Customer integration into the service innovation process is essential when creating successful services that add value to the customer. In addition, common development and the integration of different resources has become the dominant view in service development research. This study focuses on that phenomenon in the facilities management (FM) service sector by investigating customer integration into service innovation from the viewpoint of information flow development and increasing customers’ opportunities to have an influence.

To meet the objective of this dissertation, the following research questions were formulated:
- How can service innovations be classified and what are the prerequisites for service innovations in FM services?
- What are the necessary elements of information flow development between customer and service provider in FM services in order to create service innovations and increase the performance of services?
- What opportunities does the customer have to influence the development of FM services and partnership in order to improve the performance of services?

The empirical research focuses on Finland’s FM service sector and was carried out in 2009 and 2010. A total of 23 interviews were performed with service providers and customers, and 23 individual service providers and built environment services professionals participated in the three workshops that were organised.

The main value that this research brings to FM research and its professionals is the new paradigm of common development and the three frameworks of service innovation development: the requirements for service innovation based on business levels, elements of information integration in FM services, and a framework for developing the customer’s opportunities to have an influence.

This study presents two critical factors for the development of the whole FM field: there is a lack of common development, and the information is managed poorly. Service development is mostly undertaken by service providers without the existence of open innovation. Currently there is a focus on making the service process efficient instead of developing new and attractive services. Poor information management prevents the development of a virtual environment. Making information integration possible through the development of common data for real estate information systems can facilitate a new actor’s entry into the market, increase competition, and speed up the development of the whole field.

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Virtauttamisen toteutuksen periaatteet ja soveltamismahdollisuudet rakennushankkeissa: Rain-tutkimushankkeen osaraportti 1

General information
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Ministry of Education publication type: D4 Published development or research report or study
Utilizing the innovation potential of suppliers in construction projects

Purpose – The manufacturers of construction components and materials are the suppliers in construction projects, and represent a significant portion of their value. However, their knowledge is not used sufficiently when it comes to construction innovation. This research paper focuses on the suppliers' innovation potential in construction projects. The purpose of this paper is to identify practices for enhancing the contractor-supplier relationship and using the suppliers' innovation potential in construction projects. Design/methodology/approach – A qualitative exploratory research strategy is used in the context of construction projects. In total, 18 interviews were conducted with contractors to discover the experiences and practices related to the contractor-supplier relationship and construction innovation. Findings – The contractors perceive that the suppliers have innovation potential, and that they are often a source of construction innovation. The findings reveal business- and project-level practices for enhancing the contractor-supplier relationship and for overcoming barriers that hinder the suppliers' innovation potential. Research limitations/implications – The research conducted for this paper is limited to the contractors' perspectives based on construction projects in one country. Further research is encouraged to verify the success of identified practices and cover the perspectives of the suppliers, clients and designers. Originality/value – Limited research and attention is directed toward the role of the suppliers in projects within the construction industry. This paper offers important information about the part that both the suppliers and the contractors play in construction innovation and its facilitation.
Analysing and Improving Student's Mathematics Skills using ICT-tools

In this paper the supportive actions taken at Tampere University of Technology (TUT) for the first year students in engineering mathematics are discussed. The measures include Basic Skill's Test (BST), Mathematics Remedial Instruction (MRI), and student profiling based on students' attitudes on learning. Specially, we describe how MRI was implemented in Math-Bridge and carried out at TUT. The effects of MRI for different learner groups using success indicators, log file analysis, and statistical methods are presented and clarified using data visualization.

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Research output: Scientific - peer-review › Article

The Management of Occupational Health and Safety: Managers' Perceptions of the Challenges, Necessary Support and Organisational Measures to support Managers

The management of occupational health and safety (OHS) in the workplace imposes a regulatory, moral and economic obligation on organisations, while the successful management of OHS contributes to both employees' well-being and organisational performance. Hence, aspects of OHS are increasingly embodied in the overall management system of organisations and included in the managerial activities. Managers at different organisational levels play a significant role in improving OHS, with their commitment to OHS being generally considered one of the most important factors that influence successful OHS management and culture. Nevertheless, the management of OHS may be very dependent on individual managers within organisations, whereas it should actually be based on regulatory requirements and organisation-specific OHS policies and procedures. There exists a need to support managers so as to achieve real advances in OHS. In order
to support both organisations and managers in the continuous improvement of OHS, information regarding effective OHS management is needed. Accordingly, information is required concerning the challenges that managers face, as well as how they can best be supported in relation to OHS management.

This study discusses the management of OHS as an aspect of managerial work and from managers' point of view. The qualitative study aims to develop new knowledge regarding the challenges and necessary support associated with managing OHS, as well as to suggest organisational measures that can be applied to support managers’ OHS-related work. The results are based on the prior OHS literature and three empirical substudies. In sub-study 1, thematic interviews (n=17) and qualitative inquiries (n=55) were carried out with top, middle and frontline managers from three public service organisations (a governmental expert organisation, a municipal social and healthcare service unit and a public vocational education organisation). In sub-study 2, thematic interviews (n=49) were carried out with middle and frontline managers from five industrial companies (a chemical processing company, an energy production company and three industrial service companies). In sub-study 3, a literature review and related categorisation were supplemented with thematic interviews (n=17) in a governmental expert organisation. The results of the sub-studies were used in the construction of a conceptual framework of organisational measures intended to support managers with regards to OHS management. The study approaches OHS management from the managers’ viewpoint, which has only rarely been studied.

According to the participating managers, the most challenging OHS management situations found in public organisations are related to the psychosocial risks contained within the work environment. The managers considered their employees’ mental overload, instances of negligence and the consideration of individual needs to be difficult OHS issues to manage. Due to the current economic situation and the associated lack of resources, the managers perceived both pressure and concern in relation to their employees' well-being. In the industrial organisations, managerial overload, production pressure and role conflicts were perceived as the main factors that hinder the managers’ commitment to OHS. However, the managers did not request more resources from upper management, presumably due to the tight economic situation. In order to cope with difficult OHS situations, the managers focused on individual relations and emotional support from their immediate superior, their colleagues, and OHS and human resources (HR) professionals.

The conceptual framework of organisational measures intended to support managers in OHS management includes top management support regarding OHS management, uniform and simple OHS procedures, and the systematic development of OHS management. Developing consistent OHS attitudes and commitment among all the managers requires strong support on the part of top management. An emphasis on leadership development is important for managers to be able to motivate their employees’ OHS participation and compliance and, hence, improve OHS performance. Existing management development practices, for example, management training, can provide easy ways to incorporate OHS management and leadership perspectives into general management development. Developing the support, resources and understanding of managers in relation to OHS may considerably improve both employees' well-being and the performance of organisations.

This dissertation contributes to the research by providing new knowledge regarding OHS management from the managers’ point of view, in the organisational context and in relation to organisational performance. Moreover, it provides a research-based conceptual framework for evaluating and developing OHS management within various organisations. The dissertation also provides a practical contribution by discussing OHS management as an integral part of general management and by pointing out the managers’ central role in improving OHS. Moreover, it suggests practical organisational measures to support managers and promote their consistent commitment to OHS.
Role of openness in industrial internet platform providers' strategy

Industrial internet, Industry 4.0 and Cyber-Physical Systems (CPS) can be collectively defined as industrial systems that integrate computational and physical capabilities of machines in order to provide advanced analytics and interact with humans. Industrial internet platforms allow the industrial companies to manage data, information and knowledge effectively within and between product lifecycle phases. Industrial internet platform’s openness plays a very important role in decision making related to platform selection for industrial companies. This paper focuses on various dimensions of openness and how it effects the strategy of platform owners or providers and how this strategy effects in short and long term to their end-users. In order to analyze the above Kaa IoT and PTC ThingWorx have been analyzed to understand the impact of openness dimensions on their strategy and business.

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Johtajuuden rakentuminen muutoksessa: Narratiivisen merkityksellistämisen näkökulma
This doctoral dissertation studies construction of leadership in a context of organizational change. Research represents relational leadership studies in which leadership is understood as a situational, co-constructed and context dependent phenomena. Interaction is significantly meaningful in situationally changing understanding of leadership. This study utilizes stories and narratives in researching leadership. This study analyses how the relationship between leaders and followers constitutes and how sensemaking considering the change process occurs from the followers’ point of view. In addition to sensemaking processes of sensegiving and sense breaking are also studied concerning the strategic change.

Communication concerning the change in the studied organisation is textual, digital and tecnologically mediated: leadersip communication and its meanings are also analysed. Research design is narrative. Interview data is collected from a Finnish industrial company.

Based on the results of this study leadership relationship in situation of change is constructed narratively through sensemaking. Four kinds of narratives are contructed from the data: Follower leads the way, Management leads the way, Time will tell and the narrative of Externality. In each of these the process of sensemaking and leadership relationship are different. Weick’s (1995) seven properties of sensemaking are used as basis for the analysis of sensemaking. Emotions and experiences emerge meaningful in this analysis of sensemaking. Narratives also change in the talk of the followers: interplay between different point of views and interaction of meanings are typical. This variation of narratives is named as shifting narrative sensemaking in this study. Variation of narratives form different kinds of recurrent dynamics in the talk of the followers.

Analysis identifies six different kinds of dynamics. These dynamics describe leadership relationships and are connected to relational leadership especially from the relational aspect. Dynamics are named based on how variation occurs in them. A different kind of leadership relationship can be found in each dynamics: in dynamics called from ‘initiative to giving up’ relationship is frustrated, in ‘vertically alternating’ dynamics relationship is reflective. The dynamics which ‘perceives the diversity of change’ relationship is analytical. In hierarchical dynamics relationship is submissive. In dynamics that ‘lives along in change’ relationship is involved and in anticipating dynamics the relationship is trusting. Recurrent triggers which launch a new narrative can be found from the variation of narratives. Typically, triggers are blog texts written by board
members in the company and situation in the market: they both triggered Management leads the way -narrative. Previous change initiatives as a topic triggered Time will tell -narrative. Informal question concerning potential additional comments launched narrative Follower leads the way. Theoretical contribution of this study offers a new kind of narrative point of view to relational leadership. Methodologically this study contributes to the analysis of dynamics of change narratives and their reciprocal variation.

A Dual Perspective of Value in a Bundle of Product and Service
Focusing on value creation in marketing has always been the key to success for companies. As a result, the definition, analysis and communication of value has gained importance. Companies are making an attempt to make a value proposition that is not only lucrative for the customer, but also has great returns for the company itself. Although this might sound simple on paper, since it is the basis for business logic, it is much more complicated in real life situations. With the service elements in the offering and the emergence of technologies such as smart and connected phenomenon, the business models become more innovative and more complexity is added to the analysis of value. The objective of this paper is to introduce a method for the dual perspective of value in a bundle of product and service in a smart and connected context. This method draws from the customer value and customer lifetime value concepts to offer an all-inclusive study on value. This assists companies in crafting an appealing value proposition in a cost-saving offering for a client that offers value to the company over its lifetime. This study specifically deals with the state of the arts smart and connected phenomenon and provides a view on how value works in that context. The framework created through this study serves to help the company choose a client that is of most value to the firm over the time of their cooperation. It then leads the company towards a better fabrication of the offering that is not only an attractive proposition to the client but also for the company. It gives a close insight onto where the benefit comes from and how a smart and connected bundle of products, services and relationships must be put together for maximum results in the modern age.
A method for analyzing practicing managers’ perception on the disruptive nature of digitalization in machine-building industry

The purpose of the paper is to demonstrate a technology foresight method where Visual Analogue Scale is used with an experimental survey design to investigate views and perceptions of possible future disruption caused by digitalization in an established machine-building industry. We demonstrate the usability of the method in detecting differences in future worldviews of practicing managers with results highlighting polarized responses with significant clustering among groups. For example, the respondents that were inclined to view that digital technologies are disruptive, i.e. change the paradigm of value creation in machine-building, also viewed that it is more related to service and business models than products and operation. Digitally enabled concepts like open innovation and industrial internet were perceived to be more disruptive drivers than the digital technologies themselves.

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Mechanisms of disruptive technological change: Case studies in transformation of traditional industries

The purpose of the manuscript is to use grounded theory building method to investigate three industry contexts that show disruptive innovations based in digital technologies that change the dynamics in industry competition. Specifically, we investigate the mechanisms of disruption in these cases and seek common features of change. Our analysis builds on mechanisms as detecting actors, their properties, and start- and end-states of the system under change and activities of the actors that bring about the change. Our analysis shows common themes that are exhibited throughout all the cases. One of these mechanisms is de-coupling of traditional value chain activities. These de-coupling mechanisms are driven by the formation of innovation ecosystems rather than traditional value chains. This is further accelerated by the emergence of platforms and digital technologies at large. We propose, based on our results, some fundamental mechanisms that are driving industry transformation due to digitalization. We also discuss managerial and theoretical implications of our results in detail.

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Host publication information
Change program management: Toward a capability for managing value-oriented, integrated multi-project change in its context

Program management has taken its position in project management research and in public and private organizations as a successful method for managing complex, uncertain, and large-scale changes. During the past 25 years, research has evolved from programs as the conceptual extension of projects to a rich field of empirical studies reflecting the special natures and contexts of change programs and their management, with unique theoretical foundations. To take stock of this recent history, in this article we analyze the patterns of previous empirical studies on change program management and their theoretical foundations. The goal is to identify and summarize proposals to guide forthcoming program management research. The results reveal three main themes of ongoing research: managing over the change program lifecycle, managing programs in their context, and program managers' capabilities. The roots of change program management in organization theories are apparent; structural contingency theory and information processing theories have dominated in previous empirical research, but are clearly being extended to agency, stakeholder, and actor-network theories. New research ideas are proposed for the use of programs in various types of changes, value creation and delivery through change programs, the profiles and capabilities of different actors in program management, the coexistence and interplay of multiple programs, and the complex stakeholder networks involved with change programs. When change becomes more prevalent in the organizations' dynamic contexts, there is an increasing need to develop program management toward an organizational capability for managing value-oriented, integrated, and multi-project change in complex stakeholder contexts.

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Scopus rating (2003): SJR 0.594 SNIP 1.09
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Scopus rating (1999): SJR 0.463 SNIP 1.114
Cross-functional integration for managing customer information flows in a project-based firm

The delivery of integrated solutions requires effective integration both between organizations and across various functions within the project-based firm. While earlier research has focused on how project-based firms integrate the resources and capabilities of suppliers, research on intra-organizational integration in projects is scant. In this study, we scrutinize integration between the sales, project operations and services functions of a project-based firm, to identify the required management support in solution deliveries. The focus is on the flow of customer information between these functions during the different phases of a solution delivery project. Drawing on 14 interviews, we identify eight integration mechanisms in three cross-functional interfaces. We find that the utilization of integration mechanisms varies strongly in the different project phases.
Tuotantoinnovaatiot tuotannon suorituskyvyn kehittämisessä


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Vesihuollon ammatilaiset ovat verkostoituneet kautta aikojen

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Backshoring of production in the context of a small and open Nordic economy

Purpose – The purpose of this paper is to investigate the extent, drivers, and conditions underlying backshoring in the Finnish manufacturing industry, comparing the results to the wider ongoing relocation of production in the international context. Design/methodology/approach – The survey of 229 Finnish manufacturing firms reveals the background, drivers, and patterns of offshoring and backshoring. Findings – Companies that had transferred their production back to Finland were more commonly in industries with relatively higher technology intensity and they were typically larger than the no-movement companies, and with a higher number of plants. They also reported more commonly having a corporate-wide strategy for guiding production location decisions. Research limitations/implications – Backshoring activity in the small and open economy of Finland seems to be higher compared to earlier studies in larger countries. The findings suggest that there is a transformation in the manufacturing industries with some gradual replacement of labor-intensive and lower technology-intensive industries toward higher technology-intensive industries. Practical implications – Moving production across national borders is one option in the strategies of firms to stay competitive. Companies must carefully consider the relevance of various decision-making drivers when determining strategies for their production networks. Social implications – Manufacturing industries have traditionally been important for employment in the relatively small and open economies of the Nordic countries. From the social perspective, it is important to understand the ongoing transformation and its implications. Originality/value – There are few empirical studies available of the ongoing backshoring movement, utilizing data from company decision makers instead of macroeconomic factors.

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Scopus rating (2007): SJR 0.497 SNIP 0.926
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News Arrivals, Jumps and Variance in Stock Markets

News containing important financial and economic information plays a crucial role in the process of investment and trading in financial markets. Sudden large changes and strong fluctuations observed in asset prices are normally related to the arrival of certain important news. However, the relationship between market reaction and news flow is complex and ambiguous. This thesis focuses on two classes of important news—firm-specific and macroeconomic announcements—and the impact of firm-specific announcements and macroeconomic announcements on jumps and variance of stock prices. Jumps, as abnormally large returns, and variance, measuring market fluctuations, are the two most important financial risk variables. A clear investigation into the impact of these two classes of news on jumps and variance will substantially contribute to financial risk management.

The first part of this thesis concentrates on the impact of news on jumps. First, a non-parametric statistical framework is introduced to examine the association between news arrivals and jumps in stock prices. To uncover the market reaction to news alerts, I focus on the time distances (waiting time) between news arrivals and the nearest detected jumps. For a given news item, both backward and forward waiting times are calculated with the jumps detected before and after the news arrival. In particular, backward waiting times may reflect possible information leakage. To examine whether observed jumps are associated with real news, a set of timestamps of general reference news is simulated considering intraday seasonality. Applying non-parametric tests, we are able to extract the statistical profiles of the empirical waiting times and their simulated references. As a result, the association between news and jumps is quantitatively demonstrated.

Taking advantage of the developed statistical framework, a thorough empirical analysis is implemented using Nordic and U.S. data to show the impacts of Nordic firm-specific and U.S. macroeconomic announcements on stock prices in both Nordic and U.S. markets. Specifically, the impact of scheduled and non-scheduled firm-specific announcements on Nordic stock prices is tested. I also investigate the sizes of jumps related to Nordic scheduled and non-scheduled firm-specific announcements following the same non-parametric methodology. In order to feature the importance of certain types of firm-level news, such as acquisitions, five important firm-specific announcements are selected to test their impact on Nordic stock prices in term of jumps. Regarding U.S. economic news, I provide empirical results for the impact of U.S. macroeconomic announcements on the U.S. stock index. In addition, U.S. macroeconomic announcements are grouped by announcing time. Their impacts on Nordic stock prices are studied to examine the importance of announcing clock time and the global influence of U.S. economic releases.

The second part in this research relates to the impact of macroeconomic news on equity variance modeling and the related option valuation performance with GARCH models. Impact variables of macroeconomic news are constructed using both the arrival timings of U.S. macroeconomic announcements and realized variance, and are incorporated into classical GARCH models. The impact variables of macroeconomic news slightly improve the joint likelihood of returns and VIX for all models compared with standard GARCH models. Regarding option valuation, an affine GARCH model with news event data consistently outperforms a pure affine GARCH model. However, there is no such consistent result for NGARCH and GJR models, implying that the explicit use of macroeconomic news events data does not improve the performance of variance modeling and option pricing with non-affine GARCH models.

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Crafting Organizational Information Security Policies

An organizational information security policy (InfoSec policy) is a direction-giving instrument for information security within an organization that seeks to communicate an organization’s posture in protecting its information assets. Researchers and practitioners alike agree that an InfoSec policy has a foundational role in securing an organization’s information assets. In an era where information is a precious resource and information security breaches are ever more prevalent, developing such a policy has become even more crucial for organizations.

The importance of an InfoSec policy has resulted in scholarly research on the policy’s contents and structure, and on the means to promote employee compliance to the set policies. In regards to policy development, research has privileged abstractions – abstract methods and procedures policy development should follow. By emphasizing such abstractions, research has paid less attention to how policies are crafted in practice.

Therefore, the purpose of this dissertation, which consists of a compendium of articles, is to increase our understanding of the crafting of InfoSec policies. Theoretically, the dissertation draws on practice theory, which takes orderly social and materially mediated doings and sayings (“practices”) as an arena for studying organizational phenomena. Empirically, the dissertation includes three qualitative studies: two ethnographic studies on InfoSec policy crafting and one case study on the implications of the crafting to policy compliance. Empirical material includes participant and non-participant observation, documentary sources, and semistructured interviews.

The dissertation contributes to the literature on information security management. The primary contribution of this dissertation is the conceptualization of InfoSec policy crafting as emerging in the lived contradictions between the international information security best practices and the local organizational practices. More broadly, the dissertation contributes to research on InfoSec policy development by positing that to understand policy crafting requires deep engagement with the actors who participate in the policy crafting and with the field where the policy is crafted. Further, the dissertation contributes to discussions on policy compliance by suggesting that compliance should be considered as partly emerging from and through the practices of the policy crafting and as relational to them. The potential for developing the policy as a joint engagement with different organizational members should not be underestimated.

The argument developed in this dissertation is that both organizations and research should place more emphasis on the practical accomplishment of InfoSec policy crafting. InfoSec policy development is not about following a rote procedure, but is a practical, joined, and skilled accomplishment – a craft. Policy crafting influences what is included in and excluded from the policy and how the policy will be complied with.

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Bibliographical note
INT=TTJ, "Niemimaa, Elina"
Research output: Collection of articles › Doctoral Thesis

Business customers’ readiness to adopt manufacturer’s new services
Purpose – For successful servitization, manufacturing firms must understand how their customers adopt new services. The purpose of this paper is to explore customers’ readiness for a manufacturer’s new services to complement its goods. The goal is to increase knowledge of the aspects that manufacturers should consider when bringing new kinds of services
Design/methodology/approach – A qualitative case study design is used to analyze readiness for services and interest in service adoption in three customer firms of a manufacturer. The interview data were collected from 14 persons at customer sites and were content analyzed. Findings – The results show that readiness - a concept that is often used in the field of technology - is relevant also for the service adoption process. In a business-to-business context, readiness for service adoption concerns the individual and organizational levels, and hence a new dimension of organizational culture and habits had to be added to the concept that originally focuses on individuals. People consider different factors when making consecutive decisions during the service adoption process and these factors can vary even within a company. The cornerstone for new service adoption is the customer firm's actual need for the service. Originality/value – The results offer new knowledge about service adoption in a business-to-business context by taking a customer firm's perspective. They, thus, complement previous studies on the supplier perspective of servitization and service adoption in consumer business. The contributions help manufacturers focus their efforts when bringing new services to market.

General information
State: E-pub ahead of print
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services, Delft University of Technology
Authors: Vaittinen, E., Martinsuo, M., Ortt, R.
Publication date: 17 Nov 2017
Peer-reviewed: Yes

Publication information
Journal: Journal of Service Theory and Practice
ISSN (Print): 2055-6225
Ratings:
Scopus rating (2016): CiteScore 2.6 SJR 0.858 SNIP 1.571
Scopus rating (2015): SNIP 1.629 SJR 0.792
Scopus rating (2014): SNIP 1.437 SJR 0.782
Scopus rating (2013): SNIP 1.007 SJR 0.688
Scopus rating (2012): SNIP 1.34 SJR 0.57
Scopus rating (2011): SNIP 1.293 SJR 0.514
Scopus rating (2010): SNIP 1.359 SJR 0.532
Scopus rating (2009): SNIP 1.159 SJR 0.685
Scopus rating (2008): SNIP 1.142 SJR 0.582
Scopus rating (2007): SNIP 0.632 SJR 0.423
Scopus rating (2006): SNIP 0.486 SJR 0.176
Scopus rating (2005): SJR 0.156 SNIP 0.179
Scopus rating (2004): SJR 0.202 SNIP 0.444
Scopus rating (2003): SJR 0.324 SNIP 0.459
Scopus rating (2002): SJR 0.189 SNIP 0.353
Scopus rating (2001): SJR 0.245 SNIP 0.2
Scopus rating (2000): SJR 0.156 SNIP 0.257
Scopus rating (1999): SJR 0.144 SNIP 0.059
Original language: English
Keywords: B2B, Service acceptance, Service adoption process, Service readiness, Servitization, Technology readiness
ASJC Scopus subject areas: Strategy and Management
Electronic versions:
Business customer's readiness to adopt manufacturer's new services
DOIs:
10.1108/JSTP-03-2017-0053
Links:
Source: Scopus
Source-ID: 85034582841
Research output: Scientific - peer-review › Article

Building B2B relationships via initiation contributors: Three cases from the Norwegian-South Korean international project business
Initiation is still an unclear phase of B2B relationship development. Here, we build on existing theoretical knowledge derived from relationship development, project marketing and international business literature. We use this to analyze three cases of business relationship initiations between Norwegian and South Korean actors in the shipping industry. By
piecing together theoretical and empirical insights, we develop a dynamic model of the relationship initiation process that highlights the role of initiation contributors in international project business. The developed model reveals that multiple entities—such as contacts, rituals and standards—serve as initiation contributors. These trigger or facilitate the focal dyadic relationship initiation, while also preparing future initiations in the focal context. Thus, our key contribution is to bring processual and contextual dimensions to business relationship initiation. Our research also suggests practical insights as to which actors and entities suppliers need to mobilize, in order to initiate new business relationships in international project business contexts.

General information
State: E-pub ahead of print
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Research group: Center for Innovation and Technology Research, Norwegian Univ. of Sci. and Technol., KEDGE Business School
Authors: Aarikka-Stenroos, L., Aaboen, L., Cova, B., Rolfsen, A.
Publication date: 3 Nov 2017
Peer-reviewed: Yes

Publication information
Journal: Industrial Marketing Management
ISSN (Print): 0019-8501
Ratings:
Scopus rating (2016): CiteScore 3.38 SJR 1.83 SNIP 1.676
Scopus rating (2015): SJR 1.416 SNIP 1.565 CiteScore 3
Scopus rating (2014): SJR 1.609 SNIP 1.776 CiteScore 3.07
Scopus rating (2013): SJR 1.483 SNIP 1.581 CiteScore 2.79
Scopus rating (2012): SJR 1.504 SNIP 1.669 CiteScore 2.51
Scopus rating (2011): SJR 1.037 SNIP 1.593 CiteScore 2.36
Scopus rating (2010): SJR 1.231 SNIP 1.635
Scopus rating (2009): SJR 1.194 SNIP 1.478
Scopus rating (2008): SJR 1.047 SNIP 1.406
Scopus rating (2007): SJR 1.318 SNIP 1.475
Scopus rating (2006): SJR 1.109 SNIP 1.735
Scopus rating (2005): SJR 0.821 SNIP 1.337
Scopus rating (2004): SJR 0.76 SNIP 1.188
Scopus rating (2003): SJR 0.905 SNIP 1.79
Scopus rating (2002): SJR 0.695 SNIP 1.219
Scopus rating (2001): SJR 0.511 SNIP 1.194
Scopus rating (2000): SJR 0.484 SNIP 1.076
Scopus rating (1999): SJR 0.548 SNIP 0.836
Original language: English
Keywords: Contact, Initiation, International business, Project marketing, Relationship development, Shipping
ASJC Scopus subject areas: Marketing
DOIs:
10.1016/j.indmarman.2017.09.027
Source: Scopus
Source-ID: 85032989171
Research output: Scientific - peer-review › Article

Vulnerability of critical infrastructures and operational capability of authorities

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Authors: Heino, O., Verho, P., Kalalahti, J., Jukarainen, P., Kekki, T.
Publication date: 2 Nov 2017

Host publication information
Title of host publication: RISK2017, Risk and Security conference : 3rd Nordic Chapter Conference, 2-3 November 2017, Espoo
Disruptive change and the reconfiguration of innovation ecosystems

This conceptual paper extends the traditional view of disruptive change, which considers the effects of rivalry between an incumbent and new entrant firm, by examining the impact of disruption upon the ‘innovation ecosystem’ in its entirety – the group of organisations that collaborate in creating a holistic value proposition for the end-user. Following Adner’s “ecosystem-as-structure” perspective, we develop propositions that anticipate structural differences between incumbent and disruptive innovation ecosystems, and then review these propositions in the context of three historical, disruptive innovation cases; Bakelite (a synthetic plastic), microwave oven, and photocopier. Through these cases, we illustrate that the manner of innovation ecosystem reconfiguration is likely to depend on the design attributes of the product, as well as the type of disruption experienced. We conclude by reflecting upon contemporary cases of disruption enabled through digital technologies, and proposing a framework that can guide future research.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Research group: Business Ecosystems, Networks and Innovations, Industrial and Information Management
Authors: Dedehayir, O., Ortt, J. R., Seppänen, M.
Number of pages: 13
Pages: 9-21
Publication date: Nov 2017
Peer-reviewed: Yes

Publication information
Journal: Journal of Technology Management and Innovation
Emotions, attitude and mindset – Managing the mental work environment to facilitate performance in changing work setting

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Vuori, V., Okkonen, J.
Publication date: Nov 2017

Managing Production Complexity with Intelligent Work Orders
Progress of Industrial Internet of Things is rapidly increasing the amount of data collected from manufacturing operations. This data can be utilized to control and improve production systems in various ways. Production control systems play a key role in realizing the potential cost savings and productivity increase. Companies are required to manage increasing complexity while shortening response times to changes. A concept of Intelligent Work Order (IWO) is proposed to assist in these challenges. It supports local or distributed decision-making, and decreases integration complexity between different factory IT-systems. IWOs also increase information visibility at the shop floor. The IWO structure and functionality are described with a discussion of the benefits of the approach.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Mechanical Engineering and Industrial Systems, Research area: Manufacturing and Automation
Authors: Toivonen, V., Järvenpää, E., Lanz, M.
Number of pages: 8
Pages: 189-196
Publication date: Nov 2017
Projektityöskentely matematiikan opiskelussa yläkoululaisten ja heidän opettajiensa kokemana

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Mathematics, Research group: Computer Science and Applied Logics, University of Helsinki
Authors: Viro, E., Joutsenlahti, J., Eriksson, S.
Publication date: 31 Oct 2017

Host publication information
Title of host publication: 2017: Proceedings of the annual FMSERA symposium 2016

Publication series
Name: Proceedings of the FMSERA annual symposium
Publisher: Finnish Mathematics and Science Education Research Association (FMSERA)
ISSN (Electronic): 2489-4583
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Links:
https://journal.fi/fmsera/article/view/60934
http://urn.fi/URN:NBN:fi:tty-201711202177

Bibliographical note
EXT="Eriksson, Sirkka-Liisa"
Research output: Scientific - peer-review › Conference contribution

Substanssiosaamisen integroinnin vaikutus asenteisiin ja motivaatioon yliopistomatematiikassa

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Mathematics, Research group: Computer Science and Applied Logics, Research group: Positioning, Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Tengvall, M., Kaarakka, T., Ali-Löytty, S. S., Nokelainen, P.
Number of pages: 12
Pages: 76-87
Publication date: 31 Oct 2017

Host publication information
Title of host publication: 2017: Proceedings of the annual FMSERA symposium 2016

Publication series
Name: Proceedings of the FMSERA annual symposium
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ISSN (Electronic): 2489-4583
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Tengvall_FMSERA
Platform Economy - Interactions & Boundary Resources: Checklist For Companies

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Industrial and Information Management, Research group: Business Ecosystems, Networks and Innovations
Authors: Still, K., Valkokari, K., Seppänen, M., Huhtamäki, J., Seppälä, T., Basole, R. C., Gawer, A.
Number of pages: 16
Publication date: 27 Oct 2017

Publication information
Publisher: Tampere University of Technology
Original language: English
Electronic versions:
INTERACTIONS-BOUNDARY-RESOURCES-CHECKLIST_2017-10-27
Links:
Research output: Professional › Commissioned report

Integrating micro-level interactions with social network analysis in tie strength research: the edge-centered approach

A social tie is a target for ongoing, high-level scientific debate. Measuring the tie strength in social networks has been an important topic for academic studies since Mark Granovetter's seminal papers in 1970's. However, it is still a problematic issue mainly for two reasons: 1) existing tie strength measurements may not reflect the true social connections of individuals accurately enough, and 2) many different methods to gather data from social media are not applicable anymore due to different data openness issues. In addition, we have only little empirical knowledge of the actual tie strengthening process in online social networks. Therefore, we suggest a new approach to tie strength research, which focuses on studying communication patterns (edges) more rather than actors (nodes) in a social network.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Business Data Research Group, Univ Copenhagen, University of Copenhagen, Dept Comp Sci
Authors: Torro, O., Gupta, J., Kärkkäinen, H., Pirkkalainen, H., Vatrapu, R., Mukkamala, R., Hussein, A.
Number of pages: 7
Pages: 203-209
Publication date: 22 Oct 2017

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Publisher: ACM
Editors: Turunen, M., Vääntäjä, H.
ISBN (Electronic): 978-1-4503-5426-4
Keywords: Social network, Social tie, Social network analysis, Tie strength, Open data
DOIs:
10.1145/3131085.3131095
Research output: Scientific - peer-review › Conference contribution

Using crowdfunding for extracting feedback: literature review

During the last few years, crowdfunding has grown in importance as an alternative source of finance for various types of purposes. It has quickly evolved into a commonly used tool to help entrepreneurs getting products developed, and furthermore, is a way for innovative, small organizations to access capital since the financial crisis. However, only very recently, it has been noticed that the significant value of crowdfunding lies in its ability to enable learning from crowdfunding backers and receive useful and interesting feedback from them in various manners. The purpose of the
study was to review and better understand the various business-related novel and rapid means of crowdfunding to provide useful information and feedback. To our knowledge, no earlier systematic literature reviews have been carried out on this topic. To study the topic, we carried out a literature review on empirical academic journal articles on crowdfunding between 2005–2016, making use of Fink’s [6, 7] process model of systematic literature review. On the basis of our review, we can state that crowdfunding is a very interesting and useful approach as a feedback channel for various types of business organizations. Even though feedback was not commonly the main goal in crowdfunding campaigns, it was noted to be very important outcome in the reviewed articles. Managerially, this study enables for instance start-ups, entrepreneurs and managers to evaluate the usefulness of crowdfunding as a means for gaining various types of feedback, new information and knowledge.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Business Data Research Group, HAMK University of Applied Sciences
Authors: Lepola, A., Kärkkäinen, H.
Number of pages: 9
Pages: 194-202
Publication date: 22 Oct 2017

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Place of publication: New York, NY, USA
Publisher: ACM
Editors: Turunen, M., Vääätäjä, H., Paavilainen, J., Olsson, T.
ISBN (Electronic): 978-1-4503-5426-4
Keywords: Crowdfunding, Feedback, Innovation, Information and knowledge
DOI: 10.1145/3131085.3131125
Research output: Scientific - peer-review › Conference contribution

Business skills laboratory in action: combining a practice enterprise model and an enterprise resource planning-simulation to a comprehensive business learning environment

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Industrial and Information Management, Research group: Business Data Research Group
Authors: Nisula, K., Pekkola, S.
Publication date: 19 Oct 2017

Host publication information
Links:

Bibliographical note
INT=TTJ, "Nisula, Karoliina"
Research output: Scientific › Conference contribution

Shaping client-driven business management concepts for modern construction markets
The pioneering review has revealed that various authors have designed and published 77 construction-related business management (BM) concepts during the years 1990-2016 (Huoivinen, 2017). In turn, the two-fold aim of our paper is to explore the degrees to which these BM concepts have been designed along the client-driven dimension and to suggest the ways to shape future BM concepts to better accommodate client views in modern construction markets. Our focused review found that 49 (57%) authors have designed their BM concepts along the client-driven sub-dimensions, i.e., 7 to high degrees, 14 to medium degrees, and 28 to low degrees. A further scrutiny of the seven highly client-driven BM concepts revealed that the six sub-dimensions may be of particular importance to take into account when shaping future BM concepts to accommodate client perspectives. These sub-dimensions include (i) client needs, (ii) client base, (iii) buyer-seller collaboration, (iv) sellers’ strategies, (v) buyers’ strategies, and (vi) services’ use, professional, and exchange values. It is envisioned that this focus on client-driven BM will trigger a flow of collaborative R&D&I programs.
Shaping future construction-related business management: A review of 77 concepts

The aim of this paper is to shape the validity of construction-related business management (BM) concepts and the effectiveness of BM practices within firms competing in construction markets. This shaping is based on the outcomes of the 17-year reviewing process, i.e., 77 construction-related BM concepts published during the years 1990-2016, primarily via 15 journals related to management in construction. Consequently, it is suggested that researchers:

- shape future studies on highly valid BM concepts and highly effective BM practices, reject one-way applications of generic BM knowledge to construction-related contexts, take a proper distance from the eight schools of thought on generic BM, collaborate with business managers, and innovate construction-related, high-validity BM concepts. In turn, business managers could:
- shape insights in contextual differences in construction markets, alertness to find means for dealing with deep uncertainty, such as using experts, own judgement, wisdom from crowds, and foresights to co-produce contextual BM knowledge together with key researchers. Thus, this pioneering review serves as a response to Leiringer and Dainty's (2017) editorial and the launching of a new section of state-of-the-art reviews of research on management in construction where published knowledge about sub-fields, one of them being construction-related BM, is analyzed and new perspectives are provided through syntheses.

Legitimacy Building in a Whole Supply Network during its Formation Phase

Legitimacy is essential for an inter-organizational network’s willingness to supply resources. This study focuses on the legitimacy-building process in a whole supply network in its early formation phase. The main objective of this study is to increase understanding on how the network actors, i.e. the organizations participating in the network, build legitimacy.
during the formation of a whole supply network. Whole networks, i.e. consciously created, goal-directed networks with a separate identity and collective actions, are considered to be the future of organizing in a society of networks. Whole supply networks are whole networks that operate in the manufacturing of products. Legitimacy building in a whole network is researched via the manifestations of dimensions, three in the pre-network and four in the network formation phases. In addition, the contingencies that exist in legitimacy building during the formation of a whole supply network are identified.

The legitimacy-building process was researched in the case of one whole supply network of 20–26 Finnish maritime organizations in a three-year networking project using pragmatic research philosophy. The mainly qualitative empirical research material was collected by means of interviewing the network actors and observing the network’s events and their respective documentation. The manifestations of the legitimacy-building dimensions as well as the contingencies were analysed at the inter-organizational network level.

The research results show that especially the network’s strategic intents and communicating them to the network organizations are an essential dimension in the legitimacy building of a whole network during its formation. It is particularly noticeable that the strategic intents of a whole network can be multiple, may even overlap and are achieved asynchronously and, if unclear, they may cause issues in network legitimacy building.

This dissertation research makes several theoretical and practical contributions. From the viewpoint of the emerging network theory of whole networks, the results clarify the dimensions of legitimacy building in the formation phase, specifically in whole supply networks. Additionally, it gives new information on legitimacy building in whole networks in completely unexplored prenetwork circumstances. Furthermore, the results add to the discussion of supply network archetypes and various contingencies, which affect the legitimacy building of a whole network during its formation. Moreover, there are practical implications for both organization leaders contemplating network collaboration and also those managing it. First of all, the pre-conditions of legitimacy building shed a lot of light on the readiness of the network for collaboration, and thus the network’s legitimacy building. Secondly, the four dimensions of legitimacy building can be used as a general level roadmap for network legitimacy building. By investing in clarifying the strategic goals of the network, specifying a network structure that is suitable for achievement of the network’s goals, supporting the network’s interaction, and as a result, enabling the creation of the network’s own identity, the ability of a network to build both internal and external legitimacy is enhanced.

General information
State: Published
Ministry of Education publication type: G4 Doctoral dissertation (monograph)
Organisations: Research group: Business Ecosystems, Networks and Innovations, Industrial and Information Management
Authors: Suominen, A.
Number of pages: 224
Publication date: 13 Oct 2017

Publication information
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Original language: English

Publication series
Name: Tampere University of Technology. Publication
Volume: 1487
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Keywords: legitimacy, legitimacy building, legitimacy-building process, inter-organizational network, whole network, supply network, network formation phase, case study
Electronic versions:
suominen 1487
Links:
Research output: Monograph › Doctoral Thesis

“Together we stand, divided we fall”: Constructivist Approach to Support Organizational Change in the Knowledge Work Context
Contemporary organizations have a relation to information systems and information technologies (IS/IT). IS/IT sometimes forms the backbone of the operation or it may have a support function. Simultaneously this means that at some point the systems must be updated and renewed. The renewal brings along changes. Always. The disturbance and disruption caused by the change manifests itself in different ways in different parts of the organization. It is an individual trait, how an employee responds to change, and yet changes need to be managed on organizational levels too. The management of the change is important to secure the implementation of the change and to enable the swift recovery from the change so that the prospective benefits may start to realize.
Literature distinguishes levels to be noted in managing organizations operation: organizational, team, and individual levels. Similarly, the literature on change offers multiple types of change to be considered. The features distinguishing the different types of change comprise e.g. whether there is a clear, decided future solution to be (teleological change) or whether there is merely an unrefined state of the future to be (life cycle type of change). The meaning of the types of change for managing the change are elaborated in order to recognize the characteristic effects each change entails.

IS/IT literature covers various topics in this vast field. Managing IS/IT related change seems a bit neglected, especially when it comes to managing the operation with individual human aspect considered. This thesis is about managing IS/IT-related change in team-based organization by using a constructivist approach. Constructivism is a theory related to learning. Constructivist approach entails the coach-like approach of presenting subordinates with a cognitive incongruity, a challenge that makes them wanting to solve the issue building on their existing knowledge. The challenge is tackled by applying new knowledge together with the existing with feedback from more knowledgeable peers. An important feature is that the employee in midst of the change is able to reflect on her/his actions and thus acknowledging the learning. There are few examples of it being applied to professional context. This thesis studies ultimately the intersection of the three mentioned areas; IS/IT, change and constructivism. It deepens the understanding of the relationship these themes have and illuminates the suitability of the constructivist approach to managing IS/IT-related change in various contexts.

Seems that the IS/IT has its features of not being entirely about technologies nor the management being entirely about humans. An understanding of these features is required to address the issues in an orderly fashion. The organizational structure sometimes dictates the operation and culture, i.e. management. The daily routines of each member of the organization leaves little opportunities for individuals to be aware of the whole operation, save but the top management. Normally there is little need for this. This means that the ‘big picture’ that people have, varies. It is plausible to assume that each division, team, and individual observes the proceedings from their own perspective. However, the motivation of change usually stems from origins not familiar to all thus presenting the change with challenges. The thesis contributes to the increasing understanding of the phenomena related to IS/IT related change by studying multiple cases, changes.

The research behind this thesis consists of seven major changes from six different organizations. People involved in the changes were interviewed to form the empirical material for the research. Semi-structured interviews were used to gain depth as well as quality. The objective was to understand the dynamics that are affecting and included in the process when the working practices in an organization change. The objective entails the will to illuminate the change and to gain understanding on how a change may be addressed with better expectations for the outcome. Further, to meet the objective it means that various aspects are to be recognized and acknowledged as being significant for the change to happen.

Constructivist approach emerged as way to offer a solution on how to address such a change. The studied cases were contemplated through the ‘constructivist lens’ to study the phenomena and even though not intended to offer some nigh on normative suggestions on how to approach future issues of this kind.
Designing green marketing across industries: a conceptual framework and implications for consumers and transdisciplinary research

Understanding what marketing messages trigger sustainable consumer behavior is one of the key issues for companies to be able to design effective green marketing. The goal of this paper is to present a conceptual framework for a green marketing approach that includes product, industry, production processes, and supply chain specific considerations to be utilized in the design of green product marketing for the mass markets. Based on a literature review, we have created a conceptual framework with industry-specific aspects on the basis of unique features in seven industrial sectors that are of relevance to the personal needs of consumers from an environmental perspective, but are focusing on the product-specific aspects of the marketed products. The originality of this study lies in the proposition that green marketing should use the actual product features as a starting point and not focus only on green consumers. The greenness of a product should be an additional dimension that adds to the competitiveness of the product when compared to conventional products. Theoretically, we propose that a transdisciplinary approach that integrates sustainable supply chain management perspectives to green marketing would benefit companies designing green marketing approaches and consumers making green product choices.

Relationships among Civil Engineering Students' Approaches to Learning, Perceptions of the Teaching-Learning Environment, and Study Success

This study examines the relationship among civil engineering students' approaches to learning, their perceptions of the teaching-learning environment, and their study success. The aim was to identify civil engineering students' approaches to learning and how their approaches to learning are related to their perceptions of the learning-teaching environment and their study success. The data of the study consist of the students' answers to a questionnaire (n=215) and their study success data (n=204), which were gathered from their university's study register. The study success data consist of the...
cumulative study credits and weighted averages of their course grades. The students were classified into four clusters according to their approaches to learning. Differences in their perceptions of the teaching-learning environment and study success between the clusters were statistically significant. Students who belonged to clusters that emphasized the deep approach to learning experienced their teaching-learning environment more positively than did other students. Students who belonged to clusters emphasizing organized studying earned more credits and higher marks in their studies than did other students.

General information
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Ministry of Education publication type: A1 Journal article-refereed
Organisations: Research group: Construction Management, Industrial and Information Management, University of Helsinki
Authors: Salmisto, A., Postareff, L., Nokelainen, P.
Publication date: 1 Oct 2017
Peer-reviewed: Yes

Publication information
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Scopus rating (2015): SJR 0.678 SNIP 1.509 CiteScore 0.96
Scopus rating (2014): SJR 0.479 SNIP 1.172 CiteScore 0.94
Scopus rating (2013): SJR 1.386 SNIP 1.598 CiteScore 1.01
Scopus rating (2012): SJR 0.897 SNIP 1.947 CiteScore 1.02
Scopus rating (2011): SJR 0.566 SNIP 1.315 CiteScore 0.63
Scopus rating (2010): SJR 0.771 SNIP 1.125
Scopus rating (2009): SJR 0.366 SNIP 0.635
Scopus rating (2008): SJR 0.458 SNIP 1.157
Scopus rating (2007): SJR 0.488 SNIP 0.931
Scopus rating (2006): SJR 0.309 SNIP 0.719
Scopus rating (2005): SJR 0.211 SNIP 0.8
Scopus rating (2004): SJR 0.456 SNIP 0.687
Scopus rating (2003): SJR 0.457 SNIP 1.579
Scopus rating (2002): SJR 0.838 SNIP 1.482
Scopus rating (2001): SJR 0.719 SNIP 0.912
Scopus rating (2000): SJR 0.304 SNIP 1.501
Scopus rating (1999): SJR 0.169 SNIP 0.595
Original language: English
ASJC Scopus subject areas: Civil and Structural Engineering, Industrial relations, Strategy and Management
Keywords: Approaches to learning, Engineering education, Study success, Teaching-learning environment
DOIs:
10.1061/(ASCE)EI.1943-5541.0000343
Source: Scopus
Source-ID: 85023205638
Research output: Scientific - peer-review › Article

What drives the sensitivity of limit order books to company announcement arrivals?
We provide evidence that recent losses amplify order book illiquidity shocks caused by non-scheduled news. Moreover, the faster markets’ reaction to scheduled and non-scheduled news arrivals is in terms of order book illiquidity, the more illiquid the order book becomes; that is, a fast reaction is a strong reaction. Additionally, order book asymmetry observed before announcement arrivals is positively associated with the magnitude of illiquidity shocks.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Research group: Business Data Research Group, University of Tampere
Authors: Siikanen, M., Kanniainen, J., Luoma, A.
Temppolievasta tiede- ja koulutuspolitiikasta kohti laajempaa näkemystä

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Civil Engineering
Authors: Katko, T. S., Hukka, J. J.
Number of pages: 8
Pages: 32-39
Publication date: Oct 2017

Host publication information
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Place of publication: Tampere
Publisher: Tampereen dosenttiyhdistys
Editors: Juuti, P., Usui-Rasi, K.
ISBN (Print): 978-951-97614-2-8
ISBN (Electronic): 978-951-97614-3-5

Publication series
Name: Tampereen dosenttiyhdistyksen julkaisuja
Links:
Research output: Scientific - peer-review › Chapter
How to manage innovation processes in extensive networks: a longitudinal study

In this paper, we examine the managing of the full innovation process, from visioning to commercialisation, in extensive networks. By drawing on the IMP, strategic network, and innovation network literatures, we develop a comprehensive picture of the management activities when ‘mobilizing’, ‘orchestrating’, and ‘involving’ actors in working towards the innovation aim in such network settings. Through using two longitudinal case studies – the one pursuing radical and the other incremental innovation - we provide an empirically refined understanding of seven key management activities.
The role of weak ties in enhancing knowledge work

The purpose of this research paper is to explore the collaboration in knowledge worker’s performance from the organizational perspective and decompose most relevant contributing factors. A systematic literature review based on Fink’s model [1] was conducted; 22 key journal articles were selected for further analysis. This research sheds light on the use of weak ties in knowledge workers’ related tasks, seeking answers towards what context knowledge workers can make use of weak ties in their tasks and for what purposes. A constructive pattern is built to advance some effective measures in knowledge work. Since the focus of the study was on knowledge work-related tasked, there is a possibility that dissimilar evaluations would have arisen if the focus had been on non-knowledge work relevant tasks. This study
has gone some way towards enhancing organizations’ understanding of the significance of weak ties in knowledge workers’ performance. The originality of this paper lies in taking a new look at opportunities of weak ties towards knowledge workers, revisit the significance of weak ties.

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**Ecosystem approach on medical game development: The relevant actors, value propositions and innovation barriers**
This paper explores the medical game ecosystem and reveals the reciprocal value propositions of the relevant actors of medical game ecosystems, as well as barriers that may be complicating or hindering realization of the value propositions. The case comprises an emerging medical game ecosystem in Finland in the traumatic brain injury (TBI) rehabilitation context. This study presents 12 actor groups, their value propositions, and the barriers between the actors. This paper gives a comprehensive view of the actual medical game ecosystem that is needed to utilize the full potential of gamification and serious games in the health care sector.

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**Vygotsky’s Zone of Proximal Development in Connection with Technology-Enhanced Learning Environments**
Technology-enhanced learning environments (TELEs) that support social interaction between teachers and learners are common in engineering higher education institutes. TELEs are often equipped with professional hardware and software, which not only enable learners to gain access to variety of learning instruments, but also allow learners to practice with authentic equipment and design tools. Furthermore, teachers can use TELEs and scaffolding principles to organize teaching in several ways that are beyond traditional classrooms. This paper discusses the potential of TELEs to shape the zone of proximal development (ZPD) of learners such that they could do harder learning activities than would otherwise be possible in less conducive environments. In addition, an example of a conducive TELE is presented that might have enlarged ZPD of learners, and, as such, may partly explain good learning outcomes obtained. The illustrations in this paper may help teachers to gain better understanding of the benefits of environment creation as well as to organize
learning episodes that are suitable for ZPD-based thinking.

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Network management in the era of ecosystems: Systematic review and management framework

Business-to-business (B2B) and business network scholars have begun adopting an "ecosystem" approach to describe the increasing interdependence and co-evolution of contemporary business and innovation activities. Although the concept is useful in communicating these issues, the challenge is the lack of overall understanding of the added value of the approach, its particular theoretical logic, and its links to network management. This systematic review analyzes the usage of the ecosystem concept in B2B journals and its implications for network management. Common themes are distilled, the specific features of the ecosystem approach are examined, and four categories of the ecosystem approach are identified: (a) competition and evolution; (b) emergence and disruption; (c) stable business exchange; and (d) value co-creation. We also examine shifts in management opportunities and challenges related to these developments. Finally, we suggest a revised network management framework, where we address the implications of utilizing an ecosystem layer for the analysis, as well as using the ecosystem as a perspective in the management of business and innovation networks. Overall, this study contributes to the literature by providing a coherence-seeking, systematic outlook on the increasingly useful, but still nascent and ambiguously utilized ecosystem approach.

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Knowledge sharing in knowledge collectivity: case digitalization in industrial network

Knowledge sharing (KS) in the inter-organizational setting is not widely researched area. However, in temporary organizations such as projects, sharing expert knowledge is essential and may take place in knowledge collectivities, i.e., Collectivities of Practices (CIP). Due to CIPs' often temporary nature, time and socialization are lacking, thus efficient KS practices are required. The complexity of projects may also necessitate CIPs to cross organization boundaries, forming inter-organizational CIPs, IO-CIPs. Therefore, a better understanding of intra-organizational practices overlapping inter-organizational KS is called for. This paper contemplates on who should participate and how the process of boundary spanning KS should be put into practice in IO-CIP context. We present a case of a network-dependent focal company aiming to form a new digitalization strategy, which requires boundary-spanning knowledge management (KM) approaches. We concentrate both on intra- and inter-organizational steps needed for developing a digitalization roadmap eventually encompassing the whole network. Based on case observations we conclude that KS in industrial IO-CIP context involves multiple internal and external stakeholders, which also play facilitating roles in KS process. The results also reveal that it is possible to achieve KS in a larger group with a stepwise, well-facilitated and goal-oriented approach that involves experts into practices gradually. Additionally, complex phenomena in industrial networks, such as digitalization, requires other processes of KM besides KS: knowledge transfer for explicit knowledge and knowledge creation at the network level, too. Thus, in IO-CIP setting, KM processes of the company and network should be approached holistically, aiming at an overall view. The results shed light on KS in inter-organizational setting, particularly the overlap between intra-organizational practices and inter-organizational KS within knowledge collectivities. We contribute to boundary spanning inter-organizational KS by adding a description of the KS practices in CIPs, which is based on the theory of social constructivism of knowledge, and expand the viewpoint of the CIP-concept also towards inter-organizational setting.
Pedagogical Content Knowledge in Product Development Education

Engineering education at university faces challenge concerning the efficiency in producing results in learning. Engineering Education will be exposed to globalisation resulting in tough competition between the service providers and individual contributors. This study focus on capturing and discussing teachers’ pedagogical content knowledge on product development education. Currently there are no holistic approaches presented from teacher knowledge viewpoint. The next steps how to develop this knowledge of product development teaching further by focusing on the continuous learning process.

Exploring institutional drivers and barriers of the circular economy: A cross-regional comparison of China, the US, and Europe

The Circular Economy (CE) has been identified as a sustainable alternative to the current linear economic model. Thus far, research on the circular economy has focused on methods for better conserving the value in material flows. As the CE is currently being adopted as a sustainable development strategy in, e.g., China and the EU, identifying and comparing the drivers of and barriers to CE implementation would be beneficial for the acceleration of the development path. To contribute toward this research area, we built on institutional theory via a multiple case study covering China, the US, and Europe. We analyzed each region as an institutional environment and considered manufacturer and integrator types of value chain actors due to their central role in CE implementation. As our key findings, we identified that the general drivers of the CE from each institutional environment support recycling as the primary CE action, while support for other CE types appears to be lacking. Regulatory measures have primarily driven increased recycling efforts on both the integrator and manufacturer sides. Similarly, identified normative indicators overwhelmingly point toward recycling, while increasing reuse faces cultural-cognitive barriers. Between regions, China differs due to its informal sector and strong regulative institutional support. We conclude that to improve institutional support for the CE and allow it to fulfill its potential as a sustainable growth model, diversified institutional support for reducing the products produced and materials used as well as increasing reuse are needed.
The core interaction of platforms: how startups connect users and producers

The platform economy is disrupting innovation while presenting both opportunities and challenges for startups. Platforms support value creation between multiple participant groups, and this operationalization of an ecosystem’s value co-creation represents the “core interaction” of a platform. This article focuses on that core interaction and studies how startups connect producers and users in value-creating core interaction through digital platforms. The study is based on an analysis of 29 cases of platform startups interviewed at a leading European startup event. The studied startups were envisioning even millions of users and hundreds or thousands of producers co-creating value on their platforms. In such platform businesses, our results highlight the importance of attracting a large user pool, providing novel services to those
users, offering a new market for producers, supporting the core interaction in various ways, and utilizing elements of the platform canvas – an adaptation of the business model canvas, which we have accommodated for platform-based business models – to accomplish these goals.

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**Ecosystem creating experiences: a case from pediatric health care**
Purpose – Recent discussion on reformation of healthcare systems to tackle rising healthcare costs has increased interest towards applying ecosystem thinking in healthcare. Despite the increased interest, little is known about the ecosystem that co-creates the healthcare services and importantly customer experiences in healthcare, namely patient experiences. As there has been no detailed investigations of the composition of ecosystem actors and actors’ roles in the healthcare ecosystem, this paper will map and provide an overview to the healthcare ecosystem in a pediatric healthcare context.

Design/Methodology/Approach – Study draws on selected literature from the fields of customer experience research and service ecosystem and explores actors participating to experience co-creation in a pediatric healthcare context. Study is based on qualitative in-terviews with 23 healthcare professionals and with 6 ecosystem actors. From this data, we map the ecosystem actors and their roles in the ecosystem.

Findings – Key findings show that pediatric healthcare service ecosystem is complex and comprises heterogeneous set of actors that participate to children’s patient experience co-creation. We identify four actor categories participating to experience co-creation, namely 1) healthcare actors, 2) social and welfare services actors, 3) family, friends and other social group actors and 4) ecosystem supportive actors. These categories include total of 11 different sub-categories for actors from hospital and social settings having effect and role in customer experience co-creation of patients.

Research implications – The paper builds contribution by increasing understanding on ecosystems co-creating customer experiences particularly in health care context. Our find-ings imply that customer experience and service management research should extend their view from only examining customer experiences in a service setting to a broader view that includes also customer’s social settings.

Originality/value – This paper contributes by providing a detailed mapping on the ecosystem co-creating customer experiences.
experiences in healthcare settings – the aspect that has been missing from the earlier customer experience research.

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**WorldSkills achievers’ and their co-workers’ and employers’ perceptions of vocational expertise and school-to-work pathways**
This paper examines the perceptions of vocational expertise and school-to-work pathways among WorldSkills Competition (WSC) achievers and their co-workers and employers within the Finnish context. At the biennial international WSC, young people (aged 18-to-23 years) from over 60 countries demonstrate their skills in more than 40 trades. Individualized training for this competition is provided through the cooperation of vocational institutions (e.g., expert coaches, team leaders and competition panellists) and industry (e.g., mentors, sponsors, materials, equipment). Semi-structured thematic interviews (N=51) were conducted in 2013 and 2014 with former Finnish WSC medal or diploma winners (n=18) who had since begun their working lives (1-to-15 years of work experience). Their employers (n=16) and colleagues (n=17) were also interviewed. Results showed that in addition to vocation-specific knowledge and skills, problem-solving skills, creativity, social skills and self-regulatory skills were acknowledged as the most significant elements of vocational expertise. The findings also indicated that formal vocational education combined with deliberate practice and training based on expert mentoring improved the long-term career progress and vocational expertise of the WSC achievers.

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**Topography of "Faceless" actors in a context: examples from public management**

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Advancing the design of concepts for international business management with contexts in capital investment markets

The aim of this paper is to advance the design of international business (IB) management concepts with contexts embedded within capital investment markets (CIMs) across the globe. This paper is part of the on-going reviewing of research on CIMs-based business management (BM). So far, the reviewing has resulted in the identification of 77 concepts published during the years 1990-2016. Focal firms have their home bases in the OECD countries plus in Hong Kong and Singapore due to the heritage of the British Commonwealth. Within the 77-concept platform, there are only 21 (27%) IB management concepts, i.e., the authors have designed them along the international dimension. There are 6 (8%) high-degree concepts, 10 (13%) medium-degree concepts, and 5 (6%) low-degree concepts. The high-degree concepts may serve as blocks in theory building. It is proposed that concept designers adopt the necessary Dimensions 1-4 in order to produce theoretically advanced and practically useful CIMs-based IB management concepts, i.e., (1) content-free frames of reference on managing single business, (2) schools of thought on generic BM, (3) theoretical approaches to IB (research), and (4) contexts embedded within international CIMs. Concept designers should adopt these four dimensions pairwise, via Couplings 1-5, during their respective design processes. It is envisioned that IB researchers, CIMs-focused researchers, and IB managers initiate cross-disciplinary and academia-industry research programs on CIMs-based IB management.

Finnish Apprenticeship Training Stakeholders’ Perceptions of Vocational Expertise and Experiences of Workplace Learning and Guidance

This study examines Finnish apprenticeship training stakeholders’ perceptions of vocational expertise and experiences of workplace learning and guidance. The semi-structured interview data was collected in 2015 in two vocational fields: the social and health care services sector (five workplaces) and the technology sector (five workplaces). The sample (N = 40) consisted of apprentices (n = 10), their co-workers (n = 10), workplace trainers (n = 10) and employers (n = 10). The study applies the classifications of natural abilities and self-regulation to identify the most important individual characteristics related to vocational expertise. The socio-cultural approach to workplace learning and guidance illustrate that vocational expertise also develops from external support through participation and guidance in everyday interactions in the contexts of education and work. The data was analysed using qualitative content analysis. The findings indicate that individuals with fluent cognitive skills (e.g., problem solving skills) combined to advanced social skills, self-awareness and self-regulation are perceived as vocational experts. The apprenticeship training was considered to draw upon an extensive learning environment to facilitate an apprentice’s vocational development by offering access to authentic work tasks and collective support by experienced workers. Yet, the lack of time, resources and pedagogical approaches were found to hinder individual guidance and reciprocal workplace learning between apprentices and experienced workers. The workplaces were shown to provide fruitful learning possibilities for those apprentices with strong self-regulatory skills.
Problems of enterprise architecture adoption in the public sector: root causes and some solutions

Enterprise architecture (EA) is a comprehensive approach aimed at understanding and aligning an organization’s business strategy and processes, information resources, and information technologies. However, implementing this approach in an organization is not an easy task as organizations have their preexisting siloes and fragmented procedures and departments. Comprehensive, inter-organizational practices, such as EA, usually break old procedures and habits, shift decision-making power, and challenge old values. This makes EA endeavors extremely difficult. In this paper, we conduct a qualitative multiple-case study. We use institutional theory to identify problems and their root causes in EA adoption in three cases. We also discuss possible solutions—by identifying eight root causes and several examples, both successful and not-so-successful—to mitigate or overcome these problems. We also argue that institutional theory and its three pillars provide a usable lens to analyze EA adoption.

Business Model Innovation of Startups Developing Multisided Digital Platforms

Platforms are defined as multisided marketplaces with business models that enable producers and users to create value together by interacting with each other. In recent years, platforms have benefited from the advances of digitalization. Hence, digital platforms continue to triumph, and continue to be attractive for companies, also for startups. In this paper, we first explore the research of platforms compared to digital platforms. We then proceed to analyze digital platforms as business models, in the context of startups looking for business model innovation. Based on interviews conducted at a technology startup event in Finland, we analyzed how 34 startups viewed their business model innovations. Using the 10 sub-constructs from the business model innovation scale by Clauss in 2016, we found out that the idea of business model innovation resonated with startups, as all of them were able to identify the source of their business model innovation. Furthermore, the results indicated the complexity of business model innovation as 79 percent of the respondents explained it with more than one sub-construct. New technology/equipment, new processes and new customers and markets got the most mentions as sources of business model innovation. Overall, the emphasis at startups is on the value creation innovation, with new proposition innovation getting less, and value capture innovation even less emphasis as the
source of business model innovation.

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**Job Crafting Aspects to Support Well-being at Work in an Activity-based Office**
Well-being at today’s demanding and constantly changing work is important. The well-being of the employees can be seen as a strategic asset in organisations (Slemp et al. 2015). Besides the work itself, the context of work, work environment, is changing. The so-called activity-based offices are increasing in number (Kim et al. 2016). The activity-based offices differ
from traditional cellular or open-plan offices in the way that they no longer provide a dedicated, personal work desk for every single employee. Compared to other office types, activity-based offices typically include many different work settings or areas, which differ from each other in terms of possibility to concentrate on individual or group work, collaboration, privacy etc. Objectives of such work environments relate to cost savings, improving cross-departmental collaboration (Kim et al. 2016), autonomy and job satisfaction. It has been stated that the activity-based working improves work satisfaction because of the freedom of choice and autonomy and improves the health and well-being of employees (van der Voordt 2004) However, the activity-based office concept poses some challenges for workers and their well-being. Although the amount of activity-based offices is increasing, the satisfaction with the concept appears to be below expectations (Hoendervanger et al. 2016). Activity-based offices are criticized for the loss of personalisation of workplace, risk of inadequate ergonomy and hygiene of shared desks. Additionally, Elsbach (2003) found that the activity-based work environment has the possibility to threaten workers’ workplace identities. In her study, it was also found that the office concept in question also negatively affected employees’ sense of belonging to a group. When considering the well-being of an employee, the work environment and the office design should be considered, too. Research has shown that the office design affects the identity of an individual, as well as their creativity, mood, comfort, ergonomics and safety (Elsbach & Bechky 2007) In general, occupational well-being is influenced by many factors. One model which can influence employee well-being and performance is the Job Demands-Resources (JD-R) model. The JD-R model claims that every work has their own demanding and motivating factors. Job demands are elements of work that demand sustained physical and/or psychological effort. On the other hand, job resources are elements of work that for example help to achieve work-related goals, reduce job demands and/or encourage learning, development and personal growth. (Bakker & Demerouti 2007) By affecting or modifying the demands and/or resources, the employee can affect their well-being. This is called job crafting. Job crafting is a method of job redesign, in which worker create an improved fit between the demanding factors of their jobs and themselves. Job crafting affects the well-being, as it helps to improve the balance between job demands and resources. (Slips et al. 2015) Job crafting is an effective method to improve well-being, as it increases job resources over time (Tims et al. 2013). Job crafting typically covers the modification of three elements of work: crafting job tasks (number, scope, type), interaction with others (quality, amount) and cognitive task boundaries. (Wrzesniewski & Dutton 2001) It has been found that employee well-being and job crafting are correlated (Slips et al. 2015). Thus, the purpose of this paper is to better understand the characteristics of activity-based work environments and their potential risks and benefits. After analysing the work environment, we propose a model of job crafting in an activity based office. As the satisfaction with activity-based offices seems to be below expectations and the office concept seems to have some negative effects to health and productivity, it is reasonable to study well-being in the office type in question. Research question to be answered is what job crafting possibilities lie in activity based offices to support well-being at work? The research methods include observation and interviews in the Finnish company Martela, in the capital area of Finland. The interviews (n=11) covered topics such as reasons to choose work settings, views of their work environment, pros and cons of the work environment, the values of the company, organisational house rules and individual work habits. The case organisation can be viewed as a successful case, as the employees seemed very happy in their ways of working and the supportive work environment. Results of the study include a proposal of job crafting in an activity based office, leading to better occupational well-being. It also covers a comparison of job crafting and activity based working.

Sustainable project management through project control in infrastructure projects
Sustainability is becoming increasingly important in the delivery of projects as stakeholders require ethicality, eco-friendliness, and economic efficiency during a project's life cycle. Previous studies focused on the environmental aspects of sustainability in project deliverables, whereas less attention has been directed at sustainable project management during project delivery. The goal of this study is to identify the control practices that a project organization uses for sustainable project management. A qualitative single-case study was conducted on a large infrastructure project in which a road tunnel was constructed in a highly demanding environment, involving multiple stakeholders in an alliance contract. The results reveal that sustainable project management is implemented using not only indicators but a holistic control package in which control mechanisms are used differently for different sustainability dimensions. Internal project control is complemented with sustainable project governance, linking the project to its external stakeholders and regulations. The alliance contract activates the partners to exploit innovation opportunities and, thus, promotes economic, environmental, and social sustainability.
The purpose of this study is to explore how consumers perceive eco-friendliness in their brand experiences and how this can be measured cross-nationally. This is a replication-extension study based on an existing brand experience scale. Data were collected in India and Finland from smartphone users (N = 1008). The fitness of the brand experience model is validated cross-nationally with structural equation modeling. The empirical data consisting of consumers’ responses on the Apple, Samsung, and Nokia brands confirm that there is a unique dimension of eco-friendliness in the general brand experiences of consumers, and it is generalizable cross-nationally in India and Finland. The study presents a consumer-focused measure of sustainable development that could be used to track how consumers perceive the eco-friendliness of brands. The paper links consumer experiences that guide sustainable consumption behavior to the macro-level management of sustainable development. This paper extends previous research on brand experience measurement by testing cross-nationally a scale including a dimension for measuring eco-friendliness. The brand experience measurement scale could aid companies in tracking the success of their sustainable development initiatives on the brand level.
Mediator's role in an innovation ecosystem

The diffusion of new innovations into a business ecosystem is an interesting phenomenon. In order to gain competitive advantage for SMEs and also to add value in SME networks, the dynamic nature of the business ecosystem demands the capability to adapt new ideas. On the other hand, the risk-bearing ability of SMEs alone can be a barrier to the utilisation of novel innovations. In order to answer our research question - how to improve innovation diffusion in a business ecosystem via SME networks in collaboration with academia? - in this article we introduce the mediator-assisted innovation diffusion (MAID) model. The model was tested in multiple case studies where a total of 18 organisations participated. In the conceptual part of this paper we discuss the context of business and innovation ecosystems, the process of innovation diffusion and the mediator's role in value creation for SME networks in such an evolving ecosystem.
Understanding consumers' renewable energy behaviour beyond 'homo economicus': An exploratory survey in four European countries

Climate change is putting global pressure for energy consumption and production to move towards sustainable solutions based on clean energy sources. Rapid advancements in technology make energy generation and storage solutions available and affordable for consumers and enable them to become relevant actors in the energy process. The actual success of sustainable energy solutions is however not so much dependent on technological readiness, which is already in place to large extent, but rather on influencing consumer adoption in an impactful way. This article explores consumers' behavioral drivers for the adoption of renewable energy solutions by comparing the economic, ecologic and social preferences of consumers in four European countries.

Finnish water services: Experiences in global perspective

The front end of radical manufacturing technology innovations

The creation of Radical Manufacturing Technology Innovations (RMTI) is necessary for the renewal and enhanced productivity of manufacturing processes. There is a need to understand different strategies for managing the front end of RMTI in manufacturing firms. We conducted an embedded multiple-case study in three firms with different RMTI
strategies. The results show different extents of formal roles, involved departments and documentation in RMTI, and differences in organizing the RMTI front end. All case companies had carried out the front end of RMTI successfully and repeatedly. The contributions include alternative strategies for managing the front end of RMTI successfully.

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Research output: Scientific › Article

Are Software Start-Ups Different? An empirical study on performance of Finnish software companies
Entrepreneurship and start-ups have become modern hype terms. Especially, software start-ups have gathered a lot of interest due to a few successful examples, and the potential scalability of new business. A plethora of accelerators, events and communities has been found as well as new research agendas announced to boost and study the new phenomenon. The question, are software start-ups different, still remains unanswered. This study address whether software start-ups differ from the other kinds of new companies. We use the set of over 20,000 Finnish companies founded during 2010–2013 as an empirical material for our inquiry. To compare the financial performance of software start-ups and the rest, we use the current ratio, profit margin, revenue and return on assets as measures of financial performance. The results show that, indeed, software start-ups differ from the control group in the used financial indicators.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Research group: Software Engineering and Intelligent Systems, Pervasive Computing, Industrial and Information Management, Research group: Center for Innovation and Technology Research, Research group: Business
Developing a Quadruple Model for Collaborative Research Actions between Higher Education Institutions and Industry

This research focuses on new, more practical models of collaboration between higher education institutions and industry in European universities. EU, the national governments and especially the national economies demand that there should be more goal-oriented actions for technology transfer and collaboration between HEIs and businesses so that the research and innovation results can be faster and more effectively capitalised. There is a research gap in combining the fluent partnerships, the applied technology research, the technology knowledge transfer and the integration of RDI and education with effective working methods. This research has concentrated on the modelling of research, development and innovation actions of HEIs, which aim at quality and practical RDI collaboration with enterprises as well as close integration between RDI actions and education.

The context of this research is the field of Finnish Universities of Applied Sciences (UASs) and in case studies the Satakunta University of Applied Sciences (SAMK) on the west coast of Finland. The goal of this research was to find connective factors and working methods, which can be utilised and focused on the research, development and innovation work at Finnish HEIs but also shared with other European universities in the future. In addition to all this the impact of the RDI work was studied in order to find the most effective factors affecting the integration of RDI and education and the engineering educators’ professional development.

This research solved real world problems of enterprises and HEIs with innovative models. The main research method of this thesis has been the design science research. The modelling of the technology knowledge transfer as well as the technology research, development and innovation inside each project were based on design science research methodology. Altogether, the whole research process rested on an idea of a new HEI targeted model for collaborative research between HEIs and industry.

This research confirms that partnerships between HEIs and enterprises generate several benefits, like new learning outcomes and need based competence development for the personnel. The partnerships seem to require constant development of the processes and actions, but this research indicates that well-functioning partnerships create research-based knowledge to support innovation processes in the industry, foster new innovation creation and recognise new opportunities for future collaboration. The research results encourage the HEIs to set their own goals more vigorously already in the beginning of the process.

The technology knowledge transfer modelling of this research has been based on applied research cases, in which the research knowledge and practical skills have been combined in order to answer the needs and challenges of the enterprises. The main goal of the practical research work has been to apply new technologies to new cases and to create new applications. The impacts of different applied research cases have been identified from the different perspectives of enterprises, HEIs and students. The modelling is based on the generalisations of these identified impacts. This research generated three different models for technology transfer. These models introduce new approaches for need and dialogue based technology knowledge transfer. The models focus on knowledge increase and innovations in SMEs. The models are non-linear, emphasise the meaning of need recognition and consist of many iterative cycles. This research states that the technology knowledge transfer deepens the collaboration between the HEIs and the SMEs. The model also aims at increasing the responsibility of the enterprises and supports push to pull transformation of the technology knowledge transfer.

As a part of this thesis, the experiences of engineering educators working as engineering researchers were studied. The results indicate that applied technology research work can increase the engineering educators’ knowledge and practical knowhow remarkably. The educators highlighted new experiences and personal development. They found the applied technology research very arduous but also rewarding. This research states that the applied technology research work is an effective way of lifelong learning.

All things considered, this research was essentially a discourse of interactions between HEIs and enterprises, especially small and medium sized enterprises. The modelling of the actions and procedures have aimed at the interactions and collaboration that can add value for both parties. As the main contribution of this research the W4 – a quadruple model for collaborative technology research activities between higher education institutions and industry – has been created. The purpose of the W4 model is to create a WINWIN-WIN-WIN situation for the HEIs’ regional innovation environment. When
the HEIs and industry collaborate according to the model, all the participants, enterprises, HEIs, students and the surrounding society, win as the collaboration creates several advantages for all of them.

To conclude, the W4 - a quadruple model for collaborative technology research activities between higher education institutions and industry – indicates clear benefits for enterprises, HEIs and students, who bring their needs and knowledge to the shared platform of collaborative technology research activities and as a result of these activities they all gain new knowledge, practical knowhow, and ideas for innovation and development. When the enterprises openly bring their technology needs and challenges to the process of collaborative activities, the HEIs can identify and allocate their expertise to these purposes and engage students to work within the processes.

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Ministry of Education publication type: G5 Doctoral dissertation (article)
Organisations: Industrial and Information Management
Authors: Leino, M.
Number of pages: 113
Publication date: 20 Jun 2017

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Original language: English

Publication series
Name: Tampere University of Technology. Publication
Volume: 1477
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Keywords: University-Industry collaboration, partnerships, applied technology research, technology knowledge transfer, engineering educators' professional development
Electronic versions:
leino 1477
Links:
Research output: Collection of articles > Doctoral Thesis

Knowledge transfer and work productivity
General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Palvalin, M., Vuori, V., Helander, N.
Number of pages: 15
Pages: 1120-1134
Publication date: 15 Jun 2017

Host publication information
Title of host publication: Proceedings of 12th International Forum on Knowledge Asset Dynamics : St. Petersburgh, Russia 7-9 June 2017
Editors: Spender, J., Schiuma, G., Gavrilo, T.

Publication series
Name: Proceedings IFKAD
ISSN (Print): 2280-787X
Links:
http://www.ifkad.org/
Research output: Scientific > Conference contribution

Pop up -kehittämismalli tuottavaan tietotyöhön
General information
State: Published
Positioning Organizational Culture Studies Between the Construction Industry and Other Industries

(Purpose) The main aim of this paper is to portray the overall position of construction related organizational culture (OC) studies amongst other OC related studies found. The amount, the extent, and the scope of the construction OC studies are investigated and their relationships and positions to other OC studies in other industries are described.

(Methodology) This study follows a bibliometric research approach integrated with an unsupervised learning based analysis of selected core studies. The study uses both well-established bibliometric methods and novel unsupervised learning approach to uncover theoretical themes of OC studies based on citation patterns and semantic text. Accordingly, the construction related OC studies are to be identified.

(Findings) Related to vast field of OC studies, the research of OC focused in the construction sector tend to be rare. The construction related OC studies have focused on topics, such as knowledge management, leadership, innovation, firm performance, and characterization of OC. The semiqualitative machine aided methodology was found to support coarse qualitative analysis of the extensive dataset. Together with human interpretation the results seem to be credible.

(Limitations) The semi-automatic methodology of the Bibliographic coupling (BC) and the Latent Dirichlet Allocation (LDA) creates the results without human effort. This may lead to the wrong interpretations without proper analysis of the results. Also the use of limited phrase search may exclude some relevant studies outside the research data. Although the impact is insignificant compared to the found data amount.

(Originality) The research is based on vast dataset with somewhat new methodologies compared with the traditional literature studies. First, it was possible locate the construction OC studies in the broad scientific field of OC and to identify some interesting research clusters. Secondly, the methodology itself represents an interesting and modern way to do mixed-method interpretation of the dataset in the construction sector.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Civil Engineering
Authors: Kähkönen, K., Teräväinen, V., Suominen, A.
Pages: 428-441
Publication date: 13 Jun 2017

Host publication information
Title of host publication: Proceedings of the 9th Nordic Conference on Construction Economics and Organization
Publisher: Polyteknisk Forlag
Editors: Buser, M., Lindahl, G., Räisänen, C.
ISBN (Electronic): 9788750211259
Research output: Scientific - peer-review » Conference contribution
interaction in energy source decisions, as they are influenced by a diverse set of analytical and emotional elements ranging from fuel costs to environmental values. This study examines companies’ vehicle investment decision making in Finland and focuses on the interaction between objective facts and subjective feelings along with the process of choosing the vehicles’ energy source.

This article is based on an interventionist case study. Switching path analysis technique (SPAT) was used to investigate companies’ switches from conventional fuels to natural gas or biogas. This article contributes to the discussion of AFV adoption by unveiling companies’ decision-making triggers, investment criteria and the use of information sources in the decision-making processes. The findings regarding the decision-making dynamics between these factors are transferable to other energy investments. However, the content of the triggers and drivers varies across contexts and may change over time, because vehicles as investment objects have different meanings for different organizational actors depending on their organizational role, investment use context, and personal preferences.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Research group: Cost Management Center
Authors: Saukkonen, N., Laine, T., Suomala, P.
Pages: 49-61
Publication date: 12 Jun 2017
Peer-reviewed: Yes

Publication Information
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Volume: 34
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Scopus rating (2016): SJR 1.796 SNIP 1.967 CiteScore 5.14
Original language: English
Keywords: Alternative fuel vehicle, Decision making, Switching path analysis technique, Energy source, Natural gas vehicle
DOIs: 10.1016/j.erss.2017.06.005
Research output: Scientific - peer-review › Article

Knitting company performance and board interlocks: An exploration with the Finnish software industry
A board of directors is a supreme organism of a modern company. Often, a single board member has a place in several companies’ management teams. This is called a board interlock and its impact on a single board member, companies and the economics on the whole has been studied for decades. However, there is a lack of understanding how software companies’ board of directors interlock as the field is driven by knowledge and relations more heavily than the other fields. Therefore, well-connected board members could be a vital competitive advantage for companies. This study presents a quantitative analysis of 262 Finnish software companies, their boards and performance. The results show that neither high board interlocks nor foreign board members are remarkably related on the performance of companies. The implications of the findings are discussed and future research inquiries are proposed.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Research group: Software Engineering and Intelligent Systems, Pervasive Computing, Research group: Business Ecosystems, Networks and Innovations, Industrial and Information Management
Authors: Hyrynsalmi, S., Suominen, A., Ruohonen, J., Seppänen, M., Järvi, A.
Number of pages: 5
Pages: 67-81
Publication date: 12 Jun 2017

Host publication information
Title of host publication: Software Business : 8th International Conference, ICSOB 2017, Essen, Germany, June 12-13, 2017, Proceedings
Publisher: Springer
Editors: Ojala, A., Holström Olsson, H., Werder, K.
ISBN (Electronic): 978-3-319-69191-6

Publication series
Name: Lecture Notes in Business Information Processing
Examining service experiences: comparing methods to capture children's experiences

Purpose – Recent discussion on the service-dominant logic (SDL) and interest of studying service experiences in different contexts have been increased. However, this has brought up a new methodological challenge for contemporary research. Research methods used, need to capture experiences in the contexts of value co-creation while taking dimensions affecting to experience co-creation into account. This challenges researchers to adapt their methodology to be suitable for the context of studied phenomenon. This paper will provide a set of methodological snapshots applicable for SDL and service research in a context of healthcare services for children and their families.

Design/Methodology/approach – Study draws on selected literature from the fields of service research and healthcare services and tests new methods of capturing experiences in a special experience context of children’s healthcare. We analyze and report a set empirical studies applying of qualitative and quantitative approaches for investigating experience in a special research field of children’s healthcare experience. These methodological approaches include probing, structured and unstructured interviews and surveys. We review and compare the key characteristics of the methods and their respective benefits for service experience research.

Findings – Key findings shows that some research methods are more appropriate capturing children’s experience data. Study also suggest that some methods are more appropriate for capturing data of co-creation in children’s social contexts..

Research implications – The paper builds contribution by increasing understanding on how different research methods capture dimensions of service experience co-creation and help researchers interested in studying children’s experiences to select an appropriate methodology for conducting their research.

Originality/value – Service experience research lacks paper that pieces together different methodology approaches capturing complex phenomenon of children’s experiences.

Key words methodology, children’s experiences, service experience, healthcare

Paper type – Research paper

Knowledge Management and Retention: A Case of a Water Utility in Finland

Knowledge management has been discussed and debated world-wide since the beginning of the 1990s. Over the years, knowledge management has become important due to an increased awareness of the importance of knowledge for an organisation’s prosperity and survival, and due to the increased availability of information technology to store, distribute and generally manage knowledge.

The shared opinion globally and in Finland is that water utilities, where most of the larger water utilities are integrated and provide both drinking water and wastewater services, face continuous challenges with the changes of physical and operational environment and with rapidly ageing personnel. Because knowledge management, especially tacit knowledge, is a critical success factor for water utilities when striving for better and more sustainable performance, utilities should manage both explicit and tacit knowledge and transfer them to new generations of employees.
This dissertation deals with knowledge management at one Finnish utility. The following research questions are addressed: (i) how do personnel at water utilities interpret the concepts of information, knowledge management and tacit knowledge, and how is knowledge captured and shared; (ii) what information needs do personnel have in performing daily tasks and what acquisition channels do they use; and (iii) what is the role of formal and informal networks in performing daily tasks and gaining new knowledge.

The approach of this research is qualitative and contained both longitudinal and cross-sectional time horizons. The personnel of the same water utility were interviewed with a semi-structured questionnaire in 2004 and in 2013. The interviews were analysed by combining qualitative and statistical methods. Multiple sources of evidence on knowledge management practices at water utilities and in organisations was gathered in thematic workshop sessions in 2010 and in 2011.

One of the interesting findings was that interpretations of knowledge management had changed from informing people in 2004 to understanding knowledge management as personal, individual property in 2013. The personnel were proud of the knowledge they owned of the water treatment processes. This knowledge was considered technical knowledge, which is critical to the livelihood of the utility. There were many ways to share information and knowledge and a number of reasons were found explaining why knowledge sharing was considered difficult. The most important difficulties mentioned included lack of time, competing priorities, organisatorial barriers, sharing attitudes and atmosphere, a gap between older and younger people, and unwillingness to share.

In 2004 tacit knowledge was an unknown concept while in 2013 the concept was quite clear to most of the personnel. Tacit knowledge was highly valued and it was associated with the skills and knowledge gathered over the years working at the same water utility. Tacit knowledge was shared in normal daily work and especially during malfunctions.

Information needs and usage at the utility were versatile and depended on the tasks performed by the employees. Almost everyone (over 90%) needed technical information on equipment, and over 60 percent needed knowledge of legislation. This research showed that the personnel used personal files, document collections, the internet and the intranet more often in 2013 than in 2004. The shift from printed material to electronic material has increased over the years. At the same time discussion with closest co-workers kept its importance.

The traced networks in trade union and professional association membership of the personnel indicate that assistance for solving professional challenges is not sought from these sources. The most important network was the closest co-workers, concerning the solutions to problems related to daily tasks. The results showed that external networks were large, quite stable and included multiple sectors. The professional networks consisted of task-relevant contacts, and every interviewee had individual contact networks.

Knowledge management requires long-term planning and actions. In this research it was clear that the top management should take responsibility for knowledge management at the utility. They should set strategies and approaches for knowledge management actions and ensure time allocations and tools for knowledge sharing. It is important to specify which kind of knowledge is valuable and worth retaining from the information overload.

Empirical findings from tacit knowledge, knowledge capturing and sharing, professional networks and knowledge retention at water utilities contributed to the understanding of the importance of knowledge management and knowledge retention. A limitation of this research is that it deals thoroughly with one water utility only. Thus, the results of this study are neither universally applicable nor directly applicable to water utilities of the same size. Yet, the gained results were supported by the evidence from multiple water utilities and water sector organisations.

General information
State: Published
Ministry of Education publication type: G4 Doctoral dissertation (monograph)
Organisations: Civil Engineering
Authors: Sandelin, S.
Number of pages: 186
Publication date: 9 Jun 2017

Publication information
Publisher: Tampere University of Technology
Managing intellectual liabilities by service recovery

Purpose – The paper studies intangible liabilities in a practical management setting with an overall aim to develop better managerial practices to avoid depreciation of organizations’ intangible assets.

Design/methodology/approach – Empirical examination of the studied phenomenon was carried out in construction industry. Empirical data was gathered in two phases. First, 16 persons engaged to customer service in four construction companies were interviewed. The purpose was to identify intangible liabilities. After the interviews, two workshops in two companies were organized to reflect findings and to improve and develop organizations’ service recovery practices.

Originality/value – The novelty value of the suggested approach lies in cross-disciplinary consideration of customer experience as an antecedent of various processes that may have negative impact on organizations’ intellectual capital, and further on performance. The paper conceptualizes the hidden renewal capability of contradictory and negative customer experiences by analyzing their potential implications on IC, especially in relational capital.

Practical implications – Contributions of the paper relate to its practical research approach and focus on relational liabilities. The paper provides new understanding about intellectual liabilities within a certain industrial context and discusses more generalizable aspects to be considered in managing intellectual capital.

Keywords – Intellectual liabilities, Intellectual capital, Service recovery, Customer satisfaction

Paper type – Academic Research Paper

General information

State: Published

Ministry of Education publication type: A4 Article in a conference publication

Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center, Research group: Business Data Research Group, University of Tampere

Authors: Laihonen, H., Sillanpää, V., Vuolle, M.

Number of pages: 14

Pages: 1570-1583

Publication date: 9 Jun 2017

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Publisher: IKAM - Institute of Knowledge Asset Management

Editors: Schiuma, G., Spender, J., Garvilova, T.


Publication series

Name: Proceedings IFKAD

ISSN (Print): 2280-787X

ASJC Scopus subject areas: Business, Management and Accounting(all)

Keywords: Intellectual liabilities, Intellectual capital, Service recovery, Customer satisfaction

Links:


Research output: Scientific - peer-review › Conference contribution

Why don’t one maximizes database utilization in product and service development in manufacturing?

General information

State: Published
Advocator, jester, spokesperson, provocateur and boundary spanner? Exploring different communication styles at twitter

Purpose – The recent development of digital communication technologies, and of social media in particular, have enhanced more direct communications between companies and their customers. Among many other things, the use of social media has become considerably popular in customer services. However, communicating with different types of customers is not easy. More profound understanding is needed about how to succeed in communicating with the customers in the increasingly impersonal, yet often emotionally sensitive online environments.

Design/methodology/approach – Based on an extensive empirical data from Twitter discussions on climate change and energy industry, the analysis will follow the ideas and concepts of research on personalities and motivation in the context of social media.

Originality/value – By theorising the impacts of human personality traits to a person’s communication style in social media, in accordance with the person’s own choices of roles and motivations to communicate in social media, this study will provide companies new insight on how to approach their customers in online environments.

Practical implications – This study offers significant information for any company that wants to improve their customer service through social media. That is, by presenting the early phase taxonomy for different social media communication styles used in Twitter, this study will provide companies with both new insight and practical advice on how to better share information and manage discussions on their social media channels, considering the different communications styles of their customers.

Customer Perceived Value - A Key in Marketing of Integrated Solutions
Knowledge Management for Open Innovation: Comparing Research Results Between SMEs and Large Companies

Knowledge co-creation and effective knowledge sharing boost innovativeness in companies. However, rapidly developing technologies and constant changes in the business environment challenge the companies' practices for knowledge management (KM). The purpose of this paper is to compare the key KM practices and their effect on open innovation between the small- and medium-sized companies (SMEs) and the large companies, and as an empirical focus, comparing them through quantitative survey and complementary qualitative interviews. The results indicate that large companies are more externally open to innovate than SMEs and the large companies also value open dialog and knowledge sharing more. Whereas, SMEs seem to rely more on developing their internal practices to support innovativeness. In the both company sizes technology is used rather poorly to support access to open data and networks. The identified factors provide insights for developing KM practices that support open innovation in varying sizes of companies.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Research group: Business Ecosystems, Networks and Innovations
Authors: Väyrynen, H., Helander, N., Vasell, T.
Publication date: 1 Jun 2017
Peer-reviewed: Yes

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Scopus rating (2016): CiteScore 1.25 SJR 0.57 SNIP 0.876
Scopus rating (2015): SJR 0.41 SNIP 0.797 CiteScore 1.17
Scopus rating (2014): SJR 0.536 SNIP 0.629 CiteScore 1.25
Scopus rating (2013): SJR 0.44 SNIP 0.502 CiteScore 1
Scopus rating (2012): SJR 0.439 SNIP 0.63 CiteScore 0.98
Scopus rating (2011): SJR 0.647 SNIP 0.965 CiteScore 1.43
Scopus rating (2010): SJR 0.32 SNIP 0.717
Scopus rating (2009): SJR 0.166 SNIP 1.081
Original language: English
ASJC Scopus subject areas: Business and International Management, Strategy and Management, Management of Technology and Innovation
Keywords: innovation, Knowledge management, large companies, network, openness, small and medium-sized enterprises
DOIs:
10.1142/S1363919617400047
Source: Scopus
Source-ID: 85020720005
Research output: Scientific - peer-review » Article
Affective interactive movements in B2B environments: Using the dynamic customer journey and explorative space to address the B2B interactions in a logistics consultancy project

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Andersson, T., Alexander, G., Helander, N.
Publication date: Jun 2017

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Publisher: EMAC
Links: https://www.rug.nl/emac2017/participate/pdf/emac_booklet_online.pdf
Research output: Professional › Conference contribution

A typology of inter-firm project networks
While existing literature has provided rich insights into the nature and functioning of inter-firm project networks, relatively little is still known about how these temporary organizational networks differ from each other. Drawing from transaction cost economics and social embeddedness literatures, this paper provides an attempt to elaborate how two antecedent factors, namely structural embeddedness and goal ambiguity may relate to the governance structures set up to ensure that projects will be carried out efficiently and effectively by inter-organizational networks of heterogeneous participating firms. A typology of project networks derived from earlier literature is presented and discussed in light of earlier research. This typology provides an initial attempt at highlighting how the mechanisms used to safeguard, coordinate and adapt interdependent economic transactions may differ between inter-firm project networks.

General information
State: Published
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Ahola, T.
Publication date: Jun 2017
Peer-reviewed: Unknown
Research output: Scientific › Paper, poster or abstract

Critical oil & gas markets in Norway

General information
State: Published
Ministry of Education publication type: D2 Article in professional manuals or guides or professional information systems or text book material
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Helander, N.
Publication date: Jun 2017

Host publication information
Title of host publication: REBUS End report publication
Publisher: DIMECC Oy
Research output: Professional › Chapter

Developing the project-based firm's relationship with distributors in the delivery of complex systems
Many project-based firms in industrial markets use distributors to save cost, utilize local expertise, and maximize coverage in their global markets. Distributors in business-to-business market are not only wholesalers but they are representatives of the focal firm’s business in defined regions. The purpose of this paper is to increase understanding on the role of distributors in delivering complex systems and highlight the importance of developing distributors' capabilities in the delivery of complex systems. A qualitative case study was conducted in one project-based firm. The results show that the project-based firm and distributors have close collaboration in the different phases of system delivery. The results contribute by identifying different required distributor capabilities that are grouped into business, relational, marketing, and delivery capabilities. The manufacturer needs to develop the distributors’ capabilities to move them from a standard equipment seller to a partner that can take an active role in delivering complex systems to the customers. The development can be divided into actions independent from projects and those closely related to the different phases of system delivery.
Introducing the project value framework: An integrative view of the multidimensionality of project success measurement

Measuring a project’s success has been extensively discussed by practitioners and researchers alike. However, practice and research tend to provide a large number of different success measures which form a fragmented whole. Some of the used success measures even seem to be in conflict unless contextualized in terms of reference to time, or in terms of taking a perspective of a specific stakeholder. The purpose of our paper is to develop a conceptual framework for measuring project success that integrates those key dimensions necessary for understanding the distinct contribution of individual measures in the overall project assessment. The proposed project value framework relates benefits with sacrifices by considering explicitly time (in the system lifecycle), perspective (of a project stakeholder) and context (of the project itself) to select a set of measures to determine project success. We analyze the extant literature of project success to develop the project value framework. We see that the conceptual understanding of project success and value, and the key dimensions that are necessary for making sense of various success measures, has a potential to contribute significantly to the management of project operations in organizations that use projects as specific forms of organizing their activities.

Managing different types of changes during the lifecycle of a complex delivery project

Delivery projects are a way for a project contractor to solve a customer’s need by delivering a customer-specific tailored solution. The success of these delivery projects is focal for both the project contractor and the customer. One way for the project contractor to promote the success of a delivery project is to plan the project well and to follow a project management methodology. However, despite the planning efforts and project management methodologies, various changes typically take place throughout the project lifecycle. There can be changes both compared to the plans and to the project management methodology and this article focuses on both types of changes and change management in delivery projects. The findings of a case study research reveal, how changes take place throughout the lifecycle of a delivery project, how there are external and internal reasons behind the changes and how both change management activities and improvisational actions are taken by project personnel to manage the changes. The findings also highlight the customer’s role as a source for changes and the different personnel’s role in performing either the change management activities or the improvisational actions. The findings of the study are discussed in relation to the literature on changes and change management in projects and to the literature on improvisation in projects.

Host publication information

Publisher: EURAM
Links:
Practices for program scope definition and goal setting in change programs
Organizations establish change programs to renew their business and implement their strategy. Programs coordinate the activities and projects in the strategic change, to achieve the pursued benefits. As the success of programs is usually assessed in terms of achieving the program benefits, there is a need for better understanding on how the benefit expectations are converted to the program scope and goals. The purpose of this paper is to explore change program scope definition based on company strategies, and the conversion of scopes towards program goals. The aim is to present the practices the organizations use to define the scope in change programs and, thereby, develop new knowledge on the process of program scope definition. A qualitative study was performed in three programs involving change in information systems, processes and organizational structures in two technology companies. The results show that organizations specify program scopes based on assumptions about the status of the organization, and develop use case scenarios of the target state of processes to convert benefit expectations to goals. The findings contribute by specifying actions for scope definition and offering a more formal view to it in information system oriented organizational changes, when compared to behavioral organizational changes.

General information
State: Published
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Guzmán Monet, J., Martinsuo, M.
Number of pages: 19
Publication date: Jun 2017
Peer-reviewed: Unknown
Research output: Scientific › Paper, poster or abstract

Safety considerations in industrial service development: triumphs and pitfalls
Safety issues are typically afforded less attention when developing industrial services as compared to goods. At worst, this may result in accidents during service delivery. The interviews with four industrial service providers indicated that companies more advanced in service provision have established more systematic development practices. However, safety does not play a significant role in service development, both because of the nature of services developed and because of project teams' lack of safety knowledge. In a novel merging of these domains, the paper makes a number of important observations about safety considerations during service development.

General information
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Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services, Research group: Centre for Safety Management and Engineering
Authors: Nenonen, S., Kivistö-Rahnasto, J., Anttila, S., Hyytinen, T.
Number of pages: 10
Pages: 624-633
Publication date: Jun 2017

Host publication information
Research output: Professional › Conference contribution

Surviving project discontinuities: Relationship quality and extrabusiness relationship maintenance practices in project relationships
Project-based firms repeat projects in similar kinds of project networks and may often benefit from maintaining long-term relationships with their suppliers. Maintenance of extrabusiness relationships is needed during project discontinuity in order to ensure that relationships do not decay or dissolve. This paper explores relationship quality between a project-based firm and its suppliers, and mechanisms to maintain extrabusiness relationships during project discontinuity. We collected interview data in one business network with long-term and recurrent project collaboration in a situation in which the actors were not engaged in a joint project together. We explored the experienced relationship quality at the early phase of discontinuity and identified extrabusiness relationship maintenance mechanisms used during project implementation. Specific extrabusiness maintenance activities were not found during the discontinuity but, instead, certain relational and business-related activities during project implementation seem to carry over the project discontinuity as well.
The results show evidence that strong relationships characterized by technical congruence, reciprocal dependence, complementing technological commitment and developed during a long-term, recurrent and demanding project execution, do not require active maintenance during periods of project discontinuity.

General information
State: Published
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services, Research group: Business Ecosystems, Networks and Innovations
Authors: Mäenpää, S., Martinsuo, M., Ahola, T., Breite, R.
Number of pages: 18
Publication date: Jun 2017
Peer-reviewed: Unknown
Research output: Scientific › Paper, poster or abstract

The business of projects in and across organizations
An organizational perspective of project management emphasizes the use of projects as means for profitable, sustainable business. To maintain a successful project business, it is not sufficient for project execution to be managed efficiently. Instead, the lifecycles of projects must be managed strategically. Significant business choices concerning project scope, partner relationships, and financial commitments are made before a project is planned or implemented. Similarly, significant business implications occur after a project has been completed, when the project’s results are in the customer’s use and may require repetitive or continuous services. This chapter outlines the business of projects through the decisions that occur at the front end of projects, the management control of projects during project execution, and the services offered to build continuous customer interaction over the lifecycle of product use. We will illustrate the business aspects of projects through examples of three empirical studies. The chapter will contribute to the extant literature by revealing the business lifecycles of projects in their contexts, mapping the business-inducing events of projects in and across organizations, and highlighting new avenues for research, particularly at the boundaries of projects and their broader business contexts.

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Martinsuo, M., Sariola, R., Vuorinen, L.
Pages: 9-18
Publication date: Jun 2017

Host publication information
Title of host publication: Cambridge handbook of organizational project management
Place of publication: United Kingdom
Publisher: Cambridge University Press
Editors: Sankaran, S., Müller, R., Drouin, N.
ISBN (Print): 978-1-107-15772-9
DOI:
10.1017/9781316662243.005
Research output: Scientific - peer-review › Chapter

Top Ten Futures XI: teesit. Ihmistöön tulevaisuus älykkäiden koneiden maailmassa (mainly in Finnish)

General information
State: Published
Ministry of Education publication type: C2 Edited books
Organisations: Civil Engineering, University of Turku
Authors: Holopainen, S., Kuusi, O. (ed.)
Publication date: Jun 2017
Peer-reviewed: Yes

Publication information
Journal: Futura
Volume: 2
ISSN (Print): 0785-5494
Original language: Finnish
**Using sales agents in project marketing**

Many project-based firms (PBF) provide tailored solutions to a global marketplace. Success in project marketing calls for both a systematic collection and processing of customer information and active development of customer relationships on potential markets. When the base of PBF’s potential customers is not necessarily concentrated on specific market areas, project marketing activities may be prohibitively expensive to be fully carried out in-house. To combine the ability to serve global markets with an acceptable cost level, the PBF may outsource a part of its project marketing activities to external sales agents. As the use of sales agents is insufficiently covered in previous project research, we explore how Energy Solutions, a PBF delivering solutions to the process industry, routinely utilizes sales agents in its project marketing process. Drawing on interviews carried out with 14 individuals, our analysis resulted in a categorization of sales agents based on the breadth of their involvement in the project marketing process: no agent involvement, agent as lead seeker, agent as consultant, and agent as value-adding partner. The findings highlight the different ways to involve sales agents in project marketing and complement earlier research discussing the roles of external actors in the marketing of complex systems in the global marketplace.

**Survey of health informatics education in Finland in 2017**

The European Union and the USA collaborate in developing the skills of the application of information technology in the health care workforce. A part of this activity is a project which studies the gaps in the present education and proposes methods of filling these gaps. The objective of this paper is to identify the existing IT related education to the health care workforce in Finland. A secondary objective was to get an impression of the experience and attitudes of the members of this workforce about health IT education.

This paper presents the results of the survey of how information technology is educated to the students of the health care professions in Finland in the year 2017. In addition to literature search including also the study guides of many major health care professional education organizations, 24 telephone interviews of health care professionals in different fields in Finland were made.

The results show that although basic information technology education is often available at every level of education, it is expected that the health care professionals learn to use the health information systems during their training periods or later in working life. The interviews showed that the given education varied considerably and some of the personnel had received no or only a little education on IT during studies. As the amount and quality of on-the-job information technology education varies, many health care professionals are not able to fully benefit from the information systems if their general feeling is that they just "survive" from daily activities with them.
Relocation of Nordic Manufacturing

Manufacturing industries have had an important role in the export-driven economies of the Nordic countries. Manufacturing companies from these countries have increasingly been moving production abroad in recent years. However, backshoring of previously offshored manufacturing is attracting growing attention among researchers and policymakers. This phenomenon, and its consequences for the renewal of manufacturing, are yet little understood.

The research project “Reshoring of manufacturing (ROaMING): Disruptive Technologies, Business Ecosystems and Performance Information as Key Enablers” focused on increased understanding of production relocation trends in the Nordic countries, Denmark, Finland, and Sweden. The aim was to create in-depth knowledge on the status of and potential for relocating manufacturing as a source of renewal of the manufacturing sector. The research approach consisted of quantitative and qualitative parts utilizing both available databases and new data collected through a large-scale survey and case research.

The report consists of five main content chapters. First, the survey results of offshoring and backshoring trends in the Nordic countries Denmark, Finland, and Sweden are presented. Then we discuss the use of financial information in decision-making regarding manufacturing offshoring and backshoring. Thereafter the results of a study on manufacturing innovations and the adoption and implementation of new manufacturing technologies are reported. The fourth chapter presents the results of a study involving two manufacturing companies on the role of business ecosystems in manufacturing relocation decisions. Finally, the fifth chapter explores the global production investments made during the period 2005-2015 by large manufacturing firms with headquarters in Denmark, Finland, and Sweden.

The results among the Nordic manufacturing firms indicate that offshoring is clearly more common than backshoring. The manufacturing relocations by Nordic firms are geographically wide-ranging. The most important regions for offshoring and of backshoring are Eastern and Western Europe, the Nordic countries, and China. Offshored production is typically cost focused, whereas production relocated to the Nordic countries is relatively complex and technology-intensive, seeking access to technology, skills and knowledge, and proximity to R&D and product development. Movement of production is expected to continue both offshore and back. The reinforcement of the Nordic countries as a strong base for high value-adding manufacturing firms can be influenced by policy measures and future research.

Policy implications, as well as future research proposals are noted as the result of this study. Cost competitiveness in the Nordic countries needs to be ensured in relation to their reference group in the competition. This also exerts pressure for continuous productivity improvements through technological advances and process improvements. Access to skills, knowledge and technology are important factors for Nordic manufacturers to relocate production. Therefore product, process and supply chain innovation, as well as colocation of R&D and production, need to be promoted. Policy-makers need to pay attention to maintaining the Nordic innovation systems. Many firms seem to lack a clear strategy or analytical capabilities for manufacturing location decisions. Expertise on managing global manufacturing networks should be.
enhanced. Follow-up on the extent, drivers and benefits of production relocations of the Nordic manufacturing firms is needed to enhance the fact-based understanding of the longer-term trend of manufacturing relocations.

**General information**

State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Number of pages: 103
Publication date: 15 May 2017

**Publication information**

Publisher: Tampere University of Technology. Industrial and Information Management
Original language: English
Electronic versions:
Relocation of Nordic Manufacturing
Links:
Research output: Professional › Commissioned report

**Global challenges and role of institutions in water services**

**General information**

State: Published
Ministry of Education publication type: D1 Article in a trade journal
Organisations: Civil Engineering
Authors: Katko, T. S.
Number of pages: 1
Pages: 15
Publication date: 9 May 2017
Peer-reviewed: Unknown

**Publication information**

Journal: Econetin asakaslehti AQ
Issue number: 1
ISSN (Print): 1799-7763
Original language: English
Links:
http://digimag.econetgroup.fi/digimag/117-english/aqen0117_01-xml
Research output: Professional › Article

**Tuunaa & viilaa: Yritysyhteistyön työkirja korkeakouluille**

**General information**

State: Published
Ministry of Education publication type: D5 Text book, professional manual or guide or a dictionary
Organisations: Industrial and Information Management, Research group: Novi, Tampere University of Applied Sciences TAMK
Authors: Hyypia, M., Hämäläinen, A., Hämäläinen, P., Olkarainen, M., Salo, H., Tuhkunen, A.
Number of pages: 39
Publication date: 3 May 2017

**Publication information**

Publisher: Tampereen teknillinen yliopisto
Original language: English
Electronic versions:
Ways to measure user experience in co-working places

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Civil Engineering, Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Horstia, J., Vasell, T., Nenonen, S., Helander, N.
Number of pages: 12
Pages: 158-169
Publication date: May 2017

Host publication information
Title of host publication: European facility management network EFMC2017: 25-28 April 2017, Madrid, Spain
Place of publication: Denmark
Publisher: European Facilities Management Network
Editors: Balslev Nielsen, S., Anker Jensen, P., Brinke, R.
ISBN (Electronic): 9788750211129
Links:
Research output: Scientific - peer-review › Conference contribution

How to measure impacts of work environment changes on knowledge work productivity – validation and improvement of the SmartWoW tool

Purpose – Measuring productivity in changing environment is a challenging task for most of the organizations. However, it is very important for managers to measure how the changes in work environment impact on knowledge work productivity. SmartWoW is proving to be a useful tool for this type of productivity measurement, and organizations are using it to make changes in the work environment. As organisations become more interested in its uses, studies with more accurate results are needed. The purpose of this paper is to validate and improve the use of the SmartWoW tool.

Method – The SmartWoW tool was used in nine organizations, which formulate the research data. Convergent validity, divergent validity and reliability are tested with SPSS and AMOS. Both exploratory and confirmatory factor analyses are applied.
Findings – The SmartWoW tool structure was found to be valid. It follows the structure described in previous literature, with slight changes in two dimensions. Four variables were added to increase tool consistency, and their wording was harmonized.

Practical implications – SmartWoW is useful for evaluating an organization’s current work environment and practices, as well as for measuring the effects of work environment changes. This study’s results also suggest SmartWoW would be useful for research by, for example, evaluating how dimensions affect each other.

Originality – This study provides a better understanding of the unique features and uses of SmartWoW. The findings not only validate through statistical analysis the tool’s structure, but also improve it and offer a broader scope of its uses.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organizations: Industrial and Information Management
Authors: Palvalin, M.
Publication date: 21 Apr 2017
Peer-reviewed: Yes

Publication information
Journal: Measuring Business Excellence
Volume: 21
Issue number: 2
ISSN (Print): 1368-3047
Ratings:
Scopus rating (2016): SJR 0.479 SNIP 0.806 CiteScore 1.38
Scopus rating (2015): SJR 0.329 SNIP 1.22 CiteScore 1.32
Scopus rating (2014): SJR 0.42 SNIP 0.896 CiteScore 1.1
Scopus rating (2013): SJR 0.423 SNIP 0.953 CiteScore 1.36
Scopus rating (2012): SJR 0.269 SNIP 1.126 CiteScore 0.99
Scopus rating (2011): SJR 0.417 SNIP 1.041 CiteScore 1.04
Scopus rating (2010): SJR 0.233 SNIP 0.41
Scopus rating (2009): SJR 0.325 SNIP 0.717
Scopus rating (2008): SJR 0.246 SNIP 0.659
Scopus rating (2007): SJR 0.196 SNIP 0.224
Scopus rating (2006): SJR 0.233 SNIP 0.408
Scopus rating (2005): SJR 0.173 SNIP 0.292
Scopus rating (2004): SJR 0.259 SNIP 0.26
Scopus rating (2003): SJR 0.173 SNIP 0.27
Scopus rating (2002): SJR 0.122 SNIP 0.138
Scopus rating (2001): SJR 0.112 SNIP 0.026
Scopus rating (2000): SJR 0.1 SNIP 0
Scopus rating (1999): SJR 0.1 SNIP 0
Original language: English
Electronic versions:
Improvement of SmartWoW tool
DOIs: 10.1108/MBE-05-2016-0025
Research output: Scientific - peer-review > Article

Suurhankkeiden virheistä on otettava opiksi

General information
State: Published
Ministry of Education publication type: E1 Popularised article, newspaper article
Organizations: Industrial and Information Management, University of Oulu
Authors: Aaltonen, K., Ahola, T.
Publication date: 21 Apr 2017
Towards evidence-based management of external resources: Developing design propositions and future research avenues through research synthesis

The general question of how best to access and leverage resources that reside outside the boundaries of the focal firm has become increasingly important for companies during the last decennia, and scholars across management disciplines have responded with increasing research efforts. However, managers still seldom base their decisions on scientific evidence. Research on managing external resources is carried out in disciplinary silos and it is extremely difficult for managers to make sense of the vast amount of scientific studies. The success story of medicine as the first domain to widely adopt evidence-based practices has been an exemplar for other disciplines such as management to address the prevailing research-practice gap. Through a systematic review and synthesis of 601 articles in six academic journals representing three management disciplines we develop design propositions for supporting evidence-based management of external resources in firms. Our analysis reveals external resource management (ERM) research to be concentrated on six distinct, yet interrelated, themes. We adopt the CIMO-logic (Context, Intervention, Mechanism, Outcomes) for developing the set of design propositions within each of the research themes. A key scientific contribution is our identification of future research opportunities and directions to advance science in the field of ERM.

General information
State: E-pub ahead of print
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Aalto University, Chalmers University of Technology, VTT Technical Research Center Finland
Authors: Tanskanen, K., Ahola, T., Aminoff, A., Bragge, J., Kaipia, R., Kauppi, K.
Number of pages: 19
Publication date: 16 Apr 2017
Peer-reviewed: Yes
Global Information Systems Management deals with multitude of topics that relate to developing, applying and managing information systems in distributed settings for the good of organizations, communities and individuals. The Global Information Systems Management-course (TLO-35306) was arranged for the first time in Tampere University of Technology in Spring 2017. The exercise consisted of specific Global Information Systems Management-related phenomenon in a problem-based approach. Each group collaborated on finding a common topic of interest and problem to be solved from research or practice. Each group pursued the solutions to these open-ended problems (solution not defined) and reported their findings in the reports that are attached in this consolidated document. Thus, groups focused on organizational, individual or societal issues of their own choosing.

The exercise consisted iterative group working done in two parts:

1) Looking into a phenomenon

In the first part (after groups were built), each group found out about a phenomenon and presented initial findings to the class. At this point, the open-ended problem was set. The course personnel and other groups helped in refining the focus of the group.

2) Addressing an open-ended problem

In the second part, groups addressed the emerging problems that organizations, individuals or societies faces. After this, the first version of the assignment was written. One round of feedback was conducted to harmonize the report before submitting the final version.

**General information**

State: Published
Organisations: Industrial and Information Management, Research group: Novi
Authors: Pirkkalainen, H. (ed.), Torro, O. (ed.)
Number of pages: 175
Publication date: 11 Apr 2017

**Publication information**

Publisher: Tampere University of Technology
Year: 2017
Original language: English
Electronic versions:
Consolidated group assignments GISM_final
Links:
Research output: Scientific › Other contribution

**Something old, something new: Path dependence and path creation during the early stage of a project**

Urban renewal projects involve several public and private stakeholders whose interaction during the project’s early stage determines the scope of the project. Prior research has conveyed a somewhat ahistorical view of this early stage, based on the assumption that abundant design options are available to stakeholders. This study of a multi-stakeholder project, focused on the renewal of the commercial center of the historic garden city of Tapiola, seeks to increase understanding of processes of path dependence and path creation during the project’s early stage. The findings show how a project and its stakeholders can be locked into a path that is affected by the stakeholders’ shared history. The findings further reveal how external triggering events, emergent stakeholder dynamics, and active individual agency contribute to change in the project’s goals, enabling breaking of the shared path and the gradual
Explaining the challenges in ERP development networks with triggers, root causes, and consequences

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management
Authors: Kähkönen, T., Alanne, A., Pekkola, S., Smolander, K.
Publication date: Apr 2017
Peer-reviewed: Yes

Publication information
Journal: Communications of the Association for Information Systems
Volume: 40
Issue number: 1
Article number: 11
ISSN (Print): 1529-3181
Ratings:
Scopus rating (2016): CiteScore 1.67 SJR 0.534 SNIP 1.031
Scopus rating (2015): SJR 0.474 SNIP 1.011 CiteScore 1.76
Scopus rating (2014): SJR 0.537 SNIP 0.895 CiteScore 1.76
Scopus rating (2013): SJR 0.511 SNIP 1.041 CiteScore 1.74
Scopus rating (2012): SJR 0.442 SNIP 0.712 CiteScore 1.2
Scopus rating (2011): SJR 0.486 SNIP 1.028 CiteScore 1.13
Scopus rating (2010): SJR 0.239 SNIP 0.401
Scopus rating (2009): SJR 0.122 SNIP 0
Scopus rating (2008): SJR 0.122 SNIP 0
Scopus rating (2007): SJR 0.122 SNIP 0
Original language: English
Links:
http://aisel.aisnet.org/cais/vol40/iss1/11/

Research output: Scientific - peer-review › Article

Toimiva vesihuolto ei ole itsestäänselvyys.

General information
State: Published
Ministry of Education publication type: D1 Article in a trade journal
Organisations: Civil Engineering
Authors: Katko, T. S.
Number of pages: 1
Pages: 17
Publication date: Apr 2017
Peer-reviewed: Unknown

Publication information
Journal: Promaint
Volume: 29
Issue number: 2
ISSN (Print): 1797-2000
Original language: Finnish
Keywords: good governance , aging infrastructure
Links:
https://issuu.com/promaintlehti/docs/promaint_2_2017
Research output: Professional › Article

Vesihuolton koulutus on erinomaista kehitysyhteistyötä: Keskustelua.

General information
State: Published
Challenges of collecting B2B customer insight from multiple channels

The purpose of the paper is to study the challenges that B2B companies are confronting when trying to understand their current and potential customers through digital channels and utilizing these viewpoints in innovation development. The paper combines literature on innovation, B2B customer experience and challenges related to digital channel usage. The study comprises 17 qualitative customer interviews and a web survey for 167 customers. The paper discusses why the customers want or do not want to express their needs in digital channels and if some of those reasons are dependent on sellers' or customers' actions. As a result, a categorisation of buyers according to their role in buying and social media usage at work is presented. Identified challenges are grouped into data, process or management challenges.

Managers’ viewpoint on factors influencing their commitment to safety: An empirical investigation in five Finnish industrial organisations

Managers’ strong commitment to safety is a key element of a successful safety management, culture and climate. Several studies have approached managers’ commitment from the employees’ point of view, but research approaching commitment from the managers’ viewpoint is scarce. This qualitative study aims to identify the organisational factors that hinder or promote managers’ commitment to safety and to suggest organisational measures that can be applied to support managers’ commitment to safety. A total of 49 managers in five industrial organisations were interviewed. In addition, a workshop for the safety professionals of the participating companies was organised to review the interview results and to suggest organisational measures to support managers’ commitment to safety.

The managers identified role overload, production demands, overly formal safety procedures, external safety goals, workforce attitudes and managers’ attitudes as the most common factors hindering their commitment to safety. On the other hand, the factors that promote managers’ commitment to safety are increasing managers’ safety awareness, influencing managers’ safety attitudes, recognising managers’ safety commitment, emphasising managers’ safety responsibilities, developing adequate organisational safety procedures, superiors’ encouragement and support, benchmarking others’ safety activities, understanding the economic effects of safety, and safety improvement. The suggested organisational measures to support managers’ commitment to safety include inspirational and participative management training; appropriate safety objectives; peer, superior and top management support; campaigns and competitions; employee safety training; and simplified safety procedures and reporting. The study expands on previous studies on supervisors’ safety engagement and suggests practical organisational measures to promote managers’
commitment to safety.

**General information**

State: Published

Ministry of Education publication type: A1 Journal article-refereed

Organisations: Industrial and Information Management, Research group: Safety Management and Engineering

Authors: Tappura, S., Nenonen, N., Kivistö-Rahnasto, J.

Number of pages: 10

Pages: 52-61

Publication date: 18 Mar 2017

Peer-reviewed: Yes

**Publication information**

Journal: Safety Science

Volume: 96

ISSN (Print): 0925-7535

Ratings:

Scopus rating (2016): CiteScore 2.81 SJR 1.054 SNIP 1.952

Scopus rating (2015): SJR 0.977 SNIP 1.933 CiteScore 2.73

Scopus rating (2014): SJR 0.979 SNIP 2.314 CiteScore 2.69

Scopus rating (2013): SJR 0.86 SNIP 2.202 CiteScore 2.25

Scopus rating (2012): SJR 0.87 SNIP 1.895 CiteScore 2.04

Scopus rating (2011): SJR 0.817 SNIP 1.732 CiteScore 2

Scopus rating (2010): SJR 0.767 SNIP 1.809

Scopus rating (2009): SJR 0.664 SNIP 1.555

Scopus rating (2008): SJR 0.704 SNIP 1.403

Scopus rating (2007): SJR 0.451 SNIP 1.567

Scopus rating (2006): SJR 0.596 SNIP 1.295

Scopus rating (2005): SJR 0.365 SNIP 1.201

Scopus rating (2004): SJR 0.424 SNIP 0.89

Scopus rating (2003): SJR 0.405 SNIP 1.153

Scopus rating (2002): SJR 0.289 SNIP 0.879

Scopus rating (2001): SJR 0.422 SNIP 0.731

Scopus rating (2000): SJR 0.302 SNIP 0.582

Scopus rating (1999): SJR 0.344 SNIP 0.616

Original language: English

ASJC Scopus subject areas: Business, Management and Accounting(all)

Keywords: Safety, safety management

DOI:

10.1016/j.ssci.2017.03.007

Links:


Research output: Scientific - peer-review > Article

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**Role of industrial internet platforms in the management of product lifecycle related information and knowledge**

This paper addresses the data, information and knowledge management challenges in product lifecycle management (PLM) using novel industrial internet/industry 4.0/cyber-physical system platforms. PLM is quite seminally related to data, information and knowledge, and about getting these properly to serve a company’s business and product development as well as to create value for the customer. We analyze Industry platforms, that are enabled by industrial internet based technologies as well as certain collaboration and social media platforms that help solving certain PLM challenges. This analysis will allow companies to make informed decisions while selecting platforms to solve their PLM challenges.

**General information**

State: Published

Ministry of Education publication type: A4 Article in a conference publication

Organisations: Industrial and Information Management, Research group: Novi

Authors: Menon, K., Kärkkäinen, H., Gupta, J. P.

Pages: 549-558

Publication date: 12 Mar 2017
Expert knowledge integration: A systematic approach for multi-stakeholder innovation

Companies developing their products or production often face complex, innovation-demanding problems. These innovations call for diverse expertise that does not exist within one company or even in its immediate network. The purpose of the knowledge integration system (KIS) tool is to transform expert knowledge into action systematically. By applying the cross-learning type of knowledge integration, the tool combines workshops and boundary objects that overcome knowledge boundaries between functions and organizations. The tool has been tested in a manufacturing investment project, where a new technology was brought into the production of a networked company. Based on this case, KIS was found to be a useful tool for supporting expert knowledge integration by collaboratively communicating and sharing knowledge in a multi-stakeholder environment to create solutions.

Relational factors as part of network relationship evaluation

The purpose of the tool is to provide the guidelines for evaluation of network relationships. It helps networked parties to focus on the essential relationship factors when the aim of the focal company is to reduce the need for control. The tool maps the level of relational factors in order to evaluate the potentiality for increasing self-direction between network parties and decrease the need for the focal company’s control. Together, the relational factors including both relational properties and relational behavior aspects form a platform that enables or restricts self-direction. The tool has been developed and tested in a case where the focal company was in need to decrease the control of its supply network and to secure its suppliers’ common cooperation capability.
The tool has been developed for situations when a focal company encounters a practical problem in network management but does not have resources to match the problem into the right theoretical context and divide the problem into manageable entities. Here, benchmarking is viewed through a practice lens. Practice lens leads to focusing on the use of tool for creating common language and offering space for interaction. The tool has been developed and tested in a case where the focal company wanted to improve its R&D processes and better manage its innovation network. The purpose is to show how third-party-supported benchmarking is mobilized, that is, to provide the guidelines for successful benchmarking facilitating discussions and reciprocal learning in a network as well as to present the outcomes the process generated.

**General information**

**State:** Published

**Organizations:** Research group: Business Ecosystems, Networks and Innovations, Industrial and Information Management

**Authors:** Breite, R., Mäenpää, S., Suominen, A., Perho, M.

**Number of pages:** 14

**Pages:** 131-145

**Publication date:** 10 Mar 2017

**Host publication information**

**Title of host publication:** Practices for network management : In search of collaborative advantage

**Publisher:** Palgrave Macmillan

**Editors:** Vesalainen, J., Valkokari, K., Hellström, M.

**ISBN (Print):** 978-3-319-49649-1

**ISBN (Electronic):** 978-3-319-49649-8

**DOIs:**

10.1007/978-3-319-49649-8_10

**Research output:** Scientific - peer-review → Chapter
eri palveluihin, sekä palveluiden ketterässä rakentamisessa uusien avaintechnologioiden päälle. Turvateknologia, kuten
kaatumisen automaattinen tunnistus ja henkilön paikannusteknologiat, ovat kehittyneet nykymuotoisena jo melko pikälle.
Keskeinen tässä selvityksessä tehty havainto liittyy tietoturvan puutteeseen. Älyteknologian osalta ongelmaa pahentaa se,
etta standardit tietoturvallisuudestun paattuvat kodin automaation osalta.

General information
State: Published
Ministry of Education publication type: D2 Article in professional manuals or guides or professional information systems or
or textbooks
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center,
Faculty of Biomedical Sciences and Engineering, Research group: Sleep and Sensory Signal Analysis Group-SSSAG,
Research group: Personal Health Informatics-PHI
Authors: Helander, N., Piikkilä, V., Vasell, T., Vehviläinen, P., Vänni, K., Värri, A.
Number of pages: 32
Pages: 115-146
Publication date: 9 Mar 2017

Host publication information
Title of host publication: Älyteknologiaratkaisut ikääntyneiden kotona asumisen tukena : Ympäristöministeriön raportteja
7/2017
Volume: 2017
Place of publication: Helsinki, Finland
Publisher: Ministry of the Environment
Edition: 7

Publication series
Name: Ympäristöministeriön raportteja
Publisher: Ympäristöministeriö
ISSN (Print): 1796-170X
Keywords: elderly, intelligent electronic device, Business, communality
Links:
Research output: Professional › Chapter

Knowledge management for open innovation: comparing research results between SMEs and large companies
General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Novi, Research group: Business Ecosystems,
Networks and Innovations, Research group: Knowledge and Learning Research Center
Authors: Väyrynen, H., Helander, N., Vasell, T.
Number of pages: 18
Publication date: Mar 2017

Host publication information
Title of host publication: Proceedings of ISPIM Innovation Forum 2017 : 19-22 March 2017, Toronto, Canada
Publisher: International Society for Professional Innovation Management ISPIM
ISBN (Print): 978-952-335-019-9
Research output: Scientific - peer-review › Conference contribution

Orchestrating Innovation Ecosystems: A Qualitative Analysis of Ecosystem Positioning Strategies
This article explores how firms can orchestrate innovation ecosystems to enhance collaboration for innovation among
different actors. Most previous research on ecosystems has focused on firm-level strategies to operate in an ecosystem
rather than the composition or orchestration of an ecosystem as a whole. However, finding the balance between the self-
interests of involved actors is critical in order to create collaborative settings that induce different parties to jointly develop
and put their best efforts into a joint endeavour. Thus, we undertook a qualitative study with 35 case companies from the
metal and engineering industries, each of whom was interested in developing their position in ecosystems and improving
their relational business practices. The findings suggest that there is an essential ecosystem competence that is needed
by all actors in an ecosystem, regardless of their position, and that is the ability to manage dynamic strategic interactions
related to innovation. This competence enables them to ensure the future vitality of the ecosystem and their own business.
These results highlight the need for managers to profile their own company’s role in an ecosystem in relation to the type of
ecosystems, while simultaneously evaluating the ecosystem’s ability and potential to survive.
Governmental Governance of Megaprojects: The Case of EXPO 2010 Shanghai

Etenemisen seurannasta elinkaariohjaukseen ratkaisutoimituksissa

mahdollisuuksia erityisesti elinkaariarvon ohjauskäytäntöjen tarkasteluun erilaisissa toimintaympäristöissä.

**General information**
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Martinsuo, M., Vuorinen, L.
Pages: 184-193
Publication date: Feb 2017

**Host publication information**
Title of host publication: Teollinen internet uudistaa palvelulikiintoimintaa ja kunnossapitoa
Publisher: Kunnossapitoyhdistys ProMaint
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**Johdanto**

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Research output: Scientific - peer-review › Chapter

**Ratkaisua täydentävän palvelun omaksuminen ja käytön edistäminen**
Laitteita, järjestelmiä ja prosesseja valmistavat ratkaisutoimittajat etsivät uutta liiketoimintaa lisäämällä palveluja tarjoamaansa. Teollisen internetin sovellukset tuottavat lisämahdollisuuksia palvelujen tehokkaaseen toteuttamiseen laitekannasta saatavan tiedon aktiivisen käytön kautta. Menestyminen palvelutoiminnassa edellyttää uusia taitoja ja resursseja, etenkin suhteessa asiakkaisiin. Myös asiakkaita edellytetään uusia valmiuksia sekä palvelujen omaksumisessa että niiden hankinnassa ja jatkuvassa käytössä. Tässä luvussa tarkastelemme ratkaisutoimittajan asiakkaiden kokemuksia edistyessä palvelujen käyttöä ja omaksumisesta sekä pohdimme keinoja, joilla ratkaisutoimittajat voivat edistää asiakkaiden valmiutta edistyneisiä palvelujen, havainnollistamme erään ratkaisutoimittajayrityksen asiakkaiden haastattelujen pohjalta, kuinka palvelujen käyttöönottoa hidasvalat ja edistävät sekä yksilöihin liittyvät tekijät. Esittelemme myös eräitä tiedottamisen, yhteistoiminnan ja koulutuksen keinoja, joilla ratkaisutoimittajat voivat aktivoi asiakkaidensa valmiutta palvelujen kokelemiseen ja käyttöön. Aiemmin tutkimus on paljolti rajautunut uusien teknologioiden omaksumiseen ja kuluttajaliiketoimintaan, ja tämä tutkimus luo uutta tietoa etenkin teknologiopohjaisia tuotteita täydentävien palvelujen omaksumisesta yritysten välisessä,
General information
State: Published
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Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Vaittinen, E., Martinsuo, M., Nenonen, S.
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Sosiaalisen median hyödyntäminen konepajateollisuusyritysten viestinnässä ja erityisesti asiakasarvon viestimissä

General information
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Organisations: Industrial and Information Management, Research group: Center for Innovation and Technology Research, Research group: Center for Research on Operations Projects and Services
Authors: Aarikka-Stenroos, L., Pirhonen, V., Martinsuo, M.
Pages: 64-84
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Research output: Scientific - peer-review › Chapter

Teollinen internet uudistaa palveluliketoimintaa ja kunnossapitoa
Visualizing the Geography of Platform Boundary Resources: The Case of the Global API Ecosystem

Platform boundary resources play an increasingly transformative role in the global digital ecosystem. In this study, we focus on one type of platform boundary resource, namely application programming interfaces (APIs). Guided by two competing assumptions—1) that geographic boundaries are blurred and potentially less important in a digitally connected world, and 2) that geographic proximity matters for co-innovation—we investigate the global footprint of APIs. Using a data-driven visual network analysis approach to examine more than 15,000 APIs and mashups, we first map the global locations of where APIs are being created. We then examine how API mashups connect these locations globally and regionally. Our results show that while APIs are globally distributed, they are mainly concentrated in major entrepreneurial regions. We also find that there is a skewed distribution, with the U.S. and Silicon Valley in particular leading the way. We conclude with both theoretical and managerial implications.
Winner does not take all: Selective attention and local bias in platform-based markets

We model how macro-level dynamics of platform competition emerge from micro-level interactions among consumers. We problematize the prevailing winner-take-all hypothesis and argue that instead of assuming that consumers value the general connectivity of an entire network, they are selectively attentive and locally biased. We contrast several alternative agent-based models with differing sets of assumptions regarding consumer agents' behavior and compare their predictions with empirical data from the competition between Sony's PlayStation 3 and Microsoft's Xbox 360. The results show that only when consumers are assumed to be selectively attentive and locally biased is it possible to explain real-life market sharing between the given platforms. In effect, it is shown how a late-entrant platform can get adopted by most consumers in the market, despite the fact that an early entrant has greater initial installed base, greater pool of complementary products, and lower initial price.
Analysing the role of crowdfunding in entrepreneurial ecosystems: A social media event study of two competing product launches

The aim of the explorative study is to understand the role of crowdfunding in the facilitation of customer engagement for entrepreneurial ecosystems, using data from two recent events of competing product launches. We conducted an event study that employed content analysis and emotion analysis, as well as social set analysis (SSA) of Facebook data to uncover and better understand crowdfunding (investor and customer) engagement and interactions before, during and after a crowdfunding campaign event. Our paper focuses especially on the role of Jollas tablet crowdfunding campaign in the development of its fanbase in relation with Nokias tablet launch during Slush 2014 event. On the basis of the above analyses and related literature, we present propositions about various types of engagement with the potential to facilitate the evolution of entrepreneurial ecosystems. We discuss the results, and evaluate the implications of crowdfunding on customer engagement for entrepreneurial ecosystems, and conclude with directions for future work. One of the key contributions of the study is the introduction of a new data source and approach for co-creative interaction between companies and their customers, as well as an approach to support the study of ecosystems from a customer perspective.

Karan Menon, Hannu Kärkkäinen, Jari Jussila, Jukka Huhtamäki, Raghava Rao Mukkamala, Lester Allan Lasrado, Ravi Vatrapu, Abid Hussain
A teacher? A mentor? A friend? - Teacher mentoring experience at Tampere University of Technology

In this paper, we research a recently set up engineering students' teacher mentoring programme with special interest on teacher mentors' expectations and experiences from the point of view of self-efficacy and motivation. We aim to have an insight in the teacher mentors' met and non-met expectations and see if this has effect on the teacher mentors' motivation and expectations of the outcomes of the mentoring programme. We also examine how beneficial the teacher mentors consider the programme to be to the students and how this is linked to their motivation.

General information
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Ministry of Education publication type: A4 Article in a conference publication
Organisations: Teaching and Learning Services, Industrial and Information Management
Authors: Niemi, T., Kalliomäki, H., Pajarre, E.
Number of pages: 10
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Publication date: 2017

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ASJC Scopus subject areas: Engineering(all), Education
Keywords: Student Teacher relationship, Teacher mentoring, Teacher role, Transition to University
Links:

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INT=otu,"Kalliomäki, H."
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Research output: Scientific - peer-review » Conference contribution

Avoiding wow-gaps through wow-canvas in business development

When talking about business development, it is important to keep in mind that the purpose of developing should drive towards differentiation of the company superiorly from rivals. The Wow-factor affects to all stakeholders of the company. Therefore, Wow-factor should be defined clearly and utilized better in all company processes. Wow approach is the approach through distinctive linkages between human, business and management aspects. Approach may emerge new, unique and motivating power to business development. This article introduces the model how to find the building blocks of Wow and how to track Wow through the company processes. The model is developed by combining the business model canvas, Wow-gap model and the theory of the Wow to a distinctive Wow-canvas. This article also deepens the knowledge of the use of the Wow-factor and the Wow-gap model in business development. Future research needs and actions are addressed in the end of the article.

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Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Turku University of Applied Sciences, Aalen University of Applied Sciences
Authors: Penttinen, M., Reunanen, T., Borgmeier, A.
Challenges in the paradigm change from mobility as a self-service to mobility as a service

The predominant paradigm of everyday mobility in Finland is mobility as a self-service where most of the mobility needs are taken care with passenger cars. The ‘Mobility as a Service’ (MaaS) model is a new paradigm that challenges the...
current mobility practises. The purpose of this paper is to describe the current state of mobility and analyse the potential and challenges of MaaS against current situation in demographics, mobility and mobility related consumption in Finland. It would require a big shift in the current mobility practises for MaaS to become mainstream. In this paper, on one hand potential and one the other more challenging customer segments are recognised and the possibilities of MaaS to address these are discussed.

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State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Research group: Transport Research Centre Verne, Civil Engineering
Authors: Pöllänen, M., Utriainen, R., Viri, R.
Number of pages: 20
Pages: 246-265
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Research output: Professional › Conference contribution

**Coping with technostress: when emotional responses fail**
In this study, we develop two new perspectives for technostress mitigation from the viewpoint of coping. First, we examine users’ emotional coping responses to stressful IT, focusing specifically on distress venting and distancing from IT. As these mechanisms may not always be effective for individuals’ well-being, we extend our approach to self-regulation in coping, which concerns general stress-resistance. Thus, we specifically study how IT control moderates the effect of emotional coping responses to stressful situations involving IT use. We test the proposed model in a cross-sectional study of IT users from multiple organizations (N=1,091). The study contributes to information systems literature by uncovering mechanisms individuals’ can use to mitigate the negative effects of technostress and by delineating the less-understood perspective of interrelated coping mechanisms; how emotional coping responses are moderated by IT control towards more favorable outcomes. Implications of the research are discussed.

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Organisations: Industrial and Information Management, Research group: Business Data Research Group, Lancaster University, University of Jyväskylä
Authors: Pirkkalainen, H., Salo, M., Makkonen, M., Tarafdar, M.
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Research output: Scientific - peer-review › Conference contribution

**Digitaalinen alustatalous**

**General information**
State: Published
Ministry of Education publication type: D2 Article in professional manuals or guides or professional information systems or text book material
Effects of Social Media on Consumers’ Sports Brand Experiences and Loyalty

Brand experience has been noted as a key attribute affecting buying behavior. Although research into the determinants of brand loyalty in sport context has grown in recent years, the focus has predominantly been on brand experience, brand personality and satisfaction, not on social media variables. In addition, we lack empirically verified evidence of the brand experience and brand loyalty relationship mediated through brand identification. In this research the authors address the role of four different social media platforms and how they drive brand loyalty through different types of brand experiences, brand identification and satisfaction to the brand experience. Structural equation modelling is used to test the model based on data from a survey of 815 ice hockey fans of a particular ice hockey team. The results show that brand experience is positively affected by brand engagement in social media and the relationship is strengthened when more different social media platforms are used for following the brand. Brand experience affects brand loyalty mainly indirectly through brand identification and satisfaction constructs.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Andersson, T., Boedeker, M., Vuori, V.
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https://www.aueb.gr/en/content/5th-international-conference-strategic-innovative-marketing
Research output: Scientific - peer-review › Conference contribution

Energiatehokkuusinformaatio palvelurakennuksissa

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Civil Engineering, Research group: Construction Processes
Authors: Sorri, J., Heljo, J., Uotila, U., Ruusala, A.
Number of pages: 6
Pages: 325-330
Publication date: 2017

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Publication series
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Links:
Research output: Scientific › Conference contribution
Engaging in knowledge exchange: The instrumental psychological ownership in open innovation communities

Online communities have become a vital channel for professionals to expand their networks and initiate new strategic collaborations. Such online behaviors have led to multiple types of innovation potential that are based on the co-creation of ideas toward new solutions. Yet, very little is known about the role of psychological ownership of knowledge in professionals’ knowledge exchange in these communities that are based on voluntary contributions. We apply the psychological ownership theory and posit that psychological ownership of knowledge is instrumental to increased knowledge exchange intentions of professionals. Informed by the theory, our model incorporates several enablers of online engagement which could be associated with psychological ownership. Our exploratory quantitative study evidences that perceived ownership of knowledge plays a critical instrumental role in idea exchange behavior. We evidence how personal outcome expectations, organizational innovativeness and affective community commitment are associated with psychological ownership of knowledge which is an important predictor of intentions to exchange knowledge in open innovation communities. Implications for theory and practice are discussed.
Features of water co-operatives: A comparative study on Finland and Kenya

There are several ways of arranging rural water supply. One of these is through water cooperatives that have been established to provide water supply, irrigation, and/or sewerage services. Water cooperatives are found in developed countries such as Finland, Denmark, Austria, Canada, and United States, and in developing countries in South America, such as Bolivia and Chile. Water cooperatives or their equivalent organizations that exist in Kenya are called self-help water projects. Yet, surprisingly little attention has been paid to this option even in countries with rich tradition of cooperatives in other sectors. In this study, Finland and Kenya were selected for a comparative analysis of the identified features of water cooperatives. Best practices observed in the features with differences could be shared between the two countries.
Finding the wow-factor to enhance business

In every company's business, there should be something really unique that differentiates the company from others, superiorly. In order to enhance company's business and profits, the Wow-factor needs to be found consciously, defined clearly and utilized better. To enhance business by using Wow-factors and its potential, the concept of Wow need to be understood. This article presents the importance of the Wow and how it is connected to company's everyday business. This article also presents one method to find the company's Wow-factor by a case study. Method shows how to give personnel the opportunity to tell their feelings and point-of-views of what is that great, unique and positive thing what the company is doing. Article also deepens the knowledge behind the Wow-factor and why business development should take the Wow-factor into account. Future research needs and actions are handled at the end of the article.

Firms' knowledge profiles: Mapping patent data with unsupervised learning

Patent data has been an obvious choice for analysis leading to strategic technology intelligence, yet, the recent proliferation of machine learning text analysis methods is changing the status of traditional patent data analysis methods and approaches. This article discusses the benefits and constraints of machine learning approaches in industry level patent analysis, and to this end offers a demonstration of unsupervised learning based analysis of the leading telecommunication firms between 2001 and 2014 based on about 160,000 USPTO full-text patents. Data were classified using full-text descriptions with Latent Dirichlet Allocation, and latent patterns emerging through the unsupervised learning process were modelled by company and year to create an overall view of patenting within the industry, and to forecast future trends. Our results demonstrate company-specific differences in their knowledge profiles, as well as show the evolution of the knowledge profiles of industry leaders from hardware to software focussed technology strategies. The results cast also light on the dynamics of emerging and declining knowledge areas in the telecommunication industry. Our results prompt a consideration of the current status of established approaches to patent landscaping, such as key-word or technology classifications and other approaches relying on semantic labelling, in the context of novel machine learning approaches. Finally, we discuss implications for policy makers, and, in particular, for strategic management in firms.
Forecasting sales in industrial services: modeling business potential with installed base information

Purpose – The purpose of this paper is to examine how installed base information could help servitizing original equipment manufacturers (OEMs) forecast and support their industrial service sales, and thus increase OEMs’ understanding regarding the dynamics of their customers’ lifetime values (CLVs). Design/methodology/approach – This work constitutes a constructive research aiming to arrive at a practically relevant, yet scientific model. It involves a case study that employs statistical methods to analyze real-life quantitative data about sales and the global installed base. Findings – The study introduces a forecasting model for industrial service sales, which considers the characteristics of the installed base and predicts the number of active customers and their yearly volume. The forecasting model performs well compared to other approaches (Croston’s method) suitable for similar data. However, reliable results require comprehensive, up-to-date information about the installed base. Research limitations/implications – The study contributes to the servitization literature by introducing a new method for utilizing installed base information and, thus, a novel approach for improving business profitability. Practical implications – OEMs can use the forecasting model to predict the demand for - and measure the performance of - their industrial services. To-the-point predictions can help OEMs organize field services and service production effectively and identify potential customers, thus managing their CLV accordingly. At the same time, the findings imply new requirements for managing the installed base information among the OEMs, to understand and realize the industrial service business potential. However, the results have their limitations concerning the design and use of the
statistical model in comparison with alternative approaches. Originality/value – The study presents a unique method for employing installed base information to manage the CLV and supplement the servitization literature.

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Scopus rating (2013): SJR 1.127 SNIP 1.811 CiteScore 3.09
Scopus rating (2012): SJR 1.008 SNIP 1.469 CiteScore 2.67
Scopus rating (2011): SJR 0.605 SNIP 1.875 CiteScore 2.27
Scopus rating (2010): SJR 0.189 SNIP 0.265
Original language: English
Research output: Scientific - peer-review › Article

Forecasting stock prices from limit order book using convolutional neural networks
In today's financial markets, where most trades are performed in their entirety by electronic means and the largest fraction of them is completely automated, an opportunity has risen from analyzing this vast amount of transactions. Since all the transactions are recorded in great detail, investors can analyze all the generated data and detect repeated patterns of the price movements. Being able to detect them in advance, allows them to take profitable positions or avoid anomalous events in the financial markets. In this work we proposed a deep learning methodology, based on Convolutional Neural Networks (CNNs), that predicts the price movements of stocks, using as input large-scale, high-frequency time-series derived from the order book of financial exchanges. The dataset that we use contains more than 4 million limit order events and our comparison with other methods, like Multilayer Neural Networks and Support Vector Machines, shows that CNNs are better suited for this kind of task.

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Authors: Tsantekidis, A., Passalis, N., Tefas, A., Kanniainen, J., Gabbouj, M., Iosifidis, A.
Publication date: 2017

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Research output: Scientific - peer-review › Conference contribution

Future industrial services: pathways and tools for service business renewal

General information
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Ministry of Education publication type: D4 Published development or research report or study
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services, Hanken School of Economics, University of Vaasa, Aalto University, Åbo Akademi University
Guiding the workplace learning in vocational education and training: A literature review

This review provides an overview of the empirical research concerning guidance in the context of vocational education and training (VET). The study examines practices, providers and supporting and hindering factors related to guidance and learning at the workplace. After the inclusion/exclusion process, the final number of research articles included in this review is 18. Results show strong evidence for the collective nature of workplace guidance, with the entire work community providing learners with guidance and assistance. Guidance provided to VET students at workplaces seems to relate strongly to the activities of the members of communities of practice. Guidance provided by the members of communities of practice opens up opportunities for learners to participate in collective practices by gradually assuming more responsibility and more demanding tasks as their skills develop. The learner's self-regulative skills, such as responsibility and the ability to take the initiative and to actively seek guidance, affect how guidance is afforded to him/her in the work community during training. Furthermore, these skills may also determine the learner's prospects for developing expertise in future workplaces.
How can crowds be used in developing complex industrial products? An analysis of factors impacting the usefulness of crowdsourcing outcomes

Understanding how to plan and execute crowdsourcing challenges of complex industrial products is crucial for receiving useful information and knowledge from crowds. This qualitative single-case study was, thus, initiated to analyse the factors impacting the usefulness of crowdsourcing outcomes. The data were collected by means of semi-structured in-depth interviews with representatives of a crowdsourcing company and a crowdsourcing platform provider. From these data, a number of factors impacting the usefulness of information and knowledge acquired from crowdsourcing were identified, and their significances were evaluated, thereby increasing our understanding of value creation from crowdsourcing activities. The need for novel skills and competences was highlighted. Though more validation is needed to generalise these preliminary results, this study generates a new qualitative understanding of the use of crowdsourcing in the development of complex (new) product development.
Infrastructures, integration and architecting during and after digital transformation
In this paper we look at infrastructure and architecting challenges stemming from digital transformation of companies, which changes both their infrastructure and architectural work. Companies will use increasingly external digital infrastructures for their business operations and this will change both architecting and the role of architects. We outline challenges brought by using external digital infrastructures and finally propose research topics based on the identified changes in architectural practice.

Inter-organizational knowledge sharing barriers within an SME network: a case study
SMEs often seek to supplement their scarce resources and limited knowledge base by networking. This calls for efficient knowledge sharing within the network, which is, however, often complicated by the existence of knowledge barriers. This paper seeks answers to the question “what are the knowledge barriers that hinder inter-organizational knowledge sharing in SME networks?” The issue is empirically examined through a case study that was carried out by the participative observation research method. The case is a network consisting of SMEs whose joint objective was to increase the companies’ capabilities in digitalization by sharing knowledge within the network. The paper concludes that companies’ ability in sharing knowledge within a network vary greatly due to, e.g. varying needs concerning the level of knowledge pursued from the network, imbalanced knowledge base, and cognitive proximity/shared interests of the network companies. Firstly, some companies’ goals may be acquiring highly specialized knowledge from the network, while others are potentially interested in harnessing rather general level knowledge. Secondly, those companies that have a broader/deeper knowledge base than others may protect their knowledge more carefully. Thirdly, the lack of understanding the value of knowledge may also lead to unwillingness of sharing knowledge with others, or, vice versa, not being able to utilize the valuable knowledge shared by others. Based on the empirical findings we can conclude that companies that share the same information needs and do not settle for merely sharing knowledge with each other go beyond the typical knowledge sharing and proceed to develop the issues of mutual interest via deeper dialogue.
Introduction to part II: knowledge integration in networks

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Research group: Business Ecosystems, Networks and Innovations, Industrial and Information Management
Authors: Breite, R.
Number of pages: 6
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Research output: Scientific - peer-review › Chapter

Introduction to the handbook

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DOIs: 10.1057/978-1-137-59099-2
Research output: Scientific › Foreword/postscript

Katsaus oppisopimuskoulutukseen institutiona Saksassa, Englannissa ja Suomessa

General information
Kilpailuetua turvallisuudesta
Teollisuuden palveluntuottajarykset sekä heidän asiakkaansa edellyttävät yhä enemmän turvallisuuden eteen tehtyjä
panostuksia. Monesti tarjouskilpailuun ei ole mahdollisuksia päästä, jos turvallisuusasiat eivät ole kunnossa.
Turvallisuusnäkökulmat on tarpeen huomioida jo palvelun kehitysvaiheessa, jotta palvelun toteuttaminen on
mahdollisimman turvallista ja sujuvaa.

Kirja-arviointi: Kuinka vesiensuojelu saatiin pääosin pääosin kuntoon?

Koulutuksen ja tutkimuksen murros yliopistoissa uuden vuosikymmenen kynnysellä
Limit Order Books and Liquidity around Scheduled and Non-Scheduled Announcements: Empirical Evidence from NASDAQ Nordic

Information arrivals may drive investors to require immediacy, generating sudden liquidity demand across multiple price levels in limit order books. We document significant intraday changes in stock limit order book characteristics and liquidity beyond the best levels around scheduled and non-scheduled company announcements. At aggregated level, liquidity beyond the best levels behaves quite differently from the bid–ask spread around scheduled announcements. Moreover, scheduled announcements improve multi-level liquidity to an exceptionally good level. We also provide evidence for pre-reactions in order books before non-scheduled announcements, which suggest the possibility of information leakage.

General information
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Authors: Siikanen, M., Kanniainen, J., Valli, J.
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- Scopus rating (2014): SJR 0.468 SNIP 0.92 CiteScore 0.99
- Scopus rating (2013): SJR 0.481 SNIP 0.704 CiteScore 0.81
- Scopus rating (2012): SJR 0.349 SNIP 0.408 CiteScore 0.44
- Scopus rating (2011): SJR 0.346 SNIP 0.701 CiteScore 0.54
- Scopus rating (2010): SJR 0.602 SNIP 0.561
- Scopus rating (2009): SJR 0.39 SNIP 0.594
- Scopus rating (2008): SJR 0.677 SNIP 0.355
- Scopus rating (2007): SJR 0.815 SNIP 0.835
- Scopus rating (2006): SJR 1.197 SNIP 0.777
- Scopus rating (2005): SJR 0.648 SNIP 0.187
Original language: English
Keywords: Limit order book, Liquidity, Company announcement, High-frequency data
DOIs:
10.1016/j.frl.2016.12.016
Links:
Long-range autocorrelations in limit order book markets: inter- and cross-event analysis

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Business Data Research Group, Physics,
Research area: Computational Physics, Research group: Quantum Control and Dynamics
Authors: Magris, M., Kim, J., Räsänen, E., Kannaiinen, J.
Number of pages: 7
Publication date: 2017

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Publisher: IEEE
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DOI: 10.1109/SSCI.2017.8280932
Links:
http://www.ele.uri.edu/ieee-ssci2017/DetailedProgram.htm (Conference programme)
Research output: Scientific - peer-review › Conference contribution

Management style, focus and purpose in development of lean in university hospital
Today's rapid turmoil in economy caused by globalization and changes in world, has forced, leaders and managers in public institutions as well as private organizations to adapt and change their organizations' cultures with their own management systems and styles. Different situational management theories and approaches are scrutinized in this study.

Literature review focuses on management styles. This paper investigates classic approaches, management boundary conditions and possibilities that these approaches can give to leaders and managers. The ontology for management style was created in this study, and gives the preliminary frame for university hospital leaders when inspecting possibility to move to Lean management. This article points out to future research needs.

General information
State: E-pub ahead of print
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Turku University of Applied Sciences, Turku University Hospital
Authors: Reunanen, T., Maijala, R.
Number of pages: 13
Pages: 52-64
Publication date: 2017

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Publisher: Springer Verlag
ISBN (Print): 9783319603711
Publication series
Name: Advances in Intelligent Systems and Computing
Volume: 594
ISSN (Print): 2194-5357
Keywords: Focus, Lean, Management, Ontology, Purpose, Style
ASJC Scopus subject areas: Control and Systems Engineering, Computer Science(all)
DOI: 10.1007/978-3-319-60372-8_6

Bibliographical note
jufoid=75019
Source: Scopus
Source-ID: 85031302911
Research output: Scientific - peer-review › Conference contribution
Managing business networks for value creation in facilities and their external environments: A study on co-location

Purpose: The purpose of this paper is to increase understanding of the logic of business network formation among the co-located and external actors of a facility. Design/methodology/approach: The research adopts a theory-building approach through developing propositions inductively from the empirical case study on four purposefully sampled modern service station facilities. The focus is on analyzing how a facility and its inherent co-located actors represent an entity that forms a business network with external actors in the facility’s environment. Findings: The findings propose that when co-located with a large number of actors, the facility and its actors represent an entity that is connected to a wide business network of multiple external actors. On the other hand, when co-located with a small number of actors, the facility becomes a part of the overall supply in the surrounding business environment with a differentiated offering for competitive advantage. Practical implications: The research suggests that an appropriate co-locating strategy, for example, when planning the tenant mix of the facility, can contribute to creating a vivid business network in the external environment, which raises the facility to a role of a central entity in such a network. Originality/value: The findings explaining how co-location affects the businesses within the facility and within a wider networked environment are novel to the scholarly knowledge on co-location. The research bridges the theories of co-location and business networks that have been treated as separate discourses in previous research.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management
Authors: Artto, K., Ahola, T., Kyrö, R., Peltokorpi, A.
Pages: 99-115
Publication date: 2017
Peer-reviewed: Yes

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Journal: Facilities
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Issue number: 1-2
ISSN (Print): 0263-2772
Ratings:
Scopus rating (2016): CiteScore 1.06 SJR 0.421 SNIP 1.217
Scopus rating (2015): SJR 0.369 SNIP 1.028 CiteScore 0.84
Scopus rating (2014): SJR 0.447 SNIP 1.291 CiteScore 1.1
Scopus rating (2013): SJR 0.344 SNIP 1.184 CiteScore 0.73
Scopus rating (2012): SJR 0.361 SNIP 0.983 CiteScore 0.62
Scopus rating (2011): SJR 0.399 SNIP 0.734 CiteScore 0.66
Scopus rating (2010): SJR 0.339 SNIP 0.594
Scopus rating (2009): SJR 0.364 SNIP 0.701
Scopus rating (2008): SJR 0.446 SNIP 0.634
Scopus rating (2007): SJR 0.189 SNIP 0.368
Scopus rating (2006): SJR 0.305 SNIP 0.852
Scopus rating (2005): SJR 0.198 SNIP 0.29
Scopus rating (2004): SJR 0.188 SNIP 0.43
Scopus rating (2003): SJR 0.189 SNIP 0.466
Scopus rating (2002): SJR 0.195 SNIP 0.691
Scopus rating (2001): SJR 0.195 SNIP 0.688
Scopus rating (2000): SJR 0.187 SNIP 0.532
Scopus rating (1999): SJR 0.204 SNIP 1.037
Original language: English
Electronic versions:
Paper_Managing_business_networks_for_value_creation_final
DOIs: 10.1108/F-07-2015-0049
Research output: Scientific - peer-review › Article
Master data management and its organizational implementation: an ethnographical study within the public sector

Purpose: Master data management (MDM) aims to improve the value of an organization's most important data, such as customer data, by bridging the silos between organizational units and information systems. However, incorporating data management practices into an organization is not a simple task. The purpose of this paper is to provide a new understanding of the challenges in establishing and developing the MDM function within an organization.

Design/methodology/approach: This paper reports an ethnographic study within a municipality. The data were collected from two consecutive MDM development projects over the time period of 32 months by observing MDM-related activities and interviewing appropriate actors. Observations, interviews, and impressions were documented to a diary that was later qualitatively analyzed. Various project documentation were also used. Findings: In total 15 challenges were identified. Seven of these were not identified earlier in the literature. New challenges included legislation-driven challenges, mutual understanding of master data domains, and the level of granularity for those domains. Eight issues, such as data owner and data definitions, were MDM specific, others being more generic. All of the issues were identified as preconditions or as affecting factors for the others. Three of the issues were identified as pivotal. The issues emphasize strong alignment between the complex concept of MDM and the organization adopting it. Research limitations/implications: This research was based on a single qualitative case study, and caution should be exercised with regard to generalizations. The findings increase understanding about the complex organizational phenomena. The study offers public sector and private sector practitioners insights of the organizational issues that establishing a MDM function can encounter. Originality/value: The issues discovered in the research shed light on the strong alignment between the complex concept of MDM and the organization. The results of this study assist researchers in their endeavor to understand the organizational aspects of MDM, and to build theoretical models, frameworks, practices, and explanations.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management
Authors: Vilminko-Heikkinen, R., Pekkola, S.
Pages: 454-475
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: JOURNAL OF ENTERPRISE INFORMATION MANAGEMENT
Volume: 30
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ISSN (Print): 1741-0398
Ratings:
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Scopus rating (2015): SJR 0.427 SNIP 1.044 CiteScore 1.93
Scopus rating (2014): SJR 0.417 SNIP 0.893 CiteScore 1.4
Scopus rating (2013): SJR 0.405 SNIP 1.163 CiteScore 1.68
Scopus rating (2012): SJR 0.472 SNIP 1.086 CiteScore 1.54
Scopus rating (2011): SJR 0.458 SNIP 1.108 CiteScore 1.53
Scopus rating (2010): SJR 0.457 SNIP 1.02
Scopus rating (2009): SJR 0.407 SNIP 0.808
Scopus rating (2008): SJR 0.533 SNIP 0.997
Scopus rating (2007): SJR 0.411 SNIP 0.613
Scopus rating (2006): SJR 0.216 SNIP 0.201
Scopus rating (2005): SJR 0.142 SNIP 0.128
Original language: English
DOIs:
10.1108/JEIM-07-2015-0070
Research output: Scientific - peer-review › Article

Measuring technological diversity over technology lifecycle
Technological diversity is the pivotal element in the process of technology evolution and the input to market selection mechanisms. The study provides insights into the patterns of technological diversity development over the lifecycle of two technology generations in digital camera industry. The findings indicate that diversity demonstrates development pattern of reversed U-shape in both technology generations. The study also compares two methods of diversity measurement and lists implications for theory and practice.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Network visualisations of knowledge assets: Their value and user experiences for innovation development

This paper explores the value of network visualisations for presenting complex knowledge assets to executive decision-makers in order to develop culturally relevant insights for programme development. The value is first addressed with an analysis of network visualisation process called 'Ostinato', an operational context in relation to cognitive fit as a theoretical context. Then, value is explored with an analysis using taxonomy of interactive dynamics for visual analytics. Furthermore, evaluating the usability of visualisation is conducted in the context of the Parisian ecosystem, with board members using network visualisations to explore complex multi-layered knowledge about relationships among key executives, companies and financing organisations. All findings support the argument that value of knowledge assets in problem-solving performance depends on both format of the data and nature of the task. Furthermore, the findings support the importance
of continual involvement and interaction between data analysts and decision-makers; they highlight the importance of considering knowledge assets as value drivers that can support knowledge-based innovation.
Nordic workplace concept development from office as a city to city as an office

Purpose: The purpose of this paper is to describe, discuss and analyze forerunner cases from three different decades in workplace concept development in Sweden and Finland and discuss the transformation over time to better facilitate management of office development and disseminate Nordic experiences. Design/methodology/approach: The reflecting paper is discussing the development of workplace concepts. It is based on case studies collected from 1980s to the new millennium. The reflection is based on the perspective of Nordic culture. The characteristics of the Nordic culture used in the paper are low power distance and individualism. Findings: The evolution from “office as a city” to “city as an office” has taken place in both countries and Nordic cultural values have provided fruitful platform for them. However, the layer of organizational culture in the studied workplaces also has an impact on the development and implication of the concepts. Research limitations/implications: The selection of case studies is limited to two Nordic countries only. The comparison of all five Nordic countries could increase the understanding of Nordic culture and similarities and differences between the countries. The study could be deepened by a more thorough literature review including not only Nordic but also European cases. Practical implications: The dilemma of management when designing workspaces for the changing world is in that individuals increasingly choose where to work, when, with whom and how. Facilitating that freedom of choice is a balancing act in modern workspace design where people is a scarcer resource than space. It requires an active management that sees their facilities as a part of their system not as a costly box top put it in. Social implications: Easy access seems to be the key to the workspace of the future when decision power shifts from organizations to individuals. Simultaneously, individuals need to take more and more responsibility and action to get their job done: the cases illustrate how this has been done and that the integration and interaction between office concepts and office work will need to be on business agendas. Originality/value: The perspective of Nordic workplace concept development from 1980s provide the material for future development, without an understanding of the past one cannot understand the future.

On the basis of the sales engineering competences and education

Sales engineers (SE) sell technical products and services to companies. They consult the professional customer and suggest technically and economically feasible solutions with maximum utility for both the customer and their own company. They combine technical knowledge with commercial skills. They are best trained to understand the requirements of the industry. Nowadays there is no clear definition of the profession of a sales engineer. Sales
engineering is a profession which includes at least as much skills than knowledge. This unique profession is a mixture of technical, sales, business, management and soft skills, internationalization included. Therefore traditional division between engineering, economics, management and other education does not seem to fit for sales engineering education and its needs. Since there is no definition for SE curricula, the state-of-the-art of the education has never been studied before. This article reveals the need for the sales engineers, introduces methods for the definition of the sales engineering education, and presents a state-of-the-art education from European perspective. Study proposes boundary limits for sales engineering education and gives a basic definition for sales engineers’ education. Future research actions and needs are addressed at the end of the article.

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Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Turku University of Applied Sciences, ESTA School of Business and Engineering, Aschaffenburg University of Applied Sciences, Aalen University of Applied Sciences
Authors: Reunanen, T., Röhr, T., Holopainen, T., Schneider-Störmann, L., Görne, J.
Number of pages: 13
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ASJC Scopus subject areas: Control and Systems Engineering, Computer Science(all)
DOIs: 10.1007/978-3-319-60372-8_16

Bibliographical note
jufoid=75019
Source: Scopus
Source-ID: 85031290140
Research output: Scientific - peer-review » Conference contribution

Organizational effects of digitalization: A literature review
The effect of digitalization on organizations has been studied separately but there has been very little research done on the overall “big” picture of the effects. However, the digitalization of society and business is marching forward at an ever increasing speed, calling for more converged research on the phenomenon. The main areas of effects elicited from the literature are organizational learning, digital innovations, organizational agility, business ecosystems, and organizational structures. More minor influences have been gathered in the framework of digitalization presented in this article. It can be seen as a tool for managers to explore their organizations capabilities on the digitalization front.

General information
State: Published
Ministry of Education publication type: A2 Review article in a scientific journal
Organisations: Industrial and Information Management
Authors: Kuusisto, M.
Number of pages: 22
Pages: 341-362
Publication date: 2017
Peer-reviewed: Yes

Publication information
Volume: 20
Issue number: 3
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Ratings:
Scopus rating (2016): CiteScore 0.19 SJR 0.124 SNIP 0.123
Partnering in offshore drilling projects

Purpose: The purpose of this paper is to evaluate to which extent partnering practices observed in earlier research focussing on the construction industry are applied in offshore development drilling projects.

Design/methodology/approach: The paper reviews earlier research on project partnering and the relationship-based procurement (RBP) taxonomy. The taxonomy is then empirically applied to describe partnering practices in an incentive-based drilling project in Norway. Findings: Many elements of project partnering observed earlier in construction projects were found to characterize offshore development drilling projects. However, as assessed using the RBP framework, the authors found that partnering elements in observed context rated consistently lower than elements previously reported in the construction industry, indicating a lower maturity of partnering practices in the studied context. Practical implications: The present study provides a multi-dimensional and systematic description of partnering practices in offshore drilling projects. Project owners can utilize this information to identify partnering elements requiring particular emphasis when initiating and managing drilling projects. Based on the findings, such elements include transparency and open-book auditing, integrated risk mitigation and insurance practices and establishment of authentic leadership. The findings further imply that partnering models cannot be directly applied across industry boundaries but must be tailored to fit the salient characteristics of each context. Originality/value: The paper systematically describes to which extent specific partnering elements of the RBP taxonomy are applied in offshore drilling projects.
Perspectives on tools and applications supporting co-creation in knowledge work

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Knowledge and Learning Research Center
Authors: Okkonen, J., Vuori, V.
Number of pages: 8
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Publication date: 2017

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Publication series
Name: Proceedings IFKAD
ISSN (Print): 2280-787X
Links: http://gsom.spbu.ru/en/events/event2017_06_09/
Research output: Scientific - peer-review » Conference contribution

ProcuValue Value Creating Procurement: Project Report
This project addressed the shift in purchasing from a “classical purchasing philosophy” reflecting a transaction-oriented approach to a “modern purchasing philosophy” highlighting longer supplier relationships and a strategic approach in managing supplies and the purchasing function. The current understanding of modern purchasing is limited and it is notably difficult to put the new ideas highlighting long-term value creation into practice.

The aim of the project was to create new and widely applicable knowledge for managing strategic purchasing and supply management. It examined the viewpoints of both buyer and supplier. More specifically, this project investigated 1) the benefits of long-term purchasing, 2) the strategic capabilities of the purchasing function, 3) models, practices, and performance measures for modern PSM, and 4) supplier capabilities and the supplier-buyer relationship characteristics. This project had four case companies: Metsä Group, Posti Group Corporation, Tieto Oyj, and Valmet Corporation. All these companies are large multi-national companies operating in the business-to-business markets. The case companies represent the viewpoint of a buyer. The project started with a purchasing maturity analysis, which was carried out by a survey addressed to the case companies. It continued with an interview study, which paid more attention to specific aspects in purchasing: value creation, long-term orientation, and performance management. A supplier survey was conducted in the latter part of the study and addressed to more than 600 suppliers of the case companies. In addition, each of the cases had their own development projects with their respective objectives, schedules and methods.

Different characteristics of long-term purchasing were identified, such as purchasing strategies highlighting close supplier partnerships, strategic technology choices, and purchasing related to long-term investments. A long-term approach to purchasing was found to offer benefits such as the utilization of supplier expertise and increased attractiveness among suppliers. The identified strengths of the purchasing functions studied were the skills of purchasing professionals to ensure the availability of purchased goods and services, the existence of a long-term purchasing strategy, documentation of a purchasing process, a link between purchasing and company strategy, and an awareness of the importance of purchasing in contributing to cost competitiveness. The most common development areas of purchasing included cross-functional integration between purchasing function and other functions such as product development, involvement of suppliers in...
product development, bundling of the supplies, and using and communicating of supplier evaluations. New models, practices and performance measures for contemporary purchasing and supply management were developed in the course of this study. In the case company Valmet, a new design-to-cost framework was developed in order to improve cross-functional and inter-organizational collaboration in product development. At Posti, an approach for measuring supplier partnerships was designed. In the case of Metsä Group, a framework for measuring supplier quality was developed. At Tieto, the idea of combining data from different functions was successfully presented and tested. The analysis of supplier capabilities and supplier-buyer relationship characteristics revealed that a foundation for a good buyer-supplier relationship does indeed exist. Suppliers appear to be capable when offering and implementing their solutions.

However, integration between supplier and buyer frequently remains rather superficial. For example, true collaboration in product development is rare.

Several avenues for future research in the field of PSM can be identified. There remains a need to better understand the benefits of long-term purchasing in terms of financial numbers as well as the mechanisms for creating the benefits. Further, there is a need to better understand when to search for long and close supplier relationships. Supplier satisfaction is a rising topic requiring more attention since buyer companies are increasingly competing for the most capable suppliers. Digitalization in purchasing and supply management is a topic gaining increasing attention and requiring more research in the future. There has already been lot of work in automating and digitalizing purchases. This project revealed a topical need for digital supplier portals, which centralize all the supplier information (e.g. costs, contracts, supplier offerings and their use in different business).

**General information**

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Ministry of Education publication type: D4 Published development or research report or study
Organisations: Industrial and Information Management
Authors: Jääskeläinen, A., Heikkilä, J., Thitz, O.
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ISBN (Print): 978-952-15-3993-0
Original language: English
Electronic versions:
ProcuValue_netti
Links:
Research output: Professional › Commissioned report

**Prosumer centric innovation system and how it is influenced by multi-regime interactions: Exploratory interviews**

**General information**

State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Center for Innovation and Technology Research, Electrical Energy Engineering, Research area: Power engineering, Research group: Power systems
Authors: Valta, J., Mäkinen, S., Kotilainen, K., Järventausta, P.
Publication date: 2017

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Publisher: IEEE
DOIs:
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Research output: Scientific › peer-review › Conference contribution

**S4Fleet – Service Solutions for Fleet Management: FINAL REPORT 6/2017**

**General information**

State: Published
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Organisations: Industrial and Information Management, Research group: Cost Management Center, Managing digital industrial transformation (mDIT), Mechanical Engineering and Industrial Systems, Mathematics
Samsung and Volkswagen crisis communication in Facebook and Twitter: A comparative study

Since September 2015 at least two major crises have emerged where major industrial companies producing consumer products have been involved. In September 2015 diesel cars manufactured by Volkswagen turned out to be equipped with cheating software that caused NO2 and other emission values to be reduced to acceptable levels while tested from the real, unacceptable values in normal use. In August 2016 reports began to appear that the battery of a new smart phone produced by Samsung, Galaxy Note7, could begin to burn, or even explode, while the device was on. In Nov. 2016 also 34 washing machine models were reported to have caused damages due to disintegration. In all cases, the companies have experienced substantial financial losses, their shares have lost value, and their reputation has suffered among consumers and other stakeholders. In this paper, we study the commonalities and differences in the crisis management strategies of the companies, mostly concentrating on the crisis communication aspects. We draw on Situational Crisis Communication Theory (SCCT). The communication behaviour of the companies and various stakeholders during crisis is performed by investigating the official web sites of the companies and communication in Twitter and Facebook on their own accounts. We also collected streaming data from Twitter where Samsung and the troubled smart phone or washing machines were mentioned. For VW we also collected streaming data where the emission scandal or its ramifications were mentioned and performed several analyses, including sentiment analysis.
Securing the flow of information in renovation projects: Sustainable synergies from buildings to the urban scale
Continuous flow of information is a paramount importance for the success of a renovation project. This has been a clear statement in several researches, clearances, publications and press releases in Finland. Tampere University of Technology (TUT) studied Finnish state supported mold renovations in three independent researches between 2010 and 2016. First one brought out that the observations made in the condition investigation weren't always taken into account in the implementation of the renovation. Next two researches focused to study the additional state grant processes, where the external review procedures were helping the flow of information. However, the processes still had some shortcomings and therefore the research team developed a form based method that property owners and builders can utilize for a successful removal of the indoor air problems. This paper describes the outlines of the form as well as the principles and methods for securing the flow of information from condition investigations to the renovation design and quality assurance of the building project. Project planning and monitoring measurements are also taken into account in the method.

Start-ups initiating business relationships: process and asymmetry
The purpose of this paper is to develop an understanding of how start-ups initiate business relationships and to identify the subprocesses that characterise business-relationship initiations in a start-up context. Design/methodology/approach The paper builds on business-relationship initiation models, develops a theoretical framework of relationship initiation and its subprocesses and, in a multiple-case study, applies this framework to seven relationship initiations by start-ups.
Start-ups innovating digital platforms: towards successful interaction

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Business Ecosystems, Networks and Innovations , VTT Technical Research Centre of Finland
Authors: Korhonen, H., Still, K., Seppänen, M., Kumpulainen, M., Suominen, A., Valkokari, K.
Publication date: 2017

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Editors: Bitran, I., Conn, S., Huizingh, K. R. E., Kokshagina, O., Torkkeli, M., Tynnhammar, M.

Publication series
Name: LUT Scientific and Expertise Publications–Reports
ISSN (Print): 2243-3384
Keywords: Platform business, Digital platforms, Start-ups, Value creation, Core interaction, Multisided markets, Disruptive innovation, Slush event

Stimuli of collaboration in product development: a case study in a project manufacturing company

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Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Jääskeläinen, A., Heikkilä, J., Hiidensalo, A., Thitz, O.
Number of pages: 14
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Publication information
Journal: Management and Production Engineering Review
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ISSN (Print): 2080-8208
Scopus rating (2016): CiteScore 0.48 SJR 0.126 SNIP 0.551
Original language: English

Bibliographical note
INT=tj,"Hiidensalo, Anna"
Research output: Scientific - peer-review › Article
Structural development of substance in engineering education: Method of cornerstones

During the current millennium, engineering education has confronted an emerging problem with learning. Driving forces have mainly been economical, since financial pressure and effort for increasing efficiency have given rise to growing amount of accessed and graduated students. Consequently, in the lack of time and financial resources, universities have had a tendency to decrease the emphasis on thorough and time-consuming learning of fundamentals. As a result, so called immediate skills have gained excessive role in comparison with long-term skills in engineering education. According to a generally accepted view, students learn to carry out engineering tasks quite well, but they do not necessarily learn to think. Recently, a study carried out at MIT ended up to call for “coherent and interconnected curriculum structure” to achieve excellence in engineering education. We suggest that by utilizing the hierarchical structure of natural sciences in engineering education, such a coherent and interconnected structure can be created. In this paper, we show how the method of cornerstones is implemented to clarify engineering substance and to promote higher learning. By making cornerstone-based structure visible to students, we aim to clarify and harmonize the substance and to promote both immediate and long-term engineering skills.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Electrical Energy Engineering, Tampere University of Applied Sciences
Authors: Korpela, A., Tarhasaari, T., Kettunen, L., Mikkonen, R., Kinnari-Korpela, H.
Number of pages: 11
Pages: 566-576
Publication date: 2017

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ISSN (Print): 2194-5357
ASJC Scopus subject areas: Control and Systems Engineering, Computer Science(all)
Keywords: Engineering education, Higher learning, Method of cornerstones
DOIs:
10.1007/978-3-319-50337-0_54

Bibliographical note
jufoid=75019
EXT="Korpela, Aki"
EXT="Kinnari-Korpela, Hanna"
Source: Scopus
Source-ID: 85010639773
Research output: Scientific - peer-review › Conference contribution

Systematic literature review on enterprise architecture in the public sector
Enterprise architecture (EA) is an approach to improve the alignment between the organization’s business and their information technologies. It attempts to capture the status of the organizations’ business architecture, information resources, information systems, and technologies so that the gaps and weaknesses in their processes and infrastructures can be identified, and development directions planned. For this reason, EA has become a popular approach also in the public sector to increase their efficiency and ICT utilization. Yet researchers have largely ignored this context, and it seems that quite little is known about how EA is developed, implemented, or adapted in different countries and in the public sector. We thus conducted a systematic literature review to identify the major research topics and methods in studies focusing on public sector EA. We analyzed 71 identified articles from the past 15 years. Our analysis shows that the development viewpoint, case studies in developed countries, and local settings seem to form mainstream EA research in the public sector. Taken together, it seems that public sector EA is scattered, and there is no strong, single research stream. Instead the researchers conduct local case studies. This means the knowledge on EA development, implementation or adaptation, their challenges and best practices does not accumulate. There is consequently a need for more research in general, and targeted research in some specific segments.

General information
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Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management
Authors: Dang, D. D., Pekkola, S.
Pages: 57-154
Teacher perceptions of teaching CLIL courses

After various definitions and discussions about what CLIL / ICLHE is, there is a need to take a critical stance on the actual teaching practices teachers employ in (adjunct) CLIL classrooms in a higher education setting. We aim to contribute to a better understanding of teacher perceptions of teaching CLIL courses, which can lead to a better ability in identifying staff training needs. Based on a questionnaire and small-scale interview, we give the voice to the teachers to describe their current teaching from the ICLHE point of view. Through thematic analysis we focus on the areas the interviews show as in need of development. These are identified based on how the teachers describe their own teaching. The results report similarities, but also differences, between the responses to questionnaire items and interview answers on the same topics. There is a need for a deeper understanding of the pedagogical and didactic differences between CLIL teaching and subject-specific language teaching. The results show that these teachers would benefit from training focusing on the basic didactic practices of CLIL, and especially on the cognitive dimension in CLIL teaching. The results provide information from an adjunct CLIL context to researchers and serve as guide for future teacher development.

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Language Centre
Authors: Niemelä, N., Jauni, H.
Pages: 77-96
Publication date: 2017

Host publication information
Title of host publication: Integrating Content and Language in Higher Education : Perspectives on Professional Practice. Selected Papers from the IV International Conference Integrating Content and Language in Higher Education 2015
Place of publication: Frankfurt
Publisher: Peter Lang
Editors: Valcke, J., Wilkinson, R.
ISBN (Print): 978-3-631-68126-8
ASJC Scopus subject areas: Arts and Humanities(all)
DOIs: 10.3726/978-3-653-07263-1
Tensor representation in high-frequency financial data for price change prediction

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Authors: Thanh Tran, D., Magris, M., Kanniainen, J., Gabbouj, M., Iosifidis, A.
Number of pages: 7
Publication date: 2017

Host publication information
Title of host publication: IEEE Symposium Series on Computational Intelligence (SSCI), 2017 : Nov. 27-Dec. 1, 2017, Hawaii, USA
Publisher: IEEE
ISBN (Electronic): 978-1-5386-2726-6
DOIs: 10.1109/SSCI.2017.8280812
Links:
http://www.ele.uri.edu/ieee-ssci2017/DetailedProgram.htm (Conference webpage)

Bibliographical note
INT="Dat, Thanh Tran"
Research output: Scientific - peer-review » Conference contribution

The adoption of green initiatives in logistics service providers-a strategic perspective
Logistics service providers (LSPs) have started to transform their operations and strategy to be more effective from a green perspective. One concern that is of particular interest of LSPs is how to create organisational green awareness and translate this into practice in their operations. The purpose of this paper is to investigate the roles of green strategic commitment and organisation in LSPs' adoption of green initiatives. The data for this study were collected through a questionnaire survey, investigating a sample of LSPs operating in the Swedish, Finnish and Italian markets. From the literature analysis, a set of testable hypotheses was developed. The results indicate that there are relationships between the nature, as well as the scope, of functional involvement and the green strategic priority. The results further suggest that the inclusion of environmental consideration in the overall business strategy is positively related to the involvement and coordination of multiple functions as well as existence of a separate environmental function.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Research group: Transport Research Centre Verne, Civil Engineering, Business Wellness Center, Centro S3, Linköping University, Aston University
Authors: Isaksson, K., Evangelista, P., Huge-Brodin, M., Liimatainen, H., Sweeney, E.
Number of pages: 16
Pages: 349-364
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: International Journal of Business and Systems Research
Volume: 11
Issue number: 4
ISSN (Print): 1751-200X
Ratings:
Scopus rating (2016): CiteScore 0.21 SJR 0.177 SNIP 0.196
Scopus rating (2015): SJR 0.204 SNIP 0.378 CiteScore 0.32
Scopus rating (2014): SJR 0.22 SNIP 0.289 CiteScore 0.23
Scopus rating (2013): SJR 0.211 SNIP 0.331 CiteScore 0.28
Scopus rating (2012): SJR 0.195 SNIP 0.234
Scopus rating (2011): SJR 0.222 SNIP 0.43
The future of customer value—multi-industry insights of value determinants in service networks

General information
State: Accepted/In press
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Industrial and Information Management, Research group: Novi, Research group: Knowledge and Learning Research Center, Research group: Business Ecosystems, Networks and Innovations, Lappeenranta Univ Technol, Lappeenranta University of Technology, Dept Math & Phys
Authors: Vilko, J., Helander, N., Seppänen, M.
Publication date: 2017

Host publication information
Title of host publication: 7th International Conference on Operations and Supply Chain Management (OSCM) 2016: 18 – 21 December 2016, Phuket, Thailand
Links:
http://journal.oscm-forum.org/oscm-2016-phuket-thailand/
http://deeva.fi/publications/
Research output: Professional › Conference contribution

The impact of workplaces and self-management practices on the productivity of knowledge workers
Purpose: This paper aims to explore the impact of workplaces, which support concentration and communication, and self-management practices on individual and team productivity. The underlying hypothesis is that the impact of these variables on the two levels of productivity (individual and team) and the two dimensions of productivity (quantity and quality) may be different. Design/methodology/approach: The paper is based on survey data from 998 Finnish knowledge workers. Factor analysis was used to test the dimensions of the conceptual model. Insights into the impact of workplaces for concentration and communications and self-management practices on productivity were obtained by multiple-regression analyses. Findings: The findings show that self-management practices have a larger impact on the quality and quantity of individual output and the quantity of team output than workplaces for communication and concentration. Improving self-management skills is key to increase all productivity dimensions and in particular the quality of the output. Practical implications: This paper contributes to a better understanding of the impact of workplace characteristics and self-management practices on different levels and dimensions of productivity. It offers valuable lessons for managers, as they are able to recognize how productivity can be approached from several perspectives. Different dimensions can be enhanced using different workplace settings. For example, the quantitative output of employees can be increased by adding more space for concentration, while quantitative team productivity can be increased by providing appropriate space for collaboration. An important means to enhance a higher quality of the output is to improve self-management skills. The findings also suggest that collaboration between different disciplines – corporate management, corporate real estate management, human resource management and IT – is needed to optimize individual and team productivity. Originality/value: This paper explores work environment experiences of Finnish office workers and connects both workplace appraisal and work practices to perceived productivity support, on individual level and team level. It also adds insights into the different impacts on quantity and quality.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Delft University of Technology
Authors: Palvalin, M., van der Voordt, T., Jylhä, T.
Number of pages: 16
Pages: 423-438
Publication date: 2017
The use of performance measurement information in the work of middle managers

The purpose of this paper is to investigate how middle managers utilize performance measurement information in their work. More specifically, the study gives understanding on the impact of performance measurement, policies and procedures (formal controls), and individual intuition and experiential knowledge (informal controls) on strategy implementation and decision making. The study also identifies hindrances to the use of measurement information.

The study is carried out as a semi-structured interview study in Finnish companies representing five industries and 29 interviewees. Empirical data were analyzed deductively according to the research framework combining informal and formal management controls with two managerial processes.

This study contributes to the earlier literature by highlighting the usage of performance measurement information as opposed to developing new measures. In addition, the novelty value of the paper relates to the focus in the work of middle managers which has gained less attention in the previous research.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Jääskeläinen, A., Luukkanen, N.
Number of pages: 21
Pages: 479-499
Publication date: 2017
Peer-reviewed: Yes

Publication information
Volume: 66
Issue number: 4
ISSN (Print): 1741-0401
Ratings:
Scopus rating (2016): SJR 0.607 SNIP 1.046 CiteScore 1.85
Scopus rating (2015): SJR 0.638 SNIP 1.371 CiteScore 2.08
Scopus rating (2014): SJR 0.421 SNIP 1.289 CiteScore 1.59
Scopus rating (2013): SJR 0.345 SNIP 1.003 CiteScore 1.28
Scopus rating (2012): SJR 0.294 SNIP 1.144 CiteScore 1.22
Scopus rating (2011): SJR 0.317 SNIP 0.71 CiteScore 1.2
Scopus rating (2010): SJR 0.344 SNIP 0.939
Scopus rating (2009): SJR 0.485 SNIP 1.214
Scopus rating (2008): SJR 0.5 SNIP 0.948
Scopus rating (2007): SJR 0.152 SNIP 0.184
Scopus rating (2006): SJR 0.118 SNIP 0.071
Scopus rating (2005): SJR 0.114 SNIP 0.079
Original language: English
Electronic versions:
PM utilized by middle managers
DOIs:
10.1108/IJPPM-02-2016-0043
Links:
http://urn.fi/URN:NBN:fi:ttty-201704061261
Research output: Scientific - peer-review › Article

Time-series classification using neural bag-of-features

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Signal Processing, Industrial and Information Management, Research group: Business Data Research Group
Authors: Passalis, N., Tsantekidis, A., Tefas, A., Gabbouj, M., Kanninen, J., Iosifidis, A.
Publication date: 2017
Using a tailored project management methodology to promote project team integration

Companies implement project management methodologies to promote repeated project success and diffuse good practices in project management. Project teams should be integrated to pursue common goals, but this may be challenging in multi-project contexts where resources are shared across projects. This research develops new knowledge on using a tailored project management methodology in a multi-project context to integrate the project teams toward common goals. An embedded case study was conducted in an engineering firm with repetitive maintenance projects. The results revealed four types of experienced benefits for project team integration from using a tailored project management methodology. The study contributes by demonstrating that a tailored project management methodology can promote project team integration.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Vuorinen, L., Martinsuo, M.
Publication date: 2017

Using deep learning to detect price change indications in financial markets

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Business Data Research Group, Signal Processing
Authors: Tsantekidis, A., Passalis, N., Tefas, A., Kanniainen, J., Gabbouj, M., Iosifidis, A.
Publication date: 2017

Valkea kaupunki, mustat vedet

General information
State: Published
Value co-creation analysis in customer-supplier network relationships

In order to succeed in complex networks and tough competition, companies need to know their customers’ drivers for value creation better than competitors do. In addition, companies strive to analyze and measure which the most valuable customers are, in order to understand what value the company itself receives from its customers. The tool presented in this chapter provides a path toward understanding these issues. It provides insights on value co-creation in the customer–supplier boundary in network relationships; thus, it focuses on the dyadic level of interaction in a business network. The tool was tested in an ICT company which aimed to develop its customer relationship management process based on deeper understanding of the mutual value creation logic. The case includes empirical data from both the buyers’ (the customer side) and the supplier’s side.

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Industrial and Information Management, Department of Information Management and Logistics, Research group: Novi
Authors: Helander, N., Vuori, V.
Pages: 251-262
Publication date: 2017

Host publication information
Title of host publication: Practices for network management – In search of collaborative advantage
Publisher: Palgrave Macmillan
Editors: Vesalainen, J., Vaikokari, K., Hellström, M.
ISBN (Print): 978-3-319-49648-1
ISBN (Electronic): 978-3-319-49649-8
DOIs: 10.1007/978-3-319-49649-8_18
Research output: Scientific - peer-review › Chapter

Value components of a digital business-to-business sales configurator

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Research group: Cost Management Center, Industrial and Information Management, Research group: Cost Management Center
Authors: Mahlamäki, T., Ojala, M., Myllykangas, M.
Number of pages: 7
Pages: 203-209
Publication date: 2017

Host publication information
Title of host publication: Proceedings of Nineteenth International Working Seminar on Production Economics : February 22-26, 2016 Innsbruck – Austria
Volume: 3
Place of publication: Innsbruck, Austria
Publisher: Congress Innsbruck
Value in buyer-supplier relationships: the impact of relational purchasing practices

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Industrial and Information Management, Research group: Center for Research on Operations Projects and Services
Authors: Jääskeläinen, A., Thitz, O., Heikkilä, J., Nenonen, S.
Publication date: 2017

Host publication information
Title of host publication: Proceedings of 26th Ipsera Conference, Budapest - Balatonfüred, 9-12 April, 2017.
Electronic versions:
Buyer-supplier value creation
Research output: Professional › Conference contribution

Vesihuolto kaupungistuvissa yhteiskunnissa

General information
State: Published
Ministry of Education publication type: A2 Review article in a scientific journal
Organisations: Civil Engineering
Authors: Katko, T. S., Pietilä, P.
Number of pages: 8
Pages: 32-39
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Alue ja Ympäristö
Volume: 46
Issue number: 1
ISSN (Print): 1235-4554
Original language: Finnish
Additional files:
2017 katsaus_katko_pietila_1-2017 Alue ja ymp

Bibliographical note
https://aluejaymparisto.journal.fi/article/view/64905
Research output: Scientific › peer-review › Review Article

Yet another ecosystem literature review: 10 + 1 research communities
The field of non-biological ecosystem studies is riddled with different kind of ecosystems, connections and relations of which are rarely discussed. For example, the field of software ecosystems is influenced by both natural and business ecosystems, as studies have identified a strong inspiration from both. In this study, we survey the ecosystem literature and identify how different types of ecosystems as much as their aspects appear in a wide literature scope. Using a bibliometric approach, our study reveals a literature body of 2,271 documents published from 1990 onward. Our analysis identifies 11 distinct research communities with one of them focusing on software ecosystems. Furthermore, it also reveals that, although the different communities are rather connected with each other, the software ecosystems community appears as an outlier, with little connections to other communities. When examining the software ecosystem community, consisted of 147 publications, we identify four distinct thematic clusters. We characterize these clusters by their theoretical background and uncover lack of a prevailing theoretical theme. Thus, this study calls for a formation of a research agenda for the software ecosystem field.

General information
State: Published
Transport system planning is constantly evolving. The need to evaluate urban environment and sustainable modes of transport have been recognised. Existing transport project appraisal methods have been developed to evaluate projects for long-haul transport. Current methods do not pay enough attention to urban environment. This report describes the current status of present methods of transport project appraisal based on interviews and a literature review. The report also introduces a new model to evaluate transport projects based on qualitative and strategy-based factors. This model is further developed into a comprehensive resource efficiency model of urban structure, which is presented in a WHOLE-project report to-be-published in 2017.

Land use and transport have a strong connection, which cannot be found in the existing methods of transport appraisal as they ignore the factors that are crucial in projects in urban environment. However, these methods are required to be used in urban projects that will receive funding from the government. The existing transport project appraisal methods, like cost-benefit analysis have other challenging factors like simplifying multi-dimensional aspects into monetary values and giving a high priority to the value of time. Several alternative methods are presented but they also have the issue of numerical valuation. No holistic model to evaluate transport projects have been provided as different factors cannot be prioritised in relation to each other. More holistic measures are required to evaluate the transport system as a whole instead of analysing different cases individually.

The qualitative transport project appraisal model presented in the report is developed to evaluate the projects according to the national and regional strategies and objectives. The model is divided into ten topics, which are urban structure, economy and business, transport system, walking and cycling, public transport, car traffic, accessibility and reachability, environment, safety and security and health and wellbeing. These topics consist of questions based on strategies and objectives and different indicators and measures to provide the answer to these questions. In a strategy-based approach, the link between urban structure and land use is emphasized. This linkage is mostly ignored by current models. The model is used in cooperation with cost benefit analysis, which describes the financial factors of the project. The strategic model emphasises the holistic and qualitative factors. The model also provides a method for post evaluation as the same questions and measures can be used on the realized results of a project.
Educators' open educational collaboration online: The dilemma of emotional ownership

The open education movement has witnessed ups and downs from initial interest in transparency and openness, followed by a lack of reuse of open educational resources (OER) and the massive boost of interest in massive open online courses (MOOCs). This article addresses educators' online behaviors and perceptions regarding participation in collaborative development of OER in online settings. Using a data-driven approach to study educators' perceptions, this article presents multiple considerations for collaborative OER development and validates a new model explaining educators' intention to participate in collaborative action. The findings reveal the contradictory nature of emotional ownership of knowledge: a critical enabling factor for commitment and a barrier to knowledge exchange in an open and transparent manner. The findings also show how outcome expectations regarding increase in reputation and status in the network do not influence the intention to share knowledge. Further interviews with idea-sharing platform users enable us to explain the favorable settings to resolve the dilemma of emotional ownership. The study contributes not only to further development of the open education movement but also to theory development of educators' collaborative behaviors online.

General information
State: E-pub ahead of print
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics
Authors: Pirkkalainen, H., Pawlowski, J. M., Pappa, D.
Assessing business learning by analysing ERP simulation log files

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Nisula, K., Pekkola, S.
Publication date: 10 Dec 2016

Host publication information
Title of host publication: AIS SIGED 2016 Conference on IS education and Research. : Dublin, Ireland, December 10-11, 2016
Place of publication: Dublin
ISBN (Print): 978-0-692-81119-1
Links:
http://icis2016.aisnet.org/ais-siged-international-conference-education-research/
Research output: Scientific - peer-review › Conference contribution

Projektimestart 2016: Esseekokoelma 4

General information
State: Published
Ministry of Education publication type: Not Eligible
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Research group: Data-analytics and Optimization
Importance of the business-to-business sales configurator characteristics

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Industrial and Information Management, Research group: Cost Management Center
Authors: Mahlamäki, T., Ojala, M.
Publication date: 1 Dec 2016

Host publication information
Publisher: University of Canterbury
Editors: Fortin, D., Ozanne, L. K.
ISBN (Electronic): 978-0-473-37660-4
Research output: Scientific - peer-review » Conference contribution

Processing Data for Visual Network Analysis

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Industrial and Information Management, Research group: MAT Intelligent Information Systems Laboratory, Research group: Business Data Research Group
Authors: Huhtamäki, J., Russell, M. G., Still, K.
Number of pages: 16
Pages: 56-71
Publication date: 1 Dec 2016

Host publication information
Title of host publication: Visual Analytics for Management : Translational Science and Applications in Practice
Publisher: Routledge
Editors: Bendoly, E., Clark, S.
Edition: 1
Article number: 5
ISBN (Print): 978-1138190719
Research output: Scientific - peer-review » Chapter

How to develop a new innovation education tool: case of impact canvas

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Industrial Management, Research group: Center for Innovation and Technology Research, Innovation Services, Research Services, University of Tampere
Authors: Aarikka-Stenroos, L., Boedeker, S., Köppä, L., Langwaldt, J.
Publication date: Dec 2016

Host publication information
Title of host publication: In the Proceedings of ISPIM Innovation Summit. The International Society for Professional Innovation Management (ISPIM). : 4-7 December 2016, Kuala Lumpur, Malaysia.
Impact assessment and the future of HCT trucks in Finland

Purpose: Finnish government allowed high capacity transport (HCT) trucks to operate freely on Finnish roads in October 2013, although Finland already differed from most of the EU countries by using EU’s exemption to allow European modular system trucks (up to 60 tonnes and 25.25 meters long) to operate in national roads. This decision clearly differs from general European legislation (FinLex 4.12.1992/1257). The new regulation increased the maximum weight limit of trucks from 60 tonnes to 76 tonnes and the maximum height limit from 4.2 meters to 4.4 meters. The maximum length of trucks remained at 25.25 meters. In addition to this new regulation, Finland has allowed operators to test even larger (up to 104 tonnes and 34.5 meters long) HCT vehicle combinations with exemption permissions on certain roads. During the summer 2015, four transport operators operated with seven HCT combinations by using this exemption permission. In these trials vehicle combinations transported raw timber, laminated veneer lumber beams, long shipping containers and retail goods. (Lahti & Tanttu 2016) The purpose of this study is to analyse how new HCT trucks have affected the Finnish road freight transportation sector by focusing on the trucks that are 76 tonnes or lighter. The impacts of the new heavier and higher trucks are analysed via the development in energy efficiency, emissions and transportation volumes. The similar analysis has been done in 2013 before the new regulation came into force by the authors and this study also includes a comparison between the predicted impacts and the realised impacts (see Liimatainen & Nykänen 2014a).

Thousands of HCT trucks, which are heavier than 60 tonnes and lighter than 76 tonnes, have been registered in Finland since the new regulation. Finnish transport operators have been interested in new heavier and higher trucks, but without effective use of increased load capacity potential benefits can not be achieved. Up to 76 tonnes HCT trucks have been permitted in Finnish roads since autumn 2013 and after two and a half year experiences it is possible to analyse how well transport companies have been able to utilize potential load capacity based on actual data.

Design/methodology/approach: The study presents a quantitative analysis where data from national road freight transport statistics from 2000 to 2015 are combined to the fuel consumption data from LIPASTO and NTM databases by using KAHMA - truck fleet management model (Liimatainen & Nykänen 2014b; Statistics Finland 2016). This time series allows authors to analyse the impacts of new HCT trucks from about two and a half year time period and compare that development with historical development and the predicted impacts from the study from 2013. Vehicle registration information is gathered from the register information services of Finnish Transport Safety Agency and from the vehicle manufactures and importers. Furthermore, the impacts of the exemption permission HCT trucks are presented based on the existing Finnish literature (see Lahti & Tanttu 2016). Finding In Finnish literature transport operators have been widely interested in new higher and heavier vehicles and thus new regulation has been well adopted in terms of vehicle registration volumes. Shift from 60 tonnes to 76 tonnes offers more than one third increase in payload, which has encouraged transport companies to actively invest in new HCT trucks. Experiences from exemption permission pilots have also been positive and vehicles have been working without any significant problems (Lahti & Tanttu 2016).

Relevance/contribution: HCT trucks have been seen as one of the most effective solutions to improve the road freight efficiency. However, attitudes towards HCT trucks have strongly differed in national legislation between EU countries. (International Transport Forum 2016; OECD 2011; Sanchez Rodrigues et al. 2015) This study presents data analysis which provides actual data over the two year time period about the impacts of the HCT trucks operating on the Finnish road network. The results provide unique empirical input to the ongoing policy debate on high capacity transport.

Keywords: high capacity transport, road freight transport, energy efficiency, CO2 emissions

General information
State: Published
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Nykänen, L., Liimatainen, H.
Publication date: Dec 2016
Peer-reviewed: Unknown
Event: Paper presented at 3nd International Workshop on Sustainable Road Freight, Cambridge, United Kingdom.
Keywords: HCT, road transport, Freight logistics, Energy efficiency, policy
Research output: Scientific → Paper, poster or abstract
Reinventing organisational creativity and innovation through adapting a service-based working culture

General information
State: E-pub ahead of print
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Department of Information Management and Logistics
Authors: Ketonen-Oksi, S.
Number of pages: 20
Pages: 1-20
Publication date: Dec 2016

Host publication information
Title of host publication: Integrating arts and creativity into business practice
Publisher: IGI Global
Editors: Schiuma, G., Lerro, A.
DOIs: 10.4018/978-1-5225-2050-4
Research output: Scientific - peer-review › Chapter

Tieliikenteen kuljettamyynysten vastuuilisuusmalli: Tilaajaohjeistus
The responsibility model being developed under the leadership of the Finnish Transport Safety Agency (Trafi) is a voluntary participation management and procedure model for road transport, for promoting responsibility in the road transport sector. The responsibility model is used to provide an incentive and support for transportation companies to adopt a proactive and knowledge-based management culture. The responsibility model covers various aspects of responsible road transport by taking into account the key security, quality and environmental issues of transportation companies and linking them with the companies’ finances. While the responsibility model has primarily been developed with transportation companies in mind, it also provides tools and operating models for communications and cooperation between the companies and transport clients.

Trafi has been developing the responsibility model for several years now. The first responsibility model development project carried out in cooperation with companies engaged in road-traffic goods transport was launched in 2013, as the result of which the core content and structure on which the responsibility model is built were created. In 2014, the development of the responsibility model continued in cooperation with goods transport companies. The actual tool for tracking responsibility and the sample forms for the responsibility model, as well as detailed instructions for transportation companies on how to use the responsibility model in their own operations, were created as the result of the first follow-up project.

The responsibility model development project for road-traffic passenger transport companies, during which the model was also expanded to cover road-traffic passenger transport, was launched in the autumn of 2015. The first series of actual expert interviews with transport clients were also conducted in conjunction with the project on the responsibility model for passenger transport. Road-traffic transport clients play such a central role in the development and promotion of responsibility that, in the autumn of 2016, Trafi launched a responsibility model instructions for clients project, for which this is the final report. The purpose of the project was to identify the most effective way for transport clients to use the responsibility model and to draw up the necessary instructions for them. A steering group was formed for the purposes of quality assurance and monitoring the project’s progress. The steering group’s members are Sanna Ström, chairman (Trafi), Marke Lahtinen, secretary (Trafi), Mikko Västilä (Trafi), Artu Lauhkonen (Trafi), Marko Rajamäki (Trafi), Ann-Mari Mäntylä (Trafi) and Lasse Nykänen (Tampere University of Technology/Verne Traffic Research Centre).
This report, which has five chapters, also includes a summary, at the end of the report, and an annex with the responsibility model user instructions for organisations which place orders for transports by road. Presented in the first two chapters of the report is background information on the development of the responsibility model and a description of the implementation of the study discussed in this final report. Chapters 3-5 discuss the perceptions of how transport clients are able to comply with the responsibility model and utilise it in their own operations, which were formed during the responsibility model projects and the literature review. The chapters also discuss the client organisations’ level of interest and commitment to enhancing responsibility within the road transport industry, and particularly on how to use the responsibility model for this.

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Nykänen, L., Viri, R.
Number of pages: 18
Publication date: Dec 2016

Publication information
Place of publication: Helsinki
Publisher: Liikenteen turvallisuusvirasto Trafi
Volume: 2016
Original language: Finnish

Publication series
Name: Trafin tutkimuksia
Publisher: Liikenteen turvallisuusvirasto (Trafi)
No.: 13
ISSN (Electronic): 2342-0294
ASJC Scopus subject areas: Safety, Risk, Reliability and Quality
Keywords: responsibility, responsibility model, Safety, quality, Environment, road transport
Links:
http://www.trafi.fi/filebank/a/1484053476/d84d7b1b8caaa702ed3d53b112b10cd8/23682-
Trafin_tutkimuksia_13_2016_Vastuullisuusmalli_tilaajoheistus.pdf
Research output: Professional » Commissioned report

Tunnedata toimintaprosessien kehittämisessä - faktaa vai fiktiota?

General information
State: Published
Ministry of Education publication type: D1 Article in a trade journal
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Helander, N., Jussila, J., Boedeker, M., Jalonen, H.
Pages: 12-14
Publication date: Dec 2016
Peer-reviewed: Unknown

Publication information
Journal: Tietoasiantuntija
Volume: 5
Issue number: 31
ISSN (Print): 1795-7338
Original language: Finnish
Keywords: tunteet, tunnedata
Research output: Professional » Article

Älypölkky, radan monitorointi, kreascoottipölkyn korvaavat vaihtoehdot

General information
State: Published
Organisations: Civil Engineering, Research group: Track Structures
Authors: Luomala, H.
Publication date: 29 Nov 2016
Ballast bed

General information
State: Published
Organisations: Civil Engineering, Research group: Track Structures
Authors: Luomala, H.
Publication date: 24 Nov 2016

Publication information
Media of output: Presentation at Nordisk Banteknisk Ingenjörsutbildning (NBIU), Espoo
Year: 2016
Original language: English
Research output: Scientific › Other contribution

Näkökulma-kolumni: Putkiremontit kestävät aivan liian kauan

General information
State: Published
Organisations: Civil Engineering
Authors: Saari, A.
Publication date: 24 Nov 2016

Publication information
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Sleepers

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State: Published
Organisations: Civil Engineering, Research group: Track Structures
Authors: Luomala, H.
Publication date: 24 Nov 2016

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Research output: Scientific › Other contribution

Näkökulmia poliisin liikenneturvallisuustyön toimintaympäristöön

General information
State: Published
Ministry of Education publication type: D2 Article in professional manuals or guides or professional information systems or text book material
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Hänti, M., Kemppainen, P., Onninen, K., Pöllänen, M., Vuorensyrjä, M.
Number of pages: 7
Pages: 109-115
Publication date: 21 Nov 2016

Host publication information
Enterprise Architecture Benefit Realization

In today’s volatile business environment, organizations need to constantly reshape their operations. Enterprise Architecture (EA) is a promising approach to supporting organizational transformation and providing the necessary agility to respond to environmental changes. Consequently, it has received attention from both academia and industry. In particular, the practical aspects of creating and implementing EA have been addressed in previous research.

Many researchers claim that a multitude of benefits can be realized by EA. These include improved decision making, better alignment of business and IT, and reduced costs. However, the question of how EA creates benefits has received little attention. Only recently have a few models been published on the EA benefit realization process. This refers to a process consisting of several interacting constructs impacting the realization of benefits by EA in an organization, such as EA products (including architecture documentation, i.e., models), different kinds of EA utilization constructs, and social and cultural constructs. Nevertheless, the results are, to a large extent, contradictory and are presented on an abstract level. Consequently, there is no unified view of EA benefit realization.

This thesis focuses on understanding EA benefit realization, taking four different viewpoints on the phenomenon. First, the EA benefit realization process is described on a general level as a data-based model. Second, EA stakeholders are considered to uncover their interaction with EA and their EA-related concerns. Third, EA product and service use (including the utilization of, for example, architecture models and architectural support for development projects) is addressed to discover when, why, and to whom EA benefits actually emerge in practice. Fourth, the measurement of EA benefit realization is scrutinized to form the basis for rationalizing the EA approach and improving EA practice.

The thesis states that EA benefits are realized through a complex process involving several interconnected constructs. There are many stakeholders that interact in the process, having various and even conflicting concerns about EA. EA use is also a complex phenomenon that is heavily intertwined with EA stakeholders, EA products, and services. Concrete measures for the EA benefit realization process constructs are also proposed. The results can be used as a basis of further study, for example, validation of the proposed model. Recommendations for EA practice are also given.

The thesis is article-based and contains six articles. The empirical part of the study is based on a multiple qualitative case study in a large public organization.

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Ministry of Education publication type: G5 Doctoral dissertation (article)
Organisations: Department of Information Management and Logistics
Authors: Niemi, E.
Number of pages: 104
Publication date: 18 Nov 2016

Publication information
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Original language: English

Publication series
Name: Tampere University of Technology. Publication
Volume: 1426
ISSN (Print): 1459-2045
Keywords: Enterprise architecture, Benefit realization, Stakeholder, Use, Measurement
Seeking New Ways of Innovating in Industry- Research Collaboration Practice

This chapter sheds light on the dynamics of innovation activity and its prerequisites for industry-research collaboration practice. It focuses on a particular intentional attempt to change the prerequisites of innovations. This new kind of research programme aimed to improve the competitiveness of the Finnish metals and engineering industry through enhancing innovations and industrial renewal. Three theoretical lenses were used in reflecting collaboration practice and learning in the programme. Two examples of changes in collaboration activity were presented and analysed within the broader context of the programme. The findings present how the characteristics of the programme and its management practices seemed to construct favourable conditions for co-innovating. The interpretations were founded on the reflections made by the four persons in charge of leading the programme. The chapter is concluded by summing up the results in terms of insight gained, as well as a general framework that aims to support practical efforts to create better prerequisites and conditions for industry-research collaboration in innovation activity.

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Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Nuutinen, M., Seppänen, M., Smedlund, A., Kaasinen, E.
Number of pages: 27
Pages: 365-391
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Research output: Scientific - peer-review › Chapter

The nexus between social media behaviour, negative consumer emotions and brand disloyalty

General information
State: Published
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Jalonen, H., Jussila, J.
Publication date: 11 Nov 2016
Peer-reviewed: Unknown
Performance Measurement for Managing Welfare Services

Performance management of welfare services is a topical issue at the moment. Because of the major structural developments in society, versatile knowledge and new tools are needed to support the performance development and management of welfare services. This research aims to find out how the performance of welfare services can be measured and managed at different levels within a welfare service system. To achieve this goal, research questions in this dissertation examine the current state of performance measurement and management in Finnish welfare service organisations, how identified challenges related to managing and measuring performance in welfare service organisations can be overcome, and how performance management can be supported by the means of measurement in the welfare service system. The theoretical part of the research builds on different research streams focusing on performance measurement and management in welfare services.

This research can be characterized as a qualitative multiple case study. Research questions are studied through six research articles applying various research methods. Interviews and action research were the main methods employed. The empirical material of the research consists of data collected in six separate research projects related to performance measurement in welfare services at different levels of the service system. Altogether, 22 public, private and non-profit organisations operating in the welfare service sector participated the research. The most of participants provide social services.

This study contributes to prior research by providing a more holistic view of performance management and measurement by structuring performance measurement tasks at different levels within the welfare service system. This research suggests and applies practical performance measurement frameworks at different levels of the welfare service system. This research indicates that different aspects related to performance and performance management are focused as the level of analysis moves from organisations to the service system. In welfare service organisations, the focus is on the outcomes that the organisation seeks to provide to its clients and on the resources and processes needed to achieve those outcomes. As intangible aspects of the service provision are focused in welfare services, this research suggests intellectual capital management as an applicable perspective in managing performance in welfare service organisations. At the service system level, the foremost managerial task relates to ensuring cost-effective service provision, which entails measuring the impacts of different service options and managing the effectiveness of service provision. This research suggests that impact measurement at the service system level should entail measuring the qualitative impacts created to clients and also measuring the quantitative and financial impacts to the service system. According to this research, the operationalization of concepts related to performance, user participation and outside support are focal factors that facilitate performance measurement efforts in welfare services, regardless of the level of analysis.
Project change stakeholder communication

This action-based qualitative case study explores how the project communication routines affect stakeholder engagement during change management process and evolve project culture. With an inductive design, this research studies change communication practices in two different case contexts. The results underline the fact that an effective communication ensures stakeholder participation in the change management processes through teamwork and empowerment, whereas lacking communication routines lead to a rational and straightforward project culture where task performance and efficiency are preferred over stakeholder involvement. Theoretical results suggest that project communication planning requires more attention on the know-how of stakeholders than the current stakeholder evaluation models instruct.

General information

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Organisations: Department of Civil Engineering, Research group: Construction Management, University of Vaasa (UVA)
Authors: Butt, A., Naaranoja, M., Savolainen, J.
Number of pages: 17
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Peer-reviewed: Yes

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Scopus rating (2015): SJR 1.484 SNIP 2.834 CiteScore 4.16
Scopus rating (2014): SJR 1.443 SNIP 2.851 CiteScore 3.55
Scopus rating (2013): SJR 1.186 SNIP 2.651 CiteScore 3.11
Scopus rating (2012): SJR 1.11 SNIP 2.42 CiteScore 2.7
Scopus rating (2011): SJR 0.997 SNIP 2.228 CiteScore 2.57
Scopus rating (2010): SJR 1.17 SNIP 1.55
Scopus rating (2009): SJR 1.172 SNIP 1.749
Scopus rating (2008): SJR 0.926 SNIP 1.442
Scopus rating (2007): SJR 1.076 SNIP 1.63
Scopus rating (2006): SJR 0.88 SNIP 1.824
Scopus rating (2005): SJR 1.12 SNIP 1.719
Scopus rating (2004): SJR 0.732 SNIP 1.72
Scopus rating (2003): SJR 0.594 SNIP 1.09
Scopus rating (2002): SJR 0.853 SNIP 0.883
Scopus rating (2001): SJR 0.502 SNIP 1.066
Scopus rating (2000): SJR 0.52 SNIP 1.145
Scopus rating (1999): SJR 0.463 SNIP 1.114
Original language: English
Keywords: Action research, Change management, Communication management, Project culture, Project management, Stakeholder know-how, Stakeholders
ASJC Scopus subject areas: Business and International Management, Management, Monitoring, Policy and Law, Management of Technology and Innovation
DOIs:
Servitization in global business-to-business distribution: The central activities of manufacturers

Manufacturers’ servitization development is a prevalent trend in the current business world. Companies then aim to increase customer closeness and complement product offerings with services. However, extant literature on distribution and marketing channels literature remains limited in terms of the implications of servitization for global business-to-business distribution. Therefore, this qualitative multiple case study identifies the central activities of servitizing manufacturers in global distribution. The study concludes with the following research propositions: Servitizing manufacturers develop global service portfolios and customize offerings according to local customer characteristics; build global operation models and adjust local service processes; ensure global brand coherency and design the customer experience according to local customer expectations; and create global value propositions and enhance local value co-creation with business customers. The study outlines managerial implications in terms of organizing global distribution. It also discusses new knowledge sharing and capability needs regarding solution sales, service provision and customer relationship management.

General information
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Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Hakanen, T., Helander, N., Valkokari, K.
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Scopus rating (2014): SJR 1.609 SNIP 1.776 CiteScore 3.07
Scopus rating (2013): SJR 1.483 SNIP 1.581 CiteScore 2.79
Scopus rating (2012): SJR 1.504 SNIP 1.669 CiteScore 2.51
Scopus rating (2011): SJR 1.037 SNIP 1.593 CiteScore 2.36
Scopus rating (2010): SJR 1.231 SNIP 1.635
Scopus rating (2009): SJR 1.194 SNIP 1.478

Boundary Objects as Part of Knowledge Integration for Networked Innovation

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State: Published
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Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Mäenpää, S., Suominen, A. H., Breite, R.
Pages: 25-36
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Links:
Research output: Scientific - peer-review » Article
Co-design, co-teaching and co-learning in technology hands-on university tuition

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Myllärniemi, J., Helander, N., Hellsten, P., Ilvonen, I.
Number of pages: 6
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DOIs: 10.1145/2994310.2994329
Links: http://www.mindtrek.org/2016/academic/
Research output: Scientific - peer-review › Conference contribution

Identifying weak ties from publicly available social media data in an event
The concept of weak ties was introduced by Granovetter through the seminal paper titled "Strength of weak ties". Since then the role of weak ties in general and their specific role as occupying the structural hole has been explored in many different fields. In this study, we identify actual or potential weak ties using publicly available social media data in the context of an event. Our case study environment is community managers' online discussions in social media in connection to the yearly-organized Community Manager Appreciation Day (CMAD 2016) event in Finland. We were able to identify potential weak ties using the conversation based structural holes, making use of social network analysis methods (like clustering) and content analysis in the context of events. We add to the understanding of and useful data sources for the Strength of weak ties theory originated from Granovetter, and developed further by other researchers. Our approach may be used in future to make more sophisticated conference recommendation systems, and significantly automate the data extraction for making useful contact recommendations from them for conference participants.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Department of Mathematics, Research group: MAT Intelligent Information Systems Laboratory, Managing digital industrial transformation (mDIT)
Number of pages: 9
Pages: 11-19
Publication date: 17 Oct 2016
The 5C categorization of social media tools

Social media can offer potential business benefits in the company context. However, successful social media initiative calls for careful strategic planning and approaching social media tools as enablers for reaching a purpose. A categorization of social media tools is called for to help the strategic choices and evaluation between the tools. To date, no coherent classification exists, and those suggested approach social media tools from a substantival perspective of what a tool is. From strategical planning viewpoint it is more practical to take the functional perspective of what a tool does. In this paper, we present a framework for categorizing social media tools by the actions they enable. The 5C categorization is based on the actions enabled by the social media tools: communicating, collaborating, connecting, completing, and combining. In order to demonstrate how the 5C categorization can be used as a framework to assess social media tools we conducted an empirical study of social media based crowdsourcing platforms in business-to-business setting. The 5C categorization can be utilized in planning a social media strategy as it forwards the understanding of which tools are suitable for certain purpose and provides a scheme to evaluate and compare different social media tools and applications.

Challenges and success factors in creating radical manufacturing technology innovations

Radical Manufacturing Technology Innovations (RMTI) renew the technology equipment that a manufacturing firm uses in its core production process and transform the process in a significant way. Previous research does not cover the manufacturing firms’ perspective to succeeding in the creation of RMTI. The goal of this study is to identify key challenges and success factors in RMTI creation. A qualitative study was conducted with manufacturing firms located in Finland, whereby 23 different exemplary cases of RMTI were explored. Success factors are revealed in supplier firm competence, expert resourcing, good pre-planning and early feedback, and coordination.
Assessing Regional Cooperation in Water Services: Finnish Lessons Compared With International Findings

Water services, that is, water supply and wastewater disposal, are traditionally the responsibility of local governments. Many municipalities have joined forces to meet the challenges of increasing water quality requirements, aging infrastructures, and decreasing fiscal resources. Regional cooperation is claimed to generate benefits in various ways, but there are challenges to this assumption. This article assesses the benefits and challenges of regional cooperation through the following categories: economies of scale, socioeconomic and spatial disparities, autonomy and legitimacy, by comparing Finnish experiences with previous research findings. Our assessment concludes that the benefits and challenges of regional cooperation are not straightforward, not only dependent on the local context but also on the level and tradition of cooperation, especially on the degree of organizational autonomy.
Learning by playing: A cross-sectional descriptive study of nursing students' experiences of learning clinical reasoning

Background Clinical reasoning is viewed as a problem-solving activity; in games, players solve problems. To provide excellent patient care, nursing students must gain competence in clinical reasoning. Utilising gaming elements and virtual simulations may enhance learning of clinical reasoning. Objectives To investigate nursing students' experiences of learning clinical reasoning process by playing a 3D simulation game. Design Cross-sectional descriptive study. Setting Thirteen gaming sessions at two universities of applied sciences in Finland. The prototype of the simulation game used in this study was single-player in format. The game mechanics were built around the clinical reasoning process. Participants Nursing students from the surgical nursing course of autumn 2014 (N = 166). Methods Data were collected by means of an online questionnaire. Results In terms of the clinical reasoning process, students learned how to take action and collect information but were less successful in learning to establish goals for patient care or to evaluate the effectiveness of interventions. Learning of the different phases of clinical reasoning process was strongly positively correlated. The students described that they learned mainly to apply theoretical knowledge while playing. The results show that those who played digital games daily or occasionally felt that they learned clinical reasoning by playing the game more than those who did not play at all. Conclusion Nursing students’ experiences of learning the clinical reasoning process by playing a 3D simulation game showed that such games can be used successfully for learning. To ensure that students follow a systematic approach, the game mechanics need to be built around the clinical reasoning process.
Comparison of community managed projects and conventional approaches in rural water supply of Ethiopia

This study aimed to compare Community Managed Projects (CMP) approach with the conventional approaches (Non-CMP) in the case of Ethiopia. The data collection methods include a household survey (n=1806), community representative interviews (n=49), focus group discussions with district water experts (n=48) and observations of water systems (n=49). The data were collected from seven districts of two regions of Ethiopia. The study shows that CMP have a better platform to involve the community than non-CMP. In terms of reducing distances to water points, all approaches succeeded. However, the intended amount of water supplied is not achieved in all the cases: only 25% of CMP users and 18% of non-CMP users are able to get water according to the national standard, 15 L per capita per day. Fee collection in the approaches has a high disparity in favour of CMP. To keep long-lasting services, three requirements need to be particularly fulfilled: quantity, quality and accessibility.

General information
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Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering
Authors: Behailu, B. M., Suominen, A., Katko, T. S., Mattila, H., Yayehyirad, G.
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Links:
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Sosiaalinen media brändi- ja asiakastiedon lähteenä

General information
State: Published
Ministry of Education publication type: Not Eligible
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT), University of Vaasa (UVA), University of Tampere
Authors: Jussila, J., Helander, N., Vuori, V., Okkonen, J.
Number of pages: 2
Pages: 55-56
Publication date: 23 Sep 2016

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Volume: 11
Place of publication: Pori
Publisher: Tampereen teknillinen yliopisto, Porin laitos
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Links:
Affective experiences and student engagement in higher education

General information
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Organisations: Department of Information Management and Logistics, Research group: Novi, Language Centre, Managing digital industrial transformation (mDIT)
Authors: Helander, N., Boedeker, M., Hellsten, P., Jussila, J., Myllärniemi, J., Tukiainen, M.
Publication date: 13 Sep 2016

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ASJC Scopus subject areas: Education
Links:

Developing a conceptual model for the relationship between social media behavior, negative consumer emotions and brand disloyalty

Companies have been facing the dark side of social media. Particularly, the odds of customer complaints and brand insults have increased tremendously. Social media has given a voice to disappointed consumers. They use the voice when they feel negative emotions, for example, due to product failures, service problems or unethical behavior. It seems reasonable to expect that the more ubiquitous social media becomes, the more it persuades people to share also their negative experiences. However, although social media raises new challenges for companies, it also gives them new opportunities. Social media enables companies to trace disappointed customers, evaluate their impressiveness and communicate with them. The conceptual paper aims to develop a model for the relationship between social media behavior, negative consumer emotions and brand disloyalty. The argument of this paper is that although social media gives consumers more power which is manifested in sharing negative emotions related to the company, the effect this has on brand disloyalty depends on the company’s behavior.

General information
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Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Jalonen, H., Jussila, J.
Number of pages: 12
Pages: 134-145
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Publication series
Name: Lecture notes in computer science
Volume: 9844
**Students as mystery shoppers: lowering knowledge sharing barriers in higher education**

This empirical research paper focuses on discussing potential knowledge sharing barriers volunteering students as mystery shoppers perceived in the context of higher education. More specifically, the focus is on students’ ideas on finding solutions to lowering individual knowledge sharing barriers, i.e. improving the quality of their instruction. Mystery shopping is a method of observing service performance from the user, or customer, perspective and it has been widely used to evaluate the overall service quality within service businesses. Using empirical data from students volunteering as mystery shoppers appears not as a widely used research and development tool. Moreover, there is little context-specific research on learning and teaching in such a knowledge intensive community like a university from the perspective of knowledge management (KM). KM offers thus a useful approach for analysing learning and teaching, as well as improving the processes of knowledge creation. A Finnish technical university and its student union organised a mystery shopping project with 45 student participants. They observed their learning experiences for six weeks in order to complement data from other sources. The students kept a casual theme-based diary on four larger topics: teaching staff and teaching (including pedagogical competence and teaching culture, instruction and guidance, course arrangements), students and the learning culture, student services and learning environment. The initial goal of the project was to add a student voice on the processes of developing learning and teaching in higher education. The research approach represents qualitative content analysis in which knowledge-sharing barriers were first recognised from the qualitative mystery shopper data. Next those instances where the students offered their solution to lowering that barrier were selected for further analysis. The results identify learner suggestions that may contribute to lowering knowledge sharing barriers. Result also indicate that individual knowledge sharing barriers as described in the literature appear to be valid in a higher education setting.

**Methods for identifying and measuring the performance impacts of work environment changes**

Purpose: The purpose of this paper is to introduce and evaluate methods for analysing the impacts of work environment changes. New working practices and work environments present the potential to improve both the productivity and the wellbeing of knowledge workers, and more widely, the performance of organisations and the wider society. The flexibility offered by information and communication technology has influenced changes in the physical environment where activity-based offices are becoming the standard. Research offers some evidence on the impacts of work environment changes, but studies examining methods that could be useful in capturing the overall impacts and how to measure them are lacking. Design/methodology/approach: This paper concludes research of the last five years and includes data from several organisations. The paper presents and empirically demonstrates the application of three complementary ways to analyse...
the impacts of knowledge work redesigns. The methods include: interview framework for modelling the potential of new ways of working (NWoW); questionnaire tool for measuring the subjective knowledge work performance in the NWoW context; and multidimensional performance measurement for measuring the performance impacts at the organisational level. Findings: This paper presents a framework for identifying the productivity potential and measuring the impacts of work environment changes. The paper introduces the empirical examples of three different methods for analysing the impacts of NWoW and discusses the usefulness and challenges of the methods. The results also support the idea of a measurement process and confirm that it suits NWoW context. Practical implications: The three methods explored in this study can be used in organisations for planning and measuring work environment changes. The paper presents a comprehensive approach to work environment which could help managers to identify and improve the critical points of knowledge work. Originality/value: Changes in the work environment are huge for knowledge workers, but it is still unclear whether their effects on performance are negative or positive. The value of this paper is that it applies traditional measurement methods to NWoW contexts, and analyses how these could be used in research and management.

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Scopus rating (2014): SJR 0.125 SNIP 0.208 CiteScore 0.71
Scopus rating (2013): SJR 0.133 SNIP 0.141
Scopus rating (2012): SJR 0.196 SNIP 0.287
Scopus rating (2011): SJR 0.188 SNIP 0.429
Scopus rating (2010): SJR 0.227 SNIP 0.673
Scopus rating (2009): SJR 0.27 SNIP 0.483
Scopus rating (2008): SJR 0.235 SNIP 0.428
Scopus rating (2007): SJR 0.1 SNIP 0
Scopus rating (2006): SJR 0.16 SNIP 0.213
Scopus rating (2005): SJR 0.196 SNIP 0.921
Scopus rating (2004): SJR 0.138 SNIP 1.169
Scopus rating (2003): SJR 0.134 SNIP 0.757
Scopus rating (2002): SJR 0.188 SNIP 0.633
Scopus rating (2001): SJR 0.139 SNIP 1.429
Scopus rating (2000): SJR 0.111 SNIP 0.311
Scopus rating (1999): SJR 0.103 SNIP 0
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ASJC Scopus subject areas: Business, Management and Accounting(all), Finance
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Links:
http://urn.fi/URN:NBN:fi:tty-201609284558
Source: Scopus
Source-ID: 84985019824
Research output: Scientific - peer-review › Article
Industrial distribution networks transformed: The disruptive power of digitalization

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Industrial and Information Management, Research group: Cost Management Center
Authors: Ojala, M., Mahlamäki, T., Saarivuori, L., Myllykangas, M.
Publication date: 3 Sep 2016

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Links:

Bibliographical note
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INT=ttj,"Myllykangas, Mikko"
Research output: Professional › Conference contribution

Knowledge barriers in university-industry knowledge networks

General information
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Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Vuori, V., Helander, N.
Number of pages: 8
Pages: 952-959
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ISBN (Electronic): 978-1-911218-03-6
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http://www.academic-conferences.org/conferences/eckm/future-past-conferences/
Research output: Scientific - peer-review › Conference contribution

Integrating mobile orienteering to team forming activity in a software engineering course
One of the most important skills software engineers need when entering work life is working in teams, including communicating, collaborating, as well as coordinating work in a team. This paper presents a team building activity aiming to support the first phases of team formation with a mobile orienteering activity. Created tasks at orienteering checkpoints were related to communication, collaboration and work division. Students were enthusiastic about the activity and expressed in their group reports on the activity that it supported the team building activity well, helped break the ice and supported agreeing the ways of working. Students also liked getting out of the classroom. The approach seems promising and we will investigate in the future similar type of activities in the first phases of team formation as well as will explore further integrating physical activity to the exercise sessions.

General information
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Organisations: Department of Pervasive Computing, Research area: User experience
Authors: Väätäjä, H., Ahtinen, A.
Publication date: Sep 2016

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Keywords: soft skills, engineering skills, collaboration, Team working, group forming, mobile orienteering, team forming
Links:
Combining mineral fractions of recovered MSWI bottom ash: improvement for utilization in civil engineering structures

In real-life construction projects, the utilization of different types of waste derived aggregates can often be falsely considered as utilization, but in fact, it is merely dumping the potentially high value material from one site to another. For example, building highway noise barriers with waste derived aggregates cannot be considered as utilization. In this study, a more advanced approach was chosen in order to create aggregate like products from recovered municipal solid waste incineration (MSWI) bottom ash (BA) and thus potentially increase their value and image in civil engineering applications. MSWI BA from one waste incineration plant in Finland was first treated with a Dutch dry treatment technology called ADR (Advanced Dry Recovery). This process separates non-ferrous and ferrous metals from MSWI BA and generates mineral fractions of different grain sizes. These mineral fractions may not be used separately, for example, in the unbound structural layers of roads due to the strict grain size distribution requirements of these civil engineering structures. Hence, different combinations were designed from these BA mineral fractions using the mathematical proportioning of aggregates. The aim was to create aggregate like products from this waste material for different structural layers (filtration, sub-base and base) of, for example, road and field structures. Three mixtures were chosen based on their correspondence to the grain size distribution requirements of natural aggregates and further analyzed in the laboratory from their technical, mechanical and environmental point of view. The leaching of chrome (Cr) and chloride (Cl-) exceeded the Finnish emission boundary values for utilization of certain types of ashes in civil engineering. On the other hand, the technical and mechanical properties of these mixed bottom ash products were considered suitable to be used, for example, in the unbound structural layers of the interim storage field in a waste treatment center. In such location, also the leaching potential of harmful substances can be further studied and verified in a larger scale.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering, Research group: Earth Constructions, Research area: Earth and Foundation Structures
Authors: Sormunen, L. A., Kalliainen, A., Kolisoja, P., Rantsi, R.
Number of pages: 12
Publication date: 22 Aug 2016
Peer-reviewed: Yes

Publication information
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Ratings:
Scopus rating (2016): CiteScore 1.4 SJR 0.446 SNIP 0.634
Scopus rating (2015): SJR 0.396 SNIP 0.515 CiteScore 1.08
Scopus rating (2014): SJR 0.455 SNIP 1.004 CiteScore 1.25
Scopus rating (2013): SJR 0.731 SNIP 1.074 CiteScore 2.01
Scopus rating (2012): SJR 0.691 SNIP 1.27 CiteScore 1.86
Scopus rating (2011): SJR 0.512 SNIP 1.02 CiteScore 1.35
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Links:
http://www.readcube.com/articles/10.1007/s12649-016-9656-4?author_access_token=NZQ_65zp2bVOVbBLEzMHEve4RwIQnchNByi7wbcMAY7GR4IWoCqWPkZkNDQXRz7x_qbWF1ahj7kWiQeH17QlthQ2Mi1WmHqe_CBiFMwbY_Igt4SeoDhDFf1GD-qyVAD6lZs6oaA2j6mNx9V6woW5Gw%3D%3D

Näkemyksiä nykyopettajauudesta yliopistossa

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Myllärniemi, J., Hellsten, P., Helander, N.
Publication date: 18 Aug 2016

Host publication information
Title of host publication: PedaForum -päivät 17.–18.8.2016, Jyväskylä
Enterprise Architecture Benefit Realization: Review of the Models and a Case Study of a Public Organization

In recent years, Enterprise Architecture (EA) has been of interest to both researchers and practitioners. However, EA benefit realization has not been focused on much. Even though a few studies have addressed the subject, the results are somewhat fragmented and are subjected to limited empirical validation, particularly from the viewpoint of different theoretical constructs and their interrelations in the benefit realization process. To understand how the EA benefits accumulate and how related constructs influence each other, we propose a model and criteria for analyzing the explanatory power of the existing EA benefit realization models. Our model emerged from the data of a qualitative case study with 14 semi-structured EA stakeholder interviews. The results support earlier findings, thereby contributing to the enhancement of the relevance and generalizability of the constructs present in previous studies. However, the results also indicate that no existing EA benefit realization model fully captures the complex process of EA benefit realization. Our findings highlight the following: the importance of EA process quality; EA service quality and supportive social environment; constructs that have received less attention in previous studies.
How can FM service providers improve their service delivery through value co-creation?

Third places and user preferences – affordances in the cities
A laboratory listening experiment on subjective and objective rating of impact sound insulation of concrete floors

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Department of Civil Engineering, Research group: Building Acoustics, Turku University of Applied Sciences
Authors: Kylliäinen, M., Hongisto, V., Oliva, D., Rekola, L.
Number of pages: 9
Pages: 894-902
Publication date: Aug 2016

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Title of host publication: Proceedings of the INTER-NOISE 2016, 45th International Congress on Noise Control Engineering: Towards a Quieter Future, August 21-24, 2016, Hamburg, Germany
Place of publication: Hamburg
Publisher: German Acoustical Society (DEGA)
Article number: 193
ISBN (Electronic): 978-3-939296-11-9
Links:
http://pub.dega-akustik.de/IN2016/data/articles/000193.pdf
http://www.internoise2016.org/
Research output: Scientific › Conference contribution

A method for design of sound insulation of glazed balconies against traffic noise

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Department of Civil Engineering, Research group: Building Acoustics, A-Insinöörit Suunnittelu Oy
Authors: Kovalainen, V., Kylliäinen, M., Huhtala, T.
Number of pages: 8
Pages: 3834-3841
Publication date: Aug 2016

Host publication information
Title of host publication: Proceedings of the INTER-NOISE 2016, 45th International Congress and Exposition on Noise Control Engineering: Towards a Quieter Future, August 21-24, 2016, Hamburg, Germany
Place of publication: Hamburg
Publisher: German Acoustical Society (DEGA)
Article number: 503
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ASJC Scopus subject areas: Acoustics and Ultrasonics
Links:
http://pub.dega-akustik.de/IN2016/data/articles/000503.pdf
http://www.internoise2016.org/
Research output: Scientific › Conference contribution

How to facilitate freshmen learning and support their transition to a university study environment

ABSTRACT
Most freshmen enter universities with high expectations and with good motivation, but too many are driven into performing instead of true learning. The issues are not only related to the challenge of comprehending the substance, social and other factors have an impact as well. All these multifaceted needs should be accounted for to facilitate student learning. Learning is an individual process and remarkable improvement in the learning practices is possible, if proper actions are addressed early enough. We motivate and describe a study of the experience obtained from a set of tailor-made courses that were given alongside standard curriculum. The courses aimed to provide a safe community to address the multifaceted needs. Such support was integrated into regular coursework where active learning techniques, e.g. interactive small groups were incorporated. To assess impact of the courses we employ the feedback obtained during the courses and longitudinal statistical data about students' success.
A manager's means to motivate experts at work

Motivated employers are vital for all companies. Motivation can be affected by using extrinsic and/or intrinsic motivators. However, intrinsic motivators offer more versatile options and are significantly more efficient. Intrinsic motivation is especially important to experts. Managers can affect and develop the motivation of experts in several ways. The results of this survey are in line with motivation theories. The study highlighted work satisfaction and significance and importance of work. The opportunity to plan and complete work tasks are considered important. The personnel want to have the kinds of duties that give them satisfaction and feelings of progress, achievement and success. Constructive feedback also surfaces as an issue.
Space for company democracy

Space is a vital element in a system for the development of anything, as it defines the freedom needed to evolve, mature, and contribute. Lack of space is lack of freedom, which means lack of progress and development. Organizations are systems that are obliged to give space to new management and leadership initiatives. The Company Democracy Model, presented in this paper, is based on the space given to people to act in a democratic environment where ideas lead to meritocracy, valid knowledge, innovation, competitiveness, extroversion, and other benefits and ideals. Democracy, on the other hand, can be annoying to those resisting and reducing the space, freedom, and opportunity that people deserve to be judged upon. The paper presents numerous reasons why organizations fail to learn from their mistakes, and provides a democratic co-evolutionary and co-opetitive framework that can significantly contribute to organizational development, as long as a minimum of space is given to freedom of speech and communication.

Schedule health assessment of construction projects

Several factors can contribute to the success of construction projects. A sound and good quality construction schedule is considered to be one of them. The quality of schedules has been a research topic only for a few efforts and amongst them construction-oriented research is even more rare. Methodical grounds for assessing schedule quality have been studied via literature study for the development of appropriate solutions to assess the quality of construction schedules. These findings combined with the experiences from practical implementations have resulted in the definition of a metric to measure schedule quality for construction projects. It includes 75 schedule requirements classified into 5 groups: general requirements, construction process, schedule mechanics, cost and resources and control process. This structure forms a...
core for the developed method to assess construction schedule quality termed as Schedule Health Assessment. The developed method has also the purpose of assisting project planners to produce and maintain good quality schedules starting from the project initiation until its completion, as via using the method to detect deficiencies of project schedules and other critical issues having importance with respect to schedule maintenance.

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Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering
Authors: Bragadin, M., Kähkönen, K.
Number of pages: 23
Pages: 875-897
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Scopus rating (2015): SJR 0.955 SNIP 1.109 CiteScore 1.28
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Scopus rating (2013): SJR 0.756 SNIP 1.114 CiteScore 1.16
Scopus rating (2012): SJR 0.669 SNIP 0.905 CiteScore 0.91
Scopus rating (2011): SJR 0.736 SNIP 1.029 CiteScore 1.03
Scopus rating (2010): SJR 0.82 SNIP 1.001
Scopus rating (2009): SJR 0.665 SNIP 0.804
Scopus rating (2008): SJR 0.726 SNIP 0.904
Scopus rating (2007): SJR 1.002 SNIP 1.007
Scopus rating (2006): SJR 0.761 SNIP 1.396
Scopus rating (2005): SJR 0.804 SNIP 1.144
Scopus rating (2004): SJR 0.785 SNIP 1.329
Scopus rating (2003): SJR 0.672 SNIP 1.193
Scopus rating (2002): SJR 0.929 SNIP 1.075
Scopus rating (2001): SJR 0.625 SNIP 1.358
Scopus rating (2000): SJR 0.534 SNIP 1.22
Scopus rating (1999): SJR 0.42 SNIP 1.406
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ASJC Scopus subject areas: Building and Construction, Management Information Systems, Industrial and Manufacturing Engineering
Keywords: Critical path method, project control, quality, scheduling
DOI:
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EXT="Bragadin, Marco"
Source: Scopus
Source-ID: 84978173674
Research output: Scientific - peer-review › Article

**Teoriaa ja kokemuksia arvioinnista MOOCien aikakaudella**

**General information**
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Research group: Novi, Tampere University of Applied Sciences
Authors: Helander, N., Myllylä, M.
Number of pages: 7
Experienced risks in social media use – longitudinal study among university students

Several recent studies indicate that there is a need for increased use of ICT and social media in the Finnish education [1], [2]. This research was conducted in order to explore the attitude towards social media use among university students. The motivation for seeking answer to the research question: “What risks students experience in social media use?” derived from the need to discover learning barriers in social media based learning environments. In particular, there is a need for novel interaction means in order to co-create and learn informally [3] also beyond the traditional classroom. The assumptions, beliefs and attitudes towards social media are studied from the perspective of perceived risks of the students. The study was conducted among graduate students attending “Communities and Social Media in Knowledge Management” course between the years 2012-2016. A web-based survey was executed annually, with a total of 113 respondents. Based on the results we were able to categorize the perceived risks and derive implications on how to lower learning barriers of students in social media based learning environments.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Pori Department, Research group: Business Ecosystems, Networks and Innovations, Managing digital industrial transformation (mDIT)
Authors: Jussila, J., Aramo-Immonen, H.
I feel great - university students affective experiences on learning and teaching

According to Kolb [1], experience is the source of learning and development. This is a statement that serves as the starting point of this study. We argue that the role of affective experiences cannot be overlooked when evaluating university learning and teaching. In the present paper, we will study students’ affective experiences in higher education setting, specifically in engineering education in a technological university. The perceived affective experiences are empirically analysed through a mystery shopper data set, which was gathered in the case university by a group of students. The study bases theoretically on affective experiences framework, more familiar from the consumer behaviour research stream. The aim of the study is to analyse what kinds of affective experiences students recognise when studying in a technical university and further to elaborate, how these affective experiences could be used to increase student engagement and the students’ motivation to learn. The study provides an innovative approach to university learning and teaching by applying mystery shopper method and affective experience approach from more business-oriented disciplines. The contribution to education science is the increased understanding of the role of affective experience in learning.
Towards a maturity modeling approach for the implementation of industrial internet
This Research-in-Progress paper facilitates the design and provides guidelines for the development of a maturity model to achieve a coordinated, systematic and stepwise adoption of industrial internet, thus enabling the industrial internet to be used to its full potential in manufacturing enterprises. Using analogous maturity models from the fields of supply chain management and product lifecycle maturity among others, this paper explains why a maturity model approach would facilitate the step-by-step implementation of industrial internet. The paper goes on to provide systematic design guidelines for industrial internet maturity model for mass production manufacturing industries which use heavy equipment. The detailed research design presented here uses ADR methodology to enable the construction of the ensemble artefact. The industrial internet maturity model will be tested, developed and validated using the experience-based feedback from industrial practitioners. This will enable the industry to plan a roadmap to assess the current situation and define the direction for the future development of industrial internet related activities and business models for industry.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Menon, K., Kärkkäinen, H., Lasrado, L.
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Keywords: Industrial Internet, Maturity model, Design Guidelines
Electronic versions:
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Links:
http://urn.fi/URN:NBN:fi:ttv-201708231696
http://aisel.aisnet.org/pacis2016/38/
Research output: Scientific - peer-review › Conference contribution

Knowledge integration method development for multi-stakeholder innovation

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Mäenpää, S., Suominen, A., Breite, R.
Publication date: 21 Jun 2016

Host publication information
Links:
Research output: Scientific - peer-review › Conference contribution

Being a start-upper in Italy: Motivations, obstacles and success factors

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT), University of Calabria
Authors: Michele Felicetti, A., Ammirato, S., Raso, C., Aramo-Immonen, H., Jussila, J.
Number of pages: 14
Does Strategic and Innovative Fit Indicate Smart Social Media use in a Company?

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Pori Department, Research group: Business Ecosystems, Networks and Innovations, Managing digital industrial transformation (mDIT), University of Calabria
Authors: Jussila, J., Aramo-Immonen, H., Rouvari, O., Porkka, P., Ammirato, S.
Number of pages: 11
Pages: 1973-1983
Publication date: 15 Jun 2016

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Title of host publication: Proceedings of the 11th International Forum on Knowledge Asset Dynamics: Towards a New Architecture of Knowledge: Big Data, Culture and Creativity, Dresden -Germany 15-17 June 2016
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Article number: 249
ISBN (Electronic): 978-88-96687-09-3
Keywords: social media, strategy, Innovation
Links:
http://www.knowledgeasset.org/Program/
Research output: Scientific - peer-review › Conference contribution

Adapting service-based working culture as the key driver for organisational creativity and innovation

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Ketonen-Oksi, S.
Publication date: 10 Jun 2016

Host publication information
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Place of publication: Dresden
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ISBN (Electronic): 978-88-96687-09-3
Keywords: social media, strategy, Innovation
Links:
http://10times.com/ifkad
Research output: Scientific - peer-review › Conference contribution

Enablers and Restraints of Knowledge Work – Does profession make a difference?

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Helander, N., Okkonen, J., Vuori, V., Paavilainen, N., Kujala, J.
Number of pages: 13
A Customer's Possibilities to Increase the Performance of a Service Provider by Adding Value and Deepening the Partnership in Facility Management Service

Reliable and good suppliers are an important competitive advantage for a customer and that is why the development of suppliers, improvement of performance and enhancement of customership are also in the interest of the customer. The purpose of this study is to clarify a customer's possibilities to increase the performance of a service provider and to develop the service process in FM services and thus help to improve partnership development. This research is a qualitative research. The research complements the existing generic model of supplier development towards partnership development by customer and clarifies the special features that facility management services bring to this model. The data has been gathered from interviews of customers and service providers in the facility management service sector. The result is a model of customers' possibilities to develop the performance of service providers from the viewpoint of value addition and relationship development and in that way ensure added value to the customer and the development of a long-term relationship. The results can be beneficial to customers when they develop the cooperation between the customer and the service provider toward being more strategic and more partnership focused.

The effect of climate change on freeze-thaw durability of concrete structures in Finland

Lahdensivu presented in his Doctoral Thesis (Durability Properties and Actual Deterioration of Finnish Concrete Facades and Balconies, 2012) that without proper air-entrainment outdoor concrete structures have needed average of 307 freeze-thaw cycles (threshold value: t ≤ -5 °C) after a rain event in southern Finland and 388 cycles in inland for incipient freeze-thaw damage to occur. The difference between figures can be explained by the greater amount of wind-driven rain (WDR) before the freeze-thaw cycle on coastal areas.

As a consequence of climate change it has been shown that by the end of the century, the amount of WDR is going to increase 30 % at southern Finland and 40 % at inland. At the same time the amount of freeze-thaw cycles after a rain event are decreasing significantly at both locations which indicates freeze-thaw durability-wise longer service life for
outdoor concrete structures. However, the latest studies show that while the amount of freeze-thaw cycles is decreasing, the amount of WDR before the cycles is also increasing significantly.

The WDR at winter time in Finland is highly orientated on west to south-east directions which can be seen also by the degradation rate observations of concrete facades and balconies based on condition assessments. In this study, the changes at WDR before the freeze-thaw events and the effect of climate change on them depending on the structure orientation are calculated to estimate the changes of climatic stress level on outdoor concrete structures.

General information
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Organisations: Department of Civil Engineering, Research group: Service Life Engineering of Structures
Authors: Pakkala, T., Lemberg, A., Lahdensivu, J.
Number of pages: 1
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Publication date: Jun 2016
Peer-reviewed: Unknown
Keywords: Freeze/thaw, Concrete, Wind-driven rain, Service life
ASJC Scopus subject areas: Civil and Structural Engineering
Links:
https://oceanext.sciencesconf.org/?lang=en
https://oceanext.sciencesconf.org/93828/document

Bibliographical note
INT=rak,"Lemberg, Antti-Matti"
Research output: Scientific › Paper, poster or abstract

Vastuullisuusmallin kokelluprojektin henkilöliikenneyrityksissä
The Finnish Transport Safety Agency Trafi is developing a management and procedure model for road transport companies with the purpose of reinforcing the safety culture of commercial traffic and promoting environmentally sustainable practices.

The two previous trial studies concerning the responsibility model focused on goods traffic. This third stage moved the focus on passenger traffic.

The trial was participated in by nine public transport and taxi companies of different sizes from around the country. Nine parties, both public and private, that order transports were interviewed to get an understanding of the views held by those who order such transports.

The study was commissioned by Trafi and implemented by the Verne Traffic Research Centre of the Tampere University of Technology. The project manager in charge was researcher Lasse Nykänen. In addition to Mr Nykänen, the research group consisted of his assistant Arttu Lauhkonen.

The steering group for the study met twice in the course of the project. The steering group was led by Sanna Ström. The other members were Juhani Intosalmi, Marke Lahtinen and Mikko Västilä from Trafi, and Lasse Nykänen and Arttu Lauhkonen from Traffic Research Centre Verne.

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne, Department of Information Management and Logistics
Authors: Nykänen, L., Lauhkonen, A.
Publication date: Jun 2016

Publication information
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Publisher: Liikenteen turvallisuusvirasto Trafi
Volume: 2016
Original language: Finnish

Publication series
Name: Trafin tutkimuksia
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No.: 13
Deterioration mechanisms and life cycle of concrete monoblock railway sleepers in Finnish conditions

Thirty eight sleepers aged 30 to 40 years old were removed from Finnish railway lines and were loaded. Twelve new sleepers were also tested. The old sleepers fulfilled most of the requirements specified for the new ones. The old sleepers were also much more resistant to loading than predicted by structural calculations. The purpose of field tests was to establish the role of traffic loads in the life-cycle of sleepers: the actual stresses and moments in sleepers due to traffic loads; the distribution of the load through the underside of the sleeper to the ballast; and the variation in ballast-sleeper reaction on different sections of track in different seasons. Strain changes at the top surfaces of sleepers were measured on tracks while the rail was loaded by passing trains. Ballast-sleeper reactions tended to be concentrated under the rail along a length of sleeper of approximately 350 mm towards the centre of the track. The mean bending moments determined at the rail seat and centre of sleepers were about ±2.5 kNm, and the maximum moments were up to ±10 kNm.

The purpose of fatigue loading tests was to analyse the long term properties of the sleepers and the effect of fatigue on the stiffness of sleepers. Several load levels were chosen in order to estimate the significance of the fatigue in a real operating situation. The fatigue limit determined based on the loading tests and the computational limit state of crack formation were clearly higher than the bending moments measured in the field tests.

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Department of Civil Engineering, Research group: Vaativat rakenteet, Research group: Vaativat rakenteet, Research group: Track Structures
Authors: Kerokoski, O., Rantala, T., Nurmikolu, A.
Publication date: 31 May 2016

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Links: http://www.wcrr2016.org/

Bibliographical note
ei isbn 8.12.16
Research output: Professional › Conference contribution

Relevance of five generic business ideation approaches vis-a-vis contexts embedded within construction markets

In general, ideation encompasses the formation of ideas or mental images of things not present to the senses or simply the creation of new ideas. Business ideation is herein perceived to be the core area within future-oriented business management (BM). The main aim of the paper is to assess and advance the relevance of the five generic approaches to business ideation vis-à-vis firms targeting contexts embedded within construction markets. A typology differentiates between the fitting, value-creating, profit generating, systemizing, and commercializing approaches. It is argued that each approach is, at minimum, highly relevant in the case of business unit (BU) management targeting preferred client investment and procurement behavior within construction markets. Approach 1 involves BUs aiming at fit between clients and their needs as well as units’ offerings and operations, respectively. Professional clients couple needs with preferred procurement methods whereas competing BUs are trying to achieve best fit between solutions and client behaviors. This approach calls for research on how to sustain such fit between a BU and clients when changes occur.

Approach 2 enables BUs to create value by specifying high-value propositions, producing value to clients, and capturing their fair shares of produced values. Farsighted clients look for more or novel values for construction investments and, thus, units are collaborating and co-producing values to clients. This approach calls for research on a BU’s value co-production with such clients, value capture, and offerings integration. Approach 3 accommodates BUs that are focusing on generating profits, achieving high-profit levels, and sustaining them. Pioneering clients pursue complex investment aims that can be met only by radical solutions. This approach calls for research on a BU’s profit-generating mechanisms related to clients with complex investment needs and radical solutions. Approach 4 facilitates BUs to systemize businesses around core ideas. Sectoral clients have large or complex needs and, in turn, units are satisfying them by engineering systems as wholes and delivering them as parts. This approach calls for research on BUs with systems and clients, multi-dimensional investments, and system engineering as wholes and parts. Approach 5 facilitates BUs to couple ideas with
commercializing dimensions such as entrepreneurship, innovation, business development, venturing, or spin-offing. Risk-taking clients prefer to enter high-innovation contracts and, thus, units are offering novel solutions and emerging business cases. This approach calls for research on a BU’s entrepreneurial competencies and risk-taking clients, wicked investment needs, and high-innovation contracts. In the same vein, the suggestions are put forth to CIB-related scholars for directing research on along the BM and ideation dimensions and adopting most relevant approaches. Likewise, management in firms and BUs competing in construction markets are encouraged to assess the business case-sensitive relevance of each of Approaches 1-5 and try out those with initial high relevance.

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Organisations: Department of Civil Engineering, Research group: Construction Management
Authors: Huovinen, P.
Number of pages: 12
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Publisher: Tampere University of Technology. Department of Civil Engineering
Editor: Achour, N.
Keywords: Business ideation, business management, construction markets, literature review
Electronic versions:
CIB WBC16 Pekka Huovinen Final paper (camera-ready) 280316
Links:
http://urn.fi/URN:NBN:fi: tty-201611214721
Links:
Research output: Scientific - peer-review › Conference contribution

Life-Cycle Economics of Rentable Prefabricated School Facility Units in Municipal Real Estate Procurement

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Civil Engineering, Research group: Life-cycle Economics, School of Architecture, Research group: Service Life Engineering of Structures
Authors: Vihola, J., Edelman, H.
Number of pages: 12
Pages: 76-87
Publication date: 27 May 2016

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Electronic versions:
Full Paper
Links:
http://urn.fi/URN:NBN:fi:tty-201606224311
Links:
Research output: Scientific - peer-review › Conference contribution
Proceedings of the CIB World Building Congress 2016: Volume IV - Understanding Impacts and Functioning of Different Solutions

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Ministry of Education publication type: C2 Edited books
Organisations: Department of Civil Engineering, Research group: Construction Processes
Authors: Nenonen, S. (ed.), Junnonen, J. (ed.)
Number of pages: 718
Publication date: 27 May 2016

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Volume: 4
Original language: English

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WBC16 Vol 4
Links:
Research output: Scientific - peer-review › Anthology

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General information
State: Published
Ministry of Education publication type: C2 Edited books
Organisations: Department of Civil Engineering, Research group: Construction Processes
Authors: Achour, N. (ed.)
Number of pages: 1,161
Publication date: 27 May 2016

Publication information
Publisher: Tampere University of Technology. Department of Civil Engineering
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Baltic Sea 2030 - Trends and scenarios

The current Baltic Sea logistics system is a result of an optimisation process by industry, ports, shipowners and other stakeholders, all adapting to changes in the operating environment and building strategies for the future. As a result of this process we see the current logistics system, but the parameters of the optimisation process are changing constantly. Global directions of change are called megatrends and common megatrends include: globalisation and increasing importance of Asia, global political issues but national interest, rising energy demand and increase in alternative energy sources, climate change, increasing pace of technological development and urbanisation.

In this study five trend categories were identified based on the megatrends and considered in terms of their effect on the Baltic Sea logistics system. The trends were also analysed by their significance and affectability by maritime sector in order to give the actors a better understanding of the trends which may and should be affected.

Four scenarios were build based on the trends. The age of growth scenario is characterised by steady economic growth, growing importance of service sector and restoration of trade between Russia and Europe. The age of regulation, on the other hand, is defined by slow economic development due to strict environmental regulation and lack of innovations in heavy industry. The age of locality could be sparked by rapid climate change which would lead to high price of energy and resulting halt in global trade. The age of change would be possible if technological innovations enable rapid transition to renewable energy and Russia integrates closely to Europe as its energy resources lose its geopolitical significance.

The actors may take one of these scenarios and begin to work actively towards it or take another and work against it. Actors may also build their own scenario as a new combination of the factor values presented in the futures table in this article.

Social media analytics empowering marketing insight- A framework for analyzing affective experiences from social media content

General information
State: Published
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Jussila, J., Boedeker, M., Jalonen, H., Helander, N.
Publication date: 27 May 2016
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Links:
http://www.emac2016.org/
Research output: Scientific - Paper, poster or abstract

The current Baltic Sea logistics system is a result of an optimisation process by industry, ports, shipowners and other stakeholders, all adapting to changes in the operating environment and building strategies for the future. As a result of this process we see the current logistics system, but the parameters of the optimisation process are changing constantly. Global directions of change are called megatrends and common megatrends include: globalisation and increasing importance of Asia, global political issues but national interest, rising energy demand and increase in alternative energy sources, climate change, increasing pace of technological development and urbanisation.

In this study five trend categories were identified based on the megatrends and considered in terms of their effect on the Baltic Sea logistics system. The trends were also analysed by their significance and affectability by maritime sector in order to give the actors a better understanding of the trends which may and should be affected.

Four scenarios were build based on the trends. The age of growth scenario is characterised by steady economic growth, growing importance of service sector and restoration of trade between Russia and Europe. The age of regulation, on the other hand, is defined by slow economic development due to strict environmental regulation and lack of innovations in heavy industry. The age of locality could be sparked by rapid climate change which would lead to high price of energy and resulting halt in global trade. The age of change would be possible if technological innovations enable rapid transition to renewable energy and Russia integrates closely to Europe as its energy resources lose its geopolitical significance.

The actors may take one of these scenarios and begin to work actively towards it or take another and work against it. Actors may also build their own scenario as a new combination of the factor values presented in the futures table in this article.

General information
State: Published
Ministry of Education publication type: D2 Article in professional manuals or guides or professional information systems or text book material
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Liimatainen, H.
Number of pages: 15
Pages: 189-203
Publication date: 18 May 2016

Host publication information
Title of host publication: The maritime cluster in the Baltic Sea region and beyond
UX Expeditions in Business-to-Business Heavy Industry - Lessons Learned

Traditionally, user experience research has focused on consumer products, and there is little research on the role of experience design in business-to-business industry. This paper shortly reports the lessons learned on introducing experience design to Finnish metals and engineering industry during a 5-year research programme. It proved important to prepare the organization to the experience thinking, to give practical means to designing for experiences, to provide distinctive experiences in all touchpoints, and to widely advertise the benefits of experience-driven design. Investing in experiences ultimately pays off by enhanced competitive advantage. We call for more research on experience design in this domain by suggesting research topics for the future.

Comparing university students' commitment – a multicultural case study

The aim of this research was to evaluate and compare the creative tension of university students in three different universities in South Korea and Finland. The creative tension, or the gap between a person's feeling of current reality and target for future, was analysed according to features describing their committing factors related to their universities and studies. Data for this study were collected from 41 university students through self-evaluation using internet-based survey instrument. The application was able to identify the creative tension in each group of university students, and the results show differences in creative tension across the universities and also between countries. This type of in-depth analysis into the cultural perceptions of attributes offers valuable new information for academia and businesses.
Donald Trumpin mediaspektaakki ja konservatismin ideologia(t)

General information
State: Published
Ministry of Education publication type: B1 Article in a scientific magazine
Organisations: Signal Processing
Authors: Ahonen, K.
Number of pages: 5
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Peer-reviewed: No

Publication information
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Issue number: 1
ISSN (Print): 0782-3053
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Electronic versions:
56577-1-55781-1-10-20160415-Ahonen-Trump
Links:
http://journal.fi/lahikuva/article/view/56577
http://urn.fi/URN:NBN:fi:tty-201708141676
Research output: Scientific › Article

Organizational Commitment and Engagement in Two Finnish Energy Sector Organizations
This study was conducted to show a novel way to analyze organizational commitment and engagement levels in organizations, and to compare the results of two Finnish organizations operating in the energy sector. Employees estimate the truth value of statements with regard to their own organization at a given moment in time. The employees also specify how they would like the situation represented by the statements to be in the future. In this study, we requested participation from a total of 90 senior salaried employees from two companies in the spring of 2014. In the end, we obtained 54 responses in total, giving us a response rate of 88% for Company A and 25% for Company B. On the basis of the responses, a collective understanding of each organization was first defined, and then a comparison was made
between these two organizations. The results of these comparisons show that there are similarities between the companies, even though the degree of affective commitment was significantly higher in one of the companies. However, both companies had similar focus points and priorities in the current state, target state, and proactive vision. On the other hand, the study also discovered that there were major differences regarding some of the evaluated features, as expected. As a result of the analysis, important areas of development were observed in both companies.

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State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Pori Department
Authors: Einolander, J.
Number of pages: 16
Pages: 408-423
Publication date: 1 May 2016
Peer-reviewed: Yes

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ISSN (Print): 1090-8471
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Scopus rating (2016): SJR 0.344 SNIP 0.744 CiteScore 1.13
Scopus rating (2015): SJR 0.334 SNIP 0.812 CiteScore 0.78
Scopus rating (2014): SJR 0.296 SNIP 0.68 CiteScore 0.62
Scopus rating (2013): SJR 0.228 SNIP 0.779 CiteScore 0.86
Scopus rating (2012): SJR 0.231 SNIP 1.295 CiteScore 0.78
Scopus rating (2011): SJR 0.343 SNIP 0.844 CiteScore 0.86
Scopus rating (2010): SJR 0.368 SNIP 0.786
Scopus rating (2009): SJR 0.38 SNIP 0.762
Scopus rating (2008): SJR 0.181 SNIP 0.4
Scopus rating (2007): SJR 0.431 SNIP 1.114
Scopus rating (2006): SJR 0.275 SNIP 0.515
Scopus rating (2005): SJR 0.296 SNIP 0.711
Scopus rating (2004): SJR 0.348 SNIP 1.185
Scopus rating (2003): SJR 0.472 SNIP 0.63
Scopus rating (2002): SJR 0.387 SNIP 0.818
Scopus rating (2001): SJR 0.193 SNIP 0.838
Scopus rating (2000): SJR 0.206 SNIP 0.328
Scopus rating (1999): SJR 0.323 SNIP 0.432
Original language: English
ASJC Scopus subject areas: Industrial and Manufacturing Engineering, Human Factors and Ergonomics
Keywords: Commitment, Decision support system, Engagement, Evaluation, Organization
DOIs: 10.1002/hfm.20664
Source: Scopus
Source-ID: 84963963384
Research output: Scientific - peer-review › Article

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**General information**
State: Published
Ministry of Education publication type: D5 Text book, professional manual or guide or a dictionary
Organisations: Department of Civil Engineering, Research group: Service Life Engineering of Structures, Research area: Structural Engineering, Research group: Structures and Their Behaviour
Authors: Köliö, A., Pakkala, T., Lahdensivu, J., Pentti, M.
Number of pages: 115
Publication date: May 2016

**Publication information**
Possible impacts of increasing maximum truck weight: Finland case study

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Nykänen, L., Liimatainen, H.
Number of pages: 13
Pages: 121-133
Publication date: May 2016

Host publication information
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Volume: 2
Place of publication: Great Britain
Publisher: Wiley-ISTE
Editors: Blanquart, C., Clausen, U., Jacob, B.
ISBN (Print): 978-1-78630-027-0
Keywords: Freight logistics, Energy efficiency
ASJC Scopus subject areas: Business and International Management, Environmental Engineering
Links:
http://www.iste.co.uk/index.php?p=a&action=View&id=977
Research output: Scientific - peer-review › Chapter

Crowdsourcing in Business-to-Business Markets: A Value Creation and Business Model Perspective

The foundation for the analysis of this chapter builds on the value creation model of Amit and Zott (2001), where they studied the importance of sources of value creation in the field of electronic business. This model was chosen for the purposes of this study because it is developed from fundamental value creation models and dominates concerning value creation in e-business, of which crowdsourcing by utilizing social media tools represents also. Moreover, Amit and Zott’s business model (2001, p. 511), which focuses on e-business for B2C companies, can be adapted for all virtual markets in general, and also applies to B2B companies (2006, p. 20). Most importantly, the model enables to analyze the relations between value creation and business model. In next, the theoretical background of value creation is opened up especially in the context of business-to-business markets, and furthermore, the model of Amit and Zott (2001) is presented. Lastly, crowdsourcing in business-to-business markets as the research context of the present study is discussed.

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Bernhardt, J., Helander, N., Jussila, J., Kärkkäinen, H.
Number of pages: 11
Pages: 933-943
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Crowdsourcing in Business-to-Business Markets
DOIs:
10.4018/978-1-4666-9787-4.ch066
Integration obstacles during ERP development
ERP (Enterprise Resource Planning) systems have increasingly been developed and integrated with other internal and external systems. This paper contributes to the field of enterprise systems integration by clarifying the concept of integration in the context of ERP systems. We investigated integration obstacles during ERP development in 5 large organizations through theme-based interviews. Besides considering integration as purely technical challenge, our findings reveal the other perspectives of integration. In total 31 environmental, technical, managerial, and organizational integration obstacles were identified from empirical data and further mapped with 13 ERP challenge categories derived from the literature. Our findings reveal that integration barriers are related to all 13 categories of ERP challenges. This indicates that integration should not be a separate project from ERP development. Identifying the integration obstacles is necessary for practitioners to develop counteractions to enterprise integration problems.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Lappeenranta University of Technology
Authors: Banaeianjahromi, N., Kahkonen, T., Alanne, A., Smolander, K.
Number of pages: 10
Pages: 4697-4706
Publication date: 7 Mar 2016

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ASJC Scopus subject areas: Engineering(all)
Keywords: Enterprise integration, ERP, Integration challenges, Integration obstacles
DOIs: 10.1109/HICSS.2016.582
Source: Scopus
Source-ID: 84975482964
Research output: Scientific - peer-review » Conference contribution

Benchmarking supplier development: An empirical case study of validating a framework to improve buyer-supplier relationship
In today's dynamic business environment, firms are required to utilize efficiently and effectively all the useful resources to gain competitive advantage. Supplier development has evolved as an important strategic instrument to improve buyer-supplier relationships. For that reason, this study focuses on providing the strategic significance of supplier development approaches to improve business relationships. By using qualitative research method, an integrated framework of supplier development and buyer-supplier relationship development has been tested and validated in a Finnish case company to provide empirical evidence. It particularly investigates how supplier development approaches can develop buyer-supplier relationships. The study present a set of propositions that identify significant supplier development approaches critical for the development of buyer-supplier relationships and develop a theoretical framework that specifies how these different supplier development approaches support in order to strengthen the relationships. The results are produced from an in-depth case study by implementing the proposed research framework. The findings reveal that supplier development strategies i.e., supplier incentives and direct involvements strongly effect in developing buyer-supplier relationships. Further research may focus on considering indepth investigation of trust and communication factors along with propositions developed in the study to find out general applicability in dynamic business environment. Proposed integrated framework along with propositions is a unique combination of useful solutions for tactical and strategic management's decision making and also valid for academic researchers to develop supplier development theories.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering, University of Vaasa (UVA), High Level Training Institute
Authors: Shahzad, K., Sillanpaa, I., Sillanpää, E., Imeri, S.
Number of pages: 15
Pages: 56-70
Together We Stand, Divided We Fall – Analyzing Information Systems Acquisition as Service

Information systems (IS) acquisition is not a widely studied topic in the literature. In particular, although the role and participation of different stakeholders such as business people, IT people, and external vendors and consultants is acknowledged, little is known about how they cooperate in an IS acquisition project. In this paper, we will apply a value co-creation framework taken from service research as a lens to study an IS acquisition project in an organization. The case organization intends to acquire their new IS as a cloud service. This approach is novel to all stakeholders, so they have to intensively cooperate for example under tight time constraints. The analysis reveals that appropriate cooperative work adds value to all participants, creates a win-win situation, and that the original value co-creation framework needs to be tailored according to the context.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Hellsten, P., Alanne, A., Pekkola, S., Tuunanen, T.
Number of pages: 10
Pages: 4870-4879
Publication date: 10 Jan 2016

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Title of host publication: Proceedings of Hawaii International Conference on System Sciences (HICSS-49)
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Publisher: IEEE Computer Society
ISBN (Print): 978-0-7695-5670-3
DOIs:
10.1109/HICSS.2016.604
Links:
Research output: Scientific - peer-review › Conference contribution
Designing Measures for Managing the Effectiveness for Integrated Service Delivery: The Case of a Geriatric Outpatient Clinic

Health and social services are increasingly produced in cooperation among several specialized organizations. This has increased the importance of service integration in the sector. While the literature acknowledges the need for performance measurement addressing outcomes and effectiveness of service integration, not enough is known about applying such measurement practices. This paper examines the design of a performance measurement system to support the effectiveness management of an integrated service delivery. The research identifies three aspects of effectiveness – community, client and network level. Empirical examination reveals that success factors for design of measures for integrated service delivery include consensus on the targets, coordination and fluent cooperation among actors in the network. The paper contributes to performance measurement literature by illustrating how the design of system level measurement is carried out in practice and analyzing the lessons learned.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Sillanpää, V.
Number of pages: 17
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Article number: 3
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DOI: 10.4018/IJPPHME.2015010103
Links:
http://www.igi-global.com/viewtitlesample.aspx?id=143728
Research output: Scientific - peer-review › Article

What is product lifecycle management (PLM) maturity? Analysis of current PLM maturity models

Product lifecycle management (PLM) implementation and adoption involves extensive changes in both intra- and inter-organizational practices. Various maturity approaches, for instance based on CMM (Capability maturity modeling) principles, can be used to make the implementation of PLM a better approachable and a more carefully planned and coordinated process. However, there are a number of different types of current approaches which can be thought to fall under the concept of PLM maturity. The aim of this paper is to investigate and analyze the various existing PLM maturity approaches to get an organized picture of the current models and their main background presumptions, goals and restrictions. Thus, we aim to facilitate their proper selection and use to facilitate the implementation of PLM.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Research group: Novi, Lappeenranta University of Technology
Authors: Kärkkäinen, H., Silventoinen, A.
Number of pages: 8
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Publication date: 1 Jan 2016
Peer-reviewed: Yes

Publication Information
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Volume: 3
Issue number: 3
ISSN (Print): 2317-3963
Ratings:
Scopus rating (2016): SJR 0.302 SNIP 0.183 CiteScore 0.37
Scopus rating (2015): SNIP 0.147 SJR 0.143 CiteScore 0.21
Scopus rating (2014): SNIP 0 SJR 0.147
Knowledge Sharing and Knowledge Security in Finnish Companies

Knowledge management includes several aspects, which can sometimes be even contradictory when operationalized in the daily activities of an organization. In this study, we empirically explore the knowledge management activities that large and small and medium sized companies in Finland have. The focus is especially on sharing and securing knowledge. The theoretical background for the paper is in the broader frame of knowledge management literature, and especially the knowledge sharing and knowledge security viewpoints. The empirical study offers a view on the status of both knowledge sharing and knowledge security in companies of different sizes. The study is able to identify the main challenges in knowledge sharing among companies of different sizes. Furthermore, the areas of knowledge security that still need more careful attention and development actions among companies in their daily operations, are also identified.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, University of Vaasa
Authors: Ilvonen, I., Alanne, A., Helander, N., Väyrynen, H.
Number of pages: 10
Pages: 4021-4030
Publication date: Jan 2016

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Title of host publication: Proceedings of the 49th annual Hawaiian International Conference on System Sciences (HICSS 2016)
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Name: Hawaii International Conference on System Sciences
ISSN (Print): 1530-1605
DOIs: 10.1109/HICSS.2016.499

Bibliographical note
EXT="Helander, Nina"
Research output: Scientific - peer-review › Conference contribution

A Case Study on Participatory Approach to Support Shift to Experience Design of Work Tools in B2B Context

To support the shift from technology-driven to experience-driven design in a company developing work tools (materials handling equipment), we developed and applied a participatory approach to increase awareness and buy-in of experience design and related methods at the company. 1) present user experience (UX) design guidelines developed for both designers and managers based on the participatory process, 2) report evaluation of the guidelines with designers, developers, and selected internal and external stakeholders, and 3) present a participatory approach to create personas and experience journey maps covering the product life-cycle. SWOT analysis of the guidelines revealed that guidelines need to be understandable without expert UX knowledge, managerial support is needed that was aimed to be supported by the guidelines developed for managers, and representative user participation is needed. Participants experienced positively the applied participatory approach, and the mindset change is proceeding in the case company.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Pervasive Computing, Research area: User experience, Aalto University, Department of Design, Rocla Oy
Authors: Väätäjä, H., Hilden, E., Roto, V., Uusitalo, K.
Number of pages: 18
Publication date: 2016
Acceptability of contaminated soils and waste materials in landfill structures

General information
State: Published
Organisations: Civil Engineering, Research group: Earth Constructions
Authors: Leppänen, M. M., Kuula, P.
Publication date: 2016
Peer-reviewed: Unknown
Links:
Research output: Professional › Paper, poster or abstract

Analyzing the relationship between workspace and smart infrastructure reliability and continuity: An ethnography of technicians’ work

Ensuring the reliable and continuous operations of complex, unpredictable, and unstable smart infrastructures, such as computerized and automated power grids or water distribution systems, is a persisting organizational challenge and a societal concern. As technologies are inherently unreliable and, especially, the behavior of complex technological systems is unpredictable, the reliability and continuity of such systems cannot be a mere technological concern, but are precarious achievements that require humans, technologies and other actors. Prior research has shown that work creates variance in organizational performance and that reliability and continuity emerges from what work is done and how it is performed. This ethnographic research focuses on technicians’ IT enabled workspace to analyze how the materiality of the workspace conditions and enables technicians to perform the reliability and continuity of a smart infrastructure (smart power grid). Building on sociomaterial theorizing and infrastructure studies, a concept of infra-acting is developed to denote the technicians’ possibilities for action in smart infrastructure setting, and to foreground and make sense of the reciprocity between the (materiality of) technicians’ workspace and infrastructure continuity. Discussion and conclusions are provided.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Niemimaa, M., Niemimaa, E.
Publication date: 2016

A Practice Lens for Understanding the Organizational and Social Challenges of Information Security Management

As the cost and amount of information security breaches continue to rise, information security management becomes vital for organizations. Often organization seek advice from information security management standards and other frameworks to manage their information security. Such standards and frameworks depict information security management as a rational, systematic and linear process and leave out the complexity and uncertainty of real-life settings. In particular, they pay little attention to the organizational and social challenges inherent in information security management. Therefore, this study draws on the practice theory to develop a practice lens for understanding how people, practices and what happens in practice interact and create such challenges. This lens depicts information security management as emerging from mundane aspects of information security management work and from the enacted social structures of and events arising at an organization and its environment and enables a deeper understanding of the organizational and social challenges. After developing this lens, it is illustrated and elaborated through an ethnographic study at an IT service provider, and its contributions to research and practice discussed.
Building Codes and Demand Response of Energy Use

Buildings are an essential part of the wider energy system. A significant share of electricity consumption occurs in buildings. Traditionally buildings have been places where electricity is consumed. Now they have a growing role also as a location where renewable energy production, such as solar power, occurs.

Demand response means the voluntary actions that are taken on the customer side as a response to something on the demand side. In practice, demand response can involve, for example, reducing the energy consumption during the peak times of the larger energy system or shifting the timing of the building’s energy consumption by synchronizing it with local renewable energy production’s profile inside the building. The building codes of Finland direct the designers’ energy-related solutions both in new construction and licenced renovations.

In this conceptual paper the literature related to demand response and regulation is reviewed, and it is discussed what kind of a role the building codes could have in advancing the buildings’ preconditions for demand response. Demand response is currently brought out in EU directives in the regulation with relation to network operators. However, preparedness for demand response could also be advanced by giving more attention to the timing of power use in the building codes.
Bus Transportation Accessibility - Does It Impact Housing Values?

General information
State: Published
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Organisations: Department of Civil Engineering, Research group: Life-cycle Economics, Research group: Construction Processes
Authors: Kurvinen, A., Sorri, J.
Number of pages: 11
Pages: 321-331
Publication date: 2016

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Volume: IV
Place of publication: Tampere
Publisher: Tampere University of Technology. Department of Civil Engineering
Editors: Nenonen, S., Junnonen, J.
ASJC Scopus subject areas: Economics, Econometrics and Finance (miscellaneous), Civil and Structural Engineering
Keywords: bus stops, bus traffic, housing prices, public transportation, residential property values, traffic related zones, urban form
Electronic versions:
WBC2016_Bus_Transportation_Accessibility
Links:
http://urn.fi/URN:NBN:fi:tty-201606224310

Bibliographical note
This paper won World Building Congress 2016 Best Paper Award.

Case study: developing campus spaces through co-creation
Higher education institutions are designed to support their core processes – learning, teaching, research, and societal impact. In order for university facilities to support these activities, it is crucial to determine together with the users what these activities are and how they are supposed to be developed in the future. This article examines the relationship between user needs and the service level in construction projects through a case study where a university cafeteria was renovated using a participatory design (PD) method called charrette. The aim of this case study was to study the effects of collaborative ways of working when applied to a space retrofit project, and how the co-created ideas are actualized during the project. Based on video observation, project document analysis, and survey questionnaires, this research shows that PD duly provides a positive impact on the resulting premises, even though every part of the project may not be successful. However, the use of PD during the concept design phase does not necessarily guarantee success. The accomplishments can be undone in the later phases of the project if collaboration is not extended through the entire project. Further, the findings of this case study revealed a framework of user needs that can be used in design management in order to enhance the user perspective.
Cluster analysis of Finnish car retail and service business operations strategy and innovation management capabilities

This research explores the strategic management of operations and innovation capability in the Finnish car retail and service business. In order to develop customer satisfaction and competitive edge, companies need innovative capability to plan and manage operational strategy. Novel collaborative thinking with stakeholders is needed to predict and meet customer needs. Therefore, the ability to create process and service innovations is important. A survey was executed among CEOs and top managers of 147 companies. Data analysis results revealed significant clustering and differences in companies' capabilities. The practical implication from this study is direct performance development proposals for managers.
Commercialising reclaimed materials in earthworks – guidelines for productization and the process of appending these materials in the Finnish national code of practice

To decrease the use of non-renewable natural resources as well as environmental effects of earth-works, natural aggregate materials can be replaced with recycled materials acquired from surplus soil, industrial by-products and waste, etc. When wishing to increase the usage of these reclaimed materials (=“UUMA”-material), the usage must be straightforward for developers, designers and constructors alike. To make this possible, the materials must have design guidelines for their appro-priate applications. They must be productized and CE marked or otherwise authorized, and the con-struction guidelines for the materials must be included in the Finnish general specifications for in-frastructural construction works (InfraRYL). As productization is especially important in increasing the usage of UUMA materials, guidelines for vendors are being drawn that present information on commercializing reclaimed materials to be used in earthworks. The guidelines for productization are being prepared in the Finnish national UUMA2 programme (2013-2017, www.uuma2.fi), which was created to promote the use of recycled materials in earthworks.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Civil Engineering, Research area: Earth and Foundation Structures, Research group: Earth Constructions, Research group: Track Structures, Ramboll Finland Ltd.
Authors: Koivisto, K., Forsman, J., Ronkainen, M., Lahtinen, P., Kolisoja, P., Kuula, P.
Number of pages: 10
Publication date: 2016

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Title of host publication: Proceedings of the 17th Nordic Geotechnical Meeting Reykjavik Iceland : Challenges in Nordic Geotechnic 25th - 28th of May
Place of publication: Reykjavik
Publisher: Icelandic Geotechnical Society
ISBN (Electronic): 978-9935-24-002-6
Links:
http://www.ngm2016.com/
Research output: Scientific - peer-review > Conference contribution

Commitment and motivation in professional organization
Personnel is vital for the companies and the performance in organizations is based on competence of personnel. Motivation and commitment are critical preconditions for organizational success. The study focuses on evaluating commitment and motivation levels of experts. The aim was to discover the main exceptions between the current status and the vision regarding commitment and motivation. The fluctuations of commitment and motivation levels were analyzed in terms of departments, gender, age and years of service. The survey was conducted by using Helix, an Evolute-based application, which was developed for measuring and evaluating the personnel commitment levels. This survey strongly emphasized the significance of affective commitment. In observing either the creative tensions or the product of creative tension and importance, all surfacing main categories fall under the affective commitment component.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Koski, J., Einolander, J., Vanharanta, H.
Number of pages: 12
Pages: 47-58
Publication date: 2016

Host publication information
Title of host publication: Advances in Human Factors, Business Management, Training and Education : Proceedings of the AHFE 2016 International Conference on Human Factors, Business Management and Society
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10.1007/978-3-319-42070-7_5
**Computer-supported collaborative learning: Praxes in new cell-oriented configurable PC-classroom**

Currently, technology-enhanced learning environments are a research hotspot in engineering education. Universities invest in modern environments equipped with the newest audiovisual hardware, computers and web-technologies. These environments support learner-centred model of education, which highlights active role of learners, learning-by-doing, and collaborative learner autonomy in a democratic atmosphere. Therefore, traditional teacher-led classrooms can be transformed to more diverse and more creative environments in which teachers and learners have relatively different roles compared with the traditional classroom.

In this paper, we present layout, construction and hardware of our newly developed technology-mediated, configurable, and cell-oriented PC-classroom, which play a key role in our teaching development. We exemplify how the classroom has helped us to improve our automation science and control engineering education. To be more specific, we have adopted the well-known concept of computer-supported collaborative learning (CSCL), which concerns how students can learn together with the help of computers. We also demonstrate how redefining and redesigning the nature of activities occurring in modern learning environments can improve the effectiveness of contact teaching, and hence, allow learning episodes to be more impactful compared with the traditional teacher-led classroom. We would like to pinpoint that redefinition and redesign have allowed us, as teachers, to take the position of a facilitating guide, or mentor, which work in close cooperation with students, and thereby, is able to strengthen the knowledge level of students through intellectual face-to-face discussion as well as through technology-supported communication.

Furthermore, our new classroom has enabled hands-on, competitive, cyber-physical attack-defence events to be conducted, which improve our automation security training. The events have invited participants from industry and academia, but most importantly, they have involved students. During the events, we have offered opportunities for students to make demonstration-of-skills to the participants from business. As a consequence, the new environment has enabled acts of openings for university-business cooperation in terms of education and recruit, free of charge. To our experience and according to student feedback, our redefined ways of conducting teaching has improved student motivation as well as increased their timely investment towards learning activities, which has eventually translated to better grades and overall satisfaction.

**Consensus building in the pre-design phase of building projects**

Building projects are unique manoeuvres in which numerous participants who possess different skills work together to complete various tasks. Working processes vary in complexity from simple to very complex. Although the building construction sector has traditional ways of structuring projects, project management professionals are continuously seek new process models and ways to cooperate between people and project participants. This paper focuses on processes in the pre-planning phase of a building project and is based on exploratory study where the conceptual and empirical literature about construction processes and decision-making were reviewed. Over thirty existent models were identified and thirteen of these models, which take a decision making into account, were more closely studied. In addition, decision-making models in other fields were surveyed. Using a hermeneutic cycle approach, the aim of this paper is to investigate a preferable model for the pre-planning phase of construction projects that can produce the main objectives, which is to best
serve the end user and the project as a whole. As a final result a new model in the case of the pre-design phase of the building process is introduced and discussed. This paper asks what we have learnt from these foci.

**General information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Authors: Keinänen, M., Uotila, U., Sorri, J., Teriö, O., Kähkönen, K.
Number of pages: 12
Pages: 561-572
Publication date: 2016

**Host publication information**
Title of host publication: WBC16 Proceedings of the CIB World Building Congress 2016 Volume II : Environmental Opportunities and challenges, Constructing commitment and acknowledging human experiences
Volume: Volume II
Publisher: Tampere University of Technology. Department of Civil Engineering
Editors: Prins, M., Wamelink, H., Giddings, B., Ku, K., Feenstra, M.

**Publication series**
Name: Tampere University of Technology. Department of Civil Engineering. Construction Management and Economics.
ISSN (Print): 1797-8904
Keywords: consensus building, target setting, decision-making, construction project management, pre-design phase
Links:

**Construction of enterprise architecture in discourses within the public sector**
Enterprise Architecture (EA) has been employed in the public sector to improve efficiency and interoperability of information systems. Despite their daily use in the public sector, the concepts of Enterprise Architecture and efficiency are ambiguous and lack commonly accepted definitions. The benefits and outcomes of using EA in the public sector have been studied with mixed results. This study examined the use of EA in the Finnish basic education system using critical discourse analysis (CDA). The research revealed how the role and rationale of EA is constructed in the speech of public sector officials. Three orders of discourse, each having its own views on EA, were found. While there were commonly accepted functions for EA, there were also areas where the concepts were not mutually understood or accepted.

**General information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Lemmetti, J.
Number of pages: 12
Pages: 287-298
Publication date: 2016

**Host publication information**
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Publisher: Springer Verlag
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Name: Lecture Notes in Computer Science
Volume: 9820
ISSN (Print): 0302-9743
ISSN (Electronic): 1611-3349
Keywords: CDA, Discourse analysis, Efficiency, Enterprise architecture, Public sector
ASJC Scopus subject areas: Theoretical Computer Science, Computer Science(all)
DOIs: 10.1007/978-3-319-44421-5_23
Contextual factors and entrepreneurial innovation: case study in equipment & machinery

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Research group: Business Ecosystems, Networks and Innovations, Industrial and Information Management
Authors: Seppänen, M.
Publication date: 2016

Host publication information
Title of host publication: ISPIM Summit 2016 Proceedings in Kuala Lumpur, Malaysia: 4-7 December 2016
Publisher: International Society for Professional Innovation Management ISPIM
Links:
Research output: Scientific - peer-review › Conference contribution

Delphic maxims based applied philosophy for business and governance management
Knowledge analysis and representation is significant in defining situations before they are implemented through action. Knowledge engineering precedes knowledge management and knowledge utilization needs knowledge creation. In the race for capturing and mastering knowledge, emphasis is given to the development of intelligent methods and tools to understand the human mind, but not the human being itself. To tackle this complexity, it is necessary to seek knowledge in non-trivial sources via root cause analysis models of philosophical wisdom, which usually provides the answers. As problems become more complex over time, synergies of knowledge disciplines are critical and necessary. This paper presents a triadic categorization approach, based on classes, taxonomies, and ontologies of the Delphic Maxims, and their analysis by cognitive models in an attempt to reveal their contribution to modern business and governance management through the essence of the Hellenic contribution to the global economy, civilization and humanity.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, University of Vaasa (UVA)
Authors: Markopoulos, E., Vanharanta, H.
Number of pages: 13
Pages: 33-45
Publication date: 2016

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Name: Advances in Intelligent Systems and Computing
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ASJC Scopus subject areas: Control and Systems Engineering, Computer Science(all)
DOIs: 10.1007/978-3-319-42070-7_4
Links:

Bibliographical note
Developing competitive advantage through tracking tools in service business: The case of a global industrial service supplier

This research is about the utilisation of tracking tools in maintenance resource coordination to investigate the benefits of tracking in the coordination processes. Based on service industry, this study uses a pilot project, questionnaires and interviews as research methods. Various challenges were found in the field of mobile workforce management; coordination, safety at work, achieving optimisation goals of cost-efficiency, quality and customer service. Many of these challenges can be facilitated with tracking. However, the possibilities of tracking utilisation vary in differing business areas of case company. Four dimensions in the existing business were identified. They are connected with the mobility and management style of service technicians. Further, the main tracking opportunities were introduced into each of these business fields. The successful usage and implementation of a tracking system necessitates strong support from management. Tracking tools offer numerous opportunities for maintenance resource coordination. Undoubtedly, the tracking implementation and utilisation require consideration of several managerial matters.
Development of students’ commitment over time—case study from a Finnish university of technology

Using a fuzzy logic-based application that utilizes linguistic scale values, we have evaluated commitment and engagement of five individual university students from Finland studying Industrial Management and Engineering from bachelor’s to master’s level. The data was gathered over one year and the students answered the application three times during different management courses. This research paper concentrates on analyzing three different commitment categories to see whether there has been change over time, as expected. Our assumption is that academic commitment and engagement toward studies tend to increase as studies progress and students approach graduation.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Einolander, J., Vanharanta, H.
Number of pages: 9
Pages: 69-77
Publication date: 2016

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Publisher: Springer Verlag
ISBN (Print): 9783319420691

Publication series
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Volume: 498
ISSN (Print): 2194-5357
ASJC Scopus subject areas: Control and Systems Engineering, Computer Science(all)
Keywords: Academic, Commitment, Evaluation
DOIs: 10.1007/978-3-319-42070-7_7

Bibliographical note
JUFOID=79020
Source: Scopus
Source-ID: 84979675925
Research output: Scientific - peer-review › Conference contribution

Different approaches of the PLM maturity concept and their use domains—analysis of the state of the art

Product lifecycle management (PLM) implementation and adoption involves extensive changes in both intra- and inter-organizational practices. Various maturity approaches, for instance based on CMM (Capability maturity modeling) principles, can be used to make the implementation of PLM a better approachable and a more carefully planned and coordinated process. However, there are a number of different types of current approaches which can be thought to fall under the concept of PLM maturity. The aim of this paper is to investigate, analyze and categorize the various existing PLM maturity approaches to get an organized picture of the models and their background presumptions, as well as their potential use domains, and to facilitate their proper use to better implement PLM in different industry contexts.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Lappeenranta University of Technology
Authors: Kärkkäinen, H., Silventoinen, A.
Number of pages: 14
Pages: 89-102
Publication date: 2016

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Publisher: Springer New York LLC
ISBN (Print): 978-3-319-33110-2

Publication series
Name: IFIP Advances in Information and Communication Technology
Volume: 467
Different roles in leadership styles in modern organization

Today's rapidly changing world has forced leaders to change their leadership styles aligned to the current situation faster than ever. What kind of leadership style should be utilized in modern expert organization? What are leaders' own experiences and can leadership styles somehow been assessed? What have scholars founded regarding leadership styles? This paper examines different situational leadership approaches in order to reveal literature based ontology of leadership styles. Ontology includes leadership styles from over ten well known and tested leadership approaches. Case study is also used to test the possibility for find leaders' styles and development needs via survey. A sample group of leaders answered to the survey with a focus to clarify the leaders of a conscious understanding towards the working role styles of leadership. The perspective of this paper is the leadership styles and coordination between different leadership approaches. Paper handles results and points out future research suggestion.

Ecosystems Here, There, and Everywhere — A Barometrical Analysis of the Roots of ‘Software Ecosystem’

This study structures the ecosystem literature by using a bibliometrical approach in analysing theoretical roots of ecosystem studies. Several disciplines, such as innovation, management and software studies have established own streams in the ecosystem research. This paper reports the results of analysing 601 articles from the Thomson Reuters Web of Science database, and identifies ten separate research communities which have established their own thematic ecosystem disciplines. We show that five sub-communities have emerged inside the field of software ecosystems. The software ecosystem literature draws its theoretical background from (1) technical, (2) research methodology, (3) business, (4) management, and (5) strategy oriented disciplines. The results pave the way for future research by illustrating the existing and missing links and directions in the field of the software ecosystem.
Empowerment in construction: a qualitative analysis of subcontractors' quality assurance

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Civil Engineering, Research group: Construction Processes
Authors: Viita, J., Junnonen, J.
Pages: 436-448
Publication date: 2016

Host publication information
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Publisher: Tampere University of Technology. Department of Civil Engineering
Research output: Scientific - peer-review › Conference contribution

Enhancing old laboratory experiment using flipped learning: Towards self-regulating collaborative groups in blended learning environment

This paper demonstrates how learning outcome of a traditional student laboratory has been improved using blended and flipped learnings in a cost-effective way. The innovation process was based on four important elements: the subject matter, educational theory, redefinition of the roles of teacher and students, and technology-driven utilities intended for education. Also, prelab activities were refurbished in order to better prepare students for the actual experiments. Teaching and learning relationship was redesigned to support learner-centred model of education, and on-site activities occurring in the laboratory room were reformulated to advance self-regulation and learner autonomy. As a consequence, the role of teacher is steered towards mentor-like activity, and hence, a teacher-mentor can use his own expertise to strengthen the knowledge level of students via on-site professional facilitation.

To be more specific, prelab activities were delivered using a virtual laboratory and a teaser video. The main role of the teaser video is to allow a remote visit to the physical laboratory room before students actually enter there. The teaser video delivers interesting visual information of the laboratory equipment when it is fully operational, and hence, students can identify causal connections of all devices affecting the physical system from anywhere at any time. The virtual laboratory, on the other hand, enables students to observe several physical quantities and their curvatures which cannot be observed nor displayed by the physical devices in the laboratory room. Furthermore, the open-ended nature of the
virtual laboratory also enables students to use it as a subject for their own active research. The teaser video and virtual laboratory help students to develop intuition, and they also strengthen students’ preparation in a timely fashion manner. As a result, more time is released for active on-site student collaboration and teacher facilitated intellectual discussion. Interestingly, the virtual laboratory is key to establish highly collaborative and activity-based learning environment inside the laboratory room. Finally, it is shown that the new implementation of the laboratory work significantly reduces implementation costs.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
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Authors: Pyrhönen, V.
Number of pages: 9
Publication date: 2016

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Keywords: Blended Learning, Cost Reduction, Flipped Learning, Laboratory
ASJC Scopus subject areas: Education
Links:
Research output: Scientific - peer-review › Conference contribution

Evaluating the business impacts of social media use with System Dynamics and Agent-Based Modeling: A Literature Review
Social media has been widely adopted as a useful business tool, especially in the domain of business to consumer marketing. However, the deployment of social media tools to business processes is hindered by the lack of concrete indicators of the effects its use has on the business process. Computer based modeling has been widely used to simulate and predict business effects in other streams of study, but relatively little in the evaluation of social media impacts. This paper argues that System Dynamics and Agent-Based Modeling have been and should be utilized in measuring social media and its impacts in business context in general, as well as in the context of business ecosystems. The authors review the current state of the use of these simulation methods in the evaluation of social media business impacts by conducting a systematic literature review.

General information
State: Published
Ministry of Education publication type: A2 Review article in a scientific journal
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT), Granite Partners Ltd
Authors: Pirttilä, O., Kärkkäinen, H., Jussila, J. J.
Publication date: 2016
Peer-reviewed: Yes

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Volume: 8
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ISSN (Print): 1942-9010
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Keywords: social media, system dynamics, agent-based modelling
ASJC Scopus subject areas: Management of Technology and Innovation
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DOIs:
10.4018/IJVCSN.2016040104
Links:
http://urn.fi/URN:NBN:fi:ttly-201608044390
Research output: Scientific - peer-review › Review Article
Functional model for organisational and safety culture

Cultures are usually defined as shared values, attitudes and behaviour of certain group. The core of culture is inside person's mind. Only through behaviour or other actions of persons the culture becomes visible and shareable. Cultural artefacts and all other perceptible signs of culture are formed through action. From this perspective culture requires functionality. It does not exist nor spread without activity of individuals. In systems theory there is a methodological distinction between theoretical system and empirical system. Theoretical system "is a complex of concepts, suppositions, and propositions having both logical integration and empirical reference". Empirical system is "a set of phenomena in the observable world that is amenable to description and analysis by means of a theoretical system". However, in cultural context, theoretical models usually describe only properties of the empirical system. Usually the functionality of the culture is left undefined. Therefore theoretical models may have flaws in their ability to describe the functionality of the culture, which is essential part of the culture. In this paper we use a novel functional model to explore the functionality of the most commonly used culture models. We inspect Schein's organizational culture model, Cooper's reciprocal safety culture model and Johnson's cultural web. We study them and their functionality with our own functional model, which integrates person to sociotechnical system and shows person-sociotechnical system interaction. This study clearly shows that if culture's basis is in shared mental models, then the question whether organization is or has culture is absurd. As Antonsen has pointed out certain mandatory organizational features are clearly structural and not cultural. We also emphasize the behavioural aspect when defining cultural issues. The shared mental model alone is not sufficient requirement to define a feature as a cultural artefact, nor is the behaviour all employees share. Behaviour or action is cultural artefact only when the members of the culture have truly free will to choose their behaviour.
Kirjaston paikallisasiakkaiden asiakasuskollisuus: case Tampereen teknillisen yliopiston kirjasto

The universities are run increasingly like a commercial organization, a shift that has transformed customer loyalty into an important theme for academic libraries. The purpose of this study is to measure the customer loyalty of the customers of the Tampere University of Technology library and utilize the loyalty theories – with loyalty as the ultimate dependent
variable – in the university context. According to this study TUT library on-site customers are highly loyal. The customer satisfaction levels are high, but the results shown in this study are also in line with the previous findings that there are more behind the high loyalty numbers than just the general customer satisfaction levels. Our study indicated that it could be worthwhile to study more thoroughly the formation process of customer loyalty in the university library context. To find out what really are the key factors in the formation of customer loyalty.

Knowledge work productivity framework – new ways of working context

Knowledge work productivity has been a popular topic in many research areas for decades. Current interest towards it has arisen due to organizations’ needs to make major changes for improving the productivity and lowering the costs. In the New Ways of Working concept, organizations change their work environment to support flexibility and employees’ opportunities to find the best ways to do their work. These changes impact the workplace, technology and management of the organization. Productivity is a typical dependent variable in many research areas, but fewer studies have been made that combine productivity drivers with the same model or study it from the knowledge worker perspective. The purpose of this paper is to identify key factors of knowledge work and what their impacts are on knowledge work productivity. The paper creates a knowledge work productivity framework. The framework consists of two major elements, the knowledge worker itself and the work environment. The value of the framework for researchers is that it increases the understanding of the phenomenon of knowledge work productivity and offers future research opportunities. For managers looking for competitive advantage or planning work environment changes, it gives a good grasp of what to focus on.
Master's students' commitment and engagement in their course behavior

Student commitment is a major concern for universities around the world. Research has indicated that students' psychological attachment to their university, in other words commitment, can be a major predictor of student retention, as well as affecting many other attitudes and types of behavior. This makes university commitment critical to university success. The present study seeks to find out whether there is a relation between students' grades and the degree of their engagement and commitment, using the Evolute approach. The research group in this study consisted of master's degree students studying in faculties of Business and Built Environment and Computing and Electrical Engineering. In the newly developed instrument, respondents assessed 124 unique statements regarding their current situation and their vision for the future. This score and its sub-scores are compared in relation to individual course grades.

Modelling of plastic culvert and road embankment interaction in 3D

A series of 3D Finite Element simulations was performed to investigate the effect of different factors influencing the distortions undergone by a plastic culvert tube while subject to external loading from a heavy truck. The applied simulation model was verified by full-scale loading tests carried out on a number of actual culvert installation sites. Based on the results of the study, it can be concluded that both installation depth and quality of the material surrounding the culvert have a dominant effect on culvert distortions while the effects of material quality above the culvert and the type of tyre...
configuration transmitting the wheel load are much less pronounced.

**General information**

**State:** Published  
**Ministry of Education publication type:** A1 Journal article-refereed  
**Organisations:** Department of Civil Engineering, Research area: Earth and Foundation Structures, Research group: Earth Constructions  
**Authors:** Kolisoja, P., Kalliainen, A.  
**Number of pages:** 8  
**Pages:** 427-434  
**Publication date:** 2016  
**Peer-reviewed:** Yes

**Publication information**

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**Volume:** 143  
**ISSN (Print):** 1877-7058  
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- Scopus rating (2015): SJR 0.238 SNIP 0.568 CiteScore 0.56  
- Scopus rating (2014): SJR 0.275 SNIP 0.679 CiteScore 0.53  
- Scopus rating (2013): SJR 0.217 SNIP 0.464 CiteScore 0.4  
- Scopus rating (2012): SJR 0.191 SNIP 0.396 CiteScore 0.28  
- Scopus rating (2011): SJR 0.237 SNIP 0.586 CiteScore 0.45  
- Scopus rating (2010): SJR 0.219 SNIP 0.434  
**Original language:** English  
**Electronic versions:**  
- Kolisoja & Kalliainen Procedia Engineering Copy  
**DOIs:**  
- 10.1016/j.proeng.2016.06.054  
**Links:**  
**Research output:** Scientific - peer-review › Article

**Municipal economics of regional development – infill versus greenfield development**

There is an ongoing debate in academia about the pros and cons of infill development. It has been said that dense city structure can lead to several agglomeration benefits and cost savings, whereas urban sprawl is usually seen as a negative phenomenon supporting an unsustainable lifestyle and leading to increasing municipal expenditures. Contradictive perspectives can also be found. Some studies claim that limiting the land available to build on is raising the prices in housing markets resulting in various problems. It is also alleged that the economic benefits gained through densifying are diminished in cities with a population over 500 000.

In this case study, the analysis is limited strictly to the financial aspects of regional development projects. The main difference when comparing this study to the existing body of literature is that the municipal revenues are considered alongside the expenditures instead of focusing solely on the cost aspects. The net Present Value method is used to analyze three different regional development projects. An ongoing greenfield residential area development project is compared with two infill development projects in the city of Tampere in Finland. The first infill area is situated in the immediate vicinity of the city center and the second is a suburb about eight kilometers west from downtown Tampere. The analysis provides information not only about differences between infill and greenfield projects, but also about the dissimilarities between different types of infill.

The results indicate that from the perspective of municipal economics, residential infill is more profitable when compared to greenfield development. Two studied infill areas start returning profits 25–30 years after the start of the development, whereas for the studied greenfield project the corresponding value is almost 50 years. Despite the undeniable economic benefits, the practice shows that there are still major obstacles preventing the widespread realization of infill in Finland.

**General information**

**State:** Published  
**Ministry of Education publication type:** A3 Part of a book or another research book  
**Organisations:** Department of Civil Engineering, Research group: Life-cycle Economics  
**Authors:** Vihola, J., Kurvinen, A.  
**Number of pages:** 24  
**Pages:** 59-82
Open Innovation Adoption Practices and Evaluation Methods in the Global Process Industry

Inter-organisational collaboration is crucial for Open Innovation adoption in order to realise, in practice, the potential benefits of the concept. However, the number of empirical studies on the activities and processes that contribute to Open Innovation adoption is relatively limited. Therefore, this chapter provides empirical evidence from the global process industry, where we have defined, tested and utilised the standardised process, evaluation methodologies and tools that engage several collaborators to improve the key business process performance of their firms. The results show that the standardised process can provide several concrete business results for the management, and can efficiently promote the adoption of Open Innovation, as well as the utilisation of the firm’s tacit knowledge to further improve the business performance.

Perspective of Social Usability in the Change Processes of an Academic Workplace

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Perspecti...
Pohjoismaiden energiapoliittika 2030: Hiilineutraalimpaan energiayrjestelmaan osin yhdessä, osin eri polkuja pitkin

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Civil Engineering, Department of Electrical Engineering, Department of Chemistry and Bioengineering, Department of Physics, Research group: Construction Processes, University of Tampere, VTT
Number of pages: 23
Publication date: 2016

Publication information

Publication series
Name: EL-TRAN analyysi
Volume: 4/2016
Keywords: Energy policy, Energy system, Carbon footprint
Links:
https://tt.eduuni.fi/sites/EL-TRAN/julkiset%20tiedostot/Pami%20Aalto%20et%20al,%20Pohjoismainen%20energiapoliittika%202030%20-%20hiilineutraalimpaan%20energij%C3%A4rjestelmaan%C3%A4n%20yhdess%C3%A4%20ja%20eri%20polkuja.pdf
Research output: Professional » Discussion paper

Rakennuskannan kehitys ja alueellinen sosioekonominen erityyminen

The status of socioeconomic segregation was investigated in Helsinki Metropolitan Area, City of Tampere, and City of Turku. Furthermore, the existence of statistically significant associations between changes in housing and building stock, and development of socioeconomic segregation was examined. The empirical analysis was performed in three separate phases, including spatial analysis, estimations of logit models, and finally, OLS estimations of regression models. The data was collected from grid-based monitoring system for spatial structure and urban form (YKR), spanning from 2000 to 2012. The size of one grid cell was 250 x 250 meters. For further analysis, the grid data was merged with a dataset containing locations and basic information on housing developments subsidized by the Housing Finance and Development Center of Finland (ARA).
It was found that the relative number of people living in socioeconomically segregated grid cells had increased in all areas during the study period. However, at the same time the boundary values for lower and upper quintiles of the variables indicating the status of socioeconomic segregation differentiated relatively little in the study period. Furthermore, statistically significant associations between changes in building stock and socioeconomic segregation were observed. Property types and housing tenures located in the grid cells were also found to be associated with the socioeconomic status of people living in those areas.

**General information**
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Organisations: Department of Civil Engineering, Research group: Construction Processes
Authors: Kurvinen, A., Sorri, J.
Number of pages: 26
Pages: 109-134
Publication date: 2016
Peer-reviewed: Yes

**Publication information**
Journal: JANUS: SOSIAALIPOLITIIKAN JA SOSIAALITYÖN TUTKIMUKSEN AIKAKAUSLEHTI
Volume: 24
Issue number: 4
ISSN (Print): 1235-7812
Original language: Finnish
ASJC Scopus subject areas: Urban Studies
Keywords: socioeconomic segregation, building stock, housing stock, real estate development, housing development
Links:
Research output: Scientific - peer-review › Article

**Reinforcement Corrosion Modelling in Renovation Strategy for Concrete Facades**

**General information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Civil Engineering, Research group: Service Life Engineering of Structures
Authors: Köliö, A., Lahdensivu, J., Pentti, M.
Pages: 199-211
Publication date: 2016

**Host publication information**
Publisher: Tampere University of Technology. Department of Civil Engineering
Links:
Research output: Scientific - peer-review › Conference contribution

**Resiliency of prefabricated daycares and schools: Finnish perspective to relocatable education facilities**
The industrialised production of prefabricated daycare and school properties offer flexible alternatives for communities for provision of communal services. The paper investigates architectural qualities and financial solutions for rentable and relocatable education facilities in Finland. In particular, the focus is on the communal interests in solving the property management with a portfolio of rentable facilities for different time spans ranging from very short term to periods up to over twenty years. The short term rental terms offer solutions for disaster mitigation such as flooding but also spaces during refurbishment of existing buildings, e.g. due to moisture and mould damage. A core issue is a potential sustainable and flexible co-existence of both permanent and flexible modules that can adapt, for example to demographic changes, improving the efficiency of communal property management. Thus the prefabricated solutions have a potential, if the architectural quality is high enough, to provide alternatives for the real estate strategies of cities also in longer term provision of daycare and school facilities.

**General information**
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering, School of Architecture, Research group: Service Life Engineering of Structures, Research group: Life-cycle Economics
Role of Power and Sense Making in the Briefing of a Small Renovation Project

Self-regulation and competence in work-based learning

This chapter discusses the connection between self-regulation and competence in both formal and informal contexts of vocational and professional education. The goal is to show that self-regulation has a theoretical linkage to a multifaceted and holistic approach to competence and that self-regulatory abilities play a role in the development of vocational competence. Different theoretical approaches to self-regulation and competence and the link between the two concepts are discussed. We argue that self-regulation plays an important role in the development of competence, as it is needed to acquire competencies, unified sets of knowledge, skills and views. Self-regulation acts as an indirect factor between competencies and direct formal, non-formal and informal learning processes (e.g. vocational studies, leisure time activities and work) aimed to develop them. In this chapter, we present results of empirical studies on self-regulation and competence to support this argumentation. Several studies with vocational skills competition competitors show that strong self-regulatory abilities are related to successful competition performances. Also results from a study with Finnish in-service air traffic controllers indicate a link between vocational excellence and self-regulative action. Our conclusion is that self-regulatory skills should be taught in addition to the vocation-specific skills in competence-based vocational and professional education.
Social media-based value creation and business models

Purpose - The purpose of this paper is to create an organized picture of the current understanding of social media-based value creation and business models. Design/methodology/approach - Following the process model presented by Fink (2005), a systematic literature review of academic journal articles published between 2005 and 2014 was conducted. The research was grounded on the theoretical foundations of service-dominant logic. Findings - This study offers detailed descriptions and analyses of the major social media mechanisms affecting how value is created in social media-based value networks and the kinds of impact social media can have on present and future business models. Research limitations/implications - The study is limited to academic research literature on business organizations, excluding all studies related to public and non-profit organizations. Practical implications - Attention is given to developing an in-depth understanding of the functions and concrete value creation mechanisms of social media-based co-creation within the different organizational processes (e.g. in product and service development and customer services) and to updating the related practices and knowledge. Originality/value - This study provides new insight into the challenges related to research models and frameworks commonly used for observing value creation, thus highlighting the need for further studies and updates.
STACK assignments in university mathematics education

Students' learning process can be assisted and diversified with the help of e-learning tools and virtual environments. In Tampere University of Technology, the aim is to utilize software that delivers assignments, checks students' answers and gives feedback to the students, in the mathematics courses. The software that has been used is called STACK, which can be integrated into Moodle. STACK assignments have been created as a part of the STEM education material bank Abacus.

Written feedback can be generated in STACK assignments as necessary. Feedback guides the students to identify their errors and revise them. It can also motivate the students to try again after giving a wrong answer.

This study concerns the use of STACK in TUT mathematics courses. Especially we are interested in:
- how do the points gathered and the time of the last submission in STACK exercises correlate with the exam grades?
- when and for how long do the students solve the STACK assignments?
- how does the activity in STACK differ between honours and engineering mathematics students?

In STACK assignments, the students were able to give their answers in Moodle. For each lecture week, they had one week to solve and return the answers. All the student activity related to the STACK assignments was saved in the Moodle logs. Data was analysed with Matlab by the means of educational data mining.

We observed that the activity in STACK was the greatest near the deadline. We also found that, on average, the better the grade, the earlier the students gave their final answers in STACK. Additionally, the honours mathematics students made their submissions earlier: many of them considered STACK exercises as a good way to revise the subjects considered in the lectures, while engineering mathematics students mostly rehearsed with STACK near the deadline.

According to the survey polls, students found the STACK exercises as a nice and efficient way to rehearse and learn mathematics. Especially, the instant feedback was mostly appreciated. However, some of the students felt writing the answers with a computer unappealing, but generally this aspect was not considered a problem.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Mathematics, Research group: MAT Positioning
Authors: Mäkelä, A., Ali-Löytty, S., Humaloja, J., Joutsenlahti, J., Kauhanen, J., Kaarakka, T.
rummun asennussyvyys on suuri tai tien aukikaivaminen aiheuttaa suuret liikenteenjärjestelykustannukset.

The impact of residential development on nearby housing prices

Purpose - Even as multi-story apartment building development proposals in existing neighbourhoods represent a substantial component of policy debate at local planning boards, there is limited evidence for the impact of such residential developments on surrounding apartment values. The void in knowledge is addressed in this study, and the impact of multi-story apartment building developments on apartment values in residential high-rise areas located outside city and district centres is investigated in Helsinki Metropolitan Area, Finland.

Design/methodology/approach - Whether a multi-story apartment building development is followed by an increase in housing values depends on both positive and negative externalities. To specify valuation effects of proximate development projects, advanced research design combining matched sample methodology and hedonic-based difference-in-difference approach is used.

Findings - It appears from the analysis that completion of a single multi-story apartment building has an immediate positive impact on apartment values within 300 metre radius. While, there is no statistically significant impact on price trend.

Research limitations - This paper studies apartment values only in Helsinki Metropolitan Area, Finland, and it is important to notice that local regulations and market conditions may have a notable impact on the outcomes.

Originality/value - This study is the first of its kind to provide with statistically significant evidence for positive impacts from multi-story apartment building development in Finnish residential high-rise areas, and may have a crucial role in helping to dispel prejudices related to such developments.

General information

State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering, Research group: Life-cycle Economics
Authors: Kurvinen, A., Vihola, J.
Number of pages: 4
Pages: 671-690
Publication date: 2016
Peer-reviewed: Yes

Publication information

Journal: International Journal of Housing Markets and Analysis
Volume: 9
Issue number: 4
ISSN (Print): 1753-8270
Ratings:
Scopus rating (2016): SJR 0.227 SNIP 0.691 CiteScore 0.52
Scopus rating (2015): SJR 0.211 SNIP 0.44 CiteScore 0.31
Scopus rating (2014): SJR 0.256 SNIP 0.633 CiteScore 0.53
Scopus rating (2013): SJR 0.269 SNIP 0.459 CiteScore 0.7
Scopus rating (2012): SJR 0.165 SNIP 0.385 CiteScore 0.3
Scopus rating (2011): SJR 0.102 SNIP 0.039
Scopus rating (2010): SJR 0.12 SNIP 0.099
Scopus rating (2009): SJR 0.113 SNIP 0.03
Original language: English
Keywords: residential real estate, real estate development, infill development, externalities, residential property values, multi-story apartment buildings
ASJC Scopus subject areas: Building and Construction, Economics, Econometrics and Finance (miscellaneous)
DOIs: 10.1108/IJHMA-10-2015-0069
Research output: Scientific - peer-review › Article

The impact of senior house developments on surrounding residential property values

Purpose - Even as many countries are facing changes in demographic profile and new types of senior housing developments are becoming more important, there is limited evidence for the development impact of a senior house on surrounding residential property values. This study addresses the void in knowledge, investigating the impact of senior house developments on apartment values in Tampere, Finland.

Design/methodology/approach - To specify valuation effects of proximate senior house development projects, advanced
research design combining propensity-score matching procedure and hedonic pricing models is used.

Findings - The results show that a senior house development has a significant positive impact on proximate residential property values within a 500 metre radius. The impact is found to be the highest in underdeveloped neighbourhoods. Nevertheless, in neighbourhoods where property values and demand for housing units are higher and senior house developments fall into the criteria of infill development, a premium is lower, but still statistically significant and notable in magnitude.

Research limitations - This paper studies apartment values only in Tampere, Finland, and it is important to notice that local regulations and market conditions may have a notable impact on the outcomes from senior house developments.

Originality/value - This study is the first of its kind to address a number of empirical issues and provide with statistically significant evidence for positive impacts from senior house developments – encouraging investors and developers to build senior houses.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering, Research group: Life-cycle Economics, Queensland University of Technology QUT
Authors: Kurvinen, A., Tyvimaa, T.
Pages: 415-433
Publication date: 2016
Peer-reviewed: Yes

Publication information
Journal: Property Management
Volume: 34
Issue number: 5
ISSN (Print): 0263-7472
Ratings:
Scopus rating (2016): SJR 0.318 SNIP 1.099 CiteScore 0.86
Scopus rating (2015): SJR 0.321 SNIP 0.765 CiteScore 0.82
Scopus rating (2014): SJR 0.299 SNIP 0.698 CiteScore 0.52
Scopus rating (2013): SJR 0.275 SNIP 0.687 CiteScore 0.54
Scopus rating (2012): SJR 0.31 SNIP 0.748 CiteScore 0.47
Scopus rating (2011): SJR 0.279 SNIP 0.688 CiteScore 0.43
Scopus rating (2010): SJR 0.374 SNIP 0.602
Scopus rating (2009): SJR 0.244 SNIP 0.702
Scopus rating (2008): SJR 0.284 SNIP 0.531
Scopus rating (2007): SJR 0.212 SNIP 0.38
Scopus rating (2006): SJR 0.213 SNIP 0.221
Scopus rating (2005): SJR 0.116 SNIP 0.235
Scopus rating (2004): SJR 0.14 SNIP 0.22
Scopus rating (2003): SJR 0.123 SNIP 0.463
Scopus rating (2002): SJR 0.111 SNIP 0.437
Scopus rating (2001): SJR 0.139 SNIP 0.186
Scopus rating (2000): SJR 0.161 SNIP 0.386
Scopus rating (1999): SJR 0.11 SNIP 0.077
Original language: English
Keywords: senior house, residential real estate, real estate development, infill development, externalities, residential property values, multi-story apartment buildings
DOIs:
10.01108/PM-11-2015-0059

Bibliographical note
EXT="Tyvimaa, Tanja"
Research output: Scientific - peer-review » Article

The Workplace for Researchers – Enhancing Concentration and Face-to-face Interaction
To network or not to network? Analysis of the Finnish software industry-A networking approach

The purpose of this paper is to study the role of networking in the development and present situation of Finnish software companies. Although the target of interest of this study is Finland, the conclusions can also to some extent be applied to other countries with mature software industries. In Finland there is uniquely wide longitudinal material on the software business available; the software industry survey is an annual study targeted for the branch, which has already been repeated for 18 consecutive years. The study shows that networking has been a key trend in the industry and also a driver for internationalization, but as it has not been identified very well in networking literature concerning the software industry, there is a clear need for further examination of software industry networks.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Department of Information Management and Logistics, Research group: Novi, Research group: Software Engineering and Intelligent Systems
Authors: Yrjönkoski, K., Helander, N., Jaakkola, H.
Number of pages: 11
Pages: 124-134
Publication date: 2016

The purpose of this paper is to introduce a model to manage knowledge security risks in organizations. Knowledge security risk management is a sensemaking process that should be carried out by managers, and the proposed model works as a tool for the sensemaking process. The model is illustrated with an analytical case example. The process model helps to identify knowledge security risks and provides a comprehensive approach to evaluating and balancing the costs and benefits of knowledge sharing and knowledge risk management. The paper addresses calls for research on the emerging topic of knowledge security and the important topic of new knowledge sharing tools from the combined perspectives of business benefits and risk management. The results presented in this paper are preliminary and conceptual, and further research on the topic is suggested. The process model proposed in this paper can be a valuable tool for practitioners aiming to develop knowledge sharing practices in companies, and at the same time need to consider the security of knowledge.
Despite its benefits, information technology (IT) use is associated with serious negative effects on individuals. For example, technostress and IT addiction can harm IT users' organizational performance and everyday well-being. Such dark side phenomena have become more evident since IT has transmuted into a major component of humans' job routines and private lives. However, since current information systems (IS) research on the dark side is in an early and fragmented stage, there is a need for a synthesis. To address this need, we conducted a literature review of 37 articles published in the IS basket journals between 1995 and 2015. We detected four key phenomena: technostress, information overload, IT addiction, and IT anxiety. Within the analysis of the articles, we paid special attention to the antecedents, consequences, and mitigation mechanisms of each phenomenon. Based on our findings, this article contributes to IS research by pointing out unmapped territories in the IS basket and suggesting five areas for future research: (1) Technostress mitigation mechanisms in everyday use of IT, (2) IT addiction in organizational use of IT, (3) Information overload in everyday use of IT, (4) IT anxiety in everyday use of IT, and (5) Personal IT actions as mitigation mechanisms.

Utilizing electronic exams in programming courses: a case study
A great number of university students' work during their studies, leading to problems with the scheduling of courses and examinations. One way to solve the problem related to exams is to utilize electronic tests, which allow flexible timetables and video–based control against cheating. In Finland, a consortium of 20 universities is using a recently developed electronic examination system called Exam. The system supports essay and multiple choice examinations in particular. In this study, we experiment with the Exam system in computer programming tests. The outcome of the study is discussed from both the students' and teachers' perspectives.
Uusilla työvälineillä somen suomenkieliset tunnemaksat analyysiin ja hyötykäyttöön

General information
State: Published
Ministry of Education publication type: D1 Article in a trade journal
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Jussila, J.
Number of pages: 3
Pages: 8-10
Publication date: 2016
Peer-reviewed: Unknown

Publication information
Journal: Tietoasiantuntija
Volume: 2016
Issue number: 2-3
ISSN (Print): 1795-7338
Original language: Finnish
Electronic versions:
Uusilla_työvälineillä_JJ_TA_lehti_2_3_2016-2
Links:
http://urn.fi/URN:NBN:fi:tty-201610064584
Research output: Professional › Article

Ventilation rates before and after energy retrofit in multi-family buildings in Finland

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Civil Engineering, Research group: Structures and Their Behaviour, Research area: Structural Engineering, Research group: Building Physics and Acoustics, Natl Inst Hlth & Welf, Finland National Institute for Health & Welfare, Dept Environm Hlth
Authors: Leivo, V., Turunen, M., Aaltonen, A., Kiviste, M., Haverinen-Shaughnessy, U.
Publication date: 2016

Host publication information
Title of host publication: Indoor Air 2016: The 14th international conference of Indoor Air Quality and Climate.Ghent, Belgium July 3-8 2016.
Article number: 764
ISBN (Electronic): 978-0-9846855-5-4
Links:
http://www.indoorair2016.org/
Research output: Scientific › peer-review › Conference contribution

Vesihuollon strateginen kehittäminen haltuun: Ydin- ja tukitoiminnon tarpeen hahmottaa selkeästi

General information
State: Published
Ministry of Education publication type: D1 Article in a trade journal
Organisations: Department of Civil Engineering
Alentaako vuokra-asuntojen yleisyys omistusasuntojen hintoja?

General information
State: Published
Organisations: Department of Civil Engineering, Research group: Life-cycle Economics, Research group: Construction Processes
Authors: Kurvinen, A., Vihola, J., Sorri, J.
Pages: 575-586
Publication date: 11 Dec 2015
Peer-reviewed: Yes

Publication information
Journal: Yhteiskuntapolitiikka
Volume: 80
Issue number: 6
ISSN (Print): 1455-6901
Original language: Finnish
Keywords: rental housing, externalities, residential property values, housing market
ASJC Scopus subject areas: Economics, Econometrics and Finance(all), Social Sciences(all), Engineering(all)
Links:
http://urn.fi/URN:NBN:fi-fe2015121023484
http://www.julkari.fi/bitstream/handle/10024/129583/YP1506_Kurvinen_liitet2.pdf?sequence=2
https://www.thl.fi/fi/web/yhteiskuntapolitiikka/arkisto/2015_6
Research output: Scientific - peer-review › Article
What Engineering Scientists Know and How They Know It: Towards Understanding the Philosophy of Engineering Science in Finland

Knowledge, research and science are all concepts into which every member of the scientific community must have some kind of insight. Although nowadays there appears to be a general consensus that engineering science is a scientific enterprise in and of its own, this has not been the case for very long. As a scientific discipline, engineering science has been somewhat neglected from the standpoint of epistemology and philosophy.

This study aims at understanding the prevailing philosophy of engineering science in Finland. It strives to comprehend the essence and challenges of knowledge and knowledge-creation processes in the field. It is hoped that the resulting comprehension will improve the research community's possibilities 1) to reflect critically upon its procedures, 2) to discuss what should be studied and how, and 3) to determine on what bases the processes and results should be evaluated. It is also expected to assist in developing doctoral education and to result in better supervision by providing a framework and vocabulary for philosophical and methodological discussion.
The cognitive interest in this study is practical, and the orientation hermeneutic. The process follows the general lines of qualitative research and applies the method of qualitative content analysis. As an empirical inquiry, this study belongs to the realm of science and technology studies. The phenomenon was studied in the context of Finland in the guise of a single-case study, with Tampere University of Technology as the case.

The final results support the view that engineering science certainly is a scientific discipline in and of its own, characterised by its own technical matrix. Most engineering science research can be classified as design science. Scientific inquiry in engineering science often requires building conceptual—but also material—constructs, as well as developing new methods for different purposes (analyses, design, implementation, evaluation). Consequently, the contributions recognised in research are of many types (artefacts, methods, declarative knowledge, proposals), but they are not always the kind of knowledge adhering to technical norms. Arriving at new theories or linking knowledge to existing theories seems to be even rarer than arriving at technical norms.

Engineering science is a discipline of considerable diversity. The objectives, methods, empirical processes and results pertaining to one type of inquiry can be very different from those found in other types of investigation. This study uncovered five distinct research profiles, but there may well be more to discover.

At the moment, the philosophy of engineering science has not raised significant interest, as it appears not to have many direct consequences; yet, there are challenges that engineering scientists face that may well be rooted in the lack of common understanding about the epistemic, ontological and methodological issues of the topic.

General information
State: Published
Ministry of Education publication type: G4 Doctoral dissertation (monograph)
Organisations: Department of Information Management and Logistics
Authors: Naukkarinen, J.
Number of pages: 205
Publication date: 20 Nov 2015

Publication information
Publisher: Tampere University of Technology
Original language: English

Publication series
Name: Tampere University of Technology. Publication
Publisher: Tampere University of Technology
Volume: 1344
ISSN (Print): 1459-2045
Electronic versions:
naukkarinen_1344

Bibliographical note
Awarding institution: Tampere University of Technology
Research output: Monograph › Doctoral Thesis

MYSTERY SHOPPERS RECOGNISING KNOWLEDGE SHARING BARRIERS IN HIGHER EDUCATION
This study focuses on the knowledge sharing barriers in the space between learning and teaching in higher education as reported by mystery shoppers. There is surprisingly little context-specific research on learning and teaching in a knowledge intensive community like a university from the perspective of knowledge management (KM). Discussing learning and teaching within KM is based on considering students controversially as customers or stakeholders. Thus including them more meaningfully in assessing and developing teaching practices, or knowledge flow, seems justified. The specific aim of this paper is to first recognise possible knowledge sharing barriers and then categorize such barriers emerging from the material into three larger domains, namely, individual barriers, technological barriers and organisational barriers.

There were 45 students from all faculties participating in a mystery shopper project in a Finnish university of technology. They observed their learning experience for six weeks in order to supplement data from other sources, to add a student voice on the process of developing learning and teaching in higher education.

The research approach represents qualitative content analysis in which knowledge-sharing barriers were recognised from the qualitative mystery shopper data. The results identify teaching practises that contribute to creating knowledge sharing barriers. More detailed and almost real-time contextual activity sampling is suggested as a method for further study and also an avenue for instant feedback for teaching staff. The results will provide data on current knowledge practices and
learning processes in a technical university in Finland.

**General Information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Language Centre, Department of Information Management and Logistics, Research group: Novi, University of Tampere
Authors: Tukiainen, M., Helander, N., Mäkinen, M.
Publication date: 16 Nov 2015

**Host publication information**
ISBN (Electronic): 978-84-608-2657-6
Links:
https://iated.org/iceri/

**Bibliographical note**
ORG=kie,0.5
ORG=tlo,0.5
Research output: Scientific - peer-review » Conference contribution

**University Students’ Perceptions of Academic Writing: An Academic Literacies Perspective**

**General Information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Language Centre, Department of Information Management and Logistics, Research group: Novi, University of Tampere
Authors: Tukiainen, M., Mäkinen, M., Helander, N.
Number of pages: 7
Pages: 7589-7595
Publication date: 16 Nov 2015

**Host publication information**
ISBN (Electronic): 978-84-608-2657-6
Links:
https://iated.org/iceri/

**Bibliographical note**
ORG=kie,0.5
ORG=tlo,0.5
Research output: Scientific - peer-review » Conference contribution

**Liikenteen markkinat murroksessa - pysyvätkö yritykset kyydissä?**

**General Information**
State: Published
Ministry of Education publication type: E1 Popularised article, newspaper article
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Liimatainen, H., Pöllänen, M.
Number of pages: 1
Pages: 64
Publication date: 13 Nov 2015
Peer-reviewed: Unknown

**Publication information**
Journal: Talouselämä
Issue number: 39/2015
Original language: Finnish
Research output: General public » Article
Social Media in Business-to-Business Companies’ Innovation

Regarding the increasingly important paradigm of open innovation, it is recognized that valuable innovation-related knowledge is distributed ever more widely to various actors outside the company borders, such as users, customers, and communities. Various types of novel collaborative web tools and approaches, such as social media, can enable and significantly increase the use of distributed knowledge both within and outside company borders.

It is a common assumption that it is much more difficult to utilize social media in business-to-business (B2B) innovation and the customer interface because of the significant differences in B2B markets, B2B products, and product development, for example. Despite the growing number of company experiments and academic studies, social media are still new to many businesses. The opportunities and benefits of social media are not well understood in business, especially in B2B context. Despite the recent increasing interest in the use of social media in B2B marketing, it has received little attention from the innovation perspective.

The general purpose of this thesis is to study and help to understand the use of social media in B2B companies’ innovation. The thesis focuses on the innovation process, customer interface and the related perspective of the creation and sharing of customer knowledge. The main objectives of the dissertation are to understand the challenges, new opportunities, use and benefits, as well as, functions and roles of social media in B2B innovation. The choice of carrying out the dissertation as an article thesis has offered the researcher the opportunity to study from multiple perspectives a phenomenon that has been little researched or understood. The thesis combines quantitative and qualitative research. Quantitative research approach was used to determine the current use and perceived potential of social media tools in innovation, as well as to identify challenges of social media use in B2B company innovation. Qualitative research was used to gain a deep understanding of the challenges and benefits, and roles and functions of social media in B2B innovation.

The thesis contributes to the increasing understanding on the rather little understood topic of social media and its potential in B2B companies’ innovation. Based on the research, new understanding was gained on the challenges that B2B companies face in using social media in innovation, on the new possibilities and benefits that social media provide for innovation, as well as on the applications and the roles of social media in B2B innovation.

In addition, models and theories were developed for enhancing social media use: based on the qualitative research, for example, a Social Customer Learning model was built, which aims to help researchers and managers to identify and evaluate different social media approaches in business-to-business customer interface and innovation; modifications and improvements were proposed for media richness theory and channel expansion theory for the better consideration of the social media and the innovation contexts.

General information
State: Published
Ministry of Education publication type: G5 Doctoral dissertation (article)
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Jussila, J.
Number of pages: 70
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Publication information
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Original language: English

Publication series
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Publisher: Tampere University of Technology
Volume: 1333
ISSN (Print): 1459-2045
Electronic versions:
jussila_1333
Links:

Bibliographical note
Awarding institution:Tampere University of Technology
Versio ok 14.12.2015
Research output: Collection of articles › Doctoral Thesis
The effect of ground leases on house prices in Helsinki

One imperfection in housing markets is imperfect knowledge about legal interests such as ground leases. Both actual reduced legal interest as well as uncertainty surrounding rights and future lease payments for houses constructed on leased land may affect prices relative to houses built on freehold land. We use regression analysis of sales prices of condominium transactions in Helsinki to examine the effect ground leases have on house prices. We find that prices on condominiums constructed on leased lots are discounted at least 5%, on average. In addition, we see that the announcement of potentially large increases in base rents upon renewal contributes to the discount.
Knowledge Management and Emerging Collaborative Networks in Tourism Business Ecosystems

If we critically look at the evolution of the Tourism Industry (TI), we can note that, in the past decade, nothing has changed as much as ICTs and the Internet which caused an extensive transformation of the TI. Both demand and supply of ICT, together with innovation in transportation and international trade agreements, have evolved the tourism sector in operational workflows, management and marketing of new of tourism experiences. The massive use of new technologies has facilitated the rise of new flat organizational models where traditional brokers have disappeared, replaced by direct connections between local providers and tourists, or they have been reconfigured into new forms of dynamic and web-based tourism package providers. The depicted industry evolution shows potential, unthinkable just a few years ago, for local service providers usually marginalized from main tourism flows, due to their small sizes, and who are unable to compete in the globalized market. In many regions characterized by a niche tourism vocation, local tourism operators have started organizing themselves spontaneously in Collaborative Networks in order to create aggregate tourism offers that are able to compete with big tourism operators thus transforming regions with potential and vocation in real tourism destinations. The main social effect of instantiating these tourism partnerships, is the stimulus towards Tourism Business Ecosystems (TBEs) giving local tourism service providers a means for economic growth. The aim of this paper is to describe how the organizational paradigm of CNs, applied to the TBEs knowledge management and supported by ICTs, can be the key means for the growth of emerging TBEs. Such models are able to reengineer the tourism destination management model in order to gain much more flexibility in service provision and provide tourists the possibility to live an augmented tourism experience. In this paper we point out that tourism destinations, in an effort to give services able to actively support each phase of the 2.0 tourist lifecycle, can benefit from collaborative network models.
Advancing international business ideation concepts for contexts embedded within capital investment markets

The aim of this paper is to advance international business (IB) ideation especially as part of IB management concepts and among concept designers related to contexts embedded within international capital investment markets (CIMs). A 5-approach typology differentiates between fitting, value-creating, profit-generating, systemizing, and commercializing business ideation. This paper is part of the on-going reviewing of research on CIMs-related business management (BM). So far, the reviewing has resulted in the identification of 71 concepts published between the years 1990 and 2013. Focal firms have their home bases in one of the OECD countries plus in Hong Kong and Singapore due to the heritage of the British Commonwealth. Within the 71-concept platform, there are 18 (25%) IB management concepts, i.e., the authors have designed them for managing businesses with contexts embedded within international CIMs. Moreover, 14 (20%) CIMs-related IB management concepts have been designed also along the business ideation dimension, respectively. There are 6 (8%) high-degree concepts, and 4 (6%) medium-degree concepts, and 4 (6%) low-degree concepts. In principle, it seems that these high-degree IB management concepts enable the viable IB ideation for contexts within CIMs. However, none of these concepts has been designed for managing primarily IB ideation. Thus, the five 2-dimensional couplings are suggested for advancing the design of IB ideation concepts, i.e., IB ideation is coupled theoretically with a frame of reference and a school of thought on generic BM as well as contextually with IB types, environments, and dynamism embedded within international CIMs. In turn, IB and CIMs-related researchers with IB managers can jointly engage themselves with cross-disciplinary and academia-industry research on IB ideation.

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Organisations: Department of Civil Engineering, Research group: Construction Management
Authors: Huovinen, P.
Number of pages: 26
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Peer-reviewed: Unknown
Keywords: Business ideation, capital investments, concepts, construction, international business, ASJC Scopus subject areas: Business, Management and Accounting(all)
Research output: Scientific › Paper, poster or abstract

The Role of Customer Experience in Value Creation in Business-to-Business Context

General information
State: Unpublished
Ministry of Education publication type: D3 Professional conference proceedings
Lean start-up companies by means of crowdsourcing

Lean start-up approach provides both small and larger companies a novel, important and useful way to organize their business development, while reducing related high risks. Traditional start-ups face a multitude of significant challenges and risks. A study by Ghosh showed that as many as 75% of all start-ups fail. Earlier research has preliminarily demonstrated that crowdsourcing has the potential to reduce the risks of failure of start-ups, as well as overcome some of the inherent challenges lean start-ups face. We argue that crowdsourcing can significantly improve the leanness and agility of start-ups' business functions.
Replacing project managers in information technology projects: Contradictions that explain the phenomenon

According to anecdotal evidence, project managers working on information technology (IT) projects are occasionally replaced, although the literature on information systems (IS) and project management (PM) makes little mention of it. With a view to narrowing this knowledge gap the authors examined the reasons behind the practice. The authors took an interpretive approach to the data gathering and analysis, and collected descriptions about replacing project managers (RPM) from interviews and questionnaires (n=43). The concept of contradiction served as a lens through which to identify the underlying reasons. Contradiction refers to statements asserting or expressing the opposite of another statement. The authors identified four contradictions explaining why RPM occurs in IT projects. These contradictions show that RPM appears to be a simplistic solution when there are more fundamental issues to consider. The implications extend to education, practice, and research in the context of IT project management.

General information

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Ministry of Education publication type: A1 Journal article-refereed
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Managing digital industrial transformation (mDIT), University of Oulu, University of Jyväskylä
Authors: Liikamaa, K., Vartiainen, T., Pirhonen, M., Aramo-Immonen, H.
Number of pages: 19
Pages: 1-19
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Peer-reviewed: Yes

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Scopus rating (2016): SJR 0.224 SNIP 0.193 CiteScore 0.48
Scopus rating (2015): SJR 0.259 SNIP 0.441 CiteScore 0.83
Scopus rating (2014): SJR 0.271 SNIP 0.483 CiteScore 0.54
Scopus rating (2013): SJR 0.256 SNIP 0.608 CiteScore 0.8
Scopus rating (2012): SJR 0.485 SNIP 0.385 CiteScore 1.32
Scopus rating (2011): SJR 0.457 SNIP 0.612
Original language: English
ASJC Scopus subject areas: Computer Science (miscellaneous), Management of Technology and Innovation
Keywords: Contradictions, IT project management, Project manager, Replacement, Turnover
DOI:
10.4018/IJHCITP.2015070101
Links:
http://www.scopus.com/inward/record.url?scp=84930458266&partnerID=8YFLogxK (Link to publication in Scopus)
Source: Scopus
Source-ID: 84930458266
Network archetypes in the network formation phase - case new market entry of Finnish maritime network

A theory of co-opetition in supply networks with specified four archetypes has been proposed in the earlier literature. As the model is not yet exhaustive, this study examines it in a case network in its formation phase. The findings bring new contribution to understanding the model of supply network archetypes and the utility of its four interrelated elements in forming strategic supply networks. The results provide novel evidence that competing situation within network and network organizations' co-opetitive or non-collaborative strategies with competitors, are essential information when forming a network, determining its network level objectives and governance.

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Suominen, A., Breite, R.
Number of pages: 10
Publication date: 29 Jun 2015

Host publication information
Title of host publication: 22nd International Annual EurOMA Conference Neuchâtel, Switzerland 28 June – 1 July 2015
ASJC Scopus subject areas: Business, Management and Accounting(all)
Keywords: supply network archetype, co-opetition, network governance model

Research output: Professional › Conference contribution

Tila haltuun! Suositukset virtuaalisen suomen opiskelun toteuttamiseen

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: University of Tampere
Number of pages: 135
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Publication information
Publisher: Turun yliopiston Brahea-keskus
ISBN (Electronic): 978-951-29-6162-7
Original language: Finnish

Publication series
Name: Turun yliopiston Brahea-keskuksen julkaisuja
Publisher: Turun yliopiston Brahea-keskus
No.: 6
ISSN (Electronic): 2342-4273
Research output: Professional › Commissioned report

Meeting radical change: SMEs and innovation capabilities and strategic foresight

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, University of Örebro Business School, University of Exeter Business School, Tampere Univ Technol, Tampere University of Technology
Authors: Aramo-Immonen, H., Bessant, J., Heinonen, T., Öberg, C., Trifilova, A.
Publication date: 16 Jun 2015

Host publication information
Title of host publication: The Proceedings of the XXVI ISPIM Conference – Shaping the Frontiers of Innovation Management, Budapest, Hungary on 14-17 June 2015
Knowledge management and digitalization in large enterprises versus SMEs in Finland

General information
State: Published
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Väyrynen, H., Helander, N.
Publication date: 10 Jun 2015
Peer-reviewed: Unknown
Links:
Research output: Scientific › Paper, poster or abstract

Knowledge work enablers and challenges in different professions

General information
State: Unpublished
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Paavilainen, N., Helander, N.
Publication date: 10 Jun 2015
Peer-reviewed: Unknown
Links:
Research output: Scientific › Paper, poster or abstract

Oppivan organisaation kehittäminen osaavaksi organisaatioksi. Tapaustutkimus suomalaisessa teollisuusyrityksessä

General information
State: Published
Ministry of Education publication type: G4 Doctoral dissertation (monograph)
Organisations: Department of Information Management and Logistics
Authors: Hagman, S.
Number of pages: 209
Publication date: 22 May 2015

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ISBN (Print): 978-952-15-3516-1
Original language: Finnish

Publication series
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Publisher: Tampere University of Technology
Volume: 1296
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Links:

Bibliographical note
Awarding institution: Tampere University of Technology
Versio 16.12.2015
Research output: Monograph › Doctoral Thesis
Test in scala reale su argille sensibili: l'esperienza finlandese

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Department of Civil Engineering, Research group: Foundation Structures
Authors: D'Ignazio, M.
Publication date: May 2015

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Title of host publication: 5 IAGIG, Incontro Annuale dei Giovani Ingegneri Geotecnicini
Place of publication: Rome
Links:
http://www.iagig.unisa.it/iagig_2015/iagig2015atti
Research output: Professional › Conference contribution

Teollisuusyrityksen digipolku: Katsaus digitalisaatioon teollisuusyritysten näkökulmasta

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics, Research group: Novi, Pori Department, Research group: Business Ecosystems, Networks and Innovations, Department of Industrial Management, Research group: Center for Innovation and Technology Research, Managing digital industrial transformation (mDIT), Intosome Oy, Hermia
Authors: Lakkala, H., Rainio, T., Jussila, J., Kärkkäinen, H., Pirttilä, O., Seppänen, M., Peltola, T.
Number of pages: 36
Publication date: Apr 2015

Publication information
Place of publication: Helsinki
Publisher: TEKES, National Technology Agency, Finland
Original language: Finnish

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Links:
http://www.tekes.fi/globalassets/julkaisut/teollisuusyritysten_digipolku.pdf

Bibliographical note
ORG=tlo,0.75
ORG=pla,0.15
ORG=tta,0.1
Research output: Professional › Commissioned report

The development curve of knowledge management practices: a ten year perspective from top50 Finnish enterprises

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Department of Information Management and Logistics
Authors: Helander, N., Väyrynen, H., Zhao, X., Kukko, M.
Publication date: 31 Jan 2015

Host publication information
Title of host publication: 15th Eurasia business and economics society conference : Lisbon, Portugal, January 8-10, 2015
Publisher: Springer
ISBN (Electronic): 978-3-319-27573-4
Links:

Bibliographical note
A Barrier framework for open e-learning in public administrations
E-Learning and openness in education are receiving ever increasing attention in businesses as well as in academia. However, these practices have only to small extent been introduced in public administrations. The study addresses this gap by presenting a literature review on Open Educational Resources (OER) and E-Learning in the public sector. The main goal of the article is to identify challenges to open E-Learning in public administrations. Experiences will be conceptualized as barriers which need to be considered when introducing open E-Learning systems and programs in administrations. The main outcome is a systematic review of lessons learned, presented as a contextualized Barrier Framework which is suitable to analyze requirements when introducing E-Learning and OER in public administrations.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Managing digital industrial transformation (mDIT), Ruhr West University of Applied Sciences, Jyväskylän Yliopisto
Authors: Stoffregen, J., Pawlowski, J. M., Pirkkalainen, H.
Number of pages: 11
Pages: 674-684
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Computers in Human Behavior
Volume: 51
Issue number: B
ISSN (Print): 0747-5632
Ratings:
Scopus rating (2016): CiteScore 4.54 SJR 1.595 SNIP 2.137
Scopus rating (2015): SJR 1.556 SNIP 2.123 CiteScore 4.22
Scopus rating (2014): SJR 1.519 SNIP 2.327 CiteScore 4.16
Scopus rating (2013): SJR 1.727 SNIP 2.531 CiteScore 4.16
Scopus rating (2012): SJR 1.528 SNIP 2.099 CiteScore 3.47
Scopus rating (2011): SJR 1.492 SNIP 2.083 CiteScore 3.67
Scopus rating (2010): SJR 1.2 SNIP 1.695
Scopus rating (2009): SJR 0.881 SNIP 1.533
Scopus rating (2008): SJR 1.016 SNIP 1.837
Scopus rating (2007): SJR 1.016 SNIP 2.321
Scopus rating (2006): SJR 0.715 SNIP 1.604
Scopus rating (2005): SJR 0.731 SNIP 1.574
Scopus rating (2004): SJR 0.56 SNIP 1.371
Scopus rating (2003): SJR 0.505 SNIP 1.437
Scopus rating (2002): SJR 0.675 SNIP 1.352
Scopus rating (2001): SJR 0.638 SNIP 0.998
Scopus rating (2000): SJR 0.503 SNIP 1.133
Scopus rating (1999): SJR 0.401 SNIP 0.772
Original language: English
ASJC Scopus subject areas: Human-Computer Interaction, Psychology(all), Arts and Humanities (miscellaneous)
Keywords: E-Learning, Open education, Open Educational Resources, Public Administrations
DOIs: 10.1016/j.chb.2014.12.024

Source: Scopus
Source-ID: 84920915233
Research output: Scientific - peer-review > Article

A Co-creation Centre for University–Industry Collaboration – A Framework for Concept Development
Abstract It is argued in general that future success in effective innovation creation is built on the ability to connect and manage talent, partnerships and related practical innovation processes. This makes it challenging for a university to develop an ecosystem of knowledge creation. The full benefit from a university can only be obtained if the university and society are organically linked together. The needs of society have to be at the centre of a university's activities, and
flexible adjustment to changing needs is necessary but often lacking. Campus management has a major role in the facilitation of multidisciplinary interaction between students, scientists, entrepreneurs and other industry partners that inspire each other with different perspectives on the same subject. One significant tool to support open innovation with diverse stakeholders is to provide supportive spaces with relevant services. This paper aims to identify the requirements of a Co-creation Centre as a concept serving the third role of a university. The literature review was conducted and, based on the result, this paper proposes a conceptual framework for capturing the key requirements for developing a multiuser Co-creation Centre. The framework consists of the requirements on the demand and supply sides of campus management. The main findings in this paper are that different modes of knowledge conversion have different capabilities to support knowledge co-creation requirements. Knowledge co-creation process requirements in the multiuser Co-creation Centre for university–industry collaboration are best supported by originating "Ba", which means the place where individuals share feelings, emotions, experiences, and mental models and the place where the knowledge-creation process begins. The results contribute to the concept development in campus management and provide a starting point for evaluating the success of multidisciplinary and multi-actor innovation environments.

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State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering
Authors: Huhtelin, M., Nenonen, S.
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Peer-reviewed: Yes

Publication information
Journal: Procedia Economics and Finance
Volume: 21
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Original language: English
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http://dx.doi.org/10.1016/S2212-5671(15)00160-4
Source: Bibtex
Source-ID: urn:eaca1c4af51146bd5fae3a31caaa20e86
Research output: Scientific - peer-review » Article

Assessment of student retention using the Evolute approach, an overview

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department
Authors: Einolander, J., Vanharanta, H.
Number of pages: 6
Pages: 581–586
Publication date: 2015

Host publication information
Title of host publication: 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015
Publisher: Elsevier

Publication series
Name: Procedia Manufacturing
Volume: 3
ISSN (Print): 2351-9789
DOIs:
10.1016/j.promfg.2015.07.269
Research output: Scientific - peer-review » Conference contribution

Birth and expansion of innovation ecosystems: A case study of copper production
Despite the growing attention innovation ecosystems have received from scholars and practitioners, rather little is known about the crucial birth and expansion phases that these ecosystems experience. Through a single case in the complex product system (CoPS) environment, this paper investigates the development of an innovation ecosystem between 1980 and 2007. The findings demonstrate that the ecosystem's birth phase includes sub-phases, namely, invention and start-up, where the ecosystem is reconfigured to find the appropriate form and the proper actors to satisfy the first customer's requirements. Moreover, the duration of the expansion phase is found to be remarkably long, suggesting that within the...
CoPS setting, expansion may also include two or more sub-phases.

**General information**
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Managing digital industrial transformation (mDIT), Queensland University of Technology QUT
Authors: Dedehayir, O., Seppänen, M.
Number of pages: 9
Pages: 145-153
Publication date: 2015
Peer-reviewed: Yes

**Publication information**
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Volume: 10
Issue number: 2
ISSN (Print): 0718-2724
Ratings:
Scopus rating (2016): CiteScore 0.68 SJR 0.259 SNIP 0.642
Scopus rating (2015): SJR 0.247 SNIP 0.567 CiteScore 0.62
Scopus rating (2014): SJR 0.199 SNIP 0.375 CiteScore 0.42
Scopus rating (2013): SJR 0.245 SNIP 0.713 CiteScore 0.61
Scopus rating (2012): SJR 0.25 SNIP 0.664 CiteScore 0.82
Scopus rating (2011): SJR 0.196 SNIP 0.558 CiteScore 0.49
Scopus rating (2010): SJR 0.125 SNIP 0.225
Scopus rating (2009): SJR 0.107 SNIP 0.038
Original language: English
Keywords: Complex product system, Copper production, Innovation ecosystem, Life cycle
ASJC Scopus subject areas: Management of Technology and Innovation
DOIs:
10.4067/S0718-27242015000200010
Source: Scopus
Source-ID: 84944446211
Research output: Scientific - peer-review › Article

**Business model innovation: Focus on Customer Experience**

**General information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Nokian Vesi Oy
Authors: Seppänen, M., Laukkanen, I.
Publication date: 2015

**Host publication information**
Publisher: IEEE
ISBN (Print): 978-1-4673-7156-8
DOIs:
10.1109/ICE.2015.7438657
Research output: Scientific - peer-review › Conference contribution

**Busting myths of electronic word of mouth: The relationship between customer ratings and the sales of mobile applications**

Business and academic research frequently highlights the power of electronic word of mouth, relying on the knowledge that online customer ratings and reviews influence consumer decision making. Numerous studies in different disciplines have been conducted to examine the effectiveness of electronic word of mouth communication. Previously, typically small sample studies suggest that positive electronic word of mouth increases sales and that the effects depend on the volume and valence of reviews and ratings. This study’s contribution lies in testing the relationship between electronic word of mouth and the sales of applications in a mobile application ecosystem (Google Play) with an extensive dataset (over 260 million customer ratings; 18 months). The results show that higher values of valence of customer ratings correlate statistically significantly with higher sales. The volume of ratings correlates positively with sales in the long term but
negatively in the short term. Furthermore, the relationship between electronic word of mouth and sales seems to be more important when the price of the application increases. The findings also underline the importance of the choice of a measurement period in studies.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Managing digital industrial transformation (mDIT), Turun Yliopisto/Turun Biomateriaalikeskus, University of Turku, Turku School of Economics, VTT Technical Research Centre of Finland, University of Turku
Authors: Hyrynsalmi, S., Seppänen, M., Aarikka-Stenroos, L., Suominen, A., Järveläinen, J., Harkke, V.
Number of pages: 18
Pages: 1-18
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Journal of Theoretical and Applied Electronic Commerce Research
Volume: 10
Issue number: 2
ISSN (Print): 0718-1876
Ratings:
Scopus rating (2016): SJR 0.353 SNIP 1.204 CiteScore 1.98
Scopus rating (2015): SJR 0.607 SNIP 1.398 CiteScore 1.84
Scopus rating (2014): SJR 0.412 SNIP 1.201 CiteScore 1.14
Scopus rating (2013): SJR 0.213 SNIP 1.14 CiteScore 1.01
Scopus rating (2012): SJR 0.286 SNIP 1.034 CiteScore 0.97
Scopus rating (2011): SJR 0.404 SNIP 1.613 CiteScore 1.42
Scopus rating (2010): SJR 0.347 SNIP 0.713
Scopus rating (2009): SJR 0.367 SNIP 0.849
Scopus rating (2008): SJR 0.122 SNIP 0.183
Original language: English
Keywords: App stores, Big data, Consumer ratings, Consumer reviews, Electronic word of mouth, Micro-pricing, Products ratings, Sales
ASJC Scopus subject areas: Business, Management and Accounting(all), Computer Science Applications
Electronic versions:
Hyrynsalmi et al 2015 Busting Myths of E-WOM, The relationship btw Customer Ratings and the Sales of Mob Apps
DoIs:
10.4067/S0718-18762015000200002
Links:
http://urn.fi/URN:NBN:fi:ttty-201603013592

Bibliographical note
EXT="Aarikka-Stenroos, Leena"

Versio ja lupa ok 12.1.2016, lupa annettu Iomakkeella KK
Source: Scopus
Source-ID: 84930678533
Research output: Scientific - peer-review › Article

CEO 2015: Proceedings of the 8th Nordic Conference on Construction Economics and Organization
Nordic conferences on Construction Economics and Organization (CEO conferences) have been biennial events for academics and industry people. These events are bringing together experts globally and those particularly from Nordic countries for sharing and learning new knowledge, to meet colleagues, get new connection and to visit/see interesting construction case projects or companies. For academics these conferences are important publishing channels. The accepted double-blind reviewed papers are published using widely recognised academic media.
We are very pleased to introduce 8th CEO conference 28th – 29th May 2015, Tampere Finland. The overall theme of this CEO2015 conference is Leadership for targeted change and proven advancements. The following titles represent key areas for which the conference was planned to contribute.

• Gaining desirable changes in real estate and construction sector

• Change towards sustainable built environment and environmental friendly behaviour
• Processes and methods for realizing change initiatives
• Principles, methods and tools for the management of change in processes and projects
• Learning from change: challenges in change processes
• Change behaviour – methods and models to affect change processes
• Business and operations management under unceasing change
• Built environment, companies and projects as systems.

The CEO2015 conference comprises 79 accepted papers and their presentations. The special issue of Elsevier Procedia Economics and Finance (Volume 21, 8th Nordic Conference on Construction Economics and Organization) includes 76 papers. This publication includes three papers. The editors are grateful to all authors for their valuable efforts.

Challenges Facing BIM Education: Development of Appropriate Teaching and Learning Resources

Building Information Modelling (BIM) is becoming the new norm in the AEC industry and also part of many construction project management (CPM) programmes. In terms of teaching BIM there is the need for specific resources in explaining the theoretical principles of BIM, BIM tools (authoring, audit and analysis) and building models themselves. Theoretical resources that are available for education in the form of books, articles and websites are easy and straightforward to locate. Likewise a good share of various tools are available for educational purposes. On the other hand, actual building models represent a challenge in terms of preparing and optimising usage of the model for high quality educational purposes. This paper addresses the difficulty in walking the narrow line between an industry ready BIM versus a BIM that is good for student learning and offers a realistic and practical, but simultaneously achievable learning environment.

Conducting a case study in an undergraduate CPM education setting, three approaches for obtaining BIM resources were identified with various challenges and benefits. A combination of internally developed models for early exposure and industry models for later courses is proposed.
Comparison of Functional, Structural, and Dynamic Business-IT Alignment Models: A Case Study

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT)
Authors: Pekkola, S., Nieminen, N.
Publication date: 2015

Host publication information
Title of host publication: Proceedings of the 21st Americas Conference on Information Systems (AMCIS) 2015
Publisher: Association for Information Systems
ISBN (Electronic): 978-0-9966831-0-4
Links: http://aisel.aisnet.org/amcis2015/StrategicUse/GeneralPresentations/13/
http://aisel.aisnet.org/amcis2015/
Research output: Scientific - peer-review › Conference contribution

Competence portfolio assessment of research and development center for regional development

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Salminen, V., Kantola, J. I., Vanharanta, H.
Number of pages: 9
Pages: 701-708
Publication date: 2015

Host publication information
Title of host publication: 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015
Publisher: Elsevier
Publication series
Name: Procedia Manufacturing
Volume: 3
ISSN (Print): 2351-9789
DOI: 10.1016/j.promfg.2015.07.310
Research output: Scientific - peer-review › Conference contribution

Customers’ conscious experience in a coffee shop

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Vanharanta, H., Kantola, J., Seikola, S.
Number of pages: 8
Pages: 618-625
Defining guided selling in business-to-business context

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Department of Industrial Management
Authors: Mahlamäki, T., Ojala, M., Uusitalo, O.
Publication date: 2015

Host publication information
Title of host publication: 23rd Nordic Academy of Management Conference : NFF 2015 - Business in society
Place of publication: Copenhagen
Publisher: CBS Copenhagen Business School
Research output: Professional » Conference contribution

Emotion measurement services for knowledge workers
In order to understand and manage how emotions affect knowledge work, organizations need proper tools to become aware of emotions. Measuring emotions is an approach to consider. In this paper, three different emotion measurement services are tested: daily experience survey, electrodermal activity ring and self-tracking of emotions. The paper provides new insights and user experiences of emotion measurement services and their applicability in daily knowledge work. Managerial guidelines are drawn up for planning and executing emotion measurement services in an organization for two purposes – self-development and measuring company pulse.

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Department of Information Management and Logistics, Research group: Novi, Department of Information Management and Logistics, Intopalo Oy
Authors: Vuolle, M., Salonius, H., Lintinen, J., Mäkinen, J.
Number of pages: 20
Publication date: 2015

Host publication information
Title of host publication: RESER2015 : 25th Annual RESER Conference, September 10-12, 2015 Copenhagen, Denmark
Place of publication: Copenhagen
Publisher: RESER European Association for Research on Services
ISBN (Electronic): 978-87-7349-921-4
Keywords: Knowledge work, Emotions, Measurement, self-management

Bibliographical note
AUX=tlo,"Lintinen, Johanna"
Examples of the Teaching of the Health Questions of Electric and Magnetic Fields at Tampere University of Technology in Finland

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Electronics and Communications Engineering, Research group: Environmental Health
Authors: Korpinen, L., Pääkkönen, R.
Number of pages: 6
Pages: 277-282
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Journal of Physical Science and Application
Volume: 5
Issue number: 4
ISSN (Print): 2159-5348
Original language: English
ASJC Scopus subject areas: Electrical and Electronic Engineering
DOI: 10.17265/2159-5348/2015.04.005
Research output: Scientific - peer-review › Article

Human Factor in Time Management
Abstract Time is the most important resource for leaders. Resources such as personnel, capital or facilities are crucial for leaders, but time is imperative. People's productivity, and hence organizations performance are heavily related to their time usage. Therefore, especially leaders should have conscious awareness towards their time personality. Time, however, is not an easy concept to handle for leader or even understand it. It has many different faces towards people. The challenge is that chronological time, where the business and management are done, is not nearly suitable when human relations and leadership are handled. Individuals experiences towards time differentiates to one another and different situations are constantly changing the experience of individual. Therefore, quite often, leaders recognize that it is hard to have schedules to match or plans to actualize within an agreed time. Some people fit more easily to same time reality with leader than others. Consequently, it is crucial for leaders also to understand how organization's members experience their time and how conscious their awareness is. Before it is possible to manage one's own time usage, personal time orientation, biases towards time, situation has to be understood consciously. This article handles research regarding time ontology in leadership and management environment and regarding peoples conscious awareness towards time and differences in their time reality. Research is done by developing and utilizing application called Chronos & Kairos which main purpose is to give possibility for thorough research for peoples’ differences when experiencing time. Time ontology for leadership and management environment is presented as well as research and results of differences of people's time reality. Article argues that people's conscious awareness towards time differentiates and this issues should be recognized especially in leadership positions. Future research aspects and recommendations are also issued in this paper.

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Pori Department
Authors: Reunanen, T.
Number of pages: 8
Pages: 709-716
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Procedia Manufacturing
Volume: 3
ISSN (Print): 2351-9789
Original language: English
Ratings:
Scopus rating (2016): CiteScore 0.09 SJR 0.105 SNIP 0.063
Managing Cultural Knowledge in Project Execution

The purpose of this study was to explore the factors through which the project implementation phase could be enhanced by cultural knowledge. The importance of studying this subject is that the exploitation of cultural knowledge (Hofstede & Hofstede 2005, Schwartz 1999, Ng et al. 2006, Hall 1976, Lewis 2006) and competence (Koskinen 2001) is still limited in the constantly increasing project-based business (Turner 1999, Arto et al. 2011, PMBOK 2004) in the international field. Two objectives exist in this study: understanding project complexity through the main challenges in project implementation and evaluating the impacts of the cultural factors behind them. We propose the multiple case study approach (Eisenhard & Graebner 2007, Yin 2014). The prominence of cultural knowledge in project implementation is difficult to determine, so the research design has exploratory features. Case project A was implemented in Sub-Saharan Africa and Case project B in the Near East. Interviewed managers worked either from distance and only visited the target country periodically or represented the perspective of an operational level manager working in the host country. The main cultural challenges that occurred in the projects are defined by these interviewees. This methodology gives evidence of the main challenges in the two case projects and clarifies the multiplicity of cultural issues in the project context. The importance of the subject was highlighted and the interviewed managers demonstrated that cultural knowledge can offer benefits. Numerous studies exist concerning the challenges in the project business (Deresky 2014,
The outcomes of the research stressed the uniqueness of projects and the situational need for cultural knowledge. The results highlighted the pervasive nature of culture in the international playing field. Companies are obliged to adjust their operations according to environments with multifaceted requirements. National cultures not only prevail within the borders of geographical areas, but are also reflected in company procedures. Therefore, their overall impact needs to be considered in international projects.

Managing tomorrow's daily consumer goods logistics value network

New tools to help in the recruitment process
Paradoxes in the development of a business critical information system

General information
State: Published
Ministry of Education publication type: D3 Professional conference proceedings
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Salmimaa, T., Hekkala, R., Pekkola, S.
Publication date: 2015

Host publication information
Title of host publication: The 19th Pacific Asian Conference on Information Systems 2015 (PACIS 2015)
Publisher: Association for Information Systems
Links: http://www.pacis2015.org/
http://aisel.aisnet.org/pacis2015/50/
Research output: Professional › Conference contribution

Pienituloisen omistusasujan energiaköyhyys: Energiaa käytettäessä on mahdollista tehdä parhaan mahdollisen hyödyn

Selvityksessä tarkastellaan asuntojen perusparannusten ja lämmitystavan muutoksen yhteyttä energiaköyhyden riskiin. Energiaankaiketkellä tarkoitetaan vaikeutta ylläpitää tai tyydyttää perustarpeita energian kustannusten takia. Selvityksen tarkastelu on rajattu omistusasuntoihin, sillä vuokralaiset eivät joudu tekemään investointeja asuntojen perusparannuksiin. Tarkastelu painottuu erityisesti pieni- ja alle keskituloisiin talouksiin. Suomessa on yhteensä 60 000 – 100 000 energiaköyhyden riskiryhmän sisältävää asunnosta.


Pienituloisten asuntojen energiasulaamiset energiakustannuksissa on Suomessa erittäin suuri

Energiaköyhyyden riskiä voidaan pienentää ja energiaköyhyyttä ennaltaehkäistä parhaiten uudenlaisia rahoitusmuotoja kehittämällä. Erityisen mielenkiintoisia ovat rahoitusinstrumentit, joissa investointikustannukset maksetaan syntyvällä energiakustannusten säästöillä sekä valtion takaamat lainat. Lisäksi olisi tarpeen luoda uusia toimintamalleja, joiden avulla energianeuvonta ja rahoitus olisivat paremmin energiaköyhyyden riskiryhmien saavutettavissa.

**General information**

State: Published  
Ministry of Education publication type: D4 Published development or research report or study  
Organisations: Department of Civil Engineering, Research group: Life-cycle Economics, Research group: Construction Processes, Tyrsky-Konsultointi Oy  
Authors: Runsten, S., Berninger, K., Heljo, J., Sorvali, J., Kasanen, P., Vihola, J., Uotila, U.  
Number of pages: 80  
Publication date: 2015

**Publication information**

Place of publication: Helsinki  
Publisher: Ympäristöministeriö  
ISBN (Electronic): 978-952-11-4385-4  
Original language: Finnish

**Publication series**

Name: Ympäristöministeriön raportteja  
Publisher: Ympäristöministeriö  
No.: 6/2015  
ISSN (Electronic): 1796-170X  
Keywords: asunto, perusparannus, lämmitysremontti, energiaköyhyys, pienituloinen, energiakustannus, lämmitystapa, rahoitus, energianeuvonta  
Links:  
http://www.ym.fi/fi-FI/Ajankohtaista/Uutta_tietoa_energiakoyhyydesta%2832589%29

**Proactive vision for strategy making**

**General information**

State: Published  
Ministry of Education publication type: A4 Article in a conference publication  
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations  
Authors: Vanharanta, H., Kantola, J.  
Number of pages: 8  
Pages: 587-594  
Publication date: 2015

**Host publication information**

Title of host publication: 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015  
Publisher: Elsevier

**Publication series**

Name: Procedia Manufacturing  
Volume: 3  
ISSN (Print): 2351-9789  
Electronic versions:  
Proactive vision for strategy making  
DOIs:  
10.1016/j.promfg.2015.07.272  
Links:  
http://urn.fi/URN:NBN:fi-tty-201606064219

**Procesual knowledge production in organisations dealing with projects**

The more complex and innovative the organisation, the problem or opportunity, or the technology within the projects, the more significant it will be to understand how the knowledge production within the organisations dealing with projects takes place. This means that the determination of viable approaches which ensure that knowledge production takes place continuously, to help organisations implement projects, is a very important issue. Therefore, it is suggested in this paper
that process thinking that involves considering phenomena dynamically in terms of movement, activity, events, change and temporal evolution, provides a fresh approach through which we may advance our understanding of the dynamics of knowledge production. It is concluded that interaction, observation, negotiation of meaning, and languaging are processes through which knowledge production takes place in organisations. However, there is also ‘infinite number’ of other processes that may affect the success of knowledge production, but those ones mentioned above, are always together in effect, i.e., they are totally interdependent.

**General information**
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Pori Department
Authors: Koskinen, K. U.
Number of pages: 15
Pages: 206-220
Publication date: 2015
Peer-reviewed: Yes

**Publication information**
Volume: 7
Issue number: 3
ISSN (Print): 1740-2891
Ratings:
Scopus rating (2016): CiteScore 0.28 SJR 0.173 SNIP 0.28
Scopus rating (2015): SJR 0.126 SNIP 0.269 CiteScore 0.17
Scopus rating (2014): SJR 0.14 SNIP 0.16
Scopus rating (2013): SJR 0.252 SNIP 0.41
Scopus rating (2012): SJR 0.435 SNIP 0.427
Scopus rating (2011): SJR 0.21 SNIP 0.323
Scopus rating (2010): SJR 0.126 SNIP 0.435
Scopus rating (2009): SJR 0.113 SNIP 0.175
Original language: English
DOIs:
10.1504/IJPOM.2015.070789
Research output: Scientific - peer-review › Article

**Public-sector as an Initiator in a Collaborative Innovation Process**

**General information**
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Suominen, A. H., Mäenpää, S., Breite, R.
Number of pages: 12
Publication date: 2015

**Host publication information**
Title of host publication: The XXVI ISPIM Innovation Conference – Shaping the Frontiers of Innovation Management – Budapest, Hungary, 14-17 June 2015
Publisher: International Society for Professional Innovation Management ISPIM
Research output: Scientific - peer-review › Conference contribution

**SAFERA SERPENTINE: Safera Serpentine hankkeen loppuraportti**

**General information**
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Pori Department
Authors: Vanharanta, H., Piirto, A., Einolander, J., Kantola, J.
Publication date: 2015

**Publication information**
Social media applications in external B2B transactions: An empirical analysis of the Finnish technology industry

Despite the popularity of the topic, social media research is still limited and focuses largely on the role of consumer-to-consumer (C2C) and business-to-consumer (B2C) domains (Volpentesta and Felicetti, 2012; Michaelidou et al., 2011). In many aspects, B2C social media practices are not directly useful for inter-organizational and business-to-business (B2B) purposes. The main aim of this paper is to increase the understanding of the current applications of social media in external B2B transactions. This is carried out through an extensive survey of companies in the technology industry which are operating purely in B2B markets, having only other companies as customers.

We wanted to understand how industrial B2B companies currently apply social media in their own inter-organizational applications, what potential they see for social media in this context, and what kind of support they need to better adopt social media together with their customers and partners. A population of 2488 Finnish decision makers from the Federation of Finnish Technology Industries were observed. Based on the answers of 143 different companies, 125 companies were found to wholly (100%) represent B2B markets, and these were chosen as the sample of this particular study.

Studies on social media, especially survey-based studies, have not focused solely on B2B companies, particularly on the inter-organizational applications of social media in B2Bs, except for the B2B-marketing oriented study of Michaelidou et al. (2011) and the study of social media utilization in B2B relationships by Pettersson et al. (2014). This study extends these previous studies by creating new understanding of the maturity of social media integration in businesses, organizational business problems that companies perceive can be solved with social media, and approaches that can support social media adoption in B2B companies.

Managerially, the results can be used, for instance, to better understand the various possibilities of applying social media for inter-organizational use in B2Bs, which are currently only superficially understood by a significant portion of managers. This can help support and facilitate external social media use in B2Bs.
cameras and the on-line user feedback system. The documentation consists of the minutes of the meetings, the financial
reporting and the time tables. Both the processes and the results of the projects are analysed. Based on the key findings,
some suggestions are put forth upon how to improve the CM process to better serve customer interests and quality
improvement in the future.

**General information**
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Civil Engineering, Research group: Construction Management, School of Architecture
Authors: Savolainen, J., Kähkönen, K., Niemi, O., Poutanen, J., Varis, E.
Number of pages: 8
Pages: 64-71
Publication date: 2015
Peer-reviewed: Yes

**Publication information**
Journal: Procedia Economics and Finance
Volume: 21
ISSN (Print): 2212-5671
Original language: English
Keywords: Co-creation, construction management, continuous improvement, customer relations management, quality
management
DOIs: 10.1016/S2212-5671(15)00151-3

**Bibliographical note**
ORG=rak,1
ORG=ark,0
Source: RIS
Source-ID: urn:76EF98A938A43DE456AFD5111BF4116C
Research output: Scientific - peer-review › Article

**Sustainable and responsible freight transport through public-private collaboration: Finnish road freight responsibility model**

**Purpose**
In aviation, maritime and rail transport safety management systems are well adapted and they are fixed part of daily practices and the minimum requirements for systems are set in European regulations. However, this does not apply a road freight sector. In 2013, Finnish Transport Safety Agency (Trafi) started to develop a road freight responsibility model, which was intended to enhance safety, quality and environmental management in the Finnish road freight transport sector. The aim of this paper is to introduce the Finnish model and to summarize the main findings from the responsibility model.

**Approach**
This paper includes data and knowledge from two separate but related projects which studied responsibility and sustainability in the Finnish road freight sector. The paper combines information from several methods, but the main research method was a case study with transport companies. Complementary methods used in this paper are workshop and online survey.

**Findings**
Transport companies have different practises and attitudes related to the responsible business and the size of the company or the main service sector of the company do not always explain the differences. According to the results, this kind of new voluntary basis approach has a demand in the road freight sector and it will provide help for transport companies to develop their business.

**Value**
The paper represents a new approach of the national transport agency to develop the road freight sector. With the responsibility model Trafi aims to promote sustainable and responsible business of all sizes of transport companies with a voluntary basis approach.
The impact of customer-guided purchasing on trust in creation of B2B relationships

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: Department of Industrial Management
Authors: Ojala, M., Uusitalo, O., Mahlamäki, T.
Publication date: 2015

Host publication information
Title of host publication: 23rd International Colloquium on Relationship Marketing (ICRM) 2015: 15-17 September, Helsinki, Finland
Publisher: Hanken School of Economics
Links:
http://hdl.handle.net/10138/156532
Research output: Scientific › Conference contribution

The New Era of Crowdsourcing — Industrial Crowdsourcing

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDiT), DIGILE – Finnish Center for Science and Innovation in the Internet Economy
Authors: Kärkkäinen, H., Jussila, J., Erkinheimo, P.
Number of pages: 7
Pages: 25-31
Publication date: 2015

Host publication information
Title of host publication: Open Innovation Yearbook 2015
Place of publication: Brussel
Publisher: European Commission
Editor: Salmelin, B.
Keywords: crowdsourcing, industrial crowdsourcing
DOIs:
10.2759/92658
Links:
Research output: Scientific › Chapter

The World Innovation Stock Exchange—shared value for individuals, business and society

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations
Authors: Markopoulos, E., Vanharanta, H.
Number of pages: 8
Pages: 595-602
Publication date: 2015

Host publication information
Title of host publication: 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015
Three positives make one negative: Public sector is procurement

The requirement specifications are centric in the IS acquisition process, also in public sector. In addition to the regulatory factors multiple stakeholders are often involved in the procurement process. Yet their expertise varies and is often limited to a narrow sector or a specific field. For this paper, we conducted a single case study on an IS acquisition in a middle-sized city. The function nominated a project manager for the project, with little if any prior experience of IS or of their acquisition. The counterpart in the CIO’s office had that knowledge but had little domain knowledge about the requirements. The third party involved was the Procurement and Tendering office. Having specialized in serving the variety of functions in that particular field, the specific areas become inevitably omitted. All three parties argued that their requirements specifications were good, if not great. We observed how such a trident, having reported successful completion of their duties, still missed the point. The tendering resulted in little short of a disaster; two projects were contested, and lost in the market court.

General information

State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics, Research group: Novi, Managing digital industrial transformation (mDIT), Tampere University of Technology
Authors: Alanne, A., Hellsten, P., Pekkola, S., Saarenpää, I.
Number of pages: 13
Pages: 321-333
Publication date: 2015

Host publication information

Title of host publication: Electronic Government : 14th IFIP WG 8.5 International Conference, EGOV 2015, Thessaloniki, Greece, August 30 -- September 2, 2015, Proceedings
Volume: 9248
Publisher: Springer Verlag
ISBN (Print): 9783319224787

Bibliographical note

AUX=tlo,"Saarenpää, Iiris"
Source: Scopus
Source-ID: 84944749274
Research output: Scientific - peer-review › Conference contribution

TiedeAreena 2015

Jo perinteikään TiedeAreena-.tapauhtuman yhteydessä järjestetään tänä vuonna ensimmäistä kertaa kaikille avoin tutkimusseminaria, jossa Porin yliopistokeskuksen sekä yhteistyökumppaneiden tutkijat esittelevät Satakunnassa tehtävää tutkimusta laaja-alaisesti. Kuten tutkimuskeskus, myös tutkimusseminaria on aidosti monitieteinen sisältäen sessioita pelillisyydestä, sosiaalisesta mediasta, ihmisen ja ympäristön vuorovaikutuksesta, sosiaalisesta eheydestä, yrittäjyydestä ja tutkimustyön menetelmistä.

Seminariin tavoite on monitahoinen. Vaikka Porin yliopistokeskus on verraten pieni tieedyhteisö, törmätään täälläkin usein ongelmaan, että emme tiedä tarpeeksi toistemme tutkimustyöstä. Seminariin tarkoitus on yhdistää samaa aihepiiriä eri tieteentalojen näkökulmasta tarkastelevia tutkijoita ja edesauttaa tieteentalojen välistä vuorovaikutusta. 

ASJC Scopus subject areas: Computer Science(all), Theoretical Computer Science
The responsibility model for road transport companies being developed under the leadership of the Finnish Transport Safety Agency (Trafi) is a voluntary participation management and procedure model intended to improve safety and environmentally sustainable practices in commercial transport. The present report focuses on the Excel-based interface of the responsibility model, its instructions and specimen documents of the model; however, the model as a whole extensively covers the major safety, quality and environmental matters relevant for road transport. The responsibility model is a management and procedure model that transport managers can employ to survey the current state of their enterprises, to identify strengths and development needs, to set goals, to generate reports and to adopt new practices.

The responsibility model for road transport companies has been under development at Trafi for several years; the responsibility model pilot study for road transport companies was begun in July 2013 and concluded in early 2014. After the trial study, the decision was made to continue development of the responsibility model. The follow-up study described in the present final report began in April 2014. The follow-up study was directly based on the findings and recommendations of the first-stage trial study.

The present final report consists of three sections. Chapters 1 and 2 contain an introduction to the project implementation, goals and purpose and a description of the overall functioning and purpose of the responsibility model. Chapter 3 contains the instructions for the interface and notes on their use. The instructions presented in chapter 3 are also given as a separate appendix at the end of the report. The third section, chapter 4, comprises sample forms and instruction documents together with notes on their use.
Tietämyksenhallinta osana organisaation toimintaa – hallintaa vai hämmennystä?

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Research group: Novi, Turku University of Applied Science, University of Vaasa
Authors: Väyrynen, H., Helander, N., Jalonen, H.
Number of pages: 16
Pages: 310-325
Publication date: 2015
Peer-reviewed: Yes
Early online date: 1 Dec 2015

Publication information
Journal: Hallinnon Tutkimus
Volume: 34
Issue number: 4
ISSN (Print): 0359-6680
Original language: Finnish
Research output: Scientific - peer-review › Article

Tietämyksenhallinta suomalaisissa yrityksissä: Loppuraportti, TSR-hanke 113295

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics, Research group: Novi
Authors: Helander, N., Väyrynen, H., Kukko, M., Jalonen, H.
Number of pages: 82
Publication date: 2015

Publication information
Publisher: Tampereen Teknillinen Yliopisto. Tiedonhallinnan ja logistiikan laitos
Original language: Finnish
Electronic versions:
Towards Business Potential of Workplace Services in Finland

People no longer work as they did 15 years ago. One of the major changes, as Laing (2013) stated, is that the employee no longer has to go to work, but information technology brings the work to the employee. Due to the independency of work from time and place, employees are working in a new way in multiple locations. For service providers, this offers a new business field. Thus, the paper focuses on this new business opportunity. The aim of the paper is to identify the business potential to build up and elaborate the workplace service business. Interviews with national workplace service providers and international workplace experts were conducted in order to get practical insight on the topic. Based on the interviews, two development steps are required to utilise the new business opportunity: (1) the transaction-oriented way to provide workplace services should be substituted by new business models, and (2) the workplace service should be re-thought and re-designed as a service that is not solely dependent on physical space. Based on the new business model and service, a new business opportunity could be harnessed.
Tuottavuusloikka sosiaalisen median avulla

General information
State: Published
Ministry of Education publication type: Not Eligible
Organisations: Department of Information Management and Logistics, Research group: Novi, Pori Department, Research group: Business Ecosystems, Networks and Innovations, Department of Mathematics, Research group: MAT Intelligent Information Systems Laboratory, Managing digital industrial transformation (mDIT)
Authors: Jussila, J. J., Kärkkäinen, H., Aramo-Immonen, H., Huhtamäki, J.
Number of pages: 2
Pages: 26-27
Publication date: 2015

Host publication information
Title of host publication: TiedeAreena 2015
Place of publication: Pori
Publisher: Tampereen teknillinen yliopisto, Porin laitos
Editor: Väkiparta, M.

Publication series
Name: Laitosraportti - TUT Publication series
Publisher: Tampereen teknillinen yliopisto. Porin laitos - Tampere University of Technology. Pori Department
ISSN (Print): 2323-8976
Keywords: social media, productivity

Links:
http://dspace.cc.tut.fi/dpub/handle/123456789/23399

Bibliographical note
Research output: Scientific - peer-review › Conference contribution

Tutkimuksen arviointia vai tieteellisen toiminnan vaikuttavuuden arviointia?: Bibliometriikkaseminaari 2015

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Library
Authors: Kumpulainen, S.
Number of pages: 3
Pages: 1-3
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Informaatiotutkimus
Volume: 34
Issue number: 4
ISSN (Print): 1797-9137
Original language: Finnish

Electronic versions:
KumpulainenInformaatiotutkimus2015

Links:
http://urn.fi/URN:NBN:fi:tty-201603173641
Wealthy, healthy and/or happy — what does ‘ecosystem health’ stand for?
The health of a software ecosystem is argued to be a key indicator of well-being, longevity and performance of a network of companies. In this paper, we address what scientific literature actually means with the concept of ‘ecosystem health’ by selecting relevant articles with systematic literature review. Based on the final set of 38 papers, we found that despite a common base, the term has been used to depict a wide range of hoped characteristics of a software ecosystem. However, the number of studies addressing the topic is shown to grow while empirical studies are still rare. Thus, further studies should aim to standardize the terminology and concepts in order to create a common base for future work. Further work is needed also to develop early indicators that warn and guides companies on problems with their ecosystems.

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department, Research group: Business Ecosystems, Networks and Innovations, Managing digital industrial transformation (mDIT), VTT Technical Research Centre of Finland, University of Turku, University of Turku, Turku School of Economics, Department of Management and Entrepreneurship, Innovation and Knowledge Economy, VTT Technical Research Centre of Finland
Authors: Hyrynsalmi, S., Seppänen, M., Nokkala, T., Suominen, A., Järvi, A.
Number of pages: 16
Pages: 272-287
Publication date: 2015

Host publication information
Title of host publication: 6th International Conference on Software Business, ICSOB 2015; Braga; Portugal; 10 June 2015 through 12 June 2015
Volume: 210
Publisher: Springer Verlag
ISBN (Print): 9783319195926

Publication series
Name: Lecture Notes in Business Information Processing
Volume: 210
ISSN (Print): 1865-1348
Keywords: Business ecosystem, Ecosystem health, Software ecosystem, Systematic literature study
ASJC Scopus subject areas: Business and International Management, Management Information Systems, Modelling and Simulation, Information Systems, Information Systems and Management, Control and Systems Engineering
DOIs: 10.1007/978-3-319-19593-3_24
Links: http://www.scopus.com/inward/record.url?scp=84937434086&partnerID=8YFLogxK (Link to publication in Scopus)
Source: Scopus
Source-ID: 84937434086
Research output: Scientific - peer-review » Conference contribution

Yhteiskunnan korvaamien kuljetusten tehostaminen – esiselvitys Pirkanmaan alueella

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics, Research group: Transport Research Centre Verne
Authors: Liimatainen, H., Metsäpuro, P., Nykänen, L.
Number of pages: 45
Publication date: 2015

Publication information
Publisher: Pirkanmaan liitto
Original language: Finnish
ASJC Scopus subject areas: Engineering(all)
Research output: Professional » Commissioned report
Knowledge interaction between manufacturers and research organisations for building product innovations: an exploratory case study

This thesis adds to research on construction innovation through exploring and describing knowledge interaction between product manufacturers and research organizations. A few publications deal with manufacturers' innovation activities on their own terms, although products are broadly recognised to have major impacts on the performance of the entire built environment. The research was conducted in a multilevel theoretical framework integrating the perspectives of systems of innovation, knowledge processes in manufacturing industries and knowledge interaction between companies and public research organizations. Ten product innovations were selected for a multiple case study. Cross-case synthesis was applied as the analysis technique of qualitative research data. The main themes in exploring and describing the knowledge interaction were found as to be a) development and use of research-based knowledge in product innovations, b) accumulation and diffusion of research-based knowledge and b) context and channels of knowledge interaction. The principal motivation for the knowledge interaction was found to be the need to know how a novel product would perform in its intended use in buildings, and how it should be designed and manufactured to meet the overall requirements. The regulations to design and use novel products were, however, often developed in parallel or after a technical invention. The objectives of joint innovation activities also reflected also the market expectations and governmental strategies. The thesis thus emphasized the dynamics of relationships between institutions and various actors within a system of construction innovation. A system of construction innovation is, however, not sufficient to uncover all the aspects of the knowledge interaction and even less the context of manufacturers' innovation activities. This is due to the division of the real estate and construction sector into competing value chains that exist in accord with basic framing materials. Manufacturers have ties to basic industries that are also important sources of product innovations. The industrial associations reflect this situation, as well as specialization of research and education. As a conclusion, approaches to the technology innovation systems were proposed for further research. The research identified similarities between the innovation processes of building product manufacturers and those of other manufacturing sectors. It is noteworthy however, that innovation activities were organised in several cases according to principles of concurrent engineering already decades ago. It was also observed that relationships between research and practice are of mutual benefit.

General information
State: Published
Ministry of Education publication type: G4 Doctoral dissertation (monograph)
Organisations: Department of Civil Engineering
Authors: Koukkari, H.
Number of pages: 189
Publication date: 14 Nov 2014

Publication information
Place of publication: Espoo
Publisher: VTT
Original language: English

Publication series
Name: VTT Science
Publisher: VTT
Volume: 49
ISSN (Print): 2242-119X
ISSN (Electronic): 2242-1203
Electronic versions:
koukkari.pdf
Links:
http://urn.fi/URN:NBN:fi:tty-201609134502

Bibliographical note
Awarding institution:Tampere University of Technology
Source: researchoutputwizard
Source-ID: 799
Research output: Monograph » Doctoral Thesis

Innoaativitoiminnan johtaminen rakennustuoteteollisuudessa
The objective of this research was to investigate how innovation is managed in the construction products industry and identify solutions to the problems found. The focus of the research was based on the researcher's personal observations of the construction sector, especially the construction products industry, during the last four decades. These observations suggested that there is much room for improvement in innovation management, especially in strategy and creation of the optimal culture for innovation. The research, therefore, focused on challenges to management, the connection between
innovation management and business strategies, and interaction between individual companies and the external innovation environment. The research method was qualitative and data were collected by theme interviews. The interviewees were primarily representatives of the construction products industry, but representatives of other parts of the value chain of construction were also interviewed. This was done in order to better understand the influence that clients of the construction products industry and the value chain have on innovation activities. The research revealed that the opinions of users and owners of properties are not given sufficient consideration in managing innovation. The construction products industry does not have a clear understanding of who the client is and, therefore, does not know whose needs it is supposed to satisfy. The construction products industry feels that the qualitative characteristics of their products are not valued by their clients and that procurement decisions are made primarily on the basis of the lowest unit price. Neither the industry nor their clients are capable of properly estimating the possible savings in overall costs from systemic innovations. The innovation activities of firms are generally driven by current strategic plans and they only develop ideas that are connected to existing or planned new businesses. Defining the competitive advantages of a potential new product, receives less attention. The search for ideas to foster innovations is poorly managed in firms – only a few of them work systematically to find new ideas. The systemic impacts of the cost effects of new ideas should be assessed in collaboration with construction company clients, based on full-scale pilot construction. In order for such collaboration to be possible, contracts are required that define how benefits and risks are to be shared and that ensure the effort is beneficial to both parties. This research is the most comprehensive investigation of innovation management in the construction products industry to date. The key conclusion is that, because innovation management plays a central role in business success, it should be given greater attention and focused on increasing the profitability of innovation activity. Creation of an internal environment that encourages innovation is essential and measures firms should take are identified in this report.

**General information**

State: Published  
Ministry of Education publication type: G4 Doctoral dissertation (monograph)  
Organisations: Department of Civil Engineering  
Authors: Vesa, M.  
Number of pages: 215  
Publication date: 7 Nov 2014

**Publication information**

Place of publication: Tampere  
Publisher: Tampere University of Technology  
Original language: Finnish

**Publication series**

Name: Tampere University of Technology. Publication  
Publisher: Tampere University of Technology  
Volume: 1251  
ISSN (Print): 1459-2045  
Electronic versions:  
vesa.pdf  
Links:  

**Bibliographical note**

Awarding institution: Tampere University of Technology  
Source: researchoutputwizard  
Source-ID: 1726  
Research output: Monograph › Doctoral Thesis

**Finnish Innovations and Technologies in Schools: a Guide towards New Ecosystems of Learning**

**General information**

State: Published  
Ministry of Education publication type: C2 Edited books  
Organisations: University of Helsinki  
Number of pages: 175  
Publication date: 2 Oct 2014

**Publication information**

Place of publication: Rotterdam  
Publisher: Sense Publishers
Prologue: Towards a Global Ecosystem

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: University of Helsinki
Authors: Niemi, H., Multisilta, J., Lipponen, L., Vivitsou, M.
Pages: ix-xii
Publication date: 2 Oct 2014

Host publication information
Title of host publication: Finnish Innovations and Technologies in Schools: a Guide towards New Ecosystems of Learning
Place of publication: Rotterdam
Publisher: Sense Publishers
Editors: Niemi, H., Multisilta, J., Lipponen, L., Vivitsou, M.
ISBN (Print): 978-94-6209-747-6
Source-ID: urn:428e026a42270240fd84f51f0f240c03f
Research output: Scientific - peer-review Chapter

Enterprise architecture in practice: from IT concept towards enterprise architecture leadership


Enterprise architecture in practice


General information
State: Published
Ministry of Education publication type: G4 Doctoral dissertation (monograph)
Organisations: Department of Information Management and Logistics
Authors: Kimpimäki, H.
Number of pages: 326
Publication date: 16 Jun 2014
The aim of this paper is to advance applied theoretical knowledge on international business (IB) ideation by designing the managing of such ideation as three recursive, multi-competence-enabled systems. The core principles of Beer’s (1985) Viable System Model are adopted for this system design task. The Viable System Model consists of five interacting sub-systems that can support a viable IB unit. The contribution of this design of the three recursive, multi-competence-enabled systems will be three novel pieces of the applied theoretical knowledge about recursivity and competences that advance the management of an IB unit as a whole and in particular that of IB ideation. For future research, I initially propose that the IB ideation (unit) is being managed the more successfully within its focal contexts, the more extensively the IB ideation is designed as a set of three recursive systems enabled by respective multi-competences. Moreover, the 3-system design may serve as the frame of reference for those compatible theorization initiatives vis-à-vis viable IB ideation management that interested competence-based management scholars will conduct in the future. I put forth the three templates to facilitate the enhancement of the IB ideation practices among leading, innovative firms and especially by the pioneering management of IB (ideation) units.
Host publication information
Title of host publication: A Focused Issue on Building New Competences in Dynamic Environments
Publisher: Emerald Group Publishing Limited
Editors: Sanchez, R., Heene, A.
ISBN (Print): 978-1-78441-275-3
ISBN (Electronic): 978-1-78441-274-6

Publication series
Name: Research in Competence-Based Management
Publisher: Emerald Group Publishing Limited
Volume: 7
ISSN (Print): 1744-2117
Keywords: Business ideation, competence-based management, international business management, Viable System Model
ASJC Scopus subject areas: Business, Management and Accounting(all)
Electronic versions:
huovinen_advancement_of_international_business_ideation
DOIs:
10.1108/S1744-211720140000007012
Links:
http://urn.fi/URN:NBN:fi:tty-201705111370

Bibliographical note
Contribution: organisation=rak,FACT1=1<br/>Portfolio EDEND: 2014-12-31
Source: researchoutputwizard
Source-ID: 507
Research output: Scientific - peer-review › Chapter

Angry Birds for Fun in Learning
General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: University of Helsinki
Authors: Harju, V., Multisilta, J.
Number of pages: 8
Pages: 69-76
Publication date: 2014

Host publication information
Title of host publication: Finnish Innovations and Technologies in Schools: a Guide towards New Ecosystems of Learning
Publisher: Sense Publishers
Editors: Niemi, H., Multisilta, J., Lipponen, L., Vivitsou, M.
ISBN (Print): 978-94-6209-747-6
Source: Bibtex
Source-ID: urn:065aa8172889a9755c90a3e8fa4fcbd2
Research output: Scientific - peer-review › Chapter

Applying performance measurement in service operations: analysis of contextual differences
General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Department of Industrial Management, Managing digital industrial transformation (mDIT)
Authors: Jääskeläinen, A., Laihonen, H.
Number of pages: 19
Pages: 243-261
Publication date: 2014
Peer-reviewed: Yes

Publication information
Assessing the Challenges of Creative Service Value in Supply Chains

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Vilo, J., Ritala, P., Hemilä, J., Kallionpää, E., Rantala, J.
Number of pages: 9
Pages: 525-533
Publication date: 2014

Host publication information
Place of publication: Nottingham, UK
Publisher: Nottingham University Business School
ISBN (Print): 978-0-85358-305-9

Publication series
Name: International symposium on logistics
Links:
http://www.isl21.org

Bibliographical note
Contribution: organisation=tlo,FACT1=0.5<br/>Portfolio EDEND: 2014-10-07<br/>Publisher name: Nottingham University Business School
Source: researchoutputwizard
A strategy framework for performance measurement in the public sector

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Department of Industrial Management, Managing digital industrial transformation (mDIT)
Authors: Jääskeläinen, A., Laihonen, H.
Number of pages: 8
Pages: 355-362
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Public Money and Management
Volume: 34
Issue number: 5
ISSN (Print): 0954-0962
Ratings:
Scopus rating (2016): CiteScore 1.03 SJR 0.544 SNIP 0.918
Scopus rating (2015): SJR 0.482 SNIP 0.682 CiteScore 0.8
Scopus rating (2014): SJR 0.578 SNIP 0.843 CiteScore 0.79
Scopus rating (2013): SJR 0.497 SNIP 0.711 CiteScore 0.68
Scopus rating (2012): SJR 0.537 SNIP 0.927 CiteScore 0.65
Scopus rating (2011): SJR 0.53 SNIP 0.865 CiteScore 0.75
Scopus rating (2010): SJR 0.781 SNIP 1.264
Scopus rating (2009): SJR 0.41 SNIP 0.887
Scopus rating (2008): SJR 0.47 SNIP 0.788
Scopus rating (2007): SJR 0.66 SNIP 0.985
Scopus rating (2006): SJR 0.668 SNIP 1.034
Scopus rating (2005): SJR 0.844 SNIP 1.223
Scopus rating (2004): SJR 0.379 SNIP 0.831
Scopus rating (2003): SJR 0.674 SNIP 1.012
Scopus rating (2002): SJR 0.536 SNIP 1.132
Scopus rating (2001): SJR 0.589 SNIP 0.897
Scopus rating (2000): SJR 0.746 SNIP 0.892
Scopus rating (1999): SJR 0.677 SNIP 0.83
Original language: English
DOIs:
10.1080/09540962.2014.945807

Bibliographical note
Contribution: organisation=tta,FACT1=0.5
Contribution: organisation=tlo,FACT2=0.5
Portfolio EDEND: 2014-09-09
Publisher name: Routledge; Public Finance Foundation
Source: researchoutputwizard
Source-ID: 556
Research output: Scientific - peer-review › Article

Avoimuus oppimisverkostossa

General information
State: Published
Ministry of Education publication type: B3 Non-refereed article in conference proceedings
Organisations: University of Tampere
Authors: Lappalainen, Y., Sihvonen, M.
Pages: 37-43
Publication date: 2014
Creating Value through Business Models in Open Source Software

This paper explores how the use of a business model enables value creation in an Open Source Software (OSS) environment. Open Source offers one possibility for firms that are continuously looking for new opportunities and ways of organizing their business activities to increase the amount of value they can appropriate through their capabilities. We argue that this value can be attained by analyzing value creation logic and the elements of business models. We demonstrate how value is created through business model elements and provide a list of questions that can help managers in their considerations with Open Source Software.
This article finds that the new virtual learning environments comprise more spaces and practices in which digital resources, tools, and applications are used. The article introduces how digital storytelling can create virtual learning environments when it is used for learning 21st-century skills and competencies needed in students' future working life. The study describes how students (n = 319) in three countries and their teachers (n = 28) value digital storytelling and what they think students have learned. Their experiences are analyzed using a theoretical conceptualization of the global sharing pedagogy that sets categories of processes or tools as mediators: 1) learner-driven knowledge and skills creation, 2) collaboration, 3) networking, and 4) digital literacy. Analyses have been quantitative and qualitative. The article describes students' experiences when they created their digital stories and how they engaged in learning. The major findings are that students enjoyed creating their stories, and they were very engaged in their work. They learned many 21st-century skills when creating their digital stories.
Equity Crowdfunding - A Finnish Case Study

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Lasrado, L., Lugmayr, A.
Number of pages: 6
Pages: 1-6
Publication date: 2014

Frameworks and Paradigms for the World Innovation Stock Exchange and the WhyNot Innovation Labs

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department
Authors: Markopoulos, E., Vanharanta, H.
Number of pages: 9
Pages: 1046-1054
Publication date: 2014
Global is Becoming Everywhere: Global Sharing Pedagogy

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: University of Helsinki
Authors: Niemi, H., Multisilta, J.
Number of pages: 13
Pages: 35-47
Publication date: 2014

Host publication information
Title of host publication: Finnish Innovations and Technologies in Schools: a Guide towards New Ecosystems of Learning
Place of publication: Rotterdam
Publisher: Sense Publishers
Editors: Niemi, H., Multisilta, J., Lipponen, L., Vivitsou, M.
ISBN (Print): 978-94-6209-747-6
Source: Bibtex
Source-ID: urn:99fc75a858f300f986c3aae5af4b5822
Research output: Scientific - peer-review › Chapter

Identifying customer value in supply chains - the process of analysis

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Kallionpää, E., Rantala, J., Vilko, J., Hemilä, J.
Number of pages: 8
Pages: 160-167
Publication date: 2014

Host publication information
Place of publication: Nottingham, UK
Publisher: Nottingham University Business School
ISBN (Print): 978-0-85358-305-9

Publication series
Name: International symposium on logistics
Links:
http://www.isl21.org

Bibliographical note
Contribution: organisation=tlo,FACT1=1<br/>Portfolio EDEND: 2014-10-07<br/>Publisher name: Nottingham University Business School
Source: researchoutputwizard
Source-ID: 641
Research output: Scientific - peer-review › Conference contribution

Innovation diffusion in SME networks - sustainability via green ICT pilots

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Pori Department
Authors: Aramo-Immonen, H., Leppäniemi, J., Soini, J.
Number of pages: 12
Pages: 1-12
Publication date: 2014

Host publication information
Joukkoistamisen uusi aalto: Teollisten yritysten joukkoistaminen

Tämän raportin tavoitteessa on koostaa yrityslaitoksen esille tutkimuksessa esiintyneestä tiedosta ja näkemyksistä, jotka ovat vieläkin sellaisia, joiden osalta on tarjolla liioitteellisempänä esitettävää. Joukkoistamisaluetta voi hieman tarkastaa, ja tarvitsemme tässä päätökseen, että tällaisissa исследовательских сферах, на которых можно устанавливать сторонние наблюдения.

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics
Authors: Kärkkäinen, H., Jussila, J., Erkinheimo, P., Hallikas, J., Isokangas, A., Jalonen, H.
Number of pages: 48
Publication date: 2014
Kansainvälinen jakamisen pedagogiikka

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: University of Helsinki
Authors: Niemi, H., Multisilta, J.
Number of pages: 15
Pages: 50-64
Publication date: 2014

Host publication information
Title of host publication: Rajaton luokkahuone
Place of publication: Jyväskylä
Publisher: PS-kustannus
Editors: Niemi, H., Multisilta, J.
ISBN (Print): 978-952451-618-1

Publication series
Name: Opetus 2000
Source: Bibtex
Source-ID: urn:69775a78983f4f188da70b0542f6d495
Research output: Scientific - peer-review › Chapter

Kehitysvammainen henkilö terveydenhuollon palvelupaluilla. Kustannusvaikuttavuuden arviointi

General information
State: Published
Ministry of Education publication type: D4 Published development or research report or study
Organisations: Department of Information Management and Logistics
Authors: Sillanpää, V.
Number of pages: 17
Publication date: 2014

Publication information
Publisher: Savon Vammaisasuntosäätiö
Original language: Finnish
Links:

Bibliographical note
TEPA-projekti<br/>&nbsp;&nbsp;&nbsp;&nbsp;Contribution: organisation=tlo,FACT1=1<br/>&nbsp;&nbsp;&nbsp;&nbsp;Portfolio EDEND: 2014-12-15
Source: researchoutputwizard
Source-ID: 1512
Research output: Professional › Commissioned report

Knowledge Management Practices in Large Companies

General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Research group: Novi, University of Vaasa
Authors: Väyrynen, H., Helander, N., Kukko, M.
Number of pages: 17
Pages: 56-72
Publication date: 2014
Peer-reviewed: Yes
Early online date: 1 Jan 2014

Publication information
Language Learning in Task Management and Task Accomplishment In Higher Education Perspectives on Content and Language Integrated Learning

Leikilliset oppimateriaalit innostavat oppimaan
Leikkien mutta tosissaan: Leikillä iloa oppimisympäristöön

General information
State: Published
Ministry of Education publication type: A3 Part of a book or another research book
Organisations: University of Helsinki
Authors: Harju, V., Multisilta, J.
Number of pages: 15
Pages: 153-167
Publication date: 2014

Host publication information
Title of host publication: Oppiminen pelissä
Place of publication: Tampere
Publisher: Vastapaino
Editors: Krofkors, L., Kangas, M., Kopisto, K.
ISBN (Print): 978-951-768-441-5
Source: Bibtex
Source-ID: urn:ce86df96eaa96c4017e9e8db1435839d
Research output: Scientific - peer-review › Chapter

Lääke julkisen palvelun kipuihin

General information
State: Published
Ministry of Education publication type: E1 Popularised article, newspaper article
Organisations: Department of Information Management and Logistics
Authors: Laihonen, H.
Number of pages: 1
Pages: B4-B4
Publication date: 2014
Peer-reviewed: Unknown

Publication information
Journal: Aamulehti
ISSN (Print): 0355-6913
Original language: Finnish
Links:
http://www.aamulehti.fi

Bibliographical note
Contribution: organisation=tlo,FACT1=1<br/>Portfolio EDEND: 2014-10-14
Source: researchoutputputwizard
Source-ID: 870
Research output: General public › Article

Managing a City With Knowledge - Four Success Factors

General information
State: Published
Ministry of Education publication type: A4 Article in a conference publication
Organisations: Department of Information Management and Logistics
Authors: Laihonen, H., Mäntylä, S.
Maturity assessment for implementing and using product lifecycle management in project-oriented engineering companies

Product lifecycle management (PLM) is a systematic and holistic way to approach challenges that exist in managing product-related information along a product’s lifecycle from product design to its disposal. There is an established set of information management approaches that address important subsets of lifecycle information management challenges, e.g., product data management (PDM), customer relationship management (CRM) and enterprise resource planning (ERP). A common characteristic of PLM is that implementation is a very challenging and complex long-term process, requiring changes in organisation, systems, conventions and importantly, skills and capabilities. The aim of this paper is to discuss the issue of PLM maturity assessment and its use and application in the specific industrial context of project-oriented engineering companies. Within this context, the empirical part of the paper studies the usefulness and tailoring needs of generic capability maturity assessment in implementing and facilitating PLM.
General information
State: Published
Ministry of Education publication type: A1 Journal article-refereed
Organisations: Department of Information Management and Logistics, Department of Industrial Management, Managing digital industrial transformation (mDIT)
Authors: Laihonen, H., Jääskeläinen, A., Pekkola, S.
Number of pages: 15
Pages: 73-86
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Measuring Business Excellence
Volume: 18
Issue number: 3
ISSN (Print): 1368-3047
Ratings:
Scopus rating (2016): SJR 0.479 SNIP 0.806 CiteScore 1.38
Scopus rating (2015): SJR 0.329 SNIP 1.22 CiteScore 1.32
Scopus rating (2014): SJR 0.42 SNIP 0.896 CiteScore 1.1
Scopus rating (2013): SJR 0.423 SNIP 0.953 CiteScore 1.36
Scopus rating (2012): SJR 0.269 SNIP 1.126 CiteScore 0.99
Scopus rating (2011): SJR 0.417 SNIP 1.041 CiteScore 1.04
Scopus rating (2010): SJR 0.233 SNIP 0.41
Scopus rating (2009): SJR 0.325 SNIP 0.717
Scopus rating (2008): SJR 0.246 SNIP 0.659
Scopus rating (2007): SJR 0.196 SNIP 0.224
Scopus rating (2006): SJR 0.233 SNIP 0.408
Scopus rating (2005): SJR 0.173 SNIP 0.292
Scopus rating (2004): SJR 0.259 SNIP 0.26
Scopus rating (2003): SJR 0.173 SNIP 0.27
Scopus rating (2002): SJR 0.122 SNIP 0.138
Scopus rating (2001): SJR 0.112 SNIP 0.026
Scopus rating (2000): SJR 0.1 SNIP 0
Scopus rating (1999): SJR 0.1 SNIP 0
Original language: English
DOIs:
10.1108/MBE-08-2013-0045

Bibliographical note
Contribution: organisation=tlo,FACT1=0.5<br/>Contribution: organisation=tta,FACT2=0.5<br/>Portfolio EDEND: 2014-09-09<br/>Publisher name: Emerald Group Publishing Limited
Source: researchoutputwizard
Source-ID: 871
Research output: Scientific - peer-review › Article

Media ja yhteisölliset sovellukset

General information
State: Published
Ministry of Education publication type: B2 Part of a book or another research book
Organisations: University of Helsinki
Authors: Multisilta, J.
Publication date: 2014

Host publication information
Title of host publication: Ikäteknologia