THE ROLE OF SCIENCE AND EDUCATION IN THE DEVELOPMENT OF DIGITAL MARKETING

Adilova Zulfiya Djavdatovna

Doctor of Economics, Research center "scientific bases and issues of economic development of Uzbekistan" Under the Tashkent State University of Economics head of the "science and education integration" department. (Tashkent); (zulfiya_adilova@mail.ru),

Bobur Khanturaev Azimovich

"Scientific bases and issues of economic development of Uzbekistan" Under the Tashkent State University of Economics, junior research assistant of Department "Integration of science and education", (Tashkent). (idmon.88@gmail.com),

Muminova Nargiza Maxsudjonovna

PhD, Tashkent institute textile and light industry, (Tashkent). (nargiza.maxsudjonovna@gmail.com)

A B S T R A C T

The new global knowledge economy – one powered by information and communication technology (ICT) – is by no means restricted to universities. One understated aspect of the Internet's impact has been the erosion of universities' effective monopoly on knowledge creation and curation. With trends in digital marketing getting even more sophisticated, service delivery and marketing analysis are improving throughout industries inclusive of educational institutions. The paper investigates the role of science and education in the digital economy and marketing.

Click here and insert your abstract text.

INTRODUCTION

The increased use of the internet and digital media has been a major influence in the field of education. The education sector is a revolutionized sector because the majority percentage of students is the users of the internet. This has a direct implication on the way that educational institutions and colleges need to utilize the web and cell phones to connect with more students. The digital marketing is the best strategy that can be embraced by the educational institutions to reach out to prospective students. With new technologies, markets, and industries, there is a growing need for graduates and employees with relevant knowledge and training in digital marketing. In order to remain relevant, quality education must have its finger on the pulse of the conditions in the marketplace and workforce. Schools need to focus on offering what will get their students meaningful employment while businesses need to provide employees with opportunities to bring more value.

In the era of constant innovation and technological advancement, digital-age learning is a pervasive concept that covers all aspects of people lives from studying and working to leisure activities, creating thus new challenges for all education stakeholders: teachers, students, and wider community. The education using digital technologies shapes the modernization of societies, boosting growth and competitiveness through better skilled workforce and more employment. The capacity to manage complex problems, to be entrepreneurial, and to think creatively by using digital resources are becoming essential skills for the opportunities brought by the digitalization of our society. [1]

The global economy has been rapidly transitioning from a 20th century industrial economy, to a 21st century "digital economy" - an economy driven by digital technology and data that enables companies to quickly conceive of new products and services and bring them to market faster and more cost-effectively than at any other time in history. Data-driven technologies, intelligent automation and 21st century skills are some of the concepts that form part of multiple conversations and strategies in an attempt to prepare individuals, communities and societies for the future [2]. The 2018 Future of Jobs Report recently published by the World Economic Forum identifies ubiquitous high-speed mobile internet; artificial intelligence; widespread adoption of big data analytics; and cloud technology as key drivers positively affecting business growth in the next four years. What is particularly clear from this report is the fact that, due to the acceleration of the rate of change, "the window of opportunity for proactive management of this change is closing fast and business, government and workers must proactively plan and implement a new vision for the global labor market" [3].

Higher Education is positioned to play a key role within this process of critically rethinking and reimagining our responses to the digital age of particular significance in highly unequal societies such as Uzbekistan, is the manner in which we engage with human-centric approaches towards e-Inclusion in the Digital Economy. With the clear need for Uzbekistan to develop relevant knowledge and skills to be both inclusive and competitive in the digital economy, international collaboration is key.

We know that education is a powerful tool to transform a society. Almost all achievements that are made possible by human mind are perpetuated by various forms of education. For many, education serves as a powerful driver of development for improving quality of life, and a recipe to reducing poverty. It is widely accepted that investing in education gives large returns and benefit in many levels. For individuals, it promotes employment, provides better livelihood, health and better adaptation to new technologies. For larger societies, education opens the door of innovation, strengthens civil institutions, fosters social cohesion and drives economic growth. It enhances people's ability to make informed decisions.

"Science, technology and innovation (STI) are integral parts of today's education. Nations spend significant amount of budget for R&D. According to UNESCO Science Report Towards 2030, in 2013 the world's gross domestic expenditure for research and development (GERD) amounted to US$1.478 billion. All nations acknowledge the importance of education and STI for sustaining growth. Low and lower-middle income countries expect STI help them raise income levels. Wealthier countries tend to hold their own STI to keep their advantage in competitive global marketplace. However, countries should also pay attention to basic science – not only applied science. Basic research is a fundamental generates the new knowledge that gives rise to applications, commercial or otherwise" [4].

The world of work is changing due to advancements in technology, innovation, automation, robotics, digital platforms and greater connectivity. The effect of the digital economy is most advanced in corporate applications and industrial systems; therefore, on investments, hiring, skill training and trade facilitation policies.

"By 2020 it's estimated there will be 1.5 million new digitization jobs across the globe. At the same time, 90% of organizations currently have an IT skills shortage, while 75% of educators and students feel there is a gap in their ability to meet the skills needs of the IT workforce. To prepare the talent needed for the digital economy, education must adapt as fast as the demand for IT skills is growing and evolving" [5]. Insights into the influence of psychological, social, cultural and environmental factors on how we learn are emerging from *"The new science of learning"*. This approach to understanding education argues that in our complex and rapidly evolving world today, academic models based on interdisciplinary research are necessary to create effective teaching and learning environments [6].

MATERIALS AND METHODS

The research was designed to investigate the research phenomenon in an open-minded way and to understand how educators and students in the context of their work environment describe their approaches to digital economy, understand the term and its implementation as part of their real-life experiences. The main objective of the article is to show the degree of science and education in the digital economy in Uzbekistan. Research methodology is based on the analysis of secondary sources and the use of Information methods. The choice of research methods arises from the adopted research problem and research aim. Information method is used to search the important facts about the digital economy and its development. The importance of the digital economy has become such that it is calling for new economic policies, reformation in law on taxation, debates on patents and trademark policies, and for brilliant economists to ask the right questions. To get a clearer idea on that economic development that is bringing a revolution, here are the some of the most exciting facts on technologies that are primarily responsible for the growth of the digital economy.

Table 1. Facts on Technologies Driving the Digital Economy.
(Source: https://www.yourtechdiet.com/blogs/10-facts-technologies-driving-digital-economy.)

№	
1	**Artificial Intelligence (AI)**
2	**Internet of things**
3	**Blockchain**
4	**Augmented reality and virtual reality**
5	**Mobile**
6	**Big data**
7	**Machine learning and Deep learning**
8	**Robots and drones**
9	**Cloud Computing**
10	**Privacy and security**

Artificial Intelligence (AI): By 2030, the largest company on the Internet is going to be an education-based company, with smart-bot instructors able to personalize lessons for each individual student [7].

The Internet of Things: The Internet of Everything could be worth $19 trillion over the next decade thanks to cost savings and profits for businesses and increased revenues for the public sector [8].

Blockchain: So far approximately $270 billion has been transacted through the technology that powers the digital currency, bitcoin. In 2017, the market has grown to $708 million, but experts predict that it will hit $60.7 billion by 2024 [9].

Augmented reality and virtual reality: by 2021, over 1 billion people worldwide will regularly use an AR/VR platform (augmented reality/virtual reality) to access apps, content, and data [10].

Mobile: Two billion individuals and 200 million small businesses in emerging economies lack access to basic financial services and credit. Broad adoption of mobile banking in developing nations could create 95 million new jobs and increase GDP by $3.7 trillion by 2025 [11].

Robots and drones: Amazon uses 30,000 Kiva robots in its global warehouses, which reduce operating expenses by approximately 20%. Bringing robots to its distribution centers that have not yet implemented them would save Amazon a further $2.5 billion [12].

Cloud: In 2020, the top five cloud IaaS/PaaS providers will control 75% of the market, up from 50% in 2016 [13].

RESULTS

The world as we know it is continually changing, and one of the fundamental drivers is digital transformation. At its core, digital transformation is not about Internet "unicorns". It is about using the latest technology to do what you already do – but better. The global economy is undergoing a digital transformation as well, and it is happening at breakneck speed. So, what is the digital economy? It is the economic activity results from billions of everyday online connections among people, businesses, devices, data, and processes. The digital economy is taking shape and undermining conventional notions about how businesses are structured; how firms interact; and how consumers obtain services, information, and goods.

The term digital Economy was first mentioned in Japan by a Japanese professor and research economist in the midst of Japan's recession of the 1990s. In the west the term followed and was coined in Don Tapscott's 1995 book The Digital Economy: Promise and Peril in the Age of Networked Intelligence [14]. According to Thomas Mesenbourg (2001) [15], three main components of the "Digital Economy" concept can identified:

– E-business infrastructure (hardware, software, telecoms, networks, human capital, etc.),

– E-business (how business is conducted, any process that an organization conducts over computer-mediated networks),

– E-commerce (transfer of goods, for example when a book is sold online).

"In the last decade of the 20th century. <u>Nicholas Negroponte</u> (1995) used a metaphor of shifting from processing atoms to processing bits. "The problem is simple. When information is embodied in atoms, there is a need for all sorts of industrial-age means and huge corporations for delivery. But suddenly, when the focus shifts to bits, the traditional big guys are no longer needed. Do-it-yourself publishing on the Internet makes sense. It does not for a paper copy" [16].

In this new economy, digital networking and communication infrastructures provide a global platform over which people and organizations devise strategies, interact, communicate, collaborate and search for information. More recently [17], *Digital Economy* has been defined as the branch of economics studying **zero marginal cost intangible goods** over the Net.

Professor Walter Brenner of the University of St. Gallen in Switzerland states: "The aggressive use of data is transforming business models, facilitating new products and services, creating new processes, generating greater utility, and ushering in a new culture of management" [18].

Education and the digital economy will undoubtedly play a role in our future. The billions of online connections made between universities and students make the relationship between education and the digital economy profoundly powerful. Education and the digital economy have immense value in many undergraduate and graduate programs, such as an MBA degree for example. One of the challenges surrounding education and the digital economy is how they are used together. Many academic institutions place technology first, and education second, according to a survey by info Dev a World Bank Group program. Technology should in fact remain a support beam for education, and if employed effectively, can positively change a student's learning experience. The digital economy can give students invaluable digital knowledge to take into the job market as well. One of the most important strategies of education and the digital economy is information and communication technologies (ICT). According to the European Commission, ICT assists students in learning more effectively, efficiently, and creatively. ICT emphasizes innovation through the use of technology. It allows students to address more complex problems with different digitally minded perspectives. The digital economy is not only impacting education, it is changing the job market nearly every month. The European Commission found that over the last five years, mobile application development created half a million new jobs in the U.S. alone. These are digital economy figures you need to track, and understand in depth for success.

The assumptions, values, and practices of higher education around the world are all being tested by the rise of the digital economy. Every dimension of the work and life of a university is being disrupted, including teaching, learning, student experience, administration and operations, and relationships with industry, government and the not-for-profit sector. This disruption is also taking place within and across the societies that universities serve, driven by the extent and pace of change in technology platforms and tools and the associated cultural changes they drive. Broadly, higher education institutions that have traditionally been relatively closed, elite, and distant are being challenged to become more open, collaborative, and engaging. They are also expected to demonstrate their value to a much more discerning cohort of learners. As it is in pretty much every other sphere of social, economic, civic, and political life, this transition is proving to be difficult and demanding but full of potential for renewal and growth.

The impact of technology on traditional industry sectors such as retail, manufacturing and banking is widely reported and acknowledged. However, higher education, it could be argued, is even more profoundly impacted given the nature of the service it provides, the demography of its learner base and the myriad extraneous factors that are simultaneously touching universities. Examples of major shifts occurring in higher education and society more generally include:

– The gradual evaporation of traditional funding sources, particularly from government;

– The rise of the «millennial» cohort which is characterized by early adoption of technology and consequently high expectations that the institutions with which they interact will harness the potential of technology to personalize and enrich their services and engagement;

– Transformation of economies and the changing needs of the labor market, driven by global competitiveness and companies' desire to be agile;

– Globalization of higher education beyond the traditional international student market focus;

– Rapid urbanization where the top 600 cities in the world are forecast to contain 25% of the global population, and generate 60% of GDP by 2025 [19].

These issues – combined with the impact of technology – are posing fundamental questions about the role that universities play in contemporary society. For some, the very relevance of universities is under threat, driven by the perceived disconnect between the way that institutions have traditionally operated and the world in which they now exist. The implications of that disconnect between institutions and the learners they serve are particularly stark, as observed in a recent global study in education to employment transitions.

"The OECD report states that young adults, people who have a post-secondary education, and people working in skilled occupations are more likely to possess ICT skills and computer experience than those who do not fit any of the three aforementioned criteria. The report adds that it is important for policymakers to integrate these sorts of technology skills into the education curriculum rather than make them course-specific. According to Cisco, post-secondary institutions need to teach and empower students to succeed in a workforce where technological change is creating – and destroying – new employment opportunities at approximately "the same rate. The company

adds that there are challenges inherent in preparing students for jobs that might not even exist yet. According to the OECD report, students, educators, and others require data on workplace trends so that people have the skills they need to succeed in the digital economy. This is something that can't stressed too much. Some skills require a significant investment of time to acquire, which means that policymakers need to grasp employment trends now so that policies can developed to help people position themselves for upcoming job opportunities. While it is not as easy as it might sound to predict skills that will be highly sought after in the future, the OECD report says that a program launched by the U.S. Department of Labor's Employment and Training Administration, which collects information on almost 1,000 jobs, provides a look at "worker attributes and job characteristics" [20].

Modern Uzbekistan is a part of the world economic community therefore, the ongoing integration processes in the international market are required from economic entities active entry into the world information community. To this end, Uzbekistan pays special attention to the development of ICT and it should be noted that since the early 90s the ICT market of Uzbekistan was formed as a separate segment in the economy.

The events of the last decade have provided ample evidence of the real importance of ICT for the way of life of the people. In this regard, the priority measures for the introduction of ICT in the economy, social sphere and management systems are reflected in the decree of The President of the Republic of Uzbekistan "On the strategy for further development of the Republic of Uzbekistan" № 4947 of February 7, 2017, which defined the "Strategy for action in five priority areas of development of the Republic of Uzbekistan in 2017-2021" [21].

This strategy is implemented in five stages, each of which provides for the approval of a separate annual state program for its implementation. The priority directions of the country's development in 2017-2021 were the following:

1. Improvement of state and social construction;
2. Ensuring the rule of law and reforming the judicial and legal system;
3. The development and liberalization of the economy;
4. Social sphere development;
5. Ensuring security, interethnic harmony and religious tolerance, implementation of a balanced, mutually beneficial and constructive foreign policy.

In the Part "Development and liberalization of the economy" were highlighted:

- accelerated development of services,
- increasing the role and share of services in the formation of gross domestic product,
- a radical change in the structure of services, primarily due to modern high-tech services;
- further development of road transport infrastructure,
- the introduction of information and communication technologies in the economy,
- Social sphere and management systems.

The development of the ICT sector can increase the competitiveness of the domestic economy in the world market, and will also contribute to the country's conclusion to a new level of development, which is characterized by intensive structural shifts in favor of the high-tech information sector, allowing without significant capital costs to solve complex economic and other problems not only on the scale of the state, but also at the level of enterprises, organizations and firms.

Over the past 10 years, the ICT market in Uzbekistan has changed significantly through the implementation of projects to modernize and develop the telecommunications network throughout the country. In particular, digital intercity stations have been installed in all regional centers of the Republic, fiber-optic cables and digital radio relay lines have been laid on the main intercity and intra-regional communication lines, television and radio transmitters have been modernized and installed, and a CDMA wireless radio access system has been introduced. The level of coverage of cities and regional centers of the Republic with digital networks of telecommunications has reached 100%. The level of coverage of rural settlements by telecommunication networks is 90%, including digital – 52%. The telecommunications system of Uzbekistan has direct international channels in 28 directions with access to 180 countries of the world, while using fiber-optic and satellite systems.

According to the press service of the Ministry of Information Technologies and Communications, the draft resolution of the Cabinet of Ministers sets the following directions for the development of digital economy in the Republic of Uzbekistan:

- identification of state and economic bodies, local self-government bodies on the basis of necessary information systems and resources, implementation of software and electronic services;
- creation of favorable conditions for attracting foreign investments in the country by organizing the technology market and technology parks on the basis of the digital economy, information technologies market, including public-private partnerships;
- coordination of modern telecommunication infrastructure, development of communication technologies and networks, introduction of modern telecommunication services;
- increase of the digital economy through the introduction of electronic services in the field of public administration and economics, development of the e-commerce and software market;
- development of proposals for the development of the national segment of the Internet, organizational, material and technical and economic support for digital media content;

– development of "intellectual systems" for the management of urban and regional infrastructure, in particular housing and communal services, transport logistics, safe and "smart cities";

– improvement of the system of training qualified personnel. The functions of the Commission are as follows:

– in 2 months, the state of the information and communication technologies in state agencies, including the inventory of information systems and the provision of personnel;

– submit proposals to the Cabinet of Ministers to improve this direction until 2018.

At the same time, by 2030 it is planned to implement measures to develop the concept of "Digital Uzbekistan" [22]. Contributing to the growth of the population's income through the organization of business in the field of e-commerce with relatively low capital intensity and high speed of capital turnover, increasing the virtual mobility of the population, the global e-commerce market has become one of the fastest growing segments of the market economy.

According to Internet World Stats, the number of Internet users in the world in 2018 increased 10 times and amounted to 4 billion units compared to 2000, and the annual growth of Internet commerce is twice as fast as the growth of traditional trade. The rapid growth in number of Internet users around the world has promoted further development of e-commerce [23].

Khurana, A. provides several advantages of ecommerce including overcoming geographical limitations, gaining new customers with search engine visibility, lower costs, locating product quicker, eliminating travel time and cost, providing comparison-shopping, and many others due to which today it is developing at high rates (Ajeet Khurana, Advantages of E-commerce Over Traditional Retail, 2017, November 19). As Orendorff, A. stated that the world turnover of e-commerce transactions between enterprises (B2B) in 2017 exceeded 7.7 trillion. USD, while between enterprises and consumers (B2C) estimated at 2.3 trillion USD (Aaron Orendorff, Global Ecommerce, 2017, September 1). Still, there is no reliable source providing data on other types of e-commerce including C2B, C2C, and B2G. Moreover, DeMatas, D. indicated, "sales from online stores are expected to increase 78% by 2020" (Darren DeMatas, 5 Types of Ecommerce Business Models That Work Right Now, 2018, February 3).

Due to its advantages, the regulatory and legal framework governing ecommerce is being formed in Uzbekistan, in particular, laws "On E-commerce", "On Communication", "On Informatization", "On Copyright and Related Rights", "On Guarantees and Freedom of Access to Information", "On Telecommunications", "On Postal Communication", "On Electronic Digital Signature", "On Electronic Document Management". The developing telecommunications infrastructure is ensuring the prompt interaction of government authorities, business entities and individuals with the active use of new information technologies through the widespread introduction of modern electronic applications and payment solutions.

Still, according to UNCTAD B2C E-Commerce Index 2016, Uzbekistan received 26.1 points out of the possible 100 in terms of electronic commerce development in 2016 (the average score for transition economies - 43). Moreover, the country has dropped from 78th to 108th position since 2014, which proves the Still, according to UNCTAD B2C E-Commerce Index 2016, Uzbekistan received 26.1 points out of the possible 100 in terms of electronic commerce development in 2016 (the average score for transition economies - 43) [24].

Moreover, the country has dropped from 78th to 108th position since 2014, which proves the insufficient development of e-commerce in the country. Therefore, it requires the Uzbek government to promote further e-commerce development based on the best experiences of developed countries. Given the coordinating role of the Ministry for Foreign Trade in the establishment of the National Electronic Commerce Platform in Uzbekistan, as well as the lack of development of national e-commerce, it is necessary for the Ministry staff to share experience and practice with the rest of the participating countries.

DISCUSSION

The world is changing rapidly under the influence of digital technologies, as they have entered all branches of state activity. In the meantime, further development and competitiveness of any country on the world stage now depend on the effective development of information technologies. Today, the economic well-being of any country is inextricably linked with the development of digital technologies.

The increasing use of technology and the growth in connectivity is also disrupting the labour market of today and will continue to do so in the future – a phenomenon labelled the 'digitalisation of work'. Gartner predicts one in three jobs will be converted to software, robots and smart machines by 2025 [25]. This change, combined with the use of technology in our personal lives, requires the upskilling of the current workforce and wider population to adapt to an increasingly digital world and to reduce the risk of this change creating a new stratum of social exclusion.

Looking to the future, some estimate that as many as 65 per cent of children in primary school will have jobs which do not exist today [26]. Therefore, being familiar with information communications technology (ICT) and possessing the skills to use this digital technology are crucial. Employers have noted a disconnect between what young people are being taught in schools and the ICT skills actually required in the workplace: Approximately 72 per cent of large companies and 49 per cent of small to medium-sized enterprises (SMEs) are currently experiencing technical skills gaps in their workforce [27]. However, while digital skills will increasingly be needed for the jobs of

the future, the growing availability of ICT and technology in the workplace also means that employers seek a workforce with additional aptitudes. These include sense making, novel and adaptive thinking, new media literacy, computational thinking, cognitive load management, problem solving, critical thinking, teamwork and collaboration, communication, creativity, and innovation [28]. Moreover, succeeding in the digital world also requires a wider set of 'digital navigation skills', which include finding information, prioritising information requirements, and assessing the quality and reliability of information.

These skills will be increasingly important in the labour market of the future and, more generally, for inclusion and participation in society. It is crucial to ensure equal opportunities for all to acquire these skills, without which those who do not have either the relevant skills or access to technology are at risk of being excluded from society (social exclusion). Education has a crucial role to play in achieving digital, social and labour market inclusion. However, is education preparing today's young people for tomorrow's jobs using yesterday's tools? How can we make sure that we give today's children the tools they need to adapt to tomorrow's world? How can we make sure that education and technologies work in partnership, where education supports the acquisition of the skills required to use technologies and technologies support the teaching and learning process? Some argue that using technology alters our brain plasticity, cogitation and concentration [29]. It is important to recognise these changes in the delivery of education and skills development to reflect how learners obtain and retain information.

Digital skills and digital navigation skills are increasingly present in education. Countries such as France and Norway have included digital literacy (defined as focusing on understanding and interacting with everyday ICT tools) as part of their core curriculum, while many other jurisdictions (including Estonia and England) have included computer coding or programming in primary and secondary classes [30]. However, perhaps more significantly, some countries, such as Finland, are revisiting how the traditional curriculum is constructed, in order to centre it on the kinds of skills that learners will need to navigate a world with fast changing technologies, rather than on the traditional subject/syllabus approach [31].

Digital education is often described as an attractive way to reach more people in a faster and more inclusive manner. Digital learning can help bring education to those who cannot physically access it (e.g. learners in hospitals, prisons, remote areas) or who need flexibility in their attendance (e.g. those who study outside work hours). The current refugee and Ebola crises provide examples of the ways in which digital methods are a major delivery channel and can facilitate inclusion for large groups [32]. In these cases, education technologies are seen as a means (sometimes the only one) to allow vulnerable learners' participation in education. However, recent research on the massive open online courses (MOOCs) phenomenon in the USA and in Europe shows that the primary beneficiaries of MOOCs are those who already have a higher education qualification, a finding which raises questions about the likely inclusivity of digital education [33].

Digital technologies can help make the students' learning experiences more engaging and can foster 'deep learning'. However, the role of the educator remains crucial to this outcome. Deep learning refers to the idea that students need to learn not only subject content areas, but also how to apply these to other situations in their life through problem solving, critical thinking and communication skills [34]. Digital technologies can promote deep learning if they provide the necessary tools. One example is to extend study time and practice by using a computer programme tailored to provide learners with simulations in which they can practice applying their new knowledge or skills. In this context, the tool provides learners with the opportunity to control their learning situations or it gives them ways in which they can learn collaboratively. With the right support and training, educators can learn to use digital technologies to help create the conditions necessary for these deeper forms of learning to become more acceptable to their learners. Unfortunately, teachers currently identify the use of ICT in the classroom as one of the areas (and in England the single area) where they are in greatest need of professional development [35]. In addition, due to the availability of information through technology, it is feasible to see the role of the educator as changing, from that of knowledge provider to that of coach. In the future, rather than providing the information, educators could concentrate on coaching and mentoring learners [36].

In the formal education context, the 'digital factor' makes recognition of credentials more complex and of potentially larger scale than in non-digital distance learning. For example, how does the supplier ensure that assessments are undertaken in fair conditions in a distance learning environment? Solutions include the development of blended forms of learning, which combine digital learning and face-to-face events (e.g. tests in a classroom environment). In the context of less formal digital education (e.g. MOOCs), additional recognition issues include the value of learning outcomes acquired through these forms of learning on an individual's studies or career prospects. Recent research shows that this is of concern to those who take MOOCs, as well as to employers and education institutions who are digital learning providers [37]. In some instances, these providers have proposed solutions, such as the introduction of learning 'badges', which are gaining value beyond the digital learning world and could inspire recognition in non-digital, non-formal and informal learning contexts.

The infrastructure of information and communication technologies and the introduction of technical solutions are the most important factors that play a key role in the development, well-being and release of the true economic potential of the nation. In a world now being overtaken by disruptive technologies, there are a few things that countries will need to think about differently. With increasing acceleration of technology, 5-10 years cycle in policy making is no longer relevant. Governments need to constantly re-invent technology related policies, which often

will need to be developed in an agile way, to go hand in hand with ICT enabled innovations and create economic opportunities for industries that will be powered by disruptive technologies.

While the Digital Economy is believed to create new jobs, on the other hand, the shift to automation, ability to connect and quickly create a test ideas are posing risks to the traditional types of employment and job security as we know it today.

WDR2016 on Digital Dividends identifies a number of risks such: -

− Risks associated with the speed of labor market changes and the destruction of traditional jobs;

− Risks associated with changing nature of work and the quality of internet enabled jobs, such as microwork or jobs in the on-demand economy;

− The risks associated with widening income inequality. Although technologies are becoming wide-spread. The economic pay off are not.

The governments need to think through strategies to address this problem.

CONCLUSION

Summing up, we want to note that the development of the digital economy opens up limitless opportunities. Nonetheless, despite the bright prospects, according to analysts, in the development of the digital economy there are obvious challenges and threats to those lagging behind, such as:

1. High risk of information security;

2. The threat of job cuts. The transition to the digital economy makes it difficult to use foreign software;

3. High risk and uncertainty in strategic decision-making. A similar situation is associated with the characteristic of the digital economy and unstable climate, dynamic changes at the technological level, increase in the intensity of competition and the reduction of the life cycle of goods and services.

Now is the time to step back and think about the challenges ahead and the opportunities offered by digital education to equip current society and prepare for the future, not only to answer the needs of the labour market, but also to shape it.

REFERENCES

- Elena Fleaca, Radu D. Stanciu. Digital-age Learning and Business Engineering Education – a Pilot Study on Students' E-skills. ScienceDirect. Procedia Manufacturing 32 (2019) 1051–1057.
- https://www.medium.com
- https://www.uwc.ac.za
- https://www.antevorta.net
- https://www.weforum.org
- https://blogs.cisco.com
- "A Top Futurist Predicts the Largest Internet Company of 2030 Will Be an Online School," South China Morning Post.
- "The Internet of Everything Is Closer than You Think," EY.
- https://www.yourtechdiet.com/blogs/will-blockchain-empower-artificial-intelligence.
- "IDC Future Scape: Worldwide IT Industry 2017 Predictions," IDC Research Inc.
- "How Digital Finance Could Boost Growth in Emerging Economies," McKinsey Global Institute.
- "How Amazon Triggered a Robot Arms Race," Bloomberg Technology.
- "IDC Future Scape: Worldwide IT Industry 2017 Predictions," IDC Research Inc.
- Tapscott, Don (1997). *The digital economy: promise and peril in the age of networked intelligence*. New York: McGraw-Hill. ISBN 0-07-063342-8.
- Mesenbourg, T.L. (2001). *Measuring the Digital Economy*. U.S. Bureau of the Census.
- Nicholas Negroponte (1995-01-01). "Bits and Atoms". *Wired magazine*. (MIT link). Retrieved 20 February 2017.
- Fournier, Laurent (2014). "Merchant Sharing". arxiv:1405.2051
- The Evolution of IS Projects in Manufacturing Industries: The Case of Product Lifecycle Management. HICSS 2018: 1-10
- McKinsey Global Institute, Urban World: Cities and the rise of the consuming class, June 2012
- https://www.digitalistmag.com
- National database of legislation of the Republic of Uzbekistan - www.Lex.uz (Национальная база данных законодательства Республики Узбекистан - www.Lex.uz)
- https://ww.kun.uz/en.
- https://www.internetworldstats.com/stats.htm
- https://tcdata360.worldbank.org/indicators
- Gartner. 2014. Drive Digital Business Using Insights From Symposium's Analyst Keynote. As of 22 February 2017.
- Caroll, Jim. 2016. 'The Future of Education: "Why Are You Here?"' 25 October. As of 22 February 2017.
- Ecorys UK. 2016. Digital Skills for the UK Economy. Birmingham: Ecorys UK. As of 22 February 2017.
- Wojcicki, Esther & Lance Izumi. 2015. Moonshots in Education: Launching Blended Learning in the Classroom. San Francisco: Pacific Research Institute.
- Carr, Nicholas. 2010. The Shallows: What the Internet Is Doing to Our Brains. New York, London: W.W. Norton & Company.

- Ministère de l'Éducation nationale, de l'Enseignement supérieur et de la Recherche. 2015. The French Digital Plan for Education. As of 22 February 2017: http://cache.media.education.gouv.fr/file/01_-_janvier/88/1/The_French_Digital_ Plan_For_Education_527881.pdf

- Ministry of Education and Culture (Finland). 2011. 'The New Core Curriculum for Basic Education Emphasises the Joy of Learning.' 25 March. As of 22 February 2017: http://minedu.fi/en/article/-/asset_publisher/ the-new-core-curriculum-for-basic-education-emphasises-the-joy-of-learning

- Gill, John. 2016. 'When only Digital Delivery Will Do.' Times Higher Education, 18 August. As of 22 February 2017.

- Castaño-Muñoz, J., Punie, Y., Inamorato dos Santos, A. (2016) MOOCs in Europe: Evidence from pilot surveys with universities and MOOC learners, As of 22 February 2017.

- National Research Council. 2012. Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century. Committee on Defining Deeper Learning and 21st Century Skills, J.W. Pellegrino and M.L. Hilton, Editors. Board on Testing and Assessment and Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. https://doi.org/10.17226/13398

- OECD (Organisation for Economic Co-operation and Development). 2009. Creating Effective Teaching and Learning Environments: First Results from TALIS. Paris: OECD Publishing.

- Wojcicki, Esther & Lance Izumi. 2015. Moonshots in Education: Launching Blended Learning in the Classroom. San Francisco: Pacific Research Institute.

- Cedefop (European Centre for the Development of Vocational Training). 2016. Validation and Open Educational Resources (OER): Thematic Report for the 2016 Update of the European Inventory on Validation. Luxembourg: Publications Office of the European Union. As of 22 February 2017.