Popular science summary of the PhD thesis

PhD student  
Aris Pagoropoulous

Title of the PhD thesis  
Product/Service-Systems in the maritime industry: From economic evaluation throughout the life cycle to implementation

PhD school/Department  
Department of Mechanical Engineering, Section of Engineering Design and Product Development

Science summary

* Please give a short popular abstract in either Danish or English (approximately half a page) suited for the publication of the title, main content, results and innovations of the PhD thesis also including prospective utilizations hereof:

Product-Service Systems (PSS) provide business opportunities by creating new revenue streams and customer value. This thesis attempts to shed light on the role of economic evaluation from a life cycle perspective in PSS implementation. Based on a review of the literature, a series of challenges and considerations were identified for applying Life Cycle Costing in PSS.

The developed support was used to examine how the developed support can help understand the potential of real-world PSS offerings. By reflecting on the role of both quantitative and qualitative results in decision making, this project highlighted the complex nature of cost savings and their causal dependency on technical and behavioral factors, the impact of the legislative framework and the importance of both customer and supplier capabilities in PSS success. Moreover, the interaction between customer/supplier capabilities was also important, as PSS adoption was in some cases hampered by lack of synergies between customer and supplier and suppliers’ inability to deliver on customer expectations.

In light of the ongoing trend of digitization and the importance of customer capabilities, this study tried to understand how the institutionalization of digital capabilities affects the implementation of PSS in the maritime industry. The research contributes to the associate field by providing a more balanced view on the role of costs and benefits in PSS adoption. Empirical findings cast a critical eye on the opportunity that digital innovations and capabilities hold for PSS procurement. Equally important, the research provides a closer look on the customer perspective and its impact on PSS implementation and development. The present thesis is intended for both academic and industry audiences. Researchers can draw inspiration from the analysis of literature across different scientific fields, and the use of tools from the field of data analysis in practical situations. Practitioners from the industry can reflect on the role and importance of adopting a life cycle perspective when analyzing costs, and reflect on the application and impact of machine learning algorithms in the context of the shipping industry.