



The development of a generic servitization systems framework



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ABSTRACT

Manufacturing institutions are increasingly adopting and implementing a servitization strategy directed at enhancing their revenue streams and gaining a competitive advantage in a highly competitive and extremely turbulent marketplace. The focus of this paper is directed at gaining an understanding of (1) the various interactive systems that assume relevance in the creation and execution of the servitization strategy and (2) the development of a generic servitization systems framework. A multidisciplinary literature review was undertaken in order to identify the systems concerned and develop a generic servitization framework that could serve as a source of reference and information in strategy development and operational execution. Supporting evidence as to the relevancy of the model was obtained from a case study analysis conducted at a South African manufacturing institution that had implemented a servitization strategy. An important finding that emerged from the research study was that the institution's business model needed to be adapted, a process that necessitated an understanding of the respective systems involved, their interaction, and the change management difficulties encountered therein. The generic servitization framework was found to assume relevance in this regard. It is contended that the servitisation systems framework could serve as a source of reference and information for executives, management practitioners and technologists involved in similar projects.

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1. Introduction

"Modern corporations are increasingly offering fuller market packages or "bundles" of customer-focussed combinations of goods, services, support, self-service, and knowledge. But services are beginning to dominate. This movement is termed the "servitization of business"

Vandermerwe and Rada [38].

The introductory statement attests to the emergent trend of manufacturing institutions offering clients a range of products and supporting services to meet their needs on a holistic all inclusive basis. It also serves as the genesis of the concept "servitization and it is almost certain that the authors, at the time in question, were largely unaware of having coined a term" and concept that would gain increasing significance in an era where services have become

the dominant sector of the global economy. Desmet, Van Looy, Gemmel and Van Dierdonck [9] attest to the fact that the service sector's increasing share of the economy has become a national trend, one that Paulson [31] contends has led to the development of "service science" as a fully-fledged domain of contemporary institutional management. As a relatively new academic discipline service science, as a field of research and tuition, has shown phenomenal growth over the last decade, with academic institutions globally offering courses therein [31].

The customer focus reflected in Vandermerwe and Rada's [38] introductory statement accentuates the client-centric approach adopted in service design within the literature [3]. Notably, Desmet et al. [10] contend that the traditional orientation, within a servitization context, has been one of an add-on to the product in the form of after-sales services, in contrast to the more contemporary view of providing clients with an integrated business solution. Within the context of this paper it is an orientation that assumes particular pertinence in the development of a strategic and operational system's framework as the two key value chains, namely products and services form an interacting and integrated entity. The servitization literature it appears offers a selection of frameworks, models and classifications that according to Baines et al. [3]

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provide “some guidance on how to configure an operations strategy for servitized manufacture, but are in themselves insufficient to provide a complete and detailed picture of the integrated delivery of products and services, and their effect of service provision on internal manufacturing operations”.

Haasbroek [14] claims that in practice servitization strategies are often adopted to gain not only a competitive advantage in a very competitive and turbulent marketplace but also to enhance an institution's revenue stream. The researcher further suggests that this is often done without a clear understanding of the impact thereof on the various operational systems involved and without clear guidelines as to what the expected effects thereof may be [14]. An important finding that emerges from Haasbroek's [14] research study is industry's apparent “naive attitude towards servitization, addressing it as a practical necessity, possibly without consulting the theoretical foundations” upon which it is based. The result is that frequently the servitization strategy implies the addition of a services layer to the existing manufacturing operations [10], with the main part of the total value creation considered to stem from the physical goods offered to clients [4]. This more traditional approach, however, tends to stand in contrast to a more contemporary perspective that views “the provision of services as a conscious and explicit strategy with services becoming a main differentiating factor in a totally integrated products and service offering” [4].

With the apparent prevailing situation reflected in the introductory discussion in mind, this paper places an emphasis on gaining an understanding of the various interacting systems that collectively assume relevance in the creation and implementation of a servitization strategy, directed at provide clients' with a holistic client-centred business solution. A contemporary literature review in effect forms the basis for the development of an integrated strategic and operational systems framework that could serve as a source of information and reference for practitioners engaged in compiling and implementing a servitization strategy. A South African servitization case study was used to determine the relevance of the framework in practice. The relevance of the research paper may be determined.

2. Servitization: a concept and systems perspective

“There are various forms of servitization. They can be positioned on a product-service continuum ranging from products with services as an “add-on”, to services with tangible goods as an “add-on” and provided through a customer centric strategy to deliver desired outcomes for the customer.”

Baines et al. [4].

The introductory quotation equates servitization with a continuum of client value derived from both products and their associated services, depending on the relative value clients derive from each. The common denominator is therefore one of a client determined value orientation, namely value-in-exchange or value-in-use [39]. Following a similar sense of thought Visnjic, Neely and Wiengarten [40] claim that “servitization implies the innovation of an organisation's capabilities and processes so that it can better create mutual value through a shift from selling product to selling product–service systems”. Here again the accent is on an integration of product and service systems or as suggested by Desmet et al. [10] the notion of “a bundle producing company” where the focus is on the client and the realisation of their services related needs. Implied therefore, according to Rajala, Westerlund, Murtonen and Starck [33], is the need for a better understanding of the new

“service-business logic” and the formation of “customer value”. Quite pertinently Rajala et al. [33] theorise that a services-logic requires new approaches, skills and mindsets, as clients for instance become co-producers of the services that are simultaneously generated and consumed. Seen within this context Grönroos and Revald's [13] contention that each instance of value creation is unique and can only be assessed from the perspective of an individual service system assumes significance. In a similar vein it is argued by Rajala et al. [33] value from a client perspective emerges from a spectrum of client and service provider interactions, which collectively shape the client's service experience.

Adopting a client-centric perspective of value-in-exchange and value-in-use suggests the existence of two distinct value chains bridging client needs and expectations on the one hand and client satisfaction in the realisation of these needs on the other. If a client's service experience or value derived from a product exceeds their initial expectations the consequential quality thereof may be determined as being positive [12]. The contrasting situation could similarly be defined from a quality perspective in negative terms. Fitzsimmons et al. [12] list reliability, responsiveness, assurance, empathy and tangibles as dimensions of consideration in the evaluation and management of service quality, all dimensions that appear to assume a client-centric perspective. A particularly valuable tool “for understanding the voice of customers and their impact on customer satisfaction”, according to Wang and Ji [41], is the Kano model. The model categorizes different client requirements based on how well they are able to achieve customer satisfaction [41]. It is the client's perspective of the service encounter and the value derived therefrom, in relation to their expectation that ultimate surfaces as a determinant of quality. It is therefore hardly surprising to find that Osterwalder [30] in the development of an institution's business model places the value proposition offered to clients at the very centre or core of his model with capability and target client networks linking thereto. The value proposition is therefore defined in terms the value-configuration or a bundle of products and services offered to clients by the institution concerned.

Smith Maull and Ng [35] in a similar vein quite specifically attest to the fact that servitization has resulted in organisations offering complex packages of both product and service to generate superior customer exchange value and thus enhance their competitive edge within the marketplace. It is interesting to note that Smith et al. [35] further contend that while some researchers refer to product service systems (PSS) as a “value proposition”, others see it as an “innovation strategy” to remain commercially competitive. A pertinent point raised by the researchers is that the underlying operational delivery systems and processes have as a consequence become more complex to manage and co-ordinate [35]. In effect not only the integration of the product and services value chains assume greater complexity but the underpinning operational support systems are similarly more complex to deal with from a design, change management and implementation perspective. Smith et al. [35] are of the view that considerable attention has been given to this increasing systems complexity of servitization. The literature, in this regard, they suggest places a particular emphasis on the human aspects involved such as the knowledge and skills required [35]. Citing Salonen, Smith et al. [35] further identify three further complex challenge that require consideration, namely “organisational culture, external effectiveness at the customer interfacing ‘front office’ and achieving internal efficiency of operations at the ‘back office’”. Notably all of these challenges imply complex support systems design considerations that will be dealt with in the ensuing section dealing with the development of the integrated strategic and operation systems framework.

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