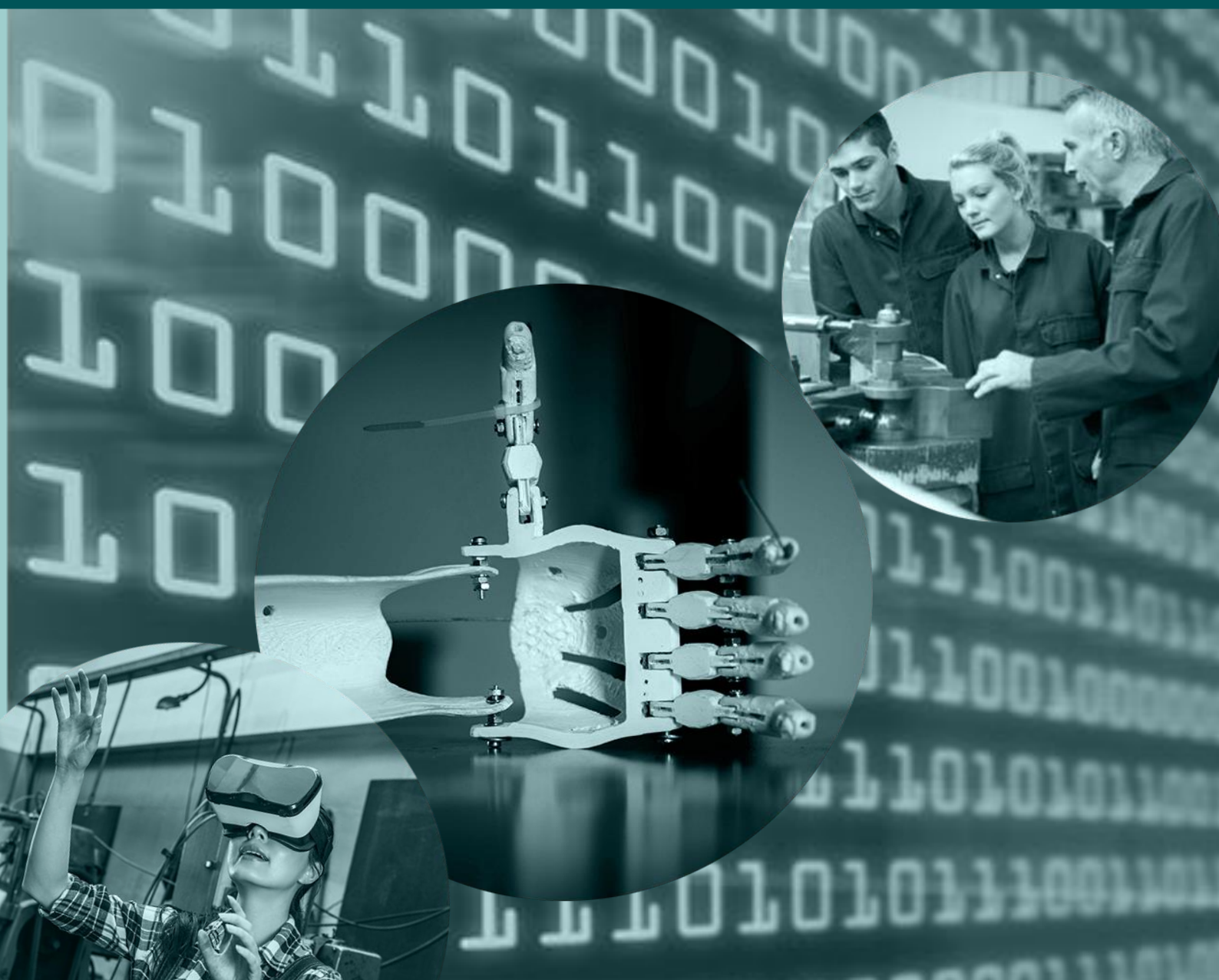




Driving Competitiveness through Servitization

FINAL RAPORT

**INDUSTRIENS
FOND** FREMMER DANSK
KONKURRENCEEVNE
The Danish Industry Foundation



Project final report: "Driving Competitiveness through Servitization"

1. Objectives and background

The beginning of this project goes back to the extensive research at CBS on Competitiveness of companies and industries. Observations were that companies increasingly compete on global markets. Innovation is happening at a much higher pace. Information and communication technologies shape economics and technologies are disrupted or transferred. Complex product and process systems are more intertwined and new countries and organizations outcompete ours.

Concurrently there was, and to some extent still is, an intensive debate on an insufficient development of productivity in Denmark. Among most frequent questions in media and the general discourse were: If we move our production, what is next? Why is productivity in Denmark lagging behind? Will the innovation activities go the same way? Can re-insourcing replace offshoring? How can we create value through new business models? How to cope with "Servitization - Extended Business Models"? What will Denmark live off?

Rather than competing with high productivity necessitating low factor costs, Danish competitiveness should be based on competitive advantages such as highly trained and skilled work force, innovative solutions, flexible organizations, entrepreneurial spirit and other such factors related to and coming from an even if small advanced society. As a strategy, Servitization fulfils these conditions. Servitization is about competing through value propositions that integrate services with product offerings. Hence extending the business model. It is a rather complex business model with a need for the mentioned societal characteristics. Hence, developing servitization should be one for Danish companies very relevant way of improving their competitiveness.

2. Purpose

Servitization embraces business processes across value chains, and in most advanced form, it involves business models that integrate products and services into total solutions. However, implementing a servitization strategy is not a trivial task as such a journey puts the companies through challenges. The purpose of this project has been to address the challenges in servitization addressing three themes with high relevance to a large target group. Within each theme, we deal with a number of important issues.

1. Servitization as a global competitive strategic response - **why** embark on servitization, e.g. Management of value chain and inter-firm relationships, Mapping of servitization landscape in Denmark, Benchmarking to grasp the experiences and learn from each other.
2. Design and innovation for servitization – **what** is needed to realize servitization, e.g. Innovating business models, Assessing servitization performance, Development of new services, Formulation of value propositions for value creation and value capture.
3. The processes of servitization transformation – **how** to implement servitization, e.g. Development of new knowledge, capabilities and skills, Development and management of network of customers and service partners, Development of KPIs and alignment of incentives, Development of managerial tools for self-assessment of servitization performance and road-mapping.

3. Content and main activities

We have been working closely with companies on the formulation of value propositions and on how to deal with the challenges of implementing servitization, both in the short and long run. We have had close collaboration with both large companies and SMEs, where there is top management involvement and active participation. We have been focusing on specific issues for individual companies (both large and SMEs) and interact with the companies through a variety of formats, such as through a progression of iterative facilitated workshops, workshops with small groups, and educational training for senior managers in executive MBA style. We have published a series of booklets to serve as guides for practitioners.

4. Research approach

Our approach to this project is applied research in close collaboration with companies, from the perspectives of operations management with particular focus on strategy, innovation and implementation. We place strong focus with participative methods including Mapping, Case studies, Action research, and In-depth longitudinal field studies.

The dissemination of the progress of our project has been taking place in various forms. For practitioners, there has been a series of booklets, workshops and seminars. For researchers, there has been participation at conferences and publication of research papers at top academic journals. There have also been workshops where we have invited renowned international researchers to share their expertise with executives from Danish companies.

For the education, the series of the booklets have been integrated into our teaching.

5. Organization and partners

There are three types of partners: academic, industrial, and funding. Academic partners include domestic institutions (e.g., DTU, Aarhus University, Force Technology, and Service Platform) and international universities (e.g., Cambridge University, London Business School, University of Warwick, Aston University, University College Dublin, and Aalto University). With international partners, it has been our ambition from the start to put Denmark in one of the leading places known for research on servitization.

6. Impacts and Effects

Project objectives encompass the companies to gain a better understanding about the effects of servitization, enabling them to: 1) to gain deeper knowledge on servitization and how it is done, 2) to develop skills for its implementation, and 3) to implement it.

The goal has been to guide the companies on how to move forward to becoming a better service provider by considering the paradoxes they continuously face.

The project has provided a picture of the servitization landscape in Denmark and paved the way for the servitization landscape in Denmark.

This project addresses challenges faced by many Danish industrial companies, which are in a position to benefit by transforming from component manufacturers to solution providers.

The activities within this project have had several ambitions for output.

First of all the individual companies participating in the research project benefit through improved understanding of how to develop business models to succeed in extending value propositions.

This has relevance beyond the companies participating directly in the research activities since project outcomes are disseminated to a broader community.

On a larger scale, the research and dissemination activities contribute to shaping the mindset of Danish industry and influencing discussions of the premises on which Danish companies can compete in a globalized economy.

In the long run, successful implementation of servitization means that the companies potentially increase profits and grow (especially crucial for SMEs).

7. WHAT WE WANTED AND PLANNED TO DO

OBJECTIVES AND WANTED EFFECTS	OUTPUTS AND EFFECTS
THE WHYS	
Deeper knowledge on servitization	Mapping form and process
Benefit by transforming	Survey shows potential benefits
THE WHATS	
Guide the companies	Collaborative research with and within companies
Develop skills for its implementation	In company seminars and ICG meetings
Implementation	Collaborative projects in ICG companies
How to become a better service provider	ICG group-works and booklet
Considering the paradoxes	ICG meetings and some in booklets
The servitization landscape in Denmark	Mapping and survey reports
Addresses challenges	Conceptualization in the mapping and other booklets
THE HOWS	
How servitization is done	Booklets and seminars both open and for ICG
All the individual companies can benefit	Active participation in the ICG meetings and exchanges
How to develop business models	ICG theme and booklet
How to extend value propositions	ICG theme and booklet
Implement it	Collaborative research in several companies
Project outcomes are disseminated to a broader community	Several conferences and articles in newspapers and journals along with the booklets
Shaping the mindset of Danish industry and influencing discussions	The mapping and the survey with individual company contacts + see dissemination above
Successful implementation of servitization means that the companies will potentially increase profits and grow	Clearly demonstrated in the survey

8. WHAT WE DID – ACTIVITIES AND EFFECTS THEY HAD

ACTIVITIES AND REPORTS	EFFECTS AND IMPACTS
Industry Core group workshops	Gained a better understanding about the effects of servitization, enabling them to gain deeper knowledge on servitization, and how it is done.

	<p>Guiding the companies on how to move forward to becoming a better service provider by considering the service paradoxes.</p> <p>Addressing challenges, they face and faced.</p> <p>How to benefit by transforming from component manufactures to solution providers.</p> <p>Front-end academic knowledge exchange related to relevant issues.</p> <p>Exchanging ideas and experiences from servitization efforts.</p>
<p>In company studies</p> <p>Interviews, discussions and knowledge transfer</p>	<p>Analyzed servitization potentials.</p> <p>Analyzed service paradoxes.</p> <p>Addressed challenges they faced and will face.</p> <p>Explored potential benefits from transforming from component manufacturer to solution provider.</p> <p>Front-end academic knowledge exchange related to relevant and for the organization specific issues.</p>
<p>In company workshops; Individual and in groups of companies</p> <p>Presentations, feedback sessions, analyses, planning sessions.</p>	<p>Guided the companies on how to develop servitization.</p> <p>Analyzing service paradoxes in the move towards becoming service provider.</p> <p>Analyzed challenges they faced and will face.</p> <p>Analyzed benefits from transforming from component manufacturer to solution provider.</p> <p>Front-end academic knowledge exchange related to relevant and for the organization specific issues.</p> <p>Mapped servitization strategies.</p> <p>On request, also Clinical Research activities in which company representatives develop servitization strategies and plans for their organizations with the guidance from researchers.</p>
Conferences for practitioners	
<ul style="list-style-type: none"> Service platform; conference in collaboration 	<ul style="list-style-type: none"> Create business through services Development processes; Service Innovation 2020
<ul style="list-style-type: none"> Børsen innovation Conference 2016 Børsen Gazelle Accelerator May 2017 	<ul style="list-style-type: none"> Service business, Servitization, Business Model Innovation Expert panel participation in Århus and Copenhagen
<ul style="list-style-type: none"> Alumni Day 2017 – celebrating CBS 100 years 	<ul style="list-style-type: none"> Special Servitization presentation for CBS Alumni in companies.
<ul style="list-style-type: none"> DI's produktivitetskonference 	<ul style="list-style-type: none"> Presentations and workshops

<ul style="list-style-type: none"> • CBS Competitiveness Day, 2015,2016,2017,2018 • CBS Forskningens Døgn, 2015,2016,2017,2018 	<ul style="list-style-type: none"> • Several sessions on Servitization issues
<ul style="list-style-type: none"> • Research seminars for practitioners and academics with international researchers. 	<ul style="list-style-type: none"> • Kowalkowski, Gebauer, Toytäri, Geiger
<ul style="list-style-type: none"> • Service Innovation 2020 for servicechefer 	<ul style="list-style-type: none"> • Company program for serviceleaders
Academic conferences	
Organizing	
<ul style="list-style-type: none"> • Servitization Spring Conference. Home base Aston, 2018 at CBS 	<ul style="list-style-type: none"> • Annual International Servitization Conference, with academics and practitioners
<ul style="list-style-type: none"> • International Competitiveness Management Conference, 2015 	<ul style="list-style-type: none"> • Special Servitization focus and participation by ICG companies
<ul style="list-style-type: none"> • Service Operations Management Forum, January 2017 at CBS • International Seminar on Service Modularity, January 2017 at CBS 	<ul style="list-style-type: none"> • Presentations by academics and practitioners • Panel debate with practitioners and leading academic researchers
Academic conferences	
Participating with contributions	
<ul style="list-style-type: none"> • EurOMA, European Operations Management Association 	<ul style="list-style-type: none"> • See appendix 1
<ul style="list-style-type: none"> • EGOS, European Group for Organizational Studies 	<ul style="list-style-type: none"> • See appendix 1
<ul style="list-style-type: none"> • Informs, The Institute for Operations Research and the Management Sciences. 	<ul style="list-style-type: none"> • TBA See appendix 1
<ul style="list-style-type: none"> • AoM, Academy of Management 	<ul style="list-style-type: none"> • TBA See appendix 1
<ul style="list-style-type: none"> • POMS, Production and Operations Management Society 	<ul style="list-style-type: none"> • See appendix 1
Mapping and survey	
Servitization in Industrial Firms: Mapping and Analyzing the Danish Service Landscape	<p>An overview of Danish industrial service landscape:</p> <ul style="list-style-type: none"> • Danish industry overview • A checklist of service categories for companies
Survey of the Danish Servitization Landscape: Service Performance and Service Strategies	<p>Expanding mapping perspectives + survey on service performance and service strategies:</p> <ul style="list-style-type: none"> • Service development over time • Contribution from Services • Profitability from Servitization

Booklets	
• Driving Competitiveness through Servitization	A guide for practitioners with everything from strategies to implementation. First booklet distributed in 10 000 copies + electronically.
• Expanding markets through services	Developing your international business
• Becoming a solution provider	Extending the business model to sell the outcome/function of the products
• Building Capabilities	In pipeline for final editing.
Media coverage	
	<p>Many but some major ones (source and theme)</p> <ul style="list-style-type: none"> • Børsen May 2015 • Berlingske August 2016; project + 3 cases • Mandag Morgen August 2017; Service for growth • Finans DK September 2017; Servitization concept • JP January 2018; Mapping • Effektivitet; June 2018, Solution Provider
Website	
Blog.cbs.dk/servitization	Dedicated website with booklets and articles for download.
Research papers	
Research papers in high level journals. More in pipeline due to long lead time	See appendix 1
Collaborations	
<p>Research collaborations; e.g.</p> <ul style="list-style-type: none"> • Bringing in international researchers • joint conferences • establishing CBS as a known center for servitization research 	<p>Direct joint activities with:</p> <ul style="list-style-type: none"> • Cambridge Service Alliance • Warwick Business School • Aston University • S:t. Gallen Eawag • Jönköping University • Dublin University College • Chalmers University of Technology • Aalto University • University of Turku • Danish; e.g. DTU and GTS institutes
Ph.D. projects	<ul style="list-style-type: none"> • 2 Ph.D. proposals with companies developed
Master theses and student projects	
	<p>Over 20 theses including the themes:</p> <ul style="list-style-type: none"> • Value drivers • Modularity in servitization • Open innovation in financial services • Platform leadership • Servitization in automotive industry

	<ul style="list-style-type: none"> • Value creation and innovation • Implementation of service strategy • Design of competitive servitization strategies • Service based business models • Servitization development project within companies by students, and faculty as supervisors
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9. Success Criteria and measures – issues and evaluation

The success criteria are related to the activities and effects mentioned above. However, it is difficult to measure the impact of our influence on a company's productivity, growth and profitability related to servitization. As our research approach is highly dependent on our collaboration with the companies, a success criterion is their involvement and participation in the project. Another criterion is the workshops held, with both the companies and the research community.

What participants take home and measures taken afterwards are relevant but difficult to identify. With the research community, measurable output is the number of publications (i.e. conference papers, journal articles, and theses).

The effect of the project on an individual company level can be measured by increases in the share of revenues generated through services as well as changes in indicators of profitability. Even if it is difficult to isolate causal relationships of these to the activities within the project an attempt has been done in the survey.

The intended measures of success	Outcome
Companies reached with the message and invitations to workshops: 200	Reached via e.g. mapping activities > 1100 Reached interactive e.g. via Survey communication > 140
Number of servitization projects initiated in companies: 15 – 20 (expected)	Close collaboration has been with companies invited to and participating in the ICG, Industry Core Group where of 13 have been active. How many others have started is not possible to say, but we assess that dozens have started after interactive activities such as seminars with managers.
Number of open workshops: 6 general and 15 case study follow-ups	Five conferences are mentioned under conferences for practitioners. In each of the partner companies, there has normally been 1 – 3 workshops.
Workshops in the longitudinal study: 6	Several of the cases turned into longitudinal relations with several workshops.
Issue specific brief practical guides (booklets) for managers: 10 – 15	Five so far. More in pipeline.
Annual research papers: 2	Consists of articles and conference papers. See list above.

New turnover from service products	The development of these and other factors are described and discussed in the mapping and even more in the survey report.
Share of services in total turnover	
Service portfolio depth and width	
Closing conference: 1	Held 27 November 2018

10. HOW FAR WE ARE AND WHAT REMAINS

Participating researchers and company representatives have shown a great deal of passion and dedication for the project. We believe it is fair to say that most of the objectives have been reached, sometimes even exceeded. Some outputs will continue to come after the conclusion of the project. These include further reports from the survey, a few booklets, and several research papers and articles.

An important effect that continues and can further develop is the established network of companies with an interest in Servitization. These include the companies participating in the first workshop and the established ICG, Industry Core Group (Grundfos, Vestas Wind Systems, Alfa Laval, FLSmidth, Novozymes, Gaia Solar, Radiometer Medical, Brüel & Kjaer, Volvo Construction Equipment, Scanex, Kamstrup, Haldor Topsoe, Viking, and Foss), as well as other industrial companies working on services and solutions.

A final very important effect is that this project has formed a basis for the development of a next phase program called Servitize.dk, which has already started. It will take dissemination and implementation further to even more companies.

11. FINAL REMARK – WHAT SUCCEEDED AND WHAT COULD NOT BE DONE – SOME EXPERIENCES

Even if most objectives are met, some are only to a lesser extent than expected; e.g. collaborations with other Danish universities, local dissemination activities and booklets. Some reasons seem to be:

- Universities collaborations: other universities hesitant to participate in projects that are not “theirs”.
- Local dissemination activities: participants think it is OK to come to CBS and Copenhagen.
- Booklets: Longer editing than expected, many results came only at the end of the project. Some more to come.

Another experience is that developing close collaboration with companies is very rewarding albeit resource demanding. Regarding dissemination there can always be more.

APPENDIX 1: RESEARCH PUBLICATIONS: ARTICLES AND CONFERENCE PAPERS

1. Becoming a Solution Provider: Integrating in the Customer Process
2. Specialization and Commonalization in Multi-branded Manufacturing Corporations
3. Value-based Pricing and Selling Capabilities for Industrial Services and Solutions
4. Locating Servitization within the Wider Services Communities
5. Exploring Service-led Growth Trajectories for Analytical Equipment Providers
6. Exploring the Managerial Dilemmas Encountered by Advanced Analytical Equipment Providers in Developing Service-led Growth Strategies
7. Locating Servitization Within the Wider Communities
8. Developing Service Strategies in Support of Servitization in China
9. Servitization in China via an External Service Partner Network
10. Exploring Servitization in China
11. Organizing for Servitization
12. Service Modularity and Architecture
13. Driving Competitiveness Through Servitization
14. Servitization and Service Level Agreements
15. Formation of Service Ecosystems
16. Servitization in Industrial Firms
17. Product and Service Modularity Strategies Game for Mass Customization
18. Configuring Product Modularity and Service Modularity for Mass Customization Strategies
19. The Impact of Product and Service Modularity on Business Performance
20. Survey of the Danish Servitization Landscape
21. Services Supporting the Customer
22. Principles for Implementing Modularity in Healthcare
23. Introduction to Innovation WITHIN and ACROSS Borders
24. Pricing and Service Bundling at a Smartphone Provider
25. The Effect of Modularity on Product/Service Life Cycles and the Reverse Supply Chain
26. Third Party Logistics 3PL and Service Individuality
27. 3PL vs. 3PL - Implications of Individuality and Standardization Embedded in the Configuration of Offerings
28. Service Modularity
29. Exploring Modularity in Services
30. Exploring the Logic of Modularity in the Context of Digital Technologies
31. 9th Workshop on Journal Publishing in Operations Management, 9th Service Operations Management Forum (SOMF), & 7th International Se
32. Management of Service and R&D Portfolios
33. Expanding Markets Through Analytical Services and Solutions
34. Proceedings of the Spring Servitization Conference
35. The Impact of Product and Service Modularity on Business Performance
36. Creating Markets for Servitized Offerings
37. Pricing Structures for Solutions
38. Servitization, Services and Managing Complexity
39. The Servitization of Manufacturers of Advanced Analytical Equipment
40. The Impact of Product and Service Modularity on Servitization Strategy
41. Modularization of Industrial Service Processes
42. Measuring the Modularity of Industrial Service Processes
43. Modular Cure Provision
44. Evolution of Modularity Literature
45. Pricing structures for solutions: an exploratory study within the oil and gas industry

