

# **The Risks of Providing Services: Differential Risk Effects of the Service-Development Strategies of Customisation, Bundling, and Range**

## **Abstract**

**Purpose:** This study examines the risks for manufacturing companies of extending their traditional goods offerings by the addition of different kinds of services.

**Design/methodology/approach:** The study develops a conceptual framework of nine propositions (and corresponding diagrammatic representations) of the relationships between: (i) three kinds of risk (operational, strategic, and financial); and (ii) three strategies for the provision of added service (customisation, bundling, and broadening the range of offerings). This conceptual framework is examined empirically by qualitative analysis of data gathered in a three-year longitudinal study of managerial representatives from nine multinational manufacturing firms engaged in the addition of services to their traditional goods offerings.

**Findings:** Eight of the nine propositions are fully supported, and one receives equivocal support. In addition, several contextual factors are identified as moderating influences on the relationships between the three categories of service offering and the three classes of risk.

**Research implications:** The study provides an original conceptual framework and nine research propositions that represent a useful starting point for the development of a formal theory of the risks of providing services.

**Practical implications:** The conceptual framework provides guidance for managers' assessments of the risks accompanying the infusion of added services to the traditional goods offerings of manufacturing companies.

**Originality/value:** This paper provides a novel conceptualisation of service innovation and attendant risk.

**Keywords:** services, solutions, risk, customisation, bundling, industrial marketing

**Paper type** Research paper

# 1. Introduction

Companies are increasingly seeking to reposition themselves strategically by moving from goods manufacturing alone to offering integrated bundles of goods and services that purport to provide customised ‘solutions’ to their customers’ needs (Brady *et al.*, 2005; Galbraith, 2002; Nordin and Kowalkowski, 2010; Oliva and Kallenberg, 2003; Vandermerwe, 2000; Wise and Baumgartner, 1999; Stremersch *et al.*, 2001; Davies, 2004; Tuli *et al.*, 2007; Fang *et al.*, 2008). Such strategic redirection can create significant business opportunities for manufacturing firms; however, it can also involve risks that were previously assumed by customers. For example, when General Electric (GE) offered to perform maintenance at a flat fee for the time that an aircraft engine had been airborne (thereby assuring fleet operators of more predictable maintenance costs than the traditional time-and-materials procedure had provided), customers were effectively able to transfer the servicing cost risk to GE.

In general, the literature has tended to focus on the positive outcomes of offering integrated goods-and-services packages, to the relative neglect of the concomitant problems and risks. Although it is true that there is an emerging body of research on various aspects of risk—including: (i) generic risk management (Zsidisin, 2003; Slywotsky and Drzik, 2005); (ii) risk in various supply-chain structures (Hallikas *et al.*, 2002; Hooper and Stobart, 2003; Spekman and Davis, 2004; Oliva and Kallenberg, 2003); and (iii) risk management in various aspects of service business (Hollman and Forrest, 1991; Giarini and Stahel, 1993; Brady *et al.*, 2005; Fang *et al.*, 2008; Gebauer and Fleisch, 2007; Oliva and Kallenberg, 2003; Penttinen and Palmer, 2007)—few studies have analysed the specific risks inherent in the extension of manufacturing companies’ market offerings into different kinds of services.

The present study addresses this relative gap in the literature. In particular, the study contributes to the literature by developing a conceptual framework and propositions regarding the various types of risk (operational, strategic and financial) faced by manufacturing companies as they seek to position themselves in terms of three service-development dimensions: (i) customisation; (ii) bundling; and (iii) the range of the offering. The study then evaluates the conceptual framework

empirically in a longitudinal qualitative study of nine European-based manufacturing companies in different industries over a period of nearly three years.

The remainder of the paper is organised as follows. The following section presents a conceptual framework (and nine propositions) of the relationships between different dimensions of service-development and various types of risk. The methodology of the qualitative empirical study is then described. The findings are then presented, and conclusions drawn. The paper concludes with a summary of the main findings and a discussion of the implications for managers and future researchers.

## **2. Conceptual framework**

### **2.1 Characteristics of additional services**

A move towards the provision of an increased range of services in a firm's portfolio usually entails the addition of services that are relatively more tailored and complex than the firm's standard service offerings (Vandermerwe and Rada, 1988; Mathieu, 2001a; Gebauer et al., 2004). These additional services have been variously described as: (i) 'full services', which were defined by Stremersch *et al.* (2001, p. 1) as "comprehensive bundles of products and/or services, that fully satisfy the needs and wants of a customer related to a specific event or problem"; and (ii) 'solutions', which have been described as a combination of "products and services customised for a set of customers" (Sawhney, 2006, p. 369). Because no clear distinction is apparent between these two descriptions, the terms 'full services' and 'solutions' are used interchangeably in the present paper to describe comprehensive (often customised) bundles of services and possibly, but not necessarily, manufactured goods. The risks associated with the provision of such 'full services' and 'solutions' can be analysed in terms of: (i) *customisation*; (ii) *bundling*; and (iii) *range of the offering*.

The first of these, *customisation*, represents a means of competing by offering superior or unique value through the design, modification, and selection of services (and perhaps goods) that fit into a customer's environment and meet that customer's needs (Valikangas and Lehtinen, 1994; Tuli *et al.*, 2007). In making a strategic decision to focus on the service market, a firm must strike an

appropriate balance between transferability across markets (standardisation) and specific benefits for individual end-users (customisation) (Oliva and Kallenberg, 2003). Solutions that are customised to a relatively high degree require companies to have a better understanding of their customers and to build closer relationships with them in terms of stronger operational linkages, enhanced exchanges of information, and clear contractual statements of each party's responsibilities—all of which have the potential to reduce the risk for the provider (Penttinen and Palmer, 2007). However, as Johnson and Selnes (2004) have pointed out, customised offerings are also associated with the risk of higher costs because they require dedicated resources, customer-specific knowledge, and the need to adjust the offering continuously to changing needs and situations. As a compromise, a modular system of product and service components, which can be reconfigured according to changing customer needs, can combine the cost advantages of standardisation with the differentiation advantages of customisation (Mattsson, 1973). Indeed, Davies et al. (2007) reported that Ericsson has estimated that three-quarters of its telecommunications solutions are based on pre-defined service modules, whereas only a quarter need to be customised to individual customer needs.

The notion of modularity also relates to the second dimension of extra services noted above, the degree of *bundling*, which refers to the integration of goods and services into packages that synergistically enhance the offered value beyond the sum of the individual parts (Sawhney, 2006). According to Stremersch and Tellis (2002), bundling strategies yield higher profit margins than unbundled offerings because customers are willing to pay for perceived higher value. Three bundling strategies were identified by Adams and Yellen (1976): (i) 'pure component strategy' (offering all goods and service components separately); (ii) 'pure bundling strategy' (offering the components only in bundled packages); and (iii) 'mixed bundling strategy' (offering the components both separately and in bundles). According to Stremersch and Tellis (2002), the pure bundling strategy is generally preferable to the mixed bundling alternative, unless the market is highly competitive—in which case, mixed bundling increases variety and thereby usually increases customer demand for the firm's offerings.

The third dimension, the *range of the offering*, refers to the number and variety of services and products on offer, which Homburg et al. (2002) considered to be a central dimension of the business orientation of service providers. For instance, if a firm makes a strategic shift from being an equipment manufacturer to a ‘solutions’ provider, it must decide whether to continue offering all of its previous products and services, or whether it should withdraw some (Kowalkowski, 2008a). The firm must also decide whether to offer services related only to its core business, or whether it should extend the range by offering unrelated services (Fang *et al.*, 2008). In making these decisions, the firm must assess its capabilities to manage the various alternatives; as Baveja et al. (2004) observed, the pattern of investments, capabilities, and market strategy will differ notably between, for example, an equipment repair service and a process consulting service. The number and type of products and services that are offered clearly have an influence on the risk faced by the provider; as Gebauer and Fleisch (2007) observed, any new strategy of enlarged service provision is risky.

## **2.2 Categories of risk**

According to Harland *et al.* (2003), who defined ‘risk’ in broad terms as the probability of some kind of loss, failure, or other undesired consequence, companies are exposed to three types of risk: (i) *operational*; (ii) *strategic*; and (iii) *financial*. Gebauer and Fleisch (2007) reported that all three types of risk rise with increased service provision; however, these authors did not analyse whether changes along the different service-development dimensions noted above (customisation, bundling, and range of the offering) had any differential influence on this increased risk.

The first type of risk, *operational risk*, refers to a company’s reduced ability to produce and supply products and services as a consequence of a breakdown in a core operating, manufacturing, or processing capability (Sadgrove, 2005; Meulbrook, 2000; Simons, 1999). The category also includes operational problems caused by human-resource problems, capacity constraints, logistics challenges, IT problems, and leadership issues (CAS, 2003).

The second type of risk, *strategic risk*, refers to threats that have the potential to affect the implementation of a business strategy, thus damaging a company’s growth trajectory and shareholder value (Simons, 1999; Slywotsky and Drzik, 2005). If a firm fails to cope with such a strategic risk, it

might fail as a business, no matter how well it otherwise manages its operations. Simons (1999) divided such risks into: (i) ‘competitive risk’ (a firm’s inability to differentiate its products or services from those of its competitors); and (ii) ‘customer risk’ (customers not necessarily placing orders). Schwartz and Gibb (1999) added ‘reputation risk’, which can erode the value of an entire business due to loss of confidence. More recently, Slywotsky and Drzik (2005) categorised strategic risks into seven ‘major classes’: (i) industry; (ii) technology; (iii) brand; (iv) competitor; (v) customer; (vi) project; and (vii) stagnation.

The third type of risk, *financial risk*, has been defined as any risk that has a direct impact on net cash flows (Cabedo and Tirado, 2004). This category thus includes problems related to price, credit, inflation, liquidity, and potential losses due to changes in financial markets and defaulting by large-scale debtors (Meulbrook, 2000).

### **2.3 Research propositions**

In their planning and decision making, firms that are considering an ‘extended service strategy’ have to take into account the attendant potential risks of exploiting certain service opportunities. Several studies have contended that the risks increase in tandem with the extension of such services (Oliva and Kallenberg, 2003; Brady *et al.*, 2005; Gebauer and Fleisch, 2007; Penttinen and Palmer, 2007; Fang *et al.*, 2008). For example, as Windahl *et al.* (2004) have noted, the provision of such extras requires the development and integration of new technical, market, and business competencies, and Brady *et al.* (2005) have argued that the provision of solutions requires enhanced skills in key account management, risk analysis, finance, legislative and regulatory policy, information management, innovation, and portfolio management. All of these increased demands have the potential to increase risks for a firm that is proposing to provide such offerings.

However, it is also arguable that an extension of offerings might *reduce* some risks to the provider. For example, if full-service providers are confident that they offer comprehensive bundles that will, in one way or another, fulfil the total needs of any customer, there will be less need for the provider to interrogate specific buyer needs (as required for conventional services and goods)—thus reducing the level of risk for the provider (Sundin and Bras, 2005).

It would thus seem that particular risks might increase or decrease as a firm extends its service offerings. With a view to a more systematic analysis of the strategic implications of shifting towards the provision of extended service and total solutions, the following propositions are developed with regard to three potential risks (operational, strategic, financial) in terms of the three service-development dimensions noted above (customisation, bundling, and range of the offering).

### **2.3.1 Degree of customisation**

In principle, customers benefit from customisation because they receive the exact offering they require, and providers benefit because they minimise the strategic risk of not solving their customers' problems and satisfying their needs. However, the customisation strategy is associated with a greater likelihood of product failure because statistical control methods based on periodic quality checks cannot be used for products or services that are produced in small volumes. Indeed, in the case of so-called 'pure customisation' (Lampel and Mintzberg, 1996), the offering is uniquely designed, manufactured, assembled, and distributed to the order of an individual customer. Although so-called 'customised standardisation' allows for the assembling of standard products and services to meet the needs and requirements of individual customers, the preparation and delivery of such customised offerings remains relatively time-consuming and difficult to plan. The reduction in operational efficiency and effectiveness associated with customisation has been labelled as "the customisation-responsiveness squeeze" by McCutcheon and Raturi (1994, p. 89). This has led to extensive use of standardised service modules not only for standardised offerings, but also to underpin more complex customised services and solutions (Davies et al., 2007; Stremersch *et al.*, 2001).

Customised services and products are also associated with greater 'competence risk', which increases the risk of the provider failing to develop and deliver the services and products on time and at the right cost (Lampel and Mintzberg, 1996; Ng *et al.*, 2009).

On the basis of the above discussion, the following two propositions can be formulated:

\* *Proposition 1a:* Greater customisation of an offering is associated with greater operational risk for the provider.

\* *Proposition 1b*: Greater customisation of an offering is associated with reduced strategic risk for the provider.

The customisation of offerings usually involves the so-called ‘principle of postponement’ (Christopher and Towill, 2000) with regard to assembly, design, and/or purchase. This implies a smaller financial risk for the supplier because less capital is tied-up in inventory in stock. In contrast, a forecast-based standardisation strategy involves greater financial risk because it typically implies the accumulation of inventory in stock and/or the recruitment of personnel against potential future demand (Pagh and Cooper, 1998). The following proposition can therefore be formulated:

\* *Proposition 1c*: Greater customisation of an offering is associated with less financial risk for the provider.

Figure 1 provides a graphical summary of Propositions 1a, 1b, and 1c (relating to customisation).

*Take in Figure 1*

### **Figure 1. Influence of customisation on risk**

#### **2.3.2 Bundling strategy**

The overall rationale for bundling of services (and/or goods) is that it has the potential for economies of scale and increased efficiency (Panzar and Willig, 1981). Bundling thus has potential benefits for customers because they need to deal with fewer suppliers and are therefore likely to have lower total costs (Choi and Krause, 2006); however, bundling does present several increased risks for providers. In particular, the provider must take responsibility for the integration of the constituent parts and the

optimisation of the performance of the total system. There is thus an increased risk of operational problems (Oliva and Kallenberg, 2003). Thus, it is proposed that:

\* *Proposition 2a:* A bundling strategy (pure or mixed) is associated with greater operational risk for the provider than a pure component strategy.

Bundling involves some degree of speculation about customers' future needs, which increases the risk that the available bundles might not appeal to the idiosyncratic needs of some customers (Pagh and Cooper, 1998). A pure bundling strategy thus implies a greater strategic risk than a pure component strategy. Moreover, as Wilson *et al.* (1990) have argued, the perceived value of bundled systems (such as the convenience of 'one-stop shopping') decreases for customers as they become more knowledgeable. To mitigate such strategic risks, suppliers can combine bundles and components in a 'mixed bundling' strategy (Stremersch and Tellis, 2002), which allows customers greater scope in choosing ingredients that are appropriate for them, thus decreasing the strategic risk for the provider. It can thus be proposed that:

\* *Proposition 2b:* While a pure bundling strategy carries a higher strategic risk for the provider than a pure component strategy, a mixed bundling strategy means a lower strategic risk than both a pure component strategy and a pure bundling strategy.

Finally, bundling also increases the financial risk for the supplier because more value is concentrated in fewer (but larger) contracts. To take an extreme example, if all value is concentrated in a single central tender, losing that tender will result in no sales at all, whereas value spread across several local tenders disperses the financial risk (Kowalkowski, 2008a). The following proposition can thus be formulated:

\* *Proposition 2c*: A bundling strategy (pure or mixed) is associated with a greater financial risk for the provider than a pure component strategy.

Figure 2 provides a graphical summary of Propositions 2a, 2b, and 2c (relating to bundling).

*Take in Figure 2*

## **Figure 2. Influence of bundling on risk**

### **2.3.3 Range of the offering**

Increasing the comprehensiveness of service offerings increases the probability of technical and human errors in the many interfaces that exist among the goods and services that constitute the total offering. If a supply chain is involved, a broader range of services also increases the risk of coordination failure within the supply chain, which invariably has its strongest impact on the provider of the solution. To manage such risks effectively, enhanced technical knowledge and competence in systems integration is required within and across organisational boundaries (Parker and Anderson, 2002). These operational risks are increased even more if the supplier offers operational services within part of its customers' operations, or if aspects of the service operations are performed by third-party providers. The following proposition can therefore be formulated:

\* *Proposition 3a*: A wider range of offerings is associated with a greater operational risk.

A main driver for the transition from product-only to product-plus-service is the increased customer demand for services and solutions generated by outsourcing and new possibilities for information-based services (Nordin and Kowalkowski, 2010; Penttinen and Palmer, 2007). A wider range would thus seem to be strategically advantageous because it increases the likelihood that customers will buy something from the provider—at least in the short term. However, if demand

becomes too great, the customers' perception of quality might decrease if the firm is unable to deliver appropriate service quality with the available resources (Grönroos and Ojasalo, 2004). Moreover, if the range becomes *too* disparate to maintain superior quality, the credibility and brand image of the supplier might be damaged in the longer term. This is especially likely to be the case if the supplier lacks a good reputation for supplying successful solutions in related business areas, which makes it more difficult to convince potential buyers of the value of the wider range of new offerings (Penttinen and Palmer 2007). It would thus seem that the effect of broadening the range on strategic risk is actually 'U-shaped'—in that an increased range initially decreases the strategic risk, but a point is likely to be reached where the strategic risk begins to increase again. The following proposition can therefore be put forward:

\* *Proposition 3b*: Up to a certain limit, a wider range of offerings is associated with a reduced strategic risk; however, after that point, the strategic risk increases as the offering becomes more comprehensive.

Because it is generally not possible to hold inventory of a finished *service* in the same way as it is possible to maintain an inventory of physical goods (Regan, 1963; Rathmell, 1966; Grönroos and Ojasalo, 2004), companies offering full services and solutions are likely to need to maintain a service organisation (in-house and/or external) to ensure sufficient capacity to meet demand fluctuations over time (Lovelock, 1983). Keeping equipment and spare parts in stock, and maintaining a capable service organisation at the ready, logically implies an increased financial risk because of the investments required (Fang *et al.*, 2008). The following proposition is therefore formulated:

\* *Proposition 3c*: A wider range of offerings is associated with a greater financial risk.

Figure 3 provides a graphical summary of Propositions 3a, 3b, and 3c (with regard to broadening the range of services).

*Take in Figure 3*

**Figure 3. Influence of range on risk**

### **3. Methodology**

#### **3.1 Research setting**

To test the above propositions, data were gathered during a three-year longitudinal research study of the development of service offerings by nine European-based multinational firms. The firms were selected to include: (i) a range of industries with different levels of competition; and (ii) firms with different levels of maturity (in terms of their different positions on the product–service continuum). All informants were experienced managers who were responsible for developing the service operations of their companies.

Studying nine case companies promised more robust findings than would have been obtained from a single case study (Eisenhardt, 1989; Yin, 1994). The three-year time frame enabled trust to be established between researchers and informants, thus facilitating the collection of frank and reliable data on how and why various risks were related to the different dimensions of service-development.

#### **3.2 Sample**

The host companies, which all had their head offices in Europe, were mature, market-leading, multinational, manufacturing companies producing relatively complex products. All had an annual turnover of €1 billion to €20 billion (USD\$1.4 billion to \$2.8 billion), and all had between 10,000 and 100,000 employees. They represented a wide range of industries—including mining, automotive, industrial gas, aircraft, outdoor power products, and telecommunications. Almost all of their sales were business-to-business transactions.

Although they had all been successful in their product-led businesses, the case companies had identified the provision of services as the key strategy for future growth. Basic service offerings, such as maintenance services and the supply of spare parts, had been offered for some time, but all firms

had increasingly focused on full services and solutions—such as outcome-based contracts and long-term rental agreements.

### **3.2 Data collection and analysis**

Data collection proceeded in four stages. First, representatives of the nine firms participated in several exploratory workshops that were conducted before the substantive study to discuss issues relating to the transition from a focus on products to a focus on services. During these workshops, detailed notes were taken and subsequently converted into minutes of the meetings.

The second stage consisted of two focus-group sessions with workshop participants who had expressed a particular interest in the risk issues associated with the development and selling of additional service offerings. These participants represented three of the nine firms. The focus-group sessions, which were recorded and transcribed, enabled researchers and respondents to interact directly and share insights in open and constructive discussions (Stewart and Shamdasani, 1990; Matthyssens and Vandenbempt, 1998).

In the third stage of data collection, the specific situations of the three companies represented in the focus groups were discussed in six individual semi-structured in-depth interviews. These interviews, which were guided by the emerging conceptual framework (as described above), were recorded, transcribed, summarised, and analysed.

In the fourth stage, the interview respondents were asked to use the emerging conceptual framework as a guide to prepare a presentation describing their firm's particular situation. These presentations were used as the basis for discussion in a workshop at which all nine participating firms were represented. Summaries were made of the ensuing discussion with regard to: (i) contextual factors influencing the categories of risk; and (ii) the relationship between these categories of risk and the service-development dimensions noted above (customisation, bundling, and range of offerings).

The collective data from the focus groups, in-depth interviews, and workshops were combined with the findings from a rigorous review of the relevant literature. In accordance with Eisenhardt (1989), the gathered data were then analysed by each individual author to identify material that supported the emerging research propositions, as well as noting that which was incongruous (and

might thus require alternative propositions). The independent analyses were then compared and merged during a joint discussion. Finally, the transcripts were reduced to relevant text sections and clustered in terms of the relevant propositions (as noted above). The final output was then read and discussed as a final check on the analytical process.

This longitudinal stepwise approach, which utilised a combination of workshops, focus groups, personal in-depth interviews, and seminar-style presentations, facilitated the gathering of detailed data and the gradual development of a deep understanding of the inherent risks of providing additional services. Although such qualitative methods do have acknowledged limitations—notably the difficulty of interpreting the open-ended and often messy data that are obtained (Kidd and Parshall, 2000; Stewart and Shamdasani, 1990)—the procedures followed in the present study proved to be efficient and effective in gathering and analysing the data.

## **4. Findings**

### **4.1 Proposition 1: Customisation and risk**

Participants were generally in agreement with Proposition 1a (that *operational risk* tends to increase with customisation) and Proposition 1b (that *strategic risk* tends to decrease with customisation). As one participant noted:

Customisation means a lower strategic risk, and the longer the time that is spent on the customisation process, the lower the risk of misunderstandings. [However] the operational risk can increase with customisation, especially if it is not built on standard components.

However, despite general agreement with the first proposition regarding operational risk, some participants did note that this increased operational risk can, in practice, be moderated by managerial practices; indeed, it might actually decrease if the offering were customised well before implementation of the contract and actual delivery.

With regard to Proposition 1b, most participants agreed that strategic risk would be reduced if the offering were customised to the specific needs of customers. However, one participant (from the aircraft industry) remarked that it is important that the customisation not be restricted to the *first*

customer; if it were, strategic risk would actually increase after the first customer because an offering that had been modified for the first customer might not be suitable for others without further customisation. It was also noted that the common use of a set of relatively standardised modules can mean that a so-called ‘customised’ offering might, in practice, be more or less standardised, depending on the degree of modularity in the components constituting the customised offerings.

There was also general support for Proposition 1c, which had postulated that customised offerings are associated with less financial risk. However, one participant argued that customisation was associated with a *greater* financial risk:

Customisation means that the offering is unique and that standard parts and resources cannot be used. This will be more expensive for us.

In spite of this, it can be argued that the proposition is correct as it stands, on the grounds that it is not the customisation *per se* that leads to a greater financial risk; rather, it is the increased range that often results from the strategy of providing additional services. Indeed, it can be argued that increased financial risk would also be associated with a wider range of *standardised* offerings. All things being equal, Proposition 1c holds true in its current form—as was acknowledged by most of the participants in the present study.

#### **4.2 Proposition 2: Bundling and risk**

Participants had some difficulty in differentiating the dimension of bundling from the other two variables (customisation and range). In particular, they had difficulties with the notion of ‘mixed bundling’.

Despite these difficulties, it was soon apparent that Proposition 2a (which had postulated that a bundling strategy is associated with increased operational risk) was generally supported because the need for subsystem integration meant that operational complexity (and hence risk) would increase. This was particularly so for suppliers with complex system interfaces, one of whom noted:

If we bundle together different products and services in a complete package, it means that we have to handle operational problems for the whole package, including problems with interfaces.

However, some had a contrary view. As one participant remarked:

If we can control the whole offering it will be easier to combine its components in a feasible and efficient way, and this will [actually] reduce operational risk.

Support for Proposition 2a was thus subject to an important proviso—that a significant contextual factor bearing on the relationship between bundling and operational risk was the extent to which suppliers can specify and design bundles to suit existing delivery systems. In other words, the greater the control exerted over the actual bundling design, the less the operational risk and the weaker the support for Proposition 2a.

With regard to Proposition 2b, which had proposed (in part) that a pure bundling strategy and a pure component strategy are both associated with greater strategic risk for the provider than a mixed bundling strategy, participants contended that the adoption of a pure bundling strategy actually promised *less* strategic risk for each individual bundle (in apparent contradiction to Proposition 2b). However, participants did agree with Proposition 2b (that strategic risk was likely to be greater) when it came to consideration of the entire portfolio and the total customer base. In this regard, participants argued that, whereas a single bundle is often created for a specific customer (and therefore associated with less strategic risk), scaling-up to a full customer portfolio would probably require each bundle to be marketed to several customers (thus increasing the overall strategic risk). With regard to a *pure component* strategy, participants agreed with Proposition 2b in arguing that the increased likelihood of imitation associated with such a strategy increased the risk of customers switching to a different provider; that is, participants argued that the strategic risk increased with a pure component strategy.

With regard to so-called ‘mixed bundling’, the participants felt that a firm adopting such a strategy could appeal to its customers whether they preferred bundles or components, thus decreasing strategic risk. This view was in general accordance with Proposition 2b, which had postulated (in part) that a mixed bundling strategy is associated with less strategic risk for the provider than either a pure component strategy or a pure bundling strategy. However, the participants did note that adoption of a mixed strategy runs the risk of diluting the effect of bundling because customers can pick and choose at will, thus effectively creating their own bundles. Moreover, the participants argued that the provider finds it harder to set prices in mixed bundling because increased transparency allows

customers to ‘unbundle’ the components and their respective prices. Nevertheless, despite these acknowledged difficulties with mixed bundling, there was agreement that a mixed strategy tended to lower the overall strategic risk. Proposition 2b was thus supported, although the actual level of strategic risk on the U-curve was deemed to be dependent on several factors.

Finally, with regard to Proposition 2c, which had postulated that a bundling strategy (pure or mixed) is associated with a greater financial risk for the provider than a pure component strategy, the participants generally agreed that a bundling strategy implied a heightened financial risk in terms of the value of the bundle. However, several moderating factors were noted. Participants argued that larger and more complex bundles are often better tailored to specific customer needs. Given that this usually implies a closer relationship between provider and consumer, the financial risk might decrease as bundles become larger and more complex. Furthermore, participants argued that a pure component strategy might increase the capital tied up in stock (and hence the financial risk of the strategy). In summary, the participants were equivocal about Proposition 2c. Financial risk was perceived by participants as being somewhat difficult to ascertain, and very context bound. This issue clearly deserves more investigation.

### **4.3 Proposition 3: Range and risk**

The general view of the participants was that, as the range of service offerings increases, so also does the *operational* risk because, as one participant put it succinctly: “More things can go wrong”. This view was in general accordance with Proposition 3a, which had postulated that a wider range of offerings is associated with a greater operational risk. Most participants agreed that it is intuitively logical to assume that the larger the number of services and products that need to be managed, the more complex are the operational requirements. Nevertheless, another suggestion was that economies of scale might provide the firm with a more professional operational platform, thus reducing the level of risk when the range increases further. Participants agreed that this would obviously be contingent upon the type of operations and the size of the customer base.

With regard to *strategic* risk, participants were initially doubtful about Proposition 3b (which had proposed that, up to a certain limit, a wider range of offerings is associated with a reduced

strategic risk; however, after that point, the strategic risk increases as the offering becomes more comprehensive). Indeed, some participants reasoned that a wider range could actually increase this risk initially as each offer becomes more difficult to define and communicate. As one participant explained:

If it becomes difficult for us to see what the focus of our business is, it will probably be even more difficult to explain this to current and potential customers. This is probably a negative factor in the long run for our company.

However, there was no agreement among participants about there being an ongoing trajectory towards an increase in strategic risk. One participant contended that this risk would increase steadily as the range became wider, but others agreed with Proposition 3b in contending that it might decrease up to a certain point, after which it would start to increase again as the range became too disparate.

With regard to *financial* risk, there was universal agreement with Proposition 3c that a wider range of offerings is associated with an increase in this risk. Participants argued that financial risk would necessarily increase as the range became wider because the scope of the enlarged business would mean that more money is involved. For example, it was noted that:

... an increased range will mean that there are many more things to check financially, and this means more things to keep in stock, more resources, more competencies, and so on.

## **5. Conclusions and implications**

Despite the extensive scholarly attention given in recent years to the fact that manufacturing companies are increasingly augmenting their traditional offerings of goods by the infusion of extra services, the management of risk in the provision of these additional services has been largely ignored. By investigating the nature and incidence of the risks inherent in the provision of different kinds of services by nine large European-based manufacturing companies, the present study makes a significant contribution to both the theory and practice of services management.

### **5.1 Research implications**

Empirical support was found for eight of the nine propositions, which referred to three types of risk (operational, strategic, and financial) and three service-development dimensions (customisation, bundling, and range of services). The exception was Proposition 2c (relating to the financial risk associated with a bundling strategy), about which the participants were equivocal. The conceptual framework and propositions of the study have thus been largely endorsed.

The major contributions of the study are therefore: (i) the provision of a conceptual framework for the analysis of a manufacturing company's repositioning strategy away from goods alone towards one or more of three approaches to the provision of added-service solutions (customisation of the service, bundling of services, and broadening the range of the offering); and (ii) the graphical representations of risks and service-development dimensions presented in Figures 1 to 3. The inclusion of three service-development dimensions and three kinds of risk in the conceptual framework and propositions represents an extension and refinement of earlier studies in this field, which have tended to focus on specific risks or specific services.

The nine research propositions could serve as a useful starting point for future empirical studies aimed at developing a formal theory of the risks of providing services. Although this paper is based on four researchers' interpretation of data from workshops, focus groups, and personal interviews with several respondents from different companies, there is a need for further qualitative or quantitative research to reduce possible bias from researchers and respondents, and to validate and refine the propositions. In particular, given the finding in the present study that the influences of some aspects of a service offering (such as bundling) can be contextual, it is apparent that further refinement of the conceptual framework could be undertaken by the identification and incorporation of such contextual factors as: (i) the number of previous customers for similar offerings; (ii) the freedom to design and develop bundles independently (rather than having to tailor them to different customers); (iii) the extent of dialogue with customers; and (iv) the modularity of the offering. How these factors (and possibly others) influence the nature and extent of various risks would be an interesting and potentially useful avenue to pursue in future studies.

The future research agenda might also include examination of the interrelationships between the three dimensions of service-development and their cumulative effect on risk. For instance, it would seem that a bundled offering is most likely to be less risky for the provider if it is also customised to the needs of the customer(s). In other words, some combinations of the three options are more or less risky than others, as are different kinds of services.

Finally, the perspective of future research could be broadened by examining risk not only at the provider level, but also in terms of the mitigation of risk from customer to supplier, or vice versa, and of the ways in which overall risks vary along the supply chain.

## **5.2 Managerial implications**

The proposed conceptual framework was regarded by the respondents in the present study as a useful and relevant structure for discussion of the strategic challenges that attend the recent infusion of service provision into marketing across many manufacturing industry sectors. By identifying critical issues that have seldom been made explicit previously, the nine propositions of the study can facilitate the management of service-development processes.

More specifically, managers could use the conceptual framework as guidance in the design of service offerings. In contrast to other models of enterprise risk management, the research propositions tested here focus on the specifics of additional services (customisation, bundling, and range), and how these influence different kinds of risks. By elaborating these service-development dimensions, it is possible for managers to influence the inherent risks (and opportunities) at a relatively early stage of a service-development project, rather than relying on subsequent monitoring and remedial action.

The framework could also guide dialogue with customers. In particular, the framework focuses attention on the relationship between changes in an offering and the attendant changes in the different categories of risk, which invariably impinges on questions of value and price. However, it is important to note that this is idiosyncratic to specific contexts. Thus, although the propositions and conceptualisations developed in this study provide useful inputs to more informed decision making, they are not a substitute for knowledge and experience in the specific context.

Finally, just as managers should not routinely seek to avoid risk, it is not the intended function of the conceptual framework presented here to avoid risk entirely. Risks and opportunities go hand in hand, and risk is often a prerequisite for rewards. What is important is to be aware of the attendant risks, to be clear about how they might be influenced by different forms of service offering, and thus to be able to make the right decisions about the specification and pricing of the solutions to be offered.

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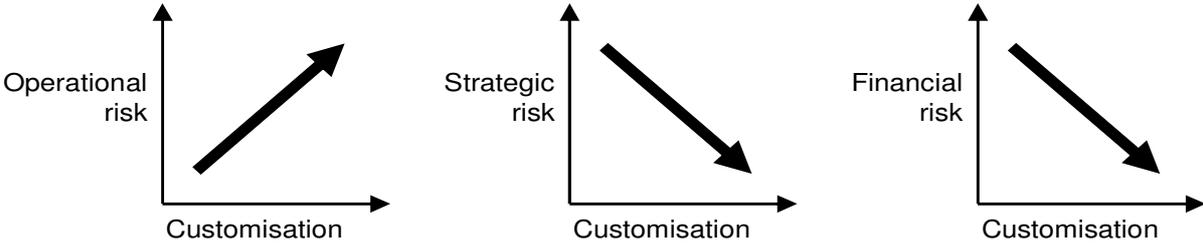
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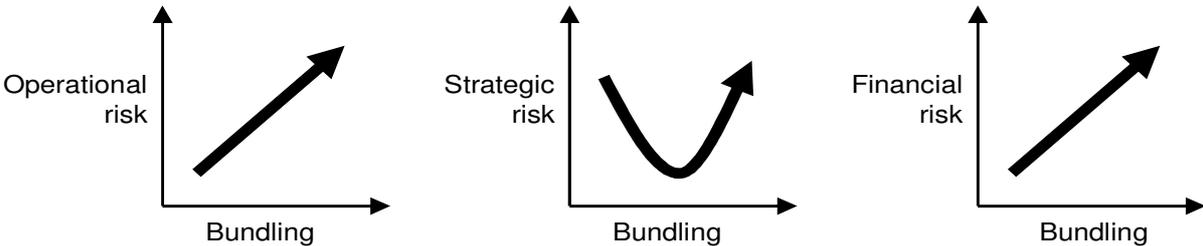
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**Figure 1. Influence of customisation on risk.**



**Figure 2. Influence of bundling on risk.**



**Figure 3. Influence of range on risk.**

