



1

Introduction: Digitalization as a Driver of the Contemporary Economy

Paweł Marszałek  and Milena Ratajczak-Mrozek 

One of the most important determinants shaping economic and social life in recent decades has been technological progress. Together with other factors (such as globalization, or social and climate change), it has radically changed the way of doing business, the organization of companies, individual industries and the entire economy (Barbrook, 2007; Caputo et al., 2021; Reis et al., 2018; Sennet, 2006; Thurow, 1996). Modern technologies have also influenced human behaviour, people's incentives and decision-making processes, intensifying—somewhat paradoxically—the number of mutual, often direct interactions between individual entities (Gobble, 2015). All these factors have changed the

P. Marszałek (✉)

Department of Money and Banking, Poznań University of Economics and Business, Poznań, Poland

e-mail: pawel.marszalek@ue.poznan.pl

M. Ratajczak-Mrozek

Department of International Marketing, Poznań University of Economics and Business, Poznań, Poland

e-mail: milena.ratajczak-mrozek@ue.poznan.pl

model of social life and cultural patterns which, in turn, has obviously had an impact on the way companies and markets function.

Rapid changes of technology, mainly in the field of information and communication technologies (ICT), have influenced the competitive position of individual sectors of the economy, as well as entire countries, business models and the behaviour of market process participants. The scale of these changes was so significant that some authors argued a “New Economy” was emerging (Jorgensen & Stiroh, 1999; Nakamura, 2000; Oliner & Sichel, 2000). This is manifested in the different production processes and the allocation of goods and services, as well as in changes in the hierarchy and organization of individual elements of a given economy.

The phenomenon of the New Economy, usually identified with the transition—due to the increased importance of knowledge and information, the development of ICT and the commercialization of the Internet—from an industrial economy to a technology-based economy, with the dominant role of services (Gordon, 2000; Nakamura, 2000), has usually been treated as an unequivocally positive phenomenon. Appreciating the role of new technologies, as well as a proper theoretical foundation and an “improved” institutional framework for economic policy, the era of general macroeconomic stability was proclaimed. It was also emphasized that thanks to new technologies it was possible to make economic entities more rational and to bring individual markets closer to the state of perfect competition (Goodfriend, 2007; Jorgenson & Stiroh, 1999).

Even the Global Financial Crisis of 2007–2009, and the resulting recession, social tensions and debt crises in many countries did not stop the further development of new technologies or the expansion of the scope of their application. The Internet, technologies, mobile devices, social networks and technological platforms are developing so quickly that the technological revolution is even referred to as the next industrial revolution—the fourth one, in fact (Rifkin, 2011; Schwab, 2016).

One of the most important aspects and dimensions of economy 4.0 is the digitalization process. As Gartner’s Glossary (2021) defines it, digitalization is “the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the

process of moving to a digital business”. The process should not be identified with digitization, which is just a conversion of data and processes. Digitization describes the pure analogue-to-digital conversion of existing data and documents (e.g. scanning a photograph or converting a paper report to a PDF file), not changing the data itself—it is simply about data being encoded in a digital format. It provides more efficiency (digitized data can be used to automate processes and enable better accessibility), but does not seek to optimize business processes or data as a whole. Thus, the meaning of digitalization is much broader than digitization, as the process can also be identified with qualitative change and specific transformation. Digitalization embraces the ability of digital technology to collect data, establish trends and make better business decisions. It is about “the use of new digital technologies (social media, mobile, analytics or embedded devices) to enable major business improvements” (Fitzgerald et al., 2014, p. 2). In consequence, the process changes, or even disrupts, the way that markets, firms and financial institutions function.

As Tekic and Koroteev (2019, p. 684) underline, “digital transformation is a multifaceted phenomenon in that it has different aspects/implications for different companies”. The adoption of new technologies becomes necessary for survival and being competitive (Caputo et al., 2021; Rachinger et al., 2019). What is fascinating about digitalization is that it affects all companies, sectors and markets, regardless of the degree of their digital advancement. Even highly traditional companies and industries with a high level of manual labour are facing digital challenges and need to learn how to handle digital solutions. Therefore, for some companies and sectors, digital transformation may mean the adoption of new modes of production, while for others it might involve using social media for the purposes of advertising and selling.

Among technologies and processes that are a manifestation of digitalization, and which are of particular importance for the economy, management and finances, primarily include the so-called Big Data, distributed ledger technology (DLT), Artificial Intelligence (AI), Internet of Things (IoT), augmented reality, blockchain, FinTech, InsurTech, RegTech, cryptocurrencies and the so-called cashless economy.

Big data is involved wherever a large amount of digital data is accompanied by the need to acquire new information or knowledge. The availability of large amounts of real-time data opens up opportunities for companies to apply new statistical methods, improve economic forecasts and make profitability and risk assessments along with quick feedback (Bakshi, 2012; Bartosik-Purgat & Ratajczak-Mrozek, 2018; Warner & Wäger, 2019).

Blockchain is a form of DLT, in other words, a decentralized database that exists in many identical copies for individual users. It can be used for secure and forgery-proof logging of all kinds of transactions. Thanks to this technology, transactions between many entities can be easily and automatically settled, which makes it applicable in virtually all industries: financial and insurance, but also the energy and oil industry, environmental protection, advertising, health protection and public administration (Narayanan et al., 2016).

The most popular use of blockchain currently concerns finance and is associated with the so-called cryptocurrencies, i.e. a special case of virtual currency, often perceived—rather exaggeratedly—as money of the future. Cryptocurrencies, being so far rather a tool of speculation and not having the status of money in principle, can, however, form the basis for the creation of local currency systems, as well as enable the transition to the so-called cashless economy, i.e. a situation in which cash, at best, is only a tiny fraction of the money supply (EBC, 2012; Popper, 2016).

RegTech is the application of the latest technologies for regulatory purposes. Solutions in this field are designed to support the collection, interpretation and reporting of data in order to meet regulatory needs. The growing importance of this issue may be associated with the global financial crisis of 2007–2009, which resulted in a sharp increase in the number of new regulations. Although it has other applications, RegTech is a specific complement to FinTech and InsurTech—the use of modern technologies in institutions and financial transactions. FinTech and InsurTech have radically changed the way financial institutions operate, including banks. For the latter, the term “Bank 4.0” has even started to be used, denoting a new way of segmenting clients and shaping relationships with them, distributing banking products, banking

risk management, modelling the offer, etc. (Carney, 2017; Fostering Innovations, 2020; King, 2018);

Augmented reality, AI and IoT, in turn, found greater use outside the financial sector. Augmented reality is defined as an enhanced version of reality created by the use of technology that overlays digital information on an image of something being viewed through a specific device, or, more simply, a system connecting the real and computer-generated world. It reflects the fusion of digital technology with reality, where images from the “real” world are synchronized with 3D and animated computer graphics (Correia Loureiro et al., 2020).

IoT describes the network of physical objects—“things”—that are embedded with sensors, software and other technologies for the purpose of connecting and exchanging data with other devices and systems over the Internet. Such things can be for instance household appliances, lighting and heating products, and even wearables (Atzori et al., 2010; Wortman & Fluchter, 2015).

AI refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions and thinking, but much more efficiently. The term AI can be also understood as any machine that exhibits the traits associated with a human mind such as learning and problem-solving. It is assumed that AI is able to rationalize and take actions that have the best chance of achieving a specific goal. A subset of artificial intelligence is machine learning, referring to the concept that computer programs can independently and automatically learn from and adapt to new data (Acemoglu & Restrepo, 2018).

The technologies described above change the shape and functioning of individual sectors of the economy and also affect the shape and intensity of interrelations between organizations and other actors in economic and social life. They also create new attitudes, behaviours and communication patterns of consumers, employees and investors. One group especially empowered by digitalization is modern consumers. Due to access to numerous media, consumers are becoming information-empowered and are much more interconnected (Alamäki & Korpela, 2021). Through these processes they are able not only to communicate with each other but also to communicate directly with companies and influence their activities (Matarazzo et al., 2021).

Thus, through digitalization the existing forms and intensity of market and non-market relations are transformed, and consequently—the efficiency, effectiveness and results of business processes. Digitalization especially changes existing business models (Caputo et al., 2021; Luz Martín-Peña et al., 2018; Rachinger et al., 2019). These diversified, new forms of business models are “characterized by decreased reliance on physical elements” (Caputo et al., 2021, p. 490) and may concern a broad spectrum of digital solutions, such as offering a digital product, reliance on digital channels of sale or the robotization of manufacturing processes. As a result of digitalization, if handled correctly, companies should be able to optimize their operations and obtain better operational efficiency and business performance (Ribeiro-Navarrete et al., 2021), which also results in the co-creation of value.

The pioneers in the business application of new technologies have been entities from the financial sector. Banks, insurance companies and investment funds have applied new technologies naturally, so to speak, thereby fostering the development of digital devices and instruments. Yet, digitalization has very quickly proven to be of the utmost importance also with regard to firms from other industries that operate on different markets. Moreover, electronic channels and innovations have also fostered closer ties between production, trade and service companies, and the financial institutions cooperating with them.

To sum up in more detail, one might identify the subsequent channels through which digitalization has had an impact on the economy: (1) digital technologies allow firms to transcend the boundaries of space, providing them with access to a larger, sometimes even global markets, and are thus claimed to be the drivers of growth and competitiveness; (2) digitization strongly influences the strategies of firms and has had a significant impact on resources and the processes taking place both internally in firms and in markets and the economy. At the same time, the adoption of new technologies imposes some challenges for management, requiring new business models and strategies; (3) digitalization leads to consumer empowerment, equipping them with new means of influencing firms, as well as leading to increased expectations; (4) digitalization causes profound changes in the labour market, introducing

new production solutions, replacing human work with robotics solutions, which creates additional pressure on firms and in turn changes the way markets operate; (5) digitalization changes the face of the financial markets and institutions, as new forms of financial instrument are created, new forms and methods of payments emerge, and the scale and speed of payments and settlements increases; and (6) the dissemination of new technologies and the consequences of this process has also become an important factor on macroeconomic level, influencing countries' digital and international competitiveness. Therefore, digitalization may be considered in the context of both challenges and opportunities set by digital technologies for business models and business operations (e.g. production, logistics, marketing activities) and markets, as well as the main driver of growth and competitiveness for markets and firms/businesses.

As a consequence of the processes mentioned above, the markets driven by technological revolutions are constantly changing. Digitalization can be seen as a crucial factor that should be taken into account when one considers management on both the micro-level (companies and markets) and macro-level (economic policy and regulations). Therefore, in the present book we adopt the interdisciplinary approach, as it provides a comprehensive view of digitalization, its manifestations, features and impact on both individual firms and economic systems as a whole. The book contributes to the present state of knowledge by offering evidence on how digitalization and digital technologies are impacting markets, firms and financial institutions. Throughout the book we identify and highlight the challenges resulting from digitalization, as well as the opportunities connected with this process. Challenges and opportunities are important elements that are taken into account in managerial decisions and are also subject to intensive research. The thorough and comprehensive analysis of these factors and phenomena, which this book aims to pursue, can be important for grasping the current and future directions of research and managerial practice.

The book comprises 11 Chapters. The authors apply various methods (quantitative and qualitative) and approaches in their research, considering the investigated problems on different levels of analysis—micro, mezzo and macro. Such diversity provides us with a broad perspective on

the problem of digitalization and at the same time gives us a wider audience for our research results. In subsequent chapters the authors bring closer various aspects of digitalization, identifying the opportunities and challenges presented by new technologies.

The first three chapters focus on how digitalization challenges the management of modern companies, which nowadays are more inter-related than ever before and function within business networks and ecosystems. In Chapter 2, Psyché, Tremblay and Yagoubi discuss the functioning of the artificial intelligence (AI) ecosystem and the contribution of technology service providers, both to this ecosystem and to specific firms in the process of digital transformation. During digital transformation, some companies, especially in the manufacturing sector, are facing difficulties with starting to modernize their facilities. The biggest identified challenges are a wariness of technological changes and concerns about data protection. However, the process of digital transformation can be facilitated by the wider AI ecosystem, including technology service providers.

In a similar vein, in Chapter 3 Hauke-Lopes, Ratajczak-Mrozek and Wiczerzycki present a case study of business cooperation anchored in a digital platform which impacts the value creation and appropriation processes in small companies' network relationships. The presented research shows that digitalization and the need to adopt certain digital solutions, services and software apply not only to IT-related sectors, but also to highly traditional (analogue) sectors, where it is not fully possible to replace the human factor and manual labour with digital solutions. Not every company is capable of carrying out full digital transformation. The introduction of digitalization to such companies poses challenges for management and their operations which, if handled correctly, through cooperation, may result in some opportunities as well. The presented research indicates that network relationships created through a digital platform result in the creation and appropriation of financial, knowledge, personal and operational value.

In Chapter 4, Ancillai, Marinelli and Pascucci also discuss the impact of digitalization on highly traditional businesses. These companies need to keep up with technological development to be able to compete with innovative firms, even if the introduction of digital solutions may be

more challenging for them than in the case of IT-related companies. The research provides a thorough analysis of a digital-driven innovation in a business model in a product/service firm, thereby showing how data can act as an enabler of change and innovation in more traditional organizations.

Network relationships and cooperation between organizations translate into the macroeconomic situation of entire countries, and the processes related to digitalization are global in nature. Therefore, in Chapter 5 Demiral and Demiral compare higher digitally-competitive countries (HDCCs) and lower digitally-competitive countries (LDCCs) in terms of the export performance associated with digital-intensive Information and Communications Technology (ICT) goods. They examine the effects of economic structure, globalization and governance indicators on the export performance of these goods.

Similarly, adopting the international cross-boundaries perspective in Chapter 6, Poncibo discusses the case of digital (smart) contracts in international trade and finance by considering, specifically, smart contracts. These contracts represent a typical example of the digitalization of cross-border business transactions and, in the absence of legal certainty, the chapter notes that economic operators and financial traders are increasingly relying on smart contracts, which are primarily characterized by a reliance on technology, to manage their international digital transactions. Poncibo's analysis is an example of an interdisciplinary approach, as the author considers the economic construct of smart contracts from a legal perspective.

Digitalization causes profound changes in the labour market, introducing new production solutions, which may cause fears that human work will be replaced with robotics solutions. Therefore, in Chapter 7 Pilc, Woźniak-Jęchorek Woźniak and Piątek compare the public messages formulated by employer associations and trade unions concerning the Fourth Industrial Revolution (or Industry 4.0) in France, Germany, Poland and the UK. The results indicate that in the case of Industry 4.0 there is one message with regard to which employer associations and trade unions are in agreement. It states that to help the manufacturing sector benefit from Industry 4.0 the government should invest much more in workers' skills.

Issues associated with human capital and workers' skills are also the subject of research conducted in Chapter 8. Here, Díaz-Rodríguez, Sosa and Cabello employ a graph theory approach, while analysing the impact of digitalization on talent migration flows and on the human capital skills required for work in the financial industry. The empirical analysis, drawing on the Digital Data for Development database (2015–2019), unveils the labour market dynamics in the financial industry. The authors' findings suggest that digitalization influences the human capital of financial institutions in a twofold way—both qualitative and quantitative change—such that the financial sector has become a pole of attraction for talent, and labour skills have increased and become specialized in this sector.

The next two chapters concentrate on the monetary aspects of digitalization. Xu (Chapter 9) and Marszałek and Szarzec (Chapter 10) consider the impact and consequences of the process on payments and the entire monetary system, respectively. As was already mentioned, the financial domain has enthusiastically implemented new technologies. In Chapter 9, focusing on the specific cases of two regions, Xu analyses how the successful adoption of mobile payment technologies differed in East Asia and East Africa. To this end, the author presents a classification of the different development paths of mobile payment operational models in the two regions and then considers the consequences of different methods for implementing the digitalization of payments.

In Chapter 10, Marszałek and Szarzec take a general, macroeconomic view, assessing inevitability of transition—being a consequence of the continuous dematerialization of money caused by digitalization and new technologies—to the cashless economy. The authors discuss the definitions and origins of the cashless economy, its features, determinants and understanding from both the micro- and macroeconomic points of view. On that ground they identify key advantages and disadvantages of the cashless economy, considering the perspectives of different stakeholders. To conclude, they argue that the result of cost–benefit analysis of the cashless economy is ambiguous, which means its full adoption is not inevitable.

One of the most currently hyped—but at the same time controversial—manifestations of the new technologies are cryptocurrencies,

which are treated as form of specific, private digital currency. In the last chapter, Chapter 11, Barbu, Boitan, Petrescu and Cepoi run a threshold analysis to attempt to identify the financial drivers of the price of Bitcoin, the most popular cryptocurrency, in times of economic and policy uncertainty. From their results it is evident that the relationships between Bitcoin price and bond yields from China and Japan are robust and statistically significant only in times of low economic or political uncertainty. This stands in contrast to German bond yields, which negatively influence the Bitcoin price in periods of economic or political turbulence. The chapter demonstrates that Bitcoin is a versatile financial product, which may act either as a diversifier or as a hedge asset, depending on investors' behaviour and risk appetite.

The chapters presented in the book show that digitalization is a factor that permeates and consolidates all economic processes in the contemporary economy. It creates numerous linkages and feedback mechanisms between individuals, companies, policymakers and supervisors. Moreover, digitalization is manifested not only in the economic dimension, but is visible also in social, cultural or legal spheres. For this reason, digitalization should be viewed as interdisciplinary phenomenon which impacts the micro, mezzo and macro levels of economic activity. Precise description and assessment of this phenomenon requires an interdisciplinary approach, combining economics, management, sociology and law, as digitalization is, as was already stressed, a phenomenon reaching far beyond economic life.

This complexity and multithreading of digitalization, as well as linkages and interdependencies between the individual spheres of economic and social life it generates, are presented synthetically in Fig. 1.1. Furthermore, it also illustrates the dependencies between the individual chapters of the book, which pertain to individual aspects of digitalization's influence.

Thus, digitalization, in changing the shape of economic and social relations, can be perceived as a specific driver of contemporary economies. It reshapes markets and monetary and political hierarchies, influencing at the same time incentives and behaviour of economic agents. This process is still ongoing and dynamic, since it received an additional boost from the COVID-19 pandemic. Looking to the future,

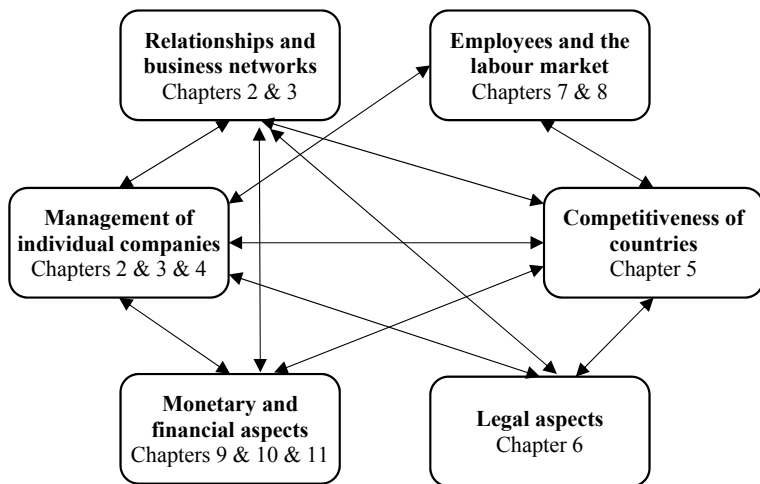


Fig. 1.1 Digitalization—areas of influence and interdependencies

we do hope that this book has captured at least a small part of contemporary digitalization, its impact on and linkages with the economy, management and finance, and that it will help us to have a better understanding of this extraordinary phenomenon.

Acknowledgements The study has been financed within the Regional Initiative for Excellence programme of the Minister of Science and Higher Education of Poland, years 2019–2022, grant no. 004/RID/2018/19, financing 3,000,000 PLN.

References

- Acemoglu, D., & Restrepo, P. (2018). The race between man and machine: Implications of technology for growth, factor shares, and employment. *American Economic Review*, *108*(6), 1488–1542.
- Alamäki, A., & Korpela, P. (2021). Digital transformation and value-based selling activities: seller and buyer perspectives. *Baltic Journal of Management*, *16*(2), 298–317.

- Atzori, L., Iera, A., & Morabito, G. (2010). The internet of things: A survey. *Computer Networks*, 54(15), 2787–2805. <https://doi.org/10.1016/j.comnet.2010.05.010>
- Bakshi, K. (2012). *Considerations for big data: Architecture and approach*. In 2012 IEEE, Aerospace Conference, Big Sky Montana. pp. 1–7. <https://doi.org/10.1109/AERO.2012.6187357>
- Barbrook, R. (2007). *Imaginary futures: From thinking machines to the global village*. Pluto Press. ISBN-13: 978-0745326603.
- Bartosik-Purgat, M., & Ratajczak-Mrozek, M. (2018). Big data analysis as a source of companies' competitive advantage: A review. *Entrepreneurial Business and Economics Review*, 6(4), 197–215. <https://doi.org/10.15678/EBER.2018.060411>
- Caputo, A., Pizzi, S., Pellegrini, M. M., & Dabić, M. (2021). Digitalization and business models: Where are we going? A science map of the field. *Journal of Business Research*, 123, 489–501. <https://doi.org/10.1016/j.jbusres.2020.09.053>
- Carney, M. (2017). *The promise of FinTech—Something new under the Sun?* Speech given at the Deutsche Bundesbank G20 conference on “Digitising finance, financial inclusion and financial literacy”, Wiesbaden.
- Correia Loureiro, S. M., Guerreiro, J., & Ali, F. (2020). 20 years of research on virtual reality and augmented reality in tourism context: A text-mining approach. *Tourism Management*, 77. <https://doi.org/10.1016/j.tourman.2019.104028>
- Fitzgerald, M., Kruschwitz, N., Bonnet, D., & Welch, M. (2014). Embracing digital technology: A new strategic imperative. *MIT Sloan Management Review*, 55(2), 1.
- Fostering innovation and competitiveness with FinTech, RegTech, and SupTech*. (2020). Marchewka-Bartkowiak, K., & Boitan I. A. (Eds.). IGI Global. <https://doi.org/10.4018/978-1-7998-4390-0>
- Gartner's Glossary. (2021). *Digitalization*. <https://www.gartner.com/en/information-technology/glossary/digitalization>
- Gobble, M. M. (2015). Regulating innovation in the new economy. *Research-Technology Management*, 58(2), 62–67.
- Gordon, R. J. (2000). Does the “new economy” measure up to the great inventions of the past? *The Journal of Economic Perspectives*, 14, 49–74.
- Goodfriend, M. (2007). How the world achieved consensus on monetary policy. *Journal of Economic Perspectives*, 21(4), 47–68. <https://doi.org/10.1257/jep.21.4.47>

- Jorgenson, D. W., & Stiroh, K. J. (1999). Information technology and growth. *American Economic Review*, 89(2), 109–115. <https://doi.org/10.1257/aer.89.2.109>
- King, B. (2018). *Bank 4.0: Banking everywhere, never at a bank*. Wiley.
- Luz Martín-Peña, M., Díaz-Garrido, E., & Sánchez-López, J. M. (2018). The digitalization and servitization of manufacturing: A review on digital business models. *Strategic Change*, 27(2), 91–99. <https://doi.org/10.1002/jsc.2184>
- Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021). Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective. *Journal of Business Research*, 123, 148–2963. <https://doi.org/10.1016/j.jbusres.2020.10.033>
- Nakamura, L. I. (2000). Economics and the new economy: The invisible hand meets creative destruction. *Federal Reserve Bank of Philadelphia Business Review*, July–August, 15–30.
- Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). *Bitcoin and cryptocurrency technologies: a comprehensive introduction*. Princeton University Press. ISBN 978-0-691-17169-2.
- Oliner, S. D., & Sichel, D. E. (2000). The resurgence of growth in the late 1990s: Is information technology the story? *Journal of Economic Perspectives*, 14(4), 3–22. <https://doi.org/10.1257/jep.14.4.3>
- Popper, N. (2016). *Digital gold. The untold story of bitcoin*. Penguin.
- Rachinger, M., Rauter, R., Müller, C., Vorraber, W., & Schirgi, E. (2019). Digitalization and its influence on business model innovation. *Journal of Manufacturing Technology Management*, 30(8), 1143–1160. <https://doi.org/10.1108/JMTM-01-2018-0020>
- Reis, J., Amorim, M., Melão, N., & Matos, P. (2018). Digital transformation: A literature review and guidelines for future research. In Á. Rocha, H. Adeli, L. P. Reis, & S. Costanzo (Eds.), *Trends and advances in information systems and technologies*. WorldCIST'18 2018. Advances in intelligent systems and computing (Vol. 745). Springer. https://doi.org/10.1007/978-3-319-77703-0_41
- Ribeiro-Navarrete, S., Botella-Carrubi, D., Palacios-Marqués, D., & Orero-Blat, M. (2021). The effect of digitalization on business performance: An applied study of KIBS. *Journal of Business Research*, 126 (July 2020), 319–326. <https://doi.org/10.1016/j.jbusres.2020.12.065>
- Rifkin, J. (2011). *The third industrial revolution: How lateral power is transforming energy, the economy, and the world*. Palgrave Macmillan.
- Schwab, K. (2016). *The fourth industrial revolution*. Penguin.

- Sennet, R. (2006). *The culture of the new capitalism*. Yale University Press. Retrieved June 14, 2021, from <http://www.jstor.org/stable/j.ctt1nq6w>.
- Tekic, Z., & Koroteev, D. (2019). From disruptively digital to proudly analog: A holistic typology of digital transformation strategies. *Business Horizons*, 62(6), 683–693. <https://doi.org/10.1016/j.bushor.2019.07.002>
- Thurow, L. C. (1996). *The future of capitalism: How Today's economic forces shape tomorrow's world*. Nicholas Brealey Publishing.
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. <https://doi.org/10.1016/j.lrp.2018.12.001>
- Wortman, F., & Fluchter, K. (2015). Internet of Things. *Business & Information Systems Engineering*, 57(3), 221–224. <https://doi.org/10.1007/s12599-015-0383-3>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

