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INTEGRATING PSS AND SERVICE DESIGN APPROACHES FOR SERVICE INNOVATION

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ABSTRACT

Service design has gained increased attention in service research (Ostrom et al. 2015) as it brings new innovative ideas to life and can further support manufacturing and service companies to design new value propositions. Manufacturing companies have been adding services to their product offerings to increase competitiveness in a servitization process (Baines, Lightfoot, Benedettini and Kay 2009). These new solutions known as product-service systems (PSS) incorporate both product and service components to enable value-in-use (Baines et al. 2007). On the other hand, enabling a smooth customer experience requires the design of service systems as the orchestration of people, physical artefacts, processes, information, where the physical evidence is a key component (Bitner, Ostrom, and Morgan 2008). For example, healthcare services (e.g. home health care services for the elderly) include many points of interaction that can only be successful if processes, material artefacts (e.g. health care provider toolkit) and physical spaces are designed from an integrated perspective.

The design of product and service components into integrated value propositions is important for both manufacturing and service companies. Some attempts have been made to bridge PSS and service design into more integrated PSS approaches that bring together the human-centred and co-creative perspective from service design and the product and organizational networks view from PSS (Costa, Patrício, and Morelli 2016). However, the impact of such approach on design processes and outcomes still needs further research.

To address this challenge, this paper presents a multiple case study (Yin 2003) with design projects with 10 companies. It involved 5 product-oriented design projects (within the Integrated Design and Management program, Massachusetts Institute of Technology) and 5 service-oriented design projects (within the New Service Development and Design course at the University of Porto). Ethnographic research, including extensive field work, participant observation, analysis of documents and interviews, were undertaken during a total of 8 months. Data collection and analysis focused on (1) differences and similarities of product- and service-

oriented design projects, exposed to product and service processes and methods, respectively; (2) how exposure to more integrative PSS approaches influenced the design process and design outcomes of these projects and (3) identify the multiple challenges involved in implementing more integrated PSS perspectives in different design settings.

The results indicate similarities but also significant differences between the two design settings. Both product- and service-oriented projects shared a human-centred and systemic perspective in the initial stage studying the customer experience and its context. However, when envisioning new solutions, product-focused projects were more bounded by physical components, and the systemic vision was somehow lost. The overall system within which the new solution was integrated was seen as context, and not as a design space. The perceived intangibility of the service, and the attachment to material components hampered the integration of service components in the final outcome.

Service-oriented projects, although starting with the same human-centred and systemic perspective, were more prone to maintain this systemic vision along the different stages of the service design project. The different network actors, their interactions and service processes were seen as part of the design space, and not merely as context. On the other hand, this focus on processes somehow hampered the ability to materialize the physical components of the service, as well as their interconnections with the other service system components.

The introduction of more integrative PSS approaches supported the project teams to generate more complete and systemic solutions especially in the concept generation stage of the design process, materializing product and service component in parallel and reflecting more on the implications of the solution for customers' experiences and organizational networks. However some teams perceived the co-creation of integrated solutions as more time consuming, requiring the use of additional resources. Additionally, product-oriented team showed difficulties in maintaining a multi-level perspective, especially when shifting to the prototyping stage.

This paper contributes to service research studying how PSS and service design approaches can be better integrated to support both manufacturing and service companies in designing new integrated PSS solutions. First, it examines the differences between product and service-oriented methods and processes and analyses the impact of infusing more integrative PSS approaches in product and service-oriented design projects. Finally, it identifies key challenges for infusing the integrated approach in different design contexts.

KEYWORDS: Service design; Product-service systems; Servitization; multiple case study

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