

Chapter 15

Digital Relations and Innovative Ecosystem for Sustainable Engineering Education: A Case of Russia

Anna Tarasova

Volga State University of Technology, Russia

Wadim Strielkowski

University of California, Berkeley, USA

Nina Larionova

Volga State University of Technology, Russia

ABSTRACT

Countries are striving to opt for digital economy by adopting miscellaneous state programs and translating them into national projects. The chapter describes digital relations and the digital economy. It examines the effectiveness of the government strategies on digitalization and indulges the programs' context in terms of their priorities, objectives, and tools for implementation, based on the rigorous critique of the programs in the literature. Furthermore, it audits the chronicle of events in programs development, actors involved, and the decision-making process. Moreover, it focuses on the legal regulation of the digital economy with a specific focus on the situation in the Russian Federation. In addition, it examines governance and economics in the context of a digitally hybridized civilization. Moreover, it assesses Russia's potential and innovative performance in the context of the Global Innovation Index to better implement robust innovation policy conditions.

INTRODUCTION

With the spread of the Internet and the World Wide Web, people are increasingly living a hybrid life in which physical and digital, real and virtual interact with each other. Online and offline identities overlap and inter-digitize, removing the barriers between them and their real-world counterparts (Graham, 2018; Simunkova, 2019).

Overall, it becomes clear that the ability to provide a new form of digital sovereignty - a digital economy with its own rules and norms - was there. While we do not yet know whether this new frontier will lead to a digital civilisation, the future will see further progress in this way of thinking. We are already witnessing the emergence of real and virtual civilizations known as “virtual economies” and “digital civilizations” in the form of online games and online communities. While the Internet and its sub-communities are still in their infancy at this stage of development, the foundations are already in place.

Similarly, virtual reality tools have shown the potential for developing a new kind of economy in the form of “virtual economies” (Kwilinski et al., 2020). These virtual spaces remain necessarily connected to the real world, but they represent an alternative means of communication between people and their virtual communities and become increasingly independent. While virtual economies still exist primarily as subsidiaries of the real economy, emerging economies and globalized economic paradigms offer them a new way to coexist (Klimuk & Tarasova, 2019).

In this sense, a very popular and widely-discussed cryptocurrency Bitcoin is serving as a failed virtual currency, and many people have little hope that the old system of the year will finally prove its worth. However, it is surprising that Bitcoin is gaining acceptance among established institutions, and Bitcoin ATM open all around the world (Hacioglu et al., 2019; Mikhaylov, 2020).

A number of hybrid forms of digital governance are emerging, and the concept of “digital governance” is also taking root, offering an alternative to traditional governance structures such as government and law enforcement. One of the most promising examples of establishing a hybrid form of virtual management in the virtual economy is virtual property, where users can do everything from buying and developing virtual properties to organizing games and scientific conferences (Belokurova et al., 2019; Betelin, 2018; Heeks & Bukht, 2018; Kutzner et al., 2018; Silin & Animitsa, 2018). The oldest and most famous are those who work in the virtual economy, such as Bitcoin, Ethereum, Bitcoin Cash, as well as other popular virtual currencies.

Of course, virtual environments are only a small part of what is done in online environments today. The apparent effectiveness of online collaboration, however, is not the result of a lack of technology, but rather of ever more sophisticated technical features that blur the lines between online and offline. However, a full switch to online learning is not in sight until the pandemic subsides. Expect mixed learning, with traditional courses increasingly integrated into online activities. Instead, it is argued that we are now witnessing the emergence of a new kind of “virtual economy” - a hybrid economy, that is, between online and offline environments. The demands on course software are changing and we are turning to new technologies such as cloud computing, virtual reality and augmented reality (Hernando de Soto, 2017).

There are many ecological competences make today’s engineers aware of nature’s basic organizational patterns, and that nature sustains life by creating and nurturing communities such as ecovillages as a way in which human activities are integrated into the natural world that supports healthy human development and can be continued indefinitely. Currently, sustainable engineering focuses in the research and delivery of solutions to natural and man-made hazards. Today’s engineers need to learn how to address a range of environmental issues, including water quality, pollution and climate change. In addition, they need to

13 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/digital-relations-and-innovative-ecosystem-for-sustainable-engineering-education/306354

Related Content

An Integer Black-Box Optimization Model for Repairable Spare Parts Management

Giuseppe Bernabei, Francesco Costantino, Laura Palagi, Riccardo Patriarca and Francesco Romito (2021). *International Journal of Information Systems and Supply Chain Management* (pp. 46-68).

www.irma-international.org/article/an-integer-black-box-optimization-model-for-repairable-spare-parts-management/275210

An Extensive Group Decision Methodology for Alliance Partner Selection Problem in Collaborative Networked Organisations

Selin Soner Kara, Omar Ayadi and Naoufel Cheikhrouhou (2012). *International Journal of Applied Logistics* (pp. 1-19).

www.irma-international.org/article/extensive-group-decision-methodology-alliance/62261

Industry 4.0 From the Systems Engineering Perspective: Alternative Holistic Framework Development

Vladimír Bureš (2018). *Analyzing the Impacts of Industry 4.0 in Modern Business Environments* (pp. 199-223).

www.irma-international.org/chapter/industry-40-from-the-systems-engineering-perspective/203121

Effectively Using Systems Thinking in New Product Development (NPD)

Brian J. Galli (2018). *International Journal of Applied Logistics* (pp. 69-85).

www.irma-international.org/article/effectively-using-systems-thinking-in-new-product-development-npd/208665

Impact of Distributed Ledger Technology on Supply Chain Sustainability

Mariana de la Roche, Laura Kajtazi, Åsa Dahlborn and Louis Helmer (2023). *Handbook of Research on Blockchain Technology and the Digitalization of the Supply Chain* (pp. 207-227).

www.irma-international.org/chapter/impact-of-distributed-ledger-technology-on-supply-chain-sustainability/324633