Performance assessment of BlueINNOship maritime innovation network

This report presents the findings of a study into the performance effects of BlueINNOship - a publicly funded innovation network in the Danish maritime industry. The study is based on a survey design of all BlueINNOship participants based on long-standing research on the innovation network. Based on the literature and the funding proposal of BlueINNOship, six performance factors were identified: dissemination, efficiency, networking capabilities, innovation capabilities, emission reduction, and growth. The study results show that BlueINNOship exceeded many of the promises regarding dissemination. Furthermore, the network had a high positive effect on efficiency where the time requirements of innovation activities could be reduced through participation in the network. Furthermore, activities achieved budget constraints. BlueINNOship furthermore had a high effect on networking capabilities. Specifically, the network enabled the participating organisation to build closer relationships with existing partners such as customers, consultants and organisations. However, the building of relationships with new partners was not part of the performance effect of the network.

The study further shows that BlueINNOship created small effects in terms of innovation capabilities. This observation may be linked to the traditional innovation models applied in the Danish maritime sector. Finally, BlueINNOship created small effects for reduction of emission targets and growth. This contradicts an explicit aim of the network which was to reduce emissions from the maritime technology and to further growth in the Danish maritime sector. The findings encourage changes to the Danish maritime sector which could further improve the positive effects of future innovation networks such as BlueINNOship. Based on this report, two changes in practice are proposed to ensure performance of future innovation networks in the Danish maritime sector. The first change in practice concerns more radical innovation approaches which include more risky projects including fundamentally new technologies. This could increase the effects on innovation capabilities and ultimately overall growth in the maritime sector. The second change in practice concerns to encouragement of the participation of new organisations in a future innovation network. This would enable the creation of new partnerships and new projects to further enhance the positive effect of a future innovation network. These proposed changes in practice could increase the performance effects of future innovation networks within the Danish maritime sector ensuring economic growth and competitiveness.

An analysis of vendor innovation capability in the contract electronics manufacturing industry

Limited academic research has been given to analysing the innovation capabilities of vendors in outsourcing contracts. This paper seeks to address this gap in the literature by enhancing our understanding of how the innovation capability of vendors is deployed to win, run and renew outsourcing contracts with their customers. Employing the resource-based view as a theoretical basis and undertaking in-depth case study analysis of three vendors in the electronic manufacturing services industry, the research shows that to achieve the outsourcing objectives of winning, running and renewing the contract, vendors can use different configurations of the competitive priorities of cost, quality, delivery and flexibility. The research aggregates the capabilities that influence the innovative capability of a vendor into the innovation-related capabilities (IRCs) of design, new product introduction and manufacturing. Three strategies are identified for vendors on how to deploy these IRCs, and a number of propositions are developed to indicate the suitability of the three deployment strategies for different operational contexts.
Maritime Innovation Networks

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z., Christoffersen, M., Fürstenberg, S.
Publication date: 2015
Media of output: PowerPoint

Event information
Event: 26th Annual Conference on Production and Operations Management Society
Location: Washington D. C., United States
Electronic versions:
Six_innovation_networks.pdf
Source: PublicationPreSubmission
Source-ID: 112442034
Research output: Non-textual form – Sound/Visual production (digital) – Annual report year: 2015 – Research

Challenges for innovation in the maritime industry

General information
Publication status: Published
Organisations: Department of Management Engineering, DTU Executive School of Business, Maersk Group
Contributors: Perunovic, Z., Fürstenberg, S., Christoffersen, M.
Publication date: 2014
Media of output: PowerPoint

Event information
Event: 25th Annual Conference on Production and Operations Management Society
Location: Atlanta, United States
Electronic versions:
POMS_2014_Challenges_for_INMA.pdf
Source: PublicationPreSubmission
Source-ID: 102968766

Innovation in networks in the maritime industry: How collaboration for innovation creates business value for the maritime industry

General information
Publication status: Published
Teaching OM at an Action-based Learning Program for Top Executives
The paper discusses design and execution of OM module in an intensive program for top executives. The participants are working as consultants in six different host companies on developing growth strategies. The OM module is designed to enable the participants to develop operations strategy that supports corporate growth strategy.

A framework for studying the importance of open innovation in the maritime industry
The industry leaders require from maritime organizations to open up their innovation processes. The question is if the industry is ready for that? In this paper we theorize about that possibility and develop a framework for studying the importance and relevance of open innovation for the maritime industry.

Deployment of vendor capabilities and competences throughout the outsourcing process
Purpose - A vendor's capabilities are recognized as one of the most important factors for success in outsourcing. However, there is a lack of understanding of how vendors manage their capabilities throughout the outsourcing process. With an aim to contribute to filling this existing gap, the purpose of this paper is to explore how vendors deploy their capabilities in order to win, run and renew the outsourcing contracts.

Design/methodology/approach - The research question has been derived by integrating a resource-based view theory with...
a model of a vendor's process in outsourcing. A multiple-case study of three contract electronic manufacturers has been employed to explore the research question.

Findings - The results show that for achieving their outsourcing objectives, vendors use different capability mixes: the winning, the running, and the renewing. These mixes are created through utilization of different portfolios of competences (balanced, unit-dominant, and versatile) and capabilities (permanent and temporary) which need to be deployed in the right combination (deployment strategy) adequate for the stage of the industry dynamics in which vendors operate. The research also indicated the importance of the relationship management capability for the success of outsourcing arrangements in the electronic manufacturing service (EMS) provision industry.

Research limitations/implications - New research involving more case companies would improve the validity of the conclusions made in this paper. Results also suggest that more research into relationship management capability in the context of the EMS industry will be a fruitful area for future studies.

Practical implications - Vendors who seek to advance in the industry's value chain need to expand their portfolio of competences and adapt their deployment strategies to new, more dynamic and volatile environments. The paper proposes three different deployment strategies for three different operational contexts.

Originality/value - In contrast with the existing static approach towards studying vendor's capabilities in outsourcing, the paper's findings show that vendors use different mixes of capabilities throughout the outsourcing process. The authors have been able to show how those capability mixes are formed. In addition, it was found that relationship management is an important capability for consideration when studying and practicing manufacturing outsourcing.
Dynamics of vendor innovation capability: Evidence from the Electronics Manufacturing Services industry

Recent developments suggest that an increasing number of companies outsource manufacturing with the hope that vendors will help them improve innovativeness. Still, the growing research in the topic has not yet studied two important dimensions of the relationship between manufacturing outsourcing and innovation. The first is the realization that vendor capabilities have been recognized as one of the most important factors for the success of outsourcing. The second refers to the fact that, even though innovation capability is required, vendors are still being selected, and their performance evaluated, by traditional manufacturing capabilities, such as cost, quality, delivery, and flexibility. Taking a vendor’s perspective in outsourcing, we develop and present a conceptual framework for studying vendor innovation capability. We propose to test this framework in the Electronic Manufacturing Services Industry.

Environmental Regulation and Innovation Dynamics in the Oil Tanker Industry

The maritime industry is widely seen as less permeable to innovation than other industries. However, the industry is now recognizing that demands for increased environment protection can only be achieved by more innovation. This study demonstrates that environmental innovation has played a significant role in changing the industry’s innovation paradigm. It has also been transformed over time.
Impact of information technology on vendor objectives, capabilities, and competences in contract electronic manufacturing

Many factors influence the success of an outsourcing arrangement but vendor capabilities have been recognized as one of the main contributors. This paper investigates how information technology (IT) utilization contributes to success in outsourcing. We take a vendor’s perspective and study how IT impacts vendor capabilities. The research framework integrates four concepts/theories: the resource-based view (RBV), the concept of manufacturing strategy, the concept of business performance, and the concept of IT impact on business performance. Two case companies are studied, one with a high level of IT development and another for which this is not the case. The results show that IT impacts vendor objectives indirectly by impacting competences and capabilities. Two types of impact of IT on competences and capabilities have been identified: IT as a competence enabler and IT as a capability enhancer. The most significant impact takes place when IT enhances a capability so that it becomes a capability important to achieving the objectives of winning, running, and renewing the outsourcing contracts. A method for calculating the impact of IT on capabilities and the impact of IT on operational performance has been proposed. The method gives valuable insights into how IT enables competences, enhances capabilities, and contributes to the fulfillment of vendor objectives. A model of how IT affects a vendor's competitiveness is proposed. In addition, two initiatives for optimizing the utilization of IT are suggested.

General information
Publication status: Published
Organisations: DTU Executive School of Business, University of San Francisco
Contributors: Perunovic, Z., Mefford, R., Christoffersen, M.
Pages: 207-219
Publication date: 2012
Peer-reviewed: Yes

Publication information
Journal: International Journal of Production Economics
Volume: 139
Issue number: 1
ISSN (Print): 0925-5273
Ratings:
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.02 SJR 2.111 SNIP 2.231
Web of Science (2012): Impact factor 2.081
ISI indexed (2012): ISI indexed yes
Original language: English
Keywords: Vendor perspective in outsourcing, Resource-based view, Information technology, Contract electronics manufacturing
DOIs: 10.1016/j.ijpe.2012.04.009
Source: dtu
Source-ID: n:oai:DTIC-ART:elsevier/366216258::19068
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Innovation in the maritime industry

General information
Publication status: Published
Organisations: DTU Executive School of Business, Department of Mechanical Engineering
Contributors: Perunovic, Z., Vidic-Perunovic, J.
Publication date: 2011

Host publication information
Title of host publication: Proceedings of the 22nd Annual POM Conference: Operations management: the enabling link
Source: orbit
Source-ID: 276431
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2011 › Research › peer-review

Building a Global Electronic Manufacturing Service Provider: Vendor's Process in Outsourcing

General information
Publication status: Published
The Utilisation of Information and Communication Technology across the Outsourcing Process: The Vendor's Perspective

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z.
Number of pages: 149
Publication date: Mar 2009

Publication information
Place of publication: Kgs. Lyngby, Denmark
Publisher: Technical University of Denmark (DTU)
ISBN (Print): 978-87-92180-00-1
Original language: English
Electronic versions:
Source: orbit
Source-ID: 239946

Topography of outsourcing

General information
Publication status: Published
Organisations: DTU Executive School of Business, University of San Francisco
Contributors: Perunovic, Z., Christoffersen, M.
Publication date: 2009

Host publication information
Title of host publication: Reshaing the boundaries of the firm in the era of global interdependence
Source: orbit
Source-ID: 255251
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2009 › Research › peer-review

Winning, running, and renewing the outsourcing contracts

General information
Publication status: Published
Organisations: DTU Executive School of Business, University of San Francisco
Contributors: Perunovic, Z., Christoffersen, M., Mefford, R.
Publication date: 2009

Host publication Information
Place of publication: Gothenburg
Application of Information Technology in Outsourcing: A Vendor's Perspective

**General information**
Publication status: Published
Organisations: DTU Executive School of Business, Industrial Engineering and Management, Department of Management Engineering
Contributors: Perunovic, Z., Christoffersen, M., Pedersen, J. L.
Publication date: 2008

**Host publication information**
Title of host publication: Proceedings of the third Nordic Outsourcing Workshop
Source: orbit
Source-ID: 220539

Building a Global Electronic Manufacturing Service Provider: Vendor's Process in Outsourcing

**General information**
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z., Christoffersen, M.
Publication date: 2008

**Host publication information**
Title of host publication: Creating and Managing a Knowledge Economy
Source: orbit
Source-ID: 219726

Competences, Capabilities, and Winning the Outsourcing Contracts

**General information**
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z., Christoffersen, M.
Publication date: 2008

**Event information**
Event: 19th Annual Conference of the Productions and Operations Management Society
Location: La Jolla, CA, United States
Source: orbit
Source-ID: 220459

The Outsourcing Process: An Overview

**General information**
Publication status: Published
Organisations: DTU Executive School of Business, University of Southern Denmark
Contributors: Perunovic, Z., Andersen, T., Christoffersen, M.
Publication date: 2008

**Host publication information**
Title of host publication: Globally Distributed Work: Concept, Strategies, and Models
Place of publication: Mumbai
Vendor's Competences and Capabilities in Outsourcing

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z., Christoffersen, M.
Publication date: 2008

Host publication information
Title of host publication: Proceedings of the Third European Conference on Management of Technology
Source: orbit
Source-ID: 223911

A framework for studying how vendors utilize information and communication technologies across outsourcing processes

General information
Publication status: Published
Organisations: DTU Executive School of Business, Department of Informatics and Mathematical Modeling
Contributors: Perunovic, Z., Nicolajsen, H. W., Christoffersen, M.
Publication date: 2007

Host publication information
Title of host publication: International Business, Local Development and Science-Technology Relationships
Source: orbit
Source-ID: 208325

Collaborative and Non-collaborative Vendor Selection Processes

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Taticchi, P., Christoffersen, M., Lunghi, P., Perunovic, Z.
Publication date: 2007

Host publication information
Title of host publication: Proceedings of the 18th annual conference of the Production and Operations Management Society
Editors: Gupta, S., Coelho, J.
Source: orbit
Source-ID: 201478

Hvorfor mislykkes outsourcing? Om ledelse af outsourcing relationer

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z.
Pages: 48-52
Publication date: 2007
Peer-reviewed: Unknown
Outsourcing Process and Theories

General information
Publication status: Published
Organisations: DTU Executive School of Business, Department of Management Engineering
Contributors: Perunovic, Z., Pedersen, J. L.
Publication date: 2007

Host publication information
Title of host publication: Proceedings of the 18th annual conference of the Production and Operations Management Society 2007
Editors: Gupta, S., Coelho, J.
Source: orbit
Source-ID: 201477
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review

Outsourcing processen – en udfordring for HR-funktionen

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z., Andersen, T., Christoffersen, M.
Publication date: 2007
Peer-reviewed: Unknown

Publication information
Journal: Human Resource Management
Volume: 2
Ratings:
Scopus rating (2007): SJR 0.966 SNIP 1.264
Original language: Danish
Source: orbit
Source-ID: 201476
Research output: Contribution to journal › Journal article – Annual report year: 2007 › Communication

The Outsourcing Process

General information
Publication status: Published
Organisations: DTU Executive School of Business
Contributors: Perunovic, Z., Andersen, T., Christoffersen, M.
Pages: 493-502
Publication date: 2007

Host publication information
Title of host publication: Globally Distributed Work and the Quest for Business Competitiveness
Source: orbit
Source-ID: 201938
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review

The Outsourcing Process – What is the Vendor’s Way?
Vendor’s Process in Outsourcing: Evidence from the Software Development Industry

An Outsourcing Dilemma

Treating the Information and Communication Technologies in the Offshore Outsourcing Process
Vendor's perception of outsourcer's ICT utilisation in the outsourcing process

General information
Publication status: Published
Organisations: DTU Executive School of Business, University of Strathclyde
Contributors: Perunovic, Z., Christoffersen, M., Williams, H.
Publication date: 2006

Host publication information
Title of host publication: Proceedings of the 15th International Conference on Management of Technology: East Meets West: Challenges and Opportunities in the Era of Globalization
Source: orbit
Source-ID: 192845
Research output: Chapter in Book/Report/Conference proceeding – Article in proceedings – Annual report year: 2006 – Research – peer-review

Exploring Danish Innovative Manufacturing Performance
The paper explores several dimensions of Danish industry's innovative performance with respect to the paradigm of the fifth generation innovation model that was suggested by Rothwell [Int. Market. Rev. 11 (1994) 7]. These dimensions include a general status of innovativeness in Danish companies, a look at time and cost trade-off, the fifth innovation generation's related performance and possible congruence between the fifth generation's factors and motives for their implementation. The source of data is an existing survey 'The Danish industry—Present and Future'. Results indicate that Danish manufacturing companies demonstrate an innovative performance close to the fourth generation of innovation, which is slightly different than it is perceived publicly.

General information
Publication status: Published
Organisations: Department of Management Engineering
Contributors: Perunovic, Z., Christiansen, T. B.
Pages: 1051-1058
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Technovation
Volume: 25
Issue number: 9
ISSN (Print): 0166-4972
Ratings:
Scopus rating (2005): SJR 0.515 SNIP 1.076
Web of Science (2005): Indexed yes
Original language: English
DOI:
10.1016/j.technovation.2004.02.013
Source: orbit
Source-ID: 184971

Introducing Opportunity-based Entrepreneurship in a Transition Economy
This paper confronts necessity-based and opportunity-based entrepreneurial concepts in the transition of developing economies. The author constructs a research model and conducts field research (using Serbia as a case study) to explore how different personal and regional characteristics can favour either a necessity- or opportunity-based entrepreneurial environment. The concluding remarks emphasize the need for careful introduction of opportunity-based entrepreneurship together with recommendations for how that may be accomplished across different regions. Results suggest that there are four possible entrepreneurial settings for a selected town or region, and four strategies for introducing the opportunity-based entrepreneurship are given. In the most general sense, this paper strives to encourage discussion about national systems of innovation as a complementary and/or dominant catch-up strategy for transition and developing economies.

General information
Strategic involvement of information and communication technologies in outsourcing

Purpose To portrait the utilisation of information and communication technology in off-shore outsourcing and raise questions for debate, hypotheses for verifications, and ideas for the improvement. Design/methodology/approach An explorative qualitative study with a research framework designed to answer the questions regarding strategic considerations and implications, outcomes and future. The authors have conducted twelve semi-structured interviews with relevant executives from twelve companies. Findings Contemporary ICT solutions help companies involved in off-shore outsourcing to achieve competitive advantages, but companies seem to realise that a bit late, during the implementation phase. Intentional and unintentional negative side effects of off-shore outsourcing could have been avoided if ICT has been thoroughly considered by top management in the initiation phase. The ICT enabled outsourcing have significant role in innovating business models of companies. However, the technological islands of application are not converging, at least not with desirable pace. Future off-shore outsourcing will comprehend more R&D activities, and spread throughout the whole business process. Existence of integrated IT solutions will stimulate, while documenting and standardising business processes will further fructify ICT's utilisation in outsourcing. Research limitations Limited number of companies makes generalisation difficult. There is a certain number of factors that influence success of off-shore outsourcing, and the research doesn't distinguish whether successful consideration and implementation of ICT is one of them. Practical implications Findings argue for appropriate consideration of ICT in the initiation phase of outsourcing. If so, companies can avoid negative side-effects of outsourcing, create new business opportunities and innovate business concepts. Originality/value Initial study to raise questions for debate, hypotheses for verifications, and ideas for improvement

Division of Labour and Coordination between independent Participants in Research and Development

Not only relatively simple work routines can today be outsourced to home countries or sent abroad. Also R&D is today object for such a development. In this paper we consider the issue through the prisms of history, uncertainty, and modularity. We look at the temporal dimension of knowledge accumulation, diminishing uncertainty, applying the modularisation concept in division of labour and all that covering with sphere of globalisation and faster, cheaper and more reliable and accurate information flow are making R&D processes object for outsourcing. We are looking at three empirical cases: 1) Open source software development, 2) Development of new types of insulating, and 3) Development of new types of agricultural technologies.
Handling Uncertainties within R&D Modules of a Developing Technology

The paper deals with uncertainties that may arise from previously modularised R&D effort of a new developing technology. The case of the insulin development technologies has been presented through modularisation of pancreatic extracts, semi-synthesis, and recombinant DNA technologies. Desk research and an interview conducted have generated following:

1. The further along the process train a module is, it accumulates uncertainties from previous modules. Second, with the growth of complexity, uncertainties grew as well, resulting in the necessity for companies to seek for knowledge on them externally.
2. The modules that have had always been present in the insulin's R&D, enabled companies to develop mechanisms for internal learning and are able to master that part of the process.
3. In the R&D, outsourcing is related to the whole knowledge acquisition while it seems that minor uncertainties (more or less standardised part of R&D, e.g. latter modules of insulin R&D) are predominantly part of the in-house R&D.

Hidden Threats in Building the Innovation Support Infrastructure in a Developing Country

The paper presents development of the innovation support infrastructure in a developing country, where case of Lithuania has been described. The authors emphasise observed unbalanced support in building the innovation support infrastructure. Such approach has created the lack of co-ordination and unutilised potential of innovation support institutions. Additionally, the model for bridging the gaps in co-ordination between different partners has been developed with very specific goals to be achieved.
Outsourcing R&D Modules of a New Developing Technology
The paper explores some of the dimensions of the R&D processes: modularity, uncertainty and outsourcing. Ways to divide R&D effort into modules and to argue, either in direction of its modularity, or interdependency, are presented. Further on, uncertainties are segmented into the majors and minors, and reasons to outsource R&D modules, in the light of these uncertainties, have been investigated. The R&D process has been observed from insulin technologies development over time.

General information
Publication status: Published
Organisations: Department of Management Engineering, DTU Executive School of Business
Contributors: Pedersen, J. L., Perunovic, Z.
Publication date: 2004

Host publication information
Title of host publication: IAMOT 2004 13th International Conference on Management of Technology
Place of publication: Miami
Publisher: The International Association for Management of Technology
Editor: Y. H. R. S. A. T. K.
URLs:
http://www.ipl.dtu.dk/publikation/8142/dk/
Source: orbit
Source-ID: 177756

Is Danish Industry progressing towards lean innovation?

General information
Publication status: Published
Organisations: Department of Management Engineering, DTU Executive School of Business
Contributors: Christiansen, T. B., Perunovic, Z.
Number of pages: 300
Publication date: 2003

Host publication information
Title of host publication: Proceedings
Publisher: Aalborg Universitet
Editor: A. D. A. H. B.
Keywords: Lean innovation
Source: orbit
Source-ID: 63590