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INTERNALISATION OR EXTERNALISATION?

EXAMINING ORGANISATIONAL ARRANGEMENTS FOR INDUSTRIAL SERVICES

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ABSTRACT

Purpose – Manufacturing firms primarily organise service provision internally, externally or through a hybrid arrangement. This paper aims to analyse how firm-, offering-, and market-specific factors influence the way in which a firm organise its service provision. In addition, the paper analyses the specific challenges that each organisational arrangement presents for a firm.

Design/Methodology/Approach – The study employed a qualitative, multiple-case research design that involved seven manufacturing firms with different organisational arrangements for service provision.

Findings – Contrary to certain explicit assumptions, few firms organise for service provision solely through an in-house organisation. Analysis of firms in a wide variety of industries has shown that the organisational arrangements (internal, external or hybrid configuration) are contingent on factors such as market strategy, customer relationships, product-service linkages, internal competences and market channel characteristics.

Research Limitations/Implications – This article is an initial attempt to understand the strategic choices that firms make in terms of inter-organisational arrangements for service provision. The research should be extended by way of a cross-sectional survey in order to test and further validate the importance of the determinants of the organisational arrangements for service provision.

Originality/Value – This article contributes to the service marketing and management literature by examining factors that determine whether firms organise for service provision internally, externally or through a hybrid configuration. Prior research has not explicitly addressed this issue.

Keywords – Industrial services, Organisational arrangement, Internalisation, Externalisation, Hybrid configuration, Service partner

Paper type – Research paper

1. INTRODUCTION

Manufacturing firms around the world are increasingly providing industrial services and solutions in order to achieve differentiation (Cova and Salle, 2008; Gremyr *et al.*, 2010; Lay *et al.*, 2010; Matthyssens and Vandenbempt, 2008). The growing proportion of revenue coming from services has meant that the way a firm organises its service provision is now a key managerial issue. When a firm shifts from focusing on manufacturing goods to becoming primarily a service provider, it must change from being product-centric (and geographically structured) to customer-centric (Davies *et al.*, 2006; Galbraith, 2002; Homburg *et al.*, 2000). Adopting a new service strategy is not a straight road to success, however, given that firms often seem to get stuck in a mismatch between strategy and organisational configuration factors (Gebauer *et al.*, 2010b). This mismatch is often caused when manufacturing firms change their service strategy in order to provide more advanced services but stay with the original organisational design.

Although prior studies of service business in manufacturing firms do provide important insights, they tend to focus on the internal organisation and overlook the fact that, for various reasons, many firms operate through service partners. In fact, when introducing new services and solutions, many manufacturing firms rely heavily on the inclination of their downstream partners to collaborate in risk-taking (Matthyssens and Vandenbempt, 2008). For example, Raymond, the lift truck manufacturing firm, operates through a North American dealer network of over 30 dealerships in more than 100 branch locations. Despite Mathieu's (2001b) discussion of collaborative options in her conceptual study of service transition manoeuvres, there is almost no empirical research regarding how manufacturing firms work with service partners in order to sell and deliver services in addition to their products.

An organisation decision regarding how to organise for the provision of a new service is influenced by firm-, offering-, and market-specific factors. A firm can choose to sell and

deliver a new service either through an in-house service organisation (internal), external partners (external) or a combination of both (hybrid configuration). Because earlier research on these issues is very limited, there is no synthesised framework that can guide a firm looking to set up its service provision.

Against this background, the purpose of this paper is to analyse how firm-, offering- and market-specific factors influence the way firms organise service provision. In addition, the specific challenges for the firm with each organisational arrangement are analysed. The study analysed firms in a wide variety of industries that provide services internally, externally or through a hybrid configuration. A qualitative, multiple-case research design was employed involving seven manufacturing firms. This study contributes to the discussions of service transition (Fang *et al.*, 2008; Neu and Brown, 2005; Oliva and Kallenberg, 2003) and, in particular, to discussions regarding how to organise for service provision (Gebauer *et al.*, 2010b; Homburg *et al.*, 2002; Kowalkowski *et al.*, 2011a). The primary focus of the study was the identified research gap regarding the determinants of a manufacturing firm's choice to provide services either internally or externally. Organisational arrangements were found to be contingent, *inter alia*, on market strategy, customer relationships, product-service linkages, internal competences and market channel characteristics.

2. THEORETICAL BACKGROUND

2.1 Organising for industrial services

There are many views regarding how to organise for service provision and on-going discussion as to whether manufacturing firms should integrate or separate their service and product business units. Some researchers have argued that firms should manage their service business as a separate in-house organisation (Gebauer *et al.*, 2005; Oliva and Kallenberg,

2003) and distinguish between front-end, customer-facing units and back-end, product- and technology-facing units (Galbraith, 2002). Others have argued that integration is important in order to benefit from intra-firm capabilities (Neu and Brown, 2005; 2008). A third group has suggested that the degree of integration between product and service business units depends on the service strategies that firms pursue (Baveja *et al.*, 2004; Gebauer *et al.*, 2010a; 2010b; Kowalkowski, 2011; Kowalkowski *et al.*, 2011a). A survey of more than 300 manufacturing firms by Brown *et al.* (2009) showed that most firms keep their services separate from the rest of their operations by creating separate units that develop and deliver their new offerings. One limitation of these studies is that the question of how to organise for industrial service provision tends to be limited to units within the boundaries of the supplier.

One noteworthy exception is Goffin's (1999) examination of marketing channels, which concluded that the marketing channel used for support "can have a strong influence on the quality of support received (and perceived) by the customer. Therefore, the choice of the channel is an important one and sometimes the high costs of a direct channel are more than offset by the revenues it generates and the competitive advantage it creates" (p. 394). However, Goffin analysed a firm that manufactured washing machines (a typical model had a factory cost of US\$300) and only offered its customers basic product services. Another exception is Mathieu's (2001b) conceptual discussion of a collaborative choice continuum for service transition, which used internalising and outsourcing as the two extremes and partnering as a hybrid organisational arrangement. Internalising means keeping all service operations in-house, whereas outsourcing places the responsibility for all service provision on the service partners. The hybrid configuration – partnering – shares the responsibility for services between the manufacturer and different service partners. Many manufacturing firms favour hybrid arrangements (cf. Galbraith, 2002) that combine service-focused organisational structures (those that have a distinct business unit for services, including selling and delivery)

and customer-focused ones (in which customers form the basis for structuring the firm) (Gebauer and Kowalkowski, 2011a). It is plausible, therefore, to expect some firms to take advantage of a hybrid configuration that incorporates both internalisation and externalisation when organising for service provision.

In an internal organisational arrangement, the core activities associated with service provision are performed in-house (cf., Gebauer and Kowalkowski, 2011; Oliva and Kallenberg, 2003), regardless of whether the product and service organisations are separated or integrated. Core activities are those activities that are identified by management as pivotal for the service business in the markets in which the firm operates. Similarly, external firms perform the core service provision activities in an external organisational arrangement. An organisational arrangement in which core service activities are performed both in-house and externally is described as a hybrid configuration. As with internal and external arrangements, a hybrid configuration can take various forms. For example, a manufacturer can perform service provision in-house in one geographical region and externally in another, sell and deliver certain services in-house and others externally, or sell services that are delivered later by a service partner.

The potential role of service partners is emphasised further in literature on the subject of integrated solutions. Several authors have highlighted the importance of the business network and of having the competence to build partnerships with service providers and other actors in order to develop solutions (Cova and Salle, 2008; Davies, 2004; Galbraith, 2002; Shepherd and Ahmed, 2000). Nonetheless, neither Mathieu (2001b) nor the research stream on integrated solutions have discussed the issue of the internalisation and externalisation of service provision or its determinants.

2.2 Factors influencing the organisational arrangement: a contingency perspective

A great deal of attention has been given to the relationship between external factors and internal characteristics using contingency theory (Burns and Stalker, 1961; Galbraith, 1973; Lawrence and Lorsch, 1969; Mintzberg, 1983). This theoretical perspective challenges the view that there is one, best way to manage and organise a firm; instead, it focuses on which organisational design is best suited to a particular environment (Davies and Brady, 2000). Essentially, there must be an alignment between strategy, organisational arrangement, and conditions in the external environment. When this is the case, firms will choose different organisational arrangements depending on their internal (that is, firm- and offering-specific) factors and their external (that is, market-specific) factors.

One offering-specific factor that has been found to have a positive link to in-house service provision is a high level of customer-perceived relatedness between a manufacturer's product offerings and its service offerings (Fang *et al.*, 2008). Because basic services fit more easily into product-service bundles (Mathieu, 2001a), it is easier to leverage the knowledge and skills that reside in the product business units to the service business (Fang *et al.*, 2008). Accordingly, it would appear that manufacturing firms are more likely to offer basic services in-house than more advanced ones (Antioco *et al.*, 2008). However, this contrasts with the research by Kowalkowski *et al.* (2011a) and Matthyssens and Vandenbempt (2008), which proposed that it is more difficult to assign service partners to complex tasks such as the provision of extensive, process-oriented services than to traditional after-sales services and 'quick fixes'.

Furthermore, firm-specific factors influence the organisational arrangement. If a manufacturing firm changes its service strategy (for example, by transitioning from being product-centric to a service provider), this may also have repercussions on its service partners. Variation in service strategies demands varying degrees of separation of the product and service business, as well as service operations on the location of the customer. Therefore, a

change in service strategy can create the need to set up a whole new organisation for service provision (Gebauer *et al.*, 2010b). Mathieu (2001b) argued that the stronger the intensity and extent of the service transition, the more a firm's partners must invest in new resources, particularly human resources.

The service business in some high-margin manufacturing firms is relatively small and conducted by specialised service firms. Because of this, it may not be worth risking investment or inherent channel conflict with external partners by entering the service business (Baveja *et al.*, 2004). The risk of entering into direct competition with service firms, such as financial or consultancy firms, is particularly high when manufacturers offer advanced services such as financing or process-management consulting (Antioco *et al.*, 2008). Furthermore, manufacturers that move into their customer's domain, either without prior agreement or too assertively, may encounter competition or even conflict with their customers (Davies *et al.*, 2006).

Finally, market-specific factors also influence the chosen organisational arrangement. From a shareholder value perspective, service provision is most attractive for manufacturing firms in product industries that have slow growth and rapidly changing customer demands (Gebauer *et al.*, 2011). On the other hand, service provision in industries with high product growth and/or stability may actually reduce firm value (Fang *et al.*, 2008). Accordingly, firms that operate in slow-growth and turbulent markets should be more inclined to operate through in-house service organisations.

3. METHODOLOGY

3.1 Research setting

The objective of this study, which is to analyse organisational arrangements for service provision, is a context-bound organisational issue. The study adopted a qualitative case study

approach because of the exploratory nature of the research and the multi-dimensional characteristics of factors of organisational arrangements (Eisenhardt and Graebner, 2007; Maznevski and Chudoba, 2000; Yin, 2003). Case study research, including interviews, is a suitable method for identifying patterns and achieving what Edmonson and McManus (2007) referred to as “methodological fit” for nascent theory.

Seven firms were studied, each with specific service strategies and organisational arrangements for service provision; this approach promised more robust findings than a single case study because the results are more deeply grounded in varied empirical evidence (Eisenhardt and Graebner, 2007; Yin, 2003). Since the aim was to analyse factors that influence firms’ organisational arrangements for services, the unit of analysis was the firms’ business units that are responsible for service provision. Where external partners were involved in service provision, these were investigated through interviews with managers responsible for the contacts with the service partners at the case company.

3.2 Data collection and analysis

In order to achieve internal validity, a research framework was formulated based on the literature. Theory triangulation was achieved by using different bodies of literature, including service marketing, industrial marketing, and management theory. Pattern matching was used to compare the empirically observed patterns with the predicted ones (Gibbert *et al.*, 2008).

Construct validity was addressed by triangulating semi-structured interview data, focus group data and archival data such as internal reports, annual reports and secondary articles. Purposive sampling was used for each case in order to access highly knowledgeable respondents from different business units, groups and hierarchical levels, as recommended by Eisenhardt and Graebner (2007). The respondents were chosen based on their experience of service provision. Most of the respondents were central and local service managers, market

managers, sales managers, service personnel and managing directors. The interview questions were open-ended and allowed the respondents to formulate their answers in their own words.

A total of 70 interviews were conducted in seven firms between 2004 and 2009, the majority of which were recorded and transcribed. As recommended by Gibbert *et al.* (2008), key respondents reviewed the interview transcripts and peers reviewed a draft version. The data analysis was an iterative process that systematically combined theoretical models with empirical observations. This process, which Dubois and Gadde (2002) described as “abductive”, can be characterised as going back and forth between the data and the theory, creating fruitful cross-fertilisation.

In order to offer insights into organisation arrangement-specific challenges and obtain external validity (that is, analytical generalisability), the selected firms had to meet three primary criteria: (1) the firm pursues differentiation strategies through services, (2) the total sample of firms should include all three forms of organisational arrangements and (3) access to key informants was provided. The seven following firms were identified as meeting these criteria: AGA, Husqvarna, ITT Water & Wastewater, Metso Fiber, Metso Mining and Construction Technology (Metso MCT), Toyota Material Handling Europe (TMHE) and Volvo Trucks. These firms provide services internally, externally or through a hybrid configuration and cover a spectrum of organisational arrangements. The firms were selected with the intention of yielding diversity rather than statistical representativeness, and each case stands on its own as an analytic unit (Eisenhardt and Graebner, 2007; Yin, 2003). Table 1 briefly describes the service provision of the seven case companies and illustrates the comparable characteristics between the firms.

---Insert Table 1 here---

Initially, each case was treated individually, although comparisons were made among cases in the later part of the research process (Yin, 2003). Each firm was classified into one of the three organisational arrangements for service provision, based on management's perception of core activities, which were generally the arrangements chosen for the firms' key services and markets. For example, a firm that mainly offers basic services internally and then introduces an advanced service through an external partner would receive the overall classification of "internalisation" given that the new service will not be decisive for the firm in the short term. If the sales of the new service are successful and the firm's share of overall service sales increases, then the firm's classification might change over time, first to a hybrid arrangement and then to an external arrangement.

In accordance with the systematic combining process, data was grouped and regrouped into similar themes based on the firm-, offering-, and market-specific factors and the types of organisational arrangements (Dubois and Gadde, 2003). Finally, a case study protocol was used and a case study database was created with all available interview transcripts, archival data and other documents in order to increase reliability (Gibbert *et al.*, 2008).

4. RESULTS

The service transition literature has generally assumed that firms provide services through in-house service organisations. However, closer examination of organisational arrangements reveals that firms often provide services through external partners. This is either due to deliberate strategic choice or an inability to create a profitable in-house service organisation.

Three of the seven firms have adopted an internal arrangement (AGA, Metso MCT, and TMHE), although these firms also deliver services externally, to a certain extent. This externalisation tends to be limited to specific, non-core services, such as TMHE's driver training service, which is sold by TMHE but provided by service partners. The three firms

that have adopted a hybrid arrangement (ITT, Metso Fiber and Volvo) sell and deliver services both internally and externally. Husqvarna is the only company in the sample with an external organisational arrangement for all service provision. However, the external organisational arrangements and conditions can differ significantly among firms. For example, Volvo has long-term relationships and stable partnerships with independent dealers in the US market; these dealers are dedicated to Volvo's brands and do not sell or service any other brands. Husqvarna, on the other hand, operates through many independent dealers. These multi-brand dealers often sell a wide range of brands and may or may not view Husqvarna as one of their most important suppliers.

A firm's decision to internalise or externalise can vary across its various offerings and markets, and a manufacturer can even work in parallel with several service channels within a specific market. This paper argues that, at an overall level, the choice of organisation for service provision is influenced by several firm-, offering- and market-specific factors. Table 2 summarises the factors that have been identified as influencing the organisational arrangements.

---Insert Table 2 here---

4.1 Firm-specific factors

A key factor in favour of internalisation is a high degree of service orientation. Service orientation is viewed as the number of services offered, the number of customers to whom the services are offered and the emphasis placed on the services (Homburg *et al.*, 2002).

Internalisation is also supported by uniform information systems across sales companies and business units. Increased control enables a firm to decide what services it introduces on the market and at which time. Firms like AGA and TMHE have invested heavily in uniform

systems, which facilitates intra-firm collaboration and cost-efficient service operations.

Services in some other firms, however, are still managed by ‘pen and paper’ in several markets. This makes it impossible to effectively keep track of all activities and customer data and increases the amount of administrative work. High overhead costs and lower service quality makes it more difficult to compete with external service providers.

Limited financial and human resources hinder many firms’ attempts to internalise service provision. In particular, an extensive service infrastructure often requires substantial investments, which leads many firms to choose a hybrid organisational arrangement. Metso Fiber has limited resources to invest in its service business. Therefore, the firm offers refurbishment services and upgrade kits in-house for mature markets but also uses many local subcontractors and service providers, particularly in emerging markets.

Flexibility and financial risk aversion are other reasons for using both an in-house service organisation and service partners. Using partners in regions with smaller customer bases (in other words, low-volume areas), allows a firm to avoid unnecessary fixed costs. In order for the partner to persist, however, the firm will probably also need to sell other products/parts and perform services for other brands as well.

A firm’s choice of service strategy influences the range of alternatives for service provision. It is generally more difficult to offer extensive and advanced services through service partners. When Husqvarna developed service contracts together with external partners, it spent considerable time and effort on designing value propositions and tools in order to secure the cooperation and standardise the service operation of their independent dealers, and also to create incentives for the dealers for service provision. As a strategic choice to increase its service business, Metso MCT has invested in emerging markets in order to strengthen its presence close to its customers. However, unclear or non-existing service strategies make it more likely that firms will choose externalisation. For example, ITT outsourced all its service

activities in certain markets to service partners several years ago when it decided to focus on the product business. Since then, the firm has refocused and increased its emphasis on services by having a hybrid organisation. In markets where ITT's internal organisation has a strong position, there are greater opportunities for upselling.

Finally, customer centricity implies a long-term, relationship-orientated business approach (Galbraith, 2002; Shah *et al.*, 2006) that goes beyond activities related to acquiring information about the customers and disseminating it internally (that is, customer orientation as viewed by, for example, Narver and Slater, 1990), and it also favours internalisation. On the other hand, product-centric firms invest few, if any, resources in the service business, and therefore externalises service operations. Externalised services reduce the opportunities to create and maintain strong business relationships with customers (Kowalkowski *et al.*, 2011a; Nordin, 2005), which cause them to obstruct a customer-centric business approach. If service partners and dealers have an operational relationship with their customers, the manufacturer's customer relationships tend to be less developed. This, in turn, makes it more difficult to gain knowledge about customer needs and agree with service partners about which party 'owns' the customer interface. Given that a key driver for the firms' service transition is to further strengthen customer relationships and become more of a strategic business partner, there can be a certain misalignment between organisational arrangement and strategy if many core service activities are performed externally.

4.2 Offering-specific factors

Service relatedness is often positively linked to an in-house organisation, since closely related businesses can enhance "synergistic spillover benefits" (Fang *et al.*, 2008). Volvo utilises its network of internal and external dealers and their service competence for most services that have a good fit between the service content and the competence of the dealers. However, it

also works with external service partners for those services that would require the dealer network to build a new service infrastructure and competences. One example is security services, for which Volvo collaborates with the global service provider Securitas.

High service predictability is another factor that favours internalisation because it enables firms to schedule service provision that reduces capacity risk. This is one reason why firms that have in-house repair services, such as ITT and Metso Fiber, prefer preventive maintenance agreements over traditional corrective maintenance services. AGA has found many advantages in being able to coordinate and manage service provision internally, since many of these services, such as preventive maintenance and safety inspection, are relatively predictable. Moreover, due to the different revenue logics between fixed price agreements and traditional service and spare parts sales, it is generally easier to manage and coordinate the provision of fixed-price agreements internally. Furthermore, when there are high fluctuations in service volumes, firms favour a hybrid arrangement so they can be adaptable to changing demands through external capacity for service delivery.

Nordin (2005) proposed that high service intensity favours externalisation and low service intensity favours internalisation. In contrast, the present study found that firms, *ceteris paribus*, choose to provide high-volume services rather than low-volume services in-house. As an example, warehouse trucks generally require more service than submersible pumps and, as a result, have greater service market potential. However, the role of service volume seems to be less central in determining the choice of organisational arrangement than other offering-specific contingencies, such as product-service relatedness and profit margins.

Firms are more likely to choose an internalisation strategy if the resources needed to perform the service are complex and scarce. Due to their product and process expertise, firms like AGA and ITT offer process technology services that few external consultancies and other competitors are able to offer. Such services can be key differentiators, regardless of whether

they are offered and billed separately or as part of a bundled offering. Metso MCT has organised its knowledge-intensive services in a separate in-house organisation in order to maximise effectiveness and achieve the desired level of back-end support, service development and sales activities. As a result, advanced knowledge-intensive services are likely to be provided in-house, whereas basic, personnel-intensive services may be externalised.

Furthermore, ‘vendor-agnostic’ services (cf., Raddats and Easingwood, 2010) favour externalisation. Most firms are reluctant to offer services for the installed base of competitors due to the business risks and difficulties involved in obtaining the necessary new skills and components. The exception is when service contracts cover both the suppliers’ and competitors’ products. For TMHE, providing support and parts for competitors’ trucks is often a necessary condition in order to sign service agreements with major customers such as Ahold and Coca-Cola, which have large multi-brand fleets.

Apart from service-specific factors, several interrelated product-specific factors also influence the choice of organisational arrangement. Products that are critical for customers’ production and business processes require a fast response time (Lele, 1997). Consequently, it is essential to have an agile service infrastructure that minimises total downtime when breakdowns occur. It becomes pivotal, therefore, to maintain tight control over the entire service process; this requirement favours increased internalisation.

Internalised service provision allows firms to receive valuable inputs about their customers’ operations, cost structures and lifecycle earnings. For firms like Volvo, such information is increasingly important in new vehicle projects, when developing new trucks and new services. Another factor that points towards internalisation is the importance of services for securing future product sales. However, a wide range of services is associated with higher business risk (Nordin *et al.*, 2011). Therefore, if a wide range of competences and

services are required, it is unlikely that all services are provided in-house, which means that hybrid or external arrangements are most likely.

4.3 Market-specific factors

Service market conditions differ significantly between geographical markets (Kowalkowski *et al.*, 2011a). For most firms, the focus in North America, Western Europe and other markets with a large installed base is on upgrades and efficiency improvements, whereas green-field projects dominate in many markets in Southeast Asia and South America. Firms that operate in markets with a small installed base are less likely to organise for service provision internally. The situation is particularly challenging if dealers and external service providers have strong market positions and limited interest in ‘true’ partnerships.

In general, operating through service partners appears more common in emerging markets. This is in line with Fang *et al.*’s (2008) view that in-house service provision is less attractive for firms in fast-growing product markets. In addition, if third-party service firms have a strong local position, this will generally make it more difficult to create a local service organisation. The situation is particularly problematic in markets where the service partners are both customers and competitors (Kowalkowski *et al.*, 2011a). Although local service firms in emerging markets may not yet compete directly with the well-known Western firms in large-scale, complex solutions, they may be highly competitive in other services. For example, Metso MCT faces competition from Chinese firms in mining technology, both in China and internationally, primarily in markets where Chinese mining firms have invested heavily.

In many industries and markets, service partners also deliver services for other brands. It can be difficult for a manufacturer to obtain the same commitment from service partners as it would from a local service organisation (Matthyssens and Vandenbempt, 2008). Husqvarna

has attempted to counterbalance such a situation by developing service contracts that tie the organisation to both the dealers and the customers. The difficulty with obtaining strong commitment and loyalty from service partners is also evident in other industries, where many service firms tend to use cheaper counterfeit spare parts instead of genuine parts, and they often lack the necessary knowledge to perform the service. Even though ITT's service partners may have the fundamental skills to perform basic services, they often lack a deeper knowledge of the service system and the customers' processes.

Two market trends that tend to favour increased internalisation are customer demands for product-service bundles and consolidation of the supplier base. In the material handling industry, global customers like IKEA sign international agreements that include both products and services. International service agreements stipulate consistent services in all local markets, which is something that only a few global firms can offer. Technical integration with customers is often more complex if service partners or other external parties provide many of the services. When Metso MCT entered the Russian market, this was a key reason why it decided to use its in-house process technology organisation to build brand awareness and establish customer relationships.

Industry turbulence in terms of changing customer needs, market channel consolidations and low-cost competition is easier to handle with in-house service provision. In such a situation, it is particularly important for a firm to stay close to its customers so that it can sense and adapt to changing customer needs. However, industry turbulence means increased business risk, and risk-averse manufacturers may choose to operate mainly through service partners. As a result, there is no unanimous view as to how industry turbulence influences organisational arrangements. Instead, other factors seem to have a larger influence on decisions regarding how to organise service provision.

Finally, the market for services typically counteracts the cyclicalities of manufacturing operations (Oliva and Kallenberg, 2003). This became evident in the recent financial crisis when product sales in many industries, such as material handling equipment and heavy trucks, more than halved on an annual basis between 2008 and 2009. The magnitude of the crisis also affected service sales, albeit to a much lesser extent. Compared to its main competitors that have external arrangements for service provision, TMHE's organisational arrangement enabled it to capture service revenues throughout the crisis.

4.4 Organisational arrangement-specific challenges

Sections 4.1 to 4.3 discussed the factors in favour of each organisational arrangement. In order to succeed with service provision, however, manufacturing firms must overcome the challenges associated with each organisational arrangement. Table 3 presents the key challenges that have been identified.

---Insert Table 3 here---

This paper argues that the identified challenges can explain why some firms do not change their organisational arrangement, even though they do not have an 'optimal' configuration from a service provision point of view. Unsurprisingly, many of the challenges associated with internalisation are internal, while most of the externalisation challenges are external. However, there are some examples of the reverse. For instance, if services are a cohesive part of the firm's core offering and there are strategic linkages between the service and product businesses, increased externalisation can entail many risks. On the other hand, external factors can constitute the main challenges of increased internalisation, particularly in 'antagonistic' market channels with a considerable amount of power play and minimal commitment.

5. CONCLUSIONS AND IMPLICATIONS

This paper has extended the existing literature on service infusion in manufacturing firms by studying service provision as a choice between an internal, external or hybrid organisational arrangement. This perspective differs from previous research, which has mainly focused on how to organise service provision internally.

5.1 Research implications

The key contributions of this study relate to: (1) the interrelationship between firm-, offering-, and market-specific contingency factors and organisational arrangement, (2) analysis of the main factors in favour of internal, external and hybrid arrangements, and (3) analysis of the key challenges inherent in each organisational arrangement. In this way, the study contributes to the marketing and management literature in general and service transition literature in particular. The study's key contribution is that it extends how service provision can be organised, from a choice between separation or integration (see Gebauer and Kowalkowski, 2011; Oliva and Kallenberg, 2003; Neu and Brown, 2005) of the service and product business, to a choice between an internal, external and hybrid organisational arrangement for service provision. This contribution is particularly timely in light of the rapidly expanding research on service transition in manufacturing industries.

The most common form of service provision for the firms in the study is a hybrid configuration, although the degree of internalisation/externalisation differs noticeably. In addition, many firms use multiple channels for service provision in order to reach their customers. Due to the immense differences among many local markets, firms are likely to have different organisational arrangements in different markets or regions. Furthermore, it is crucial to recognise the potentially inhibiting role of the market channel for *both*

internalisation and externalisation. While latent risks for conflict with service firms impede internalisation, externalisation is inhibited by antagonistic market channels with little room for close collaboration.

The present study also contributes to the discussion on the factors in favour of internalisation and externalisation of service provision. Rather than viewing cost considerations as the most important factor for determining the degree of internalisation and externalisation (Goe, 1991; Perry, 1992), the present study supports the view that the most important driver is a combination of non-cost-driven factors (Beyers and Lindahl, 1996; Coffey and Drolet, 1996). However, it is not possible to discern a unanimous view of how specific types of services should be organised. Consistent with a contingency perspective on organisation, service selling and service delivery must be consistent with adjustments to various firm-, offering-, and market-specific factors. Under certain circumstances, the firm is well positioned to proactively achieve a favourable alignment between organisation and service provision; in other situations, it must adapt to the market conditions.

Previous research has not presented a unanimous view regarding whether manufacturing firms are more likely to offer basic services or advanced in-house services. While Antioco *et al.* (2008) argued that firms are more likely to offer basic services, Kowalkowski *et al.* (2011) and Matthyssens and Vandenbempt (2008) suggested that advanced services are more difficult to externalise. Even if it is generally more difficult to assign service partners to advanced services, the present study found no evidence that firms are more likely to offer basic services in-house than they are to offer more advanced ones. Although this was the case for some firms, others displayed the opposite pattern. This can be explained by contingency factors, such as service profitability and rivalry from independent, local workshops.

5.2 Managerial implications

When organising for service provision, managers must recognise the key firm-, offering-, and market-specific factors in favour of each organisational arrangement, as well as the inherent challenges of each. In some situations, firm- and offering-specific factors may dictate the most fitting configuration, whereas market-specific factors may play a pivotal role in others. In practice, this means that managers organising for service provision must balance contradicting factors. Therefore, managers should have a clear view of the firm's market position, service strategies and service portfolio, although a complete overview may not be possible to comprehend (cf., Hirschman and Lindblom, 1962; Kowalkowski *et al.*, 2011b). Different organisational arrangements often fit different regional markets, such as Europe, Southeast Asia, North America and South America.

Unsurprisingly, hybrid organisational arrangements, in their various forms, seem to be the most plausible options. Manufacturing firms with a hybrid organisational arrangement benefit from the advantages of in-house and external service provision, such as focusing on profitable and core services internally and arranging for non-core, low-margin services externally. Even customer-centric firms with high service volumes and margins and high degrees of service predictability tend to have certain services performed by external partners. These are usually non-core services with low relatedness to their core offerings, or services that require a very different resource base.

In contrast to the externalisation of service provision, internalisation requires significantly more resources and time and involves the potential risk of channel conflict. However, managers often underestimate the scope, difficulty and time obligation involved in setting up and running an in-house service organisation (Gebauer and Fleisch, 2007; Kowalkowski *et al.*, 2011b). Consequently, it often seems more effective to use service partners, although firms that do so potentially run the long-term risk of creating a profitable

intermediary that has the day-to-day customer interface. Moreover, the service partner is likely to react if the firm later reconsiders its decision to use an externalisation strategy and instead decides to operate through an in-house channel. Thus, although manufacturing firms often externalise service provision when they lack sufficient capacity, capabilities and cost efficiency to perform the services in-house (Axelsson and Wynstra, 2002), managers do not necessarily reflect upon the long-term consequences of an eventual outsourcing decision when they consider outsourcing service provision. In fact, such changes may be irreversible (at least in the shorter term) because re-entering the service business is often a cumbersome process, regardless of whether the service market is fragmented or dominated by a few large actors. Consequently, any major service externalisation option should be thoroughly considered before any decision is made.

5.3 Limitations and future research

This study represents an initial attempt to investigate the internalisation/externalisation aspect of industrial services. The study has certain limitations. Firstly, although in-depth studies were conducted of business units responsible for service selling and delivery, the study lacked primary data from service partners and dealers; such data would have provided valuable additional insights that would either confirm or modify the findings. Secondly, the study did not consider service development activities. Examining organisational arrangements for service development could have offered a more comprehensive view of service operations, including development, sales and delivery. Thirdly, the study did not measure the performance or success of firms organising according to the three focal arrangements. It would have been valuable to analyse the extent to which the configuration was successful, given the various internal and external contingency factors. Fourthly, only the business units of seven firms were studied. A potential avenue for future research would be to conduct a

larger, cross-sectional survey that would allow a more detailed understanding of the influence of internal and external contingencies and the advantages/disadvantages of each organisational arrangement. Another relevant approach would be to examine the potential manifestation of equifinality (Miller, 1996); that is, whether different types of organisational arrangements can lead to equally good results.

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Table 2. Factors in favour of each organisational arrangement.

	Internal	Hybrid	External
Factors			
<i>Firm-specific</i>	<p>Service orientation and customer centricity.</p> <p>Deep knowledge of the products' role in the customers' processes.</p> <p>Aspiration to become more of a strategic business partner with customers.</p> <p>Uniform information systems across business units and subsidiaries.</p> <p>Possibility to control the delivery process to ensure quality.</p> <p>Competence-intensive, valuable and scarce resources for performing services.</p>	<p>Possible service and customer orientation.</p> <p>Slack in the service organisation may favour more in-house operation, whereas a lack of skilled employees may favour externalisation.</p>	<p>Product orientation.</p> <p>Competence to build partnerships with service providers.</p> <p>No service transition strategy.</p> <p>Limited financial and human resources.</p> <p>Limited geographical coverage.</p>
<i>Offering-specific</i>	<p>Services regarded as a cohesive part of the core offering.</p> <p>High service volumes.</p> <p>Services are a high-margin business, a potential profit pool.</p> <p>Services are difficult to imitate.</p> <p>High level of customer-perceived relatedness between the firm's products and its services.</p> <p>Products are expensive and have long lifecycles.</p> <p>Services are important for building relationships, building brand awareness and securing future sales.</p> <p>Services are important for the proper functioning of the products.</p>	<p>Some services are more critical for the firm than others.</p> <p>Some services are more related to the products than others.</p> <p>Products are complex, requiring a wide range of competences (from advanced to personnel intensive services).</p>	<p>Services are not regarded as part of the core offering.</p> <p>Low service volumes.</p> <p>Product sales are more profitable than services.</p> <p>Services are easy to imitate.</p> <p>Low level of customer perceived relatedness between the firm's products and its services.</p> <p>Low-cost products with limited time span.</p> <p>Service provision for competitors' products.</p> <p>Competence required is not scarce or valuable.</p>
<i>Market-specific</i>	<p>Product commoditisation.</p> <p>Customer outsourcing of service operations.</p> <p>Customer demand for bundled offerings and solutions.</p> <p>Internationalisation of customers.</p> <p>Service firms have limited skills.</p> <p>Customers have limited skills and interest.</p> <p>Large service market and installed base.</p> <p>Services are countercyclical.</p>	<p>Possibility to establish partnerships with service firms partially covering the market (in terms of resources and competence and also geographically).</p> <p>Different regional market drivers.</p> <p>Different market positions on different markets.</p> <p>Customers are geographically diverse.</p>	<p>High-growth product market.</p> <p>Ownership of dealers/service provider is prohibited.</p> <p>Partners have key resources and market positions.</p> <p>Difficult or costly to acquire service partners.</p> <p>No customer demand for advanced services or strategic relationships.</p> <p>Limited service market, small installed base.</p> <p>Many small customers.</p> <p>Highly competitive service market.</p> <p>Weak market presence.</p>

Table 3. Major challenges with each organisational arrangement.

	Internal	Hybrid	External
Challenges	<p>Large fixed costs. Reduced flexibility. Requires a wide range of (changing) competences. Service transition is generally a difficult and long-term process: establishing an in-house organisation requires time, resources, and top management commitment. Fewer resources assigned to product business. Firms may need to manage the symbiotic relationships of having two different business logics; service and manufacturing. Risk of running into conflict with customers that also perform services. Internal coordination across markets with potentially very different characteristics.</p>	<p>Risk for competition with service partners. More difficult to change organisational arrangement without risk of channel conflict, particularly in antagonistic market channels. Difficulty sharing responsibilities.</p>	<p>Uncertainty and potentially incongruent motives of manufacturing firm and service partner, and an unwillingness to adapt: relationship risk and competence risk. In market channels with power play and limited trust, loyalty is difficult to establish. Fewer spare parts sold through third parties. Unclear who 'owns' the customer interface. Coordination costs. If service providers are local, it is more difficult to offer uniform international service agreements. Strategic linkages between service and product business can become obfuscated. Difficult to launch services and secure the support of and the necessary resources of the market channel.</p>