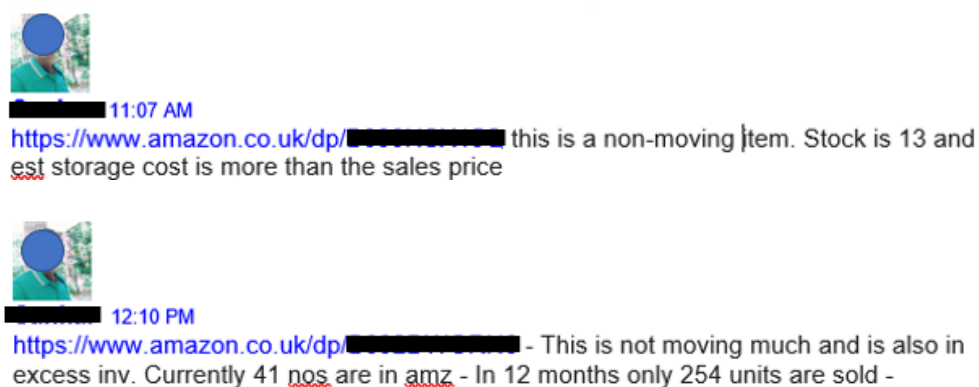


Figure 4.33: Product Research 3

In another instance, he provided details of low-sales products. In this scenario, William and Sascha track and report the issues, while Victor and Sam take corrective actions to improve sales or take back the products from the Amazon central warehouse to reduce storage costs (figure 4.34). Sometimes, Kevin is responsible for tracking the inventory that needs to be taken back and updating the information in the group chat. Similarly, Kevin monitors stocks and their expiry period and returns. Kevin and Victor are planning future sales and the quantity to be sent to Amazon warehouses. Evidence of shared responsibility is visible here.



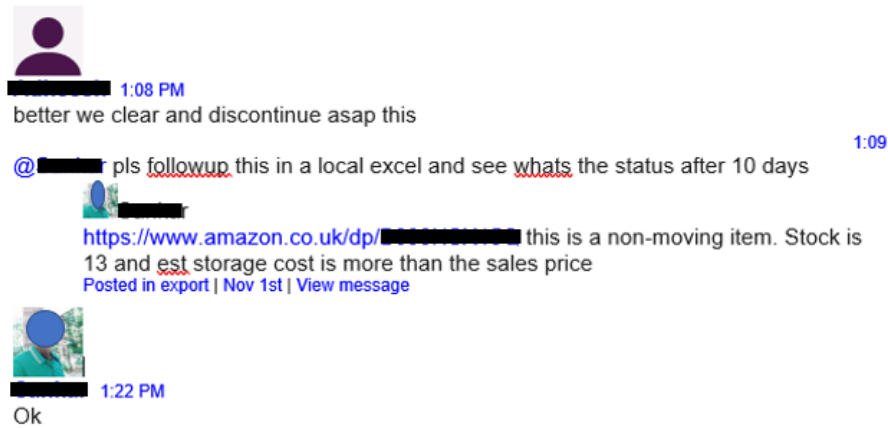


Figure 4.34: Sales channel stock details

#### 4.4.1.7 Degree of Understanding

The participants have a high level of understanding of what is communicated in the chat. Many bespoke terminologies and abbreviated vocabulary are exchanged in the conversations, including those specific to their business domain. Images with short comments were used to convey a problem, and the brevity of messages is notable. Some messages looked challenging to interpret for the researcher; however, the participants did not exhibit any clarity or understanding of issues, which was indicated by the appropriate responses and actions. Most of the responses are tagged to the original query so that the reply is transparent and mapped to the correct query. The increased understanding among the stakeholders may be attributed to their consistent long-term interaction through the ESN platforms. Figure 4.35, figure 4.36 and figure 4.37 highlight the use of abbreviations and business terminologies.

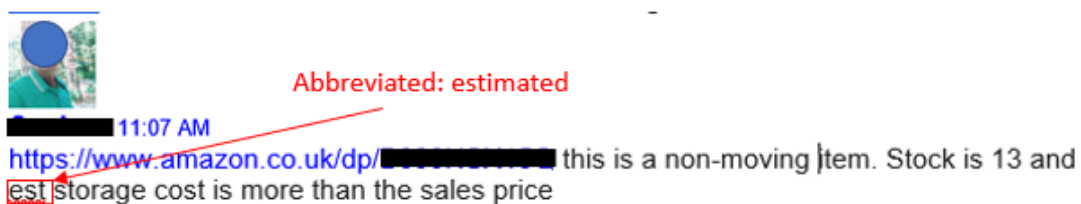


Figure 4.35: Conversation screenshot 1

10:42 AM  
Image from iOS 10:45

Image with comments 10:46

@here, just clarification on this,  
When the that Estimated Storage cost will Apply? After 365 days or when?  
Let me clarify please, thanks

10:57 AM  
Amazon will take storage fee if the item with their **wh** for more than 365 days  
they will charge a monthly fee for that 10:57

Abbreviated: warehouse

Figure 4.36: Conversation screenshot 2

S

10:10 AM  
Ok.. hope it will get cleared.. will have to keep an eye, since its already excess.. 10:11

Same case with - <https://www.amazon.co.uk/dp/...?th=1> we have 101 in **FBA** and thats also excess... our sales are around 10 p/m only.. so it will take a long time to clear, atleast a few months? 10:12

@ @  
Screenshot 2021-10-29 at 2.41.57 PM.png  
Image with comments 10:15

May be we should have more of **SFP** for these seasonal boxes  
with a few boxes in FBA for ranking? 10:15

10:22 AM  
**fba** stock for the above is from last valentines day time, that time navy was **oos** i think and Navy in above listing have more traffic as well, so cream sales goes down after navy restock. will see till nov 1st week if sales still less for this we can take it back to save storage fee (edited) 10:28

i am wondering that why its **buybox** showing 36.62% , no other sellers in that. 😊

10:50 AM  
Did we add stock here...? its still 0 in SFP @ (edited)

sfp stock added to 100  
Posted in export | Oct 18th | View message 10:51

image.png 10:52

or in 10 days we cleared 100?

10:54 AM  
we have removed sfp because for sfp the delivery date showing as monday and for fba its next day  
so for weekends we can give priority to fba

Business specific terms/abbreviations

Abbreviated: out of stock

Figure 4.37: Conversation screenshot 3

#### 4.4.1.8 Trusted Behaviour and Decision Making

The contributors of the group chat from the focal company and outsourcing partner have displayed highly responsible behaviour in their conversations, indicating the trust aspect. The interdependence among the group chat members was already presented in section 4.4.1.2 and table 4-6.

The group chat members shared information and facts that helped in decision-making. Sascha shares information highlighting the existing stock vs sales status of a product for which the sales have been low. He suggests options for releasing coupons, price reduction and advertising to improve sales. Victor takes corrective action and updates everyone in the group, and Sascha keeps track of the sales. Here, Sascha displayed trusted behaviour by emphasising the low-performance area and providing assurance that sales would be tracked after Victor took corrective action. Victor displayed trusted behaviour by promptly taking corrective action. The timely notification by Sascha and his suggestions helped Victor in decision-making (figure 4.38, Figure 4.39).



Figure 4.38: Conversation screenshot 4



Figure 4.39: Conversation screenshot 5

Sam requests warehouse stock information from Kevin to plan for procurement (figure 4.40). Kevin asks for the existing data and provides the updated response in the spreadsheet to help Sam decide on the purchases. Kevin proactively acknowledged the mistake he made on the expiry date and requested Sam to update the same, which displayed his openness and trusted behaviour (figure 4.41).



Similarly, sharing confidential information such as login credentials (figure 4.42) and discussing sales strategies can be considered highly trusted behaviour.

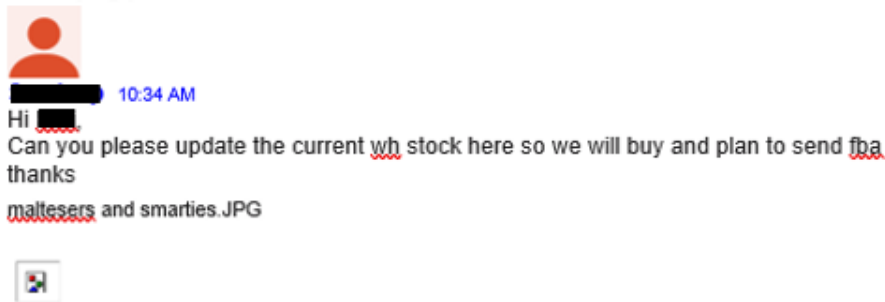


Figure 4.40: Conversation screenshot 6



Figure 4.41: Conversation screenshot 7




Figure 4.42: Conversation screenshot 8


#### 4.4.1.9 Friendliness in Communication

A casual way of communication using informal language is observed throughout the conversation. The use of emojis is notable, as they help show emotions in a friendly manner. Sam uses emojis in his response and highlights that the billing information shows 30kg in some instances as well. More details on the use of emojis are presented in section 4.4.1.4.2. As noted in section Confidential Information4.4.1.4.4, confidential information is shared, which displays highly transparent communication behaviour.


The participants were not concerned with the format or style of sentences, such as capitalisation, spelling, and grammar. The focus is on what is communicated, providing responses, and solving the issues. The conversation displays transparent communication; for example, Kevin provides a detailed explanation of the UPS billing criteria, as displayed in figure 4.43 and Figure 4.44.


None of the participants is found greeting each other by saying hello, good morning, or good afternoon. The conversation is purely used for work-related communication only.

 11:49 AM  
 \*\*\*\*\*  
 Just spoke with Our UPS Account manager regarding Parcels in Germany, He is saying that everything is ok, But he will email to the Brokerage in Germany regarding that n will update back to us soon. **Coming to Invoice Pricing:** He said it's due to box Dimensions (Package Size) is more than 300 cms. I calculated and told him that's less than <300  
 Invoice: [REDACTED], Shipment No: [REDACTED]  
 For Example: Length + 2x Width + 2x Height  
 = 62 + 96+ 82  
 =240 which is less than 300  
 And weight also mentioned 24.4 Kgs . I told him we never sent more than 18-19 kgs. After that he said, it's on (Dimensional Weight), Which is calculated on different way, as follows=62\*48\*41/5000  
 =24.4 Kgs , So finally the charges on this weight. He is explaining that on our Account The Dimensional Weight is 20Kgs, so that's the reason it's more cost. I asked him, did you explain all these to Us before? Now you are explaining when we are asked you. He saying i am sorry....I asked him regarding the Billing refund and all, He will contact the Billing department will come back to us **Note:** Now he saying that he will update on our account 25 Kgs Dimensional Weight after discussing with Pricing Team, Anything we need the clarification from him, obviously we are the victims on this

 11:52 AM  
 😊 Dimensional Weight!!! (edited)

In some cases they marked 30kg+ weights as well


 11:56 AM  
 ok Sandeep, but weights we never sent more than 20 kgs right?


 11:56 AM  
 yes


all are 18kg max


Detailed explanation


Figure 4.43: Conversation screenshot 9

 11:57 AM  
 yes, i told him the same

 11:57 AM  
 mmm

 12:01 PM  
 thanks [REDACTED]

 4:16 PM  
 we send mostly 15Kg with UPS

 4:16  
 ok [REDACTED] but weights we never sent more than 20 kgs right?  
Posted in [REDACTED] | Mar 3rd | View message

because amazon had restrictions 4:17

last few weeks only we started with 18KG 4:17

because more than 15KG 2 people are needed for carrying and it was not allowed under covid protocol in Amazon warehouse 4:17

Figure 4.44: Conversation screenshot 10

#### 4.4.1.10 Problem-Solving

The focal company has used Slack to seek clarification, provide suggestions, and resolve issues quickly. Problem-solving was achieved in multiple areas of the business, which included solving remote connectivity issues, sorting UPS billing issues, and taking measures on low-sales items by adjusting the sales listing or taking the stock back from Amazon's central warehouse.

The team used the Slack group to coordinate all regulatory documents and requirements to set up international shipments. A conference call was set up with the UPS account manager, who helped with the process. As a result, international shipments were sent, which were later tracked to the destination in Germany, enabling the company to send international shipments after that.

Kevin used the group chat to finalise the shipping provider for a particular shipment when he was unsure of it. It created a discussion on which shipping provider is economical for each weight category, and all members in the chat provided the information they could gather. The discussion produced actionable insights, assisting Kevin in creating accounts with shipping providers and configuring shipment collection from the warehouse location.

During the downtime of the remotely connected computer, the overseas team used the Slack group chat to communicate with the team in the UK to fix the issue, which has always been resolved on high priority. On one occasion, when there were higher priority tasks, the UK team member provided an alternate solution, and the downtime issue was resolved the next day (figure 4.45, figure 4.46). Kevin generated the required UPS shipping, as that was quicker than fixing the remote connection issue during the busy time.

The platform was used to solve high-stock - low-sales issues where a team member notified the issue, leading to a discussion of different strategies. Finally, the outsourcing partner took corrective action by attaching the listing to a product variation with higher sales.

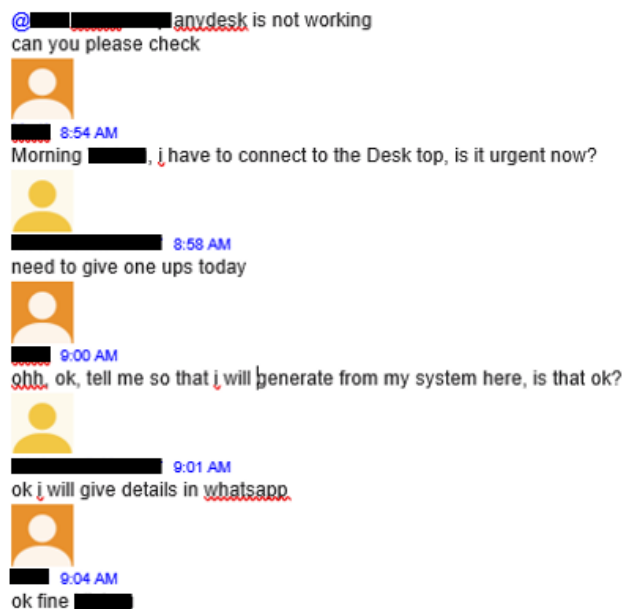


Figure 4.45: Conversation screenshot 11

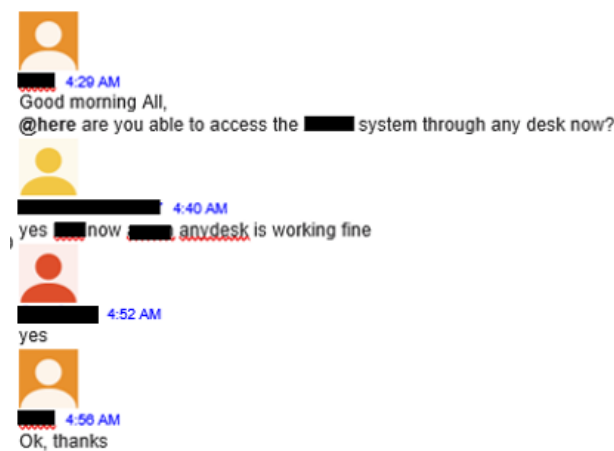


Figure 4.46: Conversation screenshot 12

#### 4.4.1.11 Collective Resources

The focal company has used Slack for structured communication by creating communication channels for each work area, as shown in figure 4.13. The channels or groups have been used to share a multitude of information, ideas and suggestions, problems and solutions and discussions on regular tasks. The information is shared in the form of plain text, images, video files and documents. It serves as a central repository of information for the organisation, and the employees and partners can look for any information in this repository without wasting time searching for information elsewhere.

Creating various channels has allowed a more structured organisation of information based on the work area. However, Slack does not allow a hierarchical structure to organise information. The focal company adopted Twist to manage a more organised way of communication. In Twist, multiple groups can be created under each channel, as shown in Figure 4.47. For example, several groups discuss various topics under the '001 General Tasks' tab. Similarly, the tab '002 Orders and Payments' has sections for different scenarios, including sections for each supplier. The information, including all documents and media, can be stored more structurally.

The author's field notes from exploring the internet about these platforms provided the following observations. The free version of Slack provides an information history of up to 90 days. However, the paid version can retain the messages and files for a lifetime. Similarly, Twist provides a limited one-month history with the free version and a complete one with the paid version. The history can be maintained based on the version used by the organisation.

Here, Slack generated collective insights by enabling the team members to share information, ideas, suggestions and updates through the group chat. The tool acts as an information store, providing various information shared through the groups.

T [redacted] [dropdown arrow] [moon icon]

Search

Inbox 2

Saved

Messages

Channels

- # 001 General Tasks 1
- # 002 Orders and Payments
- # 003 Tasks 1
- # 008 Data Analysis -FBA
- # General
- # Party Pack FBA and BO Pl...
- # Sales Improvement
- # [redacted]
- # XMAS Packing Plan
- + New channel

## 001 General Tasks

Private

S A P 6 [New thread] [more options]

- SR** Spice Box Launch - Launch Ideas and Wholesale  
 [redacted] Guys, comments on this?
- S** Supplier Login Details  
 [redacted]: <https://www.kuberindustries.co.in/customers/login> [redacted] 1d
- S** General Discussions  
 [redacted] Self Publish Print Book using Print-on-Demand | Pothi.com 11/14/2021
- S** New Amazon Listing Tracking  
 [redacted] Listed Lindt in Red Letterbox <http://www.amazon.co.uk/dp/B09LN7N26D> 11/14/2021
- V** Zoho Stock Value Check  
 [redacted] kinder fba [redacted] 11/11/2021
- SR** Chocolate Design Prices and Design  
 [redacted] We need something colorful like this 11/06/2021
- S** FBA Shipment Track - Issues  
 [redacted]: FBA15FGD6T33 Shipped 96 Recd -64 KID006660-FBA-ChinaMagneticBox-Black 11/03/2021
- A** Low Stock Excess Inventory- For Removal  
 [redacted] Here we can discuss low sales velocity item with excess inventory, which eating storage fee. 11/02/2021
- AG** Amazon Ads /Promotions Best Methods  
 [redacted] renamed this thread from "Amazon Ads Best Methods" to "Amazon Ads /Promotions Best Methods". 10/26/2021
- A** SFP Shipment Issues  
 [redacted]: sfp shipment issues from sep 24- Oct 04JPG 10/06/2021

Figure 4.47: Twist screenshot - organised channels- general tasks

T [Redacted]

Search  
 Inbox 2  
 Saved  
 Messages

**Channels**

- # 001 General Tasks 1
- # 002 Orders and Payments 1
- # 003 Tasks 1
- # 008 Data Analysis -FBA
- # General
- # Party Pack FBA and BO PL...
- # Sales Improvement
- # [Redacted]
- # XMAS Packing Plan
- + New channel

Invite people x

## 002 Orders and Payments

Private

S A P 6
New thread

- S Payment cross check with Bank - Partially fulfilled Orders  
 [Redacted] ===== 11/05/2021
- S Return and Refunds  
 [Redacted]: 1000337149 £563.40 has been processed 10/22/2021
- S [Redacted] Orders  
 [Redacted] image.png 1h
- S Daily Orders & Payments  
 [Redacted] PO#275 1d
- AG China Ada Noata Payments  
 [Redacted]: Order Number: [Redacted] Final Payment TCRE497 ---Gift box set --red --28182.4cm--4000pcs DDP PRI... 1d
- S Wear Orders  
 [Redacted] PO-00269
- AG Inventory Level in Amazon  
 [Redacted]: yes send new stock after due diligence 11/01/2021
- V 4LP Orders  
 [Redacted] Love order order placed total 1495.68 GBP 10/28/2021
- S Tallon orders  
 [Redacted] PO-00195 09/21/2021
- V Boxes and Pricing  
 [Redacted] wicker letter box price 50.7 inr for 4000 nos 09/20/2021

Figure 4.48: Twist screenshot - organised channels - order and payments



#### 4.4.1.12 Achieving Efficiency

The focal company has achieved operational efficiencies through the work-oriented usage of multiple ESN tools and the creation of groups for the team members to communicate and share work information.

The Slack group has been used to collaboratively share knowledge and information about the business's regular operations. The communicating parties involved in the conversations actively led to the quick resolution of business use cases and issues, which would have been inefficient through traditional methods such as emails and telephones. Several instances of business solutions and issue resolution have already been discussed in section 4.4.1.

Detailed information shared through the group chat has apprised all communicating parties of the statuses, latest updates and guidelines relating to the business. Active discussion, suggestions and being informed of all events have allowed the participants to make quicker decisions. Using Slack group chat has allowed faster response rates, eliminating any delay waiting for responses, an example of which is shown in figure 4.50, thus increasing efficiencies. The remote connectivity issues are handled immediately (figure 4.49), and if there are other high-priority tasks, they are fixed the next day.

The information shared through the platform and the collaborative environment has allowed all participants to provide their ideas and suggestions to generate better analytics and insights. It can be observed that operational data such as sales, stock, purchase, and order have been shared as an Excel document in multiple instances, which can help improve analysis.

The focal company has used Slack as a platform for sharing documents, which allows streamlined document management. The group members have all information and documents accessible from a single place, making it easier to perform their work better without wasting time looking for information.

The communicating parties in the group conversation are from two different organisations and have different roles. No hierarchy is evident in the conversation. The absence of hierarchy has created more efficient communication and actions.



Figure 4.49: Solving IT issues in two different instances.



Figure 4.50: Example of quick response

#### 4.4.1.13 Culture

Using ESNs has created a new working culture in the focal company, making most of the stakeholder interactions online. Slack has helped the focal company and outsourcing partners understand and adopt a common work culture. All the participants understood the use of symbols and emojis, uncommon abbreviations, business terminologies, and bespoke languages well. The communication and working patterns are in synchronization, indicating a common culture's existence.

Similarly, the cultural impact created by ESN usage in circumventing the hierarchical system of organisation is highly significant in general communication transparency. The Slack conversations of the focal company reflected the activities and thought processes of all communicating parties rather than presenting a pre-planned view of the company. ESN has a more profound impact as participants from different geographies and time zones can easily understand the company culture.

#### **4.4.2 Company2 – CraftTex Manufacturing**

CraftTex Manufacturing is a large enterprise whose primary business is manufacturing fabric and garment stitching. The manufacturer then ships the finished garments to business customers in the UK and Europe. More than 90% of the customers are major clothing brands in the UK. CraftTex has a global network of partners that procure raw materials and products required for garment production based on customer sourcing requirements. The company emphasises sustainable sourcing and manufacturing and collaborates with stakeholders with similar values, delivering long-term benefits to Planet, People and Products. CraftTex has sourcing hubs, suppliers, manufacturing plants, and design and sales centres in various parts of the world, including Bangladesh, China, India, Indonesia, Italy, South Korea, and Turkey.

The company employs 17000 plus people, of which more than 90% work in the factory doing sewing, fabric making, stitching and packing orders. They do not use any digital technologies or ESN platforms at work. All office administrators, executives, managers, and top management include less than 10% of the total strength and use digital technologies and ESN platforms. These officials have business contacts with internal and external stakeholders and strive to maintain relationships with them.

#### 4.4.2.1 Background of ESN at CraftTex Manufacturing

The focal company, CraftTex, used WhatsApp, WeChat and Skype on a small scale before the pandemic. Most of the supplier interactions were face-to-face, where the procurement team travelled to the supplier location to finalise the purchases. However, during the pandemic, the situation changed, and the use of ESNs increased, including 1) the adoption of Microsoft Teams and 2) the increased use of WhatsApp for internal communication and the use of WhatsApp and WeChat for supplier communication. The conversations are related to procurement activities.

The conversations analysed from WhatsApp include communication between the company staff from various departments located in Bangladesh and suppliers located overseas. The conversations include a group chat and a one-to-one direct chat between employees of two organisations, which includes the conversations among Graeme (Procurement manager), Henry (Procurement Executive), Samuel (Junior Procurement Executive), Dejan (Supplier - Sales Director), Jeff (Supplier - Director)

#### 4.4.2.2 Interdependence

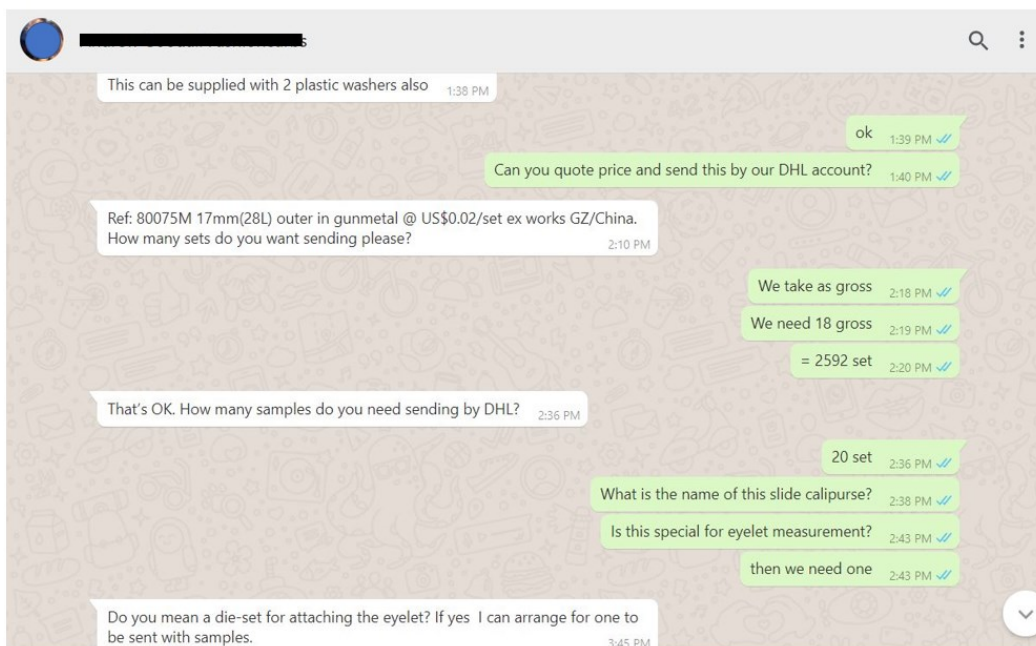
Graeme used the WhatsApp group conversation to resolve procurement-related issues. Although Graeme is the procurement manager, he depends on Henry, the procurement executive, to answer queries from Dejan, the supplier. As Graeme is the procurement manager, he depends on others to get statuses and work done. Graeme asked Christoff to check the quality of drawstring metal tip samples to finalise the product for delivery. However, the sample did not match the requirements, and Christoff shared images of the required product so that Dejan's company could supply the correct pieces. Similarly, Graeme depends on Dejan to manage procurement and solve invoicing issues, as it was the first order from the supplier. Multiple instances of interdependence are evidenced in the group chat.

#### 4.4.2.3 Collaboration

Graeme and his team have used the WhatsApp group to collaborate and work by sharing information and images, seeking clarifications, resolving procurement issues, and discussing product specifications. A detailed discussion on each topic has occurred, and each member has actively contributed. Graeme and his team (CraftTex) have used the platform to communicate with each other and the supplier, to share the product dimensions, arrange samples, request

internal quality checks and manage approvals for bulk purchase of products such as eyelets and metal tips for drawstring cords.

In addition, Graeme has maintained direct communication with the supplier, Dejan, for discussions and follow-ups. He has gone one step ahead by sending the fabric that will use eyelet to the supplier so that the supplier can get the correct dimensions for the eyelet production. Direct messages helped move things faster where inputs from other team members were not required, especially for urgent orders. Price clarification and negotiations are discussed here. The group conversation and the direct messages have displayed a highly collaborative nature of interactions. Some group conversations are shown in figure 4.51, figure 4.52 and figure 4.53.



*Figure 4.51: Discussion on product details*

[10:51 AM] Henry SCM Whatsapp: @Dejan FCS Suppliers Let us know 28/L Eyelet delivery update urgently...

[6:40 PM] Henry SCM Whatsapp: @Dejan FCS Suppliers Hello...

PI: 15625

you didn't mention H.S code, please share urgently.....

[1:34 PM] Christoff SCM WhatsApp: @Dejan FCS Suppliers hello... Regarding Metal Tips & Toggle: Metal Tips length should be 17mm & color Shiny silver. we don't need the toggle right now. pls arrange metal tips sample ASAP.

[1:40 PM] Graeme: @Christoff SCM WhatsApp

[1:40 PM] Graeme: FCS Suppliers sent few metal tips in their last consignment

[1:42 PM] Graeme: @Christoff SCM WhatsApp see that top right metal tips

[1:42 PM] Graeme: @Henry SCM Whatsapp have the samples

[1:42 PM] Graeme: Just check the quality

[1:43 PM] Graeme: If it is okay, then Dejan will send us final order wise sample

[1:53 PM] Dejan FCS Suppliers: Thank you Graeme. If you can approve these then we can go straight to bulk without submitting nee samples (if OK with you).

[1:56 PM] Graeme: Let Mr. Christoff check this thing tomorrow and he will back to you

[1:58 PM] Christoff SCM WhatsApp: @Dejan FCS Suppliers Our new requirements is something different from your provided sample. we need new sample like metal bullet. which has no gap in the body part. I'll share a photo soon.

[2:05 PM] Christoff SCM WhatsApp: ok sir

[2:13 PM] Dejan FCS Suppliers: Thank you Christoff.

*Figure 4.52: Active discussions showing collaboration 1*

[3:01 PM] Dejan FCS Suppliers: Hi Christoff

[3:01 PM] Dejan FCS Suppliers: Do you mean like this?

[3:01 PM] Dejan FCS Suppliers: But in silver

[3:17 PM] Christoff SCM WhatsApp: @Dejan FCS Suppliers Hello, we need like this

[3:50 PM] Dejan FCS Suppliers: OK

[3:50 PM] Dejan FCS Suppliers: So you are going to glue the cord in.

[3:50 PM] Dejan FCS Suppliers: What thickness is the cord please?

[3:56 PM] Graeme: @Dejan FCS Suppliers

[3:56 PM] Graeme: There are two things

[3:57 PM] Graeme: 1. The requirement is our old design, old concept

[3:57 PM] Graeme: And you can show us whether you can give us it or not!

[3:57 PM] Graeme: 2. If there is new available design, you can suggest the whole process

[3:58 PM] Graeme: Our drawstring/metal tipping process need to develop

[4:10 PM] Dejan FCS Suppliers: OK Graeme

[4:10 PM] Dejan FCS Suppliers: Leave it with me

*Figure 4.53: Active discussions showing collaboration 2*

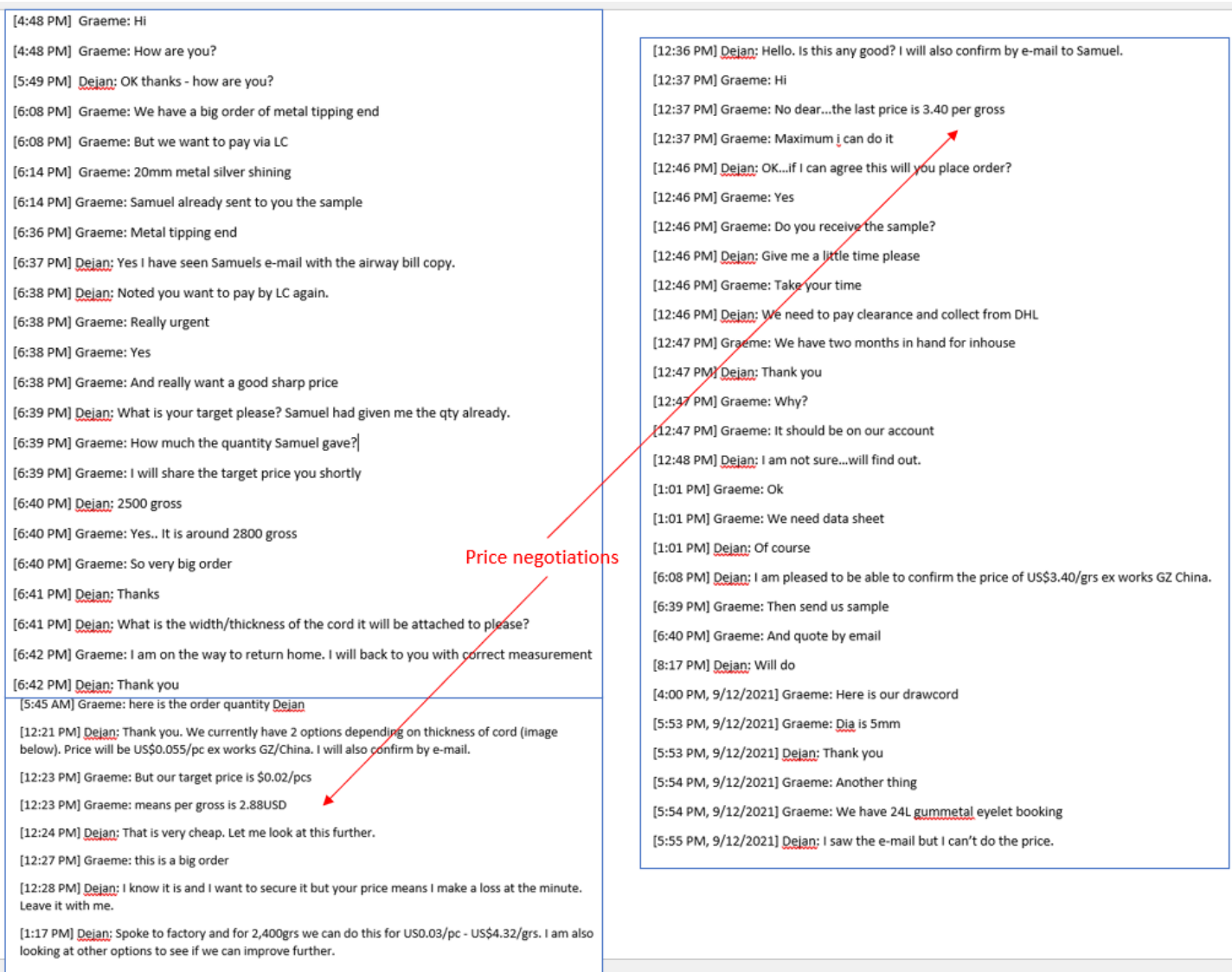


Figure 4.54: One-to-one conversation



#### 4.4.2.4 Information Sharing

This section presents the characteristics, features and types of information shared, including documents and images.

##### 4.4.2.4.1 *Characteristics of information*

The platform has been used to share accurate and reliable procurement information by both parties, such as product specifications, order quantity and price details. The information shared is business-relevant and highly focused on procurement, and no non-serious or fun conversation is observed. The communicating parties have been able to provide timely responses to help decision-making because the communicating members are highly available due to the platform being used on handheld devices. For example, the supplier asked about the quantity of certain products, and Henry immediately responded. Figure 4.52 and figure 4.53 show examples of faster responses.

##### 4.4.2.4.2 *Features of ESN conversations*

The communication parties have used the @mention (figure 4.56) feature to draw the attention of a particular member to the message. Although the use of symbols or emojis is evidenced (figure 4.55), they are seldom used. The communication is somewhat formal and operational. Acronyms and regional bespoke terminologies are used, as shown in figure 4.57.

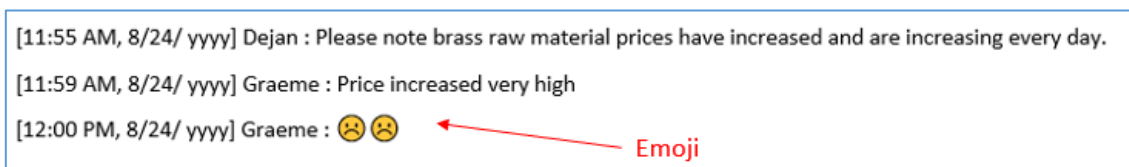


Figure 4.55: Use of emoji

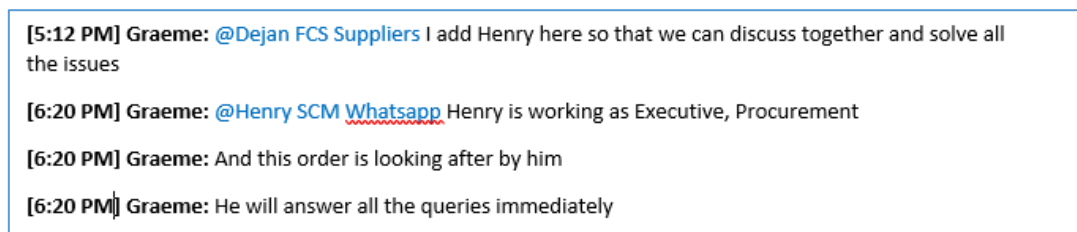


Figure 4.56: Tagging (@mention)



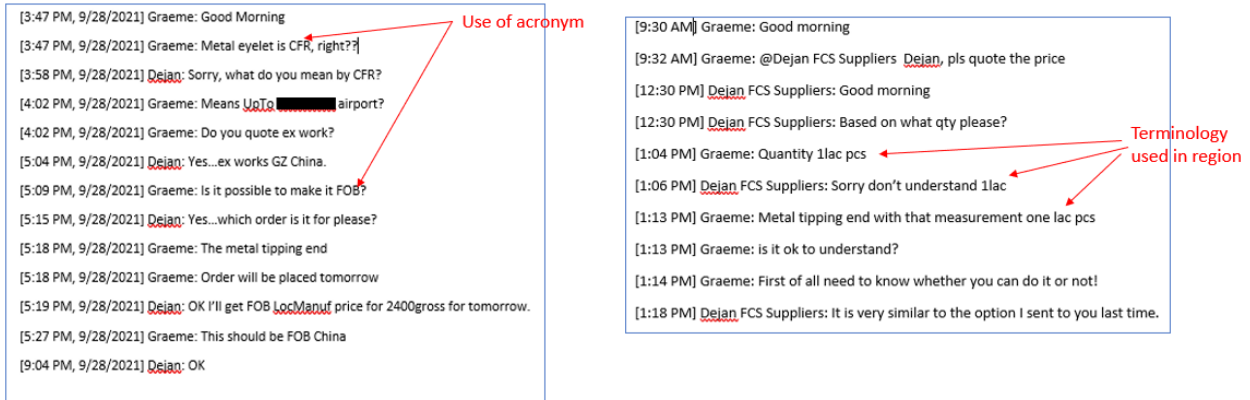


Figure 4.57: Acronyms and bespoke terminologies

#### 4.4.2.4.3 Types of functional information

Information such as product specifications, price details, factory closures, financial details such as bank and invoice details, statuses of orders, shipping and delivery and various images are shared. The supplier, Dejan, has shared images of products he can supply to get confirmation from the focal company team before the product is shipped. The majority of information shared is related to product specifications.

Henry used the platform to get the dimensions of the die-set and punch tool dimensions used to manufacture the eyelets to ensure the products had the correct specifications. Dejan has shared the details with images, as shown in figure 4.58.

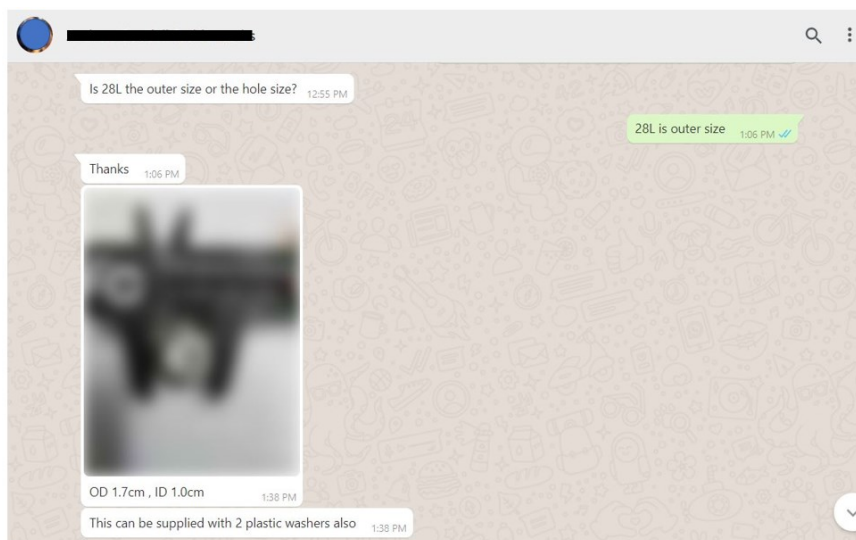


Figure 4.58: Eyelet size and measuring equipment

Graeme has used the chat to inform the supplier that the samples sent do not match the specification and that they want a gunmetal colour instead of golden or black. Images of existing products have been shared to indicate the requirement (figure 4.59, figure 4.60). Figure 4.61 shows price information shared at the product level.

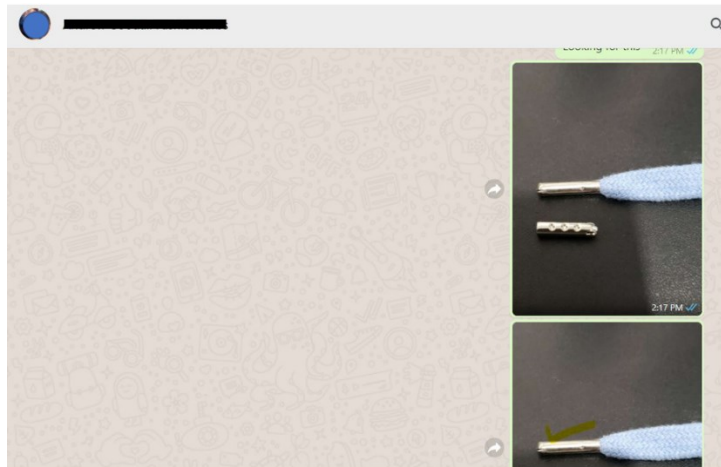


Figure 4.59: Drawstring metal tip image with choice ticked

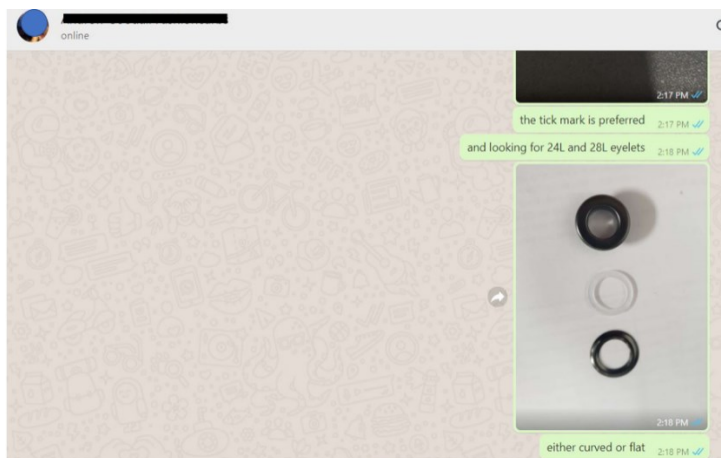


Figure 4.60: Eyelet image shared

[11:52 AM, 8/24/ yyyy] Dejan: Hi Graeme  
[11:53 AM, 8/24/ yyyy] Dejan : Based on approx 85,000sets the price today will be  
[11:54 AM, 8/24/ yyyy] Dejan : FC72661RB 24L (15mm) gunmetal @ US\$4.32/grs ex works GZ/China  
[11:54 AM, 8/24/yyyy] Dejan : FC72661RB 28L (18mm) gunmetal @ US\$5.76/grs ex works GZ/China  
[11:55 AM, 8/24/ yyyy] Dejan : Please note brass raw material prices have increased and are increasing every day.  
[11:59 AM, 8/24/ yyyy] Graeme : Price increased very high  
[12:00 PM, 8/24/ yyyy] Graeme : 😞😞  
[12:01 PM, 8/24/ yyyy] Dejan : I know...not ideal. I'll see what I can do to help absorb the increase. Is the qty correct?  
[12:36 PM, 8/24/ yyyy] Dejan : FC72661RB 24L (15mm) gunmetal @ US\$4.03/grs ex works GZ/China  
[12:36 PM, 8/24/ yyyy] Dejan : FC72661RB 28L (18mm) gunmetal @ US\$5.04/grs ex works GZ/China  
[12:36 PM, 8/24/ yyyy] Dejan : I hope this helps  
[1:03 PM, 8/24/ yyyy] Dejan : let me check again  
[12:17 PM, 8/27/ yyyy] Dejan : Hi Graeme, will this work?

Figure 4.61: Sharing price information

#### 4.4.2.4.4 Confidential information

Information linked with procurement, such as product specification, order details, financial details and delivery statuses that are business critical, are shared. This information may need to be maintained private among the communication parties. Also, the identity information of the communicating parties is revealed in the conversation. However, no confidential information, such as login credentials, is shared.

#### 4.4.2.5 Improved Communication

Graeme has used WhatsApp groups to establish communication with teams from two different organisations. The conversation, which started with formal introductions, slowly developed into a very open conversation. As the conversation progressed, it was getting informal, and the participants increasingly used the platform for clarifications and issue resolution. A good flow of dialogue is observed, with a good amount of information shared, detailed in section 4.4.2.4.

The improved communication enabled the participants to interact more and efficiently carry out the procurement activities. The communicating parties in the group have raised their requirements and concerns much more quickly through the conversations, which are observed and commented on by all parties, instead of siloed communication or multiple emails that are not interactive. However, the communication and open conversation that developed indicates a developing professional relationship.

#### 4.4.2.6 Reciprocity

Graeme wants a more significant purchase and asks for a price negotiation. The supplier, Dejan, agrees to a lower price provided Graeme can confirm the order. Here, reciprocity behaviour is evidenced from the conversation, where Graeme receives a discount in price, and Dejan receives a large volume order (see figure 4.62, figure 4.63).

[12:23 PM, 9/8/2021] Graeme: But our target price is \$0.02/pcs  
 [12:23 PM, 9/8/2021] Graeme: means per gross is 2.88USD  
 [12:24 PM, 9/8/2021] Dejan: That is very cheap. Let me look at this further.  
 [12:27 PM, 9/8/2021] Graeme: this is a big order  
 [12:28 PM, 9/8/2021] Dejan: I know it is and I want to secure it but your price means I make a loss at the minute. Leave it with me.  
 [1:17 PM, 9/8/2021] Dejan: Spoke to factory and for 2,400grs we can do this for US0.03/pc - US\$4.32/grs. I am also looking at other options to see if we can improve further.

*Figure 4.62: Negotiating price 1*

[12:36 PM, 9/10/2021] Dejan: Hello. Is this any good? I will also confirm by e-mail to Samuel.  
 [12:37 PM, 9/10/2021] Graeme: Hi  
 [12:37 PM, 9/10/2021] Graeme: No dear...the last price is 3.40 per gross  
 [12:37 PM, 9/10/2021] Graeme: Maximum i can do it  
 [12:46 PM, 9/10/2021] Dejan: OK...if I can agree this will you place order?  
 [12:46 PM, 9/10/2021] Graeme: Yes

*Figure 4.63: Negotiating price 2*

#### 4.4.2.7 Reduced Transaction Costs

There are multiple scenarios where the communication participants have exchanged information and come to an agreement. In the above example, Graeme and the supplier agree on pricing and order, as shown in figure 4.62 and figure 4.63, and the platform used to share various product specifications, arrange samples, perform quality checks, and place purchase orders in real-time improves the turnaround time.

#### 4.4.2.8 Shared Responsibilities

Although Graeme is the procurement manager, his team members have used the platform proactively to share information and ask queries. For example, Henry provides product specifications, asks about statuses and follows up on various activities. Similarly, Christoff and

Samuel have provided product information and details required by the supplier for shipping and have followed up on issue resolution.

It is also observed that Graeme openly delegates tasks in the chat that his team members carry out. Each person is responsible for providing the correct information, clarifying queries or following up on tasks to make the procurement process more efficient, which has been possible due to the interactive nature of the conversation, where all parties can see the information and comment easily. However, the level of engagement needs to improve, and participants need to be more proactive and take more responsibility. It may be because the group is new, and people are getting comfortable and used to each other. In future, an increased engagement may be observed as the conversation progresses and a strong relationship is established.

#### 4.4.2.9 Degree of Understanding

A good level of understanding is evidenced in the conversation. The communication is clear and formal, and there is no reason for a clarity issue to occur, as the topic discussed is very focused on procurement. In one instance, when Graeme used a terminology commonly used in the south and the southeast Asian region, Dejan needed clarification and asked again to understand more (figure 4.64). Similarly, acronyms that the supplier does not understand are used, and clarification is sought for them (figure 4.65).

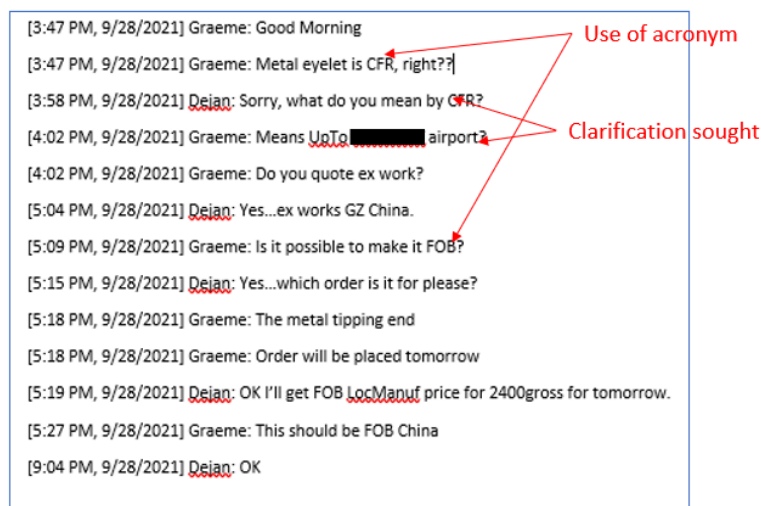


Figure 4.64: Use of bespoke terms and clarifications

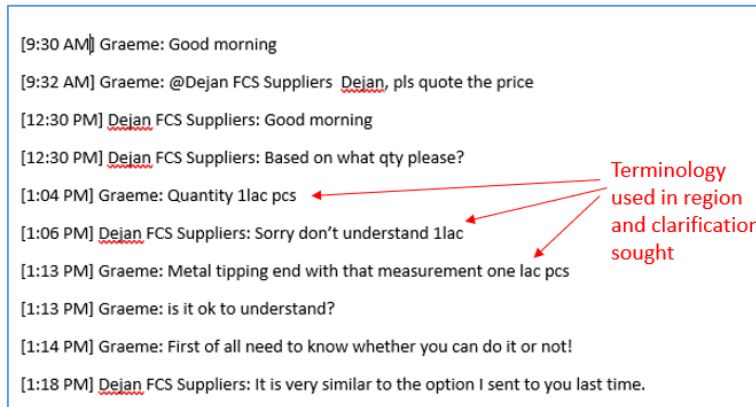


Figure 4.65: Use of acronyms and clarifications

#### 4.4.2.10 Trusted Behaviour and Decision Making

Graeme has openly acknowledged that specific product requirements are for old designs and old concepts that need improvement, making him vulnerable to the supplier. He also relies on the supplier for new designs and process suggestions. Dejan takes this responsibility and provides multiple options for Graeme's consideration. Graeme also acknowledges that he is trying to improve the management process, as it is the first procurement he has handled since joining the company.

Using the WhatsApp group chat, Graeme and the team have made faster decisions in light of the information shared, images, suggestions, clarifications provided by other members, quick turnaround, and approvals.

Being vulnerable, showing reliability, taking responsibility, and making faster decisions are determinants of trust, as evidenced by the conversation. The conversation indicates that a letter of credit is issued to the supplier upon finalizing the order, and payment is made after the order is delivered to the factory, which indicates trust. However, only limited instances of conversation indicate the presence of trust.

#### 4.4.2.11 Friendliness in Communication

Graeme thoughtfully initiated friendly communication with the group chat participants. He has used different terminologies to greet everyone in the group, including seasonal greetings. He also introduces new joiners to the group, revealing their professional identities, such as their names and job roles.

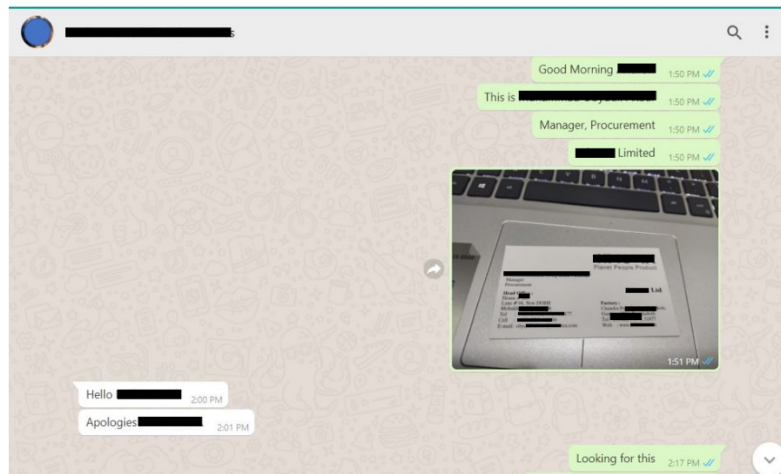


Figure 4.66: Introduction and sharing a business card

Graeme also sets the context of the discussion topic so that an open conversation can occur to resolve the current procurement issue. A friendly greeting is observed throughout the conversation, indicating friendliness. Figure 4.66 shows the screenshot of Graeme introducing himself and sharing his business card, exhibiting self-disclosure.

Graeme used the platform to openly express this disappointment using emojis when the supplier mentioned the price hikes, which were much higher than his expectations.

#### 4.4.2.12 Problem-Solving

The supplier sent a black-coloured sample instead of gunmetal on a bulk order to be followed by CraftTex. Henry raised the issue, and although there was initial confusion, Dejan acknowledged that there was a mistake in the sample; however, the bulk order was as per specification, and an image was shared to ensure it. Here, Graeme demands that the dealing be accurate and error-free and mentions that the management is sensitive.

#### 4.4.2.13 Collective Resources

Although information and images specific to procurement are shared, and the history feature is available, the platform is not used as a document store. The application has the limitation that the images may not be available after a certain period unless downloaded to the device.

#### 4.4.2.14 Culture

The increased use of ESN platforms during the pandemic has allowed a new working culture in the organisation. Most of the interactions identified are supplier interactions. Stakeholders have agreed to use symbols, uncommon abbreviations, and business terminologies within the



organisation. Specific terminologies can be of regional culture. However, the external stakeholders find it challenging to understand specific usages, although they have been working in this business sector, and ask for clarification (figure 4.64, figure 4.65). The prolonged interactions through ESN platforms can benefit stakeholders from both organisations by allowing them to adopt a common work culture.

#### 4.4.2.15 Achieving Efficiency

The platform is used to provide instant clarifications and inputs from various participants. One-to-one conversations to make decisions on certain aspects where other inputs are required. The focused conversations may avoid noise. With a combination of group and one-to-one conversations, Graeme has been able to carry out business activities quickly.

### **4.4.3 Summary of Netnographic Analysis**

A netnographic analysis of conversations from two organisations was conducted in this section. The first organisation was an early adopter of ESN and extensively used multiple platforms in its operations. The second company accelerated their ESN usage during the pandemic. They use various platforms for their operations and are beginning to use them extensively.

## **4.5 Chapter Conclusion**

This chapter presented the findings of the three phases of this study, namely, email questionnaire, focused interviews and Netnographic observation. Phase one presented the adopters and non-adopters views of using ESN, phase two presented practitioners' perspectives in detail, and phase three presented the results of observation of conversations gathered from two different companies. A detailed discussion of the findings is presented in chapter 5.



## Chapter 5 Discussion and Analysis

### 5.1 Introduction

The findings from each phase of this empirical research presented in chapter 4 generated various insights on using ESNs in supply chain management. This chapter presents the combined outcomes from all three stages of empirical research in a comprehensive and integrated manner to address the research questions (RQs). Although the different phases of this research were aimed at addressing specific research RQs, the study was organised in such a way that all stages could contribute to generating knowledge and understanding about all the RQs. This research approach adheres to methodological pragmatism, as mentioned in section 3.3.6. Further, the empirical findings of this research are related to the existing body of scholarly knowledge.

The subsequent sections present a holistic and unified discussion of the results from this study's phases to address the research questions (RQs) outlined in section 2.4.2. The discussion does not strive to provide a conclusive answer to each RQ. Instead, it offers new perspectives on the issues being investigated. It needs to be noted that the discussion and analysis focus on ESN literature. However, social media literature is sometimes referenced to support the findings because ESN is a type of social media.

### 5.2 RQ1: Explore the nature of relationships and trust among supply chain participants through Enterprise Social Networks

In response to the research question RQ1, this section presents the discussion and analysis of the findings to explain the nature of relationships and trust exhibited by using ESN platforms. It observes the development and nature of relationships and trusts among the supply chain stakeholders due to their continued interactions on ESN platforms for supply chain management activities by examining its various elements, followed by the concluding comments. The various elements of relationships and trust identified from the analysis of different phases of this study are summarised in figure 5.1. It includes collaboration, openness in communication, information sharing, shared responsibilities and mutual benefits, reduced transaction costs, degree of understanding, trusted behaviour, building relationships, decision-making and problem-solving. Whilst most codes are *priori*, 'degree of understanding' is emergent. The sections examine findings supporting each element upheld by the existing literature.

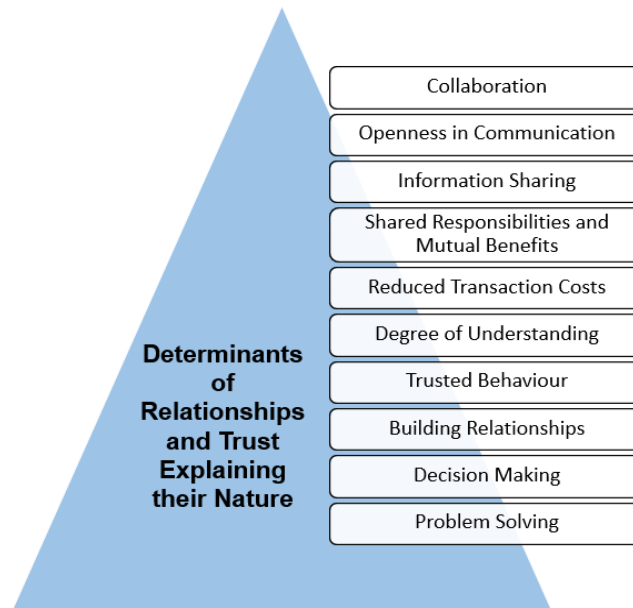


Figure 5.1: Determinants of relationships and trust

### 5.2.1 ESN Enables Collaboration, Facilitating Relationships and Trust

The phase one findings indicate that all respondents have collaborated using ESN, which agrees with Riemer et al. (2011, 2012) and Ellison et al. (2015) that ESN supports collaboration. Different individuals or organisations have used ESN for varying levels of collaboration in their supply chain management activities. It includes internal and external teams and collaboration across geographies, as presented in section 4.2.1.1.1. For instance, while Sean mentioned that his organisation restricts individuals from ‘direct messaging’ external stakeholders and uses it only for internal collaboration, John’s organisation allows ‘direct messaging’ with external stakeholders, and Liam uses Microsoft Teams for internal and external collaboration, which indicates the collaboration level varying between organisations. The internal and external collaboration observed in the findings agrees with existing literature that collaboration in the supply chain is coordination between internal functions and external stakeholders (Liao and Kuo, 2014; Mofokeng and Chinomona, 2019; Sudusinghe and Seuring, 2022).

The findings of phase two, consistent with those of phase one, suggest that external, internal, team and cross-boundary collaboration exists. The level of collaboration identified from the phase two findings recorded against each participant is shown in table 5-1. The internal collaboration using ESN, as evidenced in the findings, agrees with Muller et al. (2012) that it allows shared resources and social connections, resulting in stronger ties. On a similar note,

Azaizah et al. (2018) have articulated that ESN enables team collaboration, supporting trust among employees. The external collaboration using ESN is evident in all the responses, agreeing with McAfee (2006) that ESN stimulates collaboration beyond organisational boundaries. However, a few respondents indicated limited external collaboration, which is not surprising due to their lack of experience and their perception of social media and ESN as a tool to socialise rather than use at work, as noted in the existing literature (Gonzalez, 2013; Riemer and Richter, 2012).

*Table 5-1: Summary of collaboration types evidenced from interview responses*

<b>Respondent</b>	<b>Collaboration Types</b>		<b>Respondent</b>	<b>Collaboration Types</b>
PER0003 - Oliver	Limited External Collaboration		PER0159 - Richard	Internal Collaboration External Collaboration Team Collaboration Cross-boundary Collaboration
PER0004 - Emma	Internal Collaboration Limited External Collaboration Team Collaboration Cross-boundary Collaboration		PER0187 - Anya	Internal Collaboration External Collaboration Team Collaboration Cross-boundary Collaboration
PER0006 - Michelle	Internal Collaboration External Collaboration Team Collaboration Cross-boundary Collaboration		PER0190 - Graeme	Internal Collaboration External Collaboration Cross-boundary Collaboration
PER0060 - Adam	Internal Collaboration External Collaboration Team Collaboration Cross-boundary Collaboration		PER0230 - Steven	External Collaboration
PER0101 - Chris	Internal Collaboration External Collaboration Team Collaboration Cross-boundary Collaboration		PER0261 - Kathryn	Internal Collaboration External Collaboration Cross-boundary Collaboration

Similarly, with team collaboration, the supply chain activities are effectively managed within the project team, which reflects the claims by Natoli (2013) and Smith (2017). The results also show that ESN has enabled cross-boundary collaboration, allowing supply chain participants to reach people irrespective of geography or time zones for enhanced communication, creating communities, and collecting helpful information, as (Gonzalez, 2013) suggested.

Phase three findings are coherent with the findings of previous phases. The results from Exela services indicate that Slack is used extensively and is essential to their regular operations, where partners work together to create improved capabilities to achieve the organisational goals. The characteristics observed are frequent communication, equal contribution and shared ideas from all parties, sharing information that leads to actions and decision-making, high trust and joined resources, which fairly adhere to a full collaboration suggested by (Frey et al., 2006).

The results demonstrate that CraftTex Manufacturing uses WhatsApp to collaborate with its suppliers. The interactions are moderately frequent, and information sharing creates mutual benefit and limited decision-making. The collaboration type exhibits networking and corporation characteristics suggested by (Frey et al., 2006).

The collaborative activities gathered from all phases of this research include internal meetings, video calls, external stakeholder interactions, employee engagement, information sharing, organisational and supply chain wide events and updates, spreading org-wide awareness, and planning and tracking daily operations and tasks, which has enabled the accumulation of ideas, observations, responses, and views, connecting knowledge and experience and can facilitate collective decision-making (Kehl, 2017).

Ghosh and Fedorowicz (2008) claim that trust is a crucial element and foundation for collaboration, and it improves information sharing. The collaboration among supply chain partners and increased information sharing presented in the results of this study evinces trust. Similarly, Matopoulos et al. (2007) claim that trust in collaboration positively affects relationships. Kumar and Anbanandam (2020) argue that supply chain collaboration helps participants achieve greater supply chain clarity and maintain a better relationship among the partners. The literature review in section 2.2.6 presents that collaboration, relationships and trust facilitate each other.

### **5.2.2 Openness in Communication Creates Closer Relationships and Trust**

The findings of the questionnaire analysis conclude that the use of ESN platforms has improved communication, making it cohesive and holistic, allowing participation from a broader geographic and demographic population, agreeing with the existing literature that improved communication is a business benefit using social technologies in an organisation (Chui et al., 2012; Turban et al., 2011). According to the respondents, ESN communication is faster, enables information sharing, and allows extended communication periods, providing better communication visibility and facilitating them to connect with stakeholders across functions, sites or geographies (Chui et al., 2012).

As per the findings, ESN facilitated personal discussions and supported influencing situations with external stakeholders. In addition to facilitating work-specific collaboration and information sharing, online interactions have allowed employees to know each other, be updated on the organisational activities, and recognise, motivate and help each other, agreeing

with (Leonardi et al., 2013) that ESNs increase communication visibility by allowing employees to communicate with specific colleagues or all in the organisation. The findings support (Dimicco et al., 2008) that ESN provides a forum for employees to communicate with each other, and employees tend to maintain a connection with colleagues with whom they may not interact regularly or whom they do not know. For instance, see the responses of Liam (excerpt 4.2.28) and Michelle (excerpt 4.2.29) (section 4.2.1.2.1).

The phase two findings show that all participants have provided evidence of open and friendly communication during their interaction with internal and external stakeholders through ESN platforms and collaborative web pages. For example, the information from Anya confirms (excerpt 4.3.166 - section 4.3.7.8) that the social wall is a driving force, making sure everyone within the organisation communicates and collaborates.

Phase three results present improved and open communication in interaction with external stakeholders. For example, section 4.4.2.5 demonstrates how Graeme has initiated group conversations with internal and external stakeholders, developed a communication flow, and created an open conversation forming professional relationships. A strong relationship with supply chain partners is based on open communication and upfront clarifications (Shahbaz et al., 2018), and transparency makes supply chain relationships closer (Casemore, 2012). Open communication or information transparency indicates trust in line with (Akkermans et al., 2004) that information transparency is fostered in collaboration underpinned by trust.

### **5.2.3 Information Sharing Enhances the Quality of Relationships and Trust**

The findings show that most respondents of phase one used ESNs to share a variety of information. Document sharing, distribution, and archiving of standard files and day-to-day updates on tasks and operations are generally shared. Other information shared includes photographs and videos of products procured, new product launches and details of purchases, orders and deliveries so that all parties are apprised of the latest updates. It agrees with (Ellison et al., 2015) that ESN enhances knowledge sharing and (Cui and Idota, 2018) that information sharing benefits organisations from innovative performance, increasing trust and relationship quality between members.

The findings of phase two provide a detailed overview of the information shared from the point of view of each interview participant. The information sharing occurs among internal and external stakeholders in various scenarios, and the type and extent of information shared vary

between participants and organisation; a summary recorded against each interview participant is presented in table 5-4. For example, some organisations (Anya - 4.3.7, Michelle - 4.3.4 and Kathryn - 4.3.10) used ESN for org-wide communication, internal updates, employee engagement and managerial statuses. Information sharing among internal stakeholders benefits from innovative performance and can increase trust and relationship quality between the members (Cui et al., 2018). Participants shared operational data such as details of products, purchases, inventory, sales, schedules, and statuses with external stakeholders; such information enables supply chain management to effectively and accurately plan various activities within the organisation's functions (Li, 2002).

The results indicate that most respondents are comfortable sharing business-critical and confidential information, indicating trust among the stakeholders, agreeing with (Kwon and Suh, 2004) that open communication and readiness to take risks are inherent in partnerships with high trust. Existing literature emphasises trust as a crucial element that fosters information sharing, transparency and commitment (Akkermans et al., 2004; Kwon and Suh, 2004; Min et al., 2005). A lack of trust can result in hesitation in releasing sensitive and confidential information (Bowersox and Closs).

Phase three findings show Exela services involved extensive information sharing with external stakeholders (outsourcing partners) through Slack (4.4.1.4). CraftTex manufacturers have also shared much information (4.4.2.4). However, the former company has shared confidential information such as passwords, indicating a high trust partnership that has evolved over long-term interaction. (Ghosh and Fedorowicz (2008) suggested that the information-sharing relationship between the retailer and the suppliers has helped build trust over time, supporting the findings. Unlike Exela services, the latter company has a developing relationship with the supplier and has not shared highly confidential information, but business-critical information is exchanged. This finding supports the literature that ESNs enable broader and more robust information sharing, affecting the organisation's information flow and enabling effective interpersonal interactions (Dimicco et al., 2009). The willingness to share occurs when there is a partnership with long-term strategic relationships, trust, and commitment among the partners (Cagliano et al., 2003; Du et al., 2012), which means increased information sharing indicates improved relationships and trust among the partners.

However, phase one and two results indicate that a small fraction of the participants who use ESNs for limited information exchange are against sharing confidential information and

believe ESNs do not foster relationships or trust. It is observed that these participants have limited experience in using ESN and have recently adopted these platforms.

### 5.2.4 Shared Responsibilities and Mutual Benefits Indicate Relationships and Trust

The results of phases two and three demonstrate that communication through ESN has enabled collaborative working to achieve joint objectives. For example, Graeme worked with the tier 1 supplier for sustainable sourcing and manufacturing of supplies from the tier 2 supplier (upward in the chain) to meet the customer requirement (4.3.1.10) through WhatsApp communication. The supply chain links between various parties involved in the whole chain and the WhatsApp communication link between the focal company and tier 1 supplier are shown in figure 5.2. Michelle used the platform to work with customers (external) and internal stakeholders to achieve diversity goals. According to (Simatupang and Sridharan), A narrowed focus of the supply chain members impedes their achievement of overall supply chain performance and shared goals. However, phase two results prove that the organisations have worked with extended enterprises by using ESNs, establishing relationships and trust, and achieving shared goals.

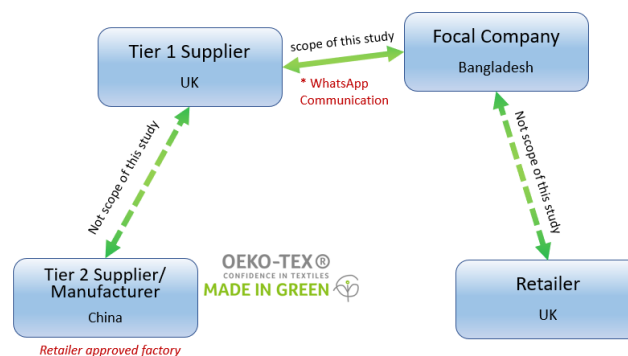


Figure 5.2: Supply chain and communication links

The findings of phase three confirm that the participants have used ESN to achieve shared objectives and mutual benefit. Graeme could negotiate product prices for a large quantity order (4.4.2.6), and the supplier accomplished a substantial business deal, benefiting both parties. Reciprocity, a determinant of trust, is a positive action by one party that responds with positive action by the other party, rewarding both (Fehr and Gächter, 2000).

### 5.2.5 Reduced Transaction Costs is a Determinant of Trust

The observations from the questionnaire survey concluded that using ESNs has enabled real-time collaboration, avoiding delays in communication, contrasted to the old way of email and



telephone options, which are not helpful in collaboration or quick resolution (see Adam's response in section 4.2.1.1.1). The findings in section 4.2.1.2.2 indicate that ESNs have helped move things faster, reducing coordination and transaction costs.

The findings of the interview responses show that using ESNs has helped get work done much faster. For example, without the ESN platforms, traditional methods like using email or physically being present at the office were the options which would delay the processes.

The netnographic observations of the conversations deduced that transaction cost reductions were achieved through collaboration facilitated by ESNs. It is important to note that through ESN conversations, a consensus is reached by the communication participants with improved turnaround time (section 4.4.2.7). According to Kanda and Deshmukh (2008), a lack of trust between supply chain partners increases the transaction cost due to additional effort involved in the operation. Laaksonen et al. (2009) noted that reduced transaction cost is a determinant of trust, which the findings prove. Section 4.4.2.7 shows that the manufacturer and the supplier have shared information to agree on the order quantity and discounted pricing over WhatsApp chat much more quickly, unlike through traditional channels such as emails and telephone. The manufacturer has used the platform to share product specifications, arrange product samples, perform quality checks and place purchase orders in real-time. The collaborative nature of interaction and the real-time availability of information has reduced coordination costs. This finding is congruent with the findings of Artz et al. (2000) that collaboration facilitated by information sharing can lower transaction costs, especially coordination costs, thereby reducing uncertainties in the supply chain. Similarly, social platforms allow efficient, low-cost and timely organisational engagement (Kaplan and Haenlein, 2010).

### **5.2.6 Degree of Understanding Improves with Length of Relationships**

The netnographic observation findings of phase three conclude that there exists a high level of understanding among the supply chain participants of Exela services communicating through ESNs. Similarly, some degree of understanding exists among the CraftTex Manufacturing group conversation participants.

As explained in section 4.4.1.7, the conversation from Exela Services displays bespoke terminologies and abbreviated vocabulary used throughout the conversation, which are easily understood by all parties, indicating a high level of understanding. A common understanding among the supply chain stakeholders can mitigate the impediments that affect a successful



SCM (Mentzer et al., 2001; Seuring and Müller, 2008). The level of understanding evidenced in the conversation of CraftTex Manufacturing is comparatively less (4.4.2.9). The stakeholders use bespoke terminologies and acronyms. However, the supplier finds it challenging to interpret specific terminologies, which other participants clarify upon request. The findings prove that the conversation that started by introducing each other has developed into a flow of communication where all members interact to solve the supply chain issues.

The difference in understanding is attributed to the length of interaction and the regional differences. In the former scenario, the participants established the relationship through their long-term interactions, primarily through ESN communication, which overcame the regional differences. In the latter scenario, it is observed that the relationship is developing, and the degree of understanding among the members is improving over time.

### **5.2.7 Decision-Making is an Indicator of Relationships and Trust**

The results of phase two show that ESNs have been used to support decision-making. For example, Michelle has used Microsoft Teams to seek prompt information, allowing better decision-making (excerpt 4.3.68 of section 4.3.4.11). Although Anya mentioned that ESN had not influenced her decision-making, her response indicates that information shared through ESN has helped in decision-making. The ideas shared by employees and feedback received through the intranet platform have enabled the organisation to improve processes (4.3.7.12). The netnographic observation provides evidence that information sharing facilitates decision-making. For example, information shared by Sascha about the existing stock vs. sales status of low-selling products enabled Victor to decide to introduce promotions to improve sales (section 4.4.1.8).

Coherent decision-making can handle future uncertainties in the supply chain which can handle many cases of future uncertainty, and the decision-makers look for the credibility and trustworthiness of the supply chain partners (Kanda and Deshmukh, 2008). Several authors have noted that the social capital (ideas, observations, responses, and views, connecting knowledge and experience) created through relationships helps in improved decision-making (Bourdieu, 1977; Coleman, 1988; Cross and Katzenbach, 2012; Kehl, 2017), indicating the significance of relationships and trust in decision-making.

### 5.2.8 Problem-solving is an Indicator of Trust

Phase one results inform that ESN enables quick resolution of issues through real-time collaboration, unlike old email and telephone methods, which are not helpful for real-time communication, agreeing with phase two findings that ESN platforms are used for problem-solving, especially at the operational level. For example, Richard acknowledged that ESNs are powerful enough to raise and solve internal issues (4.3.6.10). Graeme used WhatsApp group to solve issues (4.3.1.2), and Anya used Yammer to seek clarification for issue resolution (4.3.7.1). Phase three findings strengthen the findings of phase two with real-life examples of problem-solving. For instance, Exela Services solved problems such as remote desktop connectivity issues and UPS billing issues by communicating through Slack (section 4.4.1.10). Similarly, CraftTex Manufacturing communicated through WhatsApp to solve a product specification mismatch provided as a sample (4.4.2.12).

The findings align with evidence from past studies claiming that ESN platforms are used to delegate tasks and solve any problem associated with the tasks (Riemer and Richter, 2010). Using ESN for problem-solving is an indicator of trust. Trust is an outcome of shared problem-solving in a project, as the partners coordinate and work together on the issues and reduce information asymmetry (Bstieler, 2006).

### 5.2.9 Nature of Relationships Influenced by the Duration of ESN Adoption and Usage

The interview phase's findings indicate that most respondents perceive ESN as a platform to establish, improve or maintain relationships with internal or external stakeholders. For instance, Michelle's role focuses on developing relationships and improving productivity, and she could build many relationships through ESN conversations and prompt information sharing (4.3.4.8). In addition, ESN platforms provided better access to external stakeholders, enhancing information flow enabling relationships. Information sharing among stakeholders can increase trust and quality of relationships between members (Cui et al., 2018).

While Emma acknowledged that she could improve relationships through ESN (4.3.3.8), Steven claims that although new relationships can be developed through ESN communication (4.3.9.6), it is limited compared to face-to-face interactions. The findings also provide varying views of the respondents that although ESN helps to maintain relationships, it can adversely impact relationships if the platform and its functionality are not used appropriately (4.3.5.5).

Few respondents provided a contradictory view. Oliver mentioned that ESN does not help build or maintain relationships (4.3.8.5). However, it needs to be noted that the individual has acknowledged that he uses ESNs only for essential purposes and prefers face-to-face interaction. Chris believes face-to-face interaction is essential for building relationships and mentioned that using ESN could reduce face-to-face interactions adversely affecting relationships (4.3.5.5).

Table 5-2: Respondents' perception of relationships through ESN

Respondent	Relationship
PER0003 - Oliver	No relationships build
PER0004 - Emma	Improved relationships with internal stakeholders
PER0006 - Michelle	Established relationships with internal and external stakeholders
PER0060 - Adam	Established relationships with external stakeholders
PER0101 - Chris	No relationships Build Used to maintain relationships Can negatively affect relationships in specific scenarios
PER0159 - Richard	Established relationships with internal stakeholders
PER0187 - Anya	Established relationships with internal stakeholders
PER0190 - Graeme	Established relationships with internal and external stakeholders
PER0230 - Steven	Limited opportunity to build a relationship
PER0261 - Kathryn	Established relationships with internal stakeholders

The findings of the netnographic analysis of the conversations of both companies support the view of most interview respondents that ESN helps establish relationships. In both cases, the ESN conversation displays transactional communication, where the participants share information on regular supply chain operations. Exela services use ESN for extensive collaboration and information sharing, including confidential data, displaying information transparency and commitment, which indicates a strong relationship among the partners. The willingness to share indicates a long-term collaborative and trusted relationship (Cagliano et al., 2003; Du et al., 2012). It supports (Matopoulos et al., 2007) claim that trust in collaboration positively affects relationships. According to existing studies, the success or failure of a supply chain relationship is governed by the level of commitment, trust and cooperation (Monczka et al., 1998).

The findings of netnographic observation of the ESN conversations of the Exela Services and CraftTex Manufacturing were juxtaposed, displaying a difference in the participants' interaction, level of relationship and trust exhibited in the conversation. Exela Services and the

service provider (outsourcing partner) displayed a sense of shared objectives, interdependence, long-term collaboration, a high level of integration between both parties, interdependence, coordination in all activities, proactive communication and actions, contribution to new product sourcing and a high degree of collaboration displaying the characteristics of ‘*alliance*’ in the continuum of buyer-relationships shown in figure 5.3 (Hoyt and Huq, 2000). The conversation of CraftTex manufacturing displayed a good sense of shared objectives, low level of interdependence, emerging collaboration and integration, coordination in all activities, somewhat reactive communication and actions, contributing to finalising the correct product specification and a good amount of collaboration placing its position in between ‘*transactional*’ and ‘*collaborative*’ in the continuum (figure 5.3) (Hoyt and Huq, 2000).

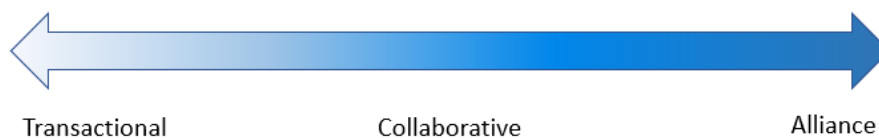


Figure 5.3: Continuum of buyer-relationships

Source: (Hoyt and Huq, 2000)

#### 5.2.10 Trusted Behaviour Increases with Increased Use of ESNs

The results of phase two present various views of trusted behaviour. Whilst some respondents supported trusted behaviour using ESNs, some had contradictory opinions. Trusted behaviour is observed by respondents who use ESNs frequently as an integral part of their business, for substantial information sharing and for planning execution and tracking of daily operations (for example, sections 4.3.1.8 and 4.3.2.4). A few respondents indicated the presence of trust because they use ESNs. The acknowledgement by respondents includes ‘*an increase in conversation by using ESN build trust*’ (4.3.4.10), ‘*comfortable in sharing confidential information*’ (4.3.3.11), ‘*creating trust through constant interactions*’ (4.3.6.9) and ‘*private nature of ESN and organisational security maintains confidentiality of information shared and existing trust*’ (4.3.10.8). The sharing of confidential information (observed above) is considered an indicator of trust in a buyer-supplier relationship. The extent to which the confidential information is shared impacts trust positively and signals that the other party’s motives and intentions are benevolent (Doney and Cannon, 1997). As existing literature suggests, ESNs reinforce internal and external information sharing, leading to innovative performance and employee productivity, increasing trust and relationship quality between

members (Cui et al., 2018; Ferreira and Du Plessis, 2009; Gonzalez, 2013). Work visibility (visibility of what co-workers do) eliminates duplication errors and innovation and creates employee trust.

A small fraction of responses signals the absence of trust. For example, '*communication methods do not influence trust*' (4.3.8.7), and '*repeatedly asking the same person many questions can have a detrimental impact on trust*' (4.3.5.6). The findings present that the participants have less experience using ESN, lack understanding of ESN and its capabilities and are hesitant to adopt a new platform. According to the existing ESN literature, ESN interactions positively influence interpersonal trust (Azaizah et al., 2018; Cagliano et al., 2003; Du et al., 2012). Rahman (2020) highlighted that although ESNs facilitate information sharing, easing employees' difficulties, inappropriate use, such as excessive information sharing, can cause inefficiencies in interpreting redundant information. In addition, the confidentiality of shared information and mismanagement of the information can be detrimental to the trust, which supports the findings.

Phase three's findings are congruent with phase two's results, supporting trusted behaviour and providing additional insights. Conversations from both companies indicate that ESN is used for significant information sharing, planning execution, and tracking daily operations. Exela Services is an early adopter of ESN and exhibits a high level of interaction and information sharing, including confidential data such as business-critical information and passwords indicating trusted behaviour. A high level of interdependence is demonstrated in the conversations, making the participants vulnerable, which is examined in section 4.4.1.2. The team depends on each other to get information about sales, existing stock, expiration dates, and Amazon inventory to manage the sales stock levels effectively. Even though CraftTex Manufacturing started extensive use of ESN during Covid, the results show that they exchange business-critical information displaying risk-taking behaviour, henceforth trust.

*Table 5-3: Respondents' perception of trust through ESN*

<b>Respondent</b>	<b>Perception of Trust Through ESN</b>
PER0003 - Oliver	No trust established
PER0004 - Emma	No change in trust
PER0006 - Michelle	Improved trust
PER0060 - Adam	Established confidence and trust
PER0101 - Chris	Difficult to establish trust
PER0159 - Richard	Use to establish trust and commitment
PER0187 - Anya	Improved trust through ESN
PER0190 - Graeme	Established trust with stakeholders Enabled decision making
PER0230 - Steven	Developed trust using ESN Stakeholders changing attitude towards ESN has improved trust
PER0261 - Kathryn	Some amount of trust

Literature suggests that a high degree of interdependence creates vulnerability, determining a trusted relationship (Gundlach and Cadotte, 1994; Kumar et al., 1995). Sharing confidential information is considered a risk-taking behaviour indicating a willingness to cooperate, signalling effective trust (Lindskold, 1978; Strub and Priest, 1976). The findings support the existing literature that ESNs driven by information sharing improve trust, where the willingness to share occurs with a long-term strategic relationship, trust, and commitment (Cagliano et al., 2003; Du et al., 2012), which can be read in conjunction with social media literature that the greater the social media interactions, the greater the interpersonal trust (Beaudoin, 2008). As Azaizah et al. (2018) noted, ESN has supported the trust factor and eased the mental pressure on new employees by readily getting information. The findings show that the argument by Colicchia et al. (2019 and Kim et al. (2011) on the capability of social media information-sharing, allowing its members to access helpful information and facilitating effortless and efficient communication eliminates any distrust that can arise due to asymmetric information, can be extended to the use of ESNs.

### **5.2.11 Concluding Comments**

This section presented the analysis to answer RQ1 by explaining the nature of relationships and trust due to ESN usage. The findings show that prolonged use of ESN for collaboration improves relationships and trust, leading to confidential information sharing and risk-taking behaviour. The subsequent section attempts to address RQ2.

### 5.3 RQ2: What is the nature and extent of information exchange among supply chain participants through Enterprise Social Networks?

The section presents the discussion and analysis of the findings to address research question RQ2. It discusses the type of information, the degree of information exchanged, and the confidentiality of information shared by supply chain stakeholders during their interaction through ESN platforms, primarily focussing on the findings of the netnographic analysis phase. This section also discusses the information-sharing behaviour exhibited by the participants of the conversations on ESN platforms based on the findings. The sections used to address the research question are shown in figure 5.4.

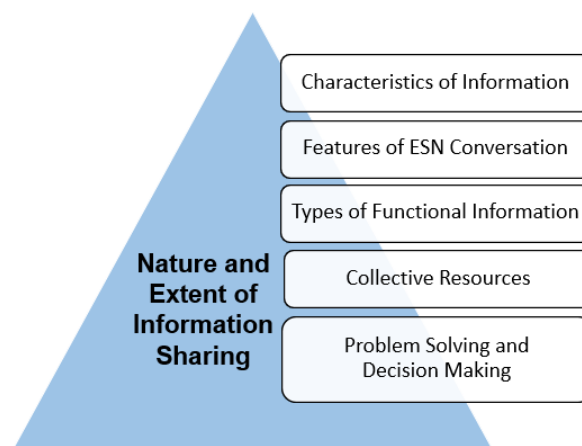


Figure 5.4: Addressing RQ2

#### 5.3.1 Nature of Information

Findings from various phases of this study uncovered the characteristics of information shared through ESN and the features of ESN conversations (figure 5.5), combined to examine the nature of Information through ESN conversation.

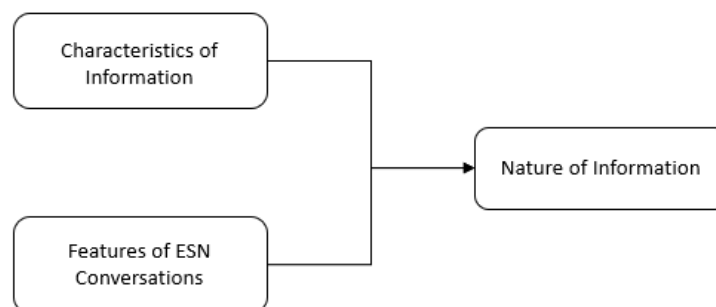


Figure 5.5: Deriving the nature of information

The phase one analysis informs that ESNs enable ‘*real-time*’, ‘*fast*’, ‘*organised*’, ‘*up-to-date*’ and ‘*quick and easy*’ communication. For example, Emma uses Slack for real-time actions and updates, Alex commented on faster and up-to-date information sharing, Mark informed that the platforms he uses allow organised and faster communication and the ability to maintain up-to-date information (section 4.2.1.2.2), and Michelle notes they are quick and easy (excerpt 4.2.29 in section 4.2.1.2.1). Similarly, it is observed that ESN allows structured communication due to its chronological order of the flow of information (4.2.1.2.4). Another characteristic noted is asynchronous communication, where team members can communicate when others are offline. Figure 5.6 shows the various characteristics and nature of the information observed. Sharing confidential information is also observed; for instance, Susan uses Microsoft Teams for internal communication and private messaging, including confidential information (4.2.1.3.4).

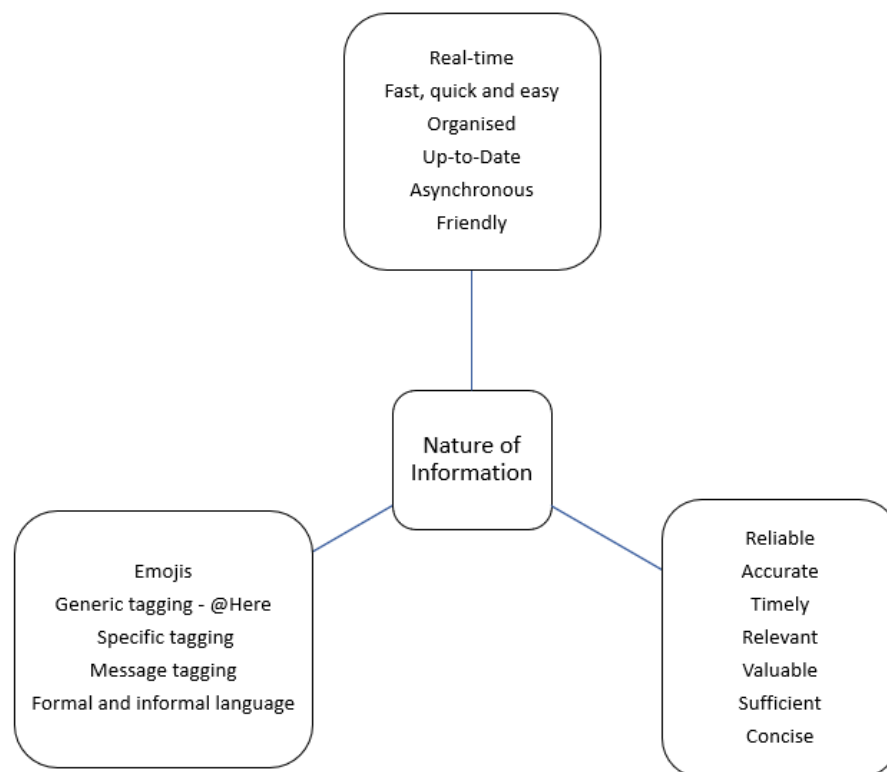


Figure 5.6: Nature of information through ESNs

The analysis of the interviews discovers ESN conversations as real-time, fast, quick and easy, reliable, asynchronous, frequent and timely. For example, Michelle says that ESN has made interactions faster, enabling quicker decision-making (4.3.4.11). Anya mentioned that ESN is used for sharing information, which is reliable (4.3.7.7), and Graeme uses ESN for urgent and



timely responses. He also uses ESN to share relevant information to solve important business issues (sections 4.3.1.3 and 4.3.1.6). It is observed that specific ESN platforms are used to share confidential information; for instance, Adam (4.3.2.5), Anya (4.3.7.14) and Michelle support it (4.3.4.14). Participants who use intranet applications and social pages in their organisations have informed that the platforms are used for employee engagement (Emma – 4.3.3.1), including online networking events (Richard – 4.3.6.7), sharing user stories at work, fun events and sharing personal experiences (Anya – 4.3.7.8).

The netnographic observation reveals that relevant, valuable, accurate, reliable, concise and timely information is shared among the supply chain partners for actionable insights. Exela Services used the information shared through Slack for procurement, planned to reduce storage costs, issued resolutions, managed daily operations, and planned the shipment of orders effectively, as discussed in section 4.2.1.4.2. The brevity of messages in communication is notable. CraftTex Manufacturing used the platform to share business-relevant information on procurement activities, choose the right products that match the required specification, inspect product quality, finalise purchase orders and track delivery. Both organisations have used ESN to share real-time information and for operational communication only; no non-serious, sarcastic or humorous comments were made, unlike some public social media (Jones, 2019).

The Slack conversations of Exela services are friendly and informal, with increased transparency in communication. Only business-related discussions are observed, sharing business-critical information (for example, discussing business strategies, sharing stock, sales and order details) and confidential information such as usernames and passwords. CraftTex Manufacturing has demonstrated some transparency through the WhatsApp conversation by sharing business-critical information such as production statuses, pre-orders, and financial information. However, they have not gone to the extent of sharing highly confidential information. Both asynchronous and real-time communication is observed in both organisations.

The use of emojis is observed in the Slack and WhatsApp conversations of both companies (4.4.1.4.2, 4.4.2.4.2). The emojis display facial expressions, articulation and human gestures, adding contextual or emotional meanings to the communication (Klostermann et al., 2018). The use of social media platforms has caused the emergence of new language styles without proper spelling of syntax (Crystal, 2006), and according to (Deumert, 2014), the use of non-standard spelling in instant messages is expected, which is observed in the ESN conversations

analysed in this study. The use of phonographics, acronyms and terminologies specific to the organisation and region is presented in sections 4.4.1.4.2 and 4.4.2.4.2, which agrees with (Ayan, 2020).

The @ symbol is used to tag users (known as @mention) in the conversation group to draw attention to someone on the communicated matter. Graeme tags Dejan in the message, drawing his attention to introducing Henry (figure 4.55). Similarly, the conversation of Exela services also displays this feature (figure 4.14). Another observation is using @here in the Slack conversation of Exela Services. It is a specific feature of Slack used to notify a channel or workspace to draw the attention of people actively working at that time (Slack; Stray et al., 2019). Considering the different geographic locations and time zones in which the participants work, this feature is helpful to prevent notifying coworkers who are unavailable at that time.

### 5.3.2 Type and Extent of Information Sharing

The findings provide an overview of the information shared through ESNs. The results of phase one confirm that information is shared with internal stakeholders across functions or departments and external stakeholders. The information shared includes org-wide news and updates, managerial updates, project details, operational information related to procurement, sales, stock, orders, daily activities, and various other statuses. For instance, Emma informed that the store management team of the retail section uses Slack as a communication and action tool for real-time actions and updates (4.2.1.1.3). Adam shares details of new products, purchases, orders and deliveries through Slack with external stakeholders (excerpt 4.2.2 - section 4.2.1.1.1).

The findings of phase 2 provide much detail about the type and extent of information shared, summarised in T. Most respondents either shared business critical and/or confidential information or supported sharing such information through ESN within their internal network (table 5-4). The findings show that business critical and confidential information is shared with external stakeholders (for example, Adam (4.3.2.5) and Graeme (4.3.1.9)). A small fraction of the population does not agree to share confidential information.

The findings of phase three align and provide additional evidence to the findings of phases one and two. Exela services use Slack to plan and track their operations, including project updates, sharing procurement details, sales and orders, and files such as documentation, images and videos for problem-solving and decision-making (section 4.4.1.4). CraftTex Manufacturing

uses WhatsApp to share information with internal and external stakeholders for procurement activities and track product production and delivery status, detailed in section 4.4.2.4.

It is observed that both companies interact with their immediate stakeholders, i.e., tier 1 suppliers or customers or service providers only, although they work together with stakeholders to achieve the chain-wide goals. For instance, CraftTex Manufacturing works with their UK supplier, who in turn works with the tier 2 supplier, to achieve the goals of the focal company's customer (figure 5.2). The results do not exhibit direct interaction with the extended supply chain players.

*Table 5-4: Type and degree of information shared*

<b>Respondent</b>	<b>Type of Information Sharing</b>	<b>Confidential Information</b>
PER0003 - Oliver	Used for essential communication only.	No confidential or business-critical information is shared.
PER0004 – Emma	Organisational news and updates Managerial information and updates Project updates, task tracking and documentation Files sharing - presentations, training schedules and resources, policies Various day-to-day statuses	Comfortable in sharing confidential information
PER0006 – Michelle	Project updates, task tracking and documentation Files sharing - documents, solutions, contracts, bids, invoices Collaborative editing	Business critical information shared. Sceptical about sharing too much confidential information
PER0060 – Adam	Files sharing - Documents, videos and images Procurement Various day-to-day statuses Regular operations or tasks Inventory, Sales and orders	Highly confidential information sharing with external stakeholders
PER0101 – Chris	Project updates, task tracking and documentation Files sharing - project files Procurement Various statuses	Comfortable in sharing confidential information
PER0159 – Richard	Organisational news and updates Managerial information and updates Project updates, task tracking and documentation Files sharing Financials Collaborative editing	No confidential information shared
PER0187 – Anya	Organisational news and updates Managerial information and updates Files sharing - documents, videos, images and posters	Comfortable in sharing confidential information
PER0190 – Graeme	Organisational news and updates Files sharing - product catalogues, images and Videos Collaborative editing Procurement, Product Information Financials - prices, quotes, negotiations and invoices Regular operations or tasks and statuses Delivery schedules, any contingencies	Business critical information shared externally
PER0230 – Steven	Project updates, task tracking and documentation Seeking project approvals Files sharing - presentations, documentation and operational process-related data shared Limited use for information sharing (recently adopted in the organisation, ongoing training on the platform)	No confidential information shared
PER0261 – Kathryn	Organisational news and updates - health and safety, organisational policies and guidelines, education and training, achievements and accolades Managerial information and updates Project updates, task tracking and documentation Files sharing Various day-to-day statuses - business and task updates	Comfortable in sharing confidential information

Empirical evidence of both companies sharing business-critical and confidential information is observed (sections 4.4.1.4.4 and 4.4.2.4.4). For instance, Exela services share confidential information in Slack conversations. The communicating parties are aware that the information needs to be maintained conscientiously.

### 5.3.3 Collective Resources

The outcome of all three phases confirms that the ESN platforms create collective resources, including collective intelligence and shared information repository. The shared information repository in this research is the information and digital artefacts shared through ESN platforms that are persistent, forming a store of documents, knowledge, and information sources. It is comparable to the argument that social media enables users to share information, experiences, opinions and artefacts, which can form information sources for the public (Kaplan and Haenlein, 2010; Xiang and Gretzel, 2010), and support Ellison et al. (2015) that ESN offers information storage.

In the questionnaire response, Michelle mentioned that the history of chats and documents shared through Microsoft Teams are retained, which helps to track previous information and conversations. The phase two findings indicate that some organisations consider ESNs an information repository. For instance, Emma's organisation uses Microsoft Teams and shared drives in conjunction with storing and sharing files, which team members can access based on permissions. Anya informed us that their intranet platforms are used to share news and updates, attach documents and share user experiences, which persists. Also, these platforms serve as the repository of all essential guidelines and policy documents in Anya's organisation.

The netnographic observation of Exela services' conversation supports the findings from the previous two phases. The observation concludes that various information, files, images and videos shared through Slack form the repository for all participating members. Various channels or groups, each for a different topic, have been used to share a multitude of information, ideas and suggestions, and the employees and partners can look for any information here without wasting time searching for the information elsewhere (4.4.1.13). To organise and store information in a more structured format, the organisation has adopted another platform, Twist, which indicates the significance of ESNs as an information repository.

Existing literature suggests that social media can gather information from the crowd or "harness collective intelligence" (collective intelligence) (O'Reilly, 2005) and allow enhanced sharing

of knowledge and resources among members, which can be observed in the use of ESN based on the data analysis of this study. The study's findings prove that the discussions and collaborative activities through ESNs have enabled the accumulation of ideas, observations, responses, and views, connecting knowledge and experience to create collective intelligence, which facilitates decision-making, aligning with Kehl (2017) and Razmerita et al. (2014).

In response to the phase one questionnaire, Francis mentioned that Microsoft Team is used to share data, information insights, and communication within the organisation (excerpt 4.2.46). Similarly, Anya, in the phase two interview response, mentioned that the intranet is used to share ideas and feedback for process improvements. The 'user-generated content' is created through various stories posted by people, and subsequent comments contain individuals' ideas, stories, and feedback, forming collective intelligence (4.3.7.13). Exela Services has used Slack to extensively share knowledge, information, ideas, and artefacts, generating collective insights and enabling decision-making, which is evident from the phase three findings (4.4.1.13).

The findings support the concept of social capital, which includes all resources (information, emotional or financial support) from social networks that people can access (Bourdieu P, 1992; Huang and Liu, 2017).

#### **5.3.4 Concluding Comments**

This section presented the analysis to answer RQ2 by discussing the type of information and the degree of information exchange through ESNs. The findings show that 'social media language' is used in communication, and the prolonged use of ESN has improved information sharing, including confidential information. The subsequent section attempts to address RQ3.

#### **5.4 RQ3: What are the antecedents of using Enterprise Social Networks in supply chain management?**

This section presents the discussion and analysis of the findings to address research question RQ3. It primarily focuses on practitioners' knowledge of the reasons for their organisation's adoption of ESN platforms. The findings uncovered several barriers to adoption; although it does not strictly answer RQ3, it provides valuable insights related to RQ3, hence presented in section 5.4.7. Hence, the findings relevant to answering this research question are contributed mainly by phases one and two, represented in figure 5.7.

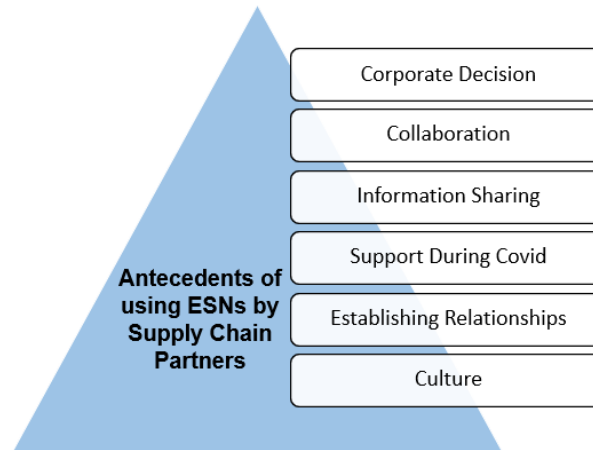


Figure 5.7: Antecedents of using ESN

#### 5.4.1 Corporate Decision

Existing studies suggest that several organisations are investing in social technologies to nurture global collaboration (Chin et al., 2015b; Kane, 2015; Leonardi et al., 2013), especially ESNs, to enhance the exchange of knowledge and ideas, promoting employee engagement, innovation, and performance (Koch et al., 2012; Kuegler et al., 2015). The findings of this study informed that at least 50% of the respondents use ESN because it was a corporate decision to adopt these platforms in the organisation for internal and external communication. Most organisations have adopted one or more platforms for various reasons. For example, Emma mentioned that in her organisation, Microsoft Teams and Zoom are used for internal and external collaboration, while the retail department uses Slack to manage operations (4.3.3.4).

Some platforms, such as Yammer, require an email ID to get access, and the non-digital workforce cannot access them (Michelle - 4.3.4.3). Anya's organisation adopted ESN as part of its digitalisation strategy, which includes Microsoft Teams, Yammer and custom-developed intranet platforms (Social Wall and Connect App). 75% of their UK workforce did not have access to digital systems and ESNs, but an email ID was required to access specific platforms. The Connect App was developed to enable the non-digital workforce to access ESN, which could be used on hand-held devices.

One of the respondents, a consultant, mentioned that he uses ESN due to client requirements. The findings confirm that corporate decisions or organisation requirements are why many participants adopt these platforms.



### 5.4.2 Workplace Collaboration

The phase one findings confirm that collaboration is one reason for adopting ESN platforms. All participants have acknowledged this; however, the magnitude and types of collaboration vary depending on the context, the role of the participants and the organisational policies. For example, Adam uses the platform for external and team collaboration (section 4.2.1.1.1 and excerpt 4.2.2), and Sean uses them for internal communications and across geographies (excerpt 4.2.5). Using ESN increases communication visibility, allowing individuals to connect with specific colleagues and the wider team within the organisation and enabling the sharing of information and artefacts at any time (Leonardi et al., 2013). This view parallels the wide acceptance of ESN as an enabler of collaboration (Ellison et al., 2015; Haefliger et al., 2011; McAfee, 2006; Riemer et al., 2011, 2012). The non-adopters view presents collaboration as potentially the purpose of using ESN and has identified internal, external, and cross-boundary collaboration. For example, Simon thinks external collaboration is a purpose of using ESN but does not appreciate '*what ESN means*', which means there is a lack of understanding of ESNs.

All interview participants acknowledged that collaboration is the reason for adopting ESN. The types of collaboration identified from the interview responses are summarised in table 5-1 within section 5.2.1. Graeme uses multiple platforms to interact with various departments of his company and has created different chat groups based on the purpose, for example, a group to communicate with the marketing team (4.3.1.2). Anya's organisation uses intranet platforms for intra-organisational collaboration, including org-wide communication and employee engagement. Managers use the platform to access action-specific information and have created groups, each for specific business or project purposes (4.3.7.2). Anya agrees that ESN provides a platform for employees to communicate with each other, and employees are inclined to maintain connections with colleagues they may not regularly interact with or did not know before (Dimicco et al., 2008).

The netnographic observation shows extensive collaboration by the participants of the conversation groups, which supports the findings of the previous two phases. However, the findings do not cover all the collaboration types, as both conversations analysed have been developed around a specific scenario where the participants of the focal company interact with external stakeholders located across geographies, evincing both external and cross-boundary collaboration. This observation is similar for both companies considered for this analysis.



### 5.4.3 Information Sharing

Information sharing has been identified as one of the reasons for using ESN platforms, as well as faster communication and quick updates. A summary of the types of information shared is shown in table 5-4, and a detailed description of information sharing is presented in section 5.3, addressing RQ2. All phases of the study displayed the use of ESNs for information sharing by supply chain professionals.

In the phase one response, Francis mentioned that the platforms he uses enable communication through a single platform across the organisation and allow data sharing, direct messaging and video calling, resulting in using the platform for an average of 6 hours daily. Anya said that the primary objective of the intranet platform is sharing news and updates with various teams, sharing best practices, updates on new business, and achievement stories with the broader organisation. In addition, managers use it to share information with their team remotely.

Phase two of the response provided detailed insight into using ESN for information sharing. It is observed that some individuals share information extensively; for example, Adam frequently uses it to share information and files required for daily operations (4.3.2.2). On the contrary, some individuals share information sparingly. For example, Chris started using Microsoft Teams recently and shares less information, although it includes project-related files, statuses, clarifications on project-related tasks, and procurement data. However, he has now started to share information through the platform increasingly. The findings support the claim that ESN is widely accepted for increased sharing of knowledge and resources among members (Ferreira and Du Plessis, 2009; Giermindl, 2018a) and is capable of mitigating any potential distortions in information (O’leary, 2011).

The netnographic observation proves that Exela Services and CraftTex Manufacturing share much information (4.4.1.4 and 4.4.2.4) for their regular operations. The findings evince multiple scenarios where the information has aided problem-solving (4.4.1.10 and 4.4.2.12) and decision-making (5.2.7, 5.2.8).

### 5.4.4 Support During Covid

The far-reaching implications of the covid-19 pandemic and social distancing caused substantial changes, particularly in how people work. Many organisations adopted ESNs to support remote working or experienced increased use of ESNs during this period. Phase one findings show that due to the covid-19 crisis, individuals and organisations explored various

ESNs and increased their use (section 4.2.1.1.4). For example, John and his team used ESN regularly for remote work during lockdown to connect with the Ryder Logistics offices across the UK (excerpt 4.2.19). Similarly, Anya's organisation used platforms for employee engagement while furloughed, and managers shared news and updates through ESN platforms. The non-adopters express that ESNs could be helpful during the covid-19 climate.

The findings of the interview phase show that all respondents, except for one, mentioned either they adopted ESN or increased the use of ESN during the covid-19 crisis, reinforcing the findings of phase one. For example, during the travel restrictions, Graeme adopted WeChat, as he was required to use the platform to communicate with Chinese suppliers as an alternative to travelling to the supplier location (section 4.3.1.5). Similarly, Emma's organisation adopted Microsoft Teams during the covid-19 pandemic for internal collaboration and communication during the lockdown, which she says is a blessing while remote working continues.

Several studies examine businesses using public social media platforms to improve communication during the covid-19 crisis (Luo, 2021; Yu et al., 2022). Recognising the advantages of social media, organisations have extended them, introducing ESNs internally to enhance collaboration. For instance, they have been adopted by government and health agencies (Chandrasekaran et al., 2020; Hargreaves et al., 2022), mainly in the academic sector for remote learning (Embuldeniya, 2021; Kazemian and Grant, 2022; Sengupta and Vaish, 2023) and for knowledge sharing in organisations (Nugraha et al., 2021). There is a gap in the literature on the adoption and use of ESNs in business management or supply chain management context during the covid-19 crisis. This study provides empirical evidence to demonstrate the covid-19 crisis as one of the causes of ESN adoption or its increased use by organisations.

#### **5.4.5 Establishing Relationships**

The findings of all phases of this research indicate that ESN fosters relationships (section 5.2.1). Although most respondents failed to explicitly specify building relationships as a reason for adopting ESN, a few respondents have specified this. For example, Michelle mentioned that her role involves developing relationships (4.3.4.8). Richard mentioned that building relationships is an important aspect of his role (excerpt 4.3.131), and he acknowledged that these platforms provide flexibility to interact and work with people in different locations. Similarly, Anya acknowledges that one of the reasons for her organisation adopting the intranet

platform is employee engagement, while studies claim that a communication system facilitating employee engagement through constant interactions and updates can cultivate relationships (Kang and Sung, 2017).

Existing literature examines that ESN enables collaboration (Riemer et al., 2011, 2012; Ellison et al., 2015), which helps accumulate valuable information through social interaction, the social capital (Polyviou et al., 2019), which is a significant factor in relationships between people (Li et al., 2014). The previous sections discussed the role of ESN in enabling collaboration and information exchange. Information sharing within firms and between firms creates social capital, which can increase trust and relationship quality between members (Cui et al., 2018).

#### **5.4.6 Culture**

The responses of phase one informed that the ESNs were adopted to support the culture of face-to-face interactions, especially during the covid-19 lockdown, as an alternative to physical meetings. For example, Michelle said that Microsoft Teams permits quick and lively communication, and video features allow a friendly interaction replicating the face-to-face scenario. Susan mentioned that physical interactions are embedded in their regional culture, and ESNs were used as an alternative way for face-to-face interaction during the lockdown.

The outcome of the interview response analysis provides additional data to support the phase one observation. It is evident that, from a cultural aspect, there are multiple views on adopting ESN. Firstly, as an alternative to face-to-face interaction, it is one of the reasons. For example, Kathryn says that the face-to-face business engagements that happened onsite shifted to online. Secondly, many individuals were forced to adopt specific platforms based on external stakeholder requirements. Graeme's organisations considered what platforms their suppliers or customers use (4.3.1.13).

Similarly, Oliver uses the platform his customers prefer, although he only uses ESN for essential purposes (4.3.8.1). Thirdly, regional culture influences the adoption of ESNs. For example, Graeme informed that using platforms such as Whatsapp for business communication is embedded in their regional culture, and he is part of the supply chain associations' active WhatsApp group. He uses specific platforms to interact with suppliers of particular regions, such as WeChat for China (4.3.1.13). This claim is supported by Adam's response that he uses WeChat to communicate with Chinese suppliers. Finally, the organisation's digitalisation strategy is a reason for ESN adoption, where the organisation intends to establish a digital

culture. Anya revealed that their organisation developed the intranet platform and the ConnectApp (for non-digital users) as part of their digitalisation strategy.

### 5.4.7 Barriers to Adoption

This section discusses the various barriers to the adoption of ESNs uncovered from the analysis of all three phases of this project. It includes a lack of understanding and training, technology adoption issues, cost implications, security concerns, reliability issues and diminished usage, as shown in figure 5.8.

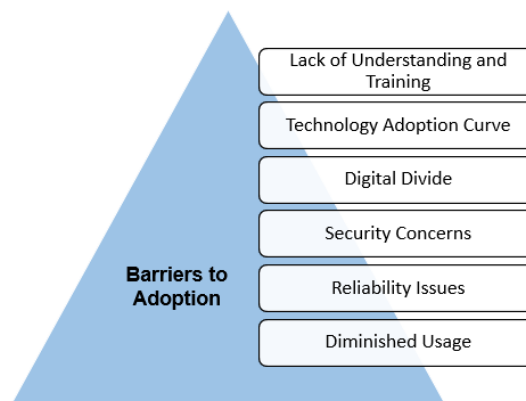


Figure 5.8: Barriers to Adoption

#### 5.4.7.1 Lack of Understanding and Training

A lack of understanding of the functionalities of ESNs and a lack of training are observed from the findings, which inhibit the use and affect the broader adoption of ESNs. Emma says that due to her lack of understanding of Slack, she hesitates to use the platform, although it is adopted in the retail function of the organisation. Although Steven uses multiple platforms to interact with stakeholders, there exists a lack of awareness and understanding of the available functionalities, as he has newly adopted these platforms to support remote working during the pandemic.

Mark highlights training as a vital issue while adopting new platforms. David recently started using Microsoft Teams and is still learning the system. Although he attended the training arranged by the organisation during the initial rollout, further training was essential to understand and exploit the full functionalities of the tools (4.2.1.4.1). From a non-adopter view, Andrew expresses his lack of knowledge of ESN and never had the idea of adopting them. He is unsure if using ESNs could add value to the practice, and he may potentially consider using ESNs. It is observed that the individuals formulate their assumptions about the value and

usefulness of ESNs based on their perception and experience of similar technologies, somewhat supporting the claim of (Treem et al., 2015).

The lack of understanding and knowledge of using ESN can cause a wrong perception of the affordances and incorrect practice of using ESN. Employees' lack of understanding of the capabilities and potential of ESN can impede the adoption of ESN in an organisation. Lack of training can make individuals unaware of the effective use of the ESN for collaboration and information exchange, causing hesitation to change (Chin et al., 2015a; Giermindl, 2018b).

#### 5.4.7.2 Technology Adoption

Several technology adoption issues have been identified from the analysis of all three phases of this study. It includes the organisational size, the organisation's digital divide, hesitation to change, and the requirement to use the platforms. The other technology adoption issues, such as lack of understanding and training (5.4.7.1), cost implications (5.4.7.3) and privacy and security concerns (5.4.7.4), are already discussed in the main section (5.4.7).

The findings indicate that the technological gap between large and small industries in the supply chain sector (Evangelista and Sweeney, 2006) is one of the adoption barriers. For example, Oliver voiced that an organisation's size, digital capabilities, and technology readiness to adopt such platforms are barriers to adopting ESNs and believes that for small organisations with limited geographical spread and employee size, ESNs may be unnecessary (4.2.2.4). Steven highlighted the cost implications of using ESN platforms for small players like him (4.3.9.11). Existing literature notes the significant differences in the technology adoption patterns depending on the varying organisation sizes (Sweeney et al., 2020). The findings of this research partially align with this statement. A digital divide within the organisation is also observed from the analysis. For example, Anya notes that 70% of the workforce are non-digital users without access to computers and do not have email IDs, so they cannot access Microsoft Teams, intranet platforms or Yammer used within the organisation. However, the organisation has implemented Connect App, which does not require an email ID to join but has integration issues (4.3.7.17). Similarly, Graeme acknowledged that 90% of the workforce who work from the factory do not use digital technologies or ESN platforms (4.4.2).

Another barrier to technology adoption is the hesitation to change. For example, Ben is a non-adopter and thinks that ESN is unnecessary due to the scale of operations and client demand of his company, and he is unwilling to embrace it (4.4.2.4). The individuals understanding of how

technology can be used depends on their previous interactions and experience with analogous technologies, which is lacking in this case (Orlikowski and Gash, 1994; Treem et al., 2015).

The findings indicate that the individuals' characteristics and the perceived benefits of ESN can influence their behaviour (Chin et al., 2015a), which can affect the adoption and use of ESN. Chris uses only limited ESN features due to his perception that only face-to-face interaction can establish a relationship, and he does not trust people unless physically met. He also mentioned that he has 'never used Yammer', which is 'old fashioned, and believes using these platforms can cause chaos due to the change in the way of work (4.3.5.12). On a similar note, Oliver said that the culture of retaining physical interaction is a barrier to ESN adoption. He prefers face-to-face interactions in business dealings (4.2.2.4). Anya informed that despite the effort made by the organisation to develop 'ConnectApp' to connect with the non-digital workforce, many of the old crews are hesitant to use any social media, including ESN, phones or any technology, and some do not want to use their personal device for work purposes (4.3.7.17). The findings corroborate existing claims that the hesitation or unwillingness to change is noted as a barrier to adoption in literature (Chin et al., 2015a; Giermindl, 2018b).

#### 5.4.7.3 Cost Implications

Further barriers revealed from the findings of this study are cost implications and return on investments. The time, money, and effort required to adopt an ESN in an organisation can become expensive. Steven highlighted the cost implications of using these platforms, especially for small players like him. As he has to use multiple platforms based on the client's requirement, he uses the 'free' version of most of the ESNs, which has imposed limitations on the features available with the free version. Oliver raised the concern of return on investments, especially for small and medium-sized organisations. It must be noted that the above respondents have only had a limited use of ESN. The findings somewhat corroborate with existing literature that 80% of ESN initiatives expect failure to leverage and benefit from the envisioned benefits (Mann et al., 2012) due to individuals' underutilising the potential of ESNs and the lack of adoption (Chin et al., 2015a; Li et al., 2015). However, it is intriguing to note the factors considered to understand the cost-benefit perspective and the intangible benefits considered to assess cost and benefits.

#### 5.4.7.4 Privacy and Security Concerns

Data privacy and security concerns are other barriers to adoption, identified from the findings. The issues associated with using ESNs include data compliance violations, privacy and security threats and leakage of information shared particularly business-critical confidential information. However, the respondents have mainly highlighted privacy and information leakage issues.

For instance, Anya says, "*we don't obviously want people to share data from there from a data privacy perspective*" (excerpt 4.2.65 - section 4.2.1.3.4). Similarly, individuals using ESNs are sceptical of the organisation spying on their conversations (excerpt 4.3.153). However, Anya is from the communication department of the organisation and assures that this is not true; it is just a misperception of the employees. Alex voiced that any security weakness of these platforms can cause information leakage (excerpt 4.2.66). Michelle has raised concerns about the security of information shared due to the ESNs being available on multiple devices (4.3.4.18 and excerpt 4.3.92 – section 4.3.4.18). Adam has a contradictory view and is not concerned about security issues, as he thinks the level of security is similar to that of any digital systems used (excerpt 4.3.21 - section 4.3.2.5).

#### 5.4.7.5 Diminished Usage

The study's findings identified adopters' declining use of specific platforms. The factors attributed to the drop in usage of ESN include lack of functionalities to support the perceived use, the ESN is not suitable for the organisation's environment, cross-platform compatibility issues, alternate platforms gaining prominence, and lack of use due to employees not sensing the absolute need to use specific platforms.

David pointed out that he has not achieved any benefits from using Yammer for four years and is unaware of anyone else using the platform in his organisation. Microsoft Teams is adopted in his organisation. However, he believes that ESN is not required in the organisational setting where he works, as all the team members are based in a single location (excerpt 4.2.76 - section 4.2.1.4.4). The cross-platform compatibility issue, a technological limitation, has already been discussed in section 5.4.7.2. Adopting new platforms with better collaborative features and focused objectives is one of the reasons for the dwindled usage of specific platforms.

Finally, Anya, David, and Rob mentioned that specific platforms failed to achieve the perceived benefit, causing the user to experience a downturn. For example, Anya said they



used Yammer for six years, but only desktop users could use it, with little benefit realised by its use (excerpt 4.2.74 in section 4.2.1.4.4). Susan highlights that people are saturated with increased screen time, leading to reduced usage, which corroborates with the phenomena of social media invoking technostress (Brooks and Califf, 2017; Maier et al., 2015) and the large amount of information shared amongst employees through ESN causing the burden of information overloading, making it hard for employees to set priorities (Giermindl (2018c).

### 5.4.8 Concluding Comments

This section presented the analysis of findings to answer RQ3 by discussing the antecedents of using ESNs in SCM. The findings show that the amount of collaboration depends on individual and organisational factors. The subsequent section attempts to address RQ4.

## 5.5 RQ4: What are the consequences of using Enterprise Social Networks in supply chain management?

This section presents the discussion and analysis of the findings to address research question RQ4. It examines the consequences of ESN, including the advantages and disadvantages from the practitioners' view and findings from netnographic analysis. Further, the section discusses the impact of using ESNs on supply chain management. The findings relevant to address this research question are categorised as benefits and disadvantages.

### 5.5.1 Benefits of ESN Usage

The findings identified the benefits of using ESN, as represented in figure 5.9.

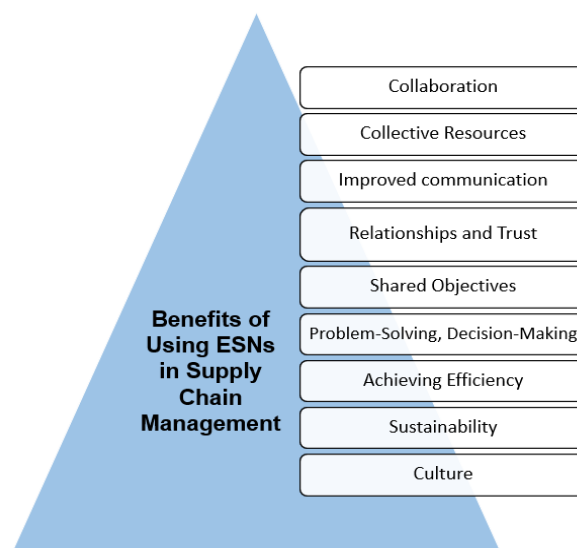


Figure 5.9: Benefits of using ESNs



### 5.5.1.1 Increased Collaboration

All three phases of the study prove that ESN has been used for collaboration. As discussed in section 5.2.1, internal, external, team, and Cross-boundary collaboration has been observed. The various collaborative activities identified from the results include virtual meetings, video calls, real-time communication, direct messaging, project management activities, and collaborative editing of documents. The netnographic analysis also identified collaborative activities among the stakeholders, as explained in sections (4.4.1.3 and 4.4.2.3).

The findings suggest that the magnitude and type of collaboration varied between respondents due to differences in the experience of the practitioners, their position and role in the supply chain sector, the opportunity to use collaborative tools, the organisation's digital capability, organisational policies and the individual's interest in using ESNs. While some respondents mentioned using ESNs for meetings, discussions, customer interactions, employee engagement and org-wide news and updates, some respondents extensively collaborate for daily operations, task tracking, status updates and other transactional activities, making ESN an integral part of their day-to-day operations.

For example, Steven uses Microsoft Teams for conferencing, video calls, presentations and external stakeholder interactions without using most of the platform's features, including file sharing and collaborative editing. It can be related to the '*networking*' level of collaboration in the model by (Frey et al., 2006), as shown in figure 5.10.



Figure 5.10: Level of Collaboration

Graeme collaborates with stakeholders to share information, solve issues, and seek responses and clarifications on various business activities (4.3.1.2). The netnographic analysis of Graeme's conversation with stakeholders shows that both parties have adjusted (price discounts, order quantity and product specification) (section 4.4.2.3). The level of collaboration observed in this interaction can be related to '*coordination*' (Frey et al., 2006).

The collaboration of Exela services exhibited frequent communication, equally shared ideas and decision-making, and sharing of highly confidential information, posing high risk but also high trust and shared resources, which means the level of collaboration is *'full collaboration'*.

#### 5.5.1.2 Formation of Collective Resources

Section 5.3.3 provides a detailed overview of the collective resources created through ESN collaboration based on the findings of all three phases of this research. These collective resources include 'collective intelligence' and 'shared information repository'.

Existing literature reveals that 'collective intelligence' or 'collective knowledge' is an outcome of ESN collaboration (Kehl, 2017; Razmerita et al., 2014), supporting the findings of this research. Anya mentioned that employees share information, ideas, stories and feedback, which forms collective intelligence, and the organisation has used it to improve processes (4.3.7.13).

Similarly, the information and files shared are stored within the ESN, depending on the choice of platform and its version. Michelle has highlighted that the history of chats and documents shared are retained in Microsoft Teams, which helps to track previous conversations (4.2.1.1.2). Alex informed that ESNs maintain the communication flow in chronological order, but the duration of preserving history depends on how ESN is maintained by the organisation (4.2.1.2.4). Similarly, the collaborative editing feature of specific ESNs (Microsoft Teams) maintains the version history of the documents (sections 4.3.6.2 and 4.3.5.8). Interestingly, Adam adopted 'Twist' to organise and store information and files in a much-organised manner (4.4.1.11). The period of history that can be maintained and the options depend on the choice of ESN and the version (paid or free) of the platform used, which is the organisation's or individual's discretion. Although existing literature has noted the concept of ESN as an 'information repository' and 'electronic knowledge repository' (Chen et al., 2020; Lacosta and Thomas, 2020) and grey literature mentioning ESN as an information store, to the author's best knowledge, no peer-reviewed literature or empirical study is demonstrating ESN being used in organisations as an information repository, especially in the supply chain sector.

#### 5.5.1.3 Improved Communication

As observed from the findings of all three phases, improved communication is an advantage of using ESN. As detailed in section 4.2.1.2.1, most responses indicate enhanced communication through ESN compared to traditional methods. Alex mentioned that faster information sharing is possible between persons or businesses. Microsoft Teams have enabled extended periods of

communication flow, and without using this platform, communication would be slow. Similarly, Sean emphasised that the communication is more cohesive and holistic, inviting participation from a wider geography and population demography.

The results of phase two are aligned with the above outcome. All respondents in phase one stated that using ESNs has made communication much more effortless. For example, Kathryn used these platforms to send quick, short, and important messages that needed to be communicated to people quickly. Although Richard has newly adopted the ESN platforms and is in the training phase, he informed that the ESN platforms he uses, especially Microsoft Teams, have provided flexibility and speed to do things, reduced steps in the process and are efficient. He added that the complex topic of knowledge management is managed very well through the intranet platform.

The findings of netnographic observation support that of phases one and two. It is observed that Exela services exchange a variety of information effortlessly for their regular operations (4.4.2.4), which is supported by Adam's response in phase two (4.3.2.3) that he used ESN tools to get quick updates on important matters and for direct interaction with stakeholders. These platforms are convenient for faster communication and sharing large-size files, which would have been difficult without these platforms. Section 4.4.2.5 details how WhatsApp groups have enabled CraftTex Manufacturing to establish a communication channel with external suppliers to manage procurement activities effectively.

#### 5.5.1.4 Enhanced Relationships and Trust

Section 5.2.1 examines the various elements or determinants of relationships and trust identified from the analysis of this study's phases, summarised in figure 5.1. The elements identified from the findings are collaboration, openness in communication, information sharing, shared responsibilities, mutual benefits, trusted behaviour, decision-making and problem-solving, the factors that foster the development of relationships, trust or both among the stakeholders (section 2.2.8 in the literature review chapter).

Most respondents have mentioned that they could either develop or maintain relationships by using ESNs, while a small fraction of the respondents did not consider ESNs to be a tool that can build relationships. For example, Kathryn said that these platforms have helped establish better relationships with internal colleagues because people get better visibility on what is

happening within the organisation. They can interact with others through comments, feedback, and recognition, and they feel more valued (4.3.10.6).

The outcome of netnographic observation also supports the above finding. While the conversation of Exela services displayed a relationship that signals an '*alliance*', the conversation of CraftTex Manufacturing displays a relationship which signals '*transactional*' in the continuum of relationships shown in figure 5.3 and explained in section 5.2.9.

Similarly, trusted behaviour is evidenced by the findings discussed in section 5.2.10. The determinants of trust, such as openness in communication, information-sharing behaviour, problem-solving, decision-making and reduced transaction costs, are evidenced by the analysis of participant responses and the netnographic analysis, already noted in section 5.2.1. For example, Graeme has acknowledged that communication transparency has helped improve decision-making in the procurement process (4.3.1.3). The ESN conversations of CraftTex Manufacturing provide evidence that business-critical information that needs to be maintained private among the communication parties is shared (4.4.2.4.4). The ESN conversations of Exela Services show that highly confidential information is shared (4.4.1.4.4), indicating trust.

However, a small fraction of the respondents do not consider ESN to be a medium to build relationships and trust, while the majority support building or maintaining relationships and trust, proving that relationship and trust are one of the consequences of using ESN.

#### 5.5.1.5 Achieving Shared Objectives

Achieving shared goals is another consequence of using ESN for collaboration. According to the literature, in present-day SCM, collaboration necessitates a high level of information sharing, trust, and commitment by the supply chain managers to work together to achieve shared goals (Liao et al., 2017; Spekman et al., 1998). For example, Graeme's organisation achieved its customer's sustainability goals by working with the tier 1 supplier, who ensured that the tier 2 suppliers did sustainable sourcing and were certified as per the customer requirement (figure 5.2), as examined in section 5.2.4. Similarly, Michelle's interview response findings inform that she used ESN to achieve the shared objective of diversity goals with customers and broader stakeholders (4.3.4.9), which ensures a diverse workforce and promotes women in the logistics workplace.

#### 5.5.1.6 Improved Problem-Solving and Decision-Making

The outcomes of this study demonstrate that ESNs have enabled problem-solving and helped in decision-making in the case of many respondents. In the interview phase, Anya acknowledged that she relies on the intranet platform and Yammer to seek a solution to any problems and receive a faster response. In her organisation, managers use these platforms for operational and resourcing support, and warehouse managers use them to ask each other for help and advice (4.3.7.1).

The outcomes also indicate that decision-making is facilitated by gathering information other members share through the ESN platform. For example, Michelle acknowledged that her interactions with internal colleagues through teams had improved her decision-making. If she needs to approve something and needs clarity on something, she asks the concerned person through Microsoft Teams to get a quick response to make the decision (4.3.4.11). Anya has noted that the information, ideas and feedback shared by employees on the intranet portal helped the management make decisions on process improvements (4.3.7.12).

The netnographic observation shows that problem-solving and decision-making have been achieved in multiple scenarios (4.4.1.10) from the information shared through the ESN platforms. The Exela Services team collaboratively solved the UPS billing issues and took appropriate measures to handle the issue of high stock – low sale products through Slack. They have used ESN to communicate and resolve technical issues during the downtime of the remotely connected computer. The overseas team used the Slack group chat to communicate with the team in the UK to fix the issue, which has always been resolved on high priority.

The findings demonstrate that decisions are made based on information shared through the ESN platforms. For instance, Kevin of Exela Services used the group chat to finalise the shipping provider based on the information shared in a discussion on Slack. Information on which shipping provider is economical for each weight category from different members was gathered through the group chat. The discussion and information shared produced actionable insights, assisting Kevin in creating accounts with various shipping providers and configuring shipment collection from the warehouse location (4.4.1.10). The findings support Kehl's (2017) claim that implementing ESN in an organisation could enable collective decision-making by utilising the corporate social network to accumulate ideas or invite the organisation's members to evaluate the proposals.

The findings align with the existing literature that many organisations depend on social technologies for information and knowledge sharing with their geographically spread workforce (Leonardi et al., 2013), and the collaborative process can enhance decision-making and problem-solving (Giermindl, 2018b).

#### 5.5.1.7 Achieving Efficiency

The interview findings confirm that the respondents could achieve efficiency by using ESNs, which include productivity through improved planning, reduced costs, time-saving due to reduced travel, working efficiently on shared objectives with global regions, reducing delays in responses and cost-efficient communication. The literature review informs that social platforms allow supply chains to reach people irrespective of geography or time zones and enable them to enhance communication, create communities, and collect helpful information (Gonzalez, 2013).

For instance, Graeme has used the ESNs, especially WhatsApp from a remote supplier location, for faster approval from top management (4.3.1.12), which has helped in the urgent situation to finalise a deal (excerpt 4.3.8 - section 4.3.1.6). Live videos of production shared by the supplier made him confident of the production status, resulting in improved planning and increased productivity (4.3.1.6). Similarly, cost negotiations with the supplier through WhatsApp reduced purchase costs. Michelle said using ESN could save a lot of travel time for important stakeholder meetings (saved 4 hours of travel for an hour meeting). Also, she could work effectively on action items jointly over a conference call instead of taking them back and getting them done in multiple iterations.

The netnographic observations support the interview findings. Section 4.4.1.12 examines how Exela services have used multiple ESN platforms to achieve efficiency in operations. Communicating through the Slack group chat has allowed faster response rates, eliminating any delay waiting for responses, an example of which is shown in figure 4.50, thus increasing efficiencies.

It is worth noting that several ESN platforms may be used to achieve efficiency, which depends on the organisation's requirements and the requirements of the stakeholders. For example, Emma's organisation uses Microsoft Teams for collaboration and Slack for retail operations (4.3.3). Similarly, Exela services use Slack with offshore service providers and WhatsApp and WeChat with suppliers (4.4.1.1).

The findings support the existing literature, which claims that real-time communication and information sharing in supply chain management can bring in cost efficiency by effectively managing daily operations (Natoli, 2013; Smith, 2017).

#### 5.5.1.8 Improved Sustainability Views

Phase one recognised the reduced use of resources as an outcome of using ESN. For example, Michelle acknowledged that her travel and any associated costs have significantly reduced and have a positive environmental impact (4.2.1.2.7). The interview phase identified reduced travel, time and cost savings as the outcomes of using ESN. For instance, Steven acknowledged that his travel, which was originally 30 to 40 thousand miles, has been considerably reduced to a few thousand miles with remote work using ESNs, which helps lower the carbon footprint. He mentioned that the ESN platforms enabled the business to function during difficult periods (4.3.9.8). Kathryn informs that using the platform is beneficial from a go-green perspective due to reduced travel and saving fuel and travel time. In addition, the organisation uses the platform itself to promote their green initiatives. The findings support existing literature that remote working enabled through digitalisation benefits environmental sustainability due to reduced harmful emissions (Orzeł and Wolniak, 2022). Remote working reduces travel time, causing a reduction in the use of transportation and henceforth reducing pollution due to CO<sub>2</sub> emissions, noise and usage of fuel and energy (Kylili et al., 2020; Slavković et al., 2022) and has a positive impact on sustainability.

#### 5.5.1.9 Formation of a New Online Culture

All phases of the study advise that a new online culture has developed in organisations that use ESNs. ESNs have provided an alternative way of face-to-face interaction during the pandemic, and remote working has become the new normal. In the phase one response, Alex has adopted the culture of using these platforms to work continuously with their customers for meetings, communications, archiving of standard files, and group chats (4.2.1.1.5).

The interview response aligns with this finding. People continued to use ESNs more, which is now embedded in their work culture. According to Steven, using ESN for collaboration and remote working has become an accepted way of doing business. The clients' attitudes and trust in the new way of working have improved in a positive manner (section 4.3.9.10, excerpt 4.3.235 and 4.3.236). Emma says that even after the pandemic, she and her colleagues continue



to use Microsoft Teams for collaboration due to the various benefits achieved, and an online collaborative culture has been created in the organisation.

The findings show that organisations invest time and money in digitalisation strategies to promote the digital culture. For example, Anya says that the organisation has developed Connect App for non-digital users and a massive increase in usage during the pandemic (4.3.7.6 and 4.3.7.16). It has created a new online culture within the organisation, providing employees with a feeling of belonging.

The netnographic observation shows that Exela services have an online working culture, with the majority of the stakeholders interacting online. Over a more extended period, the company and its outsourcing partners have developed a synchronised work pattern, where the use of uncommon abbreviations, phonographics, business terminologies, and bespoke languages are well understood by all the participants, indicating a common culture. Similarly, it is observed that communication through ESN has avoided the hierarchical system of organisation, which improved communication (4.4.2.13). A prolonged interaction through ESN platforms can benefit stakeholders from both organisations and help them adopt a common work culture (4.4.2.14).

### 5.5.2 Disadvantages due to ESN Usage

Even with the many advantages from the findings and the increasing popularity of ESNs highlighted by most respondents, there are many disadvantages and limitations to using these platforms, as informed by the respondents. The disadvantages identified from the findings of this research are displayed in figure 5.11.

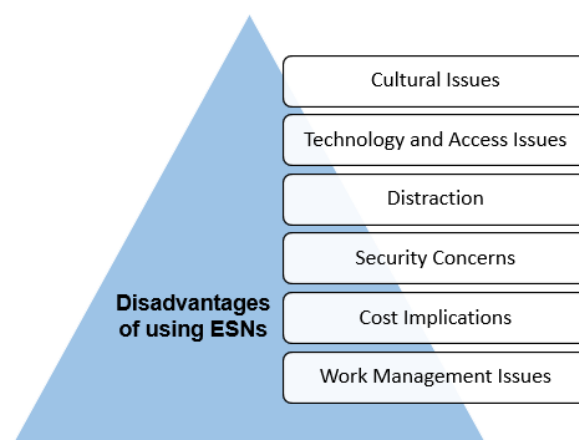


Figure 5.11: Disadvantages of ESNs



### 5.5.2.1 Adverse Impact on Regional and Organisational Culture

The study uncovered that cultural view is one of the factors that negatively impacted the use of ESNs. With the increased use of ESNs and remote work, many organisations are reducing physical interactions and travel to minimise costs and time that impact organisational culture. For example, Susan mentioned that physical interactions are embedded in their regional culture, and ESNs providing an alternative to face-to-face interaction during the lockdown have reduced physical interactions. She thinks the online mode of interaction has limitations and would like to return to the old way of face-to-face interaction (4.2.1.3.1). Another issue a respondent (Alex - 4.2.1.3.1) highlighted is the background being visible while in video calls from the home office and the appearance of individuals affected by the lighting and surroundings. The netnographic analysis revealed a cultural difference in the use of language; for example, the external stakeholders found it challenging to understand specific usages, which was clarified by the focal company members (4.4.2.14).

Giermindl (2018b) uncovered cultural issues of using ESNs in that the organisations did not facilitate an open-communicative culture. None of the respondents of this study provided evidence supporting this statement; on the contrary, some respondents revealed that their organisations adopted ESN to promote a collaborative culture where people's voices can be heard. For example, Anya mentioned that her organisation had invested time and money to promote the digital culture (4.3.6.13). Similarly, the netnographic observation shows a free flow of communication and no hesitation is observed.

### 5.5.2.2 Technology and Access Issues

The technological issues of ESNs uncovered from the findings of this study are cross-platform compatibility issues, integration issues with internal systems, application downtime, internet issues, usability shortcomings, and access restrictions.

While most ESN platforms are cross-platform compatible and accessible on computers and hand-held devices, the study's findings informed that specific platforms are not accessible on hand-held devices. For example, Anya and Emma mentioned that their intranet platform could not be used on mobile phones or other hand-held devices (4.2.1.3.2). Anya's organisation developed the 'Connect App', which can be used on mobile phones and non-digital users without an email can use it on their smartphones. However, the application is isolated and does not integrate with the organisation's other internal systems.

Another limitation identified is the access restrictions imposed by the organisation. Anya says their intranet platform social wall has regional restrictions, and the UK social wall is not accessible to the rest of the world and vice versa (4.3.7.4). Similarly, John mentioned that their organisation restricts instant messaging access with external stakeholders but allows access on a need basis, which indicates controlled access to external stakeholders.

Usability issues such as audio quality and limited visibility due to screen width are other limitations identified by the respondents. John mentioned that participants might not be visible during conference calls due to the screen width limitation. Susan highlighted the audio quality issue. The audio quality in Microsoft Teams is poor and impractical when using a computer or laptop, but using a mobile application improves quality (4.2.1.3.2).

Internet issues and server downtime of the ESN platforms are other issues identified from the findings. Adam acknowledged that he had experienced server downtimes with Slack and used WhatsApp in such situations for business continuity (4.2.1.1.6). Emma mentioned that internet downtime makes communication difficult (4.3.3.14).

#### 5.5.2.3 Distraction from Work

One of the disadvantages identified from the findings of this study is the distraction caused by using ESNs at work. Emma said that sometimes ESNs are intrusive and expect one's availability round the clock because they are very contactable. Similarly, during a training course, an urgent task popping up through Microsoft Teams can be challenging, and they may need them to fix that urgently, causing a distraction to the training (4.3.3.14). Michelle mentioned that using multiple platforms to communicate is challenging to ensure that all action items are ticked off, and sometimes, the same communication can be repeated on multiple platforms (4.3.4.18). From a non-adopter point of view, Andrew points out that ESNs may be used for fun, which could impact performance at work (4.2.2.3).

#### 5.5.2.4 Security and Confidentiality Concerns

Security and confidentiality are other disadvantages raised by the respondents, as identified from the findings. The security aspects and confidentiality largely depend on the specific platform used for communication, organisations' guidelines and policy of using ESNs and the conscientious actions of individuals.

Michelle raised security concerns because the platforms can be accessed on any device and suspects that confidential information shared over these platforms may potentially be breached (4.3.4.18). Anya says many employees in her organisation think the company might watch their private conversations, but she thinks it is just a perception and approves that the platforms they use within the private network are secure and maintain information confidentially. Susan highlights that a consensus exists among the employees of her organisation that confidential content cannot be shared through Yammer. However, Microsoft Teams is used to share confidential information (4.2.1.3.4).

#### 5.5.2.5 Overload of Information

The study's findings indicate that information overload is an issue with using ESN platforms. Using multiple platforms causes a lot of information flow, making it challenging to manage the information. Adam highlighted the difficulty in organising information due to its continuous flow. To mitigate the issue, he adopted Twist, allowing for better organisation of information (4.3.2.6). Michelle revealed that sharing a screen over video calls is a good feature. However, too much information may be complex for other participants to process (4.3.4.18). From the non-adopters point of view, Simon said that the random nature of the posts and communications could also be time-consuming to interpret (4.2.2.3). The findings corroborate the research by Giermindl (2018c), which documented that plenty of information is shared amongst the employees through ESN, who face the burden of information overloading periodically, making it hard to set priorities and decide which information is beneficial and which should be overlooked.

#### 5.5.2.6 Work Management and Work-Life Balance Issues

The findings from all phases of this research identified several issues that affect work management, including the work-life balance. ESNs can be used for fun, cause distraction, and longer screen time can cause digital exhaustion, affecting work performance. In addition, the expectation of round-the-clock availability, faster response, and intrusive nature can affect the work-life balance.

For instance, Emma highlights some disadvantages of using ESNs as they are intrusive and expect one's availability round the clock because they are very contactable. She also mentions that the platforms can be a distraction (4.3.3.14). Richard says using ESNs has caused longer screen times and caused exhaustion using multiple platforms and keeping up to speed. He notes

the expectation of being available to contact someone 24 hours a day and seven days a week, affecting work-life balance (4.3.6.14). Kathryn mentioned that the platform could be intrusive during video calls, making the background of the home or other members in the background visible, which is entirely personal. She also mentioned getting messages outside of office hours, which is intrusive (4.3.10.11). From a non-adopter point of view, Oliver points out the digital exhaustion caused by people using ESNs as a drawback. Although he did not raise any issue related to work-life balance, he understands the risks of such problems other individuals may face (4.2.2.3 and 4.3.8.10).

#### 5.5.2.7 Creating Negative Influence

Creating a negative impact is another disadvantage identified from the findings. Anya highlighted that people's word-of-mouth might divulge information, cause unhappy opinions, and cause dissatisfaction through these platforms. Employees share negative feedback if they are not happy with some work, which can help sort out problems the individuals are facing, but it can create negative impressions. Chris highlighted a different issue: sometimes stakeholders use the chat facility too frequently for help. It can create a negative impression about that person and is detrimental to relationships.

### 5.5.3 Concluding Comments

This section presented the analysis of findings to answer RQ4 by examining the positive and negative consequences of using ESNs. ESNs provide several benefits, leading to effective operations management and cost efficiency. The disadvantages are also discussed, thus addressing the final RQ.

## 5.6 A Conceptual Model for ESN Adoption

This section aggregates the findings, discussions and analysis, combining all phases of this research to propose a conceptual model to guide the adoption of ESNs for supply chain organisations and practitioners to use while adopting ESN platforms in their practice.

### 5.6.1 How the Conceptual Model was Developed

The analysis of the findings to address the research questions RQ3 and RQ4, primarily based on practitioners' knowledge, has provided valuable insights into the antecedents of ESN adoption and the advantages of using such platforms in professional practice. Although several barriers and disadvantages were identified, a wise strategy of ESN adoption based on the

organisation’s need and implementation of policies, guidances and best practices could mitigate many of the issues identified from the findings and bust the myths. The findings revealed that a platform that works well for one organisation might not fit well for another and emphasised the need for a framework to guide practitioners in assessing and adopting platforms that best suit their organisational settings. The conceptual model has evolved from the analysis of findings of this study generated based on the insights generated from the practitioner’s knowledge and experience and is represented in figure 5.12.

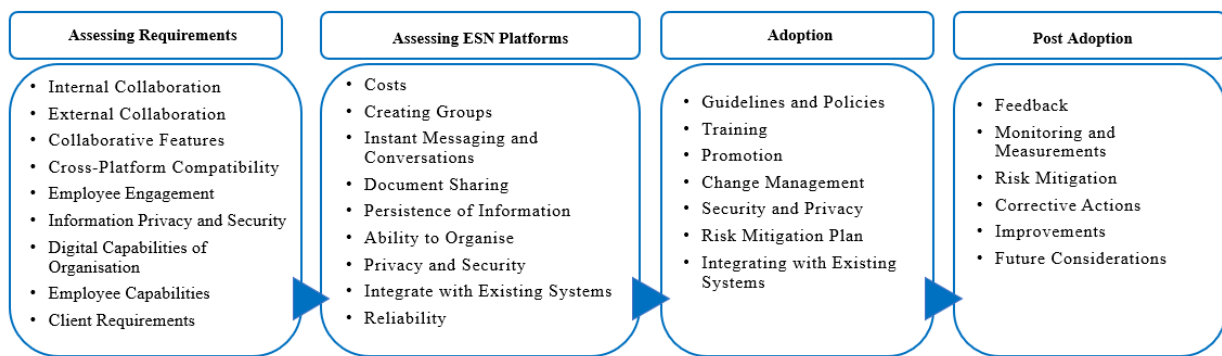


Figure 5.12: Conceptual model for ESN adoption by practitioners

### 5.6.1.1 Assessing Requirements

In this initial stage, practitioners must assess the organisation’s requirements to implement ESN platform(s). Firstly, the type of collaboration, whether internal, external or both. Some platforms are accessed using organisational email Ids, and individuals outside the organisation are not allowed to access them. Some organisations may have options to create access to external stakeholders. Other factors to be assessed are collaborative features such as direct messaging, document-sharing, employee engagement and updates on news and events. The type of information, how it is shared and to what extent (if external stakeholders are considered) needs to be assessed, as it may require a platform where a moderator can publish news and events and the employees can provide their comments. The organisation’s digital capabilities and employee skills must be considered. Cross-platform compatibility allows the platforms to be used on handheld devices; however, non-digital users without an email ID and access to the organisation’s digital systems must be considered. Further, information privacy and security criteria must be evaluated, as the project groups can share business-critical or confidential information. Finally, client requirements and regional factors must be considered, as some clients may have restrictions to using specific platforms in their organisation; similarly, there could also be regional restrictions.

#### 5.6.1.2 Assessing ESN Platforms

Once the requirements are assessed, the next step is to evaluate the various available platforms. Features such as group creation, instant messaging, document sharing, storing information history, ability to integrate with the existing organisational system, privacy and security and the platform's reliability must be juxtaposed. The ability to group and save information and documents in a hierarchical format or create channels based on the topics being addressed could be an added advantage. The practitioner must identify the features that can vary based on the platform's implementation. For example, some platforms do not allow instant messaging or document-sharing with external stakeholders, while others allow this feature; however, it depends on how they are configured and the organisation's access policies. Organisations can consider developing customised applications, as observed in the findings. The ESN's cross-platform compatibility must be evaluated, especially if the organisation has a non-digital workforce, as some platforms mandate an email ID to access them, as observed in the findings.

#### 5.6.1.3 Adoption

The next step is to choose the ESN(s) and its actual implementation. Assessing requirements and existing platforms leads to the choice of platform, and the organisation could choose either a free or paid version of ESN available in the market or a bespoke platform that must be developed. Multiple platforms may be adopted based on the organisation's requirements (assessed from step one). The organisation must ensure that appropriate guidelines and policies on using the ESN platform are in place, and change management has to be taken care of. It is worth running promotions by the organisation's communication department or ESN advocates and arranging training, as it can create a better understanding of the ESN, reducing hesitation to use. Integrating with existing systems, implementing access controls, and setting up a risk mitigation plan are part of the adoption process.

#### 5.6.1.4 Post-Adoption

Further to the platform's successful implementation, the platform's rate of adoption and usage pattern need to be monitored and measured. It includes gathering feedback from the existing users, identifying issues and risks and taking corrective actions, as observed in the findings. The organisation's metrics could be juxtaposed with other organisations' metrics and usage patterns. Any improvements in the ESN's usability, functionalities, and future considerations, such as adopting a second ESN, can be considered at this stage.

### **5.7 Impact on Supply Chain Management**

The supply chain literature in Chapter 2 discussed the objectives of SCM and the need for an integrated supply chain to achieve sustainable competitive advantage (section 2.2.3). Asymmetric information and lack of supply chain visibility are some of the challenges identified in the implementation of SCM, causing integration issues and uncertainties in the supply chain (section 2.2.4). The supply chain risks can be reduced by sharing some of the standard supply chain costs, and dedicated information systems can reduce time and costs and improve accuracy. Digital technologies offer enhanced information sharing, which can help companies maintain the stock level, enable easier control, reduce storage costs, and lower communication costs. However, information sharing depends highly on the "willingness to share" of the supply chain partners. The willingness to share occurs when a trusted relationship exists. ESNs enable collaboration and information sharing, fostering relationships and trust among the supply chain partners and increasing the "willingness to share". An improved relationship and trust allow the sharing of information, risks and costs, contributing to a win-win situation for all parties. The enhanced collaboration helps participants work together to achieve greater supply chain clarity and maintain a better relationship among the partners based on open communication lines. Thus, organisations sharing business-critical information can improve supply chain visibility, leading to an integrated supply chain. ESNs provide real-time information sharing and reduced transaction costs through information integration, which can improve supply chain performance and achieve a sustainable competitive advantage.

### **5.8 Chapter Conclusion**

This chapter combined the findings of all three study phases to address all four research questions. Further, the impact on SCM is briefed. Chapter 6 is the concluding chapter. It presents the contributions of this study to the body of knowledge and discusses the implications to practitioners, followed by the limitations and future research suggestions.



## Chapter 6 Conclusions, Implications and Future Research

### 6.1 Introduction

Following the introduction in Chapter 1, Chapter 2 outlined identifying the research gap and formulating the research questions to address this research's objective. This research aimed to explore and develop an understanding of the influence of Enterprise Social Networks (ESNs) on building relationships and trust amongst the supply chain participants (RQ1) and its impact on information sharing in supply chain management (RQ2). The research also explores the antecedents and consequences of supply chain practitioners' use of ESNs (RQ3, RQ4). The in-depth examination of the research method, findings and discussion are outlined in Chapter 3, Chapter 4 and Chapter 5. This final chapter outlines the main contributions of this research set out in this thesis. Firstly, the contribution to knowledge is identified, followed by suggestions to organisations and supply chain practitioners on adopting ESNs in practice. Further, a conceptual model that can guide the various considerations while adopting ESNs has been proposed. Finally, the limitations of this research are underlined here, which leads to suggestions for future research.

### 6.2 Contributions to Knowledge

This section summarises the key contributions of this research set out in this thesis to the existing body of knowledge.

1. The nature of relationships amongst supply chain practitioners is often positively influenced by the increased usage of ESN and the length of online collaborative interactions. (RQ1)

Prajogo and Olhager (2012) demonstrated that long-term relationships and collaborative practices in supply chain management are mutually beneficial. Jovevski and Vasilevski (2019) and Ma et al. (2021) demonstrated that social media significantly influences building of long-lasting relationships. Hüllmann and Kroll (2018) identified that prolonged discussions through ESNs and continuous engagement lead to solid relationships. However, to the author's best knowledge, no peer-reviewed literature studied how the length of online collaborative interactions and degree of ESN usage influence the nature of relationships, thus highlighting the gap in the body of knowledge and the subsequent contribution.



2. Supply chain practitioners often exhibit self-disclosure and risk-taking behaviour through ESN communication when relationships and trust exist. (RQ1)

Kaplan and Haenlein (2010) explained that social networking sites allow the presentation of a user's identity, often through 'self-disclosure', which is a critical step in developing close relationships. Information transparency and the sharing of confidential information are considered risk-taking behaviours, indicating a willingness to cooperate and signalling effective trust (Akkermans et al., 2004; Lindsfold, 1978; Strub and Priest, 1976). Kwon and Suh (2004) suggested that open communication and readiness to take risks are inherent in partnerships with high trust. This study contributes to the body of knowledge by identifying self-disclosure and risk-taking behaviour exhibited by the ESN participants when relationships and trust among the supply chain stakeholders have been observed.

3. The nature and extent of information shared among the supply chain stakeholders through ESN often depends on the length of the online collaborative relationship. (RQ2)

Fawcett et al. (2007b) and Prajogo and Olhager (2012) suggest that '*willingness to share*' requires a long-term, trusted relationship. Gassenheimer et al. (1996) claim that interdependence, moulded by the exchange of resources (information and services) among the partners, can create a differential advantage in the relationship. Studies suggest trust and long-term relationships are crucial for the open exchange of strategic information, resulting in supply chain performance (Mentzer et al., 2001; Sweeney, 2011). ESNs can provide quick access to information, enabling new forms of communication and collaboration, improving social relationships (existing and new social ties), and facilitating knowledge sharing and collaboration (Albuquerque and Soares, 2011; Parsons et al., 2011). Right supply chain relationships are based on strategic collaboration with supply chain partners leveraged by the flow of timely, accurate and quality information (Li and Lin, 2006; Yeung et al., 2009). Although existing literature provides insights into social media and ESNs enhancing information sharing and supply chain literature informs on information sharing and long-term relationships in the supply chain management arena, to the author's best knowledge, there is a lack of peer-reviewed literature that examines the type and nature of information exchanged among the supply chain stakeholders underpinned by online collaborative relationship. This study fills the gap and subsequently contributes to the literature.

4. The communication and information sharing through ESN often exhibit the use of emojis, 'social media language' and bespoke terminologies prevalent in the regional and organisational culture. (RQ2)

Vidal et al. (2016) studied using emojis in social networks and identified that they are frequently used in interpersonal and group communication. Studies suggest that organisations have adapted their digital messages to include communication styles such as emojis and phonographic texts, causing a positive effect on building interpersonal relationships (Arya et al., 2018; Das et al., 2019) and an excellent tool in marketing (Casado-Molina et al., 2022; Hede and Watne, 2013). Ramanathan et al. (2017) suggested that people's communication style has drastically changed, with increased use of abbreviations and summarised writing neglecting grammar. Similarly, Defede et al. (2021) identified the use of abbreviations and specific terminologies in social media communication. To the author's best knowledge, there is a lack of peer-reviewed literature on using emojis, abbreviations, phonographics or terminologies specific to the organisation's business culture or the regional culture used in ESN conversations, especially in the supply chain setting. This study contributes to the body of knowledge identifying the use of emojis, 'social media language' and bespoke terminologies prevalent in the region or organisation in ESN conversations, reflecting the regional or organisational culture.

5. The supply chain practitioners' previous online experience, the individual's interest in using ESNs, the opportunity to use digital technology, and the organisation's digital capability often influence the magnitude and extent of ESN use. (RQ3)

Giermindl (2018c) identified employee resistance due to the paradigm shift as one of the challenges to the adoption and increased usage of ESNs. Employees' willingness to accept the new technology and changes in work practices is identified as one factor that facilitates the implementation of an ESN (Richter et al., 2016). Skilton (2016) claimed that digital capabilities are required for organisations to support their social media strategy. To the author's best knowledge, there is a dearth of study in this area and peer-reviewed literature examining the factors resulting in the increased use of ESNs among supply chain practitioners. This study contributes to the body of knowledge by identifying practitioners' previous online experience, interest in using ESNs, the opportunity to use digital technology, and the organisation's digital capability, which influence the magnitude of ESN usage.

6. Relationships and trust among the supply chain partners established through long-term interaction over ESN often display a high degree of understanding of the information shared through ESN communication. (RQ4)

Existing studies examined the significant influence of social media and ESNs in trusted relationships through prolonged use and continuous engagement (Jovevski and Vasilevski, 2019; Ma et al., 2021). Long-term relationships improve the ‘*willingness to share*’, leading to improved information exchange (Fawcett et al., 2007b). Using emojis, abbreviations, and specific terminologies is common in social media communication (Defede et al., 2021; Ramanathan et al., 2017), which requires a high level of understanding acquired through the learning process over a more extended period to understand the information exchanged rightly and such information integration requires strong relationships (Prajogo and Olhager, 2012). However, little research exists investigating the use of specific terminologies in ESN communication and how well the parties understand the information exchanged, presenting a gap. This research fills the gap and contributes to the body of knowledge by identifying a high degree of understanding of the information exchanged in a long-term relationship.

7. Supply chain practitioners often share operational information through ESNs in real-time and asynchronous communication mode, resulting in effective operations management and cost efficiency. (RQ4)

Carr and Hayes (2015) state that social media allows real-time and asynchronous interaction and information sharing. Casemore (2012) identified that obtaining real-time information from internal departments and external partners is a significant benefit of social media in the supply chain, including effective operations management and cost efficiency. Existing studies demonstrated that ESNs had been effectively used to share supply chain specific information (Lissillour and Ruel, 2022; O’Leary, 2011; Sulthana and Vasantha, 2022). Several grey literature suggest that real-time communication with business partners using social media can achieve various benefits by effectively managing daily supply chain operations (Natoli, 2013; Smith, 2017). This study extends the body of literature identifying that supply chain practitioners share operational information through ESNs in real-time and asynchronous communication, providing empirical evidence.

8. Prolonged use of ESNs often moderates the reluctance to share information among the supply chain stakeholders. (RQ4)

Fawcett et al. (2007b) and Prajogo and Olhager (2012) suggest that ‘*willingness to share*’ requires a long-term, trusted relationship among the supply chain partners. Existing studies demonstrate that social media significantly influences the building of long-lasting relationships (Jovevski and Vasilevski, 2019; Ma et al., 2021); similarly, ESNs can enhance and provide quick access to information, enabling new forms of communication and collaboration, improving social relationships, and facilitating knowledge sharing and collaboration (Albuquerque and Soares, 2011; Parsons et al., 2011). However, to the author’s best knowledge, there is a lack of peer-reviewed studies on the investigated phenomenon combining ESNs and supply chain management, presenting the gap. This study fills the gap and contributes to the body of knowledge by identifying that prolonged use of ESNs often moderates the reluctance to share information among the supply chain stakeholders.

9. ESN is often used as an information repository of the organisation or project (RQ4)

Chen et al. (2020) noted that ESNs, unlike public social media, include a shared document repository, where the researchers used the platform to gather data for their study. Lacosta and (Lacosta and Thomas, 2020) note ESNs being used as ‘electronic knowledge repositories’ within organisations for knowledge management. However, to the author’s best knowledge, no peer-reviewed literature proves that ESN is being used as an information repository among supply chain practitioners, and this research fills the gap with empirical evidence, contributing to the body of knowledge.

10. A netnographic approach is used to study the phenomena that occur through ESN conversations in the context of supply chain management. (Methodology)

Kozinets (2019) developed netnography focusing on consumer and marketing research, which was later expanded to other fields. Major netnographic studies focused on researching public social media, and a summary of studies using the netnographic approach is shown in table 3-4 (Chapter 3 ), although it may not present an exhaustive list. These studies are in accounting, education, sociology, health care and pharmaceuticals, public relations, branding, tourism, sports business and customer experience. A few studies investigate private communication through WhatsApp groups, studying community behaviour, including ethnic communities, farmers, parental behaviour of sharing children’s photographs, and citizens’ perception of smart cities. To the author’s best knowledge, there is a dearth of peer-reviewed studies using netnography in an organisational setting, especially examining ESN conversations. This study

investigates the organisation's private communication with its stakeholders in supply chain management, thus applying an emerging research method in a new arena and introducing supply chain management scholars to this new methodology.

### 6.3 Recommendations to Organisations and Practitioners

This section summarises the key suggestions of this research for supply chain practitioners.

1. Since supply chain practitioners' relationships and trust are often influenced by the use of ESN and online collaborative interactions, organisations need to promote ESNs. Virtual interactions largely replace face-to-face interactions, and supply chain practitioners need to leverage the potential of ESNs to develop and maintain their external and internal relationships.
2. Both individual and organisational factors influence the adoption of ESN and its continued use. Based on the findings, the supply chain practitioner's previous online experience, the individual's interest in using ESNs, the opportunity to use digital technology and the organisation's digital capability often influence the adoption of ESNs. Organisations need to identify the factors for the successful implementation and improved use of ESNs. In addition to the lack of common understanding, a small fraction of the practitioners' hesitation was identified. Creating a common understanding through adequate training and raising organisation-wide awareness through promotions are identified from the interview responses. It is worth conducting feedback surveys during the ESN adoption phase to address any subsequent challenges.

Small-size organisations and organisations that lack digital capabilities may find it challenging to implement ESNs that best suit their requirements and cost constraints, and questions around investment versus benefits are identified from the questionnaire and interview responses. Advancements in the internet and digital technologies have increased the availability of ESN platforms and provided flexible options. Developing organisations' digital skills often improves communication and information access and reduces transaction costs. Organisations and individual practitioners must assess what best suits their requirements and cost constraints, and the conceptual model (section 5.6) can guide the various considerations while adopting ESNs.

3. While ESNs often improve relationships and trust, enabling increased information exchange, including critical and confidential information for business, supply chain practitioners and organisations need to be careful and sensible in sharing, handling, and

storing information. It must be ensured that the project groups include only authorised members of the project and that appropriate access control is in place while accessing the project information repository. The organisation needs to implement policies and guidance and create awareness of the negative implications if the information is leaked. The practitioners need to follow the organisational guidelines and handle information meticulously.

4. Since supply chain practitioners often use ESNs to track day-to-day activities and manage regular operations effectively, organisations and practitioners must assess the ESN's capability in this area. The platform that suits one organisation may not be appropriate for the other, and the choice of platform needs to be made diligently, where the conceptual model (6.3.1) can provide guidance.
5. As supply chain practitioners often use ESNs as an information repository to store information and artefacts in an organised fashion and easily retrieve them, practitioners need to consider this option and choose the right platform that suits their needs. Practitioners need to consider the existing organisational systems the ESNs can integrate to support their role as an information repository. Practitioners need to remember that one or more platforms may be needed depending on the purpose (for example, employee engagement, project execution or supply chain operations) and the access controls needed for the safety of the information.

#### **6.4 Limitations and Future Research**

The author adopted a pragmatic philosophical approach, following a qualitative approach with a data triangulation method using an online questionnaire, focused interviews and netnographic observation. This multi-method qualitative study generated valuable insights, answering the research questions and contributing to the body of knowledge. However, the nature of the study was qualitative and exploratory, and a quantitative interpretation was not intended, which must be considered a limitation that opens future research avenues.

This research used an open-ended questionnaire survey intended to gather textual responses and did not completely answer the objective in a definitive or statistically significant manner, which is another limitation from a methodological angle.

The data collected for netnographic observation provides a profile of the phenomena investigated for a short duration. The ESN conversations of the first company represented

existing long-term ESN interactions, while the second company represented an emerging conversation. The researcher could not analyse and determine 1) how the conversation or phenomena emerged over time in the former case and 2) further communication in the latter case to understand how the phenomena have emerged. This limitation provides the opportunity for a longitudinal study in a similar setting or a specific industry sector.

The participants of this study are from different supply chain sectors with varying capabilities and organisation sizes and without focus on a specific supply chain sector or organisational size or capabilities, which is a limitation. The behaviour of the investigated phenomena can vary between the industry, their position in the supply chain, and the organisation's capabilities and size. This limitation provides further opportunities to investigate the phenomena in a specific sector, organisation size or capabilities and also opens an avenue for a comparative study.

Although this study examined the nature of relationship and trust, focusing on collaboration and information exchange through ESN, it did not consider the role of power in a relationship and the influence of individuals, their position in the organisation or the organisation's reputation in the industry, and this limitation provides further opportunity to future research to examine the influence of the factors as mentioned earlier on the phenomena investigated.

The research has not investigated the negative sides of relationships, collaboration and information sharing using ESNs, while many studies exist on this topic, but not in the context of ESNs (Anderson and Jap, 2005; Oliveira and Lumineau, 2019; Villena et al., 2011). This limitation provides further opportunity for future research.

This research has not focused on the reasons for ESN failures and the associated factors, which should be recognised as a study limitation. Although obstacles, such as the organisational risks, individual challenges, risks of employee resistance to new technologies, and misuse of ESNs are examined in existing literature (Andriole, 2010; Giermindl, 2018b; Kane, 2017; Leonardi and Neeley, 2017; Leonardi et al., 2013; McAfee, 2009; Pirkkalainen and Pawlowski, 2014; Turban et al., 2011), scholars have begun exploration of ESN failures only recently (Chin et al., 2015c; Giermindl, 2018b; Van Osch and Yi-Chuan, 2017). This limitation provides an opportunity for future research on the drawbacks and failures of ESNs in the supply chain sector.

There are further opportunities in investigating areas such as cyber security aspects of using ESNs in the supply chain context, the impact of the digital divide in the supply chain sector on ESN adoption, an investigation of work-life balance issues and the adoption of white label applications in the supply chain management sector.

### **6.5 Chapter Conclusion**

This chapter outlined the contributions to research and practice based on the study's findings, discussion and analysis. Further, a conceptual model for adopting ESNs, which addresses RQ3, is proposed. Finally, the limitations and opportunities for future research were discussed.



## Glossary

CMC	Computer Mediated Communication
ESN	Enterprise Social Network
FBA	Fulfilled by Amazon
RQ	Research Question
SCI	Supply Chain Integration
SCM	Supply Chain Management
SCP	Supply Chain Performance
ICT	Information and Communications Technology
SNS	Social Networking Site
PC	Personal Computer
SPaM	Strategic Planning and Modelling
HP	Hewlett-Packard
SCO	Supply Chain Orientation
TCO	Total Cost of Ownership
MBO	Management by Objectives
TBL	Triple Bottom Line
SCC	Supply Chain Collaboration
CPFR	Collaborative Planning Forecasting and Replenishment
VMI	Vendor Managed Inventory
UGC	User Generated Content
IT	Information Technology
CRM	Customer Relationship Management

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# Appendices

## Appendix 1 Participant Information Sheet



Site Logo  
(to be added)

**Impact of Social Media on Information exchange in Supply Chain Management**  
**Participant Information Sheet**  
**for interviews**

### Invitation

We would like to invite you to take part in a research study.

Before you decide if you would like to participate, take time to read the following information carefully and, if you wish, discuss it with others such as your family, friends or colleagues.

Please ask a member of the research team, whose contact details can be found at the end of this information sheet, if there is anything that is not clear or if you would like more information before you make your decision.

### What is the purpose of the study?

The aim of this research is to develop an understanding on how social media influences relationships and trust amongst supply chain participants, and its impact on information exchange in supply chain management. This study will observe the development of long-term relationships and trust due to the influence of social media in the supply chain management scenario, and the nature and extent to which information is exchanged.

### Why have I been chosen?

You are being invited to take part in this study because you satisfy the below criteria.

1. The organization you work for has an active role in a supply chain.
2. The organization you work for use social media platforms for business activities and collaboration (This does not include use of social media for marketing, promotion and for consumer service & feedback).
3. Your job role involves business activities related to supply chain operations.
4. You use enterprise social platforms to collaborate as part of your job role.

### What will happen to me if I take part?

If you decide to take part in the study, you will be required to take part in an interview of approximately 1 hour, where you will be asked questions as part of the study.

REC ID: 1630, Version 1.3, 12 Mar 2020

You may be contacted through email, for any clarifications on the information you have provided during the interview.

Total time commitment expected for this study is 1 to 2 hours.

**How will the conversation during the interview be recorded and the information I provide managed?**

With your permission we will audio record the interview and take notes.

The recording will be typed into a document (transcribed) by the researcher. This process will involve removing any information which could be used to identify individuals e.g. names, locations etc.

The researcher proposes to validate the transcripts with the interviewee, for any corrections, clarifications and ratify the content and authenticity of what was said during the interview.

Audio recordings will be destroyed as soon as the transcripts have been checked for accuracy.

We will ensure that anything you have told us that is included in the reporting of the study will be anonymous.

You of course are free not to answer any questions that are asked without giving a reason.

**Do I have to take part?**

**No.** It is up to you to decide whether or not you wish to take part.

If you do decide to participate, you will be asked to sign and date a consent form. You would still be free to withdraw from the study at any time without giving a reason.

**Will my taking part in this study be kept confidential?**

**Yes.** A code will be attached to all the data you provide to maintain confidentiality.

Your personal data (name and contact details) will only be used if the researchers need to contact you to arrange study visits or collect data by phone. Analysis of your data will be undertaken using coded data.

The data we collect will be stored in a secure document store (paper records) or electronically on a secure encrypted mobile device, password protected computer server or secure cloud storage device.

To ensure the quality of the research, Aston University may need to access your data to check that the data has been recorded accurately. If this is required, your personal data will be treated as confidential by the individuals accessing your data.

**What are the possible benefits of taking part?**

While there are no direct benefits to you of taking part in this study, the outcome of this study could provide supply chain practitioners more insights into the role of social media in building long-term relationships and trust and provides an opportunity to understand the potential of utilizing social media to improve firm's performance.

**What are the possible risks and burdens of taking part?**

The potential risks include: 1) Individual becoming identifiable from the data provided. 2) Participants may divulge sensitive or confidential information during the interview which may risk their job, if known to the managers.

To avoid such risks, the researcher will handle the data diligently to avoid any breach in confidentiality or disclosure of identity. The data would be anonymized and any identifiable information about the company or the participant will not be associated with any responses. Also, any information about the company and the participant, which makes them identifiable, will not be used.

Burdens include: Time commitment to take part in this study.

#### **What will happen to the results of the study?**

The results of this study may be published in scientific journals and/or presented at conferences. If the results of the study are published, your identity will remain confidential.

A lay summary of the results of the study will be available for participants when the study has been completed and the researchers will ask if you would like to receive a copy.

The anonymised results may be used for research by other research teams as described in Appendix A.

The results of the study will also be used in PhD thesis of Amritha Dhanya C Sasankan, and in journals for publication.

#### **Expenses and payments**

There will be no payments made towards participation in this study.

#### **Who is funding the research?**

The study is being funded by Aston University

#### **Who is organising this study and acting as data controller for the study?**

Aston University is organising this study and acting as data controller for the study. You can find out more about how we use your information in Appendix A.

#### **Who has reviewed the study?**

This study was given a favorable ethical opinion by the Aston University Research Ethics Committee.

#### **What if I have a concern about my participation in the study?**

If you have any concerns about your participation in this study, please speak to the research team and they will do their best to answer your questions. Contact details can be found at the end of this information sheet.

If the research team are unable to address your concerns or you wish to make a complaint about how the study is being conducted you should contact the Aston University Research Integrity Office at [research\\_governance@aston.ac.uk](mailto:research_governance@aston.ac.uk) or telephone 0121 204 3000.



Site Logo  
(to be added)

## **Impact of Social Media on Information exchange in Supply Chain Management**

### **Participant Information Sheet**

#### **For collecting social media data**

#### **Invitation**

We would like to invite you to take part in a research study.

Before you decide if you would like to participate, take time to read the following information carefully and, if you wish, discuss it with others such as your family, friends or colleagues.

Please ask a member of the research team, whose contact details can be found at the end of this information sheet, if there is anything that is not clear or if you would like more information before you make your decision.

#### **What is the purpose of the study?**

The aim of this research is to develop an understanding on how social media influences relationships and trust amongst supply chain participants, and its impact on information exchange in supply chain management. This study will observe the development of long-term relationships and trust due to the influence of social media in the supply chain management scenario, and the nature and extent to which information is exchanged.

#### **Why have I been chosen?**

You are being invited to take part in this study because you satisfy the below criteria.

1. The organization has an active role in a supply chain.
2. The organization uses social media platforms such as enterprise applications, inhouse digital networking applications, etc. for business activities and collaboration (This does not include use of social media for marketing, promotion and for consumer service & feedback).
3. You have responsibilities for governing the social media platform of the organization/ department/working group within the organization.

#### **What will happen to me if I take part?**

If you decide to take part in the study, you will provide social media conversations pertaining to the organizations day-to-day business activities.

## Appendix 2 Participant Consent Templates



THE IMPACT OF SOCIAL MEDIA ON INFORMATION EXCHANGE IN SUPPLY  
CHAIN MANAGEMENT

Consent Form for Interviews

Name of Chief Investigator: Amritha Dhanya C Sasankan

Please initial boxes

1.	I confirm that I have read and understand the Participant Information Sheet (Version 1.2, Date _____) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights being affected.	
3.	I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I needed.	
4.	I agree to my personal data and data relating to my job collected during the study being processed as described in the Participant Information Sheet.	
5.	I authorise the investigator to interview me or administer a questionnaire.	
6.	I agree to my interview being audio recorded and to anonymised direct quotes from me being used in publications resulting from the study.	
7.	I understand that security of the data collected is assured during and after completion of the study.	
8.	I agree to my anonymised data being used by research teams for future research.	
9.	I agree to my personal data being processed for the purposes of inviting me to participate in future research projects. I understand that I may opt out of receiving these invitations at any time.	
10.	I agree to take part in this study.	

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature



THE IMPACT OF SOCIAL MEDIA ON INFORMATION EXCHANGE IN SUPPLY  
CHAIN MANAGEMENT

Consent Form for collecting social media data

Name of Chief Investigator: Amritha Dhanya C Sasankan

Please initial boxes

1.	I confirm that I have read and understand the Participant Information Sheet (Version 1.4, Date _____) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my [ <i>participation/approval to collect data</i> ] is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights being affected.	
3.	I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I needed.	
4.	I hereby provide consent to the investigator to collect social media conversation data [ <i>context of data/department/group name</i> ] in my capacity as [ <i>job role/job title</i> ], and to process the data as described in the Participant Information Sheet.	
5.	I understand that security of the data collected is assured during and after completion of the study.	
6.	I agree to provide additional data if needed.	
7.	If any information is unclear, I agree to provide clarifications through email.	

\_\_\_\_\_  
Name of participant                      Date                      Signature

\_\_\_\_\_  
Name of Person receiving consent.                      Date                      Signature



THE IMPACT OF SOCIAL MEDIA ON INFORMATION EXCHANGE IN SUPPLY  
CHAIN MANAGEMENT

Consent Form for clarification

Name of Chief Investigator: Amritha Dhanya C Sasankan

Please initial boxes

1.	I confirm that I have read and understand the Participant Information Sheet (Version 1.3, Date _____) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my legal rights being affected.	
3.	I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I needed.	
4.	I agree to my personal data and data relating to my job collected during the study being processed as described in the Participant Information Sheet.	
5.	I agree to provide clarifications related to my posts in the social media conversation.	
6.	I understand that security of the data collected is assured during and after completion of the study.	
7.	I agree to my anonymised data being used by research teams for future research.	
8.	I agree to my personal data being processed for the purposes of inviting me to participate in future research projects. I understand that I may opt out of receiving these invitations at any time.	
9.	I agree to take part in this study.	

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Person receiving  
consent.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature



## Appendix 3 Research Ethics Approval



Aston University  
Birmingham B4 7ET  
United Kingdom

+44 (0)121 204 3000  
www.aston.ac.uk

Date: 16 April 2020

Karen Jones  
School of Engineering and Applied Science  
**Student: Amritha Dhanya Cheriachanasseril Sasankan**

Dear Karen,

Study title:	The Impact of Social Media on Information Exchange in Supply Chain Management
REC REF:	# 1630

### Confirmation of Favourable Ethical Opinion

On behalf of the Committee, I am pleased to confirm a favourable opinion for the above research on the basis of the application described in the application form, protocol and supporting documentation listed below.

### Approved documents

The final list of documents reviewed and approved by the Committee is as follows.

<i>Document</i>	<i>Version</i>	<i>Date</i>
Participant information sheet: interview	1.3	12/03/20
Consent form: interview	1.3	12/03/20
Participant information sheet: social media	1.5	12/03/20
Consent form: social media	1.4	12/03/20
Participant information sheet: further clarification	1.4	12/03/20
Consent form: further clarification	1.5	12/03/20
Interview questions: phase 2	1	02/03/20
Invitation Letter – Company Participant	2	16/04/20
Invitation Letter – Individual Participant	2	16/04/20

After starting your research please notify the University Research Ethics Committee of any of the following:

- Amendments. Any amendment should be sent as a Word document, with the amendment highlighted or showing tracked changes. The amendment request must be accompanied by a covering letter along with all amended documents, e.g. protocols, participant information

sheets, consent forms etc. Please include a version number and amended date to the file name of any amended documentation (e.g. "Ethics Application #100 Protocol v2 amended 17/02/19.doc").

Amendment requests should be outlined in a "Notice of Amendment Form" available by emailing [research\\_governance@aston.ac.uk](mailto:research_governance@aston.ac.uk).

- Unforeseen or adverse events e.g. disclosure of personal data, harm to participants.
- New Investigators
- End of the study

Please email all notifications or queries to [research\\_governance@aston.ac.uk](mailto:research_governance@aston.ac.uk) and quote your UREC reference number with all correspondence.

Wishing you every success with your research.

Yours sincerely



**Professor James Wolffsohn**  
**Acting Chair, University Research Ethics Committee**

## Appendix 4 Details of ESN Platforms

### i. Slack

Slack is a business communication platform developed by Salesforce. Slack was founded in 2013 as an ESN tool, with over 25 million active users in 2022. It has a paid and unpaid version of the tool (Ruby, 2023). Slack is categorised as an enterprise social network (Wiesneth, 2016) as it can be used to communicate with co-workers in the organization. Slack, being a multi-platform tool, can be used on all kinds of devices and operating systems, including mobile phones (Stray et al., 2019). It has become a contemporary communication tool that enables instant messaging, file-sharing, and creating groups and project communication channels. It integrates with other tools such as Google Drive and Trello and enables internal and external (Dennerlein et al., 2016). It is increasingly being chosen as the ESN for organisations for improved communication, problem-solving and increased effectiveness (Nordström, 2019; Wong, 2018). The ability to search previous messages, use emojis, and use ‘@’ (“@Everyone”, “@Channel”, and “@Here”) to notify a channel or workspace to draw the attention of people are some of the features (Hawthorne, 2021). The below figure represents a screenshot of the Slack tool.

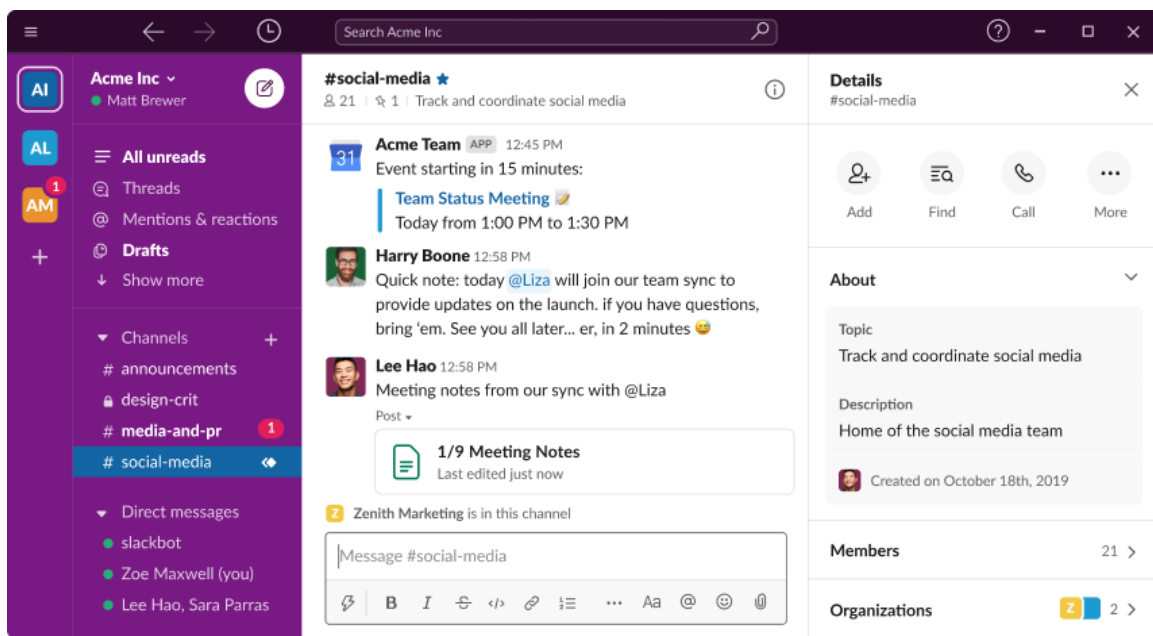


Figure 0.1: Screenshot of the Slack tool

Source: [slack.com](https://slack.com)

ii. WhatsApp

WhatsApp is one of the popular messaging apps initially introduced for smartphones, and later, a web version was developed to facilitate users' access to computer desktops (Giansanti, 2020). Later, in January 2018, a business version of WhatsApp called 'WhatsApp Business' was introduced to help organisations address the needs of their customers and their inquiries (Sixto-García et al., 2021). It allows direct communication and group conversations, enabling users to make audio and video calls, send text and voice messages, and share links, multimedia files, and documents with individual users or groups (Ayan, 2020). WhatsApp is increasingly being used in organisational communication, which includes marketing, trading, education and health agencies (Giansanti, 2020; Sugiyantoro et al., 2022). Users increasingly tend to use non-standard spelling emojis and other stylistic features in WhatsApp communication (Ayan, 2020). The WhatsApp business version offers the 'WhatsApp Business platform' and 'WhatsApp Business app'. 'WhatsApp Business platform' can integrate with other technology stacks, such as an omnichannel inbox, customer support software, or a bot platform to manage communications with customers, and is used by large businesses to communicate at scale through programmatic access. However, the 'WhatsApp Business app' offers limited customization and integration with other tools and is used by small businesses. Below figure represents a screenshot of the WhatsApp application.

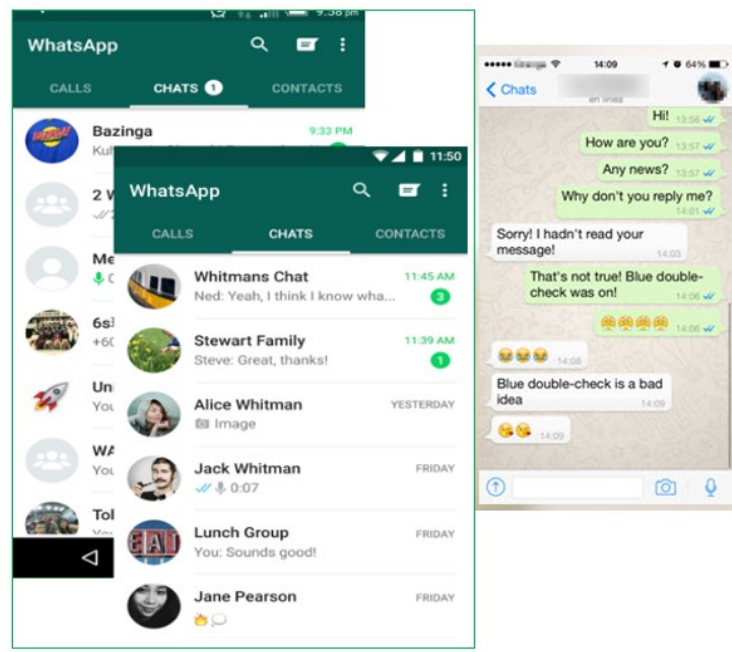


Figure 0.2: Screenshot of WhatsApp

Source: [apowersoft; getjar.com](https://apowersoft.com/getjar.com)

iii. Microsoft Teams

Microsoft Teams, commonly called Teams, is an ESN tool that enables users to make video and audio calls, send instant messages to individuals and groups, and share, edit and collaborate on files stored in a shared location (Hargreaves et al., 2022; Microsoft, 2019). Microsoft Teams is increasingly being adopted by organisations in all sectors after the significant challenge faced during covid-19 (Mehta et al., 2020a). For example, it is increasingly used in Education (Henderson et al., 2020; Martin and Tapp, 2019). It is a multi-device technology and integrates with Microsoft Apps such as Outlook, SharePoint and OneNote (Microsoft, 2020). use of emojis and '@' to mention a team or channel is one of its features. For example, @general to notify all in the general channel, @<team name> to notify the team members, @<channel name> to notify all channel members and @<name> to notify a person (Microsoft). A screenshot of how Microsoft teams App look is shown in figure below.

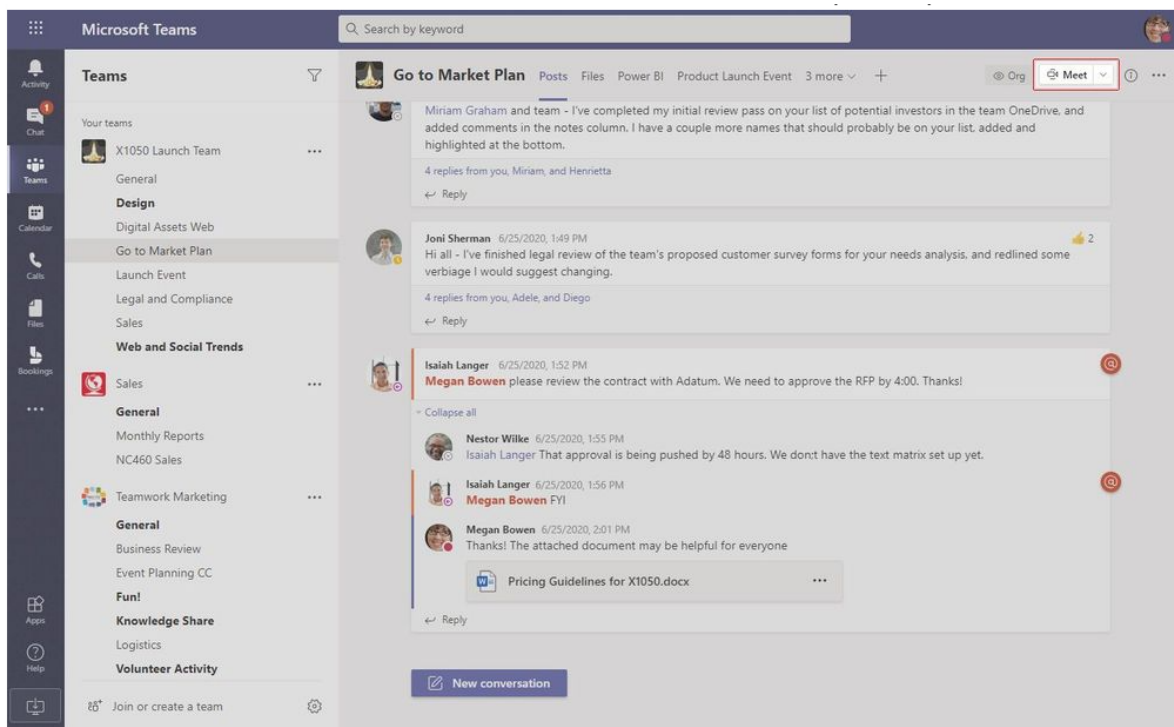


Figure 0.3: Screenshot of Microsoft Teams

Source: [microsoft.com](https://www.microsoft.com)

## Appendix 5

### i. Social Exchange Theory

Social exchange theory originated in anthropology and later extended to other disciplines (Griffith et al., 2006). The theory argues that the interaction between different parties occurs with an expectation of a reward from the interaction (Homans, 1958). The behaviours and attitudes are influenced by the reward minus the cost of the interaction (Wu et al., 2014). It means that if a contribution is made by one party in the interaction, there is an expectation that the other party will reciprocate with a contribution at a later point in time (Griffith et al., 2006). In the supply chain context, the theory suggests that stakeholders collaborate through a cost-benefit analysis (Khan et al., 2018).

## Appendix 6 Identification of Themes and Codes

Author	Open Coding	Categories	Comments
Burns & Friedman, 2012	Team working	Collaboration	
Burns & Friedman, 2012	Timely problem solving	Problem solving	
Burns & Friedman, 2012	Specific skills	Expertise	
Burns & Friedman, 2012	Ability to answer critical questions	Expertise	
Burns & Friedman, 2012	Use of common language	Style of Communication	
Burns & Friedman, 2012	shared participation in a conversation	Collaboration	
Burns & Friedman, 2012	use of short, quick conversations	Style of Communication	
Butler and Matook, 2015	Dependable behaviour (interdependence)	Interdependence	Dependable behaviour for information/clarification, updates and issue resolution
Butler and Matook, 2015	Wide range of topics	Communication	
Butler and Matook, 2015	Issue resolution	Problem solving	Issue resolution/ problem solving
Butler and Matook, 2015	Frequent interactions	Communication	
DiMicco et al., 2009	Sharing artefacts/ resources	Information sharing	
Cousins and Spekman, 2003	Team working	Collaboration	
Cousins and Spekman, 2003	High degree of communication	Communication	
Cousins and Spekman, 2003	Expertise in domain	Expertise	Commercial awareness
Cousins and Spekman, 2003	negotiation and analytical skills	Expertise	
Cousins and Spekman, 2003	Specific skills	Expertise	
Cousins and Spekman, 2003	interpersonal communication	Communication	
Emergent code	Proactive actions/ problem solving	Problem solving	Proactively identifying issue and solving the problem
Hersberger et al., 2005	Information sharing behaviours	Information sharing	
Khan et al., 2018	Sustainable practices	Sustainability	
Knight, 2000	Timely Communication	Communication	
Knight, 2000	Appropriate communication	Communication	
Knight, 2000	Clear communication		
Knight, 2000	structured communication		Informal communication can be offensive sometimes. Influence of culture in language. Atmost care some assumptions are not understood by other parties not used off work
Knight, 2000	Consistency of talk and behaviour	Style of Communication	
Knight, 2000	Commitment	Commitment	
Msanjila and Afsarmanesh, 200	Being vulnerable	Interdependence	Trust is the willingness of a trustor to be vulnerable to the actions of another party based on the expectations that the trustee will perform a particular action important to the trustor irrespective of the ability to monitor or control the trustee
Msanjila and Afsarmanesh, 200	Act dependably	Interdependence	
Msanjila and Afsarmanesh, 200	Act securely	Commitment	
Msanjila and Afsarmanesh, 200	Act reliably	Commitment	
Spralls et al., 2011	Cultural compatibility		
team, L. C. C. W., 2003	Sharing confidential information	Information sharing	
Wong, Lai, Cheng and Lun (201	collaborative decision-making	Collaboration	reduced uncertainties (Khan et al., 2018)
Zak, 2007	Showing vulnerability	Interdependence	asking help
Zak, 2007	Recognizing excellence	Encouragement	
Zak, 2007	Sharing artefacts/ resources	Information sharing	



Author	Open Coding	Categories	Comments
Zak,2007	Sharing artefacts/ resources	Information sharing	
	Collaborative working	Collaboration	
	Effective Sharing information	Information sharing	
	Working towards Shared strategies	Collaboration	
	Communication context	Communication	
Cui et al., 2018	expressing care and concern		
Cui et al., 2018	willingness to be vulnerable	Interdependance	
Cui et al., 2018	competence/reliability		
Cui et al., 2018	dyadic information sharing	Information sharing	
Cui et al., 2018	positive attitudes and behaviours		
Cui et al., 2018	confidence placed on team member/confidence on each others expertise	Encouragement	
Cui et al., 2018	reciprocal benevolence		In many social situations a pay back (good will, thoughtfulness) is made for what was received from others
Cui et al., 2018	seeking credibility of other part - start of relationship		
Cui et al., 2018	Information Sharing	Information sharing	
Cui et al., 2018	professionalism and dedication	Commitment	
Cui et al., 2018	increased communication transparency		
DiMicco et al., 2009	concrete identification of identity		
DiMicco et al., 2009	getting to know personally		
DiMicco et al., 2009	getting to know professionally		who some one is, their role, what they are working on, how approachable they are and their knowledge level (people sense making)
	Closeness/friendliness/rapport in professional commu	emergent	
	use of bespoke terms and language	emergent	
	un structured communication	emergent	
	informal language	emergent	
	high level of understanding	emergent	
	flexibility	emergent	
	common agreement/consensus	emergent	

Category	Theme	Authors	Description
Type of Information	Demand	Lotfi et al. (2013); Pandey et al. (2010); Baihaqi and Beaumont (2006); Teo et al. (2018)	
Type of Information	Exchanging decision rights	Baihaqi and Beaumont (2006)	
Type of Information	Future plan	Pandey et al. (2010);	
Type of Information	Inventory information	Lotfi et al. (2013); Pandey et al. (2010); Baihaqi and Beaumont (2006)	status
Type of Information	Market development	Pandey et al. (2010);	
Type of Information	Order tracking	Lotfi et al. (2013); Pandey et al. (2010); Baihaqi and Beaumont (2006); Teo et al. (2018)	dispatch details, timelines, quantity
Type of Information	Production Information (product development)	Lotfi et al. (2013); Pandey et al. (2010); Teo et al. (2018)	Performance criteria, such as production quality data and early complete date, etc. and production capacities.
Type of Information	Product Information		status, timelines, future requirements, product development
Type of Information	Co-operate objectives	Pandey et al. (2010);	product specification
Type of Information	Operational information exchange	Ramayah and Omar (2010)	Operational information exchange, Advanced shipping notice, Order status, Production schedules, Inventory
Type of Information	Strategic information exchange	Ramayah and Omar (2010)	Pricing strategies, New target markets, Distribution strategies, Promotion strategies
Type of Information	Purchases information	Pandey et al. (2010);	Invoice, billing, product details, timelines, quantity
Type of Information	Sales forecasting	Lotfi et al. (2013); Pandey et al. (2010); Baihaqi and Beaumont (2006)	
Type of Information	Sales data	Lotfi et al. (2013); Pandey et al. (2010); Baihaqi and Beaumont (2006); Teo et al. (2018)	Billing, Price, quantity
Type of Information	Shipping information	Baihaqi and Beaumont (2006)	delivery details, timelines
Type of Information	Stakeholder Info	Pandey et al. (2010);	Customer , Supplier, service providers, logistics providers, 3pl etc.
Type of Information	Technology know-how	Lotfi et al. (2013); Pandey et al. (2010);	
Type of Information	Operations scheduling	Pandey et al. (2010); Baihaqi and Beaumont (2006)	Work and resource allocation
Relationships	Information sharing	Pandey et al. (2010); Ramayah and Omar (2010); Zand (1972)	The extent to which information is shared can create opportunities for firms to work collaboratively to remove supply chain inefficiencies, and thus has a significant direct impact on the relationship between buyer and the supplier.
Relationships	Interdependence	Jule et al. (1996); Mo, 2004;	
Relationships	distributed responsibilities	Jule et al. (1996)	
Relationships	Honesty, respect, Faithfulness	Mo, 2004	
Relationships	Reciprocity	Chai et al., 2015	
Relationships	Collaboration	Mena et al., 2009; Tsanos and Zografos (2016)	
Relationships	Trust	Zand (1972)	

Category	Theme	Authors	Description
Trust	Collaboration	Tsanos and Zografos (2016)	
Trust	Openness in expression, exchange of ideas	Zand (1972)	
	greater clarification of goals and problems	Zand (1972)	
	disclosure of information	Zand (1972)	
Trust	Interpersonal acceptance	Zand (1972)	
Trust	Problem solving	Zand (1972)	effectiveness.
Trust	Timely information sharing	Zand (1972)	
	Interdependence	Mo, 2004;	
Trust	Information sharing	Zand (1972)	Accurate, timely, complete and relevant' Knowledge and ideas
Trust	greater Influence	Zand (1972)	
Trust	Reliability of others	Zand (1972)	
Trust	Greater motivation	Zand (1972)	
Classification of Information	Confidential		Access to confidential data requires specific authorization and/or clearance. Types of confidential data might include Social Security numbers, cardholder data, M&A documents, and more. Usually, confidential data is protected by laws like HIPAA and the PCI DSS.
Classification of Information	Internal		This type of data is strictly accessible to internal company personnel or internal employees who are granted access. This might include internal-only memos or other communications, business plans, etc.
Classification of Information	Public		This type of data is freely accessible to the public (i.e. all employees/company personnel). It can be freely used, reused, and redistributed without repercussions. An example might be first and last names, job descriptions, or press releases
Classification of Information	Restricted		Restricted data includes data that, if compromised or accessed without authorization, which could lead to criminal charges and massive legal fines or cause irreparable damage to the company. Examples of restricted data might include proprietary information or research and data protected by state and federal regulations.
Questions	Does the organisation has any data classification?		

## Appendix 7 Sample Response to Email Questionnaire

**Please answer the below questions if you are using Enterprise social networks (ESNs)/ Enterprise social media platforms (ESMPs) at your workplace.**

Please refer to the [glossary](#) to know what an ESN/ESMP is.

1. Which ESN platforms are you using/have used at work for supply chain related communications, and how long have you been using/used this platform? What is the nature of usage and extent to which the platform is used?

Response: We use mainly Slack, G-suite & Wrike etc for project management and tracking also to give update to various tasks/events in Organization. Major communications between warehouse and offshore team regarding purchases/orders/deliveries happen through Slack as its much easier to send updates much easier than through emails. Any delivery issues or new products etc can be send as photograph or video through Slack. G-suite is mainly used for emails, chats and also screen sharing. Wrike is mainly used for project management work especially based on specific tasks. These platforms are extensively used to communicate between teams who are based in different locations.

2. What are the benefits of using this platform in your regular business interactions/ stakeholder communication? If possible, relate this with the scenario when the platform was not used.

Response: The main benefits is real time collaboration and communication and avoiding too many emails and possible delays in communications. Important matters are resolved in minutes between teams who are in different countries. More importantly these apps are available in mobile as well, so monitoring issues and resolution is happens almost instant. If these platforms are not used, the old way of email and telephone options which are not helpful in collaboration or quick resolution.

3. What do you think are the limitations of the platform (features/functionality)? Please explain the issues and concerns while using this platform, and any specific scenario that you have come across.

Response: These platforms are costly for Micro organizations also over dependence of any platform is an issue as some time the server might go offline especially this happened with slack which don't send messages some time. Hence, we have WhatsApp business or Emails help us in backup scenario.

4. Do you have any other information to share?

Response:

**Glossary** [go to top](#)

**ESMP** - Enterprise Social Media Platforms

**ESN** – Enterprise Social Networks/ Enterprise Social Networking

ESNs/ESMPs are online social networks that are used to share business interests and/or activities among the corporate world. This is similar to the use of LinkedIn, Facebook, Instagram, Twitter etc. in our personal lives. ESNs are usually internal, private social networks which companies implement to allow smooth communication and collaboration among employees or external stakeholders.

The benefits of using ESNs include real time communication and updates, information and knowledge sharing, innovation, project progress tracking, building better relationships and efficient work force etc. MS Teams, Slack, G-Suite, Yammer, Jive, IBM Connections, Asana, Wrike, Confluence, Facebook's Workplace etc. are examples of ESNs. ESNs are also available as handheld device apps and as in-house developed software.

## Appendix 8 Sample Interview Transcript

### Investigator

Yes, I so I'll just I introduced myself I am Investigator Sasankan and I'm in my third year of PhD at Aston University my research is in supply chain management I'm from an electronics engineering background and I have worked in the information technology sector before joining Aston University. So, this is about me I will tell a bit detail about my research but before that I would like to hear about you

### Respondent PER0006

yeah of course my name is Respondent PER0006 I'm a contract manager for Wincanton. so, Wincanton is sort of the largest British three PL logistics company, so we operate all over the UK. so, what my sort of role involves in so I run a transport network and so we supply on behalf of Roper Rhodes which is a high-end bathroom retailer bathroom for their whole UK distribution so we sort of managed that through Wincanton. I've probably been in Wincanton for about seven years now previously doing operational manager roles so I've worked in London for a bit in our shared user network so dealing with the supply chain of trainers, cosmetics, tyres, sofas, so quite an array of goods and then previous to that sort of continuous improvement roles in projects, roles all in the logistics network and just before Wincanton I worked in construction so plant hire equipment and so I've always sort of been involved in supply chain or logistics in some way

### Investigator

yeah so, I can see that you have you know quite a lot of experience like many years of experience in supply chain and logistics

### Respondent PER0006

yeah, I enjoyed being fair it's a nice sector to be involved in and I think it is very problem solving is very action orientated so it suits what I'm after really quite well

### Investigator

yeah, that's right. just want to ask about your current role, so you told that you manage a transport network I didn't quite get if you mentioned about a specific client, I thought you mentioned name

### Respondent PER0006

yes, it's called Roper Rhodes, so they are high end bathroom supplier and yes so that they basically do all bathroom fittings furniture's fitting showers bathrooms everything to do with your bathroom, if you wanted to redo your bathroom so we deliver all of their goods for them in the UK.

### Investigator

thank you very much so it was nice know about you and your job. so I'll just brief you about my research so the research is mainly on this Social Media for information exchange supply chain management so I mainly focus on Enterprise Social Networks and Collaboration Tool or for information exchange in supply chain management and understand how and why supply chain managers and organisation uses platform or for their business to business interactions so when I say supply chain I consider, end to end supply chain which includes you know starting from procurement manufacturing logistics and distribution to 3pl, suppliers and any business customers. I am not looking at the use of these platforms for brand building, marketing or customer service that is one area that is just not scope of my project so basically I want to know how different our parties within the supply chain communicate both with internal and external stakeholders so it can be between in a different internet functions, different departments within an organisation and other external stakeholders and I'm also looking at the development of relationship and trust because of using this networking platforms and you know the type and extent of the information that is exchanged and the implication it has on the supply chain performance so that is a generic overview of my studies do you have any question

### Respondent PER0006

no that makes sense thank you

**Investigator 5 min**

okay thank you very much yeah and I want to see that you know this is an ethical research so all information will be maintained confidential and other studies regulated by Aston universities research ethics committee so can you tell us a bit more about doing a job or like in all your daily activities and your involvement in logistic sense apply change management and its operation

**Respondent PER0006**

yeah course, so within my role so I'm the contract managers who just get your idea in terms of my team. so, I have a transport manager based in the system, we got hub in port brey in Bristol, so I've got myself and then the transport manager so and they look after the more op side of it and a bit more hands on with the transport compliance in the legal conformance. I oversee that piece and then we have two supervisors based in the hub as well, so they look at dispatching all of the drivers from our southwest hub and then we have five out bases in total so in order to supply the UK we trunk and cross dock in five out raises so my role really is to oversee the operational the finance the service of all of those three elements. so, sort of the key tasks I would say my role would be health and safety focus so making sure everything is compliant, we are up to date on our orders, any accidents, investigations have been done properly. from a finance perspective it is managing the budget. for that that works so we have a budget that we set out with ourselves and our client because obviously I work for Wincanton that's a three PL so I work for a Wincanton on behalf of Roper Rhodes said this to two budgets that we have there and I work quite closely with the ops director of Roper Rhoades in terms of innovation you don't earn looking at how we can do things differently, service improvements and so it's very project based so to give you an example we're currently looking at new ways that we can serve all of our customers five times a week whether we currently operate a three day service level. so, a lot of my role is really building up relationship with the customer because at three PL, our relationship with the customer is king so I would say that what you mention about building trust is probably fifty percent of my job. to do that and I would say the other fifty percent is really reviewing our operational model and see how we can do things cheaper quicker and better so it's constantly sort of reviewing our KPIs and our stats and where we can sort of go more.

**INVESTIGATOR**

Okay so just want to confirm my understanding so both operational and finance you're looking for both an internal team as well as that of the clients is that right. in your email questionnaire of any responded you have mentioned that you mainly use teams and our Skype so and you have mentioned that it's mainly for the internal communication so what sort of a platforms or tools do you use for your excellent communication

**RESPONDENT PER0006**

Okay good question so in terms of talking to the customer we also use teams so we use that more and I would say that only recent and so since I would say in the last two months or so we now can access external people on our team so I can message people have teams meetings use with people external to people from Roper Rhodes and I would say the only other platform I use a lot is LinkedIn. so I use that a lot for multiple things, so there's that whole branding marketing bit and I use that to post any vacancies that we have a I use that to post any partnership success we've had between ourselves and the customer to build that loyalty and trust and I also use it in terms of any, if for example I have a dead load going somewhere so I've got you know I'm returning back from London empty linked in is used a lot for that as well and so I probably use it for those three purposes

**INVESTIGATOR**

okay do you have any intranet or social pages bearing, or employees can contribute and commend

**Respondent PER0006**

yeah so we have something which we call Wizz which is our intranet for Wincanton and so that is on every Wincanton place and that's basically the hub information you can post things like announcements in both internally and externally and but I would say it's quite poor, it's very outdated and it's very un-user friendly and as a result not many people use it and the only other one that we use is I think it's



called Yammer where we put in things that we got different cohorts, for example I'm part of our diversity campaign so we've got a lot around females in logistics so we use a lot for that we have our own little group on that but really I would say internally we tend to use teams or WhatsApp groups is mainly what Wincanton tends to use

**INVESTIGATOR**

okay so when you say WhatsApp group is it the normal personal WhatsApp or WhatsApp business.

**Respondent PER0006**

The business one.

**INVESTIGATOR**

How long have you been using this WhatsApp business?

**Respondent PER0006**

3 years, a while

**INVESTIGATOR**

Just want to clarify you mentioned the intranet for Wincanton, is it Wiz as in W-I-Z?

**RESPONDENT PER0006**

Yea that's the one

**INVESTIGATOR**

Yammer told it is mainly used for diversity campaign and how about the access to you know Yammer or the intranet, does everyone who has a Wincanton email ID has access to these?

**RESPONDENT PER0006**

So, for Wiz, everyone with a Wincanton ID has access to it. on Yammer you have to be I think everyone would have access to the normal Wincanton but there's certain groups that are restricted so, for example the female one I talk about is it is only a select few in there so no one else can come in unless we allow them access

**INVESTIGATOR**

Okay so what motivates to use this platforms communication centres such as email and telephone, you have mentioned about teams and then skype and Yammer, WhatsApp business and Wiz.

**RESPONDENT PER0006**

I think a lot of people use teams so like instant chat instead of emails because people get drowned in emails and there's a less you know there's a less of an urgency I think if someone's sending an email you're expecting a reply in two three hours now most people are in meetings or calls so people don't check their emails regularly so I think the main reason people use teams either to call or for like an instant message is because it's quick, you can see when someone reads it so you know that they at least been informed if you didn't want a response and I think people generally a bit like their phone, you know if you get a text message you read it quickly and people tend to ignore emails because there is that assumption that if it is urgent someone wouldn't message or call me and teams you just filter through you know the general spamming that you get on your emails

**INVESTIGATOR**

yes ok, one more thing you told that in teams you are using shared documents and group chat so for what kind of work or functions do you use these group chats for.

**RESPONDENT PER0006**

So, it's mainly project work so if I give you an example so we're working on what we called project DARKSTAR which is a new Waitrose DC that we're opening so I would say actually just thinking about enough teams is really changed the way that we operate so in terms of a project we've got a shared group on teams and then we've also got all of the shared files on teams so you've got instant access to the whole team, you can message and any documents throughout a call to the whole group which we do a lot and we also all have access to shared files instantly which is in part of that team's group so it almost holds everything you need to do with that project and you can see clearly who was responsible for what and etcetera whether before that we used send countless emails with various different versions like version control was a nightmare because you know every time someone updated it sent out to another group so if you match the project plan we probably had in a standard project out about fifty emails a project plans where everyone's updating and resending it, whether now it's here's the live link it's on your team's files go and do it so I think version control and access is a lot better now it's on teams

**INVESTIGATOR**

Okay so how about the access like is it only the allowed members are part of the group.

**RESPONDENT PER0006**

yes, for that purpose yes so anyone can message anyone on teams but if you're going into a certain group, you will be given access it just pops up on your team. so, one person owns that group so I've been the project manager that set this app owns this group, and I would go through and sort of add anyone to it. You can't just see it.

**INVESTIGATOR**

okay and who owns the data like now supposedly there is a group of many people many employees or you know the team individuals within the project team okay share information and post documents so basically who owns the data user to you know project team or you know the Wincanton's I.T. department

**RESPONDENT PER0006**

the honest answer is probably I don't know I think what usually tends to happen is that projects file will stay open for probably appeared of time after go live and then it will eventually just get closed and that information usually gets archived from the change management team so they have a what they call a project closure group where they would basically summarise all the files of the thing together and then hand that over to the business's usual team so I would say, I don't think anyone necessarily owns the data I don't think anyone's really thought from a data point of view but it would probably naturally fall to the project team

**INVESTIGATOR**

okay so can I say, if I say like this vendor project is active it's mainly with the project team and once everything is completed and archive is a full ownership of the Wincanton and sometimes you may not also have the access, may not

**RESPONDENT PER0006**

yes, definitely Wincanton yeah

**INVESTIGATOR**

yes, and do you have any Social Media usage policies guidelines or terms and conditions document

**RESPONDENT PER0006**

not really we have one like code of conduct policy that loosely references what you shouldn't disclose, confidential things on Social Media but it is probably only a couple of sentences we don't have a policy in its own right and I think the only thing we've got in our terms and conditions just don't bring the company into disrepute but that's it we don't have anything in terms of what you can and can't put on Social Media if it's positive really.

**INVESTIGATOR**

okay I was just asking you know sometimes you know they can be a policy document for usage of Social Media within the organisation like my Social Media I mean it's the internal social network

**RESPONDENT PER0006**

we got nothing in terms of internal nothing at all. Only on external.

**INVESTIGATOR**

okay then could you please explain how using these platforms or BH two teams when I say like these platform, I refer to all that you have told like Yammer, Teams, Skype and LinkedIn okay whichever you may have mentioned so could you please explain how this platform how helped to establish business contacts I develop your internal and external networks send built the relationship with the stakeholders

**RESPONDENT PER0006**

So, if I think internally within Wincanton, by using these platforms and especially as teams it's brought in video calling, we've never ever done video calling before in Wincanton. Just to give you a bit of context Wincanton's culture is face to face so if we had a project meeting for two hours they would still expect everyone to drive to you know the north Hampton a catering to the central point of the world so regularly for my job I would travel four hours for a one hour meeting and that was just the normal in Wincanton that's what's expected as we started using more of these Social Media platforms more what was the whole days you know productivity for people to go into teams to a face to face meetings we now only have a one hour teams meeting a lot of people got video cameras a lot of people's making more contact within that group because people have more time and it's become a new culture that that's how we do it now you know we do things a lot more remotely whether previously was face to face I think having something where you can instant message people and goes a long way to being a lot more personable and so where you have an email before that tend to be quite formal quite structured there's loads of times now where you know would be on a conference call about something and I'll be messaging at the people on the call going let's do this that send the file let's just do it now so it's become a lot more productive so rather than sitting in a face to face meeting and getting a list of actions and having to travel back and go in do it within the team's environment now that we use people do the actions while on the call whether that's good or bad but so for example you know so someone says that I'll send that document straight away they can send it on you know the group forum of teams so I think that's built a lot of relationships built a lot of productivity and it's made things flow naturally so in terms of externally so for the relationship with the customer so Roper Rhodes with the wider network we use from a team perspective it's quite useful that we have a Social Media platform that is both internally used with both customers so it bridges the gap so for example like a simple things is in Wincanton use outlook at Roper Rhodes used gmail so there's always a natural clash of systems which with their the team system it bridges the gap so I can instant message an external customer or my team's chat so it just makes you a lot more accessible it makes your lot more available you can see when people are active and not active so you can choose to call them at the appropriate time so it just makes work a lot quicker and it just has a more of a free flow and I think the only thing I communicate differently so within the link ten one so now sort of once you've got your platform up on LinkedIn you have a lot of like-minded or similar role people add to that they don't necessarily know you directly so a lot of people would build a network so you know I've got a lot of transport managers contract managers office managers etcetera that wouldn't would be either second or third connections that reached out to connect because they want some help or they see the post I've done about X. Y. Z. we want to talk about it and I do the same vice versa so I see it posted someone's gone for example line marking in the warehouse I connect with them and ask them you know who did you go with what was it like so I think people are just on a lot more willing to share information and personally I use my LinkedIn a lot to promote the contract Roper Rhodes and the gations between us and the client so an example I can give you is so in very parades we've got an all-female transport team and as a result we done quite like Social Media around that we've got like a video it just sort of try to encourage women into transport which we've shared on are LinkedIn page in the customer's shared as well so Roper

Rhodes of shared that so that's where it's built in that real sense of partnership in loyalty is in we both have joint Social Media campaigns which makes trust and our loyalty between the two separate businesses quite strong and so it makes a huge difference I think personally

**Investigator**

okay yes so, our young basically because you know your interactions and activities that increase by the use of this kind of platforms are what you're saying is you know you are sharing more information and your trust have increased

**Respondent PER0006**

yeah, and also, I think it's a case of you can endorse people in LinkedIn you know when you go round and you send emails to you know the managing director for example very parades but then he goes on Linked and he shares the post about the success Wincanton's had with a contract is had with a contract it reinforces that as a an Africa of Wincanton so I think it you see the customers in the clients much more personal so when I'm in work for example you know I work for Roper Rhodes I'm there to support them but on LinkedIn it's like everyone's sort of a little bit more equal so I think people see people from a personal perspective because not only do you put things up in terms of post but you also shows what you're you supports you put a lot of articles in check if it builds that and personality from people that you don't usually see in work places

**Investigator**

yes, so have you, you know shared a strategy or goals with your business stakeholder which you were able to achieve by using or interacting closely using these platforms

**Respondent PER0006**

Sorry I just missed that then. Shared strategies or goals?

**Investigator**

shared strategies or goals or any business operations. you have been mentioning about you know your what would say marketing or about the Roper Rhodes I just want to specifically know a few examples of where you were able to you know work with your stakeholders to achieve shared strategies and goals by using the Social Media platform.

**Respondent PER0006**

So I would say the best example is probably so both Roper Rhodes and Wincanton and the wider stakeholders wanted to do I am had a diversity goal to make sure we had a diverse work force so we work together with Roper Rhodes and our marketing PR Team to build a video which promote women in the workplace so we worked and we've got sort of like a two month Social Media campaign and with the strategy of one getting more of a diverse work force but two, also showing Wincanton Roper Rhodes is a diversity champion within the industry and we worked with you know our marketing PR team etc. you and Roper Rhodes to make sure you know the wording and the video was appropriate for both so that's probably the best example I can give

**Investigator**

okay thank you very much and also, I have seen your W. squared let initiated so how have these platforms helped with the initiative

**Respondent PER0006**

so not in my current role no so I've been involved in the first wave of the W squared so I was on part of the audience judging team for that and I help pilot one of the am shortlisted at company called when I say city stream and they did so instant deliveries rather transport in London, so I help support the testing of that so it's very good to bring in innovative companies but we don't necessarily use much Social Media other than promoting that externally for it to my knowledge but it is a good campaign but on a day-to-day basis if you're not in W Squared it doesn't tend to affect you to much

**Investigator**

okay yeah, I was just seeing the latest one, the 2020 one in the intranet so I thought I'll just ask. You have told about different types of information that is exchanged like you share documents and several other things or can you say specifically a bit more about the type of information that you usually exchange and what is your comfort level in using the platform for sharing Information

**Respondent PER0006**

yeah course so the sort of stuff we would share on teams so we have something that we call a DPD which is the design parameters document and so that's probably quite common one we share so when we bid for new businesses we build a solution a document that details commercials, contract links the operational solution the IT and so not something we want to get in the hands of anyone outside of Wincanton and but we share that regularly we share invoices that again we want to get in the hands of another customer regularly so we share probably too much then what we should, and I've never thought about it until you've mentioned it now so my comfort level was pretty relaxed about it but again I'm not sure if that's the right idea or not

**Investigator**

yeah also I just want to ask earlier are you concerned about the security like when you share these documents.

**Respondent PER0006**

not usually no yeah I wouldn't say usually yeah I've never really thought about it if I'm honest I think now you mention it I think yeah it's probably not great because these aren't password protected documents on team shared I think there's a comfort it is internal so no one can access it but they probably should be tighter controls because we are I think as we use teams a lot more we are sharing very sensitive information

**Investigator**

I want to ask about a supply chain operation so Wincanton provides several services so within your job role do you deal with any disruptions or any operation related supply chain or operation logistics operation related events out through these platforms

**Respondent PER0006**

no not really if I'm honest I don't really do any events around it

**Investigator**

I guess so basically if I say that it's mainly related to your coordination and basically project management activities using this platform is that right

**Respondent PER0006**

yes that's right yes okay

**Investigator**

Do you think these platforms have you know strengthened your relationship and trust among the stakeholders whom you interact with and how has it generally influenced information sharing

**Respondent PER0006**

I think it has built trust in the sense of I think instead of people sending emails highlighting or escalating things people go direct people on teams before it becomes something you need to report so there's a lot more communication trust through that and I think it's it helps build it on teams because it's much more personable I think it is the real key things that you know you can see someone's face when they're calling you and you know you can add instant message people you know they tend to be a lot more informal like if it isn't the typical email goes you know good morning hope you're well you know I trust this finds you well and there's all of that so formal thing

almost like you're writing a letter weather on teams you know people usually reply hi smiley face what's the day and have you got that information yet so it is instantly a lot more punchy and a more personable a lot more informal and that just builds trust because you're seeing a person asking you for the information not a signature on an email chasing you for something

**Investigator**

okay and because of these interactions do you think you have received any special considerations like for example if you wanted to get some urgent approval or urgent work done because of this interaction it was done much faster or were you able to do quicker decision working towards objectives because of using these platforms

**Respondent PER0006**

yeah I think it helps so if I need it so there's almost like an unwritten understanding if you need something done now you call someone or message them on team if it can wait to the end of the day and it's not so urgent you put it on email so it's almost like a different priority list so for example someone messaged me on teams I will instantly look at it regardless if I'm in a meeting or not and whether emails people just leave and hold so if I need something urgently approved like I said something around payroll before I need to ask my manager I message you on teams and they get improved in minutes if I put an email take hours and just because of the different priorities people lead on different Social Media platforms so I definitely think it is helps the work force

**Investigator**

okay thank you okay I have one question related to the supply chain and logistics operations so there might be different team who is involved in you know the detailed operation of the logistics so do you think they are using any of these platforms for the regular day to day activities within the organisation

**Respondent PER0006**

I think it's used quite a lot so I think where you know for example we use to get on calls or do some reports for like daily updates now it's just a team's message I think we from Wincanton perspective where they use to communicate quite well internal if I wanted to find out more, I would go on their LinkedIn post which is a lot more accurate than their whizz 34:18 I think certain companies have got a better Social Media presence and the internal one

**Investigator**

How about Yammer. You told about the diversity campaign but other than that do you think the employees are widely using Yammer for any help or events or general guidelines or best practices 34:48

**Respondent PER0006**

no if I'm honest I think we don't tend to use. it is not widely used we don't tend to use it for any sort of sharing of best practise and it is more sociable it's more sort of you know this is what we've done over here or sort of celebrating success rather than saying look this is the best way to do X, Y and Z. and so it tends to be more of a people use it to network and you know market their personal brand their contract branch rather than necessarily sharing information and best practise

**Investigator**

do you think that you know it should be used more for these kind of activities there you know on the kind of education or best practises and on what do you think is the factor 35:51 it is a hindrance for you know more usage of a Yammer or the platforms?

**Respondent PER0006**

so I think the hindrance of Yammer it is not very well known it is not very well used it's a very professional not very personable and so I think though by default it gets used less and whether if you think of LinkedIn Facebook and teams you know especially Facebook and LinkedIn people have their personal accounts it is not related to their workplace it's their own personal accounts so when you when you

want to share in those ones it's on your own account you know you have to set a new one up for a new job and you know a lot of people in the same jobs for like eighteen months now and but with LinkedIn Facebook that follows them regardless weather yammer is very internal and I think by the time people start job realised about it get involved in it most of the time there then you know move on to different roles and so, I think that's a challenge really that we have by trying to sort of get people engaged and I think the reason LinkedIn works a lot more it is because as people build profiles and there's a personal gain by having LinkedIn so you know people get jobs from their people connected and you know the lot recruits there so I think people use that because there's a personal game with it with a yammer I don't believe that that use that much because it is purely a work profile

**Investigator**

yeah I can understand so because of this pandemic do you think or how has the use of the platforms changed

**Respondent PER0006**

Massively so like the sort I've allude to earlier where we use to drive into a face to face meeting we never had video conferencing you know we never had the ability you know we use Skype loosely but a lot of it was conference call numbers package feels like back in the day now you used to get conference call numbers and people would dial in whether than now it's so much easier so much quicker you know it's integrated into our calendar emails now teams and so it is you know you get a Diary 38:08 invite automatically it updates its team so people can dial in so it's kind of making it okay for people not to travel and given the pandemic I think there's something in it and it sounds really small but you know when you've got a video chat and you see things into people's rooms where they are you feel like you learn a lot about them from a personal perspective so if I give you an example I had a new boss during the pandemic that I haven't even met everything's been over teams which is highly unusual but you know he's such shows me around his house to show me like pictures of his children and stuff which you would never do face to face another personal project I worked with I found out just by seeing the background they got a lack of B. hive suits 38:55 so they look after BT you just I think it shows you much more into someone's personal life because they are in their home and it builds a lot more report and I think where people aren't constantly driving or not been sociable in their personal life because we can't go out it kind of forces people by default to have the team's calls a lot more personable to learn a lot more about your colleagues

**Investigator**

yeah, okay that is right have you had any issues or concerns while using these platforms I want to know in terms of technical issue as well as in terms of managing information

**Respondent PER0006**

so no technical issues so it works you know too well I would say with a team that I can get it on my personal phone my work phone I can get it on any laptop I go to so I can access it anywhere which is great but in terms of management information or the sharing information it also means that you know if I was a company I can access all of that information without even doing any remote login so whatever's on my team for example someone sent me a confidential document on teams and someone could hack my team and get in to get out information whether you can't hack my emails because you have to go through the Wincanton systems so it's very open I would say the only thing I think teams in terms of a downside which I've noticed is where emails there always seems to be an expectation of you know someone emails you five six seven o'clock at night you've got to the next morning to reply I think with teams being so easily available where as I can see a move to people becoming more twenty four seven on it and so for example I've got my director message me at seven eight o'clock at night on teams which I find a lot more intrusive teams because you know it is an instant messages expected replying email you wait and then you go the next day so I think as we get more and more used to this I can see it blurring the lines between work life balance and I think this is the only downside I see come in

**Investigator**

yeah, ok, I think one of the disadvantage of this mode of working is the compromise of the work life balance

**Respondent PER0006**



yeah, it is too accessible I think or like for example people are respective of your status so like if you're on a call I've got the other people trying to call me all you got and then there's also that expectation like I'm on a conference like I'm on a team's calls so it shows everyone I mean call, but people will still message so you're thinking well they are expecting me to reply even though they know I'm on a call because they can see that so it is that pressure I suppose all that expectation that regardless you know, you now need to manage your team's messages as well as your emails as well as everything else

**Investigator**

yeah, okay I understand. Do you face any issues with information overload or problems with non-structured communication like your not able to prioritise or it is not in the right channel or something like that

**Respondent PER0006**

I don't think so like people use multi method to communicate you I think the only thing I struggle with is you have an email about something you have a teams call about something you have a teams message about something and sometimes you even have a WhatsApp so sometimes it's quite difficult to make sure that you've ticked all of them off and even though it's the same thing so that can be too much I think you know that the joy of sharing screens on teams is really good but I have noticed you know you can tell that you lose some participants if you put too much information on their because where you would do things face to face and break things down and make it more manageable and people would ask free flowing questions and there'd be natural breaks, discuss things there is not in this world so it can be a lot of information to process it once and people don't naturally want to query things on calls I think they think that they stick out a lot more and so I think there's probably a problem with digesting the information and people feeling comfortable to interrupt a large teams meeting say actually what you mean by that I don't understand which you would do face to face

**Investigator**

well, thank you very much Respondent PER0006 yeah, I just have one more question so you told that you are using WhatsApp business, so how do you configure that like is it through your Wincanton, ID or is it through your personal credentials

**Respondent PER0006**

so, it's on my Wincanton phone which I don't believe is restricted so I can download any apps, so I have access to WhatsApp business and normal WhatsApp as well so, it is just by your number by default so there's no sort of like checking re logging in or anything like that the only thing that we have locked down on our phones is our emails which every so often we have to re log back in to make sure and that it is correct I think it's every two weeks or so at the top of my head I have to re log back in to get my emails but I don't have to do anything with WhatsApp just unlock my phone and then straight on

**Investigator**

so that means even if it is WhatsApp business, it doesn't have any direct link to the organisation only link is that you're using a phone number but even if was your personal number you could use for WhatsApp business

**Respondent PER0006**

yes, exactly yeah there's no integration or link with anything to do with the company

**Investigator**

ok, get easy vitally use within the organization

**Respondent PER0006**

I would say so yeah, I think teams is slightly, so before we got into teams with Covid because it's relatively new for us we use WhatsApp all the time and so it was if someone would say you know can you give us an update and we would you know give (something) 45:20 updates

etcetera whether now everything is more used on teams so it is still used but less I can see that slowly being replaced with teams groups instead of WhatsApp groups

**Investigator**

Okay, and when the WhatsApp group is used, is it that all employees are using the WhatsApp business version or is it a mix

**Respondent PER0006**

I would say mix because it's not locked down at all so I've got group on non-WhatsApp business and one's on WhatsApp business and you can get on both so I think it's mixed a mixed bag between the two of them none of it is all people adding them based on their phone number so you add them to come in and none of its locked down or controlled I would say

**Investigator**

Respondent PER0006, I have come to the end of my questions do you have any questions for me

**Respondent PER0006**

No not at all, thank you for your time it was all quite interesting actually I've not thought about sharing information on teams, so I'll definitely look at that another way but no questions from me thank you

## Appendix 9 ESN Conversations Sample

- i. This section presents extracts from the group conversations of CraftTex manufacturing with an external supplier.

### Conv 1

[1:50 PM, 3/28/2021] Graeme: Good Morning Dejan

[1:50 PM, 3/28/2021] Graeme: This is Graeme

[1:50 PM, 3/28/2021] Graeme: Manager, Procurement

[1:50 PM, 3/28/2021] Graeme: ECT Manufacturing Limited

[2:00 PM, 3/28/2021] Dejan: Hello Mork

[2:01 PM, 3/28/2021] Dejan: Apologies Graeme.

Image shared

[2:17 PM, 3/28/2021] Graeme: Looking for this

[2:17 PM, 3/28/2021] Graeme: the tick Graeme is preferred

[2:18 PM, 3/28/2021] Graeme: and looking for 24L and 28L eyelets

[2:18 PM, 3/28/2021] Graeme: either curved or flat

[2:18 PM, 3/28/2021] Graeme: You can engage us with your China team via WeChat

[2:19 PM, 3/28/2021] Graeme: Then our team will communicate

[2:21 PM, 3/28/2021] Dejan: Leave it with me...I'm back at work tomorrow so will work on it then.

[2:21 PM, 3/28/2021] Graeme: ok

### Conv 2

[11:50 AM, 3/29/2021] Graeme: Good Morning

[11:51 AM, 3/29/2021] Graeme: We need 28L eyelet

[12:10 PM, 3/29/2021] Dejan: Is that outer diameter or inner hole diameter? Do you want gunmetal colour?

[12:11 PM, 3/29/2021] Graeme: 28L Gun Metal Eyelet (With Double Plastic Washer)

[12:55 PM, 3/29/2021] Dejan: Is 28L the outer size or the hole size?

[1:06 PM, 3/29/2021] Graeme: 28L is outer size

[1:06 PM, 3/29/2021] Dejan: Thanks

[1:37 PM, 3/29/2021] Dejan: OD 1.7cm , ID 1.0cm

[1:38 PM, 3/29/2021] Dejan: This can be supplied with 2 plastic washers also

[1:38 PM, 3/29/2021] Graeme: ok

[1:40 PM, 3/29/2021] Graeme: Can you quote price and send this by our DHL account?

[2:10 PM, 3/29/2021] Dejan: Ref: 80075M 17mm(28L) outer in gunmetal @ US\$0.02/set ex works GZ/China. How many sets do you want sending please?

[2:18 PM, 3/29/2021] Graeme: We take as gross

[2:19 PM, 3/29/2021] Graeme: We need 18 gross

[2:19 PM, 3/29/2021] Graeme: = 2592 set

[2:36 PM, 3/29/2021] Dejan: That's OK. How many samples do you need sending by DHL?

[2:36 PM, 3/29/2021] Graeme: 20 set

[2:37 PM, 3/29/2021] Graeme: What is the name of this slide caliper?

[2:43 PM, 3/29/2021] Graeme: Is this special for eyelet measurement?

[2:43 PM, 3/29/2021] Graeme: then we need one

[3:45 PM, 3/29/2021] Dejan: Do you mean a die-set for attaching the eyelet? if yes I can arrange for one to be sent with samples.

[3:45 PM, 3/29/2021] Dejan: It's not a full tool but it fits into a tool.

[4:18 PM, 3/29/2021] Graeme: Share me the picture if possible

[5:04 PM, 3/29/2021] Dejan: I've ordered 20sets and a die-set from the factory. Hope to share image and send samples tomorrow. Please can you advise your DHL a/c number, Name & address of destination along with a contact name and telephone number. Many thanks.

[5:22 PM, 3/29/2021] Graeme: Sure

[7:52 PM, 3/29/2021] Graeme: Our DHL ACCOUNT

xxxxxxxx

[7:54 PM, 3/29/2021] Graeme: Pls write it as

"Free of cost, value for customs purpose Only."

[7:54 PM, 3/29/2021] Graeme: Name: Graeme

Number: 0xxxxxxxx

[7:59 PM, 3/29/2021] Graeme: Head Office Address:

House # xxx | Lane # x | New XXXX | XXXXXXXX | LocManuf-xxxx, SuppCountry.

Factory Address:

Xxxxx XXXXXX|XXXXXXXX|XXXXXXXXX| LocFactory-xxxx| SuppCountry

[8:30 PM, 3/29/2021] Dejan: Thank you...shall we send the samples to your head office or factory?

[8:35 PM, 3/29/2021] Graeme: You mentioned both

[8:35 PM, 3/29/2021] Graeme: Head office Address and factory address

[8:35 PM, 3/29/2021] Graeme: Mainly it delivered to our head office

[8:36 PM, 3/29/2021] Graeme: Head office sent these to our factory

[8:36 PM, 3/29/2021] Dejan: OK...thank you.

[8:36 PM, 3/29/2021] Graeme: What about metal tipping end?

[9:07 PM, 3/29/2021] Dejan: We normally supply the whole cord cut to length with the metal ends attached.

I am waiting for the factory to advise if they can supply these separately with an attaching tool.

Hopefully I'll have an answer in the morning.

What colour and how many do you need?

[9:33 PM, 3/29/2021] Graeme: I will let you know shortly

### Conv 3

[2:27 PM, 3/30/2021] Dejan: Morning. When we supply the cord with metal ends on the cord is wrapped with a plastic end first before the metal end is clamped on.

[2:58 PM, 3/30/2021] Graeme: Good Morning

[2:58 PM, 3/30/2021] Graeme: I need to check the picture first..then we can easily understand

[5:45 PM, 3/30/2021] Graeme: BTW

[5:45 PM, 3/30/2021] Graeme: What is the position you are holding in the company?

[5:45 PM, 3/30/2021] Graeme: May I see your business card

[7:30 PM, 3/30/2021] Graeme: Sorry dear

[7:30 PM, 3/30/2021] Graeme: Don't be offended

[7:31 PM, 3/30/2021] Graeme: Just I need to know to inform my head

[7:31 PM, 3/30/2021] Dejan: I'm not offended just don't have any business cards to send image of...I'm the Sales Director.

[7:46 PM, 3/30/2021] Graeme: That's ok

[7:47 PM, 3/30/2021] Graeme: So if you have DHL tracking number, kindly inform me

[1:47 AM, 3/31/2021] Dejan: As soon as I receive I will forward to you.

[1:48 AM, 3/31/2021] Dejan: Also, please find image of metal ends we can supply (before attachment). As I mentioned our factory applies plastic ends to the cord before inserting into & clamping the metal ends.

[6:54 AM, 3/31/2021] Graeme: Can you send sample to us

[6:54 AM, 3/31/2021] Graeme: With various length?

[10:51 AM, 3/31/2021] Graeme: metal tipping end length is 20mm

[10:52 AM, 3/31/2021] Graeme: and we need data sheet for eyelet and tipping end

[2:19 PM, 3/31/2021] Dejan: eyelets + die-set and metal tips (2.3cm) + die-set have been sent

[2:31 PM, 3/31/2021] Graeme: Thanks

[2:31 PM, 3/31/2021] Graeme: I will update you after getting approval

[2:31 PM, 3/31/2021] Graeme: after receiving. I will send the feedback to you

[2:32 PM, 3/31/2021] Dejan: Thank you.

[1:36 PM, 4/6/2021] Graeme: Received

[1:38 PM, 4/6/2021] Graeme: Thanks

[1:38 PM, 4/6/2021] Graeme: Good Morning

[1:54 PM, 4/6/2021] Dejan: Let me know if you need anything else.

[5:04 PM, 4/6/2021] Graeme: Good Afternoon

[5:04 PM, 4/6/2021] Graeme: Kindly share your email ID

[5:05 PM, 4/6/2021] Graeme: I will send an email keeping my boss CC

[5:14 PM, 4/6/2021] Dejan: [Dejan.xxxxxx@xxxxxxxxxxxx.co.uk](mailto:Dejan.xxxxxx@xxxxxxxxxxxx.co.uk)

### Conv 4

[9:53 PM, 4/11/2021] Graeme: Hello

[9:54 PM, 4/11/2021] Graeme: Good Evening

[3:16 PM, 4/12/2021] Graeme: Hello

[3:16 PM, 4/12/2021] Graeme: We have a big booking in hand

[3:16 PM, 4/12/2021] Graeme: Need to talk

[3:23 PM, 4/12/2021] Graeme: 1. Inner 1 cm and outer 1.8cm

[3:23 PM, 4/12/2021] Graeme: 2. Inner 1 cm and outer 1.4cm

[3:23 PM, 4/12/2021] Graeme: Gunmetal eyelet  
[3:44 PM, 4/12/2021] Graeme: We need pass report  
[3:44 PM, 4/12/2021] Graeme: Each type  
[3:46 PM, 4/12/2021] Dejan: Hi Graeme, these will be from an **ECT Manufacturing** certified factory.  
[3:52 PM, 4/12/2021] Graeme: ok

## Conv 5

[1:47 PM, 4/13/2021] Graeme: Good Morning  
[1:47 PM, 4/13/2021] Graeme: How are you ?  
[1:54 PM, 4/13/2021] Dejan: Good morning  
[1:54 PM, 4/13/2021] Dejan: I'm good thanks  
[2:11 PM, 4/13/2021] Graeme: Received your email  
[2:11 PM, 4/13/2021] Graeme: The documents that we open **[C]** need to open in favour of **FCS Suppliers**  
[2:11 PM, 4/13/2021] Graeme: Since this is nominated of **SBY Retail**  
[2:12 PM, 4/13/2021] Graeme: I am worried that you are using another factory..  
[2:13 PM, 4/13/2021] Dejan: We use several factories depending on customers requirement/products.  
There is nothing to worry about.  
[2:14 PM, 4/13/2021] Graeme: ok  
[2:14 PM, 4/13/2021] Graeme: Basically in **SuppCountry**, there are many factories  
[2:14 PM, 4/13/2021] Graeme: But we are looking for nominated source of **SBY Retail**  
[2:14 PM, 4/13/2021] Graeme: Since you are nominated of SBY Retail for Adultwear  
[2:14 PM, 4/13/2021] Graeme: We are looking for your product  
[2:15 PM, 4/13/2021] Dejan: Yes we are a nominated supplier to **SBY Retail's**.  
[2:15 PM, 4/13/2021] Graeme: But 24L have big order  
[2:15 PM, 4/13/2021] Graeme: Don't you have any other option?  
[2:18 PM, 4/13/2021] Dejan: 24L is equivalent of 15mm. Let me check what the largest inner size we can get with a 15mm outer.

[2:19 PM, 4/13/2021] Graeme: ok..  
[2:19 PM, 4/13/2021] Graeme: And this should be same color of the sample you sent  
[2:20 PM, 4/13/2021] Graeme: Can you send sample again of these two three options again?  
[2:20 PM, 4/13/2021] Dejan: It will be  
[2:20 PM, 4/13/2021] Graeme: Since this is a new order, I will take approval from merchant  
[2:20 PM, 4/13/2021] Graeme: And will place final order  
[2:27 PM, 4/13/2021] Graeme: 144 set we declare as 1 gross  
[2:27 PM, 4/13/2021] Graeme: So if you mention price in Gross, it will good  
[2:27 PM, 4/13/2021] Graeme: set is no issue also  
[2:27 PM, 4/13/2021] Dejan: OK  
[2:28 PM, 4/13/2021] Graeme: But other supplier **[B]** is in gross..  
[2:28 PM, 4/13/2021] Graeme: that's why gross is better  
[2:28 PM, 4/13/2021] Graeme: After order confirmation, how many days it will take in production?  
[2:28 PM, 4/13/2021] Dejan: I can quote in gross.  
[2:28 PM, 4/13/2021] Dejan: Production is approx 2 weeks.  
[2:28 PM, 4/13/2021] Graeme: And we need data sheet  
[2:29 PM, 4/13/2021] Graeme: we will send you fabric  
[2:29 PM, 4/13/2021] Graeme: and data sheet need in return by email  
[2:29 PM, 4/13/2021] Dejan: OK  
[2:29 PM, 4/13/2021] Graeme: There is another requirement of metal tipping end  
[2:30 PM, 4/13/2021] Graeme: If I share with you the size, diameter and design, can you check?  
[2:30 PM, 4/13/2021] Dejan: Will the eyelet just need to go though 1 layer of fabric?  
[2:30 PM, 4/13/2021] Dejan: Certainly  
[2:31 PM, 4/13/2021] Graeme: it will be use in hoodie  
[2:31 PM, 4/13/2021] Graeme: Eyelet will be use in hoodie  
[2:32 PM, 4/13/2021] Dejan: So you will need to send a mock up piece for us to check the overall thickness of the fabric panel.  
[2:32 PM, 4/13/2021] Graeme: is it necessary for each order?

[2:33 PM, 4/13/2021] Dejan: I've just looked at my hoodie and it looks like the eyelet goes through 1 layer of fabric only

[2:33 PM, 4/13/2021] Graeme: when you will need it?

[2:33 PM, 4/13/2021] Graeme: We will share with you the mockup , if need

[2:35 PM, 4/13/2021] Dejan: if it is made like this then it is one layer of fabric only

[2:35 PM, 4/13/2021] Graeme: yes..this is like this

[2:36 PM, 4/13/2021] Dejan: OK...we just need a piece of fabric then to send to factory. They will then give us the data sheets

[2:36 PM, 4/13/2021] Graeme: ok

[2:36 PM, 4/13/2021] Graeme: But I am really expecting you will give us 24L

[2:37 PM, 4/13/2021] Graeme: the order is doing round the year

[2:38 PM, 4/13/2021] Dejan: Yes I have asked for 15mm outer (24L) and the nearest to 10mm hole

[2:38 PM, 4/13/2021] Dejan: Waiting for factory to confirm

[2:38 PM, 4/13/2021] Graeme: ok

## Conv 6

[3:40 PM, 4/15/2021] Graeme: Good Morning

[3:41 PM, 4/15/2021] Graeme: We need this metal tipping items

[6:19 PM, 4/15/2021] Dejan: Hi Graeme, this looks the same as the sample I sent you (just in silver).

[8:34 PM, 4/15/2021] Graeme: Yes

[8:35 PM, 4/15/2021] Dejan: On the eyelets have you managed to send the fabrics yet please?

[8:35 PM, 4/15/2021] Graeme: No..I will send those hopefully on Saturday

[8:48 PM, 4/15/2021] Graeme: But we want plain body of metal tipping end

[8:48 PM, 4/15/2021] Graeme: No design

[8:48 PM, 4/15/2021] Graeme: 20mm length

[8:53 PM, 4/15/2021] Dejan: Let me check again

[2:52 PM, 4/16/2021] Graeme: Good Morning

[2:52 PM, 4/16/2021] Graeme: Can you send 24L, 28L eyelet and metal tipping end sample today?

[7:27 PM, 4/19/2021] Graeme: Good Morning

[7:27 PM, 4/19/2021] Graeme: How are you ?

[7:27 PM, 4/19/2021] Graeme: Are you here?

[7:30 PM, 4/19/2021] Dejan: I am

[7:33 PM, 4/19/2021] Dejan: How are you?

[7:34 PM, 4/19/2021] Graeme: I am fine

[7:34 PM, 4/19/2021] Graeme: The think is we will send sample tomorrow

[7:35 PM, 4/19/2021] Graeme: Meanwhile if you send the sample, we can take our Merchants approval

[7:35 PM, 4/19/2021] Graeme: Else it will be late

[7:35 PM, 4/19/2021] Graeme: That's why I am worried

[7:35 PM, 4/19/2021] Graeme: 28L order is confirmed

[7:35 PM, 4/19/2021] Graeme: 24L is yet to confirm

[7:36 PM, 4/19/2021] Dejan: I have replied to you about the cord tips by e-mail and replied to Henry about the 28L & 24L eyelets.

[7:36 PM, 4/19/2021] Dejan: I have received the 28L booking. We might have correct colour to send...is that OK?

[7:39 PM, 4/19/2021] Graeme: Yes

[7:39 PM, 4/19/2021] Graeme: Gunmetal

[7:39 PM, 4/19/2021] Graeme: 28L order confirmed

[7:39 PM, 4/19/2021] Graeme: So your previous sample was ok

[7:39 PM, 4/19/2021] Graeme: But we need exact size

[7:40 PM, 4/19/2021] Graeme: Previous sample color and finish are ok

[7:40 PM, 4/19/2021] Graeme: Size was 1mm less

[7:40 PM, 4/19/2021] Dejan: I will arrange to send 28L gunmetal samples...need to check with factory.

[7:41 PM, 4/19/2021] Graeme: After getting your sample, we will take signature from Merchant and will confirm you and will send Fabric by DHL

[7:42 PM, 4/19/2021] Graeme: How many days it will take to ready the full quantity?

[7:42 PM, 4/19/2021] Dejan: I need to check and advise tomorrow.

[7:45 PM, 4/19/2021] Graeme: Please

[7:45 PM, 4/19/2021] Graeme: Just let me know the total weight of ordered quantity and how many days it will take to complete the Production

ii. This section presents the group conversations of Exela Services with its outsourcing partner.

**SET 1 Conversations**

**Conv 1**

**Sascha** 9:10 AM

@Victor - this one <https://www.amazon.co.uk/dp/XXXXXXXXXX>.. we have around 1200 in stock..and our sales are very bad for the last 6 months, around 25 p/m.. may be we should give some coupons or something? i think we have some room for price adjustments.. can enable ads also

we have around 1500 boxes.. and FBA is already excess

[Screenshot 2021-10-29 at 1.41.10 PM.png](#)

**Sam** 9:37 AM

was added to Group5 by Victor.

**Victor** 9:48 AM

Sam also added to this group

**Sam** 9:47 AM



=====

this box was splitted from the parent and we have reattached it , so traffic will come automatically by the other variations. So will wait and green is festive color sales will come

Sascha

@Victor - this one <https://www.amazon.co.uk/dp/XXXXXXXXXX>.. we have around 1200 in stock..and our sales are very bad for the last 6 months, around 25 p/m.. may be we should give some coupons or something? i think we have some room for price adjustments.. can enable ads also

[Posted in Group5 | Oct 29th | View message](#)

**Sascha** 10:10 AM

Ok. 👍 hope it will get cleared.. will have to keep an eye, since its already excess..

=====

Same case with - <https://www.amazon.co.uk/dp/XXXXXXXXXX?th=1> we have 101 in FBA and thats also excess... our sales are around 10 p/m only.. so it will take a long time to clear, atleast a few months?

@Victor @Sam

[Screenshot 2021-10-29 at 2.41.57 PM.png](#)

May be we should have more of SFP for these seasonal boxes with a few boxes in FBA for ranking?

**Sam** 10:22 AM

fba stock for the above is from last valentine's day time, that time navy was pos i think and Navy in above listing have more traffic as wellll, so cream sales goes down after navy restock. will see till nov 1st week if sales still less for this we can take it back to save storage fee (edited)

i am wondering that why its buybox showing 36.62% , no other sellers in that 😊

**Will** 10:50 AM

Did we add stock here...? its still 0 in SFP @Victor (edited)

Victor

sfp stock added to 100

[Posted in Group5 | Oct 18th | View message](#)

[image.png](#)

or in 10 days we cleared 100?

**Victor** 10:54 AM

we have removed sfp because for sfp the delivery date showing as monday and for fba its next day so for weekends we can give priority to fba

**Will** 10:55 AM

ok right

**Sascha** 11:50 AM

Oh ok.. yes, its in excess storage, may be we should take back or try to sell it off.. we have months to Valentines now..

**Sam**

fba stock for the above is from last valentines day time, that time navy was pos i think and Navy in above listing have more traffic aswellll, so cream sales goes down after navy



restock. will see till nov 1st week if sales still less for this we can take it back to save storage fee

Posted in Group5 | Oct 29th | View message

Sam 12:05 PM

will wait few more, days hopefully it will sell out

thanks

12:05

Saturday, October 30th

Sascha 8:53 AM

Ok. 👍

8:53

=====

## Conv 2

Adam 10:36 AM

These are high cost ones.. but still post ur ideas frequently like this... also post in the general thread in [twist](#) as the history here will disappear in 30 days

👉 [Ld PxxxxxxgXxxx](#)

[Luxury Gift Paper Box Collection](#)

LD Packaging is a wholesale supplier of printed and luxury gift boxes in UK. Visit us and explore personalised range of gift bags and folding gift boxes at cheap rates.

1 reply

17 days agoView thread

Adam 10:36 AM

@Sam these are costly ones but cheaper than Emart ones i think.. can we give a try?

10:38

`couple of ones set of two eduthitt multi list cheyyan patumonn nokk..`

10:40

Account details: [sales@xxxxxx.com](mailto:sales@xxxxxx.com) XxxxXxxx (Password)

10:40

[image.png](#)

we took this samples long back and all were good

10:41

Will 10:44 AM

replied to a thread:These are high cost ones.. but still post ur ideas frequently like this... also post in the general thread in [twist](#) as the history here will disappear in 30 days

Will do..

Will 10:55 AM

<https://www.xxxxxxxxxxxxxxxxx.co.uk/christmas/christmas-gift-packaging/gift-boxes/xxxxxxxxxxxx.html>

10:57

<https://xxxxxx.co.uk/white%20gift%20boxes.html>

[xxxxxx.co.uk](#)

[White Gift Boxes UK, Gift boxes UK, Gift Presentation boxes,](#)

WHITE gift boxes, presentations boxes square and rectangle 16 Sizes available

Sam 11:02 AM

yes we took last time, will see for a multilisting

Adam

we took this samples long back and all were good

Posted in Group5 | Oct 30th | View message

Will 11:07 AM

<https://xxxx.co.uk/gift-packaging>

[xxx.co.uk](#)

[Wholesale Gift Packaging Supplier | Gift & Hamper Packaging | WBC](#)

Take a look at our wholesale gift packaging, our extensive range includes wicker baskets, gift boxes, gift bags and gift trays. No minimum order and free delivery over £150\*.

11:08

The above we havnt checked out I guess @Adam

11:08

wicker boxes

Will 11:14 AM

<https://thedxxxxxxxxcompany.co.uk/collections/xxxxxx-boxes>

[The Dorset Box Company](#)

[Kraft Boxes](#)

Presentation boxes and gift boxes, manufactured and ready to go from our Dorset factory. Hand-finished boxes, made from sustainable materials and 100% NOT imported. A selection of quality paper over board boxes, inspired by the place we call home. Bespoke sizes and foil print personalisation - no problem.

<https://xxxxxxxxxxxxxxxx.co.uk/collections/kraft-boxes>

11:18

<https://www.eapollowholesale.co.uk/aroma/candles/birthday-candles.html>

[eapollowholesale.co.uk](#)

[Birthday Candles - Candles - Aroma | UK wholesaler and supplier](#)

Apollo Wholesale established in 1989. UK wholesaler, cash & carry, and supplier of Makeup, Beauty, Cosmetics, Gifts, Incense, Smoking, Fashion Accessories.

Monday, November 1st

Sam 6:10 AM

=====

6:10

<https://xxxxxxxxxxxx.co.uk/xxxxxxxx/xxxxxxxx-gift-tin-collection/products/ip?variant=xxxxxxxx>

 Ld PackagingMall

### Rectangular Step Lid Christmas Gifts Storage Tin

\*Free Design For Custom This Item Item ref. B-IP-01 L222mm xW161mm xH28mm Aluminium tin/Tinplate Permanent print Matt finish Tin Boxes are available in many shapes and sizes and are available with many features such as various printing ink combinations, metallic inks, many finishes (gloss, matte, crackle, brushed, s

6:10

<https://ldpackaging.co.uk/collections/christmas-gift-tin-collection>

 Ld PackagingMall

### Printed Christmas Gift Tins

All you need to give Christmas that extra sparkle. A fantastic range of Christmas gift tins!

6:11

tin boxes we can give a try, for multilisting letterbox sized tins aswell

6:11

may be we can make some rank these months and generic can be used as variations

**Will** 11:07 AM

<https://www.amazon.co.uk/dp/XXXXXXXXXX> this is a non moving item. Stock is 13 and est storage cost is more than the sales price

**Sam** 11:08 AM

i have assigned it to discount offer

11:09



**Will** 11:09 AM

Good

## Conv 3

**Will** 11:25 AM

@Victor Pls share `sfp` returns data for October

**Will** 12:10 PM

<https://www.amazon.co.uk/dp/XXXXXXXXXX> - This is not moving much and is also in excess inv. Currently 41 nos are in `amz`. In 12 months only 254 units are sold -

**Adam** 1:08 PM

better we clear and discontinue asap this

1:09

@Will pls followup this in a local excel and see whats the status after 10 days

Will

<https://www.amazon.co.uk/dp/XXXXXXXXXX> this is a non moving item. Stock is 13 and est storage cost is more than the sales price

[Posted in Group5 | Nov 1st | View message](#)

**Will** 1:22 PM

Ok

## SET 2 Conversations

### Conv 1

**Kevin** 11:21 AM

@here, Good morning, afternoon, Can we send 5 Kgs through royal Mail?

We got one order in Abx Company, Let me know plz, thanks

**Sam** 11:43 AM

We have only upto 2kg service with royalmail

11:43

above that they will charge more

**Kevin** 11:44 AM

ok, will you create the Label From DPD Sam? you can find the order in Abx Company or send me the DPD login details plz

**Sam** 11:45 AM

I think dpd cost is also high now, let me check with Adam

**Kevin** 11:50 AM



**Sam** 11:53 AM

Kevin will send with DPD

11:53

I will pass label

**Adam** 12:04 PM

wait

12:05

DPD will charge collection charge as u mentioned

12:05

[parcel2go.com](https://parcel2go.com)

12:05

Kevin, please try to send via this

Adam

[parcel2go.com](https://parcel2go.com)

[Posted in Group2 | Sep 7th | View message](#)

12:05

see the charges

**Kevin** 1:50 PM

Can i select the Parcelnet on Amazon to confirm the Dispatch while created the shipping label through Parcel2go Adam?

**Adam** 1:51 PM

if we use DPD then need to mention DPD and give its tracking number manually as of now

**Kevin** 1:52 PM  
booked through Parcel2Go , so selecting other and entering the name, and entering the Tracking number at the moment Adam

**Adam** 1:53 PM  
thats fine

**Kevin** 1:53 PM  
will check the other options for these items

**Adam** 1:53 PM  
which service and whats the cost

**Kevin** 1:54 PM  
it's standard, cost 4.7

**Adam** 1:54 PM  
including collection?

**Kevin** 1:54 PM  
no, just drop off today

**Adam** 1:55 PM  
ok

<https://www.myhermes.co.uk/business-accounts> 1:55

 **myhermes.co.uk**  
**Business Parcel Delivery | Small & Large Business Courier | Hermes**  
Looking to build your business? Why not see if you qualify for one of our business accounts here at Hermes, thus saving you time and reducing your costs.

hermes take one online account when you have time.. we can use that as well.. cheaper and they collect as well 1:55

**Kevin** 1:55 PM  
Yes, created account, but didn't check today

**Adam** 1:56 PM  
ok

**Kevin** 1:56 PM  
One more doubt Adam, shall i use the unit 16 Address for collections like these in future? 1:57

Like Hermes, DPD

**Adam** 2:00 PM  
yes in parceltogo app and myherms pls give that 2:00

fulfillment /pickup address

## Conv 2

Monday, October 4th

**Kevin** 9:26 AM  
Good morning,

**Kevin** 9:26 AM  
Good morning,  
Sam & Vishnu, Do we have any DPD parcels to send today? We need to send 1 order from Abx Company. Please let me know, thanks

**Sam** 9:29 AM  
yes will arrange collection 9:29

we can send spices packed for DPD 9:29

4 box will be there with 18kg

**Kevin** 9:30 AM  
ok Sam, plz check the order from Abx Company, it's rice Bag, can mention 10 Kgs

**Sam** 9:30 AM  
I just saw that 9:31

will book collection

**Kevin** 9:31 AM  
ok thanks Sam

**Sam** 10:57 AM  
done

Sam  
will book collection  
[Posted in Group2](#) | [Oct 4th](#) | [View message](#)

## Conv 3

**Kevin** 11:32 AM  
ok , please save the Label in Dropbox Sam

**Sam** 11:32 AM  
ok

**Kevin** 11:35 AM  
If any SNL items to Send in Abx Company, still we can send as Bulk with single Label, because we haven't got any email confirmation to send as individual items should be Labeled.

**Sam** 11:40 AM  
saved in dropbox Kevin

Kevin  
ok , please save the Label in Dropbox Sam  
[Posted in Group2](#) | [Oct 4th](#) | [View message](#)