SERVITIZATION TRANSFORMATION:DRIVERS, BENEFIT AND BARRIERS

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ABSTRACT

The study described in this paper has set out to build the evidence base underpinning servitization transformation. We applied a Delphi research methodology from 33 senior executives, in 28 different sized organisations, from a cross section of British industry. Our findings focus on servitization: (1) drivers, (2) benefit (3) barriers. The four findings are presented to contribute to our understanding of the transformation processes that manufacturers to compete through servitization.

Keywords: Servitization Transformation, Change Management, Operations Management

1 INTRODUCTION

Businesses in developed economies is keen to promote growth through servitization. Previous studies suggests the adoption of servitization can bring growth in revenue, competitiveness and better natural environment (Baines and Lightfoot, 2013, Sakao and Lindahl, 2009). Organisations can implement various servitization strategies, for instance they can extend their provision of intermediate services (e.g.; condition monitoring, breakdown, repair), or move engage in a corporate take-over of a conventional services provider (e.g.: consulting, accounting, training firms)(Gebauer et al., 2013, Ulaga and Reinartz, 2011) .

The advanced services imply a redefinition of the boundary between those activities that are carried out by the customer and those performed by the manufacturer. Confusion arises around the definition of advanced services because particular contracting features are often coupled. Our study defines advanced services with four key features:

- Pay-for-use revenue payment: pay-per-click, pay-as-you-go, power-by-the-hour etc. are all terms used commonly to refer to advanced services.
- Long-term contracts: Contracts of featuring 20-25 years.
- Risk management: The provider takes on the responsibility for ensuring asset availability, condition and performance.
- Commitment to on-going process improvement and cost saving.

When these four features are coupled with the principle of delivering a capability, contracts become sophisticated and demanding.

Exploitation of servitization requires organizational level insight of the change processes. Such a transformation was seen to be fundamental to a servitization journey, with base and intermediate services forming part of their portfolio.

Our study has focused on those organisations that have been engaged historically with Original Equipment Manufacturer (OEM), and that have changed their business models from being production-centric to services-focused (Baines et al., 2007, Mathieu, 2001). These organizations move away from reliance on simply `selling a product' and builds on technological capabilities.

Three boarder research questions are addressed in this study; (1) what factors have driven servitization adaptation across supply chains? (2) What are the actual benefits that both customers and manufacturers have realised, how well did these align with their drivers, and what other benefits were realised? (3) What factors are inhibiting and enabling the adoption of these services within both customers and OEMs?

Our study contributes to understanding of the process of servitization. The four findings summarised to demonstrate servitization transformation in practice. These findings have arisen from the collective experiences of 33 senior executives, in 28 different sized organisations, from a cross section of industry. All methodologies have their limitations, but we have found this Delphi approach valuable in eliciting a rich insight into industrial practice.

2 METHOD

Our research adopt the Delphi method, a systematic and interactive research technique for obtaining the judgment of a panel of independent experts on a specific topic (Hallowell and Gambatese, 2009). Throughout this study the research team partnered with Xerox. Collaboratively, the research team identified suitable experts, developed a data collection protocol, distributed the questionnaires to all the panellist and established a feedback mechanism to improve the precision of the responses and foster a group consensus.

In all, 33 experts from 28 organisations participated between November 2012 and May 2013. In each case senior managers have been interviewed, their responses recorded and transcribed. Three rounds of interviewing were carried out. The first captured the bulk of the data, which the research team then compiled, and clustered evidence around key themes. This was then fed back to the experts, as a second round, who then responded with refinements and additional data. A third round was then executed as a final check for anomalies and convergence of findings.

3 TRANSFORMATION OF ADVANCED SERVICES

The results from the Delphi study lead us to refine our knowledge about (1) the servitization drivers in the UK, (2) the servitization strategy benefits, and (3) enablers and inhibitors affecting OEMs. Each of these topics are now discussed individually and summarised as a key finding.

3.1 Drivers

The market pull for advanced services can happen through direct and indirect routes. Directly, OEMs were very much encouraged to move to services by their customers. Indirectly the UK governments have previously helped to stimulate servitization through large infrastructure projects where it sought to encourage private finance. Alstom Transport illustrates how this occurred;

'Prior to privatization national operators, like British Rail and London Underground, carried out their own maintenance. They bought their own rolling stock, and in some cases with British Rail they made their own. When private finance came into it, it became a matter of risk management, and a matter of the banks and the finance companies saying,' you want us to provide money, so we want to make sure that the asset remains in tip-top condition and that there isn't any potential compromise to the life of the asset'. To do that, they sought the OEM to be involved.'

The OEMs themselves have encouraged their customers into servitization; For example, Rolls-Royce proposed 'power by the hour' business concept which were put to its customers as innovative ways of doing things, but which also achieve the objectives of keeping out other potential competitors.
Understanding the reasons underpinning the early servitization adoption can analysed through the lens of defensive reasons (preventing competitors from gaining a foothold in their markets) and offensive reasons (gain market acceptance for new innovations that drive growth).

Customers chose to deal with servitized manufacturers to improve their operational performance. For example, British Airways, sought cost savings and improvements in efficiency; the Heart of England NHS Foundation Trust targeted economic drivers; and Hoyer, for instance, wanted a pay-as-you-go system where costs were 'per mile' driven, so that its overall contract costs were more predictable.

Some customers also adopted manufacturers' services for strategic reasons. For instance, British Airways saw these services as taking a lot of its 'pain' away and enabling a focus on the core business of being an airline.

In summary, through this study we identified a number of key drivers of servitization:

Finding 1: The market force through direct customer and indirect government initiatives can help to drive servitization. Diffusion of servitization can also drive from OEM to their customers through defensive and offensive motives.

3.2 Benefit

Our intention has been to translate these benefits into quantifiable business impact. Unfortunately, quantifiable performance data is elusive and too commercially sensitive for many organisations to divulge. Typically we were told 'we don't feel comfortable sharing details about this but we have seen a very significant increase in revenue as a result of us having embraced advanced services. This is a trend we are seeking to harness and continue into the future'. Where we were given evidence, we were often not permitted to publish it.

The benefits of advanced services have exceed the original motivations for their adoption. For customers, leading adopters have experienced significant cost reductions through the adoption of advanced services. These range from 25-30%. Although the data points are few, there is clear indication that significant savings are possible. Likewise, while we were told of many improvements to services of customers, only Alstom Transport was able to indicate this impact by describing the change in passenger numbers on the West Coast Mainline.

The 'cost reductions attributed to the adoption of services from OEMs' reflects customer desired improvements in business efficiencies, while 'growth of their own services through improved service performance' helps to indicate improvements in their own business performance attributable to the services of the manufacturer.

In addition, customers have also demonstrate improvements in safety and environmental sustainability. MAN Truck and Bus UK reported that the services it provided improved fuel consumption

by at least 10% and reduced CO2 emissions by 10-15%. The University of Nottingham has seen its document management systems as about 70% greener. In addition, these services have enabled structural change that was elusive within the customer.

For OEMs, a move away from relying only on product sales, and diversification into services, has demonstrate a range of significant benefits in terms of growth and resilience. A range of companies indicated that they had either achieved, or are striving to achieve a 50/50 split in product/ service revenues. Although it is difficult to establish the precise make-up of these service revenues, there is clear indication of a 'balanced economy' within OEMs themselves, which has improved their own resilience against economic downturn. As for growth, the evidence we have suggests that OEMs themselves believe they can achieve a growth in services revenue in the region of 5-10% per year. Again, there are many caveats to this figure; the main take-away point is that growth is seen as achievable in an otherwise stagnant economic context.

Moreover, new market opportunities have been created. For example, Rolls-Royce services such as TotalCare have supported the creation of low-cost airline operators because the emphasis on maintaining the product is with the OEMs. There have also been benefits to product development, as exemplified by MAN Truck and Bus UK;

'The truck is a mobile R&D centre…I've now got a ten billion kilometre database of all categories of transport where I can show quite clearly what our vehicles cost to operate'.

For the wider economy, the companies we have studied certainly indicate potential, with examples of growth ranging from 5 - 10% per year. There is clear evidence that servitization is a response of manufacturers in advanced economies to external pressures; a chance to differentiate their offering; and a way to support economic restructuring and growth. Conceptually, servitization offers an opportunity that can impact upon both national and regional growth. The senior executives that have participated in this study reinforce the message comprehensively:

> *'Britain went too far towards services, and has got to get back to manufacturing … but the two are completely complementary in these terms. [GKN].*
> *You've got a safer, more reliable, more economical and more environmental installed based, number one. [MAN].*
> *'It presents an opportunity for companies which are basically listed on the UK Stock Market to get a foothold in other markets in the world. [BAE]*

In this study we have engaged executives from a set of organisations that are significantly important to the UK economy. Across these, there is little doubt that competing through services are a vitally important concept for the future. It is not a panacea, it is not for all organisations at all times, but it is an aid to improving the commercial and environmental sustainability of the national economy.

In summary, through this study we now understand about benefits that:

Finding 2: Servitized manufacturers and their customers have realised the benefits they sought and, also, found that there are additional benefits that strengthen their competitiveness. Although elusive, there is evidence that servitization has a very positive impact on resilience, efficiencies and growth. Trade-offs are however inevitable to OEMs as they sacrifice more traditional revenue streams.

Finding 3: Resilience and growth in a developed economy can be positively impacted by servitization. While such economies are complex, multi-faceted and unpredictable, there is unquantifiable real revenue growth amongst OEMs that deliver services successfully. Consequently, the executives in our study see

significant potential for both the regional and macro-economy if the opportunity presented by these services-focused business models can be harnessed more effectively.

3.3 Barriers

Customers resist engaging in advanced services where they are unconvinced, uncomfortable, or unable. There are practical factors around: ease of product substitution (e.g. if it fails it can be easily replaced); availability of suppliers that can offer a sufficient range of technologies; and institutional unwillingness to engage in outsourcing-style contracts.

Adoption will also be hindered where there is fear that being overly dependent on a single supplier may restrict the customer's ability to obtain value for money (both now and in the future). For example, Finning UK described how some of its customers fear that putting 'all their eggs into one basket' may restrict their ability to get best value for money, and Islington Borough Council stressed the importance of knowledge retention to enable market re-entry should this be desirable.

Even when appealing, the customer may not be able to adopt advanced services. Limiting factors exist around process compliance, budgeting systems, data systems, legislation and contracts. For instance, Heart of England NHS Foundation Trust stressed the importance of process compliance before services can be considered for outsourcing. Contract complexity can inhibit both the customer and OEM. Another factor is a lack of people with the appropriate contracting skillsets. Even when a contract is in place, there may be a reluctance to continue engagement, if the customer feels service levels are not being met or more generally that value is not being demonstrated.

OEMs share inhibitors around contracting, finance, and data systems. Lack of skills to construct usable and reliable contracts is a major inhibitor for smaller organisations, as is lack of availability of finance from third parties to 'unlock' services contracts.

Assuming that the OEM is committed to pursuing servitization and delivering advanced services, there are also particular inhibitors that impact its ability to follow and sustain such a strategy. Linked to contracting is the lack of intellectual property within the OEM to innovate and modify its technologies to give the cost and efficiency savings.

'Sometimes our ministry tries to buy rights to IP….you'd have thought we were in a strong position. The Australian Air Force came along a bit later and actually got rights to the IP. So somehow or another our Ministry of Defence didn't do ... didn't match up to the negotiations that the Australians got.' [Marshall Aerospace]

Skillsets in general are a major concern for OEMs.

'…if you look at where technical skill sets are developed, it's generally within a new build environment. And my concern is with manufacturing- certainly within the heavy industries- actually being minimised, then…will that know-how and know-why and capability be there to sustain service business in the longer term? Now I think if you look at the service businesses in the UK then there's still very heavy skill sets that are there from manufacturing ... My concern is, in 20 years will we still have that same capability?' [Alstom Transport]

In summary, through this study we now understand about the servitization barriers that:

Finding 4: Exploitation of servitization is seen prohibited when OEMs lacks confidence and capability of delivering advanced services or customers are unconvinced or uncomfortable with these. This innovation is fragile, language needs to coalesce, and nurturing is needed while our understanding develops. OEMs in particular need help with the culture change, skills, contracts and financing that are

particular to servitization, delivering services whilst building their technology innovation capabilities along the way.

4 CONCLUSION

This study has set out to build the evidence base underpinning servitization transformation. The findings so far discussed have focused on three areas: (1) servitization driver, (2) benefit of servitization strategy, and (3) barriers that prevent diffusion of servitization.

This study contributes to our understanding of servitization. The four findings summarise how transformation is seen to be taking place in practice. These have arisen from the collective experiences of 33 senior executives, in 28 different sized organisations, from a cross section of British industry. All methodologies have their limitations, but we have found this Delphi approach valuable in eliciting a rich insight into industrial practice. To extend our understanding further, we would suggest a similar approach to investigating how servitization adoption fails. Our study has exclusively targeted organisations that have succeeded with the adoption of servitization either as providers or consumers. It would be helpful to gain insights into organisations that have chosen not to take this route, and it would be valuable to know more about OEMs who have in some way failed to achieve the desired outcomes. Such knowledge would be extremely valuable to progressing the servitization debate further.

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