

# TWO FACES OF DIGITAL TRANSFORMATION

Technological Opportunities  
versus Social Threats



BÜLENT  
AKKAYA

AKIF  
TABAK

Editors

# **Two Faces of Digital Transformation**

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# Two Faces of Digital Transformation: Technological Opportunities versus Social Threats

EDITED BY

**BÜLENT AKKAYA**

*Manisa Celal Bayar University, Turkey*

AND

**AKIF TABAK**

*Izmir Katip Celebi University, Turkey*



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INVESTOR IN PEOPLE

*This book is dedicated to two kind-hearted teenagers, İbrahim and Ebahir Akkaya,  
who have always supported me all my life.*

—Bülent Akkaya

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# Table of Contents

List of Contributors	ix
Preface	xi
Acknowledgements	xiii
<b>Chapter 1 Digital Transformation: Threats and Opportunities for Social Entrepreneurship</b>	<b>1</b>
<i>Iza Gigauri, Simona-Andreea Apostu and Catalin Popescu</i>	
<b>Chapter 2 Impact of Digitalization on Social Entrepreneurship</b>	<b>19</b>
<i>Adeena Alam Khanzada, Ali Hasnain, Sanam Narejo, Bhawani Shankar Chowdhry and Lubna Laxmi</i>	
<b>Chapter 3 Digitalization and Generation Z: Advantages and Disadvantages of Digitalization</b>	<b>31</b>
<i>Gülcan Olçum and Asena Altın Gülova</i>	
<b>Chapter 4 Digitalization in Public Administration</b>	<b>47</b>
<i>Gülin Göksan</i>	
<b>Chapter 5 Positive Effects of Digital Transformation on Business Stakeholders in Turkey</b>	<b>59</b>
<i>Huriye Akpınar</i>	
<b>Chapter 6 Digitalization in Organizations With a Dystopic Point of View</b>	<b>75</b>
<i>Melike Çirak</i>	

<b>Chapter 7 Artificial Intelligence and Digital Transformation in Healthcare Management</b>	87
<i>Demet Topal Koç and Yeliz Mercan</i>	
<b>Chapter 8 Technostress, Career Concerns and Organizational Citizenship Behaviour in South Africa's Professional Services Workspace</b>	101
<i>Simoné Anastasia Appolis and John Kolawole Aderibigbe</i>	
<b>Chapter 9 Has Digitalization had an Impact on Social Entrepreneurship Financing?</b>	119
<i>Yakup Erciyes</i>	
<b>Chapter 10 Smart Factory in the Context of Digital Transformation</b>	129
<i>Deniz Şahin Samaraz</i>	
<b>Chapter 11 Air Transportation Management and the Effects of Digital Transformation Strategies</b>	141
<i>Sabiha Annaç Göv</i>	
<b>Chapter 12 Antecedents to Perceived Usefulness of M-Commerce: An Application of Technology Acceptance Model</b>	157
<i>Kittisak Jermsittiparsert, Navaporn Wongsuwan and Bülent Akkaya</i>	
<b>Chapter 13 Subjective Norms and Behavioural Intention of E-Banking Adoption: Mediating Role of Perceived Usefulness</b>	177
<i>Kittisak Jermsittiparsert, Navaporn Wongsuwan and Bülent Akkaya</i>	
Index	195

## List of Contributors

<i>John Kolawole Aderibigbe</i>	University of the Western Cape, South Africa
<i>Bülent Akkaya</i>	Manisa Celal Bayar University, Turkey
<i>Huriye Akpınar</i>	Graduate School of Social Sciences, Turkey
<i>Sabiha Annaç Göv</i>	Gaziantep University, Turkey
<i>Simona-Andreea Apostu</i>	Bucharest University of Economic Studies, Romania
<i>Simoné Anastasia Appolis</i>	University of the Western Cape, South Africa
<i>Bhawani Shankar Chowdhry</i>	Mehran University of Engineering and Technology, Pakistan
<i>Melike Çirak</i>	Izmir Katip Celebi University, Turkey
<i>Yakup Erciyas</i>	Izmir Katip Celebi University, Turkey
<i>Iza Gigauri</i>	Saint Andrew the First-Called Georgian University, Georgia
<i>Gülin Göksan</i>	Izmir Katip Celebi University, Turkey
<i>Asena Altin Gülöva</i>	Manisa Celal Bayar University, Turkey
<i>Ali Hasnain</i>	Mehran University of Engineering and Technology, Pakistan
<i>Kittisak Jernsittiparsert</i>	University of City Island, Cyprus
<i>Adeena Alam Khanzada</i>	University of Sindh, Pakistan
<i>Demet Topal Koç</i>	Kirklareli University, Turkey
<i>Lubna Laxmi</i>	University of Limerick, Ireland
<i>Yeliz Mercan</i>	Kirklareli University, Turkey
<i>Sanam Narejo</i>	Mehran University of Engineering and Technology, Pakistan
<i>Gülcan Ölçüm</i>	Izmir Katip Celebi University, Turkey

*x List of Contributors*

*Catalin Popescu*

Petroleum-Gas University of Ploiesti,  
Romania

*Deniz Şahin Samaraz*

Izmir Katip Celebi University, Turkey

*Navaporn Wongsuwan*

Sukhothai Thammathirat Open University,  
Thailand

# Preface

The fact is that the rapid pace of penetration of digital technologies into all spheres of life of modern society entails a change in the usual models of the economic and social structure of societies. These changes entail a change in the institutions of power and society, industrial and social culture and communications. Digitalization also affects the person himself, transforming his worldview, changing values, culture of behaviour, ways of socialization and identification. Unfortunately, modern society's understanding of the ongoing global changes associated with the development of digitalization of societies, as well as its various socio-economic consequences and impact on various aspects of human life, lags far behind the pace of changes. Therefore, it makes sense to discuss not only about the digital economy and digital production/service but also about the digital community, where many new social phenomena, new processes and new challenges arise as a result of the use of modern digital technologies. Today, the main factors for the emergence of social problems arising from digital transformation are associated with the fourth industrial revolution.

Nowadays, it is impossible to imagine a business without technology. The fourth industrial revolution has undoubtedly provided many unimaginable conveniences and business opportunities to human life. The world was already moving towards industry 4.0, but the global pandemic of COVID-19 has really rushed things up. In different aspects of life in general and business in particular, optimized computerization, digitalization and artificial intelligence are being used with never-seen-before speed and impact. Most industries are becoming 'smarter' and more tech-driven. New ways of working, such as Agile and DevOps, are introduced, leading to new risks. These risks do not restrict themselves to the technology domain; new challenges arise by teams working together in a distributed manner to deliver high-paced value at a higher pace by reducing the time to market. We see smart cities emerge, and society is taking a more holistic view of the regulation of such high-tech developments. For policymakers and business leaders, technology is no longer a domain that is shrouded in mystery; instead, it is an essential business discipline that is here to stay.

Didn't this revolution have any social and behavioural threats?

Does a worldwide dilemma arise for social threats due to digital transformation? To answer those questions, the book aims to examine the opportunities created by the fourth industrial revolution as well as the threats it poses from a social/managerial/behavioural perspective. Most organizations already probe for new opportunities and threats on a periodic base. We need strategy that

is context-aware and malleable, with a strong focus on a bigger vision or mission. Therefore, besides taking advantage of the opportunities created by the fourth industrial revolution, we must also consider the social threats it poses.

In conclusion, this book is a scholarly referenced work of original and previously unpublished research manuscripts that provide cutting-edge, multidisciplinary research and expert insights on the use of digital transformation in business settings and the social threats that it brings. The book will go over the hidden risks to society that have arisen as a result of the digital transformation's expansion. The book discusses the major issues that digitization may bring about in terms of social life threats. Among these threats is the possibility that as the world continues to undergo a digital revolution, more and more social threats will emerge. It is possible that future workers/employees/gen Z discharged as a result of digitization may become not merely jobless but also inoperable.

The editors have put together a list of digital transformation opportunities versus social threats occurring in today's hyper-dynamic business environment. The book, through a series of carefully researched chapters, not only explains how Industry 4.0 arrived in its conclusions but also suggests that the right approach to the ongoing development of the business environment is to welcome Society 5.0.

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*Editors*  
Bülent Akkaya  
Akif Tabak

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## Chapter 1

# Digital Transformation: Threats and Opportunities for Social Entrepreneurship

*Iza Gigauri, Simona-Andreea Apostu and Catalin Popescu*

### Abstract

The expansion of new technologies has induced the digital revolution and paved the way for an innovation-based economy. Digitalization, while blurring real and virtual environments, acts as an incentive for innovation and has been regarded as a tool to tackle the crisis. Its particular acceleration was caused by the lockdown regulations due to the COVID-19 pandemic. Social entrepreneurship searches for innovative methods, tools and models to solve pressing social problems. The concept suggests applying business models for implementing social missions. Revenue generated from commercial activities is spent to solve social challenges caused by market imperfection, government inefficiency, disasters, pandemics, wars and economic crises. Advancing technologies, on the one hand, present opportunities for social enterprises and, on the other hand, involve risks to employment, data protection, transformed business model and strategies and changes in society's lifestyle and impose costly digital technologies to be adopted. Social entrepreneurs can create social value by using digital technologies that allow them to reach remote customers, investors or beneficiaries overcoming geographical boundaries or time differences. Yet digitalization can pose a threat to existing jobs as they become redundant; it transforms them or gives rise to new jobs while demanding technological skills and digital literacy. Moreover, enhanced digitalization and effective governmental actions set the stage for the decline of social business. The chapter explores the influence of digitalization on social entrepreneurship and discusses the potential of digital transformation for social enterprises. It examines the risks and opportunities that bring accelerated digitalization to social entrepreneurship.

*Keywords:* Digitalization; digital; social entrepreneurship; DSE; risk; entrepreneur; social enterprise; technologies

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Two Faces of Digital Transformation, 1–17

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## 1. Introduction

The expansion of information and communication technologies (ICTs) enabling instant communication not only between people but also between machines and people with machines completely changed our society and reshaped the modern age. Moreover, the eminence of artificial intelligence (AI), blockchains, virtual and augmented realities, automation, robotization and other advancements has a significant influence on economic interactions. These developments have reshaped industries creating new opportunities and threatening traditional business operations, rising new jobs and declining regular services. The digital revolution has brought about a completely new way of collecting and processing information, created novel communication channels and automation and robotization are expected to replace humans through algorithms. At the same time, the digital age provides novel possibilities to entrepreneurs as changing economic systems towards a digital economy based on innovation offer new business models leaving less room for fear or threat (Skala, 2019). Businesses can open up limitless possibilities to understand customer needs, wants and behaviours based on which tailored products and services are developed. Consequently, entrepreneurship has to develop in the digital direction to survive.

Social entrepreneurship is a growing phenomenon attracting more entrepreneurs and young people, who have social and environmental concerns and want to serve as change agents for positive transformation, under circumstances when the gap between wealth and poverty is deepening (GEM, 2021; Guerrero, Amorós, & Urbano, 2019; Kabir, 2019). Although the correlation between entrepreneurship and economic growth is still widely discussed, this impact is mostly indirect through creating employment or developing innovations. Therefore, governments around the globe tend to encourage entrepreneurial initiatives as a source of creating employment, technology advancement, economic development and societal progress (Kabir, 2019).

Social entrepreneurship is not beneficial for countries with effective governments. If governments fulfil social needs and digitalization is well established, there is no need for social entrepreneurs (Torres & Augusto, 2020). Enhanced digitalization and effective governmental actions set the stage for the decline of social entrepreneurship. Moreover, adopting new technologies and accessing data are possible for large companies, leaving small enterprises behind. Under such conditions, social enterprises can survive while transforming into digital enterprises with social missions. By the same token, social entrepreneurs can spread digital literacy and benefit from new technological facilities. Social entrepreneurship is under the influence of various forces in a given country (Kiss, Krátki, & Deme, 2021). Political, legal, economic and technological factors affect social enterprises and shape their decisions. Consequently, technological infrastructure can be a possibility or obstacle.

Given that digitalization, as a complex phenomenon, has various dimensions (Akkaya, Guah, Jermittiparsert, Bulinska-Stangrecka, & Koçyiğit, 2022; Cide Demir, 2021), its impact on the social and economic spheres must be researched. Studies examining the consequences of digitalization on social entrepreneurship

are limited. Yet digitalization brings about rapid transformation; it carries important implications for entrepreneurship inspiring scholars to investigate possible outcomes of this process (Kraus, Palmer, Kailer, Kallinger, & Spitzer, 2019).

The objective of this chapter is to illustrate the influence of digitalization on social entrepreneurship. It examines the favourable and unfavourable impacts of digital transformation on social enterprises. The chapter has the following structure. After the Introduction, the basic concept of social entrepreneurship is discussed through the lens of innovation and entrepreneurial spirit. Next, digitalization and new technologies are reviewed in light of the digital age. Further, the digitalization effect on social enterprises is analyzed and digital social entrepreneurship (DSE) is described. Ultimately, conclusions, limitations and proposed research avenues are offered.

## **2. The Rise of Social Entrepreneurship**

Social entrepreneurship is a complex concept from both theoretical and practical points of view and hence, has been widely discussed (Saebi, Foss, & Linder, 2019). Historically, entrepreneurship is rooted in Joseph Schumpeter (1942) who linked the concept with innovation describing entrepreneurs as innovators inducing progress. Entrepreneurs strive to change the status quo and increase standards of living. Peter Drucker (1992) assumed that entrepreneurs create new markets or find unique solutions. Earlier studies found that small enterprises created more workplaces in the United States contributing to the economy in this way (Birch, 1987). Although many enterprises have low income and few staff (Shane, 2010), 2–6% of them produce tangible benefits for the economy (OECD, 2015). Prior studies indicated that newly established enterprises create the most employment opportunities in the OECD countries (Calvino, Criscuolo, & Menon, 2016). Entrepreneurship impacts economic growth mainly indirectly (Carree & Thurik, 2008) by innovation and job creation as well as through the contribution of innovation-oriented enterprises (Cumming, Johan, & Zhang, 2014; Dima, 2021). Entrepreneurs find a gap in demand and supply and address it through their enterprises (Kabir, 2019).

Social entrepreneurship is described as a concept which aims to achieve social and economic goals simultaneously while focussing on a social mission. Social entrepreneurship integrates social goals into commercial activities (Choi, Lee, & Hur, 2020; Dees & Anderson, 2003; Zahra & Wright, 2015) in order to satisfy social needs unmet by the business and government sectors (Corner & Ho, 2010). In essence, social entrepreneurship addresses market failure when public, business and non-profit organizations fail (Defourny & Nyssens, 2017). The focal goal of social entrepreneurship is societal change and improving living standards (El Chaarani & Raimi, 2021; Zahra, Newey, & Li, 2014). The twofold purpose of social venture causes the tension between social and economic results (Wry & York, 2017). In fact, social entrepreneurship creates social value while recognizing and employing opportunities, and uses innovation in the value development or

distribution process (Peredo & McLean, 2006). Thus, social entrepreneurship tries to achieve social impact and improve social well-being rather than make a profit for shareholders or owners. Moreover, the generated income through providing goods or services is used for implementing a social mission. Entrepreneurs interpret social business as a means to tackle emerging societal challenges through business actions and innovation (Gigauri, 2022; Witkamp, Raven, & Royakkers, 2011). They pursue social objectives and strive to reduce social problems through utilizing business models (Barberá-Tomás, Castelló, De Bakker, & Zietsma, 2019; Bierhoff, 2002) to generate revenue through commercial activities in order to trigger societal change.

A wide range of social problems can be solved through social entrepreneurship, including poverty, hunger, malnutrition, unemployment, inequalities, diseases, clean water shortage, disastrous consequences of wars, economic crisis, deforestation, pollution and environmental degradation, illiteracy and inaccessibility of education, juvenile crime or drug addiction, as well as challenges caused by ineffective governments and market failure. Not only developing but also developed countries face various environmental, health, social and educational problems that need a permanent solution. Social entrepreneurship creates social value through profit-oriented activities. Social enterprises generate revenue to finance social objectives, sustain in the market and expand a business. Thus, the profit is used for social purposes and is not distributed among shareholders or owners, unlike their commercial counterparts who enter into entrepreneurship for profit.

## 2.1 Innovation and Entrepreneurs

Innovation is defined as ‘new or improved products, services, processes, business models’ or solutions (Akkaya & Bagieńska, 2022; Dima, 2021). Moreover, it can be new tools, markets or a combination of existing ones leading to a commercialized invention. In this sense, digital technologies serve as a tool for innovation and entrepreneurial activities (Fernández-Rovira, Álvarez Valdés, Molleví, & Nicolas-Sans, 2021; Sedera, Tan, & Xu, 2022). Innovation represents the main aspect of entrepreneurship and enables enterprises to succeed (Coşkun, Popescu, Şahin Samaraz, Tabak, & Akkaya, 2022; Du, Bhattacharya, & Sen, 2011) under the circumstances of uncertainties, constant changes in customer preferences and increasing competition (Si, Zahra, Wu, & Jeng, 2020).

Innovation is critical for entrepreneurship (Skala, 2019) as innovative entrepreneurs have the ability to identify opportunities and use them (Hysa, Kruja, Rehman, & Laurenti, 2020) while recognizing a gap in the market addressing which they can generate profit (Apostu, Mukli, Panait, Gigauri, & Hysa, 2022). Scholars indicate some common qualities entrepreneurs possess, including innovativeness, risk tolerance, flexibility, adaptability to uncertainties, responsiveness and self-motivation while disrupting existing disequilibrium in order to create new equilibrium (Kabir, 2019). Entrepreneurs recognize opportunities in the situation when others feel uncertain, ambiguous or pessimistic. Earlier studies emphasized

the characteristics and traits of a person who becomes an entrepreneur (Kirzner, 2015; Venkataraman, 2019), as only entrepreneurs can see and utilize such market opportunities. Accordingly, personality traits enable entrepreneurs to behave in an entrepreneurial manner and have appropriate responses to various situations (Caprara & Cervone, 2000; Rauch & Frese, 2000; Zhao & Seibert, 2006). However, recent literature argues that there are neither entrepreneurial genes nor psychological traits responsible for entrepreneurship (Ramoglou, Gartner, & Tsang, 2020), but rather factors such as belief in one's entrepreneurial ability, innovation and opportunity detection skills (Palacios-Marqués, García, Sánchez, & Mari, 2019) and using the abilities to provide social change play a critical role (Farinha, Sebastião, Sampaio, & Lopes, 2020).

Societal problems have emerged for many years; they are already severe and need to be solved or mitigated urgently. However, finding a long-term solution is difficult requiring creativity and an innovative mindset. Moreover, the duality of social and commercial missions of social enterprises creates additional challenges. Although they have two main objectives to create social and economic values simultaneously, social goals are primary. Frequently, social entrepreneurs appear as a result of market failure, when demand is not satisfied by governmental institutions because of limited resources or ineffectiveness and inefficiency, and businesses are not interested due to the low profit. Social entrepreneurs address markets where commercial companies do not see a possibility of profit maximization.

Social entrepreneurs undertake business actions with inventive ideas and ethical beliefs to produce goods or services and thus make a profit, but it is spent on solving social problems. They are committed to finding a solution with their problem-solving skills. Social entrepreneurs have a vision of societal transformation with innovation and creativity using scarce human and financial resources. Thanks to visionary entrepreneurs, social innovation alleviates social problems and changes existing conditions to ameliorate people's lives (Guerrero, Santamaría-Velasco, & Mahto, 2020; Novak, 2021). Innovation is accelerated by new technologies driven by Industry 4.0. The digital economy offers a special environment for entrepreneurial activities while digitalization has been becoming a source of innovativeness. Innovation presents an essential component of entrepreneurship, including social entrepreneurship.

### **3. Digitalization and Technological Advancement**

If twenty years ago notions such as mobile internet, AI or Internet of things (IoT) referred to completely new things, managed by experts but unknown to ordinary people, today these things have acquired an important value in everyday life and represent ordinary things (Comin & Ferrer, 2013). The idea of digitalization was developed especially with the increase in the number of internet connections, access to mobile data and high-speed internet. It is obvious that digitalization is based on technology, and this generates a need for the integration of new technologies in the functioning of society and development at the socio-economic

level. Numerous examples can be listed regarding the impact of digitalization in various fields. Digitalization has changed and will change the automotive industry. Today, the manufacturing lines are served by a network of robots that use the internet and AI. The future of the field promotes autonomous driving and monitoring transport based on car sharing or renting electric scooters, with the aim of reducing the cost of transport and reducing the impact on the environment ([Sustainable Mobility for All, 2017](#), p. 8). Also, top industrial fields related to the production of biochips, biosensors or new materials require infrastructure based on the concept of Smart Manufacturing ([Hallward-Driemeier & Nayyar, 2017](#)). The financial industry has undergone major changes from internet banking to blockchain technologies that allow new ways of financing and corporate participation. Another result of digital technologies is the emergence and development of the virtual currency sector (for example, Bitcoin, Ethereum, Ripple, Litecoin, Dash etc.). In addition, digitalization will also change the way and content of how many of the traditional professions will be carried out. Thus, the medical sector will benefit from e-health applications with a focus mainly on diagnosis, but also on so-called telemedicine, which allows some doctors and surgeons to operate remotely by means of robots. Digital services called Legal Tech are already circulating in the legal sector.

Digitalization has created new opportunities in the education sector through the use of digital platforms. In addition, the possibility of interaction with a virtual teacher able to offer various knowledge, consultancy or simply answers to those interested is foreshadowed (see, for example, the case of Professor Watson). The area of public administration is already well represented by e-administration type applications (such as paying fees and taxes, accessing information of general interest). The cultural sector is also impacted by digital innovations, for example, virtual tours in museums or for certain routes within some localities. Remarkable innovations that will be further developed and that will express top technological levels refer to virtual reality and augmented reality, which is a technology based on the creation of an artificial environment very close to reality for real or imaginary locations. Through this technology, there is the possibility to visit places you have never seen, all from the comfort of your home or personal office. Once connected to the virtual world, you can visit places you haven't visited or can't visit; you can play and have fun in many other ways. Augmented reality allows the user to interact with the created artificial objects, making the distinction between reality and digital. The development of augmented reality was initiated by the game *Pokemon Go*, which involves finding *Pokemon* in the real world through mobile digital devices. Augmented reality is currently used in fields such as advertising, training and maintenance of industrial equipment and machines, or aeronautics.

#### **4. The Impact of Digitalization on Social Enterprises**

The recent lockdown policies, as preventive measures, after the COVID-19 pandemic, forced companies to move online, introducing digitization. However,

digital transformation requires changes in strategies and additional finances to go hand in hand with modern progress. Social enterprises with scarce income can be at risk of bankruptcy and terminating business activities.

Although previous research shows that social entrepreneurs are planning to use advanced technologies, and online platforms, and are, in general, optimistic about future digital opportunities (Gigauri & Bogacz-Wojtanowska, 2022), there still are hidden risks in digitalization to social enterprises. Social enterprises can benefit from accelerated ICT as it allows access to information and knowledge; online payment and transactions are easily available. On the one hand, digitalization can facilitate social entrepreneurs in their efforts to solve socio-economic challenges, but on the other hand, it can cause difficulties in terms of data management, data privacy and other costly measurements. Furthermore, technological applications are often seen as a tool for surveillance and control. Consequently, many people can refrain from using devices or applications to avoid leaving digital footprints.

Social enterprises, founded with the financial aid of donor organizations or governmental grants (Gigauri, Panait, Apostu, & Raimi, 2022), possess insufficient financial revenue to afford advanced technologies and hence, continue working in a traditional way, focussing on handicrafts. The empirical studies revealed that social enterprises need technical assistance to introduce digital opportunities in their business operations (Gigauri & Bogacz-Wojtanowska, 2022) and require additional funds for the development of digital skills for their employees (Gigauri & Djakeli, 2021). Digital infrastructure, necessary for the development of social entrepreneurship, requires investment by state governments to ensure an available and affordable digital ecosystem (Skivko, 2022).

The negative effects of the fourth industrial revolution have not yet been revealed entirely, but researchers predict that digitalization can cause such social problems as social inequality, loss of jobs, rising unemployment and a declining middle class (Prodanov, 2018). Besides, the main threat to digitalization for social entrepreneurship is associated with high costs (Prodanov, 2018). First, social enterprises cannot afford data collection, processing and use due to the costs and necessary infrastructure creation which is expensive. Next, developing digital innovations need sound investment that can rarely be available for social enterprises as they have limited funding opportunities. Further, social enterprises are facing a labour shortage as they have difficulties hiring educated and experienced professionals, especially hi-tech or ICT specialists because they cannot pay them as much as for-profit companies. Predominantly, social entrepreneurship relies on volunteerism and low paying wages. However, such pro-bono help in the technological domain is usually temporary with short-term benefits. Provided that prices for establishing and using technological infrastructure are tremendous, social enterprises can use some technological tools or services, but cannot afford to create them and take advantage of digital technologies (Prodanov, 2018). Furthermore, digital developments force existing businesses to alter their strategies, but new enterprises have also been established due to digital opportunities (Kraus et al., 2019). Scholars suggest that potential benefits of the digital age are portrayed in productivity, efficient allocation of resources and equal opportunities

(Cide Demir, 2021; Skivko, 2022). Literature maintains that digitalization unfolds new opportunities for companies to enter new or international markets, engage in innovation and create innovative and digital products or services, leading to digital entrepreneurship (Rodrigo & Palacios, 2021; Skivko, 2022). Under these conditions, digital entrepreneurship is emerging.

#### ***4.1 The Emergence of Digital Social Entrepreneurship***

Digital entrepreneurship is defined as entrepreneurship in which a traditional enterprise digitizes its operations or some activities and hence, shifts towards selling ‘digital products or services across electronic networks’ (Guthrie, 2014). A traditional business is becoming digital entrepreneurship by doing business in a new, digital way in accordance with the digital age.

Sustainability and digitalization are the two most influential trends of the modern era impacting entrepreneurship and transforming ventures (George, Merrill, & Schillebeeckx, 2021). This condition also makes for a novel perception of socially focussed organizations. In that respect, the concept of social entrepreneurship is also shifting towards digitization with the aim of tackling grand challenges with which contemporary society is struggling. DSE uses online channels to provide products and services to market or create a delivery business. For example, previous research on social enterprises aiming to discover the influence of the COVID-19 pandemic on Georgian social ventures revealed that they began using the internet and established new communication channels to offer goods to customers during the lockdowns (Gigauri & Bogacz-Wojtanowska, 2022). Even social cafes, moving online, switched to delivery services through digital applications.

Thus, social entrepreneurs can elaborate technology-driven solutions. Desa and Kotha (2006) explained that social-tech entrepreneurship aims to find, develop and use solutions to social problems on the basis of technology. According to the research results, DSE can play a facilitator role between digitalization and social value creation (Cide Demir, 2021). DSE is defined as an entrepreneurial business model that combines social values and objectives with digital technologies (Masiero & Ravishankar, 2019). This combination has the capacity to improve social well-being by overcoming the ineffectiveness of the public sector (Torres & Augusto, 2020). DSE presents an approach to transforming enterprises while offering social opportunities (Liu, Chenfang, & Bin, 2020). Masiero and Ravishankar (2019) argue that digital and non-digital opportunities are merged in digital social entrepreneurial activities: while the digital type of activities is implemented through digital technologies, another type encompasses fieldwork with a direct relationship with beneficiaries. This hybrid nature is also accentuated by He, Liu, Phang, and Luo (2022) emphasizing the integration of digital technologies into social entrepreneurship to solve social challenges and meet social demand through the digitization of resources. They claim that economic and social values are effectively combined in this way (He et al., 2022).