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**Article**

## Digital transformation in the context of European Union's green deal

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## **Digital Transformation in the Context of European Union's Green Deal**

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The European Union currently faces several economic, social, and environmental challenges. Our future depends on a transition from a linear economy toward a circular/green economy. It is currently one of the most important priorities in the EU and a major preoccupation for policy makers, industry and academia.

We are witnessing a transformation of today's society toward an increasingly digital society; this trend is called Industry 4.0 and more broadly Society 5.0. Both concepts have one thing in common, that is smart technologies, which is predicted to exponentially increase in market value and scope with time. These technologies have the potential to completely take over all of production through interconnected systems, also known as Internet of Things/Cyber-physical systems, in turn eliminating the need for human monitoring/intervention in tasks through machine learning/artificial intelligence algorithms.

The EU Member States' ambitious commitment to become climate-neutral by 2050 requires transformation in all economic sectors and entails important social changes. In achieving this goal, digitalization will play an essential enabling and catalytic role.

Policy and decision makers are looking at the potential of smart technologies to help contribute to a green economy. Over 95% of solid waste comes from industry, which means that a sustainable future needs to see a revolution in industry, with better resource and waste management. By reducing waste and circulating it through the supply chain and value network, our global footprint on the environment can be significantly reduced. Green economy smart technology applications have already saved companies millions of euros in the past decade and it is estimated that €700 billion can be saved per year worldwide, if initiatives are funded to circulate materials instead of throwing them away. This can help both grow the industry and reduce the negative side effects of the industry on the environment.

For sustainable economic development and social cohesion, in addition to technological advancement, social transformation is also required. Further development of digital technologies will influence and be influenced by public support, changing social attitudes, social decision making, risk and loss aversion and various other human factors in different economic situations. It is important to study these attitudes, as Industry 4.0 and Society 5.0 smart technologies will eventually be applied to all aspects of life, such as digital education, digital policing, digital resource management, mobile and internet applications and much more. We are already seeing the digitalization of government, cities, villages, factories, education, as well as transport and logistics. We are all going to be participating in these

developments, so it is important to study the perspective/attitudes of different groups and individuals on these developments and potential changes in attitude and behaviour that can lead to a more sustainable future.

Issue 59 of the *Amfiteatru Economic* journal is dedicated to investigating the complexity and novelty of the ongoing digital transformation phenomenon affecting both economy and society, which requires our response and adaptation by providing novel concepts, ideas and models. Following a rigorous peer review, the published articles contain original approaches to the phenomenon of digitalization, analyzed from different and multiple perspectives. In our opinion, the results of the research in published articles contribute to a better understanding of this complex phenomenon – the literature is thus expanded both by research applied to theories and concrete models.

The article *“Cyberspace Ecologism 4.0”: Between Software Softeners of and Hardware Hardships on the Natural Environment* investigates the relationship between digitalization and ecology by highlighting possible connections between the virtual cyberspace and the physical natural environment and the translation of a great part of the world and social life into cyberspace, especially in the wake of the Fourth Industrial Revolution.

The issue addressed in the article *“Adopting Sustainability and Digital Transformation in Business in Romania: A Multifaceted Approach in the Context of the Just Transition”* is that of how sustainability and digitalization in companies affect the way the company innovates, manufactures products, affects costumer relationships and logistics. The study explores the responses from professionals, executives, and managers, either from local or multinational companies from different sectors, and uses structural equations to analyse the data.

The article *“Sustainable Transformation of Romanian Companies through Industry 4.0, Green Production and Environment Commitment”* develops an econometric model that establishes the link between green performance, digitization, green production and environmental engagement, using structural equation modelling. Thus, the article identifies key elements that help companies transform digitally and sustainably.

The article *“Quantifying the digitalisation impact on the EU economy. Case study: Germany and Sweden vs. Romania and Greece”* looks to conceptualize, validate and test the “development of digitalisation econometric model”. The authors did this in regards to how the European Union envisions the development of the data economy, i.e. by studying the long-term likelihood of the EU’s baseline scenario, the high growth scenario and the challenge scenario.

The article *“Avoiding Digital Divide in European Union through European Green Deal”* reviews literature and uses multidimensional analysis to study internet access for households in countries in the European Union. They look at the digital divide and how it will be influenced by the European Green Deal.

The article *“Digital Transformation, Financial Performance and Sustainability: Evidence for European Union Listed Companies”* investigates the beneficial effects of digitalization on efficient use of natural resources, reduction of pollution, and looks at how motivated companies are to transformation into a sustainable company. They achieve this by studying a large sample of companies in the European Union and how the financial market responds to companies that wish to digitalize and become more responsible.

The article *“The Green Deal – Dynamizer of Digitalization in Tourism: The Case of Cluj-Napoca Smart City”* uses a questionnaire to study 38 hotels in regards to the European Green deal. They sought to verify whether hotels have heard of the Green Deal, and to determine whether they have adopted any measures to reduce energy consumption and improve waste management. Finally, they looked at whether or not hotels have increased the rate of digitalization as a result of the COVID-19 pandemic.

The article *“Vegetables Consumers’ Profile in the Context of Digitalization: Evidence from Romania”* seeks to analyse differences in consumer profiles and methods of payment used in online purchasing of fresh vegetables from local producers. They surveyed Romanian companies involved in vegetable farming. They also studied the preferences and preparedness of vegetable producers and consumers for digital transformation, and how vegetable producers need to adapt to the digital needs of consumers.

The article *“Examining the Correlations Between Industry 4.0 Assets, External and Internal Risk Factors and Business Performance Among Hungarian Food Companies”* investigates how various risk factors can affect business performance of Hungarian food companies, such as the development and investment risk factors associated with a company planning on developing or using Industry 4.0 technology.

The article *“Urban Agriculture Digital Planning for the European Union’s Green Deal”* used digital agricultural data acquired from the geographic information system AGRO-GIS and used it to calculate and predict potential urban agriculture that can be developed from abandoned horticultural lands and greenhouses in urban areas.

This issue deals with digitalization and sustainable development, and the articles found within it are diverse and accurate representations of problems and opportunities for companies, particularly in regards to social responsibility and digital transformation, as well as the benefits that can occur when companies upgrade their digital systems by creating more environmentally friendly business models. The articles imply that digitalization is a topic that needs further study, particularly since the literature supports the idea that digitalization can lead to a more sustainable world. This is a much needed change that can help us battle the threat of global climate change and create a better future for coming generations.

**Member of the Editorial Advisory Board,  
Andrej Bertoneclj**