Service-oriented product development strategies: Product/Service-Systems (PSS) development

Manufacturing companies have traditionally focused their efforts on designing, developing and producing physical products for the market. Today, global competition, outsourcing and legislation commend that companies take greater responsibility of their products. This is driving some manufacturers to shift their business strategies from selling products (e.g. photocopying machines) to the provision of services (e.g. document services). Instead of the product itself, the activity and knowledge associated with the use of the product is perceived to be of more value to customers. In the research community, service-oriented approaches that embrace this change of business focus from individual products to total integrated customer solutions are termed Product/Service-Systems (PSS). The research in this thesis addresses the systematic design and development of PSS solutions in manufacturing firms. Here PSS are understood on three levels in relation to design: 1. PSS solution – a system of integrated products and services that companies develop and deliver to customers. 2. PSS development – the integrated design processes and development activities that result in PSS solutions. 3. PSS approaches – service-oriented business strategies that coordinate PSS development. Based on an extensive review of the relevant literature and five empirical case studies the following insights were made:

- PSS solutions may be conceptualised by considering the product life phase systems, customer activities and the actor network. These perspectives are fundamental to the understanding of PSS and provide an answer to how they can be more resource-efficient and competitive than traditional product-based business models.
- Development activities related to PSS take place on multiple levels of the organisation in a manufacturing firm, from the formulation of business strategy to individual development projects of products and services, right down to the continuous support of customer activities on an operational level. This identification of PSS related development activities helps companies and researchers in understanding and structuring the development task related to PSS approaches.
- PSS approaches require companies to coordinate their business strategy with their development competencies, product strategy and service offerings in close collaboration with customers and other external partners. These findings resulted in theoretical models, prescriptive methods and practical tools that are useful for industry, academia and students interested in adopting PSS approaches.

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