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Digital Business Transformation and the Changing Role of the IT Function

by

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Introduction to the Special Issue

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Digitization Creates New Demands on the IT Function

Technological trends such as social media, big data, the internet of things, mobile computing and cloud computing significantly influence processes, products, services and business models[1]. Not only the intensity, but also the speed of the resulting change is remarkable. Most of the aforementioned technologies cannot be seen as revolutionary individually, but rather develop their innovative strength through the massively increased efficiency, the significant better network possibilities, and their widespread use. By combining the transformational power of these technologies, the impact on the business is even greater. The processing of new quantities and qualities of data in combination with the application of sensors and actuators creates new opportunities for automation. Finally, information technology reaches all areas of its users' life while the meaning of "user" changes simultaneously. "The user" of the corporate IT systems is not only the internal employee anymore. Instead, customers and consumers became a new stakeholder group for the IT function. The consequences are almost unlimited possibilities in the innovative application of IT, also and above all, for business purposes[2].

The described developments are usually quite welcomed or even demanded by consumers because they often lead to appreciable advantages such as higher comfort, faster purchase procedures or lower prices – although there are costs in terms of lost privacy and data protection. Enterprises experience this change with mixed feelings. On the one hand, the potential benefits resulting from this digitization trend are enormous. Digital business model and value creation innovations offer, especially small and young companies, the chance to capture not only new but also traditional markets with novel products and services. On the other hand, these disruptive technologies and business models are forcing companies to rethink their strategies and capabilities – and to do so quickly. Agility becomes a key factor in the fierce competition among digitalized and digital business models. Well-established companies, in particular, face pressure from start-ups with their extraordinary potential for rapid innovation and high level of implementation competence[3]. After redefining the strategy and position in the ecosystem, enterprises must follow a

[1] Fitzgerald, M., Kruschwitz, N., Bonnet, D. and Welch, M. (2013) Embracing Digital Technology, MIT Sloan Management Review.
[2] McDonald, M. P. and Rowsell-Jones, A. (2012) The Digital Edge: Exploiting Information & Technology for Business Advantage, Gartner, Inc, Stamford.
[3] Hess, T., Matt, C., Benlian, A. and Wiesböck, F. (2016) Options for Formulating a Digital Transformation Strategy, MIS Quarterly Executive, 15, 2, 123-139.

stringent and often demanding path of organizational and technological transformation.

Due to its inherent technology focus, the digitalization trend has increased the importance of information technology and heightened demands on companies' IT functions. The business activity gets not only more efficient, but is also no longer imaginable without IT. Since information technologies are applied to realize innovations for businesses these days and will so to an even greater extent in the future, IT functions are required to cooperate proactively and early on with the business departments to be able to develop and implement such innovations jointly. Thus, besides ensuring the regular IT operations, IT functions are increasingly requested to proactively identify technological innovations and to rapidly transfer them into marketable solutions – and with that to directly contribute to the company's overall success.

Need for Transforming the IT Function

With their current set-up, many IT functions do not meet these new requirements because as rather reactive service providers they do not have the necessary structures, processes and abilities to systematically develop business innovations. Additionally, they are often perceived as being too bureaucratic, hardly flexible, and not on a par with the business departments. For instance, changes in information systems which are requested by business departments on short-notice are, from their point of view, not implemented fast enough when the IT department follows fixed timeframes for implementation. Thus, in the digital age, flexible and fast modification of information systems is of high importance. Agility in organizational structures and information systems becomes a key capability for enterprises as they are interacting with a highly dynamic environment with innovative endeavors. In cases in which the IT function is not capable of switching to a new mode of working with a focus on innovation and agility, enterprises tend to set up new "digital units" or "digital IT units".

Considering the historical development of the corporate IT, it is not surprising that IT functions are often not optimally set up for the challenges of the digital age. The corporate IT underwent several developments since its inception. Initially, the focus of corporate IT was on operating mainframe computers, subsequently on the management of the increasingly interlinked personal computing. In the mid-1990s, the era of the IT industrialization began with the particular aim to enhance the effectivity and efficiency of the IT functions and to position them as service providers[4]. In many cases, the desired effects could be reached – however, with the consequence that in many companies the IT function now operates 'far away' from the business so that an effective business-IT-alignment has turned out to be a continuous challenge. Meanwhile – or as a reaction to this situation –, business units (like the marketing department) started to improve their IT capabilities by hiring people, improving their knowledge, and using cloud services.

To meet the challenges of the digitization, the IT function needs to undergo a change that comprises new modes of internal organization as well as new forms of collaboration and alignment with business departments. Concepts like co-location, cross-functional digital teams, IT innovation management and enterprise architecture management can be understood as precursors of the 'new IT function', which switches IT from the role of the service provider to that of a consultant, enabler, and innovator.

[4] Zarnekow, R., Brenner, W. and U., P. (2006) Integrated Information Management: Applying Successful Industrial Concepts in IT, Springer, Berlin, Heidelberg.

Moreover, developments like cloud computing simplify the outsourcing of elements of the IT value chain. These developments cause a gradual transition of roles and capabilities of today's IT functions and it is to be expected that they will also be reflected in new structures, processes, methods, and governance mechanisms. Several companies have already responded to these changes. Nevertheless, the appropriate role of corporate IT – and how IT leaders can fulfill that role – is still unclear [5].

Introduction to the Special Issue

Given the importance of these changes to IT practice, this special issue solicited papers that explore how the IT function can cope with the changes brought on by the digital economy, and how it can enable, support or even drive the digital business transformation. This special issue began with the Call for Papers in July 2017, which stimulated significant interest in this emerging topic, resulting in 20 submissions. After several rounds of reviews, four submissions were finally accepted for publication. The articles cover a wide variety of perspectives on the changing role of the IT function in the digital age.

The first article by Christian Dremel, Matthias M. Herterich, Jochen Wulf, Jean-Claude Waizmann, and Walter Brenner focuses on the topic of big data analytics as an enabler of a transformation that can lead to competitive advantage. It illustrates how Audi drives digitalization towards harnessing digital opportunities in digital business models and data-driven services in a three-stage journey of increasingly strategic big data analytics. The authors conclude with five learnings with actionable guidance for senior executives on how enterprises can evolve toward digitization through increasingly effective use of data and analytics.

The second article by Ingmar Haffke, Bradley Kalgovas, and Alexander Benlian investigates options for transforming the IT organization using bimodal IT. The authors interviewed business and IT executives from 19 global corporations to conceptualize different forms of bimodal IT. The results suggest that bimodal IT can be established through four archetypes: project-by-project, subdivisional, divisionally-separated, and reintegrated. The study also identifies the factors that drive an organization's need to adopt bimodal IT and clarifies how bimodal IT supports the broader achievement of the IT vision. It further outlines possible IT transformation journeys organizations can take, as the case data indicates that companies tend to switch between different archetypes of bimodal IT. The authors suggest the specific actions organizations need to undertake to maximize the long-term benefits from bimodal IT. Finally, they give an outlook on future visions of corporate IT beyond the bimodal archetypes.

The third article by Sanja Tumbas, Nicholas Berente, and Jan vom Brocke explores the nascent role of the Chief Digital Officer (CDO). For that purpose, the authors analyze interview data with 35 CDOs from organizations across various sectors. The results suggest three general types of CDOs (digital accelerator, digital marketer and digital harmonizer) which result from different reasons for establishing the role. Further, the authors identify specific domains where successful CDOs build digital capabilities and each of these domains is a focal domain for one of the identified CDO types: digital innovation, data analytics, and customer engagement. The article concludes with a reflection on the relationship between CDOs and CIOs.

[5] Urbach, N. and Ahlemann, F. (2016) IT-Management im Zeitalter der Digitalisierung – Auf dem Weg zur IT-Organisation der Zukunft, Springer, Berlin, Heidelberg.

The fourth article by Kristine Dery, Ina M. Sebastian, and Nick van der Meulen analyzes how companies are responding to the challenges of the digital world by redesigning how their employees work. The authors find that high-performing companies design digital workplaces that enhance the employee experience by investing in two dimensions: responsive leadership and employee connectedness. In their paper, they report on the transformational journeys of three companies – DBS Bank Singapore, Deloitte Australia, and Audi Germany – to illustrate how digital workplaces create business value and how IT leaders play a critical role in guiding the transformation. The article concludes with a set of recommendations for IT leaders trying to map a successful journey.

We think that enterprises are currently facing a major paradigm shift in business and IT management. This development demands for research that captures and analyzes the ongoing changes in practice and contributes by highlighting successful transformation or by suggesting alternative pathways. With this special issue, we seek to contribute to the discussions about the implications of digitization on the IT function, its structures, processes and people, as well as about the adjustments that are necessary to address the new challenges.

As with any special issue, there is a lot of effort by many participants. We particularly thank the editorial board members Frederik Ahlemann, Cynthia Beath, Tilo Böhmann, Andreas Drechsler, Pernille Kræmmergaard, Christine Legner, Christian Matt, Martin Mocker, Joe Peppard, Michael Rosemann, Sandra Sieber, Mary Sumner, Huseyin Tanriverdi, Michael Wade, Martin Wiener, Till Winkler, Robert Winter, and Stephanie Woerner. We also want to thank all the authors of accepted and non-accepted papers. Finally, we thank the MISQE Editor in Chief, Dorothy Leidner, for her excellent guidance throughout the process. We could not have produced this special issue without the goodwill of all these people.