

ZEL Classification O1,2 , O31**DISRUPTIVE INNOVATIONS AND THEIR IMPACT ON THE GLOBAL ECONOMY****Maia Pisaniuc Ph.D. Associate prof.***Center of Innovation Business Research and Consultation**Academy of Economic Studies of Moldova (ASEM)*

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Abstract. *This article is about the newest and most ingenious innovations in the world economy. Innovations have made their mark in all areas of business, but in the global economy innovation is one of the key drivers of growth, development and prosperity in economic indicators. The impact of disruptive innovations on the global economy can be positive, bringing economic growth, job creation and higher living standards. However, there can also be negative effects, such as disruption of traditional markets and threat to jobs. It is important to manage these innovations wisely and consider social and economic issues to maximise benefits and minimise negative impacts.*

Keywords: *innovations, disruptive innovations, digital technologies, global economy, economic growth.*

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Introduction

Nowadays innovation is almost everywhere. Innovation is a key driver of progress in today's economic world and benefits consumers, businesses and the economy as a whole.

From an economic point of view, innovation refers to the design and implementation of ideas and technologies that improve goods and services or increase production efficiency.

Joseph Alois Schumpeter is one of the most brilliant economists of the 20th century and famous for his theory of dynamic economic growth, known as "creative destruction". Schumpeter pointed out that innovation leads to the creation of new industries and therefore to new jobs and increased prosperity, but that not all companies survive technological change.

Disruptive innovation is defined as innovation that replaces expensive or highly sophisticated goods or services that were previously available to a high-end or more skilled segment of consumers with others that are more affordable and accessible to a wider population. This change disrupts the market by displacing long-term dedicated competitors.

Disruptive innovation refers to the use of technology to make products easier to use or more affordable and available to a larger, untapped market.

In 1997 the term "disruptive innovation" was coined and popularized by Harvard Business School professor Clayton Christensen, who describes it as "a process by which a product or service takes root initially in simple applications at the bottom of the market and then moves relentlessly, luxury, eventually replacing established competitors." ¹

Technology has long been recognised as a disruptive force that has radically changed the nature of work, business and society in general. In the 19th century, the Industrial Revolution changed the world and the way organisations were managed profoundly and permanently. Then came electrification, automobiles and mass production, just to name a few massive technological changes that reshaped the 20th century.

In today's 21st century, powerful digital technologies and the rise of internet connectivity have created a digital knowledge-based economy that has revolutionized to a more significant extent and has had a considerable impact on the profound changes in human history in the way we work, live and, do business every day.

In turn, the professional literature highlights the significant interest in disruptive innovations, which has given rise to a variety of strategic approaches aimed at better understanding the impact of such innovations on firms and industries.

Research methods applied

This article has been developed by consulting scientific papers, global reports, official GIR (Global Innovation Report) documents and research studies from the

¹ Institutul Christensen „[Dilema inovatorului](https://www.christenseninstitute.org/books/the-innovators-dilemma/)” [online] [citat 29.10.2023]. Disponibil: <https://www.christenseninstitute.org/books/the-innovators-dilemma/>

Brookings Institution. The focus was on the impact of disruptive innovations on the global economy, which allowed the authors to identify trends in developments in different periods and in different countries. At the same time, the following methods were used to achieve the objectives of the study: observation, analysis and synthesis. These methods allowed me to analyse concepts, get to the essence of the theories studied and make relevant conclusions.

Results and discussion The phenomenon of disruptive innovation is having a significant impact on the global economy, bringing significant changes to industry, society and the way people live and work. These disruptive innovations have the potential to create new markets and disrupt or disrupt existing markets, causing significant changes in business models and bringing economic benefits and challenges. The most relevant examples in this context are the following:

Economic growth Disruptive innovations can stimulate economic growth by creating entirely new industries, products and markets. They often lead to increased productivity, job creation and expanded economic opportunities. For example, the growth of the internet and e-commerce has transformed the way people shop and do business, contributing to economic growth.

Digital technology. The internet has been a disruptive digital innovation that has changed a fundamental way people communicate, do business and access information, but blockchain technologies and cryptocurrencies (such as Bitcoin) have the potential to transform the financial industry and the way transactions are recorded and managed.

Market disruption, Disruptive innovations can disrupt established markets and industries, offering more profitable or innovative alternatives. This can lead to the decline or even the decline of traditional businesses, which can have a negative impact on those sectors, but ultimately lead to greater efficiency and cost savings for consumers.

Increased competition Disruptive innovations introduce new competitors into traditional markets, forcing existing companies to adapt or face the risk of being overtaken. This increased competition can lead to better products, lower prices and

greater choice for consumers.

Globalisation Disruptive innovations have accelerated the process of globalisation, making it easier for companies to operate on a global scale. E-commerce, digital communication and logistics technologies have made it possible for businesses to reach customers around the world.

Displacing jobs While disruptive innovations can create new jobs, they can also lead to job displacement in traditional industries. For example, automation of manufacturing processes has reduced the need for manual labour in some sectors. This can create economic challenges for the workers and regions affected.

Investment and capital allocation Disruptive innovations can change the way investors allocate capital. Traditional industries may see reduced investment, while emerging technologies and startups receive more funding. This can have significant implications for the flow of capital within the global economy.

Social and environmental impact Some disruptive innovations address pressing social and environmental issues. For example, renewable energy technologies have the potential to reduce greenhouse gas emissions and combat climate change, which has economic and societal implications.

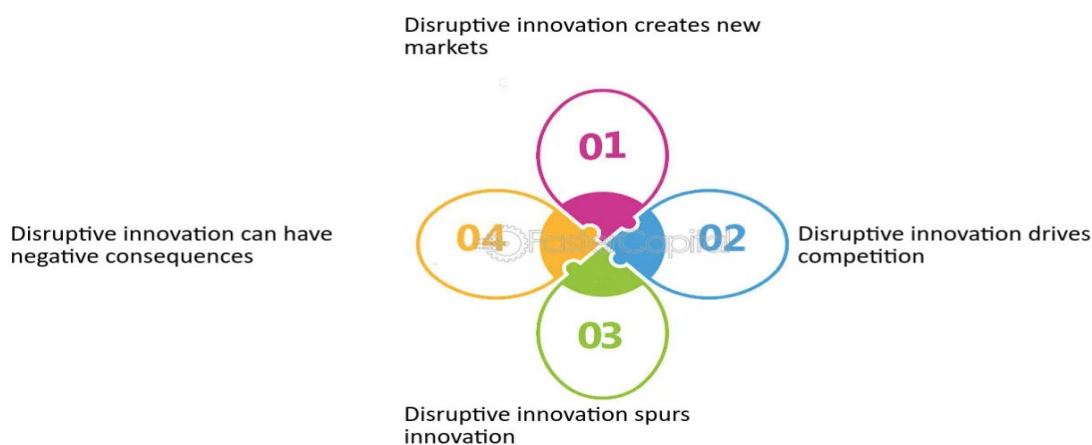


Figure 1 : The role of disruptive innovation in the new economy

Source: <https://fastercapital.com/fr/contenu/Innovation-de-rupture---alimenter-la-nouvelle-economie.htm>

Innovation has already become a must-have for the world's countries, according to the Global Innovation Index 2023 edition which takes the pulse of global

innovation trends against the backdrop of an economic environment full of uncertainty. It reveals this year's ranking of the world's most innovative economies.

Table 1: Ranking of countries by global innovation index 2023

Rang GII	Economy	Score	Income group rank Region rank	Region rank
1.	Switzerland	67.6	1	1
2.	Sweden	64.2	2	2
3.	United States	63.5	3	1
4.	United Kingdom	62.4	4	3
5.	Singapore	61.5	5	1
6.	Finland	61.2	6	4
7.	Netherlands	60.4	7	5
8.	Germany	58.8	8	6
9.	Denmark	58.7	9	7
10.	Republic of Korea	58.6	10	2
60.	Republic of Moldova	30.3	13	35

Source: *elaborated by autor in baza datelor oferite de GII, disponibile:*

https://www.wipo.int/global_innovation_index/en/2023/

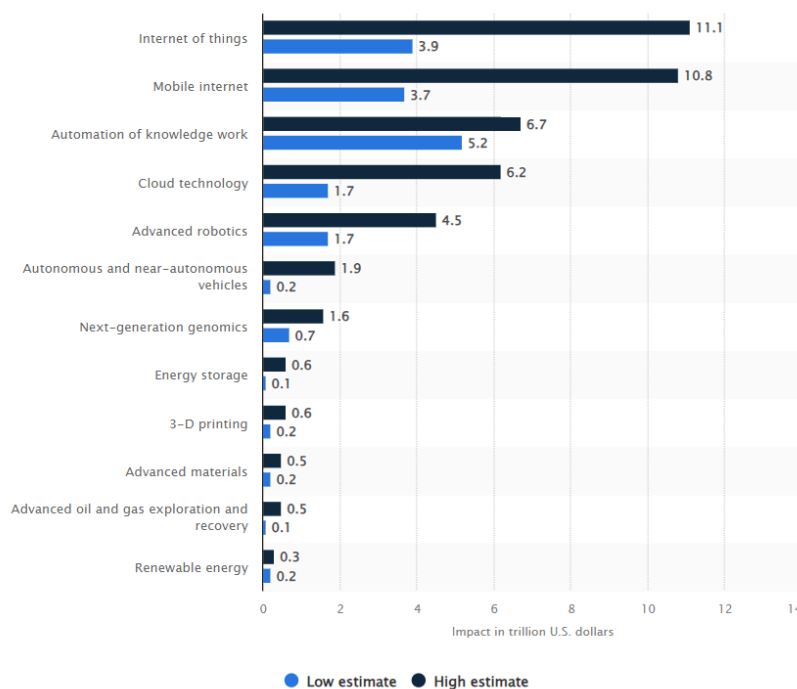


Figure 3: Estimated economic impact of disruptive technologies in 2025 by technology type (in trillions of US dollars)

Source: *https://www.statista.com/statistics/826712/worldwide-disruptive-technologies-economic-impact-forecast/*

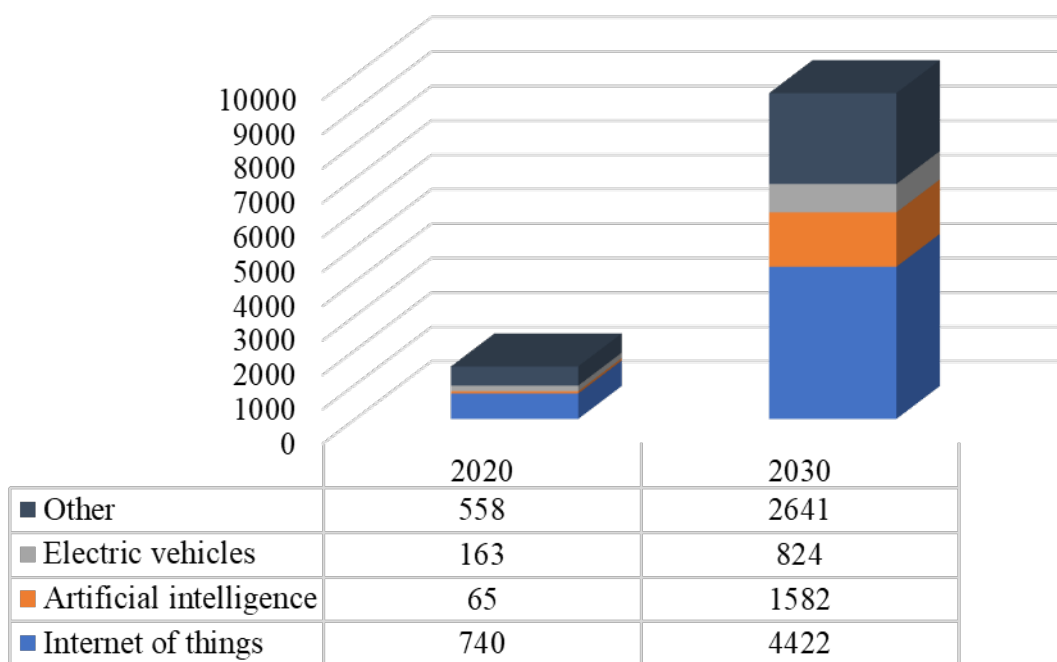


Figura N2. Value of frontier technologies is expected to boom in the 21th centry (billion US)

Source: . Elaborated by autor by data UNCTAD

The statistics show a forecast of the economic impact of disruptive technologies in 2025 by type of technology, with both low and high estimates. By 2025, the economic impact of the Internet of Things is estimated to reach USD 11.1 trillion per year.

The 17 frontier technologies covered in the report such as artificial intelligence, Internet of Things and green hydrogen already represent \$1.5 trillion market, which could grow to over \$9.5 trillion by 2030. Frontier technologies are basically technological advancements that have passed through the research and development (R&D) phase but have not yet been mass marketed nor adopted by the main stream.

Frontier technologies can increase productivity and improve livelihoods. But few developing countries have the capacities needed to take advantage of frontier technologies, which rely on digitalization and connectivity. They include block chain, drones, gene editing, nanotechnology and solar power.

The report assesses countries’ preparedness for frontier technologies. It presents

a “readiness index” ranking 166 countries based on five “building blocks”: ICT deployment, skills, research and development (R&D) activity, industry activity and access to finance.

The index shows that countries in Latin America, the Caribbean and sub-Saharan Africa are the least ready to use, adopt or adapt to frontier technologies and are at risk of missing current technological opportunities.

In general, those most ready are high-income economies, notably the United States, Sweden, Singapore, Switzerland and the Netherlands. Moldova ranks 82nd, down from 2021

The 2023 edition of the Global Innovation Index (GII), published by the World Intellectual Property Organization (WIPO), takes the pulse of global innovation trends against the background of an economic environment fraught with uncertainty. It reveals the ranking of this year’s most innovative economies in the world amongst 132 economies and localizes the top 100 science and technology innovation clusters. For the 13th year in a row, Switzerland is the most innovative economy in 2023 followed by Sweden, the United States, the United Kingdom and Singapore.

Conclusion

Disruptive innovations have had a profound impact on the global economy in recent decades, with long-term implications for markets, organisations and consumers, and their influence is likely to continue to shape the global business landscape in the future.

Disruptive innovations can be the engine of economic growth and healthy competition, opening doors to new opportunities and significant growth in various fields. However, they can also cause major disruptions in industry, sometimes leading to the collapse of traditional companies that fail to adapt to change.

In summary, disruptive innovations are driving transformation across sectors, fundamentally changing the way business and technology work. Addressing them can bring enormous opportunities, but require adaptability and openness to change to seize their potential and remain relevant in a changing market.

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