
**DIGITAL TRANSFORMATION:
CORPORATE COMMUNICATION IN
THE CONTEXT OF INDUSTRY 4.0**

Mehmet KARANFILOĞLU

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FOREWORD

The notion of digital transformation, innovation, and differentiation is among the most dominant paradigms of today's corporate communication strategies and practices. The strategic management of many organizational structures, especially when examined at the scale of organizational communication, brings the need of acting from a rational and development-oriented perspective.

The process of making sense of the environment and creating added value, of individuals and communities at large, changes and develops over time in line with the superior benefits of technology. The scope and functionality of the Industry 4.0 concept has a significant place in terms of showing the stage of this sustainable development has reached today.

The research and writing of this book is the product of a precious effort. For this respected study, I am again proud of my dear classmate and friend, Dr. Mehmet KARANFILOGLU, with whom we share the doctoral journey.

Also, it is a source of pride for me to be a part of the work and witness the meticulousness and effort shown at every stage of the book.

I wish a lifetime of success to my dear friend, who will make an important contribution to the literature with this valuable work.

Özlem COŞAN

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THANKS

The increasing digitization and its benefits have forced us to undergo a mandatory change. As a result, many ways of doing business have changed, and they continue to change. Therefore, the communication disciplines could not remain the same in such a process.

With its increasing number of employees, corporate communication must be a part of this change. The evaluation of the opportunities provided by digitization and their transfer to corporate communication will undoubtedly positively impact all communication processes. Of course, positive and negative effects must be considered together. However, the predominance of positive aspects depends on a good understanding of digitization's benefits and proper use.

The transformation movements that began after Industry 4.0 are digitizing companies and bringing the conditions of the physical world into the digital world. In this context, corporate communication should be repositioned in this new digital world, as the fate of thousands of people working in this field depends on it. I have rewritten some topics I worked on in my doctoral thesis and other studies with this book. I hope readers can create a correct roadmap based on the concepts and findings in the book.

Unfortunately, during the completion of this book, two devastating earthquakes and many aftershocks that deeply shook all of Turkey occurred, causing many people to lose their lives and leaving thousands homeless. I also had a difficult test with my loved ones during these earthquakes. Some of my loved ones and friends passed away. The loss of both Hakan Aksaray (Hakan

Abi) and Furkan Genco was sudden and painful. I will miss both of you very much. Therefore, I dedicate this book to my mother, father, Efe, Aleyna, my wife, my son, my wife's beautiful family, Hakan Abi, and Furkan.

I thank my dear doctoral colleague Özlem Coşan, who has always been by my side, and my sister (billam), who agreed to be part of the preface of this book.

Best regards,

Mehmet KARANFİLOĞLU^{1*}

Istanbul, February 14, 2023.

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INTRODUCTION

Throughout history, people have been captivated by the idea of the future. Many cultures have contemplated what lies ahead, offering various explanations. Predicting the future has been a pleasure for many, with seers, magicians, and oracles offering their insights. While some of their predictions have proven accurate, humanity has often been caught off guard by unexpected outcomes. Despite this, the allure of the future remains, with its mysterious and unknown elements piquing our curiosity. For those aware of their mortality, the desire to make the most of their limited time adds to this curiosity. As a result, the quest to anticipate and understand the future has been a shared fascination for centuries, with various methods used to gain insight.

Industry 4.0 is a transformative revolution that encompasses a multitude of new business processes and has the potential to impact both industrial and social structures profoundly. It combines technologies that have matured over the previous three industrial revolutions, paving the way for a new era of change. As with any change process, Industry 4.0 contains future factors that pique the curiosity of society and its members. Industry 4.0 is shaping the future by transforming industrial structures and introducing new consumer habits and lifestyles. While many expectations for Industry 4.0 are promising, the ongoing transformation makes it difficult to predict its outcome. As a result, various forecasts and expectations for Industry 4.0 make it a highly debated and relevant topic.

The concept of Industry 4.0 was first introduced in 2011, and since then, there has been a surge in research, news coverage, and scientific publications on the topic. Numerous symposiums, summits, panels, and meetings have been organized to discuss Industry 4.0, leading to increased visibility and interest from companies across various industries. Given this widespread interest, it is crucial to examine the implications of Industry 4.0 for companies critically and comprehensively.

The maturation of digitization and global competitive conditions are two key factors that have led to the emergence of Industry 4.0. Digitization, which started with the introduction of the internet and computer technologies, took some time to mature to the point where the technological advancements of Industry 4.0 could be developed. It was not until 2011 that the term Industry 4.0 was coined to describe this fourth industrial revolution.

Additionally, in the face of various global economic challenges, technology was seen as a solution to the problems that many industries were facing. It gave rise to a renewed focus on Industry 4.0, which offers many benefits through the automation and digital transformation of various business processes. For instance, many human-driven processes are now being replaced by autonomous robots and cyber-physical systems that can communicate with one another and be controlled via computers.

These and other technological advancements have led to significant changes in the industrial production process, allowing for more flexibility, speed, and efficiency. Industry 4.0 has enabled businesses to become more agile and responsive to changing market conditions and has created new opportunities for growth and innovation. However, it is essential to note that the adoption of Industry 4.0 technologies requires significant investments in infrastructure, talent, and training, and it may also raise ethical concerns related to the displacement of human workers.

Industry 4.0 comprises various components that comprise the fourth industrial revolution's ecosystem. These components work together to form the foundation of Industry 4.0, enabling new levels of automation, efficiency, and flexibility in industrial production.

One key component of Industry 4.0 is the internet of things (IoT), which connects all devices via the internet, allowing data to be collected through sensors and stored in a large data pool. Algorithms are then used to process this data, transforming it into meaningful information that can be used to control autonomous robots and systems. It enables high-speed and error-free production processes that are impossible with human labor alone.

Other components of Industry 4.0 include augmented reality technologies and simulations, which allow factories to be controlled via computers and accessed from anywhere using cloud computing and supercomputers. Artificial intelligence is also used extensively in many business processes, enabling faster and more creative decision-making, while personalized production allows for a new relationship between production and consumption.

Three-dimensional (3D) printing is another essential component of Industry 4.0, enabling the production of previously impossible or difficult-to-manufacture products. These printers use layering to create three-dimensional products, and they can produce customized designs on a large scale. Finally, cybersecurity measures are also in place to protect digital systems in these processes, ensuring they remain secure and protected from cyber threats.

In summary, Industry 4.0 is a complex ecosystem of various components that work together to drive innovation, flexibility, and efficiency in industrial production. While these components are transforming the industrial landscape, their adoption requires significant investments in infrastructure, talent,

and training, and it also raises ethical concerns related to the displacement of human workers.

From the perspective of a corporate communicator, examining and presenting Industry 4.0 can provide valuable insights that can guide future studies. By delving deeper into the information contained within Industry 4.0, researchers can make it more comprehensive and generalizable, enabling a better understanding of the topic.

There is also a need to conduct similar studies in different countries and regions to benefit communicators worldwide. Given the global impact of Industry 4.0, it is essential to understand its implications for different industries and regions. It will enable communicators to develop effective strategies to communicate the benefits and risks associated with Industry 4.0 to various stakeholders, including employees, customers, and shareholders.

In conclusion, examining Industry 4.0 through the lens of corporate communication can provide essential insights that can guide future studies and benefit communicators worldwide. By conducting research in different countries and regions, we can better understand the implications of Industry 4.0, helping companies navigate the challenges and opportunities associated with this transformative revolution.