Nina Koch-Ørvad - DTU Orbit (14/03/2019)

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Organisations

PhD Student, Department of Management Engineering
28/08/2015 → present
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VIP

Engineering Systems
03/06/2016 → present
VIP

Production and Service Management
28/08/2015 → 20/05/2016 Former
VIP

Engineering Systems Group
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VIP

Research outputs:

Construction transformation

General information
State: Published
Organisations: Engineering Systems, Department of Management Engineering
Contributors: Thuesen, C., Koch-Ørvad, N.
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Host publication information
Title of host publication: Sustain Conference 2018 : Creating Technology for a Sustainable Society
Place of publication: Lyngby, Denmark
Publisher: Technical University of Denmark (DTU)
Editors: Melero, C., Mølhave, K.
Article number: A-1
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http://www.sustain.dtu.dk/
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2018

Disrupting the ecosystem: The challenges of circular construction

General information
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Organisations: Engineering Systems, Department of Management Engineering
Contributors: Koch-Ørvad, N., Thuesen, C.
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Learning from Digitalised Industries: Designing Value Propositions for Disruption

Digitalisation changes the way business is made. In some industries, digital disruption has been caused by companies like AirBnB and Netflix, whereas in other industries the opportunities stemming from digitalisation have still not been fully utilised. In this article, we explore how companies from less digital industries may create digital business opportunities by learning from successful digital companies in other industries. A 3-hour workshop set-up is developed and the findings from two workshops with 17 participants from the construction industry are described. It is shown how an analysis of the customer profiles of well-known companies facilitate cross-industrial learning and aid the creation of new ideas for digital value propositions. Although substantial further work is necessary before the full potential of the ideas may be harvested, we believe the described workshop method represents a tangible first step in creating digital business model innovation.

General information
State: Published
Organisations: Department of Management Engineering, Engineering Systems, Copenhagen Center for Health Technology, NIRAS A/S
Contributors: Ernstsen, S. K., Koch-Ørvad, N., Berg, J. B., Brinck, S., Thuesen, C., Maier, A.
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Murmuration as Metaphor for Sustainable Innovation processes

The construction industry stands before an extensive and essential transition towards sustainability; however, the configuration of the innovation processes that lead to such transition is unclear. In this paper, the concept of murmuration, i.e. the collective behaviour of starlings, is introduced as a metaphor for sustainable innovation processes in construction. The murmuration metaphor captures the flowing, ever-changing non-structure that characterises innovation processes within sustainable construction. This conceptual hypothesis is based on an empirical observation, and the potentials of the metaphor are explored at two interdisciplinary workshops with actors from the Danish construction industry. The empirical validation shows that the murmuration metaphor can generate a useful framework for understanding and discussing sustainable innovation processes in construction. Furthermore, murmuration can be a fruitful addition to the understanding of the societal transition towards sustainability as an elaboration of the niche-to-regime processes emphasised in the Multi-Level Perspective.

General information
State: Published
Organisations: Department of Management Engineering, Engineering Systems, Chalmers University of Technology, Norwegian University of Science and Technology
Contributors: Koch-Ørvad, N., Thuesen, C., Koch, C., Berker, T.
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Radical Sustainable Innovation of office buildings

The recent development of technologies, processes and methods of sustainable building has enabled an unprecedented quantum leap in the available solutions. These possibilities could be interpreted as radical, yet they appear at a time as results of a long emergent development. The aim of this paper is to critically scrutinize, theoretically and empirically, whether radical innovation is occurring in sustainable building and what the implication are. The theoretical framework is based on concepts of radical innovation, inventions and sustainability. Radical sustainable innovation (RSI) should be characterized by high degrees of newness in the entire life cycle. RSI should offer significant enhancements of known benefits, entirely new benefits, or substantial cost reductions, leading to the transformation of existing markets, the creation of sustainable growth, and global sustainability. Thus, if buildings were RSI, it would be a shift in paradigm of how buildings are designed, build and used. Serious limitations on these notions are addressed. Buildings are large complex products realised through complex processes and with a long lifecycle. It appears impossible that an entire building should/could be radically new. How to evaluate radicality is a major challenge. It is tentatively proposed, to use standards for sustainable office buildings. Standards are developed to accelerate the sustainable development but has to some extent come to constrain possibilities of radical innovation. As the criteria of newness is incorporated in standards, going
beyond them, could be viewed as radical. Empirically a selection of international cases of office buildings with very high scores of BREEAM, LEED and DGNB are examined. Six selected cases were analysed more in detail, one of them, GeelensCounterflow's Headquarters, being the most outstanding. This handful of office buildings have reached remarkable higher level of sustainability than contemporary building regulations. There is indeed a gap between these few buildings and the majority, making them more radical, yet due to weak social sustainability, they are not evaluated as radical innovation.

**General information**

State: Published
Organisations: Department of Management Engineering, Engineering Systems, Chalmers University of Technology, Norwegian University of Science and Technology
Contributors: Koch, C., Berker, T., Koch-Ørvad, N., Thuesen, C. L.
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Byggeriet skal gøre en større forskel

**General information**

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Organisations: Department of Management Engineering, Engineering Systems
Contributors: Bonke, S., Thuesen, C., Koch-Ørvad, N.
Publication date: 12 Aug 2016
Peer-reviewed: Unknown

**Publication information**

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ISI indexed (2012): ISI indexed no
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Source: PublicationPreSubmission
Source-ID: 125389109
Research output: Communication › Contribution to newspaper - Newspaper article – Annual report year: 2016

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Organising Sustainable Transition: Understanding the Product, Project and Service Domain of the Built Environment

Sustainable transition of the built environment construction industry is challenging the existing construction practices and business models. This article presents a framework for understanding and facilitating sustainable transition in the built environment. The framework was developed through a four years innovation project based on theories on sectorial and business model innovation and ten detailed case studies of different types of companies and their experimentation with different management and sustainability concepts. The framework interprets the construction industry as a collection of three generic domains - the Project, Product and Service domain - with widely different markets, companies, business models and regulation. Besides identifying the characteristics of the different domains, the findings show that these domains are interdependent, but largely live their own lives with internal agendas. Furthermore, it is shown that the domains are subject to more or less consciously coordinated innovation activities. The research concludes that the three-domain-model represents a promising framework for understanding and facilitating sustainable transition of the construction industry and built environment.

**General information**

State: Published
Organisations: Department of Management Engineering, Engineering Systems, Centre for Facilities Management, Systems Analysis, DTU Climate Centre
Contributors: Thuesen, C., Koch-Ørvad, N., Maslesa, E.
Buildings are essential for securing a sustainable society, and the Scandinavian building sector is viewed upon globally as the one to lead the way. This paper investigates in which directions sustainable building in Scandinavia is likely to move and outlines a number of areas where sustainable innovations are necessary for supporting this movement. The focus on innovations as essential support for the sustainable transition of the building sector derives from the Multi-Level Perspective, which has been applied to this study as a framework for understanding sustainable transitions of socio-technical systems. The findings are based on twelve expert interviews with key persons from central companies, research institutions and associations in Denmark, Norway and Sweden. The experts identify five directions for sustainable building in Scandinavia and list a number of innovations that will support the movement of the sector in these directions. These paths to the future for sustainable building seem remarkable clear and manageable, and the paper discusses the risk of the experts being too optimistic in the assessment of the sustainable transition of the Scandinavian building sector.
CIOB Award
Nina Koch-Ørvad (Recipient), Christian Thuesen (Recipient), Christian Koch (Recipient) & Thomas Berker (Recipient)
Department of Management Engineering, Engineering Systems

Description
Best Paper award on Innovation and Sustainability for the paper "Murmuration as Methaphor for Sustainable Innovation Processes"

Details
Awarded date: 4 Sep 2018
Degree of recognition: International
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event: 34th Annual Conference ARCOM 2018
Prize: Prizes, scholarships, distinctions

Press clippings:

‘Tiny homes’ fra Airbnb kan disrupte byggeriet
Sidsel Katrine Ernstsen, Nina Koch-Ørvad & Christian Thuesen
28/02/2019

Description
https://ing.dk/artikel/kronik-tiny-homes-airbnb-kan-disrupte-byggeriet-224228
Department of Management Engineering, Engineering Systems

Media contribution (1)

‘Tiny homes’ from AirBnB might disrupt construction
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Sidsel Katrine Ernstsen, Nina Koch-Ørvad & Christian Thuesen
Department of Management Engineering, Engineering Systems
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