**PSS** 

DOI NUMBER: 10.19255/JMPM01709

# FROM ORDER-QUALIFIER TO ORDER-WINNER?

SAAD MAJED ZIGHAN, PHD

UNIVERSITY OF PETRA, JORDAN
ASSISTANT PROFESSOR

DAVID BAMFORD, PHD.

UNIVERSITY OF HUDDERSFIELD, UK
PROFESSOR OF OPERATIONS MANAGEMENT

IAIN REID. PHD.

MANCHESTER METROPOLITAN UNIVERSITY, UK
SENIOR LECTURER IN OPERATIONS MANAGEMENT

KEYWORDS: SERVTIZATION; PRODUCT-SERVICE SYSTEM; ORDER-WINNER; ORDER-QUALIFIER; REAL ESTATE DEVELOPMENT PROJECTS; DELPHI STUDY

# SERVITIZATION VALUE CHAIN AND THE REAL ESTATE DEVELOPMENT PROJECTS

Abstract: This paper investigates the value of servitization in the context of real estate development projects. A qualitative case study research approach is adopted, and the principles of the Delphi study applied. The findings indicate that the outputs of the real estate development projects have become systems of both project components and added services. These systems are the result of servitization strategies in the real estate development projects that shift the industry focus from only designing and selling a physical output to delivering a system of services integrated to the project, which together are capable of adding more customer value. The research identifies several types of services, which are used to develop four categories of servitization in the real estate development projects. The research develops the value chain of servitization strategy and it was found that offering services in real estate development projects is an incremental process; offering basic services (order qualifier) adds additional value for customers and makes the project 'more' valuable. However, basic services will not ensure competitive success. More advanced services such as customer-orientated-services need to be provided to enhance the project's competitive advantage (order-winners). However, it the system solutions that shape the order-winning criteria of the construction industry.

JOURNALMODERNPM.COM SEPTEMBER/DECEMBER 2018

### 1. Introduction

Servitization has become one of the successful strategies in helping organizations improve competitiveness and ensure maintainable growth by creating more value for customer through a combination of product and service systems. (c.f. Boy t& Harvey, 1997; Wise & Baumgartner, 1999; Oliva & Kallenberg 2003; Tukker, 2004; Artto et al., 2008; Baines et al. 2009a; Gebauer et al., 2012a; Min, et al. 2015 Robinson, et al. 2016). Scholars have argued that achieving competitive advantage based on services provision, is vital for businesses (Baines et al., 2009a; Neely et al., 2011; Gebauer et al., 2012b). This new business model is conceptualized as servitization (Vandermerwe & Rada, 1988). Servtization refers to "The innovation of an organisations capabilities and processes to better create mutual value through a shift from selling product to selling product-service systems" (Baines et al.' 2009a p. 555). Given the benefits held out by servitization, this study is developed to capture the value of servitization within the real estate development projects. It focuses on the growing implementation of the process of servitization in real estate projects, which is altering the way firms obtain benefits (Brady and Davies, 2004). The real estate development projects are developed in temporary organizations established to achieve a specific objective rather than through continuous manufacturing or service activities. These project-based firms provide a unique solution for the customer (Galera-Zarco, et al., 2014). It is important to note that developing business models based on services within resale estate development projects requires abandoning the idea that value centers exclusively on the project delivery phase (Davies et al., 2006). The project should be understood as a process that includes phases before and after the construction process and the customer's receipt of the building. It should find ways to add services to each of these phases, ensuring that the customer perceives value in each phase (Galera-Zarco, et al., 2014). Thus, a firm that supplies projects should study carefully what services to include during the different phases of the lifecycle of the solution it provides (Artto et al., 2008).

The purpose of this study is to advance the knowledge and the support methodology of adopting servitization strategy in real estate development projects. Therefore, this research attempts to respond to the following two research questions: RQ1. How viable is the servitization in influencing real estate development organizational competitiveness? And RQ2. To what extent are firms of real estate development servitizing to enhance their competitiveness? The remainder of this paper is arranged as follows; following this introduction, literature review is presented. It is followed by describing the research methodology. Then, the study results are presented. Finally, conclusions, theoretical and managerial implications and future research opportunities are introduced

### 2. Litterateur review

### 2.1 Real Estate Development Projects

The real estate development projects refer to the activities of converting raw lands into housing. commercial or industrial buildings (Galaty, 2014). The sector transforms open spaces into properties (Gehner, 2008). The outputs of real estate development projects are developed infrastructure. commercial properties, modern housing and industrial properties (Galaty, 2014). These projects serve wide variety of people's needs and activities (Ratcliffe et al., 2004). The sector is the pillar of society and environment, the engine of economic development and the heart of economic sustainability. Commonly, the industry accounts for 20% of economic activity and job opportunities. It makes up almost 9% of the world's GDP. Nevertheless, the importance of the real estate development projects is not only related to the industry it-self but also to the role of such an industry in economic development (Horta et al., 2013). The real estate development are heterogeneous projects that produce unique long-life assets (Boon, 2005; Coiacetto, 2006). Each project has a specific time frame to accomplish a specific objective

through a logical sequence of highly interrelated and interdependent series of tasks (Ratcliffe et al., 2004). The industry also involves multiple processes, multiple stages (Hastjarjo, 2015), multi-functions and highly social interactions (Ratcliffe et al., 2004). It is a fragmented industry where several parties are involved in fulfilling a project (Ankrah & Langford, 2005). Ambiguity and complexity are the main characteristics of real estate development projects (Gehner, 2008).

Usually, The real estate development projects operates based on the traditional operating model Design-Build-Market-Sell, where, the strategic decision of a project is usually developed based on ideas and decisions of real estate developers and involves considerations of the project location. project cost and quality. The real estate developer's view is what guides the strategic vision and future direction of building projects (Hendrickson & Au, 2000; Horta et al., 2013). Besides, the industry focuses primarily on cost reduction and the value of the project is centred on the delivery phase (Galera-Zarco et al., 2014). Most of real estate development projects do not offer any kind of services during the project execution or after project delivery, whereby each project ends after delivery (Keegan, & Turner, 2001). In summary, four main characteristics describe the construction industry:

- The industry is project-oriented based on developer-led, design, build, and sell.
- The industry focuses primarily on cost reduction.
- The project outcome is limited to project delivery, i.e. the developers' responsibilities end once the project is delivered.
- Usually, the project scope does not include any extra services during the project life cycle, or after project delivery.

## 2.2 Servtization Strategy

Servitization represents a tendency among different businesses. Achieving competitive advantage, based on services provision, is often claimed to be a viable route for businesses (Baines et al., 2009a; Martinez et al., 2010; Gebauer et al., 2012b; Neely et al., 2014; Benedettini et al., 2015). Providing services enable close and long-term customer relationships to develop (Sakao & Lindahl, 2009). This close customer relationship contributes significantly to the organization's survival, through steering marketing offerings to meet customers' needs and promotes a prompt response to dynamic changes of the business environment (Baines et al., 2009a; Neely et al., 2011; Gebauer et al., 2012a; Wallin et al., 2015). Offering additional services becomes a necessary strategic decision for businesses. Literature categorized the drivers of servtization into a set of strategic motivations. Those are marketing, strategic, financial motivations and innovation advantage (c.f. Mathieu, 2001; Baines, et al. 2009a; Lay, 2014). The literature of servitization refers to different management theories to explain the potential competitive advantage and benefits of having a servitization strategy (Velamuri et al., 2011; Alghisi& Saccani, 2014; Eloranta & Turunen, 2015. Table (1) summarizes these perspectives. The competitive advantage from offering service integrated to the product is explained by the marketbased theory (Eloranta & Turunen, 2015). Servitization emphasises the market driven strategy by which organizations tend to focus on internal competencies that foster greater responsiveness to their customers and target market (Vandermerwe & Rada, 1988). Through servtization, organizations are putting the market at the centre of their strategic decision. The process includes market analysis, defining the value proposition, creating the value chain and the revenue mode. These decisions are determined or driven by market forces (Lay, 2014). The service-dominant logic is used to explain the competitive advantage of servitization based on a services atmosphere and the positive impact of moving from product consumption to product utilization through offering services (Baines et

al., 2009b; Ohvanainen & Hakala, 2014). Also.

servitization emphasises the role of value co-creation in

business prosperity (Kowalkowski, 2010). This value co-

creation is imperative for maintaining organizational

competitive advantage in a dynamic environment by

the two-way exchange of knowledge (Baines et al.,

2009b).

Theoretical Perspective	The Sources of Competitive advantage	Source
Market-Based Theory	Servitization contributes to the organization's survival by	Vandermerw & Rada,
(Market Driven).	steering their market offering to customers' needs.	1988; Neely et al., 2011
Dynamic Capabilities	Servtization Develops organizational capability that facilitates adaption to external conditions of the business environment	Baines et al. 2009a; Velamuri et al. 2011
Service-Dominant Logic and Value Co- Creation	Offering integrated solutions develops intimate customer relationships and creates new competitive advantages based on joint production mutually valued outcomes	Baines et al. 2010; Ang et al., 2010; Ohvanainen & Hakala, 2014
Leaning Theory	Servtization stimulates organizational learning and improve business response to intensive competition. An organization improves over time as it gains experience. Offering services aides the rapid learning of customer changing needs.	Brady& Davies, 2004; Baines et al. 2010; Wallin et al., 2105; Leoni, 2015.
Network-Based View	Networking is a crucial aspect of servtization. Networking facilitates the development of organizational distinctive capabilities and achieve new value propositions.	Gebaure et al. 2012a; Eloranta & Turunen, 2015
Knowledge- Based View	Close customer relationships based on servitization enables businesses to collect more valuable knowledge and exchange their product development and market offering	Brax & Jonsson, 2009; Alghisi & Saccani, 2014
Resource-Based View Theory	Servitization innovates organizations capabilities and processes. It reconfigures the organization resources to create a distinctive competitive advantage	Baines et al., 2009a; Ulaga & Reinartz, 20111

Table 1: Management Theories Used to Explain the Potential Competitive Advantage of Servitization Strategy

The dynamic capabilities theory is also used to explain the competitive advantage of servitization through organizational ability to develop, integrate and reconfigure organizational internal competencies with external threats and opportunities in the business environment (Velamuri et al., 2011). In this context, servitization is considered a dynamic process that requires continuous adaptation to customers' requirements. Offering services stimulates organizational capabilities to sense business opportunities, transforming an organization from being product-oriented to customer-oriented. It also sustains the operating service and responds to customer needs or intensive competition (Gebauer et al., 2012a). As well as, organizational learning theory was employed to explain the competitive advantage of servitization. Servitization strategy is attributed with being an effective tool to gain market information by having

The dynamic capabilities theory is also used to explain the competitive advantage of servitization through organizational ability to develop, integrate and reconfigure organizational internal competencies with external threats and opportunities in the business environment (Velamuri et al., 2011). In this context, servitization is considered a dynamic process that requires continuous adaptation to customers' requirements. Offering services stimulates organizational capabilities to sense business opportunities, transforming an organization from being product-oriented to customer-oriented. It also sustains the operating service and responds to customer needs or intensive competition (Gebauer et al., 2012a). As well as, organizational learning theory was employed to explain the competitive advantage of servitization. Servitization strategy is attributed with being an effective tool to gain market information by having longterm relationships with customers (Baines et al. 2010). Customer feedback promotes the exploitation of operating

proficiency and knowledge (Brax & Jonsson, 2009).

Offering a product-service system also stimulates organizational exploratory learning capabilities to gain new knowledge (Brady & Davies, 2004). In addition, Alghisi & Saccani, (2014) explained the competitive advantage of servitization through the lenses of the Knowledge Management theory, where the competitive advantage servitization emerges from collecting, and analysing the data that is generated from the customers' use of industrial equipment.

Other scholars explained the competitive advantage of

servitization through the Network-Based View, where the collaboration and partnerships with other organizations create more sustainable competitive advantage (Eloranta & Turunen, 2015). Providing services requires firms to establish comprehensive networking systems with the surrounding business environment. This is necessary to achieve exceptional customer support through organizational alliances, partnerships and networking, and providing research and development capabilities. Here, the development of economic competences and capabilities based on networking contribute to organizational competitive advantage (Gebauer, 2008; Gebauer et al., 2012a). Finally, the resource-based view theory (Wernerfelt, 1984) is widely used to explain the competitive advantage of servitization based on creating unique resource combinations and innovating organizational competencies through offering services (Velamuri et al., 2011: Eloranta & Turunen, 2015). The Resource-based Theory provides the predominant basis from which the majority of servitization literature and research comes (Eloranta & Turunen, 2015). This perspective considers offering service as the tool to redefine a company business model (Gebauer et al., 2011). A servitization strategy innovates organizational capabilities to develop inimitable, rare and valuable competences that provide a causal ambiguity. These competences are used to manipulate the market environment based on proactive responses rather than reactive responses (Antioco et al., 2008; Eloranta & Turunen, 2015). These capabilities aim to added value to manufacturing output and increase value in the eyes of customers (Baines et al., 2009a). Accordingly, the market position of an organization

that could take is reflected in the portfolio of the resources it controls (Barney & Clark, 2007). An effective harmonisation of these resources will build organizational capabilities that are responsible for developing organization competitiveness (Barney, 1991). Here, a distinction needs to be made between capabilities at a threshold level and core competences. Threshold capabilities are those needed for an organization to meet the necessary requirements to compete in a given market. Whereas, core competences are those unique resources that critically underpin competitive advantage and that others cannot easily imitate or obtain. These unique competences emerge from the effective synergy between tangible and intangible resources (Johnson et al., 2013). Within this context, order-winning and order-gualifying criteria could be used to describe the relationship between threshold capabilities and core competences. (Brown et al., 2013).

# 3. Theoretical Background

The terms "order-winners" and "order-qualifiers" were coined by Terry Hill, professor at the London Business School, and refer to the process of how internal operational capabilities are converted to criteria that may lead to competitive advantage and market success (Brown et al., 2013). An order-qualifier is the minimal level required from a set of criteria for a firm to do business in a particular market segment. Fulfilling the order-qualifier will not ensure competitive success; it will only position the firm to compete in the market (Krajewski et al., 2013). Still, without these capabilities, firms will lose orders (Brown et al., 2013). An order-winner is a criterion that customers use to differentiate marketing offers. Orderwinners criteria are those factors that win orders in the marketplace over competitors (Brown et al., 2013). Understanding which competitive priorities are classed as order qualifiers and which are order winners is important for strategic decision-making (Brown et al., 2013; Krajewski et al., 2013). Moreover, the terms "order- winners" and "order-qualifiers" emphasize the vital role of operations management to develop a competitive advantage. The link between marketing strategy and operations strategy is vital to convert operational capabilities to criteria that will develop a competitive advantage and lead to market

success. Marketing is responsible for identifying the criteria of order-winners and order-qualifiers. Operations management is responsible for providing and developing the criteria that enable the product to win orders in the marketplace. This process starts with the corporate strategy and ends with the operations strategy to provide the criteria that keep the business in the market and win the customers' orders (Brown et al., 2013).

# 4. Research Methodology

The primary purpose of this study is to improve the competitiveness of real estate development projects by developing a model supporting the successful adoption of the servitization strategy. For which, this research was designed based on a qualitative case study research approach (Voss et al., 2002), using a number of interconnected stages and techniques of data collection and analysis to produce a more complete understanding of servitization strategy within a complex research context (Hallowell & Gambatese, 2009). The selected research design is driven by the nature of the study and the inductive approach of theory building (Eisenhardt, & Graebner, 2007).

The principles of Delphi Study have been adopted for an incremental data collection strategy, which includes multiple stages of data collection, analysing, and refining cycles. The Delphi Method is a modern, iterative and interactive data collection process that provides deep understanding of the research topic (Hallowell & Gambatese, 2009). It is used to achieve theoretical saturation and develop consensus knowledge

(Skulmoski et al., 2007) particularly in a complex research situation (Baines, and Shi, 2015; Hallowell & Gambatese, 2009). In this study, three rounds of Delphi were conducted. The first round attempted to systematically collect empirical data of a phenomenon that lacks comprehensive historical data in a new research context. The second round attempted to collect in-depth information and to reach categories saturation covering the applications of servitization in real estate development projects and to ensure that these applications are well-developed. Finally, the third round of Delphi was a validation one that attempted to develop consensus knowledge and achieve a convergence of opinion on the value of servitization in the real estate development projects. These three rounds of Delphi were conducted within 8 real estate development projects.

### 4.1 Developing Case study

The purpose of a case study research is using empirical evidences to contribute to the existing knowledge. The case study, therefore, could not be randomly selected; its need to be purposefully selected and accurately designated to be representative of the research phenomenon (Voss et al., 2002; Seawright & Gerring, 2008). According to Seawright & Gerring, (2008), a representative case study should be typical of the research category and able to produce insights, information and knowledge related to the research topic. In this study the selected case studies consist of eight companies managing various mega projects in Jordan,

Table 2: The Case Studies Different Projects

Co.	Project deliverables	Total Investment	Market Segment
A	Gated Suburb	US\$ 225 million	High income
В	Private Resort	US\$ 60 million	High Class
С	Residential complex	US\$ 30 million	Middle income
D	Commercial Complex	US\$ 7 million	Business to Business
E	New City development	US\$ 60 million	Low & middle income
F	Resort Town	US\$ 1.5 Billion	Tourism
G	Compound Housing	US\$ 20 million	Low & middle income
H	Industrial City	US\$ 225 million	Business to Business

addressing different market segments, with different geographical distributions and based on different visions and missions. These companies extended their project deliverable trajectory into project-service systems. Their projects varied from residential housing, private resorts, public housing and complex building (see table 2).

# 4.2 Data Collection & Data analysis

The iterative technique of data collection and analysis was used to achieve category saturation. The process consists of multiple steps of "forth and back" data gathering and data analysis. This is where data are collected then analysed synchronously (Baines, and Shi, 2015; Hallowell & Gambatese, 2009). The procedure then continues with more data gathering to find more information based on the result gained in the previous step or steps and so forth until reaching "category saturation." The process of "back and forth" allowed the researches to conduct a more focused study; collect more in-depth and relevant data; identify which aspects needed to be added to or made more elaborate; and whether more participants should be considered. Evidence and opinions were collected from experts in the field. The participants were all involved in the process of offering services. For instance, the respondents' profile includes CEO, CFO, and Deputy CEO for Industrial Investment, Deputy CEO for Marketing and Sales Affairs, Deputy CEO for operations and engineering affairs, Sales Director, Marketing Director, Projects Managers, Quality Assurance Managers and Budgeting, Treasury & KPIs Manager. The data analysis is based on data from three rounds of Delphi that were conducted between 2013 and 2016 to collect data from the participants within the selected case studies. Three rounds of online Delphi were conducted. The data collection process started from examining the case studies' secondary data. The secondary data research was arranged based on longitudinal design. which involved repeated observations of service provision activities from 2004 until 2014. These secondary data involved internal and external documents such as company documentation, minutes of board meetings, internal correspondence and

company website. After completing the case study's secondary data research, the primary data was collected using a series of open-ended questions based on three rounds of Delphi: 42 interviews were carried out in the first round, followed by 23 interviews in the second round and 11 interviews in the third round. The first round of Delphi was an exploratory stage using email interview. A set of questions was emerged from reviewing literature review and secondary data analysis. These questions were then complied into open-end questions. These open-end questions sent to 73 participants and only 42 participants replied who made valuable contributions to the understanding of offering service activities in construction industry. All participants' responses were fully copied and transferred into word documents for data analysis. Guided by the results of the first round, semi-structured questions were developed looking for more in-depth data regarding the criteria of product-service system that satisfy customers in project based business. Also, to investigate, confirm and reconstruct the outcome of round 1 accordingly. For this round respondents were refined and carefully chosen as individual with more expertise and knowledge than other members. 23 individual interviews were conducted via interactive-video conversation. All interviews were recorded and fully transcribed. Finally, Delphi's 3rd Round concerned the building of the servitization quality control model. It was designed as verification and validation phase. The process of validation involved an exchange between the researcher and the experts who provide individual critiques and comment on the validity of the developed model of servitization quality. The preliminary models, themes and conclusion were confirmed with experts. The preliminary models were sent to the study members via email and discussed via interactive-video conversations. This allowed the researchers to reconstruct these models and make a final conclusion. Delphi's 3rd Round involved 11 experts from diverse standpoints. It consisted of business directors, executive managers, strategic managers, marketing and sales Managers and projects managers. All interviews were recorded and fully transcribed.

# 5. Findings

5.1 The prominence of a servitization strategy in real estate projects

The first objective of the data analysis was to understand the reasons for offering services, within the context of project-based businesses looking at the purposes and motivations of servitization strategy and the driving forces behind offering services. The experts were asked why companies chose to offer services. Experts agreed that the business environment requires a new way of thinking, and offering more value to customers is one of the ways to do this. The Projects Director argued "Offering service is the new concept in real estate development, by which companies have to come up with new ideas to distinguish themselves from what already exists in the local market."

The necessity of providing services was the main theme that emerged from the data. Offering services is undoubtedly seen by the experts as a vital element of the project market proposition. The companies offered services for different reasons and attracting customers and gain a competitive advantage over competitors were highlighted as the most important ones. For example, a project manager argued, "Offering service is an important element for the outcome of building industry to make it more appealing to buyers."

According to The Marketing Director, services were offered "To expand markets based on inspiring consumer confidence and targeting the increasingly larger market of busy professionals who need an entire job done from A Z." The case study companies also

offered different types of services to outperform competitors and avoid price reduction. For example, the CFO said "Offering service is a competitive advantage strategy to avoid price reduction and price wars." The majority of respondents considered offering services as an essential element of the project marketing success. This necessity of providing services comes from the characteristics of the service. For instance, The CEO said, "Service gives the customer the flexibility to choose the design he needs, and which is in line with his needs." The Marketing and Sales Manager focused on the necessity of offering service for the company and the customer, saying that services "Expand markets... differentiate products ... and reassure customers." Service was also offered as an innovation strategy that required less time, effort and investment than product innovation. According to The CEO, "Service is an easy innovation process to develop creative ideas and meet customer needs". Other respondents mentioned, that services were offered to enhance the product functionality. For instance, The Director of Projects mentioned, "Services were offered to raise product quality and efficiency".

Generally, the data indicated that there is consensus among respondents that offering services integrated to the product is considered indispensable and strategically essential for real estate development projects. Service is offered to add customer value and gain competitive advantage. Customers' needs become the core of the service provision regardless of services or products on offer. However, offering service is a more logical move for the real estate developer for several reasons. The expert agreed that the motivation factors for service provision are inter-connected and that there is a clear overlapping of them. These reasons were collected and summarized according to the respondents in **table (3)**.

Table 3: The respondents' description of the reasons behind offering services

Added Value	Offering services is considered a vital part of the value added that customer
Element	perceived and appreciated
Customer Satisfaction	Services offer a customized options for customers
Customer Trust	Services become a part of real estate developer responsibilities. It assures customers, rises confidence and encourage customer buying decision
Competitive Advantage	services crates a competitive edge by distinguishing the real estate offering in the market
Marketing Tool	Services gives the company the opportunity to demonstrate the importance of the customer and reinforce the buyer. It clears the project portrayal and enhances project branding
Innovation Thinking	Services offer more opportunities for innovations and developing distinguishing ideas. It offers the realty businesses more flexibility in their offers
Growth Opportunity	Services are an important strategic decision for future growth in project-based business

### 5.2 Services Approach

The data analysis process sought to identify the types of services that were offered by the case study's projects. The study identified different types of basic, advanced and more advanced services were offered by the case studies. These services were inconsistent from project to project. **Table (4)** illustrates these services.

Generally, this service aimed at providing several choices for the customer and to meet different customers' needs. By tracking the processes and the times when these services were offered, the data analysis process showed that the offered services could be divided into three stages of the project life cycle; project initial design, project execution and after project delivery. At these different phases of the project life cycle, the case

study companies gradually offered basic services, advanced services and system solutions. The service concept was embedded in the project design stage. Each project was designed with customers' needs in mind, such as the need for modern houses at a proper price; the need for more security and gated communities; the need for social status and luxurious lifestyles; the need for an attractive business environment; and fully served and equipped industrial cities. These different types and range of services are used to develop the four categories of servitization in the real estate development projects, which are namely; project-oriented, product-oriented, customer-oriented and service-oriented (See table 5).

Table 4: Type of Services offered

Basic Services	Project's brochure, Project's 3D Model and 3D virtual tour animation, mass customization, customer relationship management, electronic selling points, transportation, aesthetic aspects of project design, maintenance and after sale services.	
Advanced Services	Consulting & advising services, financial service, customized design, interior decoration, equipment supplying, installation and supervision, insurance coverage, Co-development and Co-design services, Mock-up models and home furnishing.	
System Solutions	Site management, Facilities management, sustainable living, recreational services, technological services, property management and business support services.	

Table 5: The Four Options of Servitization in Real Estate Development Projects

Project-Orientated	Gated Community, Elite residence and luxury service, modern city,
Service	attractive business environment and infrastructure services
Product –Orientated Services	Project's brochure, Project's 3D Model and 3D virtual tour animation, mass customization, customer relationship management, electronic selling points, transportation, aesthetic aspects of project design, maintenance and after sale services.
Customer-Orientated Services	Consulting and advising service, financial service, customized design, interior decoration, equipment supplying, installation and supervision, insurance coverage, Co-development and co-design service, mock-up models and home furnishing
Site management, Facilities management, sustainable living, recreation services, technological services, property management and business supposervices.	

The project-oriented approach involves conceptualizing the project design to deliver general standard services, where additional basic services directly related to the project concept are provided. Here, the service concept was embedded early in the project's design. Each project was designed around satisfying general customers' needs within a specific market segment. These included the need of development modern cities within a reasonable price range; the need for more security and gated communities; the need to cater for people who enjoy a high social status and luxurious lifestyle; the need for an attractive business environment and fully served and equipped industrial cities. These services were offered to place the project in a particular perceptual position within the mind of the customers. The product-oriented approach involves offering basic services related to product to enhance product sales. The product-oriented

systems involve offering basic services. The services offered during project planning and initial design were designed as an attractive customer entry mode such as 3D animated tours on projects building villas. These basic services add value to customers and improve the minimum level required from the real estate development firm to operate its business. The customeroriented approach involves offering advanced services related to customer activities offered to enhance customer satisfaction. These services offered during the execution phase were designed to keep the customer satisfied by producing more customized and tailored output. These services help building firms to be more competitive and support customer-purchasing decisions. These advanced services are considered as the base of order-winner criteria. Finally, the serviceoriented approach involves offering more advance services and system solutions. These services are designed to enable sustainable living and day-to-day running of the project facilities. It is offered to gain customer trust and influence their purchasing decision of what is a long-term expensive asset. These services offered after project delivery. These system solution services are designed to provide a safe, compliant, and clean living or working environment and were designed to gain customer trust and influence their purchasing decision of a long-term asset. The system solutions services make customers more confident with their purchasing decision develop unique competencies.

### 6. Discussion

This study aims to identify the value of servtization in real estate development projects. The discussion section has been arranged around the research questions to provide a clear structure and answering these research questions. The first research question was RQ1. How viable is the servitization in influencing real estate development organizational competitiveness?

6.1 The Prominence of Servitization Strategy in Real Estate Development

The role of services in sustaining organizational competitive advantage is much discussed from a broad range of academic perspectives (Baines et al., 2009a). Service has become the main source of market differentiation and the main part of the value creation system (Neely et al., 2014; Brad & Murar, 2015). Traditionally, service was viewed as an additional cost to cut out. It was added as an additional part of marketing strategy not as a value creation system (Baines et al., 2009a). Likewise, the real estate development projects focuses primarily on cost reduction (Horta et al., 2013). The industry focuses exclusively on the project delivery phase as the value centres (Galera-Zarco et al., 2014). This study highlights the growth of the service element in the real estate development projects. The case studies emphasise the project-service system of their businesses. whereby the service concept was embedded into the project design stage. Each project was designed with customers' needs in mind. The necessity of providing services in building projects is justified by the characteristics of the services. The study highlighted these characteristics, which found an underlying logic to the provision of services for several reasons. These come from the pressures of the business environment, where customers have become more conscious, more demanding and their needs are more diverse and mutable. Providing a variety of services gives customers more flexibility to choose what suits them and what fits with their needs. Moreover, services offer more opportunities for innovation and development of inspiring ideas through fostering close customer relationships and value co-creation. Finally, offering services becomes a part of a real estate developer's responsibilities to support the product's long-term life. By which, offering services inspires customer confidence and assures customers of reliable support when needed.

# 6.2 The Motivations for Providing Services

Servitization is becoming a worldwide trend (Eloranta& Turunen, 2015). Still, organizations are disconcerted about the strategic goals and objectives of servitization (Neely, 2008). The literature suggests several factors and drivers motivating organizations to offer both product and service.

It indicates that servitization strategy is being forced by the business environment, as this environment yields different threats and prospects (Vandermerwe & Rada, 1988), whereby providing services becomes a necessary move for all firms to create competitive advantage (Kujala et al., 2013). Businesses are inspired to adopt a servitization strategy based on marketing, strategic, and financial motivations (Mathieu, 2001a). The findings of this study indicate that real estate development organizations are offering services not for one specific reason, but for a combination of strategic, marketing, and financial reasons. The service provision is mainly driven by customers and aimed at outperforming competitors by attracting customers, meeting customers' needs and gaining customer trust. Customers' needs are dramatically changing, they have become more conscious, exacting and more ambulant. Service offers more value to those customer. It provides customers with more flexibility. This flexibility improves customer satisfaction. As well as, offering sustainable service builds customer trust, inspires customer confidence and assures customers of reliable long-term support. The case studies offered services for a combination of interconnected reasons, one of which for example, was to attract more customers and stimulate project sales. This is a differentiating element to gain a competitive advantage by offering more value rather than reducing costs. Besides, service is intangible and hard to imitate. These objectives are described as the strategic rationale. Services were also offered to promote projects in the marketplace and enhance the customer perception of these projects. Adding service enriches customer value whilst the service itself is perceived as a personal customization. Additionally, service provision creates a closer relationship between organizations and customers. These objectives are described as marketing rationale. Finally, the innovation rationale involves the ability to develop new ideas based on services provision, the ability to learn from customers and from the company's previous mistakes. Nevertheless, the ease and simplicity of developing and offering services played a significant role in motivating

companies to excel in the market place by providing

services. The case studies were motivated to attract more customers using a simple innovation method to outperform competitors and increase market share and unit sales. This was based on service innovation rather than product innovation. This is reasonable when linked to the features of service innovation as it is more flexible, requiring less sophisticated technology, less research and development activities as well as less complex actions than product innovation. Besides, as service is labour intensive and it does not require a significant capital investment.

The second research question is to what extent are real estate development firms' servitizing, and how viable is the servitization in influencing the real estate development organizational competitiveness?

# 6.3 The Scope and Extent of Offering Services

The decision to offer services is complex and associated with a high degree of uncertainty (Benedettini et al., 2015). A strategic challenge emerges from the level of service provision strategy and the degree of customer-oriented approach to be applied (Baines et al., 2009a). Understanding the extent to which a service provision strategy will mature is challenging (Baines et al., 2010). A servitization strategy has different forms and dimensions (Oliva & Kallenberg, 2003; Tukker, 2004). Each dimension includes different activities and elements of product and service systems (Sakao & Lindahl, 2009). Each dimension has its own outcome and impact on organizational performance and each dimension has its own set of difficulties and requirements (Martinez et al., 2010). Debate among scholars has emerged regarding the extent of services provision (Baines et al., 2010). Scholars argue that it is more difficult for firms to benefit from servitization by adding services than might be expected (Gebauer et al., 2005). Focusing on high value-added service could lead to bankruptcy (Neely, 2008). Other scholars argue the positive impact of servitization happens when only providing high value-added service to customers (Min et al., 2015). Generally, previous studies specify different results regarding the impact of various extents of servitization on organizational performance

(Benedettini et al., 2015). There is also limited practical guidance related to the scope and extent of offering services (Baines et al., 2010). The study's findings indicate that offering service becomes an important pillar of the real estate development projects. The study found that the service roles in providing more customer values are ever more important in the real estate development projects. According to the respondents, services become a part of the project. These services made a difference and created new competitive advantage. Still, the strategy worked differently based on the type of project, the type of offered services, and the targeted market segment. The nature of the building projects influenced the extent of service provision as the main value of a project becomes within the whole project life cycle. The findings argue that in realty projects, servitization is an inter-dependant and interconnected process covering the whole project life cycle. Providing life-cycle services is critical to gain full customer satisfaction. Realty firms have to offer basics, advance and system solutions services during the project's life cycle.

Each dimension has its own outcome and impact on project's performance. However, these dimensions shape the outcome of servitization. Services should be continuously enhanced with more advanced ones. These services should be related to the project's nature, customer needs, and fit with the market segment. In terms of service scope, the findings recommend a limited scope of services to reduce task variety and decrease project uncertainty. The study points to different features that guide the service provision process. Addressing customer needs through careful planning and incremental development are imperative components of a servitization strategy. The respondents emphasised that the outcome of servitization strategy in real estate projects does not come from the sale of services, but rather comes from the ability of services to promote and sell the project. The study concludes that there are three connected outcomes of servitization in realty projects. (See figure 1).. Services were offered to attract customers, satisfy customers and increase customer confidence. The case studies describe how the basic services have potential to attract customers through their focus on adding more

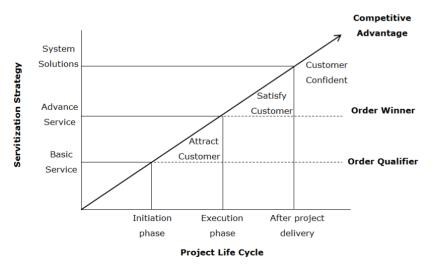


Figure 1: The relationship between project life cycle and servitization strategy to develop competitive advantage.

value for customers and to support the customer's processes. The basic services attract more customers by creating additional value. It enhances market qualifier characteristics but has limited impact on market winning characteristics. This level of service provision should be supported by offering more advance services. These advance services are more distinctive, where customer is participating in value creation. It provides customers with more flexibility. Offering these services is more likely to satisfy customers. These advance services form the basis of order winning characteristics. Nevertheless, the output of a real estate project is longlife building units, where the purchasing decision requires heavy investment from customers, requiring a long-term commitment and relationship between customer and supplier. Realty firms have to deal with this long-lasting project outcome by offering sustainable services. These include site management, facilities Management, sustainable living, recreational services, technological service, property management services, and business support services. These services are offered to gain customers confidence and to influence their purchasing decision. These services work as a facilitator to winning the purchasing contract and forming the order winning characteristics. Selling these different categories of long-life services becomes the main element of the business model and the main source of organizational revenue after project delivery phase.

### 6.4 Servitization Journey

Oliva & Kallenberg, (2003) developed the service continuum moving from offering pure product to offering basic services, by advanced services to reach the offer of system solutions. Baines & Lightfoot, (2013) differently categorized these services into base services, intermediate services and advanced services, where the advanced service involves capability and performance delivery. The journey of servitization in real estate development projects is an incremental process and developed based on several approaches of service provision. The study found that in order to fulfil a servitization strategy in real estate development. businesses have to offer different types of service at different stages of the product life cycle these different forms of services are mapped into four main categories. Table (6) shows this categorisation framework. The output of the real estate development projects becomes a system of both the project component and added services. These services are offered to set a new value model for customers and raise the criteria of selecting a market offering. The project-orientated service is a basic service. It could be seen as a general market position of the project as the service places the project in a particular perceptual position within the mind of the customers. The product-orientated service is also a type of basic service. It can be seen as "product plus services",

Project-Orientated	The project-orientated service is a form of providing basic services. It
Services	involves conceptualizing the project around service provision designed and combined so that they are jointly capable of fulfilling general customer needs.
Product-Orientated	The Product-Orientated Service involves offering basic services to support
Service	product sales. These services help the customer realize the application of the project.
Customer-Orientated	The Customer-Orientated Service involves providing advance services to
Service	support customer activities and the design of customized project output.
Service- Orientated	The service-orientated involves providing after sales services to support
	project functionally and support customer to optimise the application of the
	project

Table 6: The Four Options for Servitization in the Real Estate Development Industry

JOURNALMODERNPM.COM SEPTEMBER/DECEMBER 2018

as services are offered to support product selling. Customer-orientated service is an advanced type of service and can be seen as customer plus services. These services support customer activities to create more customized products. Finally, the service-orientated approach is about offering more advance services and can be described as service plus project. These services are offered to support the product functionality throughout its life cycle. The real estate development projects could offer different forms of these services within different stages of the project lifecycle. Each dimension has its own outcome and impact on organizational performance (See figure 2). Traditionally, the minimum level required from a real estate development firm to do business in the market is delivering the project on time, at the agreed cost and quality specifications. Offering basic services such as project-orientated service and product-orientated service adds more value for customers and makes the project more valuable. Providing basic services becomes one of the project performance dimensions to fulfil the market order qualifier criteria.

However, offering basic services will not ensure competitive success. More advanced services such as customerorientated-services need to be provided to enhance the project competitive advantage. Offering advance services tailors the project toward customer needs, distinguishes the project from others and enhances customer satisfaction. These advanced services are considered the base of orderwinner criteria that facilitate winning the contract. Still, real estate development projects need to deal with the long-time horizon of the project outcome. This long-term nature of the industry outcome requires service provision that supports long-term product functionality and to assure product stability. Offering system solutions builds customer trust, inspires customer confidence and assures customers of reliable long-term support, all of which motivates customer purchasing decisions and influences customer confidence when buying a costly and long-term asset. These system solutions shape the order-winning criteria. Thus, in real estate projects, servitization is an inter-dependant and interconnected process covering the whole project life cycle. Providing life-cycle services is critical to gaining full customer satisfaction and developing a competitive advantage.

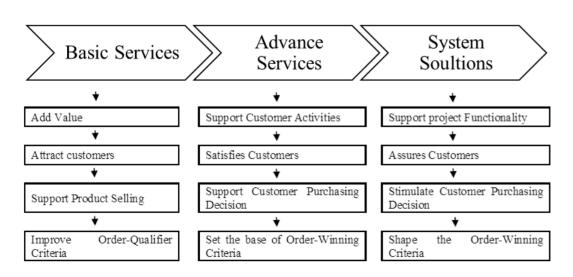


Figure 2: Servtization Value Chain

Traditionally, the minimum level required from a real estate development firm to do business in the market is delivering the project on time, at the agreed cost and quality specifications. Offering basic services such as project-orientated service and product-orientated service adds more value for customers and makes the project more valuable. Providing basic services becomes one of the project performance dimensions to fulfil the market order qualifier criteria. However, offering basic services will not ensure competitive success. More advanced services such as customer-orientated-services need to be provided to enhance the project competitive advantage. Offering advance services tailors the project toward customer needs, distinguishes the project from others and enhances customer satisfaction. These advanced services are considered the base of orderwinner criteria that facilitate winning the contract. Still, real estate development projects need to deal with the long-time horizon of the project outcome. This longterm nature of the industry outcome requires service provision that supports long-term product functionality and to assure product stability. Offering system solutions builds customer trust, inspires customer confidence and assures customers of reliable long-term support, all of which motivates customer purchasing decisions and influences customer confidence when buying a costly and long-term asset. These system solutions shape the order-winning criteria. Thus, in real estate projects. servitization is an inter-dependant and interconnected process covering the whole project life cycle. Providing life-cycle services is critical to gaining full customer satisfaction and developing a competitive advantage.

### 7. Conclusion

The study concludes that offering services become indispensable and strategically essential part of real estate development projects. The importance of services emerges from the nature of the industry's products and the nature of the real estate purchasing decision. Offering services becomes crucial to satisfy customers' specific needs coupled with an external pressure to gain competitive advantage over rivals. Our findings indicated for managers that the journey of servitization in real estate development projects is an incremental process and developed based on several approaches of service provision. The study argues that the value chain of a real estate development project is now described as systems of both the project component and services. These systems are capable to add more value for customers. By which, a building project becomes a process that includes stages before and after the project execution and delivery. Accordingly, to offer services successfully, managers should be continuously enhanced with more advanced ones to cope with customer needs. Services should be added to each stage of project development. This means that building firms have to provide different types of service that cover the whole project's life cycle. This requires a series of steps that build upon one another, and be performed in order to develop incrementally a competitive advantage. Finally, the study provided a comprehensive review of servitization value chain and provides a platform on which more researches of servitization value chain could be carried out.

"the value chain of a real estate development project is now described as systems of both the project component and services."

JOURNALMODERNPM.COM SEPTEMBER/DECEMBER 2018

# Saad Zighan

Senior lecturer at the University of Petra, teaching Operations Management and Project Management for undergraduate and graduate students. Saad has over 15 years' experience working in project management are real estate development industry and his PhD centres around Servitization in project based businesses. During his working experience, Saad implemented several administrative and support functions and contributed in developing new ideas and solutions to organize work flow of several construction and industrial projects.



Email: SZighan@uop.edu.jo

# **David Bamford**

Experienced industrialist/academic with multiple publications to his name. Knowledge transfer projects, across many sectors, have been central to his academic career and his research interests are focused towards operations improvement strategies in: the application of Operations Management theories; strategic organisational change; leadership and quality management; and sports operations management. Email: d.r.bamford@hud.ac.uk



# **lain Reid**

Reader in Operations Management at Manchester Metropolitan University, lain's research focuses on Professional Service Firms, specifically in the context of: Lean Law; Mass Customisation; Sports Operations and Bid Data & Knowledge Transfer. Prior to joining academia lain worked in the manufacturing sector, specifically machine tools until he joined the University of Liverpool's Agility Centre as an operations analyst implementing operational agility and supply chain optimisation. Email: Iain.Reid@mmu.ac.uk



# REFERENCES

& Control: 1-17.

Alghisi, A., & Saccani, N. (2014). Development of a Knowledge Management framework to support installed base information management practices in a servitized context. In 24th Annual RESER Conference (p. 28).

Ang, G. C. J., Baines, T., & Lightfoot, H. (2010). A methodology for

adopting product service systems as a competitive strategy for manufacturer. In Proceedings of the 2nd CIRP International Conference on Industrial Product/Service Systems (pp. 489-496). Engineers, Part B: journal of engineering manufacture, 224 (5), Ankrah, N. A., & Langford, D. A. (2005). Architects and contractors: a comparative study of organizational cultures. Construction Management and Economics, 23(6), 595-607. Antioco, M., Moenaert, R. K., Lindgreen, A., &Wetzels, M. G. (2008). Organizational antecedents to and consequences of service business orientations in manufacturing companies. Journal of the Academy of Marketing Science, 36(3), 337-358. Artto, K., Wikström, K., Hellström, M., & Kujala, J. (2008). Impact of services on project business. International Journal of Project Management, 26(5), 497-508.

Baines, T. and Shi, V. G. (2015). A Delphi study to explore the

Baines, T. S., Lightfoot, H. W., Benedettini, O., & Kay, J. M. (2009a).

The servitization of manufacturing: a review of literature and reflection on future challenges. Journal of Manufacturing Technology Management, 20(5), 547-567.

Baines, T. S., Lightfoot, H., Benedettini, O., Whitney, D., & Kay, J.

M. (2010). The adoption of servitization strategies by UK-based manufacturers. Proceedings of the Institution of Mechanical

Baines, T., Lightfoot, H., Peppard, J., Johnson, M., Tiwari, A. Shehab, E. Swink, M. (2009b). Towards an operations strategy for product-centric servitization. International Journal of Operations & Production Management, Vol. 29 Iss: 5 pp. 494 -519.

Baines, T., & Lightfoot, H. W. (2013). Servitization of the manufacturing firm: Exploring the Operations Practices and Technologies that deliver advanced services. International Journal of Operations & Production Management, 34(1), 1-1. Barney, J. (1991). Firm resources and sustained competitive adoption of servitization in UK companies. Production Planning advantage. Journal of management 17(1): 99-120.

Barney, J. B., & Clark, D. N. (2007). Resource-based theory: Creating and sustaining competitive advantage. Oxford: New York .Oxford University Press.

Barney, J., Wright, M., & Ketchen, D. J. (2001). The resource-based it competitive and why?. Urban Research Program. Criffith view of the firm: Ten years after 1991. Journal of management, 27(6), 625-641.

Benedettini, O., Swink, M., & Neely, A. (2015). Why do servitized firms fail? A risk-based explanation. International Journal of Operations & Production Management, 35(6).

Boon, B. (2005). The availability and usefulness of real estate data in eastern Asia-a user's perspective. IMF/ BIS Conference on Real Estate Indicators and Financial Stability. Pp. 91-111 model with strategic implications. Industrial Marketing Management, 26(4), 291-300.

Brady, T., & Davies, A. (2004). Building project capabilities: from exploratory to exploitative learning. Organization studies, 25(9), Service Management, 26(3), 394-425. 1601-1621.

Brax, S. & Jonsson, K. (2009). Developing integrated solution offerings for remote diagnostics: A comparative case study of two manufacturers. International Journal of Operations & Production Management, Vol. 29 No. 5, pp. 539-560.

Brown, S., Bessant, J. R., & Lamming, R. (2013). Strategic Operations Management. 3rd edition. Routledge.

Cojacetto, E. (2006). Real estate development industry structure: Is University. Research Paper, 10.

Davis, M. M., Aquilano, N. J., Balakrishnan, J., & Chase, R. B.

(2005). Fundamentals of operations management. 5th edition. McGraw-Hill Ryerson.

Davies A., Brady T., Hobday M. (2006). Charting a path toward integrated solutions. MIT Sloan Management Review 47 (3):39 -

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from Boyt, T., & Harvey, M. (1997). Classification of industrial services: A cases: Opportunities and challenges. Academy of management iournal, 50(1), 25-32.

> Eloranta, V., & Turunen, T. (2015). Seeking competitive advantage with service infusion: a systematic literature review. Journal of

Galaty, F. W., Allaway, W. J., & Kyle, R. C., (2014). Modern Real Estate Practice. Dearborn Real Estate. 19th edition Kaplan. Inc. USA Galera-Zarco, C., Morales-Gallego, M., & Pérez-Aróstegui, M. N. (2014). Servitization in Project-Based Firms. Strategic Change, 23(5-6), 329-340

Gebauer, H. Anders Gustafsson A. Witell L. (2011), Competitive advantage through service differentiation by manufacturing companies. Journal of Business Research 64 (2011) 1270–1280

Gebauer, H., Krempl, R., & Fleisch, E. (2008) Service development in traditional product manufacturing companies. European Journal of Innovation Management, 11(2), 219-240.

Gebauer, H., Paiola, M., & Edvardsson, B. (2012a). A capability perspective on service business development in small and medium-sized suppliers. Scandinavian Journal of Management, 28(4), 321-339

Gebauer, H., Ren, G. J., Valtakoski, A., & Reynoso, J. (2012b). Service-driven manufacturing: provision, evolution, and financial impact of services in industrial firms. Journal of Service Management, 23(1), 120-136

Gehner, E. (2008). Knowingly taking risk: investment decision making in real estate development. Eburon Uitgeverij BV. Netherlands

Hallowell, M. R., & Gambatese, J. A. (2009). Qualitative research: Application of the Delphi method to CEM research. Journal of construction engineering and management, 136(1), 99-107.

Hastjarjo, (2015). Strategic Real Estate Development (RED): Risk Assessment, Capability, Strategy Flexibility, Competitive Strategy, and RED Performance Empirical Study of RED Firms in Indonesia, Professionals Centre for Business Research. Vol.: 2. 17-34

Hendrickson, C., & Au, T. (2000). Project management for construction: Fundamental concepts for owners, engineers, architects, and builders. 2nd edition. Prentice-Hall

Horta, I. M., Camanho, A. S., Johnes, J., & Johnes, G. (2013). Performance trends in the construction industry worldwide: an overview of the turn of the century. Journal of Productivity Analysis, 39(1), 89-99.

Janssen, Ö. (2000). The European construction industry and its competitiveness: a construct of the European Commission. Construction Management and Economics, 18(6), 711-720.

Johnson, C., Whittington, R., Angwin, D., Regner, P., Scholes, K., & Pyle, S. (2013). Exploring strategy: text and cases. 7th edition Pearson.

Keegan, A., & Turner, J. R. (2001). Quantity versus quality in project-based learning practices. Management learning, 32(1), 77-98.

Khalifa, S. A. (2004). Customer value: a review of recent literature and an integrative configuration. Management decision, 42(5), 645-666.

Kowalkowski, C. (2010). What does a service-dominant logic really mean for manufacturing firms? CIRP Journal of Manufacturing Science and Technology, 3 (4), 285–292.

Krajewski, L. Ritzman, L. Malhotra, M. (2013), Operations Management: Processes and Supply Chains. Global Edition, 10th Edition, Parson.

Lay, C. (2014). Servitization in Industry. Springer International Publishing. Switzerland

Leiringer, R. and Bröchner, J. (2010) Editorial: service-led construction projects. Construction Management and Economics 28:11, pages 1123-1129.

Martinez, V., Bastl, M., Kingston, J. Evans, S. (2010). Challenges in transforming manufacturing organisations into product-service providers. Journal of Manufacturing Technology Management, Vol. 21 Iss: 4, pp.449 - 469 Mathieu, V. (2001). Service strategies within the manufacturing sector: benefits, costs and partnership. International Journal of Service Industry Management, Vol. 12 Iss: 5, pp.451 - 475

Min. L., Wang, J., & Luo, Q. (2015). Does the Servitization Strategy Improve the Performance of Manufacturing Enterprises in China?. American Journal of Industrial and Business Management, 5(05), 281.

Neely, A., Ng, I., & Roy, R., (2014). Complex engineering service systems. Journal of Service Management, Vol. 25 lss: 5

PAGE 149

Neely, A.D., Benedettini, O. & Visnjic, I. (2011). The servitization of manufacturing: Further evidence. In 18th European Operations Management Association Conference. Cambridge (pp.3-6).

Ohvanainen, J., & Hakala, E. (2014). Introducing a Change Path Framework for an Industrial Company Entering Service Business. International Journal of Service Science, Management, and Engineering, 1(2), 21.

Oliva, R., and Kallenberg, R. (2003). Managing the transition from products to services. International Journal of Service Industry Management, Vol. 14 No. 2, pp. 1-1

Ratcliffe, J., Stubbs, M., & Shepherd, M. (2004). Urban planning and real estate development (Vol. 8). Taylor & Francis

Sakao, T. & Lindahl, M. (2009). Introduction to Product/Service-System Design, Springer

Seawright, J., & Gerring, J. (2008). Case Selection Techniques in Case Study Research A Menu of Qualitative and Quantitative Options. Political Research Quarterly, 61(2), 294-308.

Skulmoski, G., Hartman, F., & Krahn, J. (2007). The Delphi method for graduate research. Journal of Information Technology Education: Research,6(1), 1-21.

Ulaga, W., & Reinartz, W. J. (2011). Hybrid offerings: how manufacturing firms combine goods and services successfully. Journal of Marketing, 75(6), 5-23.

Vandermerwe, S. and J. Rada (1988). Servitization of business: Adding value by adding services. European Management Journal 6(4): 314-324

Velamuri, V. K., Neyer, A. K., & Möslein, K. M. (2011). Hybrid value creation: a systematic review of an evolving research area. Journal für Betriebswirtschaft,61(1), 3-35.

Robinson, W. G., Chan, P. W., & Lau, T. (2016). Sensors and sensibility: examining the role of technological features in servitizing construction towards greater sustainability. Construction management and economics, 34(1), 4-20.

Voss, C., Tsikriktsis, N., & Frohlich, M. (2002). Case research in operations management. International journal of operations & production management, 22(2), 195-219.

Wallin, J., Parida, V., &lsaksson, O. (2015). Understanding product-service system innovation capabilities development for manufacturing companies. Journal of Manufacturing Technology Management, 26(5). Wernerfelt, B. (1984). A resource-based view of the firm. Strategic Management Journal, 5(2), 171-180.

Wise, R. and Baumgartner, P. (1999).Go downstream: the new profit imperative in manufacturing. Harvard Business Review, September/October, pp. 133-41.

Vin, R. K. (2013). Case study research: Design and methods. 5th Edition. Sage publications

"to offer services successfully, managers should be continuously enhanced with more advanced ones to cope with customer needs. Services should be added to each stage of project development."