How to Cite:
Narmanov, U. (2022). The role and importance of the digital economy in the development of innovative. *Linguistics and Culture Review*, *6*(S1), 121-133.
https://doi.org/10.21744/lingcure.v6nS1.1957

The Role and Importance of the Digital Economy in the Development of Innovative

Ulugbek Narmanov
National University of Uzbekistan, Tashkent, Uzbekistan

***Abstract*---**The research reveals that theoretical foundations, stages, driving forces, efficiency factors of modern digitalization are considered as digital economy. The key components of the term "digital economy" are presented: digital technologies, ecosystems and transformations, taking into account their interconnection and interdependence, as well as continuity with the previously developed conceptual series - informatization, intellectualization and robotization. Also, the article presents a clear understanding of the object and subject of research, the importance of the essence of the digital economy phenomenon and the stages of its development. The purpose of this study is to study the relationship between digital technologies, innovative and economic development, describe the advantages and disadvantages of digitalization for countries with different levels of economic development. It is noted that the digital economy is an integral part of the information (digital) environment, forming in accordance with the needs of the real sector of the economy and the needs of society, changing under the influence of technological innovations.

***Keywords*---**communication technologies, digital company, digital economy, digital ecosystems, digital technologies, digitalization, information technologies.

Introduction

Nowadays, the term "digital economy" is widely used both in theory and in practice, according to well-known statements by Stan Kaplan in his methods of risk analysis, 50% of problems in the world arise from situations when the same words are used to denote different concepts, and the same amount appears because the same concepts are interpreted in different words (Bucht & Hicks, 2018). The relevance of the problems of the formation of the digital economy is due to both the growth in the scale of social communications through social networks and the efficiency of digital platforms that increase the speed and

***Corresponding author**: Narmanov, U.; Email: ulugbek.narmanov@mail.ru*
Manuscript submitted: 27 Sept 2021, Manuscript revised: 18 Nov 2021, Accepted for publication: 05 Dec 2021

variety of exchanges (through the use of technologies that built with using of signs of discreteness, programmability). Today, the concept of digital economy has emerged in the economic theory and practice of a number of countries. It was characterized by the rapid development of digital technologies, the revolution in the field of information and the acceleration of the processes of globalization of the economy. The effectiveness of their use has been transformed into increasing knowledge, and socio-economic ties are expanding.

Increasing digitalization of the economy and society is changing the ways people act and interact. One of the distinguishing features of various digital transformations has been the exponential growth in machine-readable information, or digital data, over the Internet. Such data are core to all fast-emerging digital technologies, such as data analytics, artificial intelligence (AI), blockchain, Internet of Things, cloud computing and all Internet-based services – and they have become a fundamental economic resource. The COVID-19 pandemic has accelerated digitalization processes, as more and more people have continued, to the extent possible, with their activities through online channels – for example, for working, studying, communicating, selling and buying, or entertainment (UNCTAD, 2021).

The digital economy is about running a business the main factor in the production and service is the data in the form of numbers, which are used to process large amounts of information and analyze the results of this processing in various types of production, services, technologies, devices, storage, is to implement more efficient solutions than the previous system in the delivery of products. In other words, the digital economy is an activity associated with the development of digital computer technology in the provision of online services, electronic payments, Internet commerce, crowdfunding and other types of industries. As a result of studying the world experience, it became clear that in developed countries in the digital economy, the state (government) market "game" rules are set for all participants of the game and the most important task of the state is to be to create a different, equal and accessible environment.

Digital transformation in terms of financial services is not only attractive but also far from controversial. In other market segments such as retail, as well as technological revolutionaries like Amazon and Apple, we see how much success can be achieved if companies change their business models and approaches to customer satisfaction (James, 2019). The digitalization of the economy can be defined as a modern innovative stage of economic development, which is based on the integration of physical and digital resources in the field of production and consumption, in the economy and society. It is characterized by new methods of generating, processing, storing, transmitting information in all spheres of human activity. The expansion of the digital economy in the world, the rapid development of information technology in all spheres of society are driving the reduction of informal employment in the labor market.

Returning to the term “digital economy”, it should be noted that the directions, forms and types of activities associated with the use of ICT, digital technologies and the analysis of big data are developing so rapidly that even definitions cannot keep up with them. In this regard, both the clarification of the conceptual

apparatus of digitalization and the assessment of its current state and prospects are relevant, which requires appropriate theoretical substantiation of this phenomenon. It should be pointed out to its two main aspects: digitalization and digital economy. The first is a long, complex and multifaceted process of transferring production, management technologies and information resources into a state suitable for the effective use of digital devices and technologies and involves achieving the following goals:

- Cheaper and more reliable collection, systematization, transmission and analysis data (due to discrete sensors - the Internet of Things, RFID tags, etc.).
- Cost reduction and simplification of communications in the economy and society (digitalization of content and communication channels);
- Creation of a system for multi-interaction of people and business processes vertically and horizontally (inter-organizational of digital systems).

Reaching a critical milestone, business process in digitalization (or the enterprise as a whole) leads to its qualitatively new state (transformation), characterized by a higher efficiency. In addition to information systems, it is necessary to introduce an appropriate "digital" culture in the company. This complex makes the company "digital", ensures its efficiency, productivity, business growth potential, then there are competitive points.

Literature review

The concept of the "digital economy" is originated in the last decade of the 20th century. The introduction of this phrase, using this term in 1995 by Nicholas Negroponte from the University of Massachusetts. Over the past period in the scientific environment, there are many approaches to the disclosure of the term "digital economy". Many countries with a remittance economy are systematically making the transition to the digital economy in accordance with the developed strategies (Guzikova & Shagun, 2018). The Digital Economy Outlook (OECD) regards this concept as a general term for describing markets that are focused on digital technologies and include, as a rule, trade in information goods and services through e-commerce (Efimushkin et al., 2017). In this case, digital technologies mean the Internet, mobile phones and all other means of collection, storage, analysis of information and exchange in digital form (World Bank, 2016). Thomas Mesenburg identified three main components of the digital economy (Guzikova & Shagun, 2019):

- E-business infrastructure (technical means, software products, telecommunications, networks, human capital, etc.).
- E-business (a way of doing business, any process is implemented by the organization with using information and communication networks).
- E-commerce (transfer of goods, for example, the on-line sale, on-line booking).

According to Katasonov (2017), in the most general form, the digital economy can be present as the part of economic relations that is mediated Internet, cellular communication, ICT. Digital technologies in modern the world create

fundamentally new opportunities for building interaction between the state, business and the population, excluding long chains of intermediaries and speeding up various transactions and operations. For successful functioning business, in the digital economy there is not three elements or composite elements are passed by parts of infrastructure. Digital economy is not only a powerful and effective instrument to introduce the world-changing cooperation technique, but also provides opportunities to lower the transaction costs between the countries to ensure the easy entrance to the market (Daniltsev, 2018).

Effective management of the digital economy depends on our ability to accurately assess the value of free digital goods and services. That's why we developed a new technique to measure not only how much consumers pay for digital products but how much they benefit from them (Brynjolfsson & Collis 2019). In a digital economy, modern scientific approaches and innovations will be important and a priority. This will lead to the development of industries with high scientific potential. Pyatkin & Kolchin (2018), believes that the area of interest of the digital economy is personnel and education, information infrastructure, information security, information security, regulatory regulation (Brynjolfsson & Collis, 2019).

Based on this understanding of the digital economy, the authors in the many studies come to the conclusion that this model of the economy will provide "digital dividends" to society in the form of increasing access to markets and market coverage, growing domestic and market efficiency, including higher labor productivity, reducing transaction costs, employment growth (unemployment reduction), full satisfaction of human needs, productivity of working hours, poverty reduction and even weakening (or completely overcoming) the social polarization of society. The current digital economy estimates provide insight into the impact of the digital economy on the overall U.S. economy. However, there are opportunities for BEA to expand these statistics into a comprehensive digital economy satellite account to reflect more completely the digital economy's contribution to economic growth (Barefoot et al., 2018).

Research Methodology

The main content of the functioning of the digital economy is a global network of economic and social activities that implemented through such platforms like the Internet, mobile and sensor networks. Digital economy tools - information and communication technologies (ICT), whose composition can be seen in Table 1. In 2017, the volume of sales in the global ICT market is valued at 4 trillion U.S dollars.

Table 1
Volume of sales in the global ICT market

Sales volumes in the global ICT market in 2017, billions of dollars		
1.	Computer equipment	368.7
2.	Telecommunication services	608.1
3.	Software	634.2
4.	Technical outsourcing and hardware maintenance	475.8
5.	Telecommunication equipment	331.8

6.	Technical consulting and services system integration	573.3

For the successful functioning of the business, three elements or components are required in the digital economy parts: infrastructure (Internet access, software, and telecommunications), e-business (conducting business through computer networks), e-commerce (trade, distribution of goods through the Internet). We can say that they are electronic business technologies, internal driving forces. But the development of the digital economy directly depends from the introduction of such "external", are advanced science-intensive technologies as nanotechnology, biotechnology, technology of energy systems, quantum technologies, etc. Conversely, further development of ICT, including: cloud computing technologies, processing technologies, big data, mobile technologies, internet, technologies, geo-location technologies, technologies of distributed communication networks, gives impetus, the development of high technologies in the real "traditional" economy. Let us explain these new concepts.

- Cloud technologies calculation
  Provision of services: resource and infrastructure; the application development platforms; using the software for specific customer requests. The development of cloud services in the EU is determined by the strategy of the EU Digital Single Market, that is, the "European cloud", which should unite all digitized information and store in European databases for the purpose of ensuring access to it for all interested parties. Cloud creation secured by public and private investments, which are estimated at 6.7 billion Euros over 5 years.
- Technologies of large data
  Is not a very accurate name; it is used to indicate ways for processing "hyper volumes" of information, the characteristic of the digital economy. The expected growth in the digital economy volumes of digitized information, development of cloud technologies, requires the availability of modern Data Processing Centers (DPC), providing reliable storage of big data and the implementation of various clouds, including public, hybrid and private. Data centre is a key component of a unified technological infrastructure of e-government.
- Mobile technologies
  A segment of the digital economy based on the creation of cellular networks, meeting the needs of the cloud calculations for indicators such as data transfer rate, traffic volume, client network capacity, power consumption. In Uzbekistan, mobile technologies are implemented by telecom operators, they allow you to collect and process information (in a single data center), both for managing household appliances and for managing individual production facilities and entire enterprises. As a tool base, the Internet things can use, adapt or universal software and hardware complexes: for the automation of production processes in industry, agricultural production, telecommunications, and household sphere of households.
- E-Location technologies
  Have opened up new opportunities for the provision of information services, with taking into account the location of the client (user), for example, satellite tracking services for transport and people: GPS, GLONASS. Using business application satellite tracking makes it possible to determine

deviations from routes, unauthorized stops, misuse of transport, control of fuel consumption, etc. High precision autographic software products are used to Indoor use: airports, stadiums, train stations, etc.

- The distribution technologies, the communication networks
  The basis of the business model of the data center operation: the expansion of capacity and the creation of mega-data centers are united in the distributed network that connected by channels with a large bandwidth. Due to economies of scale, maximum reliability is ensured, information safety, fault tolerance, high standards of service agreements and attractive cost of services.
- Ecosystem
  Unites Data centres, backbone network infrastructure, traffic exchange points, own import-independent cloud new platform. The infrastructure digital economy – the elements of external digitalization cookies: managerial, legislative and regulatory acts, supplying organizations: energy sky, communication, educational points, housing and communal services enterprises, etc. The efficiency of the transition to digital economy is determined by the available and the ability to use tools, formation that created in one sphere for the life of people, in others spheres and industries. With this mind, the key, necessary condition is to provide compatibility of the elements of its Ecosystem: the implementation platforms and services, applications, elements of electrical networks communication, software applications, and provision. The solution to this problem is the result of the well-coordinated work of the entire In- Frastructures of the digital economy, the creation and the function of the state. The digital economy is underdeveloped not only digitalization, but also society, business and government, therefore, its development consists in accelerating processes of penetration of digital relations at all levels of interaction, its participants - from state to personal.

Analysis and Result

The digital economy should develop, first of all, through the activation of the innovative direction, development, implementation and commercialization of innovative products (Plaskova, 2018). The number of social media users has increased by more than 13% over the past year. By the beginning of 2021, almost half a billion new users were registered on social networks. On average, more than 1.3 million new accounts were created every day during 2020, which are approximately 15.5 new users per second (Hootsuite, 2021). Meanwhile, computers still make up a significant proportion of global Internet activity. More than 40% of web pages visited in December 2020 were opened in web browsers on laptops and desktops, although the total share of these devices decreased slightly compared to December 2019 (Hootsuite, 2021).

Digitalization is changing the face and structure of the economy, breaking the usual business models, leading to the expansion of markets and opportunities, increasing competition and growing competitiveness, and both among individual business entities and entire countries. A striking example of this is the data provided in the Report. Woetzel et al. (2014), according to which, after 20 years of growth (from 1987 to 2007), the share of traditional flows of goods, services and

finance in global GDP fell from 53% in 2007 to 39% in 2014, while the volume of cross-border data exchange in the period from 2005 to 2014 increased 45 times. In 2014, about 12% of world merchandise trade was carried out through international e-commerce; about 50% of world trade in services is already digitalized. That is why many experts agree that digital transformation is becoming one of the key drivers of global economic growth. So, according to one of the authoritative experts in the field of digital economy, The Boston Consulting Group (BCG), the share of the digital economy in the developed countries has grown since 2010 by 1.2 percentage points. In developing countries, this indicator increased from 3.6 to 4.9% (Table 2).

Table 2
Growth dynamics of the share of the digital economy in the different countries, G20, %

Country	2010	2016
Great Britain	8.3	12.4
The South Korea	7.3	8
China	5.5	6.9
European Union	3.8	5.7
India	4.1	5.6
Japan 4.7 5.6	4.7	5.6
USA	4.7	5.4
Mexico	2.5	4.2
Saudi Arabia	2.2	3.8
Australia	3.3	3.7
Canada	3	3.6
Argentina	2	3.3
Russia	1.9	2.8
South Africa	1.9	2.5
Brazil	2.2	2.4

The high level of development of e-commerce in China is noteworthy. According to the same BCG Company, in 2011 the turnover of e-commerce in the PRC was amounted to 18 billion US dollars, and at the end of 2016. Chinese consumers spent on purchases through the Internet are in the order of 750 billion US dollars, which is more than the figures for the United States and Great Britain combined. In general, according to the Ministry of Commerce of the PRC, the share of China in international e-commerce by the end of 2016 was 39.2%. A path of future technology centered on automation is not preordained. It is a consequence of choices by researchers who focus on automation applications at the expense of other uses of technology and by companies that build business models on automation and reducing labor costs rather than on broad-based productivity increases (Daron, 2021). At the same time, according to the sectoral development program adopted in the country for 2016–2020, the volume e-commerce will grow in 5 years to 5.8 trillion. US dollars (Woetzel et al., 2014).

According to estimates of the McKinsey Global Institute Woetzel et al. (2014), by 2025, digital technologies will drive China's GDP growth up to 22%, and Russia - up to 34%. The expected Value added by Digital Technologies in the United States

by 2025 may amount to 1.6-2.2 trillion US dollars. These economic forecasts are predetermined not only by a high level of automation of existing processes, but also by the introduction of fundamentally new, breakthrough business models and technologies. Among them, digital platforms, digital ecosystems, in-depth analytics of big data, Industry 4.0 technologies (3D printing, robotization, Internet). According to the McKinsey Global Institute McKinsey Global Institute, the annual investment in the global economy of the Internet of Things will be from 4 to 11 trillion US dollars until 2025. Another trend in e-commerce is the increasing activity and role of small and medium-sized businesses in global trade. Digitalization has allowed the most active and entrepreneurial representatives of small and medium-sized businesses to transform into “micro-multinational” organizations, including by providing them accessing to the infrastructure of digital platforms that operate on the so-called ""connect and play” principle; and unprecedented access to the platform’s built-in global customer base (Hilty et al., 2006; Røpke et al., 2010).

Design patents protect the “look and feel of products”. A significant portion of these patents can relate to ICT product designs. ICT designs, for example, comprise almost half of the average design portfolio held by Korean firms across the European Union Intellectual Property Office, the Japan Patent Office and the United States Patent and Trade Office. For other countries, these average shares are much lower. However, they still reach 10% to 20% in China, Sweden, Finland and the United States, showing the importance of ICT product design. In comparison to 2004-07, ICT designs in 2014-17 maintained their share, relative to designs in general in the US market (+0.1 percentage point). In contrast, they declined as a share of all design filings in Europe (-0.8 percentage points) and in Japan (-2.5 percentage points) (OECD, 2020). The number of small and medium-sized businesses is registered on its platform increased by more than 2.5 times. The share of their foreign subscribers is about 30%. This fact characterizes social media platforms as a powerful marketing tool, especially for companies interested in exporting growth, indicators (Everaert & Safari, 2021; Bressanelli et al., 2018).

The transition to the active phase of innovative development of the digital economy is associated with deep institutional transformations, rethinking of conceptual approaches and revision of industrial values of the outgoing "technogenic" culture and the emergence of values of the informational and "homogenous" nature of the emerging new culture, focusing on the role and importance of interdependent information and human resources (Yakovleva, 2018). They expressed the results in indices that take into account many parameters (“BCG indices”). All countries were ranked in descending order of the BCG indices. Among the leaders turned out to be: Denmark (1); Luxembourg (2); Sweden (3); South Korea (4); Netherlands (5); Norway (6); Great Britain (7). The lower levels of the rating were taken by the UAE (30); China (35); Russia (39); India (80th) (Zatsarinnyy & Shabanov, 2019; Hojeghan & Esfangareh, 2011).

BCG specialists divide the diverse digital economies into 5 groups. The grouping criteria were the relative level of development of digital transactions and GDP per capita. BCG experts classify the countries with the highest percentage of “digitization” of economic transactions and the highest level of technologies that used for such “digitization” to the group of leaders. These are: South Korea,

Denmark, Great Britain, Sweden, Norway and the Netherlands. The second (main) group includes most of the countries with developed economies, in particular, Germany, the USA, Japan, and the countries of the European Union (Subramaniam et al., 2019; Pagoropoulos et al., 2017).

The third group covers countries with a high level of prosperity (GDP per capita), but with relatively lower rates of "digitization" of operations. These are the countries of the Middle East, primarily the UAE and Saudi Arabia. BCG experts emphasize that the number of countries of the third group, there are themes of the development of digital operations, which is why in the future they can rise to the second or even the first group. The fourth group is represented by "emerging leaders". In these countries, the level of development of digital operations is higher than the level of development of the economy. The most prominent representative of this group is China. All other countries are classified by BCG experts as lagging behind in the development of the digital economy (Mäkiö-Marusik et al., 2019; Khoshnevis, 2004).

In Uzbekistan, since the establishment of independence, special attention has been paid to the intensive development of information and communication technologies. The country is implementing large-scale digital infrastructure projects, including the development of public electronic services, the expansion of the electronic procurement system, and the involvement of citizens in the process of making socially significant decisions. Global Population: As of early 2021, the world's population was 7.83 billion. According to the UN, this figure is currently growing at 1% per year. This means that the world's population has increased by more than 80 million since the beginning of 2020 (Hootsuite, 2021).

Mobile devices: Today 5.22 billion people use a mobile phone - 66.6% of the world's population. Since January 2020, the number of unique mobile users has grown by 1.8% (93 million), while the total number of mobile connections has increased by 72 million (0.9%) and reached 8.02 billion by the beginning of 2021. Internet: In January 2021, 4.66 billion people worldwide use the Internet, up 316 million (7.3%) from last year. The Internet penetration rate is now 59.5%. However, COVID-19 has had a significant impact on the collection of data on the number of Internet users, so the actual numbers may be higher (Hootsuite, 2021). Social media: There are now 4.20 billion social media users in the world. Over the past 12 months, this figure has grown by 490 million, representing an increase of more than 13% year on year. Social networks in 2021 are used by 53.6% of the world's population (Hootsuite, 2021).

Nevertheless, despite the positive dynamics in development information technologies and communications require their solution to the problem of their more active implementation in the economy. The rapid development in the world of digital technologies and the expansion of their role in the global economy, on the one hand, open up new opportunities and horizons for further development, and on the other hand, they give rise to serious challenges and threats for countries and companies that have not learned to live in a dynamic world of permanent innovation (Koroliova et al., 2021; Biletska et al., 2021).

Conclusion and Recommendation

One of the key trends in the global economy over the past decades is its rapid digitalization. Digital transformation is changing shape and structure of economies, breaking the usual business models, lead to the expansion of markets and opportunities, become the most important engine of world economic growth. Digitalization provides fundamental transformations in all spheres of human life and activities. Technology is not only becoming an engine for the development of new industries, but also acquiring important social roles, making a significant contribution to solving social problems such as population aging, social stratification, environmental problems and climate change (Dasih et al., 2019; Lukman et al., 2016).

The results of the analysis allow us to believe that with the high degree of probability in the near future, the level of digitalization will determine the competitiveness of not only business, but also entire countries. At the same time, only those countries and companies can adapt most quickly and maximize the benefits of these changes. To adopt successfully to change and reduce technological gap with the leading players, Uzbekistan needs to develop effective responses to the challenges of the digital age. In particular, the development of long-term evidence-based strategies is required. In this context, the outstripping pace of development should imply the gradual "catch-up" introduction of technologies of the previous generation. This approach will not only place the country and business in the position of perpetually lagging behind, but also lead to significant risks, since players with fundamentally new business models may enter the market. For advanced development, it is important to identify trends in the field of digital technologies that the most affect the appearance and structure of the economy as a whole and on individual industries, in particular, and also determine which of them will allow the greatest benefits over the next 5-10 years (Rinartha et al., 2018; Tetty, 2020).

According to the Decree, the President of the Republic of Uzbekistan dated June 30, 2017 №UP-5099; today the necessary favorable conditions have been created in the country for this purpose. The development of sectoral programs for the modernization of the country's industry on the basis of the principles of "Industry 4.0" with the introduction of financial and non-financial mechanisms to stimulate demanding from enterprises for technologies. At the same time, it is important to motivate industrial enterprises to attract specifically domestic suppliers, engineering companies and research centers for the development and implementation of these technologies. Thus, the digital economy is a powerful innovation, growth and social well-being and its development in Uzbekistan is a requirement of the modern era. Deepening and expanding digitalization will increase the competitiveness of domestic economy in the world arena, to provide conditions for a gradual transition to the level of innovation economy and knowledge economy, as well as increasing the quality and standard of living of the population.

References

Barefoot, K., Curtis, D., Jolliff, W., Nicholson, J. R., & Omohundro, R. (2018). Defining and measuring the digital economy. *US Department of Commerce Bureau of Economic Analysis, Washington, DC*, *15*.

Biletska, O., Lastovskyi, V., & Semchynskyy, K. (2021). Intercultural communication competence: International relations and diplomacy area. *Linguistics and Culture Review*, *5*(S4), 1664-1675. https://doi.org/10.21744/lingcure.v5nS4.1874

Bressanelli, G., Adrodegari, F., Perona, M., & Saccani, N. (2018). The role of digital technologies to overcome Circular Economy challenges in PSS Business Models: an exploratory case study. *Procedia Cirp*, *73*, 216-221. https://doi.org/10.1016/j.procir.2018.03.322

Brynjolfsson, E., & Collis, A. (2019). How should we measure the digital economy. *Harvard Business Review*, *97*(6), 140-148.

Brynjolfsson, E., & Collis, A. (2019). How should we measure the digital economy. *Harvard Business Review*, *97*(6), 140-148.

Bucht, R., & Hicks, R. (2018). Definition, concept and measurement of the digital economy. *Bulletin of international organizations*, *13*(2), 143-172.

Daniltsev, A. (2018). Risks and Challenges to Trade Within Digital Economy. *Торговая политика*, (4 (16)).

Daron, A. (2021). Remaking the Post-COVID World: To reverse widening inequality, keep a tight rein on automation. *Finance & Development*, *58*(001).

Dasih, I. G. A. R. P., Triguna, I. B. G. Y., & Winaja, I. W. (2019). Intercultural communication based on ideology, theology and sociology. *International Journal of Linguistics, Literature and Culture*, *5*(5), 29-35. https://doi.org/10.21744/ijllc.v5n5.738

Efimushkin, V. A., Ledovskikh, T. V., & Shcherbakova, E. N. (2017). Infocommunication technological space of digital economy. *T-Comm: Telecommunications and Transport*, *11*(5), 15-20.

Everaert, P., & Safari, M. (2021). Digital self-contained module to assist a writing task on evaluating the financial, social, and environmental performance of a company: Teaching note. *Journal of Accounting Education*, *57*, 100752. https://doi.org/10.1016/j.jaccedu.2021.100752

Guzikova, L. A., & Shagun, V. I. (2019, September). Innovative Ways of Financing Small Business during Economic Crisis. In *International Conference on Innovation and Entrepreneurship* (pp. 345-XVIII). Academic Conferences International Limited.

Hilty, L. M., Arnfalk, P., Erdmann, L., Goodman, J., Lehmann, M., & Wäger, P. A. (2006). The relevance of information and communication technologies for environmental sustainability–a prospective simulation study. *Environmental Modelling & Software*, *21*(11), 1618-1629. https://doi.org/10.1016/j.envsoft.2006.05.007

Hojeghan, S. B., & Esfangareh, A. N. (2011). Digital economy and tourism impacts, influences and challenges. *Procedia-Social and Behavioral Sciences*, *19*, 308-316. https://doi.org/10.1016/j.sbspro.2011.05.136

Hootsuite, W. A. S. (2021). Digital 2021: Global Overview Report. *DataReportal–Global Digital Insights*.

James, D. (2019). *Songs of the women migrants: Performance and identity in South Africa*. Edinburgh University Press.

Katasonov, V. (2017). Digital economy — the bright future of mankind, or stock bubble? Strategic culture Foundation.

Khoshnevis, B. (2004). Automated construction by contour crafting—related robotics and information technologies. *Automation in construction*, *13*(1), 5-19. https://doi.org/10.1016/j.autcon.2003.08.012

Koroliova, V., Grechenko, V., Kovalchuk, M., Samoilenko, V., Shevchenko, T., & Zaitseva, V. (2021). Information and communication activity of students when writing a course work on linguistics. *Linguistics and Culture Review*, *5*(1), 115-128. https://doi.org/10.21744/lingcure.v5n1.1062

Lukman, .-., Abdulhak, I., & Wahyudin, D. (2016). Learning model development to improve students' oral communication skill: (a research and development study on english as a foreign language (EFL) subject in all junior high schools in north of lombok, west nusa tenggara province). *International Journal of Linguistics, Literature and Culture*, *2*(2), 147-166. Retrieved from https://sloap.org/journals/index.php/ijllc/article/view/103

Mäkiö-Marusik, E., Colombo, A. W., Mäkiö, J., & Pechmann, A. (2019). Concept and case study for teaching and learning industrial digitalization. *Procedia Manufacturing*, *31*, 97-102. https://doi.org/10.1016/j.promfg.2019.03.016

Pagoropoulos, A., Pigosso, D. C., & McAloone, T. C. (2017). The emergent role of digital technologies in the Circular Economy: A review. *Procedia CIRP*, *64*, 19-24. https://doi.org/10.1016/j.procir.2017.02.047

Plaskova, N. S. (2018). The Development of the Economic Analysis Methodology in the Digital Economy. *Accounting. Analysis. Auditing*, *5*(2), 36-43.

Pyatkin, V. V., & Kolchin, A. I. (2018). From information society to digital economy or knowledge economy. *Vestnik sovremennykh issledovanii= Bulletin of Modern Research*, (7.1), 22.

Rinartha, K., Suryasa, W., & Kartika, L. G. S. (2018). Comparative Analysis of String Similarity on Dynamic Query Suggestions. In 2018 Electrical Power, Electronics, Communications, Controls and Informatics Seminar (EECCIS) (pp. 399-404). IEEE.

Røpke, I., Christensen, T. H., & Jensen, J. O. (2010). Information and communication technologies–A new round of household electrification. *Energy Policy*, *38*(4), 1764-1773. https://doi.org/10.1016/j.enpol.2009.11.052

Subramaniam, M., Iyer, B., & Venkatraman, V. (2019). Competing in digital ecosystems. *Business Horizons*, *62*(1), 83-94. https://doi.org/10.1016/j.bushor.2018.08.013

Tetty, M. (2020). Theory of origin of languages. *Macrolinguistics and Microlinguistics*, *1*(1), 13–22. Retrieved from https://mami.nyc/index.php/journal/article/view/2

UNCTAD. (2021).Digital economy report.

Woetzel, J., Orr, G., Lau, A., Chen, Y., Chang, E., Seong, J., ... & Qiu, A. (2014). China's digital transformation: The Internet's impact on productivity and growth. *McKinsey Global Institute, July, McKinsey&Company*.

World Bank Group. (2016). *World development report 2016: digital dividends*. World Bank Publications.

Yakovleva, E. (2018). Management of intellectual resources of employees in the conditions of innovative development in the digital economy. Journal of Creative Economy.

Zatsarinnyy, A. A., & Shabanov, A. P. (2019). Model of a prospective digital platform to consolidate the resources of economic activity in the digital

economy. *Procedia Computer Science*, *150*, 552-557. https://doi.org/10.1016/j.procs.2019.02.092