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A case for participatory practices in the digital transformation of insurance

MICHAEL PERSSON, CASANDRA GRUNDSTROM & KARIN
VÄYRYNEN

Abstract Digital transformation, or digitalization, is a near-ubiquitous concept in the contemporary insurance business ecosystem, and describes the work towards change that is carried out in insurance organizations towards novel, digitally empowered practices, services, and management structures. Large-scale studies have identified key factors for successful digital transformation as, among others, customer experience, digital development, and changing business processes. This case study investigates a customer-owned Finnish insurance company that currently resides in the nascent stages of such a transformation. Through a set of 13 interviews with 10 service developers and managers, we set out to understand and evaluate their current digital development practices, based from the perspectives of participatory design, towards informing marketing research. Our findings indicate that while there exists a general understanding of the value of user involvement in the design process, participatory design practices see limited implementation, and there is an apparent disparity between the customer-centric organizational culture and the development practices that it should inform. We suggest work to be put towards the creation of models for evaluating digital transformation, and towards aligning the management of the digital transformation process with a participatory mindset.

Keywords: • Digital transformation • Participatory design • Customer experience • Bled eConference •

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1 Introduction

Information systems research has long held that information and communication technology (ICT) enables the potential for innovation in service-based sectors such as insurance (Barrett, Davidson & Vargo, 2015). With ever-increasing amounts of personal and public data, the ability of healthcare providers and service companies to make informed decisions is improving rapidly (Raghupathi & Raghupathi, 2014). This shift challenges the traditional, reactive business model of insurance service provision, enabling insurance companies to develop new technology-driven business models and services. Rushing to harvest these opportunities, the contemporary insurance industry has undertaken a near-pervasive journey towards a digital transformation, or digitalization, of their offerings; the enactment of novel digital strategies to meet the challenges of an increasingly complex and technology-saturated context.

Over the last decade, large-scale business studies have been conducted to outline the particulars of digital transformation in the insurance industry. EY (2017: p.3) defines digital transformation as: “... *capitalizing on the power of technology to revisit business models, acquire customers to new channels and create essential user experiences.*” Forrester Consulting (2015: p.1) found that the customer experience is at the heart of the digital transformation, and that “... *digital development and customer experience improvement are two key priorities for businesses*”. However, the digitalization of the insurance industry is lagging behind compared to other fields, and should seek inspiration from technology-based companies (Eling & Lehmann, 2017; Kettunen & Lantti, 2017). Strategizing for the creation of customer experience is pervasive in the industry, but despite its recognition by practitioners, it has a limited body of work in marketing research academia (Verhoef et al., 2009), and research on the mindsets and capabilities required for an organization to successfully manage the customer experience is scarce (Lemon & Verhoef, 2016). Exploring this gap in academic research of marketing practice affords the opportunity for this paper to contribute to the understanding of the customer experience from the human-computer interaction field, which posits that participatory design practices are required in order to properly understand the customer experience (Sanders, 2002). As such, this paper sets out to examine the intersection of participatory theory and marketing research in the context of understanding the creation of customer experience.

How, then, are the customers participating in the creation of the services that is intended to encapsulate their experiences? To address this, we asked the following research question: “*To which degree are participatory practices utilized in early-stage digital transformation of insurance?*”

Through a case study of a Finnish insurance company, this paper intends to investigate the practices that constitute their digital development, with the purpose of painting a picture of the degree to which participatory practices and mindsets are leveraged in the early-stage digital transformation work in the Finnish insurance context. The remainder of the paper is structured as follows: First, we discuss the theoretical background,

followed by a description of the research methodology, the results, and discussion of our findings. We conclude the paper with managerial implications, research limitations, and suggestions for future research.

2 Theoretical Background

In this section, we define the key topics explored in this paper, and describe their relationships. The topics are structured into related groups and outlined in the following way: Digital transformation and organizational culture, customer experience and user experience, and finally, participatory design. These themes are considered to represent the overarching context of the paper (Digital transformation and organizational culture), a desired outcome of digital transformation, and determinant of success (Improving the customer experience and user experience), and finally the human-computer interaction theory informing the practices through which the aforementioned outcome is likely to be realized (Participatory design).

2.1 Digital Transformation and Organizational Culture

In this paper, we borrow the definition of digital transformation from the recent summary of the state of the art of digital transformation in the insurance industry by Eling and Lehmann (2017: p.5) as: “... *the integration of the analogue and digital worlds with new technologies that enhance customer interaction, data availability and business processes*”. Kettunen & Lantti (2017: pp.14) argue that with increased digitalization, companies invariably drift towards software development, and concludes that “*truly transformational changes require revisiting and challenging the fundamental business assumptions and organizational culture*”. Organizational culture has been defined in many ways, but in the context of this paper we align with Barney (1986: p.657); “... *organizational culture typically is defined as a complex set of values, beliefs, assumptions, and symbols that define the way in which a firm conducts its business. [...] culture has pervasive effects on a firm because a firm's culture not only defines who its relevant employees, customers, suppliers, and competitors are, but it also defines how a firm will interact with these key actors*”. As such it follows, that in facilitating for digital transformation, it is necessary to foster an understanding of the organization through examining the constituent parts of its cultural context. For this paper, we consider organizational culture to be of critical importance towards the contextualization of the digital transformation of the organization.

2.2 Customer Experience and User Experience

Customer experience is a holistic representation of a customer's journey (or, set of interactions) through the service provision of a company, outlining, among other things, moments of contact, or touch points (Gentile, Spiller, & Noci, 2007; LaSalle and Britton, 2003). Customer experience is summarized by Lemon and Verhoef (2016: p.71) who concludes that it is “... *a multidimensional construct focusing on a customer's cognitive, emotional, behavioral, sensorial, and social responses to a firm's offerings during the*

customer's entire purchase journey". Further, they posit that customer experience theory is firmly entrenched within marketing research, and holds that "*A customer-centric focus is an important facilitator within firms to create stronger customer experiences*" (p.84). In the context of digitalization, the ubiquity of the internet is empowering customers to put higher demands on their experience: "*Always-online consumers have unprecedented power and choice. If they fail to have a rewarding customer experience in their digital interaction with a brand, they can readily take their business elsewhere.*" (Collin et al., 2015: p.94). Using methods derived from human-computer interaction practice to understand the customer experience has prior been explored in marketing research, for example, by leveraging the creation of personas (Herskovitz & Crystal, 2010), a practice more commonly found within user experience. There is a large definition overlap between customer experience and user experience, and the terms are used almost interchangeably depending on the context (Sward & McArthur, 2007). User experience concerns itself with facilitating the experience of a user as they interact with systems (Benyon, Turner, & Turner, 2005). Weighing in on the nature of user experience, Benyon et al. holds that experience has to be understood as a whole, and cannot be designed as much as facilitated: "*Designers can design for experience, but it is individuals and groups who have the experience.*" (2005: p.99), implicitly stating that the holistic experience of others exist in their personal context, and as such the understanding of their experience is dependent on them being able and willing to extrapolate on it. This paper considers the outcome of good customer/user experience to be a primary driver of success in digital transformation, and the while the distinction between them is important, it is secondary to understanding the practices that outline the creation of a positive customer/user experience outcome.

2.3 Participatory Design

Towards understanding user inclusion in development practices from the human-computer interaction perspective, we consider Sanders and Stappers (2008) framework of the participatory landscape, later iterated on by Pallot, Trousse, Senach, and Scapin in their social innovation context schema (2011). This schema (Figure 1) explores the contemporary landscape of design practice, where along the x-axis of users, the far left pertains to user-centered design with "Users as observed subjects" and the far right to participatory design with "Users as Value Creation".

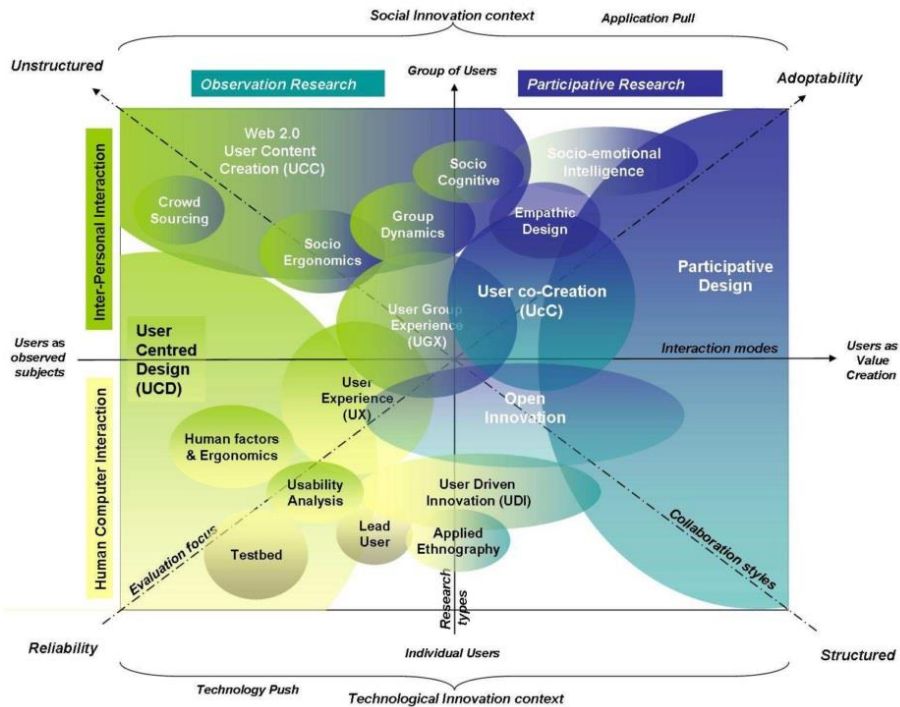


Figure 1: Domain Landscape of the Living Lab Research Map (Pallot et. al, 2011)

Participatory design is as such considered to encompass the areas where research is not so much performed on the users, as is the case of user-centered design, but rather with the users. Spinuzzi (2005) outlines three criteria for participatory design work with the users: Quality of life for workers (i.e. focusing on an outcome that empowers the user), collaborative development (i.e. granting the user agency within the development), and an iterative process (i.e. a cyclical reexamination of the design work being undertaken). Steen, Manschon, and De Koning (2011) have identified three types of benefits in the utilization of participatory practice — benefits for the service design project itself (such as improving the creative process and organization of the project), benefits for the service’s customers and/or users (such as a better service experience and higher satisfaction), and benefits for the organization (such as improving creativity and normalizing the focus on customers and users). In this paper, we consider the implementation of participatory practices and mindsets to be suitable towards improving customer experience and organizational culture, and by extension, the digital transformation of the organization.

3 Methods

3.1 Case Description

The subject of this qualitative case study is a Finnish insurance company (from here on out referred to as Alpha). Alpha is one of the biggest actors in the Finnish insurance ecosystem. With the increased digitalization of society and the predictive capabilities of data, the traditional models of insurance provision are growing increasingly inadequate. In the light of this outlined obsolescence, Alpha has set out to modernize its service offerings through a large-scale digital transformation. This transformation is described by their intention to create holistic, life-long relationships with their customers; a one stop package for all of their security needs. In a recent official newsletter, there is an explicit statement from Alpha regarding the context of the case study; establishing the fact that they understand the importance of practices that involve the customers, and that they are currently working on improving the customer experience and digital development of their services. Combined, these factors point towards the suitability for Alpha as a case through which to examine the research question of this paper. The case study presented in this paper investigates the underlying conditions of this transformation by exploring the organizational culture and the service development practices through the lens of contemporary service design — in other words, examining the degree to which Alpha is utilizing participatory practices to inform their digital transformation.

3.2 Data Collection and Analysis

We conducted this study as an empirical qualitative case study (Yin, 2013) to construct an understanding of the degree of participatory practices currently employed by Alpha. Data was gathered in the form of semi-structured interviews within the insurance company. The data gathering process of this case study was conducted in the form of semi-structured interviews within the insurance company, primarily selecting for professionals in various executive roles in service development, and structured to elicit descriptions of their work, their attitudes and knowledge towards customer participation in service development, and the policies that influence their professional context. The interviews were carried out across two periods, spaced nine months apart. Some of the interviewees in the first round of interviews was interviewed again for the second round, offering a limited longitudinal perspective. This case study consists of thirteen interviews in total. We interviewed the Analytics/Sales lead, the Chief Digital Officer, the Unit Director (Health and Wellbeing Strategy), and the Digital Health Development Project Manager twice to give us a longitudinal perspective on certain topics. In addition, we interviewed a Business Unit Director, three Development Managers, a Digital Health Director, and a Communications Manager. The interviews lasted between 50 and 90 minutes, with the average interview lasting roughly 80 minutes.

The analysis of the data was initiated in the interview process as a combination of note-taking and asking follow-up questions based on interviewee responses. After the conclusion of the data collection, all the interviews were transcribed in full (non-verbatim,

to allow for clarification of language barrier idiosyncrasies). A number of the transcriptions were then fully coded and catalogued into themes using nVivo, four of which were selected for their relevance to the research question: **Service development practices, Participatory practices, Customer experience, and Organizational culture.** These themes were subsequently used as the basis of text query searches (Bazeley & Jackson, 2013) through the rest of the transcribed material. An initial text query that were used to parse the transcriptions for responses pertaining to participatory practices could look like this: [“participat*” OR “co-creat*” OR “co-desig*”], but the queries evolved over time as we discovered new terms and mannerisms used to cogitate about participation in the body of the data.

4 Results

In this section, we present case findings related to the pertinent fields outlined in the theoretical background. Through investigating the practices and attitudes of the service design professionals, we intend to find descriptions of how services are developed, how customers are being involved in aforementioned development, how customer experience is defined and cogitated about within the company, and comments relating to the organizational culture.

4.1 Service Development Practices

Interspersed throughout the interview data, primarily from the development managers, we find mentions of user-centered design practices. The points of customer interaction are noted to exist primarily at the start of the process (as user research in the early stages of development) and at the end of the process (in pilot studies): *“In some cases, we have customers involved in the early phases, also, but mainly, I would say, the customer is involved only at the end of the project.”*, and some notions that *“... we don't ask [the customers] enough what they want, we don't test enough [...] [we've] built services [for which we] have no proof that [they are] working, and I don't like that.”* Development work is divided amongst both in-house and external practitioners. During the time of the interviews, a customer portal that had previously been in use had closed, disrupting their standard channel of customer outreach.

4.2 Participatory Practices

The service designers report explicit knowledge surrounding participatory design, some even having experience of such practices from earlier workplaces and from academia, as well as being able to identify the participatory practices of their competitors. Several service designers were also of the opinion that there is not enough customer participation in the context of Alpha, but some have a positive outlook on the improvements being done in the area: *“I think it's is [improving]. I have heard that there is some people who [nowadays] meet with customers, and [are organizing workshops], and things like that. But I think that we should do that much more. And in my project, we haven't done it enough.”* and *“I believe that if we want to create good experiences, good services, we*

need to involve the customers in such a way that we are not merely asking them what we should do, but creating the services together, like actually co-creating them, co-designing them.” There are notions that the skill of the practitioners may be insufficient: “... *people here, the way I see it, don't really have the skill set – they don't really know how to involve the customers.*” but we also find opposite notions, implying that customer involvement is already integral to contemporary practice: “... *I would say it's an essential operation mode for us – involving our clients, exposing them to how we operate and what we plan, and then taking their feedback into account.*”

4.3 Customer Experience

The customer experience theme presented itself in a majority of the interviews, from different perspectives, ranging from descriptions of the current experience of being an insurance customer, to the analysis of the definition of customer experience. The chief digital officer considered the role of the customer in the following way; “... *how we use the client is to [continuously] monitor [their value and customer experience]. [...] we want to have the best customer experience, and then we can see [whether] this is the right way, and we try to understand where the customer experience came from, and [put] more focus on things that maximize the value and the customer experience.*” Another notion underlines the importance of customer experience in delivering the ultimate outcome of the digital transformation, that is, their vision of a pervasive personal security: “... *we will actually recreate the customer experience when it comes to [Alpha] and their clients, and obviously, that's where we believe that it will be one of the key success factors in growing our business, in the local market.*” Some interviewees noted on the ambiguity in the definition of what customer experience means; “*Someone would say that it's good customer experience that the billing is functioning properly, and for others it means that you feel good in communication with us. And [for yet] another it means that good customer experiences is that customer can choose different things and it will influence the solution. So the definition is not ready yet.*” and “... *many people understand, nowadays, differently – What is the good customer experience, and what customer involvement means... ... it is very challenging to achieve one common metric so that everyone understands it in the same way.*” In regards to how the idea of customer experience is utilized in Alpha, it largely appears to be done as an evaluation rather than used as a tool to inform the design. One of the service designers claims that the company does not yet have a systematic, holistic approach to the analysis of customer experience, and that “*it would be a good idea to understand the customer experience [through the use of] the application*”, underlining that even as the customer experience is understood to be a tool for evaluation rather than a design consideration, it's not widely used in either way.

4.4 Organizational Culture

The chief digital officer compares the organization to an “*armada of ships*”, painting a metaphor for the cooperative, regional structure of the company, each led separately, but following a central direction, and lending an air of agility to the organization. There are

differing notions of how the organizational culture of Alpha is affecting its development practices. A shift towards agile service development is believed to affect the organization, with some resistance: “... *we are moving very strictly [towards] Sapphire methodology, which is agile, so we are changing our culture based on that. But still, there is sometimes too much bureaucracy [regarding those] methodologies...*” and “... *the top management has to give responsibility to the lower [levels] and rely on the experts. And this is the biggest cultural movement which should be taken.*” There are also notions about the upper management of the company as being detached from the practices: “... *whatever gets the job done, [the senior management is] fine with that. They are not really interested in practices as long as [those practices] deliver results.*” As Alpha is in the process of entering into a service eco-system with third-party developers and healthcare providers, they have to act on disruptions to business as usual, and reconsider their customer experience in the new context: “*Health is something where we foresee changes, [and we hope to be able to grab onto the] opportunity and build businesses around it, and then of course, build our customer experiences around it [...] [this represents] a disruption, when it comes to our current and existing business models*”. The place of the customer in the hierarchy of the organization was a recurrent theme throughout the case study, and the notions are mixed. Most interviewees hold that the customer is either at the top, or should be at the top: “... *to me personally, the customer is in the top. And I hope [everyone in the company] says the same.*” and “*I would like to say that the customer is rather high in our hierarchy, that we really do try to think of things from the customer's point of view [...] But I'm not sure if that's the case considering [the company] as a whole.*” represents the two overall types of responses in this category.

5 Discussion

In this section, we discuss the findings of the case study as outlined above.

While we find notions of participatory practices interspersed in the interview responses, the amount of user research that is carried out in the service development appears to be present at degree (according to the opinions of the service developers), as well as more closely related to user-centric practices than to participatory design practice; in that they observe and interact with largely passive users from an expert perspective (Pallot et al., 2011), and commonly only used at the beginning and the end of the design process. Regardless of this lack of participatory practices in the service development context, several of the interviewees placed the users central to the business and at the top of the company hierarchy. Despite talk of customer-centricity and customer experience, most service developers largely conceded to the issue of poor customer inclusion practices (often mentioned in conjunction with answering about the customers' purported place in the company hierarchy), and expressed skepticism about the notion that Alpha could truly be considered to possess a customer-centric organizational culture. Having an apparently customer-centric culture, it would seem, does not necessarily translate into customer-centric development practices, something that could be exacerbated by a fuzzy definition of customer experience.

Digital transformation literature posit that organizations stand to benefit from a move towards the structure of software development companies, as they become more invested in the technology-driven development practices that inform their service offerings (Kettunen & Lantti, 2017). This movement is reflected in the shift of development methodology of Alpha, in their efforts to become more agile. As the management may hold the conviction that the company is customer-centric as a core value, despite the high variance in the understanding of customer experience, it may be difficult to align the organizational culture with participatory shortcomings in digital development practice, a notion that appears to be further exacerbated by a purported indifference towards practice in the higher echelons of the company. The apparent mismatch between customer-centric policy and customer-centric practice could represent a core issue in digital transformation work.

Despite the similarities between the objectives of customer experience and user experience, the cross-pollination between human-computer interaction and marketing research does not appear advanced. In the context of digital transformation, this might prove to be shortsighted, as combining both perspectives could offer new insights towards technology-based development and marketing practices in which the user-customer is more intrinsically invested in the formation of their own experiences. Acquisition and retention of digital talent needs to be prioritized throughout the organization, and a participatory mindset, or at least an understanding of company development practices, should be introduced to the upper management towards aligning organizational culture with organizational practice (Hansen, Kraemmergaard, & Mathiassen, 2011). Further studies of the interaction between conductors of early-stage digital transformation and their customers, particularly through a participative lens, could inform new practice models through which to co-create customer experience and facilitate for digital transformation.

6 Conclusion

In this paper, we report on the results of a case study conducted in a large insurance provider in Finland. We studied to which degree participatory practices are employed by Alpha, an insurance provider in the early stages of a digital transformation initiative. We found that, despite internal knowledge of participatory practices among service developers, such practices only saw limited implementation in service development. We argue that a fuzzy definition of customer experience as well as a disparity between policy and practice can be held as preliminary reasons for the absence of customer inclusion.

This study has several limitations. The case study was limited to one company, and extending the study to other insurance providers would have allowed for a comparison of whether our findings would be generalizable to the greater context of the insurance sector, and/or whether they represent a trend in insurance provision business in Finland in general. In addition, interview studies can only extrapolate on the opinions and attitudes of individual people based on the topics of the discussion, and as such can only give a fairly one-dimensional and decontextualized interpretation of the organizational culture.

Future studies of conductors of digital transformation involving their customers in development and customer experience creation could inform new models of practice through which to successfully facilitate the digital transformation. Investigation of the intersection of marketing research and participatory design is of particular interest to align the marketing research field in the practices that inform digital transformation.

References

- Barney, J. B. (1986). Organizational Culture: Can It Be a Source of Sustained Competitive Advantage? *The Academy of Management Review*, 11(3), 656. <https://doi.org/10.2307/258317>
- Barrett, M., Davidson, E., & Vargo, S. L. (2015). Service Innovation in the Digital Age : Key Contributions and Future Directions. *MIS Quarterly*, 39(1), 135–154. [https://doi.org/10.1016/S0090-2616\(98\)90006-7](https://doi.org/10.1016/S0090-2616(98)90006-7)
- Bazeley, P., & Jackson, K. (Eds.). (2013). *Qualitative data analysis with NVivo*. Sage Publications Limited.
- Benyon, D., Turner, P., & Turner, S. (2005). *Designing interactive systems: People, activities, contexts, technologies*. Pearson Education.
- Collin, J., Hiekkanen, K., Korhonen, J. J., Halén, M., Itälä, T., & Helenius, M. (2015). *Leadership in Transition: The Impact of Digitalization on Finnish Organizations*. *Science And Technology*.
- Forrester Consulting (2015). Digital Transformation in the Age of the Customer [White paper]. Retrieved March 16, 2018, from Accenture: https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Digital_2/Accenture-Digital-Transformation-In-The-Age-Of-The-Customer.pdf
- Eling, M., & Lehmann, M. (2017). The Impact of Digitalization on the Insurance Value Chain and the Insurability of Risks. *Geneva Papers on Risk and Insurance: Issues and Practice*, 1–38. <https://doi.org/10.1057/s41288-017-0073-0>
- EY (2017). *Digital Transformation in Insurance: Driving immediate value and enabling future innovation* [White paper]. Retrieved March 16th, 2018, from EY: [http://www.ey.com/Publication/vwLUAssets/ey-digital-transformation-in-insurance/\\$FILE/ey-digital-transformation-in-insurance.pdf](http://www.ey.com/Publication/vwLUAssets/ey-digital-transformation-in-insurance/$FILE/ey-digital-transformation-in-insurance.pdf)
- Gentile, C., Spiller, N., & Noci, G. (2007). How to Sustain the Customer Experience: An Overview of Experience Components that Co-create Value With the Customer. *European Management Journal*, 25(5), 395–410. <https://doi.org/10.1016/j.emj.2007.08.005>
- Hansen, A. M., Kraemmergaard, P., & Mathiassen, L. (2011). Rapid Adaptation in Digital Transformation: A Participatory Process for Engaging IS and Business Leaders. *MIS Quarterly Executive*, 10(4)
- Herskovitz, S., & Crystal, M. (2010). The essential brand persona: storytelling and branding. *Journal of Business Strategy*, 31(3), 21–28. <https://doi.org/10.1108/02756661011036673>
- Kettunen, P., & Laanti, M. (2017). Future software organizations – agile goals and roles. *European Journal of Futures Research*, 5(1), 16. <https://doi.org/10.1007/s40309-017-0123-7>
- LaSalle, D., & Britton, T. A. (2003). *Priceless. Turning ordinary products into extraordinary experience*, Harvard Business School Press, Boston, Massachusetts.
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, 80(6), 69–96. <https://doi.org/10.1509/jm.15.0420>
- Pallot, M., Trousse, B., Senach, B., & Scapin, D. (2011). Living Lab Research Landscape : From User Centred Design and User Experience towards User Cocreation.

- Raghupathi, W., & Raghupathi, V. (2014). Big data analytics in healthcare: promise and potential. *Health Information Science and Systems*, 2(1), 3. <https://doi.org/10.1186/2047-2501-2-3>
- Sanders, E. B. E. (2002). From user-centered to participatory design approaches. *Design and the Social Sciences Making Connections*, 1–8. <https://doi.org/10.1201/9780203301302.ch1>
- Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign*, 4(1), 5–18. <https://doi.org/10.1080/15710880701875068>
- Spinuzzi, C. (2005). The Methodology of Participatory Design. *Technical Communication*, 52(2), 163–174. <https://doi.org/10.1016/j.infsoc.2008.09.005>
- Steen, M., Manschot, M., & De Koning, N. (2011). Benefits of co-design in service design projects. *International Journal of Design*, 5(2).
- Sward, D., & Macarthur, G. (2007). Making user experience a business strategy. In E. Law et al. (eds.), *Proceedings of the Workshop on Towards a UX Manifesto* (Vol. 3, pp. 35-40).
- Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer Experience Creation: Determinants, Dynamics and Management Strategies. *Journal of Retailing*, 85(1), 31–41. <https://doi.org/10.1016/j.jretai.2008.11.001>
- Yin, R.K. (2013). *Case Study Research*. (5th edition) Thousand Oaks, SAGE Publications Ltd.