

The Digital Economy

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Abstract

The digital economy encompasses economic and social activities that are enabled by platforms such as the internet, mobile and sensor networks, including e-commerce.

The total contribution of the digital economy to country growth is composed of a direct impact on the digital capital growth and indirect one through the diffusion of digital capital into the productive system.

In full swing, the digital economy is a strategic sector of the economy, and its contribution to the growth of states is not negligible. In Romania, digital represents 6% of the created added value, and its weight in the input to growth is higher than that traditional sectors.

Key words: the digital economy, the process of economy's digitalization, digital money, internet, industrial revolution.

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1. Introduction

Information and communication technologies (ICT) or new economy, new technologies and electronic economy, are labels used to describe the digital economy.

But what is the digital economy? What are the sectors it encompasses? What are the theoretical and empirical impacts observed in Romania?

The digital economy is today's vector of growth, productivity, and competitiveness of companies and countries. Its transversal nature impacts all sectors of the economy; it is also at the origin of the new innovative industries and has made others dependent on it.

2. Research methodology

The research has adopted an empirical model. For collecting the data, I used various literature titles and reports regarding the digital economy inside Romania's borders. Sources which had been in the making process of this research can be found in the references section. The main objective of the research is to evaluate the level of Romania's digital economy which can be used for developing new strategies for the country's growth.

3. Theoretical background. The digital economy - Definition and Sectoral Composition

Although the literature is varied, there is no exact definition of the digital economy. Indeed, it is not limited to a particular sector of activity and encompasses very different concepts.

It results from the widespread use of new technologies, of general use first of all the field's information and communication; however, it has become a universal that technology has implications far beyond information and communication technologies (ICTs). It has had an impact on all economic sectors, the growth and productivity of the states without forgetting the business environment, individuals, households and their behavior (Underhill, 2019).

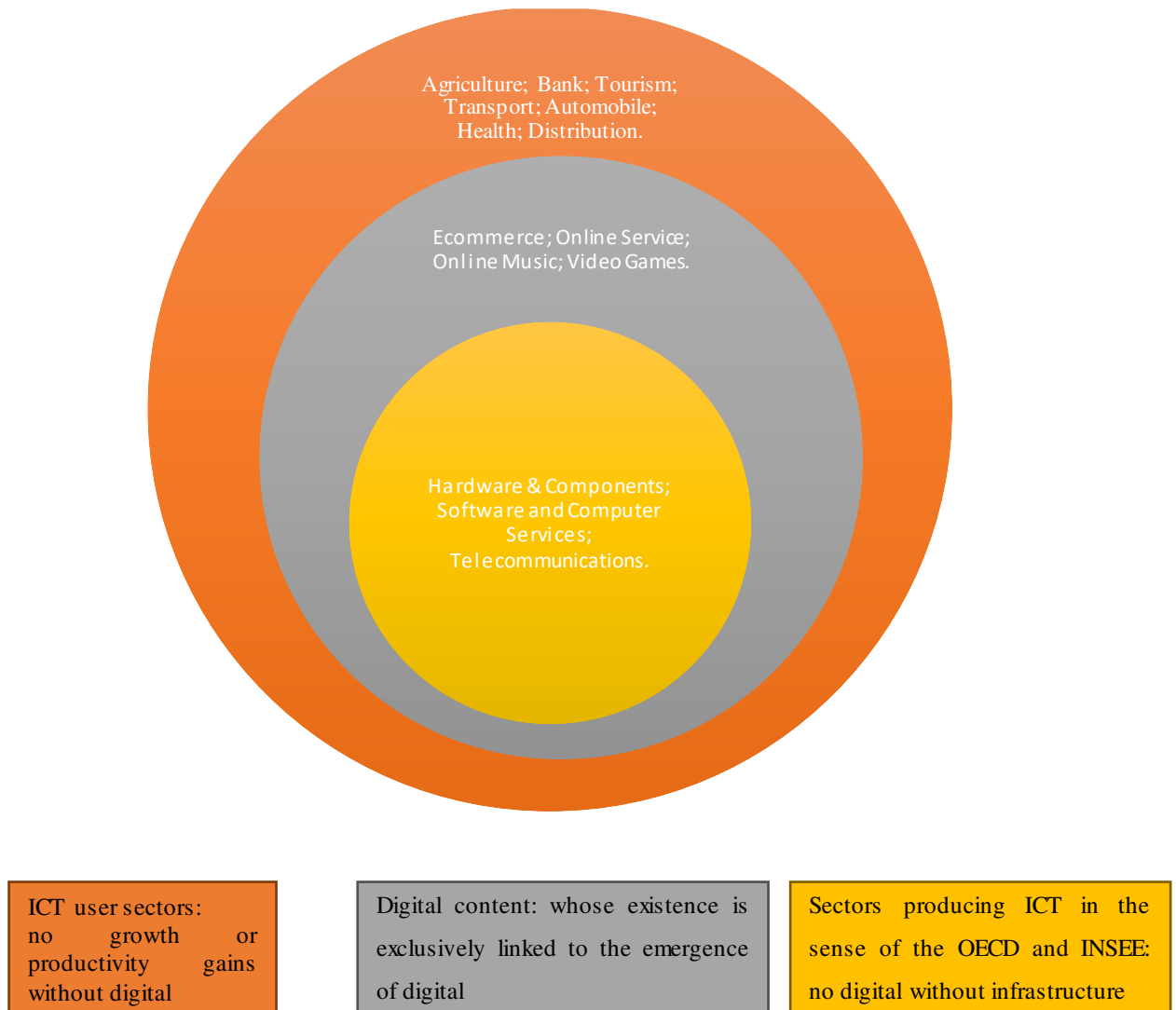
The use of the internet, for example, has brought people together and means by dematerializing the physical distance to create, develop and share their ideas giving rise to new concepts, new contents and consequently to the birth of a new generation of entrepreneurs and markets.

According to the UN (un.org, 2019), the digital economy is a complex of economic activities that are enabled by platforms such as the Internet, mobile and sensor networks, including e-commerce. Its main goal is to enhance efficiency in the production and distribution processes.

Given the difficulty of defining the digital economy and the complexity of quantifying it, INSEE likens it to the ICT-producing sectors. The ICT sector companies that produce goods and services which are supporting the process of economy's digitalization is the transformation of information used or provided in digital data (IT, telecommunications, electronics) (Krikke, 2018).

The transversal nature of the digital economy affects all sectors; it is at the origin of the new innovative industries and has made the existence of other areas dependent on it. It brings together the ICT sector, user sectors and sectors with high digital content; the latter could not exist without these technologies.

Figure no. 1 Composition of the Digital Economy



Source: Data Processing by Carvalho (2018).

4. Theoretical Impacts on Growth

Krikke (2018) estimates that the contribution of the digital economy to economic growth, in general, is twofold. Indeed, there is a direct contribution by increasing digital capital as a factor of production and an indirect contribution generated by the fact that the increase in digital money has a positive effect on the overall productivity gains of the economy.

In terms of direct contribution, the digital economy has a macroeconomic effect linked to the increase in business productive investment, investment in tangible goods: digital equipment and materials; or intangibles: software used in the production process. Therefore, there is a volume effect on growth because an increase in the productive capital leads to a rise in aggregate gross fixed capital formation (AGCF) and consequently in GDP (Boccia&Leonardi, 2018).

Another effect is related to the increase in the productivity of employees. Proper training of the employees in the use of the digital in company increases their productivity, in particular, thanks to the possible automation of the tasks, which lead to a saving of time, to an improvement of processes, to an increase of the exchanges and an optimization of the organization. This reorganization leads to the improvement of labor productivity, a major determinant of economic growth (Tobji et al., 2018).

Concerning the indirect contribution, it is the heavy use of digital technologies that leads to an improvement in the global factor productivity (GFP). This notion of GFP is challenging to quantify because it can not be measured by the increase in the use of factors of production such as capital and labor. The GFP reflects the impact of technical progress on growth and its improvement is partly attributed to the digital material producing sectors but also to the digital innovation user sectors (Ibid.).

Indeed, the substantial productivity gains (direct volume effect) of the producing sectors have led to a fall in price' production and sales of digital goods and services, which has an impact on price dynamics and therefore on inflation. The lower the prices, the more user sectors will be encouraged to invest in digital products to increase their productivity. Overall productivity factor also depends on the wide diffusion of digital innovations throughout the economy (OECD, 2018).

Digital innovation has "network" externalities, and digital changes are widely disseminated and adopted, with more significant benefits (learning effect, economies of scale). Thus their diffusion allows all other economic sectors to gain in innovation and productivity as well (OECD, 2017).

5. The Impacts of the Digital Economy Observed in Romania

In Romania the digital economy is a strategic sector whose weight is substantial and represents a factor of growth. In 2018, the value added of digital brought to Romania GDP amounted to 6%, its contribution to GDP is estimated to be higher than that of specific traditional sectors such as agriculture (2%) and financial services (4.8%).The digital economy and its constituent sectors contributed to the growth of Romania GDP on average between 2010 and 2013 at 13%.

The importance of this sector is driven by household consumption of digital equipment such as smartphones, tablets as well as private investment and public spending in digital infrastructure. According to the report OECD, Romania: in terms of direct employment, digital employs 3.3% of the active population in Romania and creates quasi-equivalent indirect or induced jobs (jobs generated by digital activities in sectors using digital goods and services). In terms of traditional commerce, digital directly or indirectly influences 42 billion euros of market transactions.

For companies, there is a growing weight of B2B exchanges, that is to say of the intercompany trade thanks to the increased use of digital channels. Similarly, for consumers, the widespread use of the internet has a powerful influence on exchanges between individuals (online sales and purchases). Regarding B2B transactions, they represent in Romania around a few billion euros and more than 50% of sales between individuals are made through the internet.

In addition, consumers can gain purchasing power thanks to direct financial gains from lower prices in online commerce and the deflationary pressure it exerts on traditional trade. In addition, savings can be achieved with the development of exchanges of goods and services between individuals.

The gains related to Internet use in Romania are estimated at € 20 per month per user. Indirect earnings are linked to services such as access to free online services (social networks, emails, information), access to a massive variety of products, time savings, and so on. These gains represent an estimated financial gain in Romania of around € 15 billion per year.

Other gains related to the use of digital for consumers are not quantified (online job search, access to education and culture, etc.). Part of these purchasing power gains is reinjected into the economy and translate into revenues of around € 7.7 billion benefiting Romanian companies. Other qualitative gains in digital are due to the adoption and emergence of organizational innovations that aim to increase business performance by improving processes or optimizing the organization. For example, these organizational innovations reduce administrative costs, transaction costs, increase well-being at work and therefore productivity.

6. Conclusions

The rise of the digital economy is associated with a new industrial revolution affecting social, economic, political and cultural spheres.

In addition to the observed and empirical impacts of the digital economy on the growth of countries, it also has a disruptive effect on all sectors of activity and consumer behavior has been altered. The organization of transformed enterprises, notably through the improvement of value chains, production processes, managerial organization and their business model continues to be called into question.

Digital transformation brings many benefits for companies that are ready to embrace change, dematerializing distances, eliminating barriers to entry in some markets, and opening up massive new opportunities for businesses.

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