

Introduction to Making Digital Transformation Real

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Introduction to Making Digital Transformation Real

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Abstract

For the fourth time in a row, HICSS is hosting the “Making Digital Transformation (DT) Real” minitrack and putting forward new ideas about how organizations, managers and individuals are dealing with DT. In this editorial, a short introduction to the topic is proposed and different contributions are briefly presented to offer a snapshot of this relevant topic.

1. Introduction

Digital transformation (DT) has become a key concern for business managers [1, 2] and IS researchers alike [3, 4, 5]. DT involves transformation toward a recognizably different organization enabled by leveraging digital technology to redefine value propositions [3]. Such transformations are spurred by swift developments in computing technology that unfold as an opportunity or a disruptive threat [6], and that drive organizations to consider making digital transformation real.

Even though researchers across various disciplines, including, but not limited to, organization science [7, 8] and information systems (IS) [9, 10], have studied organizational transformation for decades, digital transformation is special in that digital technology changes the very fabric of contemporary organizations [11, 12, 13]. These changes in organizational fabric are reflected in how making digital transformation real requires questioning assumptions about business processes [14], technology renewals [15], work practices [16], deinstitutionalization [17], redefinition of value proposition [5], to mention but a few. The importance of exploring how organizations, managers, and frontline workers cope with these changes and make digital transformation real is thus pressing. The fact that much still needs to be done to unpack what is distinct about digital transformation and how its novel challenges put organizations to the test renders our track a top priority when considering contemporary IS phenomena.

We called for papers to reflect on the way organizations and technology influence each other during digital transformation and to investigate how organizations are dealing with the complexity generated by digital transformation at different levels simultaneously. Our intent with doing so was to be able to present papers that further add nuance and specificity to DT as an emerging construct and thus move beyond a catch-phrase style use of this phrase.

2. Contributions

This year we received ten submissions, of which five were accepted to the minitrack. Our acceptance rate was thus 50%. Overall, absolute number of submissions to this track has increased and a geographical concentration is tangible, with all 18 authors being European, 13 of whom are German.

Most papers have adopted qualitative approaches, action design research and design science research. The five papers address issues related to conducting DT or tools to support DT concretely. Not only does this echo most research on DT thus far, it also reinforces our general contention that measuring digital transformation quantitatively is and remains an important topic for future research. Moreover, gauging effects of digital transformation across organizations and samples remains a vastly under-investigated topic on the DT research agenda. It seems to us that one challenge in this context is that DT unfolds over time with impacts materializing potentially years after management initiates DT. We would be delighted to receive papers about how these impacts can be isolated and measured across large n samples in the future. This is in addition to process-oriented papers that engage in illuminating the black box of DT process.

The papers included in this year’s minitrack cover topics of strategies for SMEs using architecture-based methods, software tools supporting orientation of DT, simulations to leverage DT of SMEs, business processes improvements with the Internet of things and barriers to

DT for digitalized and non-digitalized enterprises. The articles are summarized below.

Stoiber and Schönig present a paper entitled “Digital Transformation and Improvement of Business Processes with the Internet of Things: A Maturity Model for Assessing Readiness” [18]. The authors argue that generation and use of data in real time enable an improvement and beneficial redesign of business processes. In DT contexts, integrating IoT into existing processes for data generation becomes more challenging due to the complexity of such contexts. Defining the IoT use for Business Process Improvements requires appropriate guidance to evaluate and scope their initiatives regarding IoT-based Business Process Improvements. The authors, therefore, propose a holistic IoT-based BPI Maturity model based on an extensive literature review and a six-round Delphi study.

Ramos, North, Thalmann, Aramburu, Gräslund and Barros present a paper entitled “Using Simulation to Leverage Digital Transformation of SMEs: A European Perspective” [19]. The paper proposes a tool to assess the digital maturity of SMEs using a design science approach. Researchers from three European countries have developed collaborative research to support SMEs in developing digital capacities to help them to jump in DT. The authors propose a learning journey using simulators with a minimal viable prototype with tools available. The main results contribute to the research on life-long learning, regrouping pedagogical strategies that allow self-guided learning in the workplace.

Gollhardt, Hermann, Cordes, Barann and Kruse present a paper entitled “Design of a Software Tool Supporting Orientation in the Context of Digital Transformation” [20]. The authors propose a tool to support technology selection in the orientation phase of a company's DT. Identifying and selecting the appropriate technologies to innovate in the business model becomes a challenge for businesses since digital technologies evolve fast. The software tool developed here supports the identification, evaluation, and selection in a structured way. Finally, the paper suggests that by implementing the tool, companies may fulfill multiple purposes in a practical and well-guided way.

Tschoppe and Drews present a paper entitled “Developing Digitalization Strategies for SMEs: A Lightweight Architecture-based Method” [21]. The objective of the paper is to present a lightweight, architecture-based method for the development and implementation of digitalization strategies in SMEs. This architecture-based method aims to help SMEs that generally face challenges related to resource scarcity, including a lack of IT know-how, relevant market information and appropriate methods for developing a strategy. Then the authors build a method following the

Action Design Research in cooperation with two medium-sized companies. The main recommendations are related to representing easy-to-use visualizations of the enterprise architecture, the business ecosystem and the related cross-layer dependencies. Finally, the paper presents four design principles from the enterprise architecture to enrich the theoretical body of knowledge in this research area.

Brink and Packmohr present a paper entitled “Analyzing Barriers to Digital Transformation in the German Engineering Industry – A Comparison of Digitalized and Non-Digitalized Enterprises” [22]. The paper analyzes the organizational barriers to DT within the German engineering industry. The authors affirm that the engineering sector is one of the most prominent industries in Germany and that DT is increasingly used to improve the offer of digital services and products to enhance customer experience. The research results show that digitalized enterprises perceive lower degrees of barriers in leadership, culture, employees, and skills, which are essential elements of a socio-technical perspective. However, there remain barriers with which digitalized enterprises struggle.

3. Conclusion

The five papers included in our track further develop upon a research agenda that seeks to make digital transformation real, that is, to convey to practitioners and researchers the key and distinct challenges involved with DT and to help organizations and society at large to cope with DT.

That being said and despite the mini-track's fourth ‘round’ at HICSS, much still needs to be done. Developing DT to become measurable by quantitative standards is one important area of research, as stated before. Likewise, it seems meaningful to go beyond the somewhat managerialist focus in DT research and to explore how DT is enacted, negotiated, and challenged on the ‘ground floor’ or organizations. Earlier research in management and IS is instructive in this regard.

Finally, it is worthwhile to also unpack how society at large copes with DT, that is, how actors outside of organizations make it real. These are not exhaustive but only illustrative directions for future research. The possibilities are numerous as digital transformation provides pertinent opportunities for scholarship that we posit would remain relevant in this decade and beyond. More research is needed to enrich the theoretical body of knowledge and to push the “Frontiers in Digital Transformation Research” [23] that aims to help decision makers and managers to solve problems in businesses and society.

4. References

- [1] McKinsey, “Digital transformation: The three steps to success”, 2016. <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-transformation-the-three-steps-to-success>
- [2] Accenture, “Digital Density: Guiding Digital Transformation”, 2016.
- [3] Wessel, L., A. Baiyere, R. Ologeanu-Taddei, J. Cha, and T.B. Jensen, “Unpacking the Difference between Digital Transformation and IT-enabled Organizational Transformation”, *Journal of the Association for Information Systems* 22, 2021, pp. 102–129.
- [4] Vial, G., “Understanding digital transformation: A review and a research agenda”, *The Journal of Strategic Information Systems* 28(2), 2019, pp. 118–144.
- [5] Bordeleau, F.-È., L.A. Santa-Eulalia, and E. Mosconi, “Digital Transformation Framework: Creating Sensing, Smart, Sustainable and Social (S⁴) Organisations”, *Proceedings of the 54th Hawaii International Conference on System Sciences*, (2021), 4610.
- [6] Schwab, K., *The fourth industrial revolution*, Crown Business, New York, 2016.
- [7] Pettigrew, A.M., “CONTEXT AND ACTION IN THE TRANSFORMATION OF THE FIRM”, *Journal of Management Studies* 24(6), 1987, pp. 649–670.
- [8] Pettigrew, A.M., “Longitudinal Field Research on Change: Theory and Practice”, *Organization Science* 1(3), 1990, pp. 267–292.
- [9] Barrett, M., and G. Walsham, “Electronic Trading and Work Transformation in the London Insurance Market”, *Information Systems Research* 10(1), 1999, pp. 1–22.
- [10] Berente, N., K. Lyytinen, Y. Yoo, and J.L. King, “Routines as Shock Absorbers During Organizational Transformation: Integration, Control, and NASA’s Enterprise Information System”, *Organization Science* 27(3), 2016, pp. 551–572.
- [11] Yoo, Y., O. Henfridsson, and K. Lyytinen, “Research Commentary - The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research.”, *Information Systems Research* 21(4), 2010, pp. 724–735.
- [12] Yoo, Y., “The Tables Have Turned: How Can the Information Systems Field Contribute to Technology and Innovation Management Research?”, *Journal of the Association for Information Systems* 14(5), 2013, pp. 227–236.
- [13] Yoo, Y., R.J. Boland, K. Lyytinen, and A. Majchrzak, “Organizing for Innovation in the Digitized World”, *Organization Science* 23(5), 2012, pp. 1398–1408.
- [14] Baiyere, A., H. Salmela, and T. Tapanainen, “Digital transformation and the new logics of business process management”, *European Journal of Information Systems* 29(3), 2020, pp. 238–259.
- [15] Wimelius, H., L. Mathiassen, J. Holmström, and M. Keil, “A paradoxical perspective on technology renewal in digital transformation”, *Information Systems Journal* 31(1), 2021, pp. 198–225.
- [16] Eden, R., A. Jones, V. Casey, and M. Draheim, “Digital Transformation Requires Workforce Transformation”, *MIS Quarterly Executive* 18(1), 2019.
- [17] Zimmer, M., A. Baiyere, and H. Salmela, “Digital Workplace Transformation: The Importance of Deinstitutionalising the Taken for Granted”, *ECIS 2020 Research Papers*, 2020.
- [18] Stoiber, C., and S. Schöning, “Digital Transformation and Improvement of Business Processes with Internet of Things: A Maturity Model for Assessing Readiness”, *Proceedings of the 55th Hawaii International Conference on System Sciences*, (2022).
- [19] Ramos, I., K. North, S. Thalmann, et al., “Using Simulation to Leverage Digital Transformation of SMEs: A European Perspective”, *Proceedings of the 55th Hawaii International Conference on System Sciences*, (2022).
- [20] Gollhardt, T., A. Hermann, A.-K. Cordes, B. Barann, and P. Kruse, “Design of a Software Tool Supporting Orientation in the Context of Digital Transformation”, *Proceedings of the 55th Hawaii International Conference on System Sciences*, (2022).
- [21] Tschoppe, N.J., and P. Drews, “Developing Digitalization Strategies for SMEs: A Lightweight Architecture-based Method”, *Proceedings of the 55th Hawaii International Conference on System Sciences*, (2022).
- [22] Brink, H., and S. Packmohr, “Analyzing Barriers to Digital Transformation in the German Engineering Industry – A Comparison of Digitalized and Non-Digitalized Enterprises”, *Proceedings of the 55th Hawaii International Conference on System Sciences*, (2022).
- [23] Baiyere, A., E. Mosconi, L. Wessel, and M. Indulska, “Frontiers in Digital Transformation Research”, *Information Systems Journal - Call for papers* https://onlinelibrary.wiley.com/pb-assets/assets/13652575/Final%20Special%20Issue%20c-all_ISJ_DT-1634657282920.pdf, 2021.