



The EU digital age

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Abstract: Purpose: The aim of the paper is to raise awareness of the need to develop a human factor which is well familiar with new technologies. At the same time it shows the importance of digitalization for economic acceleration, social well being and maintaining the sustainable ecosystem. Approach: In this work are analyzed the process of digitalization and its positive impact on the social, natural or economic environment. At the same time was explored a EU's experience in digitizing the population, such as programs adopted up to 2027 and some measures which were taken. Findings: The analysis of the EU's digitization programs and their benefits to the economic and social framework reveals that digitalization process is highly to be implemented especially in overpopulated areas. The effect that digitalization has due to simplification and reduction the negative impact of globalization and social modernization are maintaining and improving the environmental, economic situation. Research limitations/implications: This paper shows the EU's experience in digitalization, some solutions and objectives for education of a developed human factor. It outlines the current beneficial changes and future trends in acceleration of the global economy. Practical implications: The results of the work are supported by the value of findings, conclusions and recommendations which can be useful for: Economists, entrepreneurs and are applied to setting out new avenues for development the economies of the States and promotion digitalization in the world. The data also can be useful in making decisions of creation as many digital cities as possible. Originality: The need of implementation of new measures to develop digital and modern spaces, analysis of the changes that will take place after an improvement of the social, environmental and economic situations, also the reference to EU's financial/technical support programs in the Republic of Moldova.

Introduction

In this presentation I will demonstrate the importance of digitalization process for daily life. At the same time I will analyze the impact of new innovation for economic, environmental and ecological success. The aim of this work was to explore the experience of EU and its projects for digitizing the population because of its position as one of the main powers in the world. The digital transformation is one of the EU's priorities. The

European Parliament is helping to shape the policies that will strengthen Europe's capacities in new digital technologies, open new opportunities for businesses and consumers, support the EU's green transitions and help it to reach climate neutrality by 2050, support people's digital skills and training for workers, and help digitalise public services, while ensuring the respect of basic rights and values.

Purpose:

To raise awareness of the need to develop a human factor which is well familiar with new technologies. At the same time this work shows the importance of digitalization for economic acceleration, social well being and maintaining the sustainable ecosystem.

What is digital transformation?

Digital transformation is the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers. It's also a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure. Digital transformation leverages technologies to create value and new services for various stakeholders, innovate and acquire the capabilities to rapidly adapt to changing circumstances.

Objectives of digital transformation are:

- To create digital platforms, the Internet of Things, cloud computing and artificial intelligence are among the technologies affecting.
- To change sectors from transport to energy, agriculture, food, telecommunications, financial services, factory production and health care, and transforming people's lives.
- To optimise production, reduce emissions and waste, boost companies' competitive advantages and bring new services and products to consumers.

Digital age strategy

On 29 January 2020, the European Commission's new work programme was published. Under the second priority - 'A Europe fit for the digital age', the Commission announced its intention to launch an overarching strategy on the subject. The strategy addresses the priorities and challenges related to the digital transformation of the EU's economy and society, while ensuring the approach taken is human, ethical and values-based. It includes three streams of action: technology that works for people, a fair and competitive digital economy and an open, democratic and sustainable society.

Main topics of digitalization**Platform economy**

Online platforms are an important part of the economy and people's lives. They present significant opportunities as marketplaces and are important communication channels. However, there also pose significant challenges.

On 29 October 2019, the Commission published the first annual self-assessment reports by the signatories of the Code of Practice. It presented its final assessment of the implementation and effectiveness of the Code on 10 September 2020, calling for more structured cooperation between platforms and the research community.

On 26 May 2021, the Commission published a revamped guidance to strengthen the Code and announced it will become a co-regulatory instrument within the DSA legislative framework. On 3 December the Commission announced the extension of its Coronavirus disinformation monitoring programme for another six months until June 2022.

Cybersecurity

As digital and physical are increasingly intertwined, new dangers arise, making cybersecurity important for areas ranging from consumer safety online to the normal functioning of hospitals, water and power supplies.

On 22 March 2021 the European Council adopted its conclusions on the cybersecurity strategy with the work of the coming years: Among others the design of a network of operational centers and the common cyber unit, the finalization of the 5G toolbox, the establishment of security standards, the defense of strong encryption, strengthening both the cyber diplomacy toolbox planning its own action plan.

On 15 September 2021, the Commission's president announced an initiative to create an European Cyber Defence Policy, including legislation on common standards under a new European Cyber Resilience Act.

Artificial intelligence and data strategy

People can benefit of AI by improving health care, making cars safer and enabling tailored services. It can improve production processes and bring a competitive advantage to European businesses, including in sectors where EU's companies already enjoy strong positions, such as the green and circular economy, machinery, farming and tourism.

Digital skills and education

The Covid-19 pandemic has demonstrated how important digital skills are for work and interactions but has also accentuated the digital skills gap and the need to increase digital education. The Parliament wants the European skills agenda to ensure people and businesses can take full advantage of technological advancements.

Over the past two years, efforts to curb the outbreak of COVID-19 led to the closure of schools and campuses prompting a shift to emergency modes of digital education.

In May 2021, the Council of the EU adopted conclusions on equity and inclusion in education and training to promote educational success for all.

On 29 November 2021 the Council of Education, Youth, Culture and Sport Council adopted a recommendation on blended learning approaches for high-quality and inclusive primary and secondary education with measures to respond to the crisis and more long-term actions.

Europe digital decade

On 9 March 2021, the European Commission presented a vision and avenues for Europe's digital transformation by 2030. The Digital Decade Community proposes ambitious targets in the area of digital skills, digital infrastructures, digital business and digital public services to empower people and businesses to seize a human-centred, sustainable and more prosperous future in a digitally sovereign Europe. This can only be achieved through close cooperation and coordination between the Commission, Member States, and public and private stakeholders.

That will be based on:

- **Digital infrastructure**

Europe will only achieve digital leadership by building it on secure and performant sustainable digital infrastructures for connectivity, microelectronics and data processing. A strong foundation for digital technology will enable innovation and support our industry's competitive edge.

- **Digital business**

The digital transformation of businesses will depend on their ability to adopt new technologies rapidly and across the board, including in industrial and service ecosystems that are lagging. This will enable more efficient resource use, boost material productivity, and reduce vulnerability to supply shocks. SMEs play a central role in this process, not only because they represent the bulk of EU companies, but also because they are a critical source of innovation. A truly functioning single market should create favourable conditions for digital take-up, disruptive innovation, rapid-growth and scale-up.

- **Multi-Country Plan**

Achieving the Digital objectives requires scaling up EU's digital capacities and strengthening critical infrastructures linked to EU's digital sovereignty. To meet this challenge, the Commission introduces a new type of plan – Multi-Country Projects – with the aim to mobilise and combine investments from the EU budget, Member States and the private sector, building on the Recovery and Resilience Facility and other EU funding. Such Multi-Country projects can create an impact that no single entity could achieve on its own, reduce digital divides within and between Member States, and support an interconnected, interoperable and secure Single Market.

These projects could combine investments from the EU's budget, including from the Recovery and Resilience Facility, from Member States, and the private sector address gaps in the identified critical capacities of the EU

Multi-country projects:

- **5G OR 6G**

The Commission adopted a 5G action plan for Europe in 2016 to ensure the early deployment of 5G infrastructure across Europe. The objective of the action plan was to start launching 5G services in all Member States by end 2020 at the latest. Following this, it suggests a rapid build-up to ensure uninterrupted 5G coverage in urban areas and along main transport paths by 2025.

To monitor the progress of the 5G Action Plan and the Digital Decade strategy, the Commission is supporting the European 5G Observatory. The Observatory is a monitoring tool covering major market developments in Europe in a global context. It also reports on preparatory actions taken by Member States such as spectrum auctions and national 5G strategies. Also, 5G technology and standards will evolve over the next few years as deployment advances. Research and Innovation (R&I) initiatives on 6G technologies are now starting around the world, with the first products and infrastructures expected for the end of this decade.

- **Digital public services and environments**

The Commission is using digital technologies to improve public services and develop smart cities. Smart public services, also known as digital public services or eGovernment, refer to the use of technology to provide services to citizens at local, regional and national levels. They bring many opportunities to both citizens and businesses: students can apply to study abroad, citizens can open bank accounts online, and workers can file taxes with the click of a button.

The EU is working to help public administrations across Europe to make the change to digital so all citizens can enjoy the benefits of smart public services during the Digital Decade. It focuses on reducing barriers to public services and ensuring they are accessible across borders.

- **Blockchain technology**

Blockchain technology allows people and organisations who may not know or trust each other

to collectively agree on and permanently record information without third-party authority. By creating trust in data in ways that were not possible before, blockchain has the potential to revolutionise how we share information and carry out transactions online.

- **European Digital Innovation Hubs**

European Digital Innovation Hubs will function as one-stop shops that help companies dynamically respond to digital challenges and become more competitive.

By providing access to technical expertise and experimentation as well as the possibility to test before investing, EDIHs help companies improve business/production processes, products, or services using digital technologies. They also provide innovative services, such as financing advice, training, and skills development that are needed for a successful digital transformation. Environmental issues are also taken into account, in particular with regard to energy consumption and low carbon emissions. European Digital Innovation Hubs will have both local and European functions. EU funding will be made available for hubs that are already (or will be) supported by their Member States (or regions), in order to increase the impact of public funding. The Digital Europe Programme will increase the capacities of the selected hubs to cover activities with a clear European added value, based on networking the hubs and promoting the transfer of expertise. Member States have an essential role in the selection process of the EDIHs; the initial network of EDIHs will be established from a list of hubs designated by the Member States.

Global partnership

The EU will promote its human-centred digital agenda on the global stage and promote alignment or convergence with EU norms and standards. It will also ensure the security and resilience of its digital supply chains and deliver global solutions. These will be achieved by

- setting a toolbox combining regulatory cooperation, addressing capacity building and skills, investment in international cooperation and research partnerships
- combining EU internal investments and external cooperation instruments
- investing in improved connectivity with the EU's partners, for example through a possible Digital Connectivity Fund

Digitalization for ecology

The (non-energy) environmental opportunities arising from digitalisation can play an important role in relation circular economy, especially with respect to tackling the issue of electronic waste. Most importantly, technological advancement plays a role in better collection and subsequent recycling of electronic waste and the reuse of the materials used.

Furthermore, Digital technologies may help to alleviate pressures on the natural environment and biodiversity in many respects. ICT-enabled solutions help monitor biodiversity and ecosystem services.

With regards to pollution reduction, non-energy environmental opportunities can also be relevant, especially when addressing reduction of air pollution. The types of technologies most significant in this respect are artificial intelligence and blockchain.

Digitalization for economy

All economists agree that digital technologies will become increasingly important for production processes in the future. It can therefore be assumed that production processes will become increasingly capital- and technology-intensive over time – not only in developed economies, but worldwide.

The increasing capital and technology intensity of production has an impact on the international competitiveness of all countries in the world.

In the future, the international competitiveness of individual economies will depend crucially on how

quickly digital technologies are used in production processes. This digital transformation in turn depends on whether a country has the necessary resources for this transformation.

Digitalization for society

Digital transformation is generating a fierce debate among policy-makers, economists and industry leaders about its societal impact. As digitalization disrupts society ever more profoundly, concern is growing about how it is affecting issues such as jobs, wages, inequality, health, resource efficiency and security.

Digital cities

Digital solutions are broad and include approaches to smart urban mobility, energy efficiency, sustainable housing, digital public services, and civic-led governance. Large-scale uptake and upscale of these solutions are crucial to help our cities and communities meet their climate targets and reduce their environmental footprint, while fostering citizen participation and bringing prosperity to all types of business, including SMEs and start-ups.

The importance of digital cities:

Cities and communities are ideal real-life, large-scale testing grounds for digital solutions and can act as urban-living labs. Cities can lead stakeholder participation and ensure that the local community is actively involved in creating solutions. Open innovation, through which local stakeholders cooperate and take ownership of the agreed solutions, is vital for a successful digital transformation in the EU. With the help of digital cities local governments will support practices and initiatives that ensure a better use and management of data, transparency and the use of unbiased algorithms to improve quality of life and digital rights in cities and communities.

New innovation in digital cities

- **Smart AgriFood**

Smart Farming aims to optimise the production in farms by using the most modern means in a sustainable way, thereby increasing the production and delivering the best products in terms of quality while maximizing the return. It makes use of a wide range of technologies including IoT sensors, wearables, GPS services, UAVs, robots and drones operating in the field which provide real-time data to systems helping to monitor the production line and support decisions. This enables less waste and maximum efficiency in operations. FIWARE, as an Open Source Platform, has developed a standard way to develop and integrate solutions for Smart Agrifood

It will be based on:

Open source means work with no licenses on platform components and enabling the contribution from multiple organizations.

Standard based enables an open and competitive marketplace of compatible farm management systems and vertical smart farming solutions. Also, it means a lower cost to achieve interoperability of vertical solutions or their integration with farm management systems and lower costs for integration with multiple IoT protocols, farm machines, robots, drones.

Flexibility is based on adding platform components parallel to business needs and an ability to add innovative features: blockchain-based traceability, open data publication, monetization of data.

Security means Quality Assurance testing on every component, designed to get the most out of the cloud and scale on demand and enabling to define or enforce compliance with data access control policies.

- **Smart ECOSystem**

What was once a direct value chain is now

transforming itself into complex ecosystems. Consumers are becoming prosumers and supply and demand are optimized in real time and at a very granular level. The need for flexibility has grown notably with the innovations of renewable energy resources, batteries, power electronics, electric mobility, blockchain, and rapid digitalization.

In my opinion digitalization process is one of transitional factor of the society from an old thinker to an efficient decision maker. Technological transition is important not only for making our life easier, but for relaunch State's economy, for monitories environmental challenge and for bigger success in our daily life. Robotics in manufacturing opens many doors — new career paths for employees, economic gains, business growth opportunities — but it is a business network that takes your innovation and success beyond your company walls.

Modern technologies create the opportunity to multiply different ways to preserve the cultural heritage and legacy for the future generations.

Especially now digital technologies are the key factor which can connect people. In COVID-19 Era online life has become more developed and each of us have to perform his digital skills for being at the same step with everyone.

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