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Digital business transformation in innovation and entrepreneurship

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**ABSTRACT**

This editorial is written at an unprecedented time in human history, when the entire world is engulfed with the effects of COVID-19 pandemic. The pandemic has taken lives of millions of people, destroyed families, and disrupted the livelihoods of hundreds of millions more. Isolations, lockdowns, and restricted movements threaten to hamper business and unravel the social fabric of the contemporary world. With widespread movement restrictions, human resilience is put to the test, manifesting through the digitalization of businesses, governments, and societies. Consequently, digital business transformation can be conceived as the single most important force to thrive in an exceptional time. In this special issue, we include seven insightful and well-executed research articles that advance contemporary knowledge on digital business transformation in the domains of innovation and entrepreneurship. We believe that these articles are only pertinent to the current circumstances where innovation and entrepreneurship are inevitably digitally-driven, but they are also likely to be relevant beyond the pandemic where digitalization would become the new norm in business transformation.

1. Introduction

When proposing the special issue on ‘Digital Business Transformation in Innovation and Entrepreneurship’ to Information and Management (I&M), the central question that we highlighted in our proposal was the need to comprehend fundamental shifts in academic discourse in the domains of innovation and entrepreneurship that are brought about by digital technologies. Acknowledging the overwhelming evidence that attests to the significant impact of digital technologies on innovation and entrepreneurship [2, 5, 20, 23], we are convinced that the advent of digital technologies in the likes of Artificial Intelligence (AI), business analytics, cloud computing, Internet-of-Things (IoT), mobile applications, and social media has provided organizations with unprecedented opportunities to innovate [15, 19, 27, 28]. Referred to as SMAC-IoT technologies (e.g., [3, 7, 17]), these technologies represent a marked departure from conventional inhouse software [14, 18, 24] and have given rise to globally renown digital businesses such as Airbnb, Alibaba, and Uber. Beyond the abovementioned noteworthy examples of digital businesses, scholars have also reported on a growing number of corporate cases whose success are attributable to the way digital technologies are appropriated for value creation [6, 19, 21]. By exploiting unique characteristics of digital technologies such as accessibility, ease-of-deployment, scalability, and ubiquity [4, 8, 16], these corporate success stories are notable for leveraging on digital technologies to tear down traditional barriers of innovation and entrepreneurship [15, 26, 27]. In this sense, digital technologies can be purported to be a catalyst for innovation and entrepreneurship [15, 19, 27, 28], possessing the potential to unify both internal and external stakeholders in value co-creation [15, 25, 29].

But at the same time, the extent of transformation through digital technologies (i.e., digital business transformation) is complex, profound, and do not necessarily conform with what was revealed through past studies. Citing previous work on the role of digitalization in innovation and entrepreneurship (e.g., [10, 12, 13]), Berger et al. ([1], p. 436) alleged that “digital technologies dissolve traditional boundaries and shift the agency of entrepreneurship and innovation processes and outcomes, thereby making existing theories potentially obsolete and requiring investigation of these intersections as novel phenomena”.

Herein, we acknowledge prior research that formulates the current discourse of digital business transformation, paying particular homage to the work of Nambisan and his colleagues (e.g., [10–13]), who has contributed substantially to advancing our understanding of the role of digitalization in innovation and entrepreneurship. However, with growing scholarly consensus that digital technologies are inherently distinct from other technologies (e.g., [9, 22, 27, 28]), it is imperative to rethink how such distinctions have altered the way we conceptualize innovation and entrepreneurship, wherein lies the impetus for this special issue.

This special issue titled ‘Digital Business Transformation in Innovation and Entrepreneurship’ is another step forward in contributing to the academic discourse on the role of digitalization in innovation and entrepreneurship. Concurring with the preceding view that digital business transformation in the innovation and entrepreneurship domains warrant an in-depth appreciation of its entire nomological net, the aim of the special issue is to solicit scholarly work that elucidates the antecedents, consequences, processes, and/or contextual conditions dictating how digital business transformation would play out in this novel phenomenon. In so doing, we hope to disentangle the
interdependencies and intricacies among digital business transformation, innovation, and entrepreneurship.

2. An overview of accepted articles for the special issue

The necessity of a deeper conversation on the topic of digital business transformation in innovation and entrepreneurship arose from a research track that we organized at the 26th European Conference on Information Systems (ECIS 2018) titled as “IT Innovation and Entrepreneurship”. Our discussions with conference attendees thereafter led us to this special issue. Here, we are grateful to the Editor-in-Chief, Professor Patrick Chau, for not only his shared belief in the importance of the topic, but also for his constant encouragement and guidance throughout the review process.

Article selection and review for the special issue adheres to a rigorous process with multiple rounds of revisions. Before submitting to special issue, we encourage authors to send an extended abstract for participation can occur in digital entrepreneurship. Embedded in the core attributes driving such transformation in digital ventures. Building a longitudinal study of two digital start-ups in the crowdfunding domain, identifies business transformation transpires in the domains of innovation and entrepreneurship, Reibenspiess, Drechsler, Eckhardt, and Wagner (this issue) delivers four strategies (i.e., invention, advancement, exploitation) and their associated digital innovation practices that can be pursued by organizations depending on the maturity of application domain and knowledge in their immediate landscape.

Additionally, the special issue include an action research study conducted by Reibenspiess, Drechsler, Eckhardt, and Wagner (this issue). As one out of a handful of studies employing the action research methodology within extant literature on digital innovation and entrepreneurship, Reibenspiess, Drechsler, Eckhardt, and Wagner (this issue) embraces the socio-technical systems theory to devise design principles for guiding the development of a digital intrapreneurship platform that fosters employee-driven ideas.

The remaining five articles are empirical in nature with three being qualitative and two being quantitative. Each of the three qualitative articles contributes to fresh theoretical understanding on how digital business transformation transpires in the domains of innovation and entrepreneurship. Gupta and Bose (this issue), in conducting a longitudinal study of two digital start-ups in the crowdfunding domain, identify core attributes driving such transformation in digital ventures. Building a framework to clarify how digital transformation takes place in entrepreneurial firms through information exchange with the environment, Gupta and Bose’s (this issue) work extends prior research by unpacking the transformation process for digital start-ups. Conversely, Leong, Tan, and Faisal (this issue) offers an intriguing account of how emancipation can occur in digital entrepreneurship. Embedded in the disadvantaged communities in Indonesia, Leong, Tan, and Faisal (this issue) identify constraints confronting a developing economy and the role of digital technologies in overcoming them. Next, Patroni, von Briel and Recker (this issue) investigate how a large retailer acquired innovative capabilities through harnessing social media exchanges. Situated within a large retail organization, Patroni, von Briel and Recker (this issue) established a process of filtering, assessing, converting, and deploying social media for driving innovation.

Of the two quantitative studies, the article by Chen, Liu, and Chen (this issue) espouses the organizational learning theory to illustrate how novelty- and efficiency-centered business model design may be attainable through striking a balance between technological exploitation and exploration. Finally, the article by Li, Liu, Fan, Lim, and Liu (this issue) analyzes investment traces to understand how initial herding in equity crowdfunding could culminate in overfunding and lead to diminished funding opportunities for aspiring entrepreneurs.

Table 1
Overview of Accepted Articles for the Special Issue.

| No | Authors | Title |
|----|---------|-------|
| 1. | Hevner and Gregor | Envisioning Entrepreneurship and Digital Innovation through a Design Science Research Lens: A Matrix Approach |
| 2. | Reibenspiess, Drechsler, Eckhardt and Wagner | Tapping into the Wealth of Employees’ Ideas: Design Principles for a Digital Intrapreneurship Platform |
| 3. | Gupta and Bose | Digital Transformation in Entrepreneurial Firms Through Information Exchange with Operating Environment |
| 4. | Leong, Tan, and Faisal | The Emancipatory Potential of Digital Entrepreneurship: A Study of Financial Technology-Driven Inclusive Growth |
| 5. | Patroni, von Briel and Recker | Unpacking the Social Media Driven Innovation Capability: How Consumer Conversations Turn Into Organizational Innovations |
| 6. | Chen, Liu, and Chen | Achieving Novelty and Efficiency in Business Model Design: Striking a Balance between IT Exploration and Exploitation |
| 7. | Li, Liu, Fan, Lim, and Liu | Exploring the Impact of Initial Herd on Overfunding in Equity Crowdfunding |

Table 2 offers a further breakdown of accepted articles for the special issue with regards to its context, theoretical lens, and methodological approach. Aligning with the aims of this special issue and responding to calls of further research into digital business transformation in innovation and entrepreneurship, we are pleased with the contributing authors’ commitment to theory building for this new phenomenon.

Of the seven accepted articles, Hevner and Gregor (this issue) drew on design science principles to advance a matrix approach to digital innovation that can be employed to guide digital transformation initiatives involving multiple stakeholders. Arguing for the need to consider the backgrounds of multiple stakeholders (e.g., application specialists, software engineers, data scientists, business managers, economists, venture capitalists) during innovation, Hevner and Gregor (this issue) delivers four strategies (i.e., invention, advancement, exploitation, and transformation) and their associated digital innovation practices that can be pursued by organizations depending on the maturity of application domain and knowledge in their immediate landscape.
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Table 2
Breakdown of the Context, Theoretical Lens, and Methodology Employed in the Accepted Articles for the Special Issue.

| No | Authors | Context | Theoretical lens | Methodology |
|----|---------|---------|-------------------|-------------|
| 1  | Hevner and Gregor | N/A | Entrepreneurial Theory of Effectuation | Design Science |
| 2  | Reibenspies, Drechsler, Eckhardt and Wagner | IT Services | Socio-Technical Systems Theory | Action Research |
| 3  | Gupta and Bose | Digital Start-up | Theory Building | Case Study [Quantitative] |
| 4  | Leong, Tan, Tan, and Faisal | FinTech | Theory Building | Case Study [Qualitative] |
| 5  | Patroni, von Briel, and Becker | Retail | Theory Building | Survey [Quantitative] |
| 6  | Chen, Liu, and Chen | Multiple | Organizational Learning Theory | Investment Traces |
| 7  | Li, Liu, Fan, Lim, and Liu | Crowdfunding | N/A | N/A |

4. Where to next?

Collectively, the articles in the special issue denote important knowledge contribution to the discipline. Insights gleaned from the seven articles will deepen our comprehension of digital business transformation in innovation and entrepreneurship by offering food for thought on the philosophical and theoretical underpinnings of the role of digitalization in light of the increasingly remote environment resulting from the COVID-19 pandemic. Because dramatic and expedited digitalization efforts stemming from the COVID-19 pandemic will call into question pre-existing knowledge of innovation and entrepreneurship, we have no doubt that the topics covered in this special issue such as novel business models, efficiency gains, and productivity improvements of digital transformation will continue to be a focus for academia. But at the same time, digital business transformation could equally give rise to adverse consequences that warrant future research such as the expanding digital divide between industrial sectors or nations, high technostress of working remotely from home, and the negative impact on social relations brought about by de-humanizing collaborative technologies.

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References

[1] E.S. Berger, F. von Briel, P. Davidsson, A. Kuckertz, Digital or not-the future of entrepreneurship and innovation: introduction to the special issue, J. Bus. Res. 125 (1) (2021) 436–442.
[2] H. Bouwman, S. Nikou, M de Reuver, Digitalization, business models, and smes: how do business model innovation practices improve performance of digitalizing SMEs? Telecom. Policy 43 (9) (2019), 101828.
[3] Y. Gong, J. Yang, X. Shi, Towards a comprehensive understanding of digital transformation in government: analysis of flexibility and enterprise architecture, Gov. Inf. Q. 37 (3) (2020) 1–13.
[4] R.W. Gregory, H. Kyriakou, Learning effects: the role of digital technology on platforms, in: Academy of Management Proceedings, 10510, Academy of Management Briarcliff Manor, NY, 2018, p. 18596.
[5] R. Kohli, N.P. Melville, Digital innovation: a review and synthesis, Inf. Syst. J. 29 (1) (2019) 200–223.
[6] S. Lokuge, D Sedera, Fifty shades of digital innovation: how firms innovate with digital technologies. Proceedings of the 24th Pacific Asia Conference on Information Systems (PACIS 2020), AIS, Dubai, UAE, 2020, p. 91.
[7] S. Lokuge, D. Sedera, T. Ariyachandra, S. Kumar, V Rav, The next wave of cm innovation: implications for research, teaching, and practice, Commun. Assoc. Inf. Syst. 46 (1) (2020) 566–583.
[8] S. Lokuge, D. Sedera, M. Atapattu, D Samaranayake, Exploring the role of is in agriculture: creating an agenda towards agri-informatics. Proceedings of the 20th Pacific Asia Conference on Information Systems (PACIS 2016), AIS, Chiyai, Taiwan, 2016.
[9] K. Lyttinen, Y. Yoo, R.J. Boland Jr, Digital product innovation within four classes of innovation networks, Inf. Syst. J. 26 (1) (2016) 47–75.
[10] S. Namisbain, Digital entrepreneurship: toward a digital technology perspective of entrepreneurship, Entrepreneurship Theory and Practice 41 (6) (2017) 1029–1055.
[11] S. Namisbain, R.A. Baron, On the costs of digital entrepreneurship: role conflict, stress, and venture performance in digital platform-based ecosystems, J. Bus. Res. 125 (1) (2021) 520–532.
[12] S. Namisbain, K. Lyttinen, A. Majchrzak, M. Song, Digital innovation management: reinventing innovation management research in a digital world, MIS Q. 41 (1) (2017) 223–238.
[13] S. Namisbain, M. Wright, M. Feldman, The digital transformation of innovation and entrepreneurship: progress, challenges and key themes, Res. Policy 48 (8) (2019) 1–9.
[14] D. Nylén, Digital innovation and changing identities. Swedish Center for Digital Innovation, Department of Informatics. Umea University, Umea, Sweden, 2015.
[15] D. Nylén, J. Holmström, Digital innovation strategy: a framework for diagnosing and improving digital product and service innovation, Bus. Horiz. 58 (1) (2015) 57–67.
[16] S. Palekar, M. Atapattu, D. Sedera, S. Lokuge, Exploring spiral of silence in digital social networking spaces. Proceedings of the 36th International Conference On Information Systems (ICIS 2015), AIS, Fort Worth, Texas, 2015.
[17] D.M. Sebastian, J.W. Ross, C. Beath, M. Mocker, K.G. Moloney, N.O. Fonstad, How big old companies navigate digital transformation, MIS Q. Executive 16 (3) (2017) 197–213.
[18] D. Sedera, S. Lokuge, The role of enterprise systems in innovation in the contemporary organization, in: M.K. Stein (Ed.), The Routledge Companion to Management Information Systems, R.G. Galliers and, The Routledge, Abingdon, United Kingdom, 2017, p. 608.
[19] D. Sedera, S. Lokuge, V. Grover, S. Sarker, S. Sarker, Innovating with enterprise systems and digital platforms: a contingent resource-based theory view, Inf. Manag. 53 (3) (2016) 366–379.
[20] F. Svanh, L. Mathiassen, R. Lindgren, Embracing digital innovation in incumbent firms: how volvo cars managed competing concerns, MIS Q. 41 (1) (2017) 239–263.
[21] F.T.C. Tan, B. Tan, S.L. Pan, Developing a leading digital multi-sided platform: examining IT affordances and competitive actions in alibaba.com, Commun. Assoc. Inf. Syst. 38 (36) (2016) 738–760.
[22] A. Tiwana, B. Konsynski, A. Bush, Platform evolution: coevolution of platform architecture, governance, and environmental dynamics (Research commentary), Inf. Syst. Res. 21 (4) (2010) 675–687.
[23] S. Tumbas, N. Renere, J.V. Brocke, Digital innovation and institutional entrepreneurship: chief officer perspectives of their emerging role, J. Inf. Technol. 33 (3) (2018) 188–202.
[24] Walth, S., Sarker, S., Sedera, D., and Eymann, T. „Exploring subscription renewal intention of operational cloud enterprise systems: a socio-technical approach,“ Proceedings of the 21st European Conference On Information Systems (ECSIS 2013), Utrecht, The Netherlands: AIS, 2013 a, p. 25.
[25] Walth, S., Sedera, D., Sarker, S., and Eymann, T. 2013b. „Evaluating operational cloud enterprise system success: an organizational perspective,“ Proceedings of the 21st European Conference On Information Systems (ECSIS 2013), Utrecht, p. 16.
[26] Y. Yoo, The tables have turned: how can the information systems field contribute to technology and innovation management research? J. Assoc. Inf. Syst. 14 (5) (2013) 227–236.
[27] Y. Yoo, R.J. Boland Jr, K. Lyttinen, A. Majchrzak, Organizing for innovation in the digitized world, Org. Sci. 23 (5) (2012) 1398–1408.
[28] Y. Yoo, O. Henriksen, K. Lyttinen, The new organizing logic of digital innovation: an agenda for information systems research, Inf. Syst. Res. 21 (4) (2010) 724–735.
[29] J.J. Zittrain, The generative internet, Harv. Law Rev. 119 (7) (2006) 1974–2040.

Darshana Sederaa a, Chee-Wee Tanb c, Dongming Xuc a School of Business and Tourism Southern Cross University Gold Coast, Australia b Department of Digitization Copenhagen Business School Copenhagen, Denmark c School of Business University of Queensland Brisbane, Australia

* Corresponding author. E-mail address: ct.digi@cbs.dk (C.-W. Tan).