

Business Model Innovation Towards Services: Insights From Dubai's Economic Development

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Abstract

This article presents a conceptual framework with recommendations for enhancing the success rates of services innovation, technology planning and new business models. This is a conceptual article, which builds on recent trends in management research and practice. It analyzes the economic development of the emirate of Dubai in the United Arab Emirates (UAE) as an example of business model innovation and planning with a focus on new services, intelligent transportation systems and logistics, digital transformation, artificial intelligence and drone taxi services. Services innovation has become critical for firms from many manufacturing sectors, such as automotive, machinery, energy and electronics, because many of their products are commoditized. Thus, business model transformation with an emphasis on services is an important means to stay competitive, to grow, and to enhance profitability based on strong absorptive and desorptive capacity. In this respect, the economic development of Dubai provides interesting insights into innovating a manufacturing firm's business models. This article presents a conceptual framework with five key factors that have been gained from a detailed analysis of the economic development of Dubai, which has successfully transformed its business model throughout the past decades to a leading place of commerce with major plans for intelligent transportation systems in light of the Expo 2020. The article further compares the key drivers of this development with the management literature about services innovation and business model innovation.

Keywords: business strategy, services innovation, business model, absorptive capacity, desorptive capacity, organizational transformation, economic development.

Introduction

Many companies in Western countries strongly focused on strengthening their efficiency and cutting costs, especially throughout past financial and economic crises. In recent years, however, many of these firms have turned their attention increasingly towards innovation in order to grow and gain market shares (Fournier et al. 2013; Lichtenthaler 2016a; Mathews 2011; Page 2014; Powers and Wilson 2010). In light of highly dynamic environments and truly global competition, innovation is often considered as the only opportunity to sustain a competitive advantage because a strong resource base or efficiency programs at one moment will often have a limited long-term impact if competitors introduce new products and technologies. Thus, most manufacturing firms put growing emphasis on innovation, and they often focus on technology-based product and process innovation (Cannavacciuolo et al. 2015; Degrauel 2011; Igartua et al. 2010; Lau and Tovstiga 2015; Muthusamy 2014; Ziam et al. 2013). However,

there are important additional ways to innovate, especially in terms of introducing new services and business models.

In this respect, services innovation has become particularly attractive for firms from many manufacturing sectors, such as automotive, machinery, and electronics (Al-Shaikh 2001; Awan et al. 2015; Carte 2005; Mitchell et al. 2015). Many of their products become commoditized to some degree, and offering new services is a major means to stay competitive, to continue to grow, and to strengthen profitability (Baines and Lightfoot 2014; Carter 2015; Daim et al. 2006; Saur-Amaral and Amaral 2010; Schweizer et al. 2015; von Nell and Lichtenthaler 2011). Moreover, many manufacturing firms currently face severe technological and market changes that offer major opportunities and threats. For instance, the growing digitization of many manufacturing sectors and value chains creates a huge potential for new service offerings. However, it also provides a major entry point for new competitors in light of digital transformation and artificial intelligence. Many software and technology companies, such as Google, Microsoft, Amazon, or the German SAP attempt to offer new services that are based on their digital core competencies and that promise to substantially optimize the production and operations processes in firms. Consequently, traditional manufacturing firms need to be careful to continue their direct relationships with their industrial customers rather than being downgraded to mere suppliers of hardware components in the high-margin systems of software and technology firms.

These trends are intensified by major advances in several fields of technology, such as sensor systems, data mining tools, and intelligent sharing and network software. A few established companies, such as IBM, have spotted some of these trends very early, and they have transformed their entire organizations towards services (Harreld et al. 2007). Besides the potential commoditization of many products, however, these technological and market trends allow for completely new services – and, in particular, for integrated product and service bundles. Consequently, manufacturing firms do not have to give up their traditional manufacturing, but they may consider rethinking their business models and extending their product business. A classic example for a manufacturing firm's strategy to reconsider its business model in terms of services is Rolls-Royce with its 'Power by the Hour' initiative (Knowledge@Wharton 2007). While this is one of few positive examples, there are many other firms that have so far unsuccessfully attempted to transform their businesses towards services.

On the one hand, there is a tremendous potential for services innovation in many manufacturing firms that have traditionally focused quite exclusively on their product business along with some additional after-sales services. On the other hand, the failure rates in such organizational transformations are very

high. There are hardly any companies that have a strong tradition in successfully transforming and extending their business models several times throughout their history. Nonetheless, the trend towards bundling products and services is a megatrend for many manufacturing industries with the potential to strongly change the competitive rules of the game and to substantially shift market shares and value chain positions. Thus, many manufacturing firms do not have any other option than turning their attention to services as the central means for proactive strategic renewal – under the condition that they aim to avoid being marginalized to a supplier of commoditized products and components. In the US, more than 76 percent of the GDP could be traced back to the service sector in 2010 (CIA 2012).

Research into services innovation is growing, but it is still surprisingly limited. There are some helpful managerial recommendations for successful services innovation, such as an early integration of key customers. Beyond this limited number of management suggestions, however, innovative insights into the process of transforming a firm's business towards services remain scarce. Besides learning from some successful pioneering firms, such as IBM and Rolls-Royce, managers in manufacturing firms may broaden their perspective to a unique case of services-directed business model transformation in recent decades: the economic development of the emirate of Dubai in the United Arab Emirates. Dubai's astonishing evolution from an insignificant settlement of 30,000 about 60 years ago to a city-state with about 2 million people and global outreach (Hvidt 2009) in light of the Expo 2020 is a great example for business model innovation with a focus on services, and it offers important insights for managers in manufacturing firms.

Therefore, this article briefly explicates the concepts of services innovation and business model innovation before presenting a conceptual framework with five key factors for transforming a manufacturing firm's business model towards services. These five factors of the conceptual framework have been gained from a detailed analysis of Dubai's economic development in the past decades and the comparison of its key drivers with the management literature about services and business model innovation. In sum, the article presents actionable recommendations for enhancing the success rates of services innovation, technology planning and service-based business models. The article concludes with a brief outlook and a discussion of challenges for the economic development of Dubai and for the development of services innovations in manufacturing firms.

Conceptual Background and Prior Research

Services Innovation

Services innovation describes the introduction of new services to clients (Damanpour et al. 2009; Khan 2015; Wells et al. 2004). Of course, many service

firms focus on this type of innovation, but services innovation is not limited to the service sector. Instead, many product-dominant firms increasingly develop new intangible services (Brazdauskas and Gaigalaite 2015; Quaye and Mensah 2017; Thrane et al. 2010). Consequently, services innovation is important in both service and manufacturing sectors. Some thought leaders even point to a convergence of product-driven and services-driven industries (Gallouj and Weinstein 1997; Lichtenthaler 2016b). These experts underscore the relevance of integrated solutions, which comprise bundles of tangible products and intangible services. The boundaries between product businesses and support services are blurring (Mallick 2014; Windahl and Lakemond 2006). As a result of these trends, many manufacturing firms have started to actively collaborate with services firms in addition to internally developing new services. In general, services innovation can be considered a key capability for many manufacturing firms in the future.

Services innovation differs significantly from product innovation. While there are some similarities, there are also major differences, which result from the following particular characteristics of services relative to tangible products: intangibility, perishability, heterogeneity, and simultaneity (de Brentani 1989). Consequently, managerial implications for successful service development usually emphasize the role of operations management and of a firm's customer as a co-developer of new services (Antonacopoulou and Konstantinou 2008). Moreover, services innovation typically goes clearly beyond R&D which further complicates the innovation process for new services in many manufacturing companies. The development of a new service in a firm that already offers significant services is a major challenge. However, the transformation of a manufacturing firm's business from a strong product focus to a growing emphasis on services is an even bigger managerial challenge. Typically, this transformation does not only include the development of services innovations. Instead, it also involves major changes to the firm's dominant business model. Therefore, the following section briefly addresses business model innovation.

Business Model Innovation

The transformation of a manufacturing firm's business towards a stronger emphasis on services typically goes along with a transformation of the business model (Munsch 2009; Sharma 2014). A firm's business model describes the boundary-spanning activity system that addresses the 'what' and the 'how' of doing business. As such, it describes "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (Amit and Zott 2001). Accordingly, a business model typically comprises three important aspects: content, structure, and governance. First, the content of a business model describes the selection of activities that are performed by the company, such as the goods and data that are exchanged. Second, the structure of a business model indicates the links between different

activities and between all relevant parties that participate in these activities. Third, the governance of a business model describes which activities are performed by which parties and partners, including the legal type of organization (Amit and Zott 2001).

With regard to business model innovation, companies can renew their business models by changing at least one of these three aspects. First, firms may change the content of their business models by adding new activities. Second, they may come up with innovative structures by linking activities in new ways. Third, firms may transform the governance mechanisms by altering one or several parties that conduct any of the activities. Each of these three changes may occur in the transformation of manufacturing businesses towards services. In this respect, firms may renew their business models as a stand-alone activity or in order to support other types of innovation. A classic example is the firm Apple, which complemented the mp3 player iPod (a product innovation) with the iTunes platform (a service innovation) and the 'one dollar per download' pricing model (a business model innovation). Only the combination of these different types of innovation made the entire service offering immensely successful.

To succeed in the transformation of the business model towards services, firms need to take several steps along a typical process for developing new business models and transforming business activities (Batovrina 2017; Bozic-Yams 2017). It starts with an idea and vision for the new business model. Here, firms need to develop a clear understanding of how to capture value from a stronger focus on services, and the idea needs to be approved for further evaluation by a firm's top management. Then, companies need to inquire with customers and have to gather additional data to better understand the reactions of customers and partners and to fully design all details of the service-oriented business model. Finally, the new business model is implemented, and it has to be protected and rolled out with the potential for adaptations if needed. Many firms fail along some of these process steps, and the average failure rates in business model innovation are very high which underscores the need for gaining insights into important determinants.

Conceptual Framework

Managers may gain critical insights into determinants for transforming business models towards services by examining Dubai's economic development (Kennedy et al. 2017). In light of the complexity of the evolution of an entire city-state, it is hardly possible to present a comprehensive overview of this development process based on strong leadership (Hvidt 2009; Muethel 2013; Rettab et al. 2009). Therefore, this article focuses on those factors that touch upon the field of services innovation with particular emphasis on transforming an organization towards an increasing emphasis on new service development. In this regard, Dubai's development process and steps to catch up with the developed world

represent an outstanding case for the key elements of such a transformation (Hvidt 2009). A detailed examination of the economic development of Dubai and the comparison of the findings with the management literature about services innovation and business model innovation (e.g. Al-Ansaari et al. 2014; Djellal and Gallouj 2007; Teece 2010) lead to a conceptual framework, which points to the following five key determinants for managing services innovation in manufacturing companies. Figure 1 provides an overview of the framework with five major drivers of transforming a firm's business towards services.

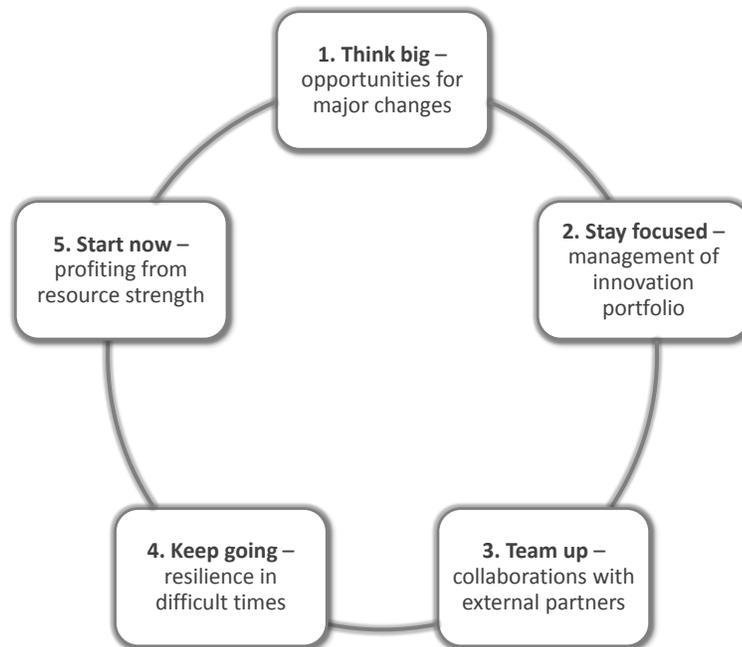


Figure 1: Conceptual framework

Think Big – Opportunities for Major Changes

If manufacturing companies aim at strengthening their services business, they should think big and should consider opportunities for major changes. The transformation of a firm's business model towards services usually involves major changes and can hardly be managed with minor adaptations of a firm's prior business activities. Consequently, a firm's top management needs to have a clear strategy and vision for the organizational transformation. The developmental success of Dubai can be traced back to conscious policies of a late developing state which continuously changed its economic, institutional, cultural, and political conditions to speed up economic development (Goby and Nickerson 2016; Hvidt 2009). Throughout the decades, several 'strategic plans' and 'visions' were formulated in order to direct economic development towards becoming a global center of commerce (Rahman et al. 2018), including the Expo 2020. Thus, government takes a leading role in Dubai's economic development,

and the institutional structure is relatively centralized (Al-Ansaari et al. 2015). This situation allows for fast decision-making and quick reactions to trends (Ahrens 2014). Despite potential negative effects of a patrimonial basis of the state in Dubai, it has clearly facilitated the substantial development progress towards a service economy (Hvidt 2009). In a similar vein, top management in manufacturing firms plays a key role in the transformation towards services because of the fundamental character of the organizational changes that are necessary. Top management needs to be strongly committed to such a strategic move in order to fight organizational resistance and to continuously promote its long-term strategy emphasizing services.

Stay Focused – Management of Innovation Portfolio

Manufacturing firms with the strategic plan to strengthen their services business need to stay focused and need to thoroughly manage their innovation portfolio. The strategic move from pure product companies to providers of integrated solutions with a substantial portion of services often goes along with the tendency to start too many different innovation projects. The consequence is a portfolio with a multitude of projects with largely incremental innovation character. Most of these projects will have a moderately positive financial value at relatively low levels of risk. Thus, they enable a firm to move in the direction of services, but they are not radical or disruptive innovations which would help the firm to arrive at a major strategic transformation and business model change. To prevent these tendencies, manufacturing firms have to focus their innovation portfolios. Again, the development of Dubai is a good example. Dubai's government acknowledged early the need to diversify its economy beyond the oil business. Based on its vision to become a global center of commerce, the emirate's focus was on a few core sectors to enable growth (Tournois 2018b): travel and tourism, banking and finance, professional services, and transport and logistics (Basit 2012). In these sectors, government took important steps to strengthen further development, for instance, by creating investment opportunities for foreign companies (Alsarhan et al. 2018; Griffiths and Mills 2016). By focusing on a handful of strong service sectors, Dubai tried to bypass industrialization and to move immediately towards a service economy with a suitable portfolio of different projects (Al-Ahbabi et al. 2017; Tournois 2018a). In a similar vein, top management in manufacturing firms should direct its attention to a few major steps of transforming their firms' business model towards services rather than starting a multitude of simultaneous projects.

Team Up – Collaborations with External Partners

The strategic move from pure product companies to active service providers is so big that manufacturing firms usually need to team up and need to enter various collaborations with external partners based on a strong absorptive and desorptive capacity (Lichtenthaler and Lichtenthaler 2010). In most cases, manufacturing firms will not have sufficient internal competencies to

immediately master a service-centered business model and to manage the transition process successfully. Consequently, they need to actively seek collaborations to strengthen their service management capabilities and to cope with the challenges of the transformation process (Albeshr and Ahmad 2015). Examples of suitable partners are service firms, innovation consultants, strategy consultants, customers, and suppliers (Pervan et al. 2015). Dubai's government is well aware of the limitations of the state's internal competencies which led to the strategy to attract some of the best experts in the world to its key projects. For instance, renowned architects were involved from the beginning of constructing new buildings at large scale. Moreover, Dubai collaborates with worldwide experts in each of its main topic areas (Laequddin and Waheed 2016). For example, the Harvard Medical School was involved in the planning of a major hospital, which is part of Dubai's Health Care City (Hvidt 2009). Only the collaboration with external experts has enabled Dubai's rapid economic development. In a similar vein, manufacturing firms may try to internally develop all critical services innovation capabilities, but this will take considerable time. Acknowledging internal limitations and being open to partners in collaborative innovation is usually more promising (Euchner 2010; Igartua et al. 2010).

Keep Going – Resilience in Difficult Times

The trajectory towards services innovation is a major challenge for manufacturing firms, and they have to keep going even in difficult times. Resilience is necessary in most types of innovation activities, but it is most critical in major organizational transformations. Any significant innovation will usually lead to some internal resistance in an organization because different stakeholders attempt to conserve the status quo based on risk averse attitudes (Amponsah and Ahmed 2017). In addition, there may be major external challenges to services innovation (Akhavan 2017a). For instance, there may be noteworthy market risks because the customers of manufacturing firms may first have to be convinced to accept new service-centered business models. Furthermore, there may simply be external influences, such as an economic downturn, which limit the development of a firm's service business. This is a negative experience that Dubai had to make. After a booming period, the internal financial and economic crisis in 2008 and subsequent years hit the state hard. Its construction sector was affected very negatively, and some landmark projects, such as the world's tallest building, the Burj Khalifa, could only be finished on time with financial support of the neighboring emirate of Abu Dhabi. Government had to adapt its plans and forecasts, but the overall strategy to become a global center of commerce was not altered (Al Faris and Soto 2016). After going through some difficult times, Dubai has shown resilience and is back on its way of fast economic development, for example in the field of intelligent transportation (Thorpe and Mitra 2011), with leading experiments and tests in the field of drone taxi services. It is nearly inevitable that manufacturing firms

experience similar internal or external challenges. However, if the envisioned strategy and service-centered business model are convincing, they should react with resilience and keep going.

Start Now – Profiting from Resource Strength

Many manufacturing firms will not have any other opportunity than strengthening their service businesses – at least in the long run. Therefore, they should already start now to initiate this major strategic transformation from a position of resource strength. Firms may profit from a strong financial position and may thoroughly plan their transition towards services rather than being forced to react to threats deriving from a commoditization of their products. A proactive strategic transformation (Akhavan 2017b) based on a strong financial and competitive position enables firms to experiment with new service offerings until they have found the most suitable service-centered business model. Service and business model innovation will often involve adaptations to the services and business models after initial market introduction. This is a major difference from the traditional approach of most manufacturing firms, which have usually tried to develop a ‘perfect’ final product before market launch. The resource strength has been the basis of Dubai’s economic development (Nghah et al. 2016). The availability of oil and the associated financial strength enabled the strategic plans and vision of fast development and of bypassing industrialization by diversifying into service sectors and developing a strong branding strategy (Hafeez et al. 2016). Oil was discovered in Dubai in 1966, and it was first exported in 1969. However, oil is available only in small quantities relative to neighboring countries and emirates – currently, the revenues from petroleum and natural gas account for less than 10 percent of Dubai’s GDP (Rasheed 2013). Without its strong resource base, Dubai’s economic development would have only taken place at a much lower level and at much lower speed. Consequently, manufacturing firms should keep this example in mind and should move into services when their product business is still strong rather than waiting for initial signals of competitive downturns.

Discussion

The example of the economic development of Dubai provides a conceptual framework with five important factors describing how manufacturing firms may strengthen their service businesses and technology bases. These five factors complement traditional suggestions for successful services innovation, such as a systematic innovation process, external partnerships and the early integration of customers as co-developers (Cropley 2016; Djellal and Gallouj 2007; Ozeliene et al. 2017; Peronard and Brix 2017). In particular, the five determinants provide actionable recommendations for managers in manufacturing firms. The final factor ‘start now’ highlights the need to begin the transformation early rather than as a defensive strategy of last resort. On this basis, managers should ‘think big’ when conceptualizing service-driven business models. At the same time,

they need to ‘stay focused’ to avoid pursuing an overly large number of relatively incremental services innovations. In addition, managers should be open to ‘team up’ with external partners in order to complement their firms’ internal competencies with particular service-oriented capabilities. Finally, managers need to envision potential setbacks and ‘keep going’ in case of unfavorable conditions because resistance is normal in case of major organizational transformations.

Dubai also experienced a number of setbacks, and the process of innovating business models always involves risk, uncertainty, and failures. Nonetheless, Dubai’s impressive economic development underscores the relevance of the conceptual framework and the five factors of managing services innovation (Ahrens et al. 2017). These success drivers will also help Dubai to continue its development despite a number of present challenges and threats to further business model development (Lasrado and Uzbek 2017). First, there are growing environmental issues and sustainability problems that are associated with the rapid rise of economic activity. Second, there is a growing discussion about Dubai’s immigration policy and about the working conditions for foreign workers. Third, a successful long-term development will require further investments in the education system, including the academic education in universities and business schools. Fourth, there may be a need for further political initiatives to keep up Dubai’s attractiveness for external partners and to cope with the growing competition of other highly dynamic players in the region, such as Abu Dhabi and Qatar. Fifth and finally, Dubai’s government needs to continue its successful long-term strategy in order to sustain its strong economic development and to avoid major failures, such as missing an important new industry sector.

Conclusion and Outlook

So far, the development of Dubai in recent decades can be considered an economic success story despite the immigration issues and other current challenges. The Expo 2020 is only an example in this regard. In 2015, Dubai was expected to accommodate over 15 million of tourists (Rasheed 2013). Consequently, the transformation of Dubai from an insignificant settlement to a service-based city state drawing on its oil-based financial strength provides important insights into a successful business model transformation of manufacturing companies. In particular, product-centered manufacturing firms should consider the proactive approach of Dubai’s government, which strongly contrasts with the reluctance to change which can be observed in many firms. In fact, most firms only transform their businesses in case of financial difficulties. In light of fundamental market and technology shifts in many industries, however, manufacturing firms should go ahead in order to be prepared when these trends fully materialize and affect their traditional product businesses. For instance, the automotive sector is fundamentally affected by new mobility services, electronic

engines, and autonomous driving. The machinery sector and electronics sectors are heavily impacted by digitization and connectivity services for a new era of production and manufacturing. A stronger emphasis on services will often be a requirement rather than an option, and manufacturing firms should act accordingly – and go ahead today rather than tomorrow.

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