ADVANCED SERVICES: THE ROLE OF INDEPENDENT SERVICE PROVIDERS

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ABSTRACT
Purpose: To consider the role of independent service providers (ISPs) in terms of developing and delivering advanced services.
Design/Methodology/Approach: A comparative case study using secondary data.
Findings: ISPs are well-placed to offer advanced services by having many of the 'service-focused' processes already. However, lack of product incumbency may prevent suitable outcome-based offerings from being viable.
Originality/Value: This paper considers two ISPs to demonstrate how they are providing advanced services and the limitations of this approach for them.

KEYWORDS: Advanced services, Independent service provider, Manufacturer, Servitization.

1. INTRODUCTION

Considerable recent research about servitization has focused on advanced services; that is, the provision of outcome-based offerings that involve a degree of risk-sharing between suppliers and customers (Baines & Lightfoot 2014). Multiple challenges facing manufacturers offering advanced services have been identified, limiting their uptake; for example, limited financial success and uncertainties around managing risks (Benedettini et al. 2017). While solutions to these challenges are proposed, it is appropriate to consider whether other actors may be better placed to offer advanced services. For example, independent service providers (ISPs) are conceived as companies that do not manufacture products and operate independently from manufacturers, so are not tied distributors of particular manufacturers' products (Burton et al. 2022). ISPs are overlooked actors in servitization despite early conceptualisations contending that it was appropriate for service and product companies (Vandermerwe & Rada 1988). Addressing the lack of focus on ISPs in prior literature, this study aims to answer the research questions (RQs):

1) *How do ISPs develop and deliver advanced services?*
2) *How does this provision differ from that of manufacturers?*

2. LITERATURE REVIEW

Differences between base/intermediate and advanced services have been discussed, with increasing value creation identified from the latter as suppliers assume greater risks in outcomes from their provision (Baines & Lightfoot 2014). However, this change in value creation (i.e., from maintaining the product condition to improving customers' operational processes) takes many manufacturers beyond their existing capabilities and is challenging (Alghisi and Saccani 2015). It seems likely that some ISPs are adept at addressing challenges customers face by optimising their operational processes, so are well placed to offer advanced services. However, ISPs can lack the deep technical knowledge that manufacturers possess about products and may need to address this (Burton et al. 2022). Summarising the capabilities for advanced services required by manufacturers, Story et al. (2017) identify the need to balance product and service innovation, focus on developing customer-focused through-life service methodologies, cultivate customer intimacy, develop distinct, yet synergistic product and service cultures, coordinate and integrate third-party products/services and have localised service delivery. Thus, for manufacturers, developing advanced services is part of a change process (Kohtamaki et al., 2021), which may take them to contradictory positions, such as offering customers the 'best' solution even if this does not include their products.

Improvements in digital technologies mean that digitalisation plays an important role in the provision of advanced services (Martín-Peña et al. 2019). The ability to capture product usage data and invoice customers accordingly means that advanced services can be more easily managed (Kamalaldin et al. 2020). However, as digitalisation may also require capabilities manufacturers do not possess, it is important to consider an ecosystem of facilitating actors (Sklyar et al. 2019). For example, intermediaries which provide an interface between manufacturers and customers may need digital capabilities that exceed those of the manufacturer in terms of being able to deliver customer solutions (Raddats et al., 2019). It could be that ISPs also need this expertise in digitalisation or they too require input from other companies to develop and deliver advanced services.

3. RESEARCH METHODOLOGY

This paper uses an analysis of secondary data from two global companies, Sulzer Services, an engineering company in the energy sector, and DXC Technologies, a provider of IT solutions. These companies were selected to provide comparative cases (Yin 2002), with one ISP that has a strong product heritage (Sulzer Services) and the other with a strong services heritage (DXC Technologies). Yin (2002) envisages a wide range of data collection techniques to develop case studies, including documentation, archival records, interviews, and observations. While this paper presents information about the first two, further data collection via interviews is planned in advance of writing a full paper.

We implemented an embedded case analysis (Yin, 2002), focused on the service offerings of the two companies. Most of the information for the study has been garnered from the company websites, which are an essential form of corporate communication (Whiteside et al. 2012; Wheeler & Elkington 2001). In particular, information for investors is well regulated and controlled and provides a source of reliable information (Marston & Straker 2001). Scott (1990) assesses the utility of documents as a source of research data and provides four measures of quality: authenticity – is the evidence genuine; credibility – is the evidence-free from error and distortion; representativeness – is the evidence typical of its kind; meaning – is evidence clear and comprehensible. These measures were taken into account as far as possible during data collection.

4. FINDINGS

The initial findings from each case study are presented in sections 4.1 and 4.2 and this is followed by a comparison of how each company develops and delivers advanced services compared to the approach undertaken by manufacturers (4.3).

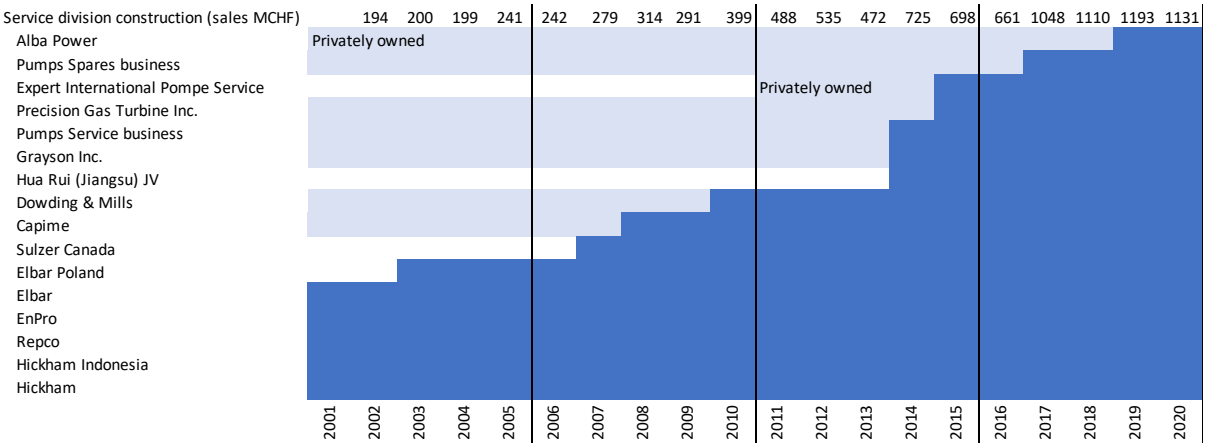
4.1. Sulzer Services

4.1.1 Introduction

The evolution of the past 20 years of Sulzer Services (today a division of Sulzer) is described in Figure 1 (Sulzer.com) and shows sales growing from just under 200MCHF to over 1,300MCHF between 2001 and 2020. The evolution of the service business takes place within the broader context of a primarily manufacturing firm. Today, Sulzer focuses on three divisions (Chemtech, Flow Equipment and Services). Sulzer Services started with the acquisition of an independent service business (Hickham) by a former division of the company, Sulzer Turbo (which was sold in 2000). Hickham was not branded as 'Sulzer' and continued to offer OEM and non-OEM services as it had done since being founded in 1972. From the initial acquisition of Hickham to today, Sulzer Services continues to develop along the lines of an ISP.

In 1995 a new facility (Hickham Indonesia) was opened to support the localisation of the existing services. In 1996, an ISP Repco was acquired by Sulzer Turbo to provide local support in the Netherlands' gas fields and refineries. Repco continued to provide mostly non-OEM services. In the same year, EnPro was acquired. It was a non-OEM field service business to the oil and gas industry. EnPro continued to provide non-OEM field services to equipment owners and operators and provide local services for some OEMs. The acquisition of EnPro provided Sulzer Services with a more significant field service capability and access to new competencies.

Figure 1: Evolution of the Sulzer Service division over 20 years



After the sale of Sulzer Turbo, Sulzer took the strategic decision to grow Sulzer Services. At this point, a new Sulzer Turbomachinery Services (STS) division was formed. Another company Elbar was acquired by STS that year, which had worked with Hickham as they had complementary capabilities, know-how, and customer bases. Elbar expanded their 'repair factory' to Poland to improve their cost base. In 2007, STS opened another service business in Canada to provide non-OEM services. The rationale was to be 'close' to customers and provide advanced services. The acquisition of Capime in 2008 provided a geographic expansion in South America and came with several existing advanced service contracts. Capime had been initially established to support a UK-based OEM, although it had always operated independently from the OEM.

In 2010, Sulzer Services acquired 30% of Dowding & Mills (via the acquisition of Castle Support Services, the holding company). Dowding & Mills provided a range of mechanical, electrical, electronic, instrument and calibration services. The acquisition provided Sulzer Services with a new range of services that were 'adjacent' to the existing range and provided a broader geographic footprint. Further geographic expansion came with a new joint venture (JV) (Ha Rui Jiangsu) in 2014, and in this case, the partner was also a customer of Sulzer Services. Grayson was acquired in 2014 and was like Dowding & Mills, primarily a non-OEM repair business and it provided a local market entry. The acquisition in 2015 of Precision Gas Turbines Inc. provided additional technology competency for Sulzer Services, allowing it to provide advanced services as an ISP. Later in the same year, Expert International Pompe Service was acquired again to expand the firm's geographic footprint. At the same time, the service businesses of a sister company, Sulzer Pumps, were absorbed into Sulzer Services, and the business model was predicated on both OEM and non-OEM services.

4.1.2 Advanced services

Sulzer Services provides a range of basic and advanced services, primarily on rotating industrial equipment, turbines, compressors, motor generators, and pumps. It grew through acquisitions, joint ventures and organically via sales of basic services, conversions, modifications, upgrades, and advanced services. Today it provides these services as an ISP and as an OEM. Sulzer Services' most advanced service contracts are based on performance commitments (outcomes) underpinned by remote monitoring. It also provides intermediate services via more traditional 'time and materials' based agreements. Other quasi-advanced services include the relocation of units and upgrades of existing machines, which are provided as an ISP. OEM services are provided as well on its pumps and those of other manufacturers.

The acquisition of Capime added advanced service agreements to Sulzer Services' portfolio of contracts. Sulzer Services later grew these advanced service offerings (for gas and steam turbines) based on outcome-based contracts and rate-based agreements. The acquisition of Precisions Gas Turbine Inc. extended the range of machines that the advanced services could be provided on by giving

access to reverse engineered parts and reducing the need for external supply chain partners. Alba Power expanded Sulzer Services' advanced service offerings further by adding aero-derivative to its competencies. Relocations and rerates were considered by Sulzer Services as advanced services. The company would purchase old machines, refurbish and re-engineer them so that they could be installed in new locations and performance commitments (outcomes) offered to customers. It also offered unit rerates, where the fluid pathway of the equipment is redesigned to improve its performance.

As an ISP, Sulzer Services works with ecosystem partners for spare parts supply and some technical competencies. It also works with OEMs to repair and overhaul equipment, partnering with the OEMs' customers to enter new markets and invest in innovation associated with service development and service operations management. This is important as Sulzer Services is not the OEM for most of its services. Thus, Sulzer Services has collaborated with different manufacturers in its ecosystem to fill in gaps in its capabilities. This collaboration supports the localisation of services and provides the opportunity to integrate new resources within the firm. Sulzer Services has provided the parent company with the platform to grow services, localising their provision via its expanding service network. Co-creating innovation with customers has provided the company with a competitive advantage, with digital technologies supporting advanced service delivery.

4.2 DXC Technology

4.2.1 Introduction

DXC Technology is a US-based global provider of mission-critical IT infrastructure services. In 2021, it had a turnover of $17Bn and operates in over 70 countries. It was formed in 2017 by the merger of Computer Sciences Corporation (CSC) and Hewlett Packard's Enterprise Service (HPES) division. The company reports sales in two divisions: Global Business Services, which provides technology solutions, and Global Infrastructure Services (GIS), which provides 'predictable outcomes and measurable results while reducing business risk and operational costs for customers' (DXC Technology, 2021). It adopts a 'technology-independent' approach, with a 'partner ecosystem' comprised of suppliers with whom it works, such as cloud providers (e.g., AWS, Microsoft Azure), hardware providers (e.g., HP, IBM), and software providers (e.g., Oracle, ServiceNow).

4.2.2 Advanced services

Advanced services are provided as part of the company's 'IT Outsourcing' offering (part of the GIS division). The company aims to reduce customers' IT operating costs by up to 30% and in its 2021 financial report terms these 'performance obligations', which may contain embedded leases. It is a complex process to determine how revenue accrues against each performance obligation and lease, whether they should be treated separately, and the timing of when revenue can be recognised (i.e., a sale has been made). The company notes how the revenue attributed to each contract often differs markedly from what was originally estimated because of differences in volumes and changes in technology, for example.

In terms of how the company develops and delivers these offerings, market analysts Everest Group (2021) note that in terms of being an Azure systems integrator, DXC drives innovation through deep collaboration with customers and has strong leaders, who are focused on largescale/complex cloud transformations. They also note DXC Technology's delivery and support operations, focus on cost reduction and technology independence, through building many OEM partnerships. DXC Technology also claims leadership in data analytics and the provision of managed services and strong digital transformation practices that facilitate migration to Azure.

For its IT outsourcing (ITO) offerings, the company notes the scale of its operation and experience, with hundreds of thousands of servers and mainframes being managed. While the specific performance guarantees are not explicitly discussed, the focus is on managing the on-premises and cloud infrastructure. So, if a client currently has predominantly on-premises infrastructure then transitioning some (or all) of it to the cloud could realise savings. DXC Technology also has a largescale data storage capacity to reduce the need for customers to have their own. In addition to cost savings and improved performance, scalability and flexibility seem to be important, and customers may want

varying numbers of employees to be able to work in multiple locations (e.g., from home during the Covid-19 pandemic) and use different devices (e.g., desktop, tablet, mobile).

4.3 How ISPs develop and deliver advanced services and how this compares to manufacturers
Using secondary data, Table 1 seeks to provide a comparison of the two companies' approaches to developing and delivering advanced services (RQ1).

Table 1: Comparison of Sulzer Services and DXC Technology's advanced services

Sulzer Services	**DXC Technology**
Working with ecosystem partners to fill in gaps in capabilities and competencies	Product independence although an ecosystem of partners
Customers paid for innovation	Customer-driven innovation
Localisation of services via its service network	Extensive delivery and support infrastructure
Service was at the core of the strategy	Leaders driving the company's (service) focus
Digital has been used to support service delivery	Digital transformation practices
Data used to support the delivery of advanced services	Data analytics and managed services skills
The business was able to integrate new resources to transform the business	Scale and experience of large-scale transformations
Solutions are developed locally shared between locations.	Solutions that are scalable and flexible

Via embedded analysis of service processes descriptions, company service statements and assertions, we identify eight dimensions that define how the ISPs develop and deliver advanced services. Working with partners is an obligatory dimension for ISPs, given they are probably not an OEM that can rely on services from this quasi 'captive' source. Thus, genuine product independence but access to an array of OEM products to service can provide ISPs with a distinctive market position. Customer innovation involves ISPs seeking new co-created solutions with customers. Local service infrastructure emphasises the importance for ISPs to have the resources to be able to deliver services where required without recourse to service intermediaries. While it may be that an ISP does require service intermediaries in some markets (e.g. geographic or vertical), having this capability in-house for core markets seems important. Service-focused leadership means having managers at the very top of the company whose 'DNA' is services. Advanced services provide the ideal platform for ISPs since what is being sold is a service rather than products and (base/intermediate) services. Thus, the commitment to developing this service focus, through replicable and robust service processes, utilising proven service methodologies and service-savvy salespeople is immutable. Data-driven process improvement is likely to see these processes improved through using digital technologies; for example, remote monitoring of customer equipment can help quickly identify fault conditions and help maintain their operational performance. Data-driven customer approaches include service offerings, such as predictive maintenance, that employ 'big data' technologies to provide customers with improvements over what was previously provided. Inorganic and organic growth used to build scale in service capabilities may be necessary, be it geographic reach, technological know-how, or sector expertise. Finally, offering a range of scalable customer solutions demonstrates high flexibility to align with customers' requirements.

In terms of RQ2, we can see that many of the capabilities required by manufacturers (Story et al., 2017) align with the ISP dimensions identified in this study. For example, the need for service innovation, the development of improved customer-focused service methodologies, coordinating third-party products and services, and localised service delivery. Less important for ISPs is the need

for product innovation and developing distinct, yet synergistic product and service cultures. Thus, we can see some commonality between the requirements of manufacturers and ISPs for advanced services. Yet, it is arguable that some of the difficulties of offering advanced services, such as the management of risk are likely to be greater for ISPs since they lack product incumbency. If an ISP is to guarantee the performance of an asset then what recourse does it have to an OEM's technical support function should the asset malfunction? This is likely to limit the performance guarantees ISPs are willing to make on individual assets. It seems more likely that when assets are part of a broader customer process, the opportunities for cost improvement may be greater; for example, DXC Technology's ITO offering that uses the cloud.

5. DISCUSSION

This paper identifies several dimensions that are important for ISPs to offer advanced services. The paper uses comparative cases of one ISP that has a product heritage and one that has a services heritage. The main theoretical contribution of this paper is to present more evidence that ISPs are well-positioned to offer advanced services to the market. Indeed, ISPs already have many of the required capabilities such as customer-focused service methodologies (Story et al. 2017) and can add new 'big data' capabilities to support advanced services just as manufacturers can (Martín-Peña et al. 2019). If developing advanced services is a change process for manufacturers (Kohtamäki et al. 2021), is it also one for ISPs and if so, what do they have to change? Product incumbency provides manufacturers with deep technical knowledge about their products (Burton et al. 2022), however, for advanced services it is the risk of taking on outcome-based guarantees that might provide the main impediment to what ISPs can offer. This is because ISPs lack product incumbency and consequently certainty about what faults may develop, how quickly they can be fixed and the cost of doing so. Thus, risk as previously set out for manufacturers (e.g., Benedettini et al. 2017) may need to be re-evaluated for ISPs too. ISPs cannot simply have superficial partnerships with OEMs that enable them to offer base and intermediate services, they need to develop deeper partnerships to allow them access to the technical knowledge and support to be confident in offering advanced services.

In terms of managerial implications, ISPs may be better placed to offer advanced services than manufacturers since the heightened service focus is already present. Several dimensions are important to develop the required expertise to offer advanced services. For example, developing partnerships with OEMs that enable outcome-based offerings to be provided. These partnerships need to go beyond supply arrangements as prioritised access to technical fault resolution is necessary for ISPs to have confidence in offering advanced services. Equally, the application of new data technologies to both improve core operations and customer offerings.

In terms of limitations, this paper only uses secondary data and further empirical data collection is needed to better understand this matter. The cases selected are not representative of other industries although they do provide a comparison of advanced services by a company that is fully independent and one that is quasi-independent of an OEM. In addition to this distinguishing feature, further analysis of ISPs based on their use of digital technologies would also be interesting to help understand how they can help the provision of advanced services to their customers and potentially distinguish these offerings from those of manufacturers.

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