

# Product *Servitisation* and Maintenance Contracts

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## Abstract

On the one hand, manufacturers, suppliers and vendors of equipment, spares and systems continuously seek ways to sustain their respective businesses. On the other hand, operators seek ways to concurrently minimise the costs of operating and maintaining turbomachinery whilst achieving increased reliability of associated equipment and systems. This brief paper is based on an investigation into product-to-service transformation and the effect on the relationship between manufacturers, suppliers, vendors and operators of equipment and machines deployed in a case study industrial environment.

## Keywords

Product-to-service transformation, *Servitisation*, Maintenance contracts

## 1. Introduction

Manufacturers, suppliers and vendors of equipment and machines are confronting numerous challenges arising from, *inter alia*, technological transformations and globalisation of logistic supply chains. In order to sustain their businesses, an approach that is increasingly being adopted by original equipment manufacturers (OEM), vendors and agents, value-adding resellers, system integrators, and original design manufacturers (ODM) is to augment their products with services. The concept of product-to-service transformation or *servitisation* (Vandermerwe et al 1988:314) highlights the new phenomenon whereby manufacturers are supplementing existing and new products with service offerings of varying degrees. This means, on the one hand, that manufacturers, suppliers and vendors of equipment and machines are increasingly seeking ways to providing additional services to the clients who utilize (i.e., operate and maintain) such equipment and machines to achieve their own business objectives.

Businesses that use equipment and machines to provide final consumer goods and services face similar unprecedented challenges often underpinned by extensive pressure to commoditize so as to grapple with the increasing customer demands for instant gratification of life-style 'experiences'. Thus, on the other hand, users or operators of equipment and machines deployed in industrial processes concurrently seek ways to (i) increase reliability and availability, (ii) maximize useful life, as well as (iii) minimize operating costs and risks. This paper arises from an investigation into product-to-service transformation and the effect of *servitisation* on the relationship between manufacturers (including suppliers and vendors), and operators of equipment and machines deployed in a case study industrial environment. Section 2 includes a brief overview on product-to-service transformation and *servitisation*, while some features of product-to-service models are outlined in section 3. An example of product-to-service offerings to a user client is discussed in section 4 and some concluding remarks are included in section 5.

## 2. Product-to-Service Transformation and *Servitisation*

The product-centric philosophy traditionally followed by most manufacturers was based on the convention that strategic advantage resides within the product and the brand, or that the product provides greater value to the manufacturer than to the customer (Fader 2012:20). As manufacturers pursued the conventional product-centric philosophy to gain market dominance, they also became exposed to the vagarious demands of the wide variety customers. The difficulty of satisfying vagarious demands of a large customer base further increased risks of

diminished customer loyalty and competitiveness (Gronholdt et al, 2000). Ostrom et al (2010:15) surmise that the short-to-medium term, uni-dimensional product-centric approach does not optimally deal with emulation challenges from competitors.

Product-centric manufacturers leave significant value suspended in the market. However, the customer-centric or market orientation approach highlighted by Narver and Slater (1990:32) is supported by Vandermerwe's (2014:45) argument that pure product or service value diminishes with time, whereas customer-value increases with time. According to Loshin and Reifer (2013:8), customer-centrism requires that manufacturers of equipment and machines provide superior value to user clients, which, in turn, should lead to increased client loyalty (Shah et al, 2006:116), reduced client attrition, and increased revenues.

To succeed in a world embracing rapidly transformative technologies and hyper-competitive globalization, both manufacturer and user of equipment and machines are obliged towards *servitisation*, that is, a strategy focused on amalgamating and integrating services with goods so to provide solutions that satisfy the needs and gratify the life-style experience of the eventual customer (Baines and Lightfoot 2013:5). For the manufacturer, supplier or vendor of equipment and machines, *servitisation* requires the establishment of a user client-oriented product-service-system (PSS) that bundles the equipment/machine with technical and other support services to the user client. The scope of a manufacturer's PSS will depend on needs of the user client base and the nature of the relationship that can be established between the manufacturer and each user client. Mont (2002:4) suggests that *servitisation* can be a mechanism for a manufacturer to explore and exploit new markets, for example, by offering as a bundle, to maintain and/or refurbish equipment and machines supplied to a user client. *Servitisation* strategy and PSS development encourages and facilitates innovation as manufacturers exploit elements of the business model canvass expounded by Osterwalder and Pigneur (2010:16) to evolve new (i) value propositions, (ii) revenue streams, (iii) key partnerships, and (iv) customer relationships.

### 3. Features of Product-Service Systems

The following features may be used to characterize *servitisation* strategy and product-service systems :-

- a) *core product* (a fleet or pool of core products) such as spare parts for a steam turbine, personal protective equipment, et cetera;
- b) *perceived value* – in both economic terms and psychological dimension (Yu et al, 2017:208) – with reference to Osterwalder et al (2010:23);
- c) *sustainability* – in terms of de-materialize, reduce, recycle, re-use targets (Sharma and Singh 2017:150);
- d) *tangibility of product-service bundle* (Brandstotter et al, 2003:799);
- e) *customer-facing metrics* – PSS performance from the user client viewpoint;
- f) *service customization and personalization* – which, for example, reinforces value co-creation (Xing, et al, 2016:216); and
- g) *remote monitoring capabilities* that enable prompt attention and response.

These features may be incorporated in terms of a PSS model as illustrated in Figure 1.

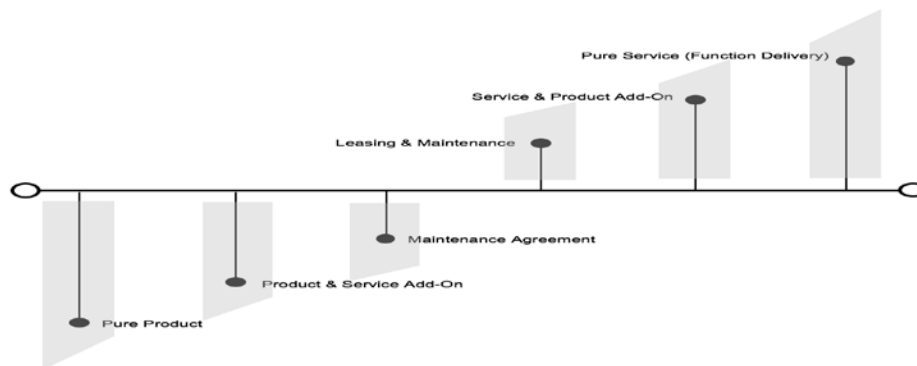


Figure 1. Maintenance *Servitisation* and PSS functional model

#### 4. PSS Case Study

For brevity, this case study involves a review of the database of existing contract agreements between a user client and many manufacturers, suppliers and vendors of turbomachinery components, spares and equipment. The objective of the review was to identify the extent to which features of *servitisation* and PSS offerings were prevalent in the contracts. Figure 2 illustrates the prevalence of the features in 99 contract agreements, and reveals that the perceived value of the core product and the core product itself, are, by far, the dominant features of the PSS.

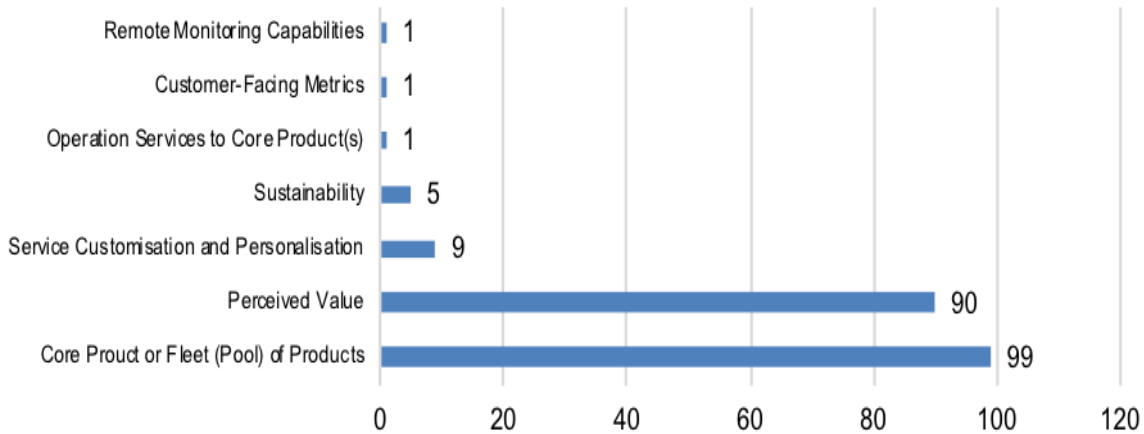


Figure 2. Servitisation and PSS Features based on a review of 99 existing contract agreements

The bar graph in Figure 3 illustrates the range of PSS features offered by various manufacturers/suppliers/vendors involved in the contract agreements with the user client. It is interesting to observe that only ten vendors offered three or more features of *servitisation*/PSS.

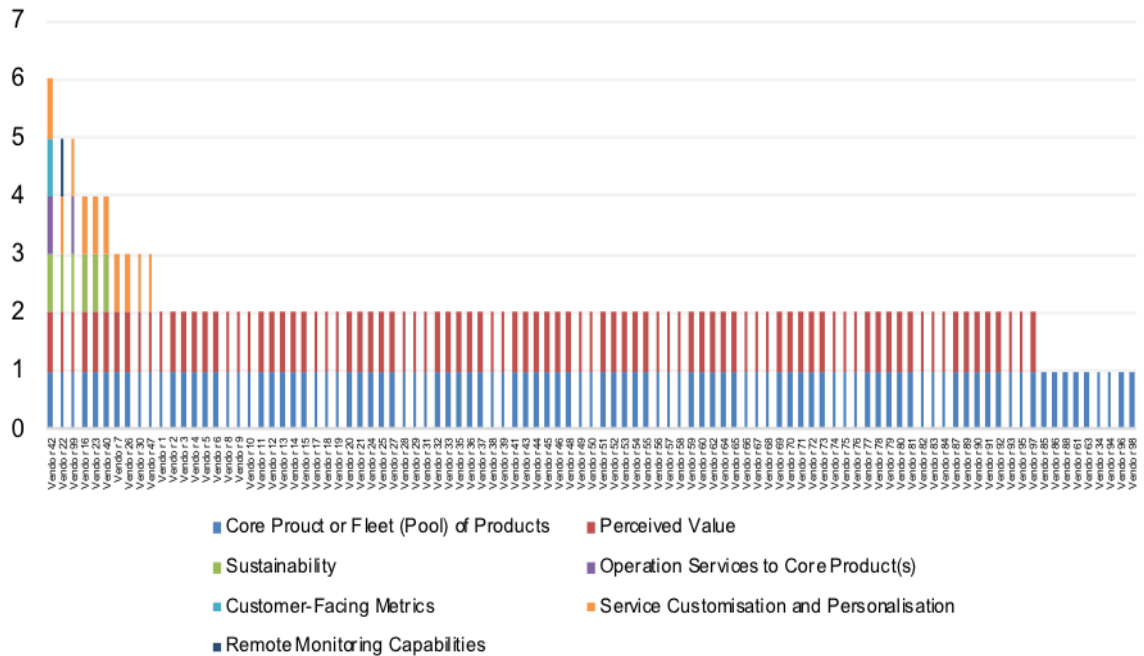


Figure 3. Vendor-Specific *Servitisation*/PSS Offerings

## 5. Concluding Remarks

The paper briefly discussed the emergent concept of *servitisation* and associated product-to-service transformation spurred on by rapid changes and evolutions in technologies, globalization, and consumer behavior. Although secondary data from literature suggests that manufacturers/suppliers/vendors are shifting from product-centric traditions towards customer-centric market-oriented product-service systems, however, the evidence garnered from a case study environment indicates that the transformation can, at best, be described as sluggish in this particular context. A muted point here is that the ten contract agreements manifesting three or more features of *servitisation*/PSS have each been in existence for at least five years.

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## Biographies

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