The adoption of servitization strategies by UK based manufacturers

Abstract

Almost all manufacturers offer services but some use these as the basis for their competitive strategy. This is a growing area of interest amongst practitioners, policy makers and academics, yet where little is known about the adoption of servitization by UK manufacturers. In this paper we present a survey that has explored the extent, motivations, challenges and successes of servitization within the B2B sector. The findings indicate, for example, that many manufacturers are succeeding with their service strategies, that they are attracted to these as a source of customer focus and revenue growth, and that such strategies require less organisational change than might be expected. Although the findings from the survey should be treated as preliminary, and further work is needed to confirm their reliability and insight, they indicate that servitization is proving to be a powerful competitive weapon for many companies.

1. INTRODUCTION

Servitization deals with the shift by manufacturers from selling products coupled with a few essential services (e.g.: training, spares, etc), to using services as the basis of their competitive strategy. Since this early work by Vandermerwe & Rada 1988, the most definitive contributions have come from the USA followed by Western Europe (see Baines et al, 2009a). For example, Wise and Baumgartner (1999) provide evidence of the value for manufacturers to "go downstream towards the customer" to achieve additional revenue generation, and Oliva & Kallenberg (2003) propose methods for the delivery of services together with identifying potential barriers to success. Work in Europe has been centred on PSS (see Baines et al., 2007). PSS originated in the late 1990s in Northern Europe and tends to focus on responding to environmental pressures. For example, Tukker (2004) describes how PSS solutions have the potential for decoupling environmental pressure from economic growth through their focus on asset use rather than on asset ownership. A key barrier here is the cultural shift necessary by consumers to place value on 'having a need met', as opposed to owning a product (Mont, 2000; Mont, 2001; Wong, 2004).

Closely related to servitization and PSS are the concepts of service marketing, service operations and services science (see Baines et al, 2009c). They all deal with the wider configuration and delivery of the service offering. For example services marketing scholars argue that the marketing of goods and services is different, as services are intangible, heterogeneous, inseparable and perishable (Fisk et al., 1993). More recently marketing services literature has moved to a "Service-Dominant Logic" (SDL), in which the customer is considered to act as co-creator of value with the firm and goods act only as vehicles for the delivery of services (Vargo & Lusch, 2004). Service operations research deals with the delivery of services, such as the 'Service Factory' concept (Chase & Garvin, 1989). Services Science originated in the IT sector and is a relatively new inter-disciplinary concept for services. It is the study of service systems and the co-creation of value within complex constellations of integrated resources (Chesborough & Spohrer, 2006). It draws on ideas from a number of existing disciplines with the aim of integrating these into a coherent science of service.

Since the term servitization was first coined in 1988 there has been a growing output of articles and papers by authors from Operations, Services, Marketing and Business fields. Service led competitive strategy is now an area of growing interest for academia, business and governments. For example, the

UK government's manufacturing strategy (Hewitt, 2002; 4) encourages manufacturers to move up the value chain and to reap the benefits of high-skilled, knowledge-intensive manufacturing operations. There is however little evidence about the adoption of servitization in the UK. Most investigations have been case studies of a few larger manufacturers (eg; Miller, 2002; Davis et al, 2004; 6; Baines et al, 2009c). One exception is the work of Neely (2008), which analyses publicly available company data, and raises concerns over the profitability and risks of servitization strategies. To complement such studies, further work is needed that engages with organisations directly and questions the extent, form and motivations of the service-led competitive strategies. Therefore, this paper addresses such questions via a survey of UK manufacturers in the business to business (B2B) sector.

This paper is structured to first summarise the research design and so construct questions to guide the survey work. Questionnaire design, sample selection, and administration are then presented. The results of the survey have then been synthesised into a set of twenty preliminary findings concerning the current status of servitization within UK based manufacturers. Finally, a short discussion and conclusion are presented.

2. RESEARCH METHOD

2.1 Research motivation, aim and objectives

As highlighted earlier, there is very little empirical evidence regarding the growth of services as the basis of competitive strategy for UK based manufacturers. Similarly, little is known about business success through service adoption, motives behind service adoption both from the perspective of manufactures and customers, and the challenges that occur when organising the efficient and effective delivery of services. The aim, therefore, of the survey reported in this paper has been to gain a clearer understanding of the penetration of service-led competitive strategies in UK manufacturing companies. The target has been manufacturing companies in the business to business (B2B) sector. To realise this aim the following objectives have been addressed:

- Design survey questions informed by existing research reported in literature.
- Pilot and refine questionnaire, scope study, and target manufacturers.
- Execute survey, compile results, document and present executive summary.
- Gather further data, extend analysis, publish and present complete findings.

These objectives have been realised through a research programme that has included working with an international team to inform questions, piloting and refining these through close collaboration with three industrial partners, and then self administering a professional survey of carefully targeted manufacturers. Given below, is a summary of the research questions, questionnaire design, sample selection, administration, and results gained.

2.2 Formation of guiding research questions

This section reflects on our current knowledge of servitization and establishes a set of questions that have been used to guide this study.

There are a variety of forms of servitization. The literature identifies positioning along a 'product-service continuum' that ranges from traditional manufacturers merely offering services as add-ons to their products, through to service provision where services are the main part of their value creation process (Tukker, 2004). Gebauer et al. (2008), consider that companies have to look at their unique opportunities and challenges at different levels of 'service infusion' to decide the appropriate positioning. This is envisioned as a dynamic process, with companies redefining their position over time and potentially moving towards increasing dominance of their service offerings. This prompts the first question, which is to understand the types of service strategies that are popular amongst UK manufacturers, and how they might be influenced by markets and customers. We have captured this as:

Question 1: *"What types of service strategies are being followed by UK manufacturing companies?"*

Manufacturing companies have been selling services for some time. Conventionally, the tendency has been for managers to view services as a necessary evil (Wise and Baumgartner, 1999; Gebauer & Friedli, 2005), where the main part of total value creation stemmed from physical goods. Over recent times, there has been a dramatic change in the way services are produced and marketed by manufacturing companies. Services are now fundamental value-added activities (e.g. Vandermerwe & Rada, 1988; Quinn et al., 1990; Gebauer et al., 2006). Understanding the extent to which service strategies have matured is a second key question, which we have captured as:

Question 2: "*What is the maturity of service adoption within UK manufacturing companies?"*

A shift to competing through services suggests that the form of the relationship between the provider and consumer is also changing. Servitization emphasises the 'sale of use' rather than the 'sale of product'. The customer pays for using an asset, rather than its purchase, and so reduces risks and costs traditionally associated with ownership. Here, servitization combines both a transactional and a relationship business models and, most importantly, revenue, profits and cash flow arise mainly from the relationship aspects of this model. Value becomes more associated with asset use, rather than sale or repair, and so the appropriate measures can be subtly different (Baines et al, 2009c). How we might understand, more thoroughly, the implication of this shift in business model is captured in the following question:

Question 3: "*What agreements, risks and performance measures are being adopted by service providers?"*

Commonly the literature suggests three sets of factors that drive manufacturers to adopt a servitization strategy; namely, financial, strategic (competitive advantage) and marketing (e.g. Mathieu, 2001, Oliva and Kallenberg, 2003; Gebauer and Fleisch, 2007). The main financial drivers often highlighted in the literature are the potential for higher profit margin and stability of income (Gebauer et al., 2005). This is especially the case for manufacturers with high installed product bases (e.g. aerospace, locomotives, and automotives). Here, Wise and Baumgartner (1999) estimate that service revenues can be one or two orders of magnitude greater than new product sales. Also, service elements offer to differentiate manufacturing offerings and so provide important competitive opportunities through closer relationships with the customer (e.g. Vandermerwe & Rada, 1988; Mathieu, 2001; Gebauer et al., 2006). This prompts the question:

Question 4: *"What motivates UK manufacturers to offer service strategies?"*

A key feature of servitization strategies appears to be a strong customer centricity. Customers are not just provided with products but broader, more tailored solutions that support the customer's processes (Mathieu, 2001; Miller et al, 2002; Davies, 2004). They can then focus effort on their own core competences (Quinn, 1990). Improved operating efficiency and reduced cost can follow. This prompts the question:

Question 5: *"What motivates UK manufacturers' customers to adopt service offerings?"*

Coupled with questions of motivation is an understanding of how service strategies and their associated service offerings are designed in practice. The existing literature only offers limited insights into these topics and how such strategies come about within an organisation (Baines et al, 2009). Slack (2005) for example argues that the design of services is significantly different to the design of products since, by their nature, services are 'fuzzy' and difficult to define. In particular, risk needs to be explicitly considered in the design process as undertaking activities previously performed by customers can present new challenges. Communication strategies also need to be considered that value proposition to the customer are important in the design of service provision (Mathieu, 2001), together with client partnering and expanded competences (Windahl et al, 2004). The PSS literature offers some tools and techniques for service design. For example, the MEPSS Handbook provides a methodology and toolkit for developing a PSS model. There is however little empirical evidence about the uptake of these techniques by manufacturers. We therefore ask;

Question 6: *"What processes are being used by UK manufacturers to form service strategy offerings?*

The adoption of a servitization strategy seems to raise significant cultural and corporate challenges. These impact the structure and culture of the organisation (Oliva & Kallenberg, 2003, Brax, 2005) and organisational processes (Gebauer and Fleisch, 2007). There seem to be particular challenges in defining the organisation structure necessary to support the delivery of a combination of products and services (Wise & Baumgartner, 1999) and a shift of corporate mindset is necessary to the take on services. This leads us to question:

Question 7: *"What organisational restructuring is needed to deliver effective service strategies?"*

Finally, one of the most frequent questions asked in practice is the commercial benefits of a competitive strategy. A number of authors have investigated, using case study work, companies who have moved to exploit the downstream opportunities offered by services. (e.g. Wise & Baumgartner, 1999; Mont, 2001; Miller et al, 2002; Davies, 2004; 2006). Successful examples reported by Wise & Baumgartner (1999) include; *embedded services* which allow traditional downstream services to be built into the product (e.g. Honeywell's AIMS for in-flight monitoring of engine systems); *comprehensive services* such as those offered by GE around its product markets (e.g. GE Capital's financing activities); *integrated solutions* where companies look beyond their traditional product base to assess the overall needs of customers (e.g. Nokia's move to network-infrastructure solutions) and *distribution control* as used by Coca-Cola to acquire shelf space in its high volume low margin supermarket segment. Whilst these examples reported above are reassuring, there is little reported evidence of the more general successes across a broader range of manufacturing organisations. Hence, the final question of our survey is:

Question 8: "What evidence is there of success through service strategy adoption by UK manufacturers?"

2.3 Questionnaire design

The questionnaire was constructed to test the questions and ideas that reflect our current knowledge of servitization. Unfortunately, although coined as long ago as 1988, the term servitization is not a commonly used terminology in everyday business language. It is reasonable to assume that practitioners might not be familiar with the term or understand its meaning. Therefore, questions were carefully phrased and the questionnaire was piloted with two manufacturing companies to help us to find the language that would be understandable by our target recipients. The questions were predominantly closed-ended, but were also accompanied with comment boxes. The overall questionnaire is given in Appendix 1. The principal sections are the; company and product business; service offering of the company, service strategy and its origins, challenges encountered, and the structure of the service organisation. The closing section asks the respondent for their personal view about the future of their service business.

2.4 Target companies

The surveys target companies that are UK based manufacturers, in the business to business (B2B) sector with a turnover in excess of £10M. Companies were identified through the FAME (Financial Analysis Made Easy) database. The Selection criteria resulted in the survey predominantly focusing on companies involved in the production of machinery (26% of target companies), mechanical equipment (26%), and electronic/electrical equipment (32%). This breakdown is illustrated in Figure 1.

2.5 Survey administration and response and analysis

The survey was based on a self-administered questionnaire typically addressed to the Managing Directors of the targeting companies. Both a paper copy and on-line questionnaire were constructed, and these were sent out in early November 2008, with responses collected over the following eight week period.

The original target sample was just over five hundred companies and we received fifty five completed questionnaires. All these responses were complete and comprehensive and returned from senior executives (e.g. Managing Director, Operations Director, Engineering Director). Using the formula from the American Association of Public Opinion Poll Research, the overall response rate was 11%. Respondents to the questionnaire typically have the characteristics of:

- Manufacturers of Electronic / Electro-Mechanical equipment
- Annual turnover of £20 - 60M for the responding operating business unit
- Having customer / end users who are predominantly large enterprises (Industrial organisations or Government agencies)
- Having a share of their chosen market of 20% - 40%: up to 10 main competitors; less than 1000 main customers
- Having an installed product base of a few hundred to a thousand units
- Having implemented ‘service strategies’ for > 3 years

The breakdown of respondents by sector is shown in figure 2. Analysis has then been carried out by calculating the popular response to each question. Here, we are mindful to treat our findings cautiously, requiring further data and analysis, though sufficient at this stage to reliably indicate the direction and magnitude of industrial trends in the UK.

3. KEY FINDINGS EMERGING FROM SURVEY RESULTS

3.1 Service strategy offerings

The survey set out to understand the types of services that manufacturers are offering, and ideally to explore any relationship to markets and competitive strategies. Figure 3 illustrates the range of services identified through the survey and their popularity. Here, the services offered range from training, delivery (logistics), spares, repair, helpdesks, installation, support labour, parts remanufacture, through to advice, monitoring, and finance. Almost all companies offer training, spares and repairs on their products, yet few provide the more sophisticated services such as preventative maintenance and monitoring. This distribution may imply the differing market value that can be attributed to service offerings. Those popular services are likely to be commoditised and have a limited impact on winning new business. Such services may be order-qualifying (see Hill, 2000) where the manufacturer will lose orders if they are not provided. These seem to include training, delivery, spares, repairs and helpdesks, and we have termed these ‘protective’ services. By contrast, there are services that are forming the basis of winning new business. These ‘proactive’ services are likely to be distinctive and include systems integration, condition monitoring, consulting, and financing. The precise role that a particular service takes in a competitive strategy is likely to be company specific and may vary over time. The term ‘transitional’ can be used for those services whose competitive role is not distinctive and may be in the process of changing. This provides a useful insight as to what are likely to be protective and proactive services within the UK B2B Sector.

Finding 1. Protective services are offered by almost all manufacturers (95%) and typically include training, helpdesk and spares

Finding 2. Proactive services are offered by the minority of manufacturers (25%) and typically include systems integration, condition monitoring, and preventive maintenance.

3.2 Maturity of service strategies

A number of questions were necessary to understand the maturity of service offerings, and to explore whether this may be influenced by company type, principal manufactured product(s), and customer base. The results indicate that most respondents have mature or quite developed service strategies. This claim initially appears unrealistic, suggesting that servitization in the UK is both extensive and adopted relatively painlessly. Key to understanding this is the data provided in Figure 3; companies are offering many forms of services but only a small portion of these are proactive. These proactive services, such as systems integration, are much more sophisticated than protective services such as training or delivery. It is unlikely that companies are equally mature in delivering both forms of service, and that our question was insufficient to illicit such differences. Future attempts to survey servitization should note this, and maybe focus on proactive services. This leads us to find:

Finding 3. Most manufacturers (58%) consider themselves to have well developed service strategies, though sophisticated services strategies (being less popular) are unlikely to be as mature.

3.3 Service *agreement undertakings, risks and performance*

The survey sought to understand the types of commercial agreements between manufacturers and their customers, along with associated risks and performance measures. Although outright purchase of the product by the customer was the norm with half our respondents, the remainder indicated that ‘pay for product use only’ agreements were sometimes entered into. The majority of service agreements included contractual penalties (e.g. revenue losses) for poor performance. Only half of the respondents undertook risks previously held by their customers, and amongst the respondents taking these risks, only a quarter of them pro-actively mitigated these using combinations of ‘liability limitation’, ‘product field data collection’, and ‘technology investment’. Almost all companies adopted measures to demonstrate the value of services delivered to customers and in the majority of cases this was achieved either by showing ‘improvements in product performance’ or ‘monetary savings’. These were made visible to customers via combinations of periodic reports, on-site visits, customer workshops and customer satisfaction reporting. This situation gives rise to the following findings:

Finding 4. Most service strategies are based around the outright sale of the product and complimentary service and support contracts.

Finding 5. In half of all cases, service strategies include the manufacturer undertaking risks previously assumed by their customers

Finding 6. Where manufacturers have increased their exposure to risks, in most cases these are mitigated through contractual (eg: formal performance agreements) and technological methods (eg: remote performance monitoring of assets)

Finding 7. The most popular measures of service business success are 'customer satisfaction', 'profit from services', then 'sales' and 'customer retention'

Finding 8. The value of services is most often demonstrated to customers either by 'improvements in product performance' or 'monetary savings'

3.4 Motivations of manufacturers to offer services

The survey set out to identify the popular factors that drove manufacturers to provide service offerings. The literature suggests a range of motivations, such as 'a desire to increase sales revenue' or 'setting up barriers to competitors'. In total, twenty such factors were identified and incorporated into the questionnaire. The respondents were also asked if any other factors existed and then, from their perspective, to scale the relative importance of these factors (see Appendix 1, section 5). If a factor had no relevance it could be omitted from the scoring. Once the survey had been completed, the scores against each factor were combined and an average calculated. Factors were then ranked on the basis of this average. Figure 4 illustrates the more popular factors cited by manufacturers. Where the average score was within two decimal points factors have been clustered together.

As illustrated in Figure 4, the most influencing factors are; 'improving ability to respond to customer needs', and then a 'desire to increase revenue', 'differentiating offering from competitors' and 'increasing customer loyalty'. Such factors are largely concerned with customer focus and revenue growth. Conversely, those factors of the less importance include 'setting barriers to competitors' and 'responding to reducing profit on product sales'. Hence, it appears that most respondents elected to offer services to build their businesses through proactively engaging with customers, rather than simply reacting to competitive pressures. We have captured this as follows:

Finding 9. Manufacturers are mainly attracted to offer services as a means to strengthen customer focus and create revenue growth

3.5 The motivations of manufacturers' customers to adopt service offerings

The survey set out to capture the perceptions that manufacturers have as to why their customers are attracted to service offerings. The approach taken to identifying and analysing motives replicated that used in Section 4.4 and led to the ranking illustrated in Figure 5.

The survey responses indicated that service providers believe that a reduction in operating costs, along with reductions in risk and investment, are the most significant attraction to customers. Of lesser importance are the opportunities for customers to focus on their core business and improve their performance to their own customers. This suggests that while the general benefits of service models may be welcome to customers, the most influential are believed to be those associated with cost and risk reduction. We have summarised this situation in the following finding:

Finding 10. Manufacturers believe that their customers are mainly attracted to services as a means to reduce costs, investments and risks.

3.6 Processes in the formation of service strategy and offerings

In addition to motivations, our questionnaire also sought to test the formation of service strategies and offerings. As the majority of companies claimed to have moved into services over ten years ago, we must recognise that the source and evaluation of decisions to provide services may not be based on the personal involvement of the questionnaire respondents. However, given that respondents gave their position in their organisations and typically identified themselves as Managing/Engineering/Operations Directors, it is reasonable to assume their responses were well informed. Two thirds of respondees indicated that their service strategy was initiated ‘top down’, but only a quarter of these consider this as resulting from in depth analysis. The remaining third held a view strategy origin that was split evenly between ‘bottom up’ (i.e.: initiated from personnel at lower levels within an organisation) and ‘other’ with the latter group reporting diverse origins such as “customer driven”, “natural extension of the manufacturing business”, “always been there” and “lost in the mists of time”. In response to questions regarding their approach to service design, less than half of the respondents claimed any structured approach, though most companies claimed to co-develop service offerings with customers.

Finding 11. Most manufacturers have taken a ‘top down’ approach to identification of a service strategy.

Finding 12. Less than half of the respondents claim to have any structured approach to the design of their service offering

Finding 13. Most manufacturers have involved customers in the development of service offerings

3.7 Investments in organisational restructuring to deliver a services strategy

The extant literature and evidence from case study work (Brax, 2005, Gebauer et al, 2006, Baines et al, 2009b) indicates that the move from manufacturer to service provider results in significant challenges in organisational culture and structure. Our survey set out to test this amongst our target companies with questions relating to organisational change. Many respondents reported the need to develop / acquire additional competencies including technical, communication and management skills. However, only 20% of respondents said they had made significant additional capital investment, few had conducted significant restructuring, and most claimed to have experienced very little internal resistance to the adoption of their service strategy. These responses indicate that companies in our survey have made the transition to servitization more easily than might have been expected. On the one hand this could be very reassuring to others contemplating such a transition. On the other hand, it again probably reflects the differing forms of service offering (section 4.1). Hence, this is probably only true for the popular services such as training and helpdesk, and is unlikely to accurately reflect the provision of sophisticated services. This leads us to find:

Finding 14. Many manufacturers have developed additional competencies to provide services, particularly technical, communication and management skills.

Finding 15. Most manufacturers (80%) claim to have experienced little internal resistance during the adoption of a service strategy, though this is probably only the case for protective services.

Finding 16. Most manufacturers (80%) claim to have made little significant additional capital investments to deliver services, though this is probably only the case for protective services

Finding 17. Most manufacturers claim to have avoided significant restructuring to deliver services, though this is probably only the case for protective services.

3.8 Popular successes through service strategies

Most of the respondents in our survey consider that their service strategies are successful and provide resilience to economic downturn and investment pressures. For almost all companies, profit before interest and tax on services is greater than on product sales, and 90% of surveyed companies saw that the addition of services is key to their future growth strategies. Although it is not yet clear to what extent these service strategies have penetrated their relative installed product bases, and what are the real future opportunities for growth.

Finding 18. Most manufacturers see their service strategy as successful, being resilient to economic downturns and competitive pressures, and key to future business growth

Finding 19. Many manufacturers (95%) reported 'profit before interest & tax' on service sales are frequently higher, or at the very least equivalent, to that on product sales.

Finding 20. Almost all companies surveyed (90%) see services to be core to their growth strategy

4. DISCUSSION AND CONCLUSIONS

The overwhelming conclusion of this survey is that service-led competitive strategies are being adopted by many UK manufacturers and delivering success. Manufacturers appear to be adopting a variety of service strategies offerings and some of these are quite mature. Their motivations are to grow revenues by helping to reduce costs for their customers. These tend to be emergent strategies developed via trial and error, sometimes achieved with limited organisational change, and manufacturers are experiencing success through these strategies. However, without wanting to undermine the value of this study, we should emphasise that our findings from this survey should be treated as indicative. We have a number of pressing concerns that need to be explained through further and more detailed data collection and analysis. For example, survey responses indicate that companies have made the transition to servitization more easily than might have been expected. Evidence from our case work is that, when delivering more sophisticated services, companies require extensive change and investment throughout the organisation. The output data from the survey regarding maturity is also contradictory. In both cases it seems to be critically important to distinguish between those companies who are proactively using services as the basis of their competitive strategy, and those that are protecting themselves by adding services to their sales portfolio. Quite clearly, this is a rich topic for further work. Key questions for our future analysis and confirmatory case work include:

- *Is our clustering of services into protective, transitional, and proactive a valid representation of the service strategies being adopted by companies? If so, should we only consider a company to be servitizing when it is competing by offering 'proactive' services?*
- *To what extent are manufacturers competing through proactive services rather than simply adopting protective services? How mature are the strategies in each case and what types and size of manufacturers adopt them?*
- *Is risk adoption a function of product-service complexity? How does risk adoption differ with protective and proactive strategies?*
- *Did respondents enter the services business because they thought they could make money, to prevent losing product customers or because customers demanded that they do? Where will future benefits to manufacturers come from?*
- *Why is the reduction of operating costs of prime importance to customers in their decision to adopt service offerings? Can we separate out the value that customers place on different service offerings? As our survey sought the opinion of manufacturers only, so we should question what the customers themselves think about all this. Why did they decide to buy services? Why did they adopt protective or proactive services and in what sequence did they adopt them? Do they intend to buy more services in the future? What benefits do they see? What services do they want in the future?*

- *Why do few manufacturers lack a structured approach to formation of a service strategy and service offering?*
- *The manufacturers that we know are more advanced and sophisticated in their provision of services have indicated that they have made significant organisational change. So, how does organisational change relate to service strategy (protective, transitional & proactive)?*
- *What specific services attract the most commercial benefit for manufacturers? To what extent have these service strategies penetrated their relative installed base, and so what are the future opportunities for growth?*

These questions provide a useful agenda for future research in this area. Our own approach is now to further build the size of our database before seeking to develop the insight and precision of our findings. We will be mindful to retain the high quality nature of the information that we have so far gained. Furthermore, we will be actively cross checking with companies to ensure the validity of our data, and comparing with national statistics to ensure we have a reliable representation of UK manufacturing industry. We look forward to reporting this work in the near future.

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