The reverse tragedy of the commons: an exploratory account of incentives for under-exploitation in an open innovation environment

This paper presents an empirical account of a phenomenon that we refer to as the ‘reverse tragedy of the commons’ in open innovation. The name signifies the ‘under-exploitation’ of intellectual property (IP) under weak appropriability. The name is this graphic because the tragedy is costly, and can also render IP effectively worthless and block innovation in the short to medium term. We propose that the tragedy is borne out of the interaction between enterprise characteristics, a competitive setting and the framework that is set by the policy intervention. This finding is pertinent to policy-makers with regard to the design of research, development and innovation instruments, as well as managers who must determine how to implement open practices in innovation.
Cluster strategies for the North Sea the offshore wind service sector. A sectoral innovation system foresight.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Andersen, P. D. (Intern), Piirainen, K. A. (Intern)
Number of pages: 3
Pages: 93-95
Publication date: 2016

Host publication information
Title of host publication: EU-SPRI Conference Lund 2016 : Book of abstracts
Chapter: 2C
Main Research Area: Technical/natural sciences
Foresight, Offshore wind service, Technological innovation system, Clusters
Electronic versions:
Cluster_strategies_for_the_North_Sea_the_offshore_wind_service_sector.pdf

Relations
Projects:
Cluster strategies for the North Sea the offshore wind service sector. A sectoral innovation system foresight.
Source: PublicationPreSubmission
Source-ID: 124267756
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2016

Cross-pollination in bioenergy: Innovation networks between the bioenergy and biotechnology in Denmark

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. A. (Intern)
Number of pages: 3
Pages: 74-76
Publication date: 2016
Purpose – This paper aims to argue that innovation system foresight (ISF) can significantly contribute to the third mission of universities by creating an active dialogue between universities, industry and society.

Design/methodology/approach – This paper’s approach is conceptual. The authors analyse the third mission and relevant literature on innovation systems and foresight to explain how and why foresight contributes to the third mission.

Findings – The authors propose that foresight contributes to the third mission of universities, particularly to the research and development and innovation dimensions through the development of joint understanding of the agendas and future needs of stakeholders. In addition, foresight enables education to be designed to address identified needs.

Research limitations/implications – The findings are both conceptual and exploratory in nature. Thus, the argument needs further examination through a broader study on foresight in the university–industry context and/or longitudinal research on the outcomes and impact of foresight in this context.

Practical implications – The findings highlight the importance of understanding the systemic nature of innovation and its role in economic development. Universities must understand their role within the larger innovation system to fulfil the potential of economic development and by extension, their third mission.

Originality/value – The paper outlines a novel approach of using ISF to promote university–industry partnerships and the growth of innovation systems. The paper also contributes to the discussion of the third mission by outlining that mission in practical terms.
Regional foresight and dynamics of smart specialization: A typology of regional diversification patterns

The concept of smart specialization has attracted great interest and has been adopted widely in European regional and innovation policy. Foresight is an important part of creating smart specialization strategies. However, both the smart specialization concept and foresight have been criticized for lacking an empirical and theoretical foundation that can help guide their application in practice. This paper contributes to the theoretical foundation of smart specialization and regional foresight by drawing on the field of economic geography and elaborating a typology for patterns of smart specialization.
We highlight that there are different paths to reaching smart specialization within the same industrial domain. The empirical research focuses on the offshore wind service sector in four regions around the North Sea. The findings corroborate a typology that offers four distinct patterns—diversification, transition, radical foundation, and modernization—all of which can enable the creation of new industrial activities where regions enter an emerging industry based on fundamentally different starting points.

**General information**

State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Pirainen, K. A. (Intern), Tanner, A. N. (Intern), Alkærsig, L. (Intern)
Number of pages: 32
Publication date: 2016
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Technological Forecasting and Social Change
ISSN (Print): 0040-1625
Ratings:
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.247 SNIP 1.635 CiteScore 3.03
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.282 SNIP 1.849 CiteScore 3.28
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.291 SNIP 1.781 CiteScore 2.88
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.281 SNIP 1.739 CiteScore 2.93
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.507 SNIP 2.009 CiteScore 2.92
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.094 SNIP 1.582 CiteScore 2.37
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.018 SNIP 1.47
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 0.838 SNIP 1.589
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.848 SNIP 1.502
Scopus rating (2007): SJR 0.628 SNIP 1.377
Scopus rating (2006): SJR 0.568 SNIP 1.171
Scopus rating (2005): SJR 0.527 SNIP 1.614
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.343 SNIP 0.897
Scopus rating (2003): SJR 0.409 SNIP 0.97
Scopus rating (2002): SJR 0.431 SNIP 1.007
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.609 SNIP 0.843
Scopus rating (2000): SJR 0.209 SNIP 0.304
Web of Science (2000): Indexed yes
Synthesizing Knowledge in Design Research

The chapter discusses knowledge synthesis in design research, bringing together the perspectives of experimental design research, Research in Design Context that is treated extensively elsewhere in this book, and Design Inclusive Research as well as Practice-based Design Research. Specific attention is paid to the question of how practice-based or problem-driven design research processes can be rigorous and yield contributions to knowledge. The main argument in this chapter is that a key to knowledge synthesis and scientific contribution is setting explicit design propositions that are instantiated within design artefacts, and evaluated rigorously. The chapter starts with a discussion of knowledge creation and synthesis within design research. Following this, the chapter moves on to focus on setting a methodological framework for deriving design propositions. Lastly the chapter elaborates on empirical aspects of evaluation of design artefacts and propositions, and the associated knowledge claims.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. A. (Intern)
Number of pages: 20
Pages: 233-252
Publication date: 2016

Host publication information
Title of host publication: Experimental Design Research: Approaches, Perspectives, Applications
Publisher: Springer
Editors: Cash, P., Stanković, T., Štorga, M.
ISBN (Print): 978-3-319-33779-1
ISBN (Electronic): 978-3-319-33781-4
Chapter: 13
Main Research Area: Technical/natural sciences
Design Theory, Design Science Research, Design Propositions, Evaluation
DOIs:
10.1007/978-3-319-33781-4_13
Source: PublicationPreSubmission
Source-ID: 123342183
Publication: Research - peer-review > Book chapter – Annual report year: 2016

The characteristics and dynamics of the Danish energy innovation system in perspective: a patent-based analysis

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Faria, L. (Intern), Piirainen, K. A. (Intern)
Number of pages: 2
Pages: 80-81
Publication date: 2016

Host publication information
Title of host publication: EU-SPRI Conference Lund 2016: Book of abstracts
Chapter: 2B
Main Research Area: Technical/natural sciences
Technological innovation systems, Energy sector, Patent analysis
Electronic versions:
The_characteristics_and_dynamics_of_the_Danish_energy_innovation_system_in_perspective.pdf

Relations
Projects:
The characteristics and dynamics of the Danish energy innovation system in perspective
A Framework for Theory Development in Foresight
The academic literature has frequently observed that foresight lacks a coherent theoretical basis. The discussion on theory of foresight calls for 'a theory', but it rarely expounds what the scope of theorizing is or should be. We propose that 'theory of foresight' has three overlapping meanings which give rise to three levels of theorizing in and of foresight.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. (Intern)
Number of pages: 1
Publication date: 2015
Event: Poster session presented at 5th International Conference on Future-Oriented Technology Analysis, Brussels, Belgium.
Main Research Area: Technical/natural sciences

Building a Cohesive Body of Design Knowledge: Developments from a Design Science Research Perspective
Design is an extremely diverse field where there has been widespread debate on how to build a cohesive body of scientific knowledge. To date, no satisfactory proposition has been adopted across the field – hampering scientific development. Without this basis for bringing research together design researchers have identified difficulties in building on past works, and combining insights from across the field. This work starts to dissolve some of these issues by drawing on Design Science Research to propose an integrated approach for the development of design research knowledge, coupled with pragmatic advice for design researchers. This delivers a number of implications for researchers as well as for the field as a whole.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Cash, P. (Intern), Piirainen, K. A. (Intern)
Number of pages: 10
Publication date: 2015

Host publication information
Title of host publication: Proceedings of the 20th International Conference on Engineering Design (ICED15)
Publisher: Design Society
Series: ICED
Number: 15
ISSN: 2220-4334
Main Research Area: Technical/natural sciences

ECOWindS Joint Action Plan - Guidelines for Implementation: Deliverable D4.2
The Joint Action Plan (JAP) is a deliverable of the European Clusters for Offshore Wind Servicing (ECOWindS) project Work Package 4 (WP4) “Joint Action Plan”. It presents a plan of action or a roadmap for research, development, and innovation (RDI) for the Offshore Wind Service (OWS) industry. The objective of the JAP is to be an international, cross-regional, agenda for research, development and innovation specifically for Offshore Wind Services.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. A. (ed.) (Intern)
Number of pages: 64
Publication date: 2015
The GRIP method for collaborative roadmapping workshops
Technology roadmapping is a well-known tool for technology management, but practical advice for facilitating collaborative roadmapping workshops is relatively scarce. To cater for this need, we have designed a method for collaborative roadmapping, dubbed the GRIP method, for facilitating group work in TRM workshops. The design is based on established best practices in facilitation and our experiences with the method suggest it is a feasible tool for technology managers. The benefits of the method are that it enables engaging a diverse group of individuals to the roadmapping process effectively even during a short workshop session and facilitates shared understanding on the technology management issues.

Theory of and within foresight – “What does a theory of foresight even mean?”
There has been an argument for a while now that foresight lacks a coherent theoretical basis. The discussion on theory of foresight calls for a theory, but rarely expounds on what the scope of theorizing is. The discussion has been centered on philosophy and different frameworks for theorizing, but the scope and form of theorizing have not been explored. We contribute to this discussion by examining foresight through the lens of established theory building literature to map what constitutes a theory in the first place and how it applies in foresight. The main guiding question is “What does a theory of foresight mean?” We fist draw on the literature on theory development in social sciences to discuss a framework for theorizing and then examine the scope of theorizing through it. Our main argument is that when we propose developing (a) theory of foresight, we need to separate three levels of analysis: one is foresight as knowledge creating activity, second is foresight as a process and as a social/organizational intervention, and foresight as theorizing about the future of a given socio-technical system.
Towards a Joint Action Plan for Research and Development in the Offshore Wind Service Industry

This paper presents a joint action plan (JAP) for research and development and innovation (RDI) in the offshore wind service industry in Denmark, Germany, Norway and the UK. Offshore wind servicing (OWS) is in this context defined as both assembly and installation of offshore wind farms as well as their operation and maintenance during their lifetime. Earlier studies have indicated that over the life cycle of an offshore farm the cost of OWS can be up to 46% of the life cycle cost of the farm including up-front investment and installation. Furthermore, the North Sea is currently the most important site for offshore wind installations, and industry clusters based on OWS are emerging in regions around the North Sea. The JAP builds on a mapping (based on desk studies, patent analyses, and bibliometrics) of each of participating region’s existing capabilities, and on an overall strategic orientation and options for a innovation. The JAP is built on this foundation together with stakeholders from the four regions, comprising representatives from R&D and education, policy makers and offshore wind industry. Following the workshop, the ECOWindS consortium has been developing the proposed action plan further based on consultations with the stakeholders of the industry.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Department of Wind Energy, Wind Energy Systems
Authors: Andersen, P. D. (Intern), Piirainen, K. A. (Intern), Clausen, N. (Intern), Cronin, T. (Intern)
Number of pages: 10
Publication date: 2015

Host publication information
Title of host publication: Proceedings of EWEA Offshore 2015 Conference
Publisher: European Wind Energy Association (EWEA)
Main Research Area: Technical/natural sciences
Conference: EWEA Offshore 2015 Conference, Copenhagen, Denmark, 10/03/2015 - 10/03/2015
Electronic versions:
Towards_a_Joint_Action_Plan.pdf. Embargo ended: 10/03/2016

Relations
Projects:
Towards a Joint Action Plan for Research and Development in the Offshore Wind Service Industry
Source: PublicationPreSubmission
Source-ID: 106676939
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015

Towards a Joint Action Plan for Research and Development in the Offshore Wind Service Industry
The poster presents a joint action plan (JAP) for research and development and innovation (RDI) in the offshore wind service industry in Denmark, Germany, Norway and the UK. Offshore wind servicing (OWS) is in this context defined as both assembly and installation of offshore wind farms as well as their operation and maintenance during their lifetime. Earlier studies have indicated that over the life cycle of an offshore farm OWS can be up to 46% of the life cycle cost of the farm including up-front investment and installation, while the O&M cost is estimated to be of the order of 25-28% of the total levelized cost of energy. Hence, reducing the cost of OWS is a major challenge for the wind industry. Furthermore, the North Sea is currently the most important site for offshore wind installations, and industry clusters based on OWS are emerging in regions around the North Sea. The JAP is a result of an ongoing project ECOWindS, funded by the EU FP7. The overall aim of ECOWindS is to reduce OWS’s contribution to the cost of offshore wind energy production by strengthening the cooperation in the existing regional networks within OWS.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Department of Wind Energy, Wind Energy Systems
Authors: Andersen, P. D. (Intern), Piirainen, K. A. (Intern), Clausen, N. (Intern), Cronin, T. (Intern)
Number of pages: 1
Publication date: 2015
Event: Poster session presented at EWEA Offshore 2015 Conference, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences
Electronic versions: Poster

Relations
Projects:
Towards a Joint Action Plan for Research and Development in the Offshore Wind Service Industry
Publication: Research › Poster – Annual report year: 2015
An Exploratory Account of Incentives for Underexploitation in an Open Innovation Environment

This paper presents an empirical account of incentives for underexploiting intellectual property in an open innovation setting. In this exploratory empirical account the phenomenon is observed in a research, development and innovation program where participants are required to share intellectual property rights within the consortium. In sum, our argument is that the observed underexploitation is induced by negative incentives for commercialization that follow from setting a coercive open innovation regime that will constrain appropriability of IPR. This phenomenon is named so graphically, because such an event is not only costly in terms of time and resources, but can in fact render IPR effectively worthless in terms of commercial exploitation and block innovation. This finding is pertinent to policy makers designing research, development and innovation instruments, as well as for managers who need to make choices how to implement open practices in innovation.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Gain Consulting Ltd., Rambøll, Consulting Engineers
Authors: Piirainen, K. (Intern), Raivio, T. (Ekstern), Lähteenmäki-smith, K. (Ekstern)
Number of pages: 25
Publication date: 2014

Host publication information
Title of host publication: Proceedings of the DRUID Society Conference 2014
Main Research Area: Technical/natural sciences
Conference: DRUID Society Conference 2014, Copenhagen, Denmark, 16/06/2014 - 16/06/2014
Electronic versions:
An_Exploratory_Account.pdf
Source: PublicationPreSubmission
Source-ID: 93684621
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Constructive Synergy in Design Science Research: A Comparative Analysis of Design Science Research and the Constructive Research Approach

Information systems research is focused on creating knowledge which can be applied in organizations. Design science research, which specifically aims at applying existing knowledge to solve interesting and relevant business problems, has been steadily gaining support in information systems research. However, design science research is not the only design-oriented research framework available. Accordingly, this raises the question of whether there is something to learn between the different approaches. This paper contributes to answering this question by comparing design science research with the constructive research approach. The conclusion is that the two approaches are similar and compatible, save for details in practical requirements and partly underlying philosophical assumptions. The main finding that arises from the comparison is, however, that there is a potential problem in claiming knowledge contribution from evaluation of the utility of an artifact. That is, utility-based evaluation often builds the argument on adoption of the artifact, assuming that adoption and utility in general validates also claims to knowledge contribution. We show that this mode of evaluation has philosophical and practical problems that need addressing in further research.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Pontificia Universidad Javeriana
Authors: Piirainen, K. (Intern), Gonzalez, R. A. (Ekstern)
Pages: 206-234
Publication date: 2014
Main Research Area: Technical/natural sciences

Publication information
Journal: Liiketaloudellinen Aikakauskirja
Issue number: 3-4
ISSN (Print): 0024-3469
Ratings:
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ECOWindS Evaluation and Adaptation Report: Deliverable D4.3

This report is a deliverable of the European Clusters for Offshore Wind Servicing (ECOWindS) project funded from the European Union 7th Framework Programme for Research and Innovation. It is part of the Work Package no. 4 “Joint Action Plan”, corresponding to the task no. 4.3 “Defining a method for evaluation and future adaptation of the Joint Action Plan” (JAP) (Deliverable no. 4.1), contributing to Task 4.4., “Revising the JAP”.

The objective of this report is first to present a system for monitoring progress of the JAP in terms of the strategic objectives and provide guidelines for adapting the JAP. The second objective is to outline a method to establish the outcome and impact of the Joint Action Plan.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. A. (Intern)
Number of pages: 54
Publication date: 2014

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
ECOWindS_Evaluation_and_Adaptation_Report.pdf

Relations
Projects:
ECOWindS Evaluation and Adaptation Report
Source: PublicationPreSubmission
Source-ID: 113792060
Publication: Research › Report – Annual report year: 2015

ECOWindS Joint Action Plan: Deliverable D4.1

The Joint Action Plan (JAP) is a deliverable of the ECOWindS project Work Package 4 (WP4) “Joint Action Plan”. It presents a plan of action or a roadmap for research, development, and innovation (RDI) for the Offshore Wind Service (OWS) industry. The objective of the JAP is to be an international, cross-regional, agenda for research, development and innovation specifically for Offshore Wind Services.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. A. (ed.) (Intern)
Number of pages: 55
Publication date: 2014

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
ECOWindS_Joint_Action_Plan.pdf
Finland as a Knowledge Economy 2.0: Lessons on Policies and Governance

"Finland is known for its consistent progress in the economy and competitiveness, as well as the egalitarian society underneath it. Yet, the challenges experienced by Finland in the beginning of the 20th century were similar to those experienced by many countries today. Finland emerged as an independent nation in the midst of international economic and political turbulence.

In spite of its remoteness, relative scarcity of natural resources, smallness of the home market and recent history characterized by wars and social cleavages, Finland transformed itself from an agriculture-based economy in the 1950’s into one of the leading innovation-driven, knowledge-based economies and high-tech producers in the twenty-first century. The development was rapid, and involved determined action and sometimes drastic decisions by the government and other key actors. Today, at the end of 2013, Finland is facing new types of challenges both domestically and internationally in efforts to maintain its societal sustainability and economic competitiveness.

Finland Knowledge Economy 2.0 presents some of the key policies, elements, initiatives and decisions behind Finland’s path into the Knowledge Economy of today. The authors hope to provide the readers inspiration, new ideas, and novel insights. Hopefully some of the lessons learned may prove valuable in another context. Based on this account of the development of Finnish Knowledge Economy, the authors have identified six areas of lessons, each described in detail in respective chapters. The book should not be seen as a scientific all encompassing study, but rather as a “Knowledge Economy cook-book”, with practical cases, links and insights provided for further exploration."

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Rambøll Management Consulting
Number of pages: 182
Publication date: 2014

Publication information
Publisher: World Bank Publications
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
Finland_as_a_Knowledge_Economy.pdf
DOIs:
10.1596/978-1-4648-0194-5

Bibliographical note
Creative Commons Attribution CC BY 3.0 IGO
Source: PublicationPreSubmission
Source-ID: 93684648
Publication: Research › Book – Annual report year: 2014

Offshore wind energy developments
This chapter will give a brief overview of a few of the activities within offshore wind energy research, specifically 1) Support structure optimization, 2) Blade coatings for wind turbines; 3) Scour protection of foundations, 4) Offshore HVDC and 5) Offshore wind services.

General information
State: Published
Organisations: Department of Wind Energy, Wind Turbines, Department of Mechanical Engineering, Fluid Mechanics, Coastal and Maritime Engineering, Department of Chemical and Biochemical Engineering, CHEC Research Centre, Department of Electrical Engineering, Center for Electric Power and Energy, Electric power components, Department of Management Engineering, Technology and Innovation Management
Authors: Stolpe, M. (Intern), Buhl, T. (Intern), Sumer, B. M. (Intern), Kiil, S. (Intern), Holbøll, J. (Intern), Piirainen, K. (Intern)
This paper addresses a growing gap between the policy practice of "Smart Specialization strategies" and its theoretical base. The concept of Smart specialization has attracted a high level of policy interest and has been adopted widely in policy circles in Europe. However, Smart Specialization lacks an empirical and theoretical foundation that can help guide its application in practice. This paper develops a framework based on two strings of literature, namely the fields of evolutionary economic geography and innovation systems. Subsequently the framework is applied on a regional mapping exercise conducted in an EU funded 'Regions of Knowledge'-project that focuses on the Offshore Wind Service sector in four regions around the North Sea. The purpose is to illustrate how a strategy-making process can be guided by a few theory based principles in pursuing the goals of smart specialization. The findings support that regions differ in terms of knowledge assets, capabilities and capacity in different parts of the value chain and consequently build on different starting points for Smart Specialization strategies.
Foresight for sectoral development. Sectoral development as a 'Third Mission' activity at the Technical University of Denmark.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Piirainen, K. (Intern), Andersen, P. D. (Intern), Andersen, A. D. (Intern)
Number of pages: 16
Publication date: 2013

Publication information
Media of output: PowerPoint
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
Foresight_for_sectoral_development.pdf

Bibliographical note
Presented at the International Foresight Academic Seminar, ZHAW, Winterthur (Zurich), Switzerland, 16-18 September 2013
Source: dtu
Source-ID: u::8687
Publication: Communication › Sound/Visual production (digital) – Annual report year: 2013

Seeking Constructive Synergy: Design Science and the Constructive Research Approach
Information systems research and management science create knowledge which can be applied in organizations. Design science specifically aims at applying existing knowledge to solve interesting and relevant business problems and has been steadily gaining support in information systems research. However, design science is not the only design-oriented framework. Accordingly, this raises the question of whether it is possible to compare the results obtained from different brands of design-oriented research. This paper contributes to answering this question by comparing two research approaches, enabling mutual learning possibilities and suggesting improvements in transparency and rigor. The objective of this paper is to compare design science research with the constructive research approach. The conclusion is that the two approaches are compatible, save for details in practical requirements and partly underlying philosophical assumptions, but both have something to teach each other about how to define and execute design-oriented research in information systems and management science.

General information
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Javeriana University
Authors: Piirainen, K. (Intern), Gonzalez, R. A. (Ekstern)
Number of pages: 14
Pages: 59-72
Publication date: 2013

Host publication information
Title of host publication: Design Science at the Intersection of Physical and Virtual Design - Proceedings of the 8th International Conference
Publisher: Springer

Series: Lecture Notes in Computer Science
Number: 7939
ISSN: 0302-9743
Main Research Area: Technical/natural sciences
Technological competence mapping in the North Sea region

**General information**
State: Published
Organisations: Department of Management Engineering, Technology and Innovation Management
Authors: Alkærsig, L. (Intern), Piirainen, K. (Intern)
Pages: 4-7
Publication date: 2013
Main Research Area: Technical/natural sciences

**Publication information**
Journal: ECOWindS Newsletter
Issue number: 2
Original language: English
Electronic versions:
ECOWinds_Newsletter_2_2013.pdf

**Bibliographical note**
The European Clusters for Offshore Wind Servicing

**Relations**
Projects:
Technological competence mapping in the North Sea region
Source: dtu
Source-ID: u::8554
Publication: Communication › Journal article – Annual report year: 2013

**Projects:**

**Networks between bioenergy and biotechnology - Strategic Research Alliance on Energy Innovation Systems and Their Dynamics**
The topic of the sub-project is to investigate the networking between biotech and bioenergy companies and transfer of technology between industries, especially in Denmark, to date. It is well-known that bioenergy in Denmark is often closely connected to the agricultural sector. Compared to this, the connection and interplay with the biotech industry is less illuminated. The connections between the bioenergy sector and biotech industry can be expected to be of high importance for the future competitiveness of new bioenergy solutions as well as wider industrial biotechnology industry both within Denmark and in the global markets. However, there is need of more systematic insight and better understanding of innovation activities and networks between biotech actors and bioenergy actors. The main approach will be network analysis based on data such as joint patents and collaboration in publicly subsidized R&D programs. The purpose of the proposed research is to analyze the Danish energy innovation system its dynamics and development trajectory. The contribution is identification of interaction dynamics between innovation systems and the role of the functions in shaping that co-evolution. These research findings will have implications for RDI and energy policy in addition to the contribution to literature on innovation systems.

Department of Management Engineering

**Technology and Innovation Management**
Period: 15/05/2015 → …
Number of participants: 1
Innovation Systems, Bioenergy, Biotechnology, Network Analysis, Knowledge Transfer, Innovation
Acronym: EIS
Project participant:
Piirainen, Kalle A. (Intern)

**Relations**
Publications:
The characteristics and dynamics of the Danish energy innovation system in perspective
**Cross-pollination in bioenergy**

**Project**

**European Clusters for Offshore Wind Servicing**

ECOWindS’ objective is to pave the way for new research and knowledge of how the costs of offshore wind energy can be driven down through better services. The objective is reached by establishing cross-regional cooperation, intensifying the relationship between research, the European offshore wind servicing (OWS) sector and the offshore wind industry. The actions in the project include mapping of regional capabilities, search of RDI projects and building a Joint Action Plan for regional and international co-operation. ECOWindS is funded from the EU FP7.

Department of Management Engineering

Technology and Innovation Management

Department of Wind Energy

Wind Energy Systems

Wind Turbines

Offshoreenergy.dk

Period: 01/11/2013 → 31/10/2015

Number of participants: 5

Offshore wind, Roadmap, Foresight, Offshore wind services

Acronym: ECOWindS

Project participant:

Piirainen, Kalle A. (Intern)

Andersen, Per Dannemand (Intern)

Clausen, Niels-Erik (Intern)

Buhl, Thomas (Intern)

Cronin, Tom (Intern)

**Relations**

Publications:

Cluster strategies for the North Sea the offshore wind service sector. A sectoral innovation system foresight.

Towards a Joint Action Plan for Research and Development in the Offshore Wind Service Industry

The GRIP method for collaborative roadmapping workshops

Towards a Joint Action Plan for Research and Development in the Offshore Wind Service Industry

Smart Specialisation: ‘All roads lead to Rome’

Offshore wind energy developments

Smart Specialization and Capabilities for Offshore Wind Services around the North Sea

Technological competence mapping in the North Sea region

ECOWindS Evaluation and Adaptation Report

ECOWindS Joint Action Plan

ECOWindS Joint Action Plan - Guidelines for Implementation

Press / Media items:

Simulatorbransjen satsar på vind

Project

**Activities:**

**PhD Project Planning**

Period: 21 Mar 2014 → 30 Apr 2014

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**Description**

A short post-graduate course on choosing a topic for PhD Dissertation and planning the project.
Related external organisation

Unknown external organisation
Activity: Talks and presentations › Conference presentations