DIGITALISATION – 'THE INVISIBLE HAND' OF DIGITALw ECONOMY

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Abstract
This paper explores the way in which digitalisation might be considered the metaphor of 'The Invisible Hand' for the current economic environment, in which the paradigm of economics has been shifted towards a Digital economy and the transition has been accelerated by the crisis determined from the recent COVID-19 pandemic. Therefore, the mainstream of Classical economics has been replaced by digital activities based on the development of digital technologies, both as goods and services, production processes, and infrastructure. As a fast solution for recovering after the difficult period, many businesses have implemented digital technologies in their business models and strategies. Hence, the present paper collects information available from the scientific literature, creating a brief overview of digitalisation, the Digital economy, and the role of digitalisation in developing the Digital economy. Moreover, the metaphor is explained as digitalisation represents the driver for business development, achieving sustainable business strategies, implementing innovative business models for higher revenues, and reshaping the economic environment. The methodology used by the authors is the review of scientific literature relevant to the research, approaching the main ideas exposed, and exploring them for conclusions and further discussions.

Keywords
digitalisation, business development, Digital economy, economic paradigm, digital technologies

JEL Classification
D230, O140, O330

Introduction

Since in the last period, the terms 'digitalisation' and 'Digital economy' have been used frequently to describe the benefits of the modern economic system, this paper aims to show how digitalisation has been a guiding instrument for developing the best system of

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the day-to-day economic activities, both for businesses and consumers. Therefore, we should consider that digitalisation might be the metaphor for 'The Invisible Hand' that helps the economy to adjust and to adapt to different scenarios. This is an important aspect of the economic environment since the beginning of the COVID-19 pandemic shifted the economic paradigm to a more digitalised economy and pushed companies and public authorities to provide more digital services, and to implement the latest digital technologies for continuing their activities.

For proving the reason for their metaphor, the authors used a short analysis of academic literature, relevant to the current topic, and explored the current trends of digitalisation and implementation of digital technologies in business models, for developing a better understanding of the significant role that digitalisation has in the current economic mainstream of Digital economy.

As modern economists interpret Adam Smith's original idea of 'The Invisible Hand' as "*a descriptor of the efficiency results achieved from perfect competition*" (Dupont and Durham, 2021), the current syntagma can be also used as a metaphor for describing the role of digital technologies in the predominant current economic environment in which digitalisation has reshaped the way of doing business, including its supply chain and its markets.

Even if studying the impact of digitalisation on the economy and therefore, the implications of integrating digital technologies into business models is not a new idea, the authors will use the current paper to present how the investments in shifting the paradigm from the Classic economy to the Digital economy will involve higher revenues and will shape an economic environment in which 'The Invisible Hand' of digitalisation helped the economic activities to run smoother and to drive faster business development (Barefoot at al.,2018); and also to overcome a difficult situation such as the COVID-19 pandemic.

Since based on its concept, 'Digital economy' means economic activities based upon digital technology and does not represent either an academic concept, or a commercial one, but a reality that has been prioritized by the public authorities globally (Pinzaru, 2015), the present research is focused on the hypothesis according to which, digitalisation symbolize 'The Invisible Hand' of Digital economy, being the main driver for economic growth and innovative development in the current economic environment.

The present research paper will be conducted based on a concise overview of digitalisation which will offer the basics for understanding the concept of the Digital economy, followed by a summary of digitalisation's role in developing the Digital economy, and the explanation of the metaphor used by the authors. Simultaneously, the results and the conclusions presented in the paper will allow further research and discussions on the topic.

1. Digitalisation – a brief overview

Since COVID-19 had a strong impact on the economic environment globally, many businesses started to consider digitalisation and the implementation of digital technologies as their focus to overcome the state of the current situation, especially when the mainstream shifted to more digital economic activities, considering the social limitations and the closure of businesses in several activity domains (Gregurec et al.,2021).

Digitalisation, in its broad definition, refers to the technical processes of converting traditional manufacturing or paper-based operations to digital operations, increasing the accessibility of information and data-based activities. Therefore, many businesses integrated innovative strategies to implement better business models based on digital technologies, driving the economic environment to embrace emergent technologies in response to the current challenges (Amankwah-Amoah et al., 2021).

Digital technologies and their application in the business environment have been also an important instruments for entrepreneurs to adapt their business models and economic activities by using sustainable ways of producing and selling goods and services.

Recently, in the business environment the trend of implementing the latest digital technologies emerged as an improvement of accessibility of processes and operations, while providing higher efficiency for businesses to incorporate new business models, achieving their sustainability goals, and digital business processes, to follow the new trend of the business environment and the shift in consumers' behaviour and their requirements. But digital technologies have been used for administrative operations as well, proving to entrepreneurs that digitalisation can have an important role in the development of their business model and business strategy (Hendriato, 2021), but also in the study of consumers' behaviour while analysing their attitudes, consumption trends and preferences over the existing digital and non-digital goods and services (Sestino et al., 2020).

As shown in their paper, Ritter and Pedersen (2020), the most important aspect is that digitalisation must be integrated and employed in the business strategy, because otherwise it might represent only costs with no returns in investments, considering that implementing digital technologies requires transition costs. Therefore, the modern technologies must be integrated into businesses' processes and activities for developing value propositions and value demonstrations.

Because a sustainable business strategy is nowadays based on digitalisation and the implementation of the latest digital technologies, the efficiency of business activities and products' quality will increase since records can be integrated using digital systems and client service can also be increased by making the knowledge sharing more accessible for both parties of the economic activities (Ilcus, 2018).

But there is no doubt that in the global economy, digitalisation also means improving the quality of human life, including consumers and entrepreneurs as well.

2. Digital economy – the current paradigm

Digital economy is a recently emerging phenomenon that has gained momentum lately, in the past several years alongside the emergence of the Internet of Things, with the driving forces of economic and political implications, basing their roots in technological innovation. With the succession of the new information and communication technologies from the late 2000s a new paradigm starts its era. The current paradigm is defined by the shift to the Digital economy with the embed of connected sensors; new end-user devices (such as: smartphones, tablets, laptops, and 3D printers), new digital models (e.g.: digital services, digital platforms, and cloud computing); higher intensity of data usage by spreading big data, algorithmic decision-making, and data analytics; and new automation and digital technologies. The impact has been shortly noticed and understood.

The existing economic sectors, systems and processes has been disrupted; the mainstream has been shifted by a re-shaped consumer behaviour; business models and business interaction have been transformed based on digital technologies, digital services, and digital approaches of the economic activities, including production processes and digital retail markets. All in one, for helping businesses and consumers to be easily reach by one another, and transaction to be facilitated by the existence of electronic marketplaces and electronic methods of payments (Bukht and Heeks, 2017).

As today, Digital economy is broadly defined as a wide range of economic activities based on digitized information and digital knowledge as key factors of production; modern network infrastructure as a general activity space; and information and communications technologies as drivers of productivity and economic growth. Although some of the current researchers also define Digital economy as "*the breadth of high technology developments, business and social transformations, and information-driven changes reflected in the growth of digital business, economic opportunities, and social practices around the world*" (Li et al., 2020, 2).

In addition, in their paper, Li et al. (2020) have highlighted how the distribution of value-added has been reshaped in global chains since now new perspectives and models are required for understanding the production activities and competition patterns that has been recently supported by the economic opportunities and challenges, by shifting the production activities from manufacturing to a more digitalised and technological processes, including the need for more investments in the R&D activities on different levels, such as: product development, production processes, and digital technologies involved in the business model. Those aspects are certainly relevant especially due to the impact of the COVID-19 pandemic which has accelerated structural changes by pushing companies to shift to more digitalised operations and online services.

There are several methods to measure the Digital economy. The most important one as shown in Brynjolfsson's and Collis' paper (2019) on how Digital economy should be measured, is the effective management based on the ability to accurately assess the value of free digital goods and services, and how much the consumers actually do benefit from them, including in the same time the increase in the GDP determined by the production of digital goods and services, because those numbers are mostly used by the policy makers to make decisions about the investments in every fields connected with the Digital economy, from infrastructure and R&D activities to education and cybersecurity.

But even taking all the factors into consideration, there is no single-use measurement of Digital economy since there are still concerns on how to regulate technologies, how much to subsidize digital infrastructure, and how the entrepreneurs do understand the benefits of implementing the digital technologies in their business model owing to the fact that both digital and non-digital goods contributes in equal proportions to the well-being of consumers, therefore to the entrepreneurs' goal to achieve competitive advantages and higher revenues.

3. The role of digitalisation in developing the Digital economy

Since the Digital economy is mostly the latest intensively developing area of the economic environment, the conceptualization of digital transformation is the most efficient while implementing the latest, newest and the most performant digital technologies in business models and business strategies. Hence, the most significant role of digitalisation is helping business to do what their goal is, to achieve economic growth.

The digital transformation, therefore the digitalisation, played an important role in developing the Digital economy, offering a set of opportunities for growth potential for businesses and society in general, allowing businesses and consumers to engage in better relationships by the usage of World Wide Web (including the mobile internet, social networks, and commercial platforms), allowing businesses to identify and to use their resources in implementing digital technologies for facilitating the e-commerce services and digital communication, which represents the key instruments for a sustainable modern business model (Milosevic, Dobrota and Rakocevic, 2018).

Although, the main problem that arose while offering a clearer perspective on the role of digitalisation in developing the Digital economy is that there is no standard definition of Digital economy. Practically, Digital economy represents the digitalisation of the economy, both at corporate, national and global level. Therefore it is quite difficult to generalize one full model of best Digital economy system, but there are several trends that have been highlighted by the scientific literature, such as: using the digital technologies in operating businesses; shifting to digital production where needed; engaging more consumers by integrating social network platforms in business communication; retailing on digital platforms (electronic marketplaces); increasing the competitiveness of companies; boosting labour productivity by remote working;

reduction of production costs by the usage of artificial intelligence and other several actions. This is most important especially since the Digital economy is based on the economic activities between socio-behavioural relations with the use of digital technologies and digitized resources, including the legal framework needed for online services, online transactions (e-payments) and online commerce (e-commerce), due to their popularity among consumers and their convenience for both businesses and consumers (Pypenko and Melnyk, 2021).

Meanwhile, digital technologies and their application in the business environment have been also an important instrument for entrepreneurs to adapt their business models and economic activities by using sustainable inputs to reach customers' requirements. Therefore, firms and companies that are shifting towards digitalisation and digital technologies can gain more competitive advantages by enhancing overall opportunities in productions and logistics, while allowing them to increase their visibility on the current global market established by the e-commerce platforms, on both enterprise-level and global economy, offering to the economic environment the resources needed to create business models that are productive and sustainable, engaging more consumers, and pushing more enterprises to integrate digital technologies in their business model (Chauhan, Parida and Dhir, 2022).

At the same time, there was a reason behind the implementation of the latest digital technologies in Digital economy. Firstly, digitalisation is a driver of economic growth, so it can provide businesses with significant economic shifts and cost reductions, affecting most of business areas, as well as labour market and people's lifestyle. Secondly, the three layers of Digital economy (table no. 1) are efficient mostly while using the digital technologies, as shown by Novikovka and Strogonova (2020) in their work.

Table no. 1. Layers of Digital economy and implications of digitalisation

Layers of Digital economy	**Implications on Digital economy**	**Implications on day-to-day business activities**
A. Markets and sectors of the economy	Responsible for establishing the best interaction among business entities (suppliers, consumers, services)	Shifting the traditional markets to a digital environment, efficient for the agents of the economic markets.
B. Platforms and technologies	Building competencies that are required for the development of segments, sectors, and markets of the economy	Helps businesses to reach the consumers and to identify the consumers' requirements, to supply them with goods and

		services suitable for their needs.
C. Environment	Facilitate development of platforms and technologies while comprising the legal regulations, the IT infrastructure, the human resources, and the cyber security.	Helps businesses and consumers to realize transactions in a safe environment for both entities, and creates the economic relationships between businesses and consumers, while including the legal constraints of the Digital economy.

Source: Adapted from Novikovka and Strogonova (2020).

The use of digital technologies in business activities can be easily observed in the economic environment that has been powerful reshaped in a way that allows businesses and consumers to get in contact easier and faster, providing the opportunity for more transaction to be realized on the outgoing markets. Firstly, as markets have shifted from the traditional on-spot locations to digital environments, the best interaction among economic entities have been established, being more efficient for all the parties involved, including the individuals, businesses, and public authorities. Secondly, as new platforms and technologies have been implemented in the economic environment, businesses can reach the consumers easier, identifying their needs and providing the most suitable goods and services for their requirements, developing business models, business strategies, and better sectors and markets of the economy. Thirdly, as the public authorities got involved in developing the environmental requirements for Digital economy, the legal constraints have been defined and applied in the current economic system, allowing businesses and consumers to conduct their transactions in a safe environment. Finally, the public authorities also need to cover the well-being of state's citizens therefore, the labour force has been instructed with the skills required by the digitalized economic environment, for providing more efficiency, and on the other hand, competitive advantages.

As a result, it can be surely justified the fact that digitalisation and the implementation of digital technologies in the economic environment have reshaped the traditional markets into 'places' in which the access to information, goods and services has been increased and facilitated, using current resources by both suppliers and consumers. Therefore, the exploration of the idea based on the current research has been accomplished, presenting how digitalisation can be the metaphor of 'The Invisible Hand' for the Digital economy, representing the driver for business development, achieving sustainable business

strategies, implementing innovative business models for higher revenues, and reshaping the economic environment.

4. 'The Invisible Hand' – reviewing the metaphor

In the last several years, publications referring to the topic of the "Digital economy" have been trending the scientific literature, being mostly required by the introduction of the term and the importance of it, even if it does not imply any changes in the classical principles of the economic mechanism. Moreover, Digital economy represents the usage of digital technologies in Classical Economics, as essential tools in operating businesses, such as: digitalisation and integration of horizontal and vertical value chains, digitalisation of goods and services, and digital business models and user access. Hence, the main benefit of digital technologies in the economic environment is the increasement of public access to information, covering the main goal of the economic activities: selling and purchasing goods and services (Kolesnikov et al., 2020).

Meanwhile, since the well-being of the population depends on the level of both pace and economic growth, Digital economy and digitalisation should be present in the national economy as well, considering that the well-being can be easier achieved by a sustainable approach on both business environment and economic environment. Therefore, 'The Invisible Hand' of Digital economy should be implemented in the national economy simultaneously, creating an environment in which all the factors are well integrated on the current markets, supporting innovative activities in the field of digital technologies (Bulturbayevich and Jurayevich, 2020), and achieving the maximum satisfaction of needs and desires of all the participants through usage of information and the availability of infrastructure that has been widely developed at an accelerated pace during the last two to three years due to the current global situation of the COVID-19 pandemic (Kobilov et al., 2022).

Moreover, the global infrastructure is reshaping the world system, from individual divisions to full connections and from single nations to linking nodes. Therefore, Digitalisation worked as an interconnection between the states for creating the global infrastructure to link the capital to the code, creating a world beyond individual nations and an integrated global society. At the same time, since almost three quarters of the global trade occurs between over the natural borders of countries, connectivity represents the essential condition of growth for both global and national economies, being a developmental impulse for the world economy, alongside technology and labour productivity (Kornev, Lipen and Zenin, 2020).

At the same time, another important aspect of the Digital economy system is that is also requiring the public authorities to get involved in the implementation of digital technologies at national level. Therefore, the digitalization of the public sector economy must be considered as a main goal for developing the national economy, introducing electronic or digital public services while being aware that by digitalizing the processes,

the quality of the services will be increased, the management costs will be reduced, and the labour productivity might be increased as well if the labour force will be involved in more efficient activities (Gersonskaya, 2020).

Digitalising the national economy is not enough to develop a sustainable economic system based on digital technologies. Meanwhile, a strong attention should be allocated to small businesses as well, being a crucial part of the national economy. For small businesses to function in the Digital economy era, developing a set of digital processes is crucial. The processes in general should refer to marketing, manufacturing, transport, and supply chain activities that can be improved by using the modern technologies to align to the national objectives of digitalisation the business environment (Molotkova et al., 2019). Simultaneously, the use of latest technologies will encourage both the business environment and the national economy to support the economic growth and the well-being of population, leading to lower transaction costs, providing equalization of the market conditions and opportunities for both big corporations and small businesses, and developing the inter-territorial and inter-industry communications' infrastructure (Gromova, Timokhin and Popova, 2020).

The last but not the least important sector, is the social development of a state. This derives directly from the labour force of its citizens, so therefore the public authorities should prioritize the digitalisation process of higher education as well, to provide the best educational services to its citizens and to increase the chances for competitive advantages by forming and training the labour force with the required skills to qualify it for the Digital economy that is outgoing as the current paradigm of the economic environment (Klochkova et al., 2020).

As the main challenge of Digital economy and an economic environment based on digital technologies is to support an innovative economic system that benefits both businesses and society (Ezrachi and Stucke, 2020), and digitalisation is transforming industries and societies fundamentally, providing great opportunities for capturing the new generation of industrialisation from much wider perspectives (Shi et al., 2022), the hypothesis used in this current research is validated. Therefore, the metaphor applies while the digitalisation symbolizes the main driver of economic growth and development in the current Digital economy era, '*forcing'* businesses to adapt the latest digital technologies in their activities for prospering and for gaining more competitive advantages in this environment of innovation and digitization.

Conclusions

But, even if the main goal of the current paper was to highlight the fact that digitalisation for the Digital economy might be compared with 'The Invisible Hand' of Classic Economics, the metaphor was used to create the references that digitalisation represents an easy step to be implemented as an investment with high returns for business models and business strategies. As a brief overlook on the scientific literature, digitalisation has

been the driver for economic growth and business development, helping all the *'players'* on the market. Therefore, even if there is a logical explanation for why the implementation of digital technologies have been properly preferred by entrepreneurs to be involved in their business strategies, the authors have been using this metaphor in the present paper to expose how after the digitalisation of the business strategy, the implementation cost has been shortly recovered and transformed in benefits and economic growth, without any additional substantial direct implications.

Moreover, even if this paper is based on a brief analyse of the former papers written on the related topics, it collects the information universally available about the current trends on digitalisation and Digital economy. There have been limitations to this paper since the scientific literature contains numerous publications on the topic approached by the authors. Therefore, future studies and discussions might be conducted to offer a more detailed perspective on the ideas that have been presented by the authors.

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