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The Co-creation Canvas

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Abstract

Digital transformation has become an increasingly important topic among enterprises and in research. The adoption of enterprise systems is such an investment, and it usually requires significant change management activities to realize the potential benefits. One important issue is how firms should go about to make investments in appropriate digital technology – and the appropriate changes to organizational processes and business models. This is particularly challenging for small and medium-sized enterprises (SMEs). They generally have very limited resources, and they usually depend on external input and cooperation with other companies. Therefore, a successful strategy for many SMEs has been to cooperate with other companies to co-create digital assets. There is limited research on co-creation among SMEs, and we know little about how they should go about to initiate a co-creation network. We have therefore developed a conceptual model of a co-creation canvas based on a review of the literature and co-creation cases. This canvas can be a useful tool for SMEs to better grasp how they should approach the formation of a co-creation network in their industry.

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1. Introduction

The rapid development in digital technologies leads to ever more complex competitive environments. It is therefore critical to innovate and transform to be competitive. Implementing new technology will not in itself create competitive advantage; businesses also need to rethink their business models, business processes and organizational structures. One way to become proficient in using digital technology is to team up with network partners to better appreciate the potential business applications and benefits. Enterprises are therefore ever more seeking multiple partners to collectively leverage the potential benefits [2].

It is challenging for most enterprises to grasp the opportunities and the potential consequences of digitalization to their business, and it is difficult to enter the route of transformation [3]. This is particularly challenging for small and medium-sized enterprises (SMEs) who generally lack required resources and capabilities [4]. One approach to improve the ability to transform is to cooperate with other enterprises, but there are many challenges to launching and managing a co-creation strategy [5].

It has been an increasing research focus on co-creation in the last 20 years. It has been researched in various areas such as marketing, management and innovation science, information systems and service science. A recent study points to a number of application areas such as customer participation, consumer communities, users as co-designers, co-production, new product design, retailing, open business models, service systems and service exchange, and digitalization [6]. The co-creation concept lacks a distinct definition [7] and there is not consensus about its foundation, its conceptualization, potential consequences, drivers and related processes [8]. Several articles have sought to frame, describe and analyze the nature of co-creation. The articles of a special issues of *MIS Quarterly* on co-creation have added to our understanding the types of assets and complementarities that are needed for collaboration, how contractual arrangements can create structures to reduce transaction costs and incentivize co-creation, as well as how information technology can be used to facilitate this [2]. Grover and Kohli [2] identified four layers of relational arrangements that impact co-creation of digital business value: assets, complementary capabilities, knowledge sharing and governance. Frow et al [9] developed a framework for co-creation design, establishing co-creation dimensions and categories that are helpful for identifying co-creation motives, forms, actors, platforms, and levels of engagement. However, we have not been able to identify studies that address how co-creation can be initiated and established, and what capabilities are required for this to happen.

For this purpose, the authors have developed a conceptual process model for initiating and establishing a network for co-creation among SMEs for the purpose of acquiring the necessary assets and complementary capabilities, including capabilities and an arena for knowledge sharing and joint governance of digital transformation projects [10]. In order to make this model operational and applicable for both action and design researchers, as well as for students and practitioners, e.g., managers, middle managers and project managers in SMEs, the authors propose developing a canvas with key questions to work and reflect on, in order to make the right decisions in the right order along the stepwise co-creation model.

The research problem for this articles study is: A. to explore whether a co-creation canvas is an efficient tool for achieving the natural goals of a co-creative SME-network for doing digital transformation of their business operations, products and services, including potential joint ventures and cooperative efforts, regardless of line trade and industry. B. eliciting what is the natural key content in such a canvas, given its scope of coordinating human resources and its ability to build assets and capabilities to perform a successful digital transformation of the SMEs.

The rest of the article continues as follows: In the next section, we present our study's theoretical grounding. Next, we describe the research method, present our discussion and our proposed co-creation canvas. We also provide examples of how the canvas can be applied to business cases. Finally, we conclude with a brief summary and offer recommendations for future work.

2. Background

In this chapter we define co-creation as a term related to collaborative efforts between independent organizations in order to transform businesses and create new and improved, digital, or digitally enabled products and services. The, the process of developing the here proposed co-creation canvas, is disseminated.

2.1. Cocreation

The literature has acknowledged the significance of interdependence between enterprises, and that these dependencies can lead to the establishment of important social relationships and networks [11, 12]. There has been a rapidly growing flow of research on these topics since the early 2000s, and such interactions has been termed co-creation. Also, it is acknowledged that co-creation can offer significant input to innovation and business transformation processes [13]. Co-creation eco-systems and networks can enhance competitive power by establishing collaborative value creation efforts [14]. Such collaborative efforts are especially valuable with dynamic markets and when the enterprises are small with little funding for innovation. Companies that cooperate in such networks or ecosystems share resources and knowledge in co-creating analyses and responses. This can involve a gamut of issues, such as innovations in new services, implementation of digital technology, and deciding the best use of supply chains [15]. These kinds of capabilities can be referred to as the effects of process orientation [16]. There has been limited research on the characteristics of co-creation in various contexts, and how it can be initiated and managed [9, 17]. There is a need to address issues such as how competing firms can collaborate horizontally in business networks, and how such co-creation can impact the value-creation of the individual participants as well as the whole ecosystem [7].

Coopetition research is a related area of research, that helps us understand co-creation (see Dorn, Schweiger, and Albers [18] for an overview). This stream of research targets various factors for co-creation, including regulatory bodies, network governance, perceptions of strategy and goals, and how the relationships between the enterprises are shaped by relative position, trust and compatibility [18]. Also, increasing levels of trust would reduce the risk of opportunistic behavior [19]. Studies of SMEs have identified firm capabilities, resource endowment, strategy formulation, perceived vulnerability and goal characteristics and as factors that lead to coopetition [5]. There has, however, been limited research on the impact of multi-actor settings on coopetition. A recent review of the coopetition literature found that there is an urgent need for research to address how the dynamics of multi-actor networks establish particular management constraints and challenges [18]. Co-creation is viewed as a particularly essential enabler for digitalization [20]. It is therefore important to comprehend how co-creation plays out in multi-actor settings, and how networks can manage co-creation to avoid opportunistic behavior that can be detrimental to value creation in the network. The innovation and technology management perspective has dominated the literature on co-creation this far. This perspective focuses on value creation from new or enhanced services leading to innovative forms of interaction between customers and companies.

2.2. Development of the Cocreation canvas concept

A canvas in this context means a blank document, but formatted with empty fields with categories marked as field heading, where users can fill out answers to appropriate questions. Canvases like project canvases, research and development proposal canvases and business modelling canvases can be an effective management tool. The process of filling out the canvas can gather explicit knowledge of operations and numbers and also map an organizations tacit resources [21].

So arguably, starting with co-creating a shared vision and picture of joint challenges and opportunities can aid management, and help build a joint platform of trust [19]. Canvases with key questions to ask, can be an effective and engaging tool for collaborative efforts in business process modelling as a part of establishing and managing a co-creation process [10], with regards to digital transformation of the business [21]. Most notable, Osterwalder's Business Model Canvas is frequently applied to form and illustrate new or improved business models [1].

The purpose of co-creation in business networks for small and medium sized enterprises, as opposed to a company doing it alone, following the logic presented above, is to leverage the pooling of resources to enhance each companies dynamic capabilities and ability to sense and seize new opportunities [9, 22, 23]. Based on this view of the company [19], this article proposes a new canvas for co-creation.

The work environment for creative workshops working with canvases as a tool, can be physical, printing out the blank canvas as a big paper, laid on a table, where participants can write and post sticky notes on the appropriate fields of the canvas, or virtual, where a document, e.g., a presentation, containing the canvas is shared both through a video meeting and simultaneously shared, e.g., via a drive, so that participants may fill out notes and post them on the canvas, online. The results can later be analyzed and processed further.

3. Method

To conceptualize and design a business model canvas, we adopted guidelines for conceptual modeling from Hirschheim [24] and Robey and Baskerville [25]. In particular, we followed guidelines addressing logical consistency, rhetorical strategy and meaningful contribution. As the start in our approach, we explored practice and reviewed the literature to identify gaps and to position our conceptual propositions in relation to both existing practice and theory.

The actual actions and methods applied to come to the proposed concept of this article where as follows; A) Discussions and workshops 2018-2020 among academic researchers doing research in the field of digital transformation in Small and Medium sized Enterprises, especially researchers connected to the ERCIS CCDT competence center [26]. B) A search based on articles on co-creation or inter-organizational collaboration, and digital transformation in SMEs, found 102 articles of recent date, on Google Scholar, April 2020. Of these, 30 articles were deemed most relevant by the authors of this article, based on a screening of titles and ingresses. The review yielded data on cases that can potentially illustrate antecedents and storylines for successful examples of SME co-creation for digital transformation (figure 2 and 3) and validate the causal model behind the canvas (figure 1). In all, references from 12 of the 30 articles are used as illustrative examples of applications of the proposed canvas's key questions, in this article's section 3. C) Interviews with coordinators in business networks in different trades (creative industries, eHealth and "smart" welfare technologies), used to find examples of successful implementations of co-created joint business ventures, products and services.

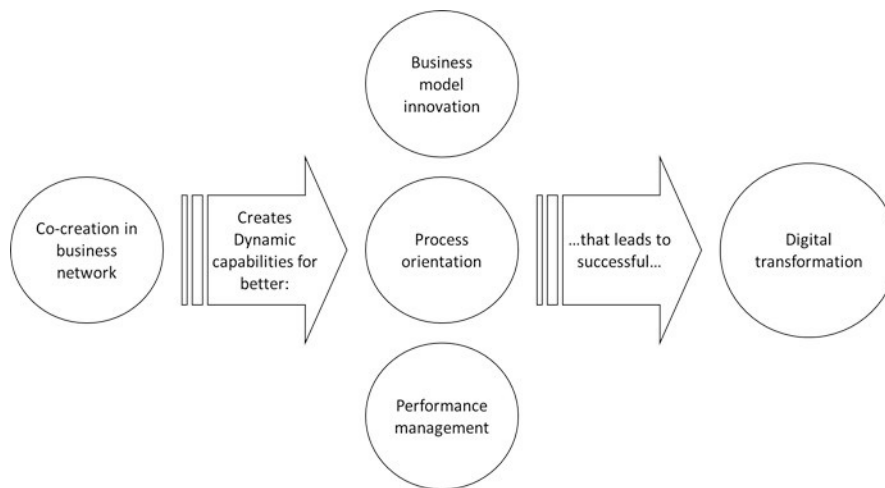


Figure 1 Simplified causal model showing the way co-creation in business networks leads to successful digital transformation

4. The co-creation canvas

The expected outcome of co-creating in business networks will be enhanced capabilities, for business model innovation, process orientation (needed to govern the changes), and organizational learning (to entrench the changes in the organization) [23]. Co-creation will also enhance the businesses ability to monitor and manage performance. Figure 1 shows a simplified model that sums up the literature disseminated in the previous sections and illustrates the prospective value created on a managerial level, by co-creation in SME business networks, and its contribution to successful digital transformation, with regards to mapping the capabilities acquired [19, 23]. In its turn, successful digital transformation can be measured as new and improved customer journeys [27], successful implementation projects [28] and new improved business models and value propositions [29]. The proposed co-creation canvas (step1) and its key questions are presented in figure 2.

The elements and key questions in the canvas (with examples from literature) are the following:

4.1. *Ecosystem changes*

Something arguably must spark the experienced need for change, for a change to happen in an organization, other ways the natural inherent inertia in organizations will prevent for changes to happen, and opportunities to be exploited [30]. A natural starting point for an arena aiming at facilitating new co-creative networks would be a mapping of ecosystem changes affecting business life, of all kinds ref. e.g., “Porter’s five forces” [31], including mapping potential disruptive technologies [32] that can re-invent and change the prospective company’s line of business. Key questions to ask here would be:

What are the new opportunities and threats from digital technologies in our field of business?

Specific: how can we better utilize new digital platforms and infrastructures?

What are other business environment changes?

An illustrative example is Palm, a transport-pallet producer in Italy who responds to the ecosystems emergent demand for healthier and ecologically sustainable products. They employ digital co-innovation platforms to ensure compliance with the ecosystems demands [33].

4.2. *Co-creation in business network*

Having decided that change is coming, or that the focus company doing the thinking could be capable of improving its capabilities and bring changes to its marketplace, the next natural line of questioning would be; how to find potential allies [19].

Who do we share interests with, who are affected by the same eco-system changes?

Who can we trust and build partnerships with?

One interesting example is using microservices. By setting small, easily realizable goals, providers can develop trust and commitment from business partners and customers and legitimize innovation investments, e. g. in digitalization, while reducing risk [34].

4.3. *Digital transformation capabilities:*

As a short-list of natural allies for co-creation is assembled, a more detailed discussion of what complementary capabilities [2] each partner brings to the table can be mapped. We propose organizing these capabilities under the following categories: business model innovation, process orientation and organizational learning, and Performance management and -monitoring, since “you can’t manage what you don’t measure” [35, 36].

Business model innovation:

What elements of the business model [1] can be improved by Co-creation in Business networks?

Example: E. g., Kotarba’s article [21], offers insights into the possible impact of new technologies on most elements of the Osterwalder BMC [1].

Process orientation and organizational learning:

How can co-creation in business networks positively effect process orientation and organizational learning?

Findings of Movahedi, Miri-Lavassani and Kumar [37], according to Janeš et al [38] have shown that if the organizational goal is centred on achieving higher customer satisfaction benefits; this can be achieved through better management of business processes at an inter-organizational level (direct effect).

Performance management, and performance:

How can Co-creation in Business networks positively effect performance management and performance in general?

Research has demonstrated that there is a complex relationship between digitalization and financial performance, or value capture, due to the inherent risks of ICT investments [39]. Successful co-creation in Business networks can arguably be linked to digital servitization. Kohtamäki et al has emphasized the value of servitization in driving financial performance from digitalization [39].

4.4. Digital Transformation

Having thus mobilized resources and created a setting for the necessary assets and capabilities needed, one can also share opinions on what new values are desirable in the relevant case [40], and knowledge of how this value can be appropriated [2]. The consequent key questions to ask among partners managers would then be:

- What are our new shared values, visions and potential future scenarios?
- How can digital transformation enable this?
- What are potential impacts of digital transformation in our case?

An illustrative example is citations from managers in SME manufacturing companies, participating in the EU-project “Co-Create” [41]: “I think sharing ideas is a good process. It is a more structured way to do brainstorming. It was easier and clearer to achieve some results during the process. In the beginning, it is a bit difficult, but during the process, you feel more comfortable because you become more confident with the other people and the process.” (...) “This provided the customer with a more aligned and structured thinking process, and the same was true for the other participants. We are now thinking about the same problems and points, sharing a common vision of the project.” (...) “This process is very useful when it comes to generating concepts.”

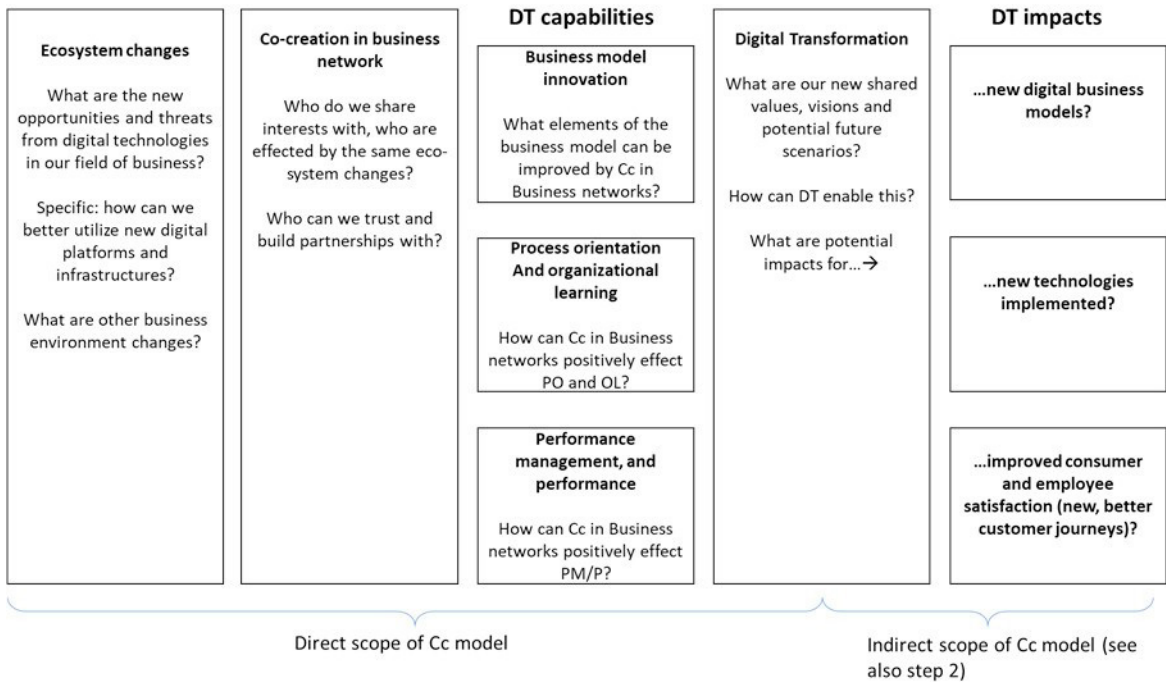


Figure 2 The Co-creation canvas, step 1 – Digital transformation capabilities

4.5. Digital transformation impacts:

Case-studies of previous successful efforts and results from instances of co-creative SME-networks for digital transformation can serve as inspiration ex-ante for rings of SMEs contemplating venturing into a more committing collaboration. “Translating” capabilities into prospective outcomes, a hypothetical business model canvas for the joint business idea can be created, and tested [42], thus, reducing risks of the proposed idea. For the purpose of this, the

authors have proposed a modification of Osterwalder’s BMC [1], and basically split the element of “Key partners” here, into two new elements; Ecosystem – which would equal the part of the business’s environment that the focus SME-companies can manage and interact with, and create complementarities to (see, e.g., case study no 2, below), and Cocreation, the “core” of SME companies, taking part in a mutually binding collaboration, for a joint purpose, see an example, figure 3.

4.6. New digital business models, new technologies implemented, and improved consumer and employee satisfaction (new, better customer journeys)

For an illustrative example, see the two impacting results of co-creation in business networks related to eHealth and welfare-technology in Co-creation canvas – step 2 – new co-created business model (figure 3), below.

These two cases were elicited through an interview (spring 2020) with a coordinator from a Norwegian eHealth business and innovation research cluster.

Impacts, Case 1 (Illustrated in figure 3), names withheld:

Amidst the tragedy of the Covid-19 crisis, spring 2020, this has also been an opportunity for smaller suppliers of hospital equipment and medical technologies, to rethink the value chain, bundle their product- and service offers and co-design new value propositions. 4 companies within medical equipment- and IT-businesses, together co-created a holistic product and service offer, with complementary services: A hospital bed, with a ‘smart’ mattress (with sensors) delivered together with electronic monitoring services, and specialized cleaning services (as hospital bed cleaning is a complicated operation). This meant improved operations for the hospital’s medical- and support staff. It also meant less waste for the involved suppliers, through better production- and service planning, and more steady revenue streams (through servitization of the value proposition).

Impacts, Case 2, names withheld:

SMEs co-creating in a business network can benefit from collaboration with larger ICT vendors and platform providers. The market need in this case, is the unsolved problem of steadily larger parts of the population living longer with cognitive impairments. This can reduce quality of life and demands care from ever more scarce resources. One consequence of cognitive impairments can be loss of language. A consortium of both bigger and smaller ICT-companies are collaborating on a project to mitigate this problem. This project plans to use Artificial intelligence, to record and analyse speak from individuals, then adapt to translate later diminished speak. As societal effect of cost savings, elderly or other with reduced speech, may be helped with lower cost for care.

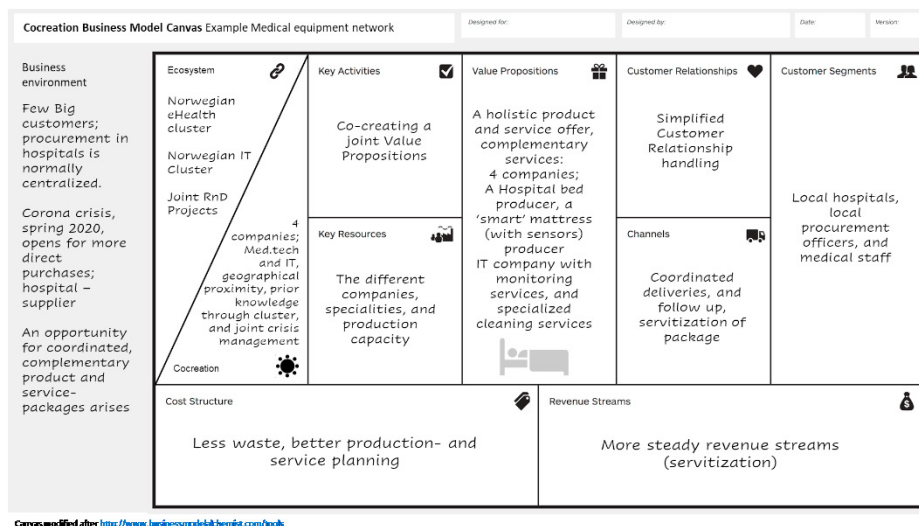


Figure 3 Co-creation Business Model Canvas (Step 2, Digital transformation impacts). Canvas adapted after [1].

5. Conclusion

Through discussions and workshops in appropriate networks and forums, literature review, and case-studies with interviews, we have arrived at a model and a toolbox that the authors hope can inspire and aid efforts into new joint ventures and cooperation, between SMEs wanting to succeed with digital transformation.

Our research problem for this articles study was:

A. -to find out if such a canvas is an efficient tool for achieving the natural goals of a co-creative SME-network for doing digital transformation of their business operations, products and services. Searching relevant literature and reverse engineering the outcome from successful cases, we believe that there is a fit between our proposed canvas (step 1 and 2), ref. figure 2 and 3, and that our proposition is a useful contribution to both action- and design research and for informing students and practitioners.

B. -eliciting what is the natural key content in such a canvas, given is scope of coordinating human resources, able to build assets and capabilities to perform a successful digital transformation of the SMEs. By a literature research into different aspects of capabilities, we see co-creation in business networks as a critical antecedent for creating or mobilizing the necessary capabilities needed for successful digital transformation, especially for SMEs that in general do not possess the necessary resources, alone. So, our proposed canvas (step 1) focuses on these capabilities.

Further plans for research include testing these propositions in an Erasmus plus project, VOIL [43], as a part of a larger toolbox for digital transformation in SMEs, that also entail learning resources and simulation labs for co-creating and testing new digital technologies, and new technology enabled products and services. The authors of this article will seek to validate and improve their models and tools, and study new modes of collaboration and sharing, online, for the purpose of co-creation. This article has shown examples of potential impacts of successful co-creation (section 4.6). Other impacts and benefits from co-creation in SME networks, involves co-branding or coordinated sales and e-marketing, giving increased sales volumes and reduced costs. Ongoing research into impacts includes case studies from the travel industries, the creative Industry in Norway, and wine industry in Italy.

6. References

- [1]. Osterwalder A, Pigneur Y, Oliveira MA-Y, Ferreira JJP. Business Model Generation: A handbook for visionaries, game changers and challengers. *African journal of business management*. 2011;5(7):22-30.
- [2]. Grover V, Kohli R. Cocreating IT value: New capabilities and metrics for multifirm environments. *Mis Quarterly*. 2012;36(1):225-32.
- [3]. Bharadwaj A, El Sawy O, Pavlou P, Venkatraman N. Digital business strategy: toward a next generation of insights. *MIS Quarterly*. 2013;37(2):471-82.
- [4]. Zach O, Munkvold BE, Olsen DH. ERP system implementation in SMEs: exploring the influences of the SME context. *Enterprise Information Systems*. 2014;8(2):309-35.
- [5]. Gnyawali DR, Park BJ. Co- opetition and technological innovation in small and medium- sized enterprises: A multilevel conceptual model. *Journal of small business management*. 2009;47(3):308-30.
- [6]. Ramaswamy V, Ozcan K. What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research*. 2018;84:196-205.
- [7]. Galvagno M, Dalli D. Theory of value co-creation: a systematic literature review. *Managing Service Quality*. 2014;24(6):643-83.
- [8]. Leclercq T, Hammedi W, Poncin I. Ten years of value cocreation: An integrative review. *Recherche et Applications en Marketing (English Edition)*. 2016;31(3):26-60.
- [9]. Frow P, Nenonen S, Payne A, Storbacka K. Managing co- creation design: A strategic approach to innovation. *British Journal of Management*. 2015;26(3):463-83.
- [10]. Eikebrokk TR, Garmann-Johnsen NF, Olsen DH. Co-creation in networks of SMEs: a conceptual model of the co-creation process. Submitted to: CENTERIS 2020; Algarve, Portugal2020.
- [11]. Czakon W, Kawa A. Network myopia: An empirical study of network perception. *Industrial Marketing Management*. 2018;73(August 2018):116-24.
- [12]. Grönroos C, Voima P. Critical service logic: making sense of value creation and co-creation. *Journal of the academy of marketing science*. 2013;41(2):133-50.
- [13]. Nambisan S. Designing virtual customer environments for new product development: Toward a theory. *Academy of Management Review*. 2002;27(3):392-413.
- [14]. Prahalad CK, Ramaswamy V. Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*. 2004;18(3):5-14.
- [15]. Kohlbacher F. *International marketing in the network economy: a knowledge-based approach*. Basingstoke, Hampshire, UK.: Palgrave Macmillan; 2007.
- [16]. Kohlbacher M. The effects of process orientation: a literature review. *Business process management journal*. 2010.
- [17]. Felzensztein C, Gimmon E, Deans KR. Coopetition in regional clusters: Keep calm and expect unexpected changes. *Industrial Marketing Management*. 2018;69(February 2018):116-24.

- [18]. Dorn S, Schweiger B, Albers S. Levels, phases and themes of coepetition: A systematic literature review and research agenda. *European Management Journal*. 2016;34(5):484-500.
- [19]. Das TK, Teng B-S. A resource-based theory of strategic alliances. *Journal of management*. 2000;26(1):31-61.
- [20]. Lenka S, Parida V, Wincent J. Digitalization Capabilities as Enablers of Value Co- Creation in Servitizing Firms. *Psychology & Marketing*. 2017;34(1):92-100.
- [21]. Kotarba M. Digital transformation of business models. *Foundations of Management*. 2018;10(1):123-42.
- [22]. Teece DJ. Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*. 2007;28(13):1319-50.
- [23]. Garmann-Johnsen NF, Helmersen M, Eikebrokk TR. Worklife Ergonomics in Digital Co-Creation: The ‘What’, the ‘Why’ and the ‘How’. *European Journal of Workplace Innovation*. 2018;4(1).
- [24]. Hirschheim R. Some guidelines for the critical reviewing of conceptual papers. *Journal of the Association for Information Systems*. 2008;9(8):21.
- [25]. Robey D, Baskerville R. Understanding Conceptual Rigor: Guidelines and Criteria for Composing Conceptual Research http://www.cis.gsu.edu/rbaskerville/aacris2012/presentations/Robey_AACRIS_2012.pdf: Georgia State University; 2012 [accessed May 2020]
- [26]. Ramos I, Garmann-Johnsen NF. Digital Transformation in SMEs <https://ccdt.ercis.org/>: European research centres for information systems; 2019 [accessed May 2020]
- [27]. Schneider J, Stickdorn M. This is service design thinking: basics, tools, cases: Wiley; 2011.
- [28]. Sahibudin S, Sharifi M, Ayat M, editors. Combining ITIL, COBIT and ISO/IEC 27002 in order to design a comprehensive IT framework in organizations. 2008 Second Asia International Conference on Modelling & Simulation (AMS); 2008: IEEE.
- [29]. Osterwalder A, Pigneur Y, Bernarda G, Smith A. Value proposition design: How to create products and services customers want: John Wiley & Sons; 2014.
- [30]. Seddon PB, Calvert C, Yang S. A multi-project model of key factors affecting organizational benefits from enterprise systems. *MIS quarterly*. 2010;34(2):305-28.
- [31]. Grundy T. Rethinking and reinventing Michael Porter's five forces model. *Strategic Change*. 2006;15(5):213-29.
- [32]. Christensen CM, Raynor ME, McDonald R. What is disruptive innovation. *Harvard business review*. 2015;93(12):44-53.
- [33]. Barile S, Grimaldi M, Loia F, Sirianni CA. Technology, Value Co-Creation and Innovation in Service Ecosystems: Toward Sustainable Co-Innovation. *Sustainability*. 2020;12(7):2759.
- [34]. Sjödin D, Parida V, Kohtamäki M, Wincent J. An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research*. 2020.
- [35]. Garmann-Johnsen NF, Helmersen M, Eikebrokk TR. Worklife Ergonomics in eHealth Co-Creation Governance. *eTELEMED 2018*. 2018:55.
- [36]. Symons C. Measuring the business value of IT. Forrester Research, Inc Cambridge, Massachusetts, USA. 2006.
- [37]. Movahedi B, Miri-Lavassani K, Kumar U, Douglas A. Operational excellence through business process orientation: An intra-and inter-organizational analysis. *The TQM Journal*. 2016.
- [38]. Janeš A, Novak R, Faganel A. “SOFT” PERSPECTIVE OF THE BUSINESS PROCESS ORIENTATION. *EMAN 2019–Economics & Management: How to Cope With Disrupted Times*. 2019:13.
- [39]. Kohtamäki M, Parida V, Patel PC, Gebauer H. The relationship between digitalization and servitization: The role of servitization in capturing the financial potential of digitalization. *Technological Forecasting and Social Change*. 2020;151:119804.
- [40]. Kohli R, Grover V. Business value of IT: An essay on expanding research directions to keep up with the times. *Journal of the Association for Information Systems*. 2008;9(2):23-9.
- [41]. Patricio R, Moreira A, Zurlo F, Melazzini M. Co- creation of new solutions through gamification: A collaborative innovation practice. *Creativity and Innovation Management*. 2020;29(1):146-60.
- [42]. Bland D, Osterwalder A. Testing Business Ideas. JohnWiley&Sons, Hoboken, NewJersey. 2019.
- [43]. Herman A. VOIL - Virtual Open Innovation Lab <https://www.voil.eu/2020> [accessed May 2020]