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Contemporary Challenges in Cooperation and Coopetition in the Age of Industry 4.0

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Preface

Industry 4.0 is a concept relating to the use of automation in industries, data processing and data exchange. The concept also encompasses artificial intelligence, the digitalization of the production process and introducing new technologies. Nowadays, workforce, digitally controlled machines connected to the Internet and information technology, is all integrated and this new setting poses new challenges for the management of organizations and for their development. One of these challenges involves the necessity of cooperation with many stakeholders and business partners. However, thanks to networking and data exchange, businesses are also able to make goods in a more economical way. What is more, they can adapt quickly to their clients' individual needs and integrate each other in the value networks which enable them to gain a competitive advantage. As a consequence, the conditions created by Industry 4.0 are both an opportunity and a threat to successful cooperation and competition.

The challenges posed by Industry 4.0 are the focus of this proceedings volume. They will be analysed in terms of their impact on present-day organizations and the changes that occur in cooperation and competition between companies. Other selected problems relating to the development of organizations based on new conditions will also be addressed. The approach the authors used when writing this proceeding volume was both theoretical and empirical. The work consists of three parts.

In Part I, general guidelines pertaining to Industry 4.0 are considered. To start with, Anna Adamik and Michał Nowicki offer their critical literature review on the subject and an account of the research in consulting firms. Based on their findings, they identified key barriers and potential pitfalls in the process of building a competitive advantage in the age of Industry 4.0. They also provided solutions to overcome them. Afterwards, Michał Młody and Adam Weinert also analysed the literature, but they provided an overview of the current knowledge level about Industry 4.0 in Poland and indicated the direction of further research in this field. Moreover, Edyta Gwarda-Gruszczyńska pointed out theoretical and research gaps in the 'Valleys of Death' concerning creating, commercializing and diffusion of Key Enabling Technologies (KETs). Another contributor, Edyta Bielińska-Dusza

identified the changes occurring in the functioning of organizations caused by ground-breaking technologies. Furthermore, Aleksandra Rudawska pointed out that the phenomenon of Industry 4.0 enables the transfer of knowledge between the workforce. It contributes to overall knowledge building in an organization and, as a consequence, positively influences the creativity of individual employees as well as the creativity of an organization as a whole. Despite this fact, the author argued that sharing knowledge is not a straightforward process. She explained that proactive and reactive knowledge sharing involves employing different mechanisms on an individual and organizational level. Finally, another contributor—Katarzyna Szymańska—identified the main directions of change in the organizational culture of companies that adapt to the new conditions of Industry 4.0.

Part II is devoted to analysing cooperation and cooptition between organizations in the light the challenges that Industry 4.0 brings. This section opens with an article by Jerzy Niemczyk and Rafał Trzaska. The authors studied the network approach in Industry 4.0 in the context of cooptition. According to them, the competitive advantage of an organization can be established by entering the network with certain cooptition features as these organizations will take advantage of all efficiency sources and therefore increase their competitiveness and market value. Next, Dagmara Lewicka and Agnieszka Zakrzewska-Bielawska analysed how trust impacts the cooperation and cooptition between various market stakeholders. According to their research, if the level of trust to a particular group of market partners (e.g. suppliers, customers and other non-competitive partners) increases, the partnership cooperation with particular group is greater, and similarly, if the level of trust in competitors increases, the inclination to cooptition is greater. The authors Łukasz Sułkowski, Robert Seliga and Andrzej Woźniak focused on the complexity of mergers and acquisitions in the specific context of tertiary education. They identified the process of cooptition, cooperation and consolidation of universities in Poland based on their qualitative research. Furthermore, Magdalena Grębosz-Krawczyk and Sławomir Milczarek dealt with the issue of communication between companies and Polish research institutions. The authors strived to establish what expectations the companies have from the research institutions. The results confirmed that interpersonal communication is the most sought-after form of contact between them. It is also demonstrated that the most convenient means of information exchange is electronic media. What is more, Iwona Staniec and Yochanan Shachmurove showed that opportunism is the key obstacle in establishing cooperation regardless of the type of business or the industry it operates in. The authors demonstrated how the perception of the risks influenced the opportunistic approach to cooperation with small- and medium-size technological companies. Meanwhile, Waldemar Glabiszewski, Agata Sudolska, Joanna Górka and Angelika Pańska assessed the extent to which absorption capacity had an impact on the level of innovation in financial companies in Poland. The research confirmed that the ability to make the use of external technologies and the ability to develop existing ones had a positive impact on the level of innovation of the financial companies. Another author, Patrycja Klimas, also highlighted the fact that the proximity in strategic management may be perceived as a significant factor

leveraging effectiveness and performance of both cooperating (or cooperating) organizations and inter-organizational networks. The author stressed the importance of close cooperation and networking and helped the reader appreciate various aspects of such close collaboration. In Part II, Dagmara Wójcik, Patrycja Klimas, Katarzyna Czernek-Marszałek and Patrycja Juszczak also examined the impact of the development of the tourist sector on the cooperation between various other sectors. The authors pointed out that the rapid development of the tourist sector, due to the popularization of the sharing economy, had a positive effect overall. Furthermore, Aleksandra Hauke-Lopes, Krzysztof Fonfara and Milena Ratajczak-Mrozek postulated various causes of conflicts in foreign inter-organizational relationships of multinational enterprises and determined the impact of such conflicts on the functioning of these companies. The authors mentioned the formal and informal tactics that managers employed in order to deal with the conflicts and mitigate their adverse effects. Aleksandra Sus and Michał Organa took up the problem of how the strategy dynamics and the dynamism of inter-organizational network strategies influenced the general development of network systems. The authors conducted a detailed analysis of relations between the strategy dynamics of inter-organizational networks (centralized or decentralized) and network development in the sense of increasing the effectiveness of activities within the considered systems. The last article in Part II was written by Katarzyna Liczmańska-Kopcewicz and Maciej Zastempowski. The article is an analysis of the relationship between a proactive responding to client's needs and the creation of innovative products in the fast-moving consumer goods industry.

In Part III, the contributing authors proposed that the conditions brought by Industry 4.0 make up a specific work and development environment. Here, Cezary Suszyński focused on outlining the main trends in the evolution of a company from the perspective of industrial revolutions to date. He highlighted the challenges and the changes introduced in how the business is done due to Industry 4.0. Afterwards, Mariusz Bratnicki and Wojciech Dyduch described the way our irrational perception of reality has an effect on the strategic decision-making in companies, which in turn determines how the values in organizations are created and captured. Another author, Andrzej Lis, identified new research areas in the context of the management of the development of organizations. Later, Dagna Siuda described the issue of co-creating the value of a brand in social media, whereas Agnieszka Izabela Baruk focused her attention on selected aspects of how the image of an employer is created by employees who are also prosumers. Automation in the context of Industry 4.0 was dealt with by Andrzej Kamiński. The author described an original concept of cooperation between heterogenic information systems in production by means of the integrated platform. The authors, Aldona Glińska-Noweś, Paweł Brzustewicz, Iwona Escher, Yulia Fomina, Barbara Józefowicz, Irina Katunin, Joanna Petrykowska and Dawid Szostek, pointed out in their article that the idea of corporate social responsibility (CSR) is being questioned nowadays, mainly due to its doubtful significance and its alleged lack of implementation in companies. In the authors' view, the basic requirement that needs to be met in order to make CSR work is to engage the workforce in projects that promote sustainable development.

The authors pointed out that such projects have the potential to introduce a positive social change within the organization and bring about many other benefits. Finally, Monika Kulikowska-Pawlak discussed political will in strategic management. The author provided insight into the range of political motivations that support stakeholder management and proposed an integrative model offering the necessary political mechanism for an organization's value creation.

Papers included in this proceedings volume have been written by scientists, researchers and practitioners, and they were presented during the 10th Conference on Management of Organizations' Development (MOD) organized by Department of Management of Lodz University of Technology in Poland. This proceedings volume highlights the complexity and diversity problems of organizations' development in the age of Industry 4.0 and the underlying challenges. It will cover a wide range of key areas from essence, determinants and forms of cooperation and competition, to networks creating and organization managing, and also culture and social problems connected with conditions of Industry 4.0. Combining the newest theory and practice, the book will provide a realistic outlook on the network economy in the age of Industry 4.0 and interdependencies between sectors and within them. That is why the proceedings will be a valuable source of knowledge for researchers in universities and research institutions, graduate students and practitioners in management in both private and public institutions.

Łódź, Poland

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