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A STUDY OF THE DIGITAL TRADE IN THE UNITED KINGDOM IN THE CONTEXT OF ADAPTATION TO THE UKRAINIAN MARKET

Abstract

The paper investigates aspects of digital trade in the United Kingdom and the possibility of adopting this experience in Ukraine. The authors analyse the performance of digital trade by segment and identify three clusters based on which they construct a mechanism for introducing the U.K. experience into the development of digital trade in Ukraine. By means of indicator systematization, the authors track the dynamics of gross value added in the sectors of IT, software and computer services, computer programming, consulting, and software publishing. The work identifies the tech companies based on the data of London Stock Exchange. Based on the analysis of average earnings in the U.K. digital

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sector by age group, the authors substantiate their suggestions aimed at creating new jobs for all age groups in Ukraine. Graphics illustrate the dynamics and trends of GDP growth from investment into digital technology in the United Kingdom over the period from 2020 to 2040. Based on this, the authors delineate the factors of influence and design the mechanism of introducing the U.K. experience into the development of digital trade in Ukraine.

Key Words:

blockchain technology; digital technology; mechanism; smart-contract; global markets; digitalization.

JEL: F50, O30, O52, Q01.

7 figures, 12 references.

Problem Statement and Literature Review

Digital technology has changed the modern life with a tendency to continue doing so in the future. The economic future of the United Kingdom, its jobs, wage levels, prosperity, national security, cost of living, productivity and ability to compete globally, as well as the country's geopolitical position in the world – all this depends on continued and growing success in digital technology. That is why the United Kingdom strengthens its positions as the world's science and technology superpower. Special attention is paid to building blocks of the digital economy, from super-fast Internet access to cyber-security capabilities. Over the recent years, the inflow of private capital into the U.K. technology has been larger than in any other European country, as attested by thousands of high-paid new jobs across Great Britain. In the new fields, such as artificial intelligence (AI), advanced semiconductor design and quantum computing, the United Kingdom is a world leader. The global network of partners and allies are a foundation for the United Kingdom to act as a force for digital good in the world arena. These very aspects enable the United Kingdom to sign agreements for the development of

digital trade and innovations. The first agreement was signed with Singapore. Ukraine will become the second country in the world to sign such an agreement with the UK. Thus, there appear many preconditions for considering the digital trade experience of the United Kingdom and elaborating on the terms of this agreement.

The analysis of specialized foreign and Ukrainian literature allowed us to organize this research. In this article, the authors studied the works on digital trade and the U.K. economy written by such scientists as Cliodhna (2022), Huaping and Binhua (2022), Okorie et al. (2022), Penga and Changqi (2022), Sava (2022), and Swabey (2022). In order to achieve the goal set for this study, the authors also considered the works on digitalization in Ukraine, in particular by Zhosan (2020), Pyshchulina (2020) and Semenoh (2020).

The **aim of this study** is to develop the digital economy in Ukraine by means of revealing the dominant tendencies in the digital trade of the United Kingdom and to work out the mechanism for their adoption in Ukraine.

Research Results

At the present time, the United Kingdom has achieved success in the sphere of digital business and it upholds its leadership position in the sphere of fintech. The success and wealth created by investors and founders of digital businesses has become national success, which should be followed for the development of digital trade in Ukraine.

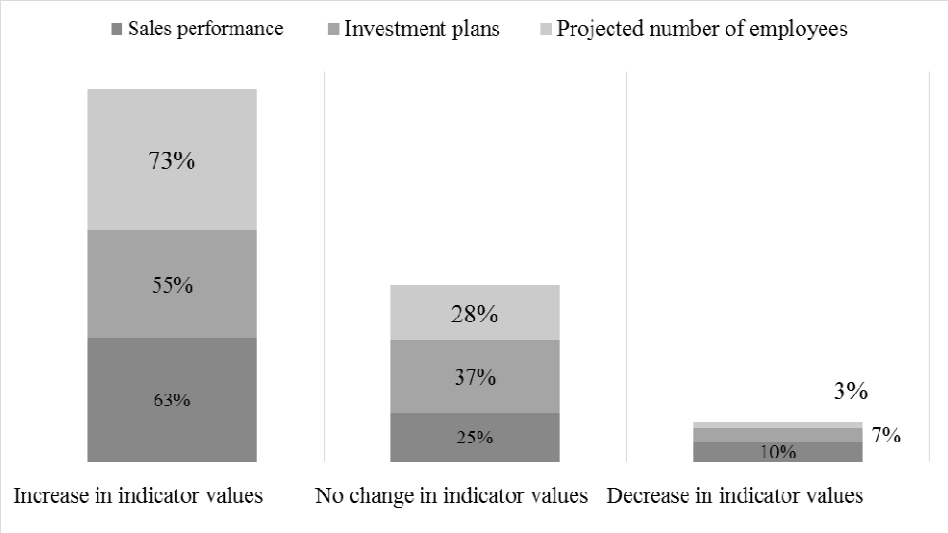
The United Kingdom is one of the best places in the world to launch and develop a technology business. Digital strategy determines the vision and the actions necessary for its realization. An approach to supporting and strengthening the digital economy can increase the annual gross value added of the U.K. technology sector by additional £41.5 billion by 2025 and create additional 678 thousand jobs.

In the authors' opinion, it is necessary to graphically see the dynamics of digital trade performance in 2021 by segment (Figure 1).

As it can be seen from Figure 1, the authors studied three positions – an increase in indicator values, no change in indicators, and a decrease in indicator values – which comprise the clusters 'sales performance', 'investment plans' and 'projected number of employees' that constitute the segments of digital trade. In 2021, these segments had a tendency to increase or decrease. As the constructed diagram shows, the overall digital economy performance in the U. K. has increased in 2021 compared to 2020. Such company segments as sales, investments and projected number of employees, have grown in 2021.

Figure 1

Performance of digital trade in the United Kingdom in 2021 by segment



Source: adapted from Cliodhna (2022); Department for Digital, Culture, Media & Sport (n.d.); and Office for National Statistics (UK) (n.d.).

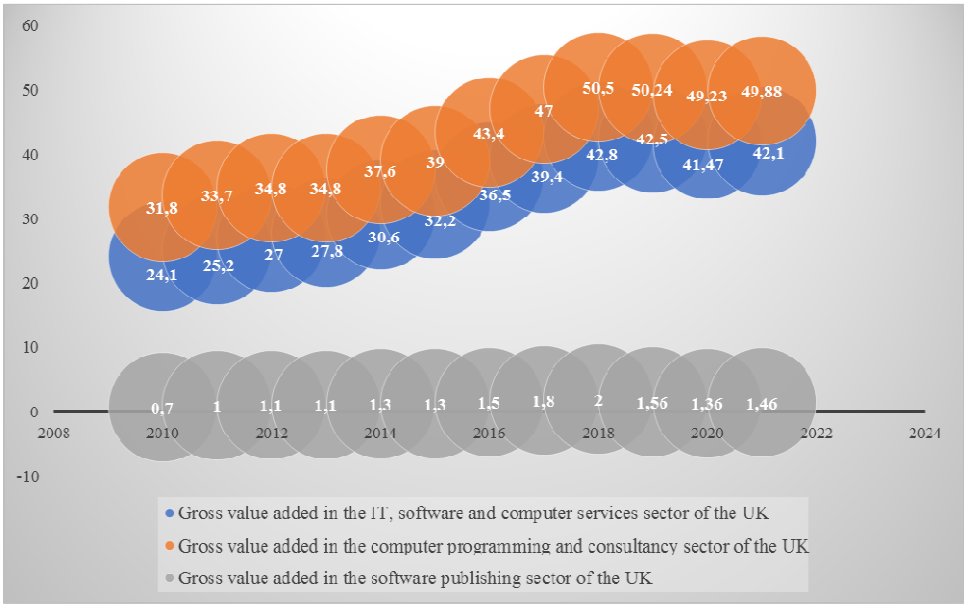
In the authors' opinion, in order to have a full understanding of the current state of digital trade in the United Kingdom, it is necessary to analyze the indicator of gross value added over the last ten years, which will allow us to track the dynamics and to reveal the weaknesses of economic situation.

Gross value added (GVA) measures the value created during production of products and services. This is one of the indicators of overall economic performance. The data show gross value added in current base prices in pounds sterling. The data for the last year are usually provisional in nature, whereas final data are shown in an update for the next year. Temporary data are indicated in the dataset.

The diagram in Figure 2 features three components, thus, in our opinion, it is necessary to specify these indicators and to analyze them separately. Thus, the dynamics illustrates graphically the gross value added of the IT, software and computer services sector in the United Kingdom from 2010 to 2021. In 2021, the gross value added exceeded £42 billion. This constitutes an increase by 74.7% over the last 11 years starting from 2010, which testifies to positive growth dynamics. It should be noted that this dynamics does now exhibit any sharp variations in indicator values, which is evidence of stable economic growth.

Figure 2

Dynamics of GVA in the IT, software and computer services sector, computer programming and consultancy sector and software publishing sector in the UK from 2010 to 2021



Source: adapted from Cliodhna (2022); Department for Digital, Culture, Media & Sport (n.d.); Office for National Statistics (UK) (n.d.); and Sava (2022).

The GVA statistics in the sector of computer programming, consultancy and related activities in the United Kingdom over the period from 2010 to 2021 illustrates that gross value added was approximately £50 billion in 2021. Over the last 11 years, this indicator has grown by 56.84%. However, the highest value of this indicator was recorded in 2018 –£50.5 billion, – which is 58.8% higher than in 2010. In comparison with 2021, we can conclude that this indicator has decreased by -1.23%. In the authors' opinion, such a decrease can be connected with the fact that, starting from 2019, the U.K. economy has been demonstrating the weakest results since 2009, when the country had not fully recovered from the Global financial crisis due to weaknesses in consumer prices, trade and business investment.

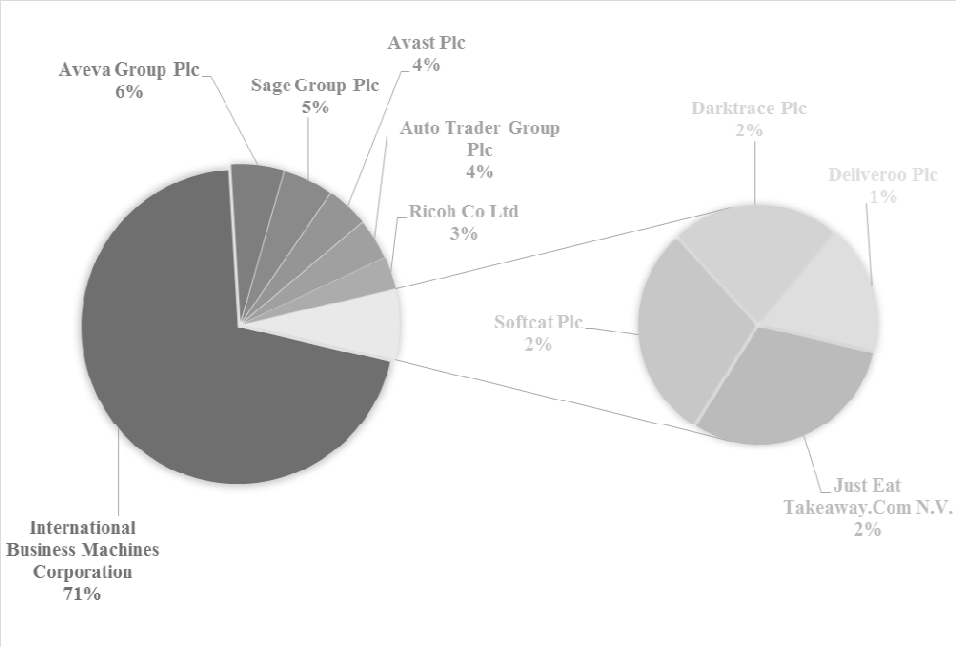
This statistics shows gross value added in the software publishing sector of the United Kingdom over the period from 2010 to 2021, and it is in 2021 that the gross value added was almost £1.5 billion.

In what concerns this dynamics, the indicators increased by 108.57% on the overall, however, as it was the case with the previous indicator, it was the year 2018 which saw the highest growth of 185.71%, which was 37% higher than in 2021, indicating a negative tendency. This can be connected with low growth of GDP in the United Kingdom in 2018-2019 from 1.4% to 1.3%. At that time, the majority of economists expected the weakening of growth in the United Kingdom over the nearest two years due to its exit from the European Union.

When elaborating on the issue of the U.K. experience in digital trade, it is worth paying attention to technology companies that are directly linked with it (Figure 3). The best example is the indicators of the London Stock Exchange because it is one of the largest stock markets in the world.

Figure 3

London Stock Exchange (UK): Market capitalisation of top technology companies in 2022



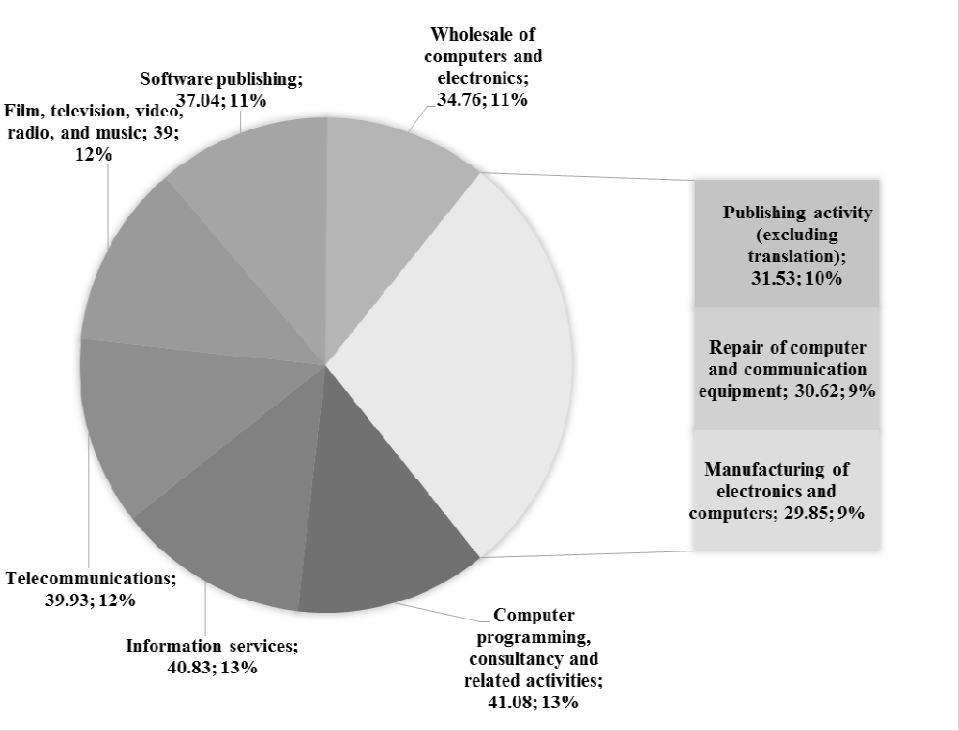
Source: designed using the data of Department for Digital, Culture, Media & Sport (n.d.); and Office for National Statistics (UK) (n.d.).

As it can be seen from Figure 3, during the period starting January 2018 to June 2022, the overall market capitalization of technology companies listed at the London Stock Exchange fluctuated between the minimum value of £142 billion in March 2020 to the maximum value of almost £206 billion in August 2021. As of June 2022, the market capitalization of technology companies listed the London Stock Exchange was £153.4 billion.

In order to achieve the set goal, in the authors' opinion, it is important to analyze the financial feasibility of digital trade. Thus, the dynamics of average earnings in the digital sector of the United Kingdom over the period from 2011 to 2020 is shown in Figure 4.

Figure 4

Average earnings in the digital sector of the United Kingdom from 2011 to 2020



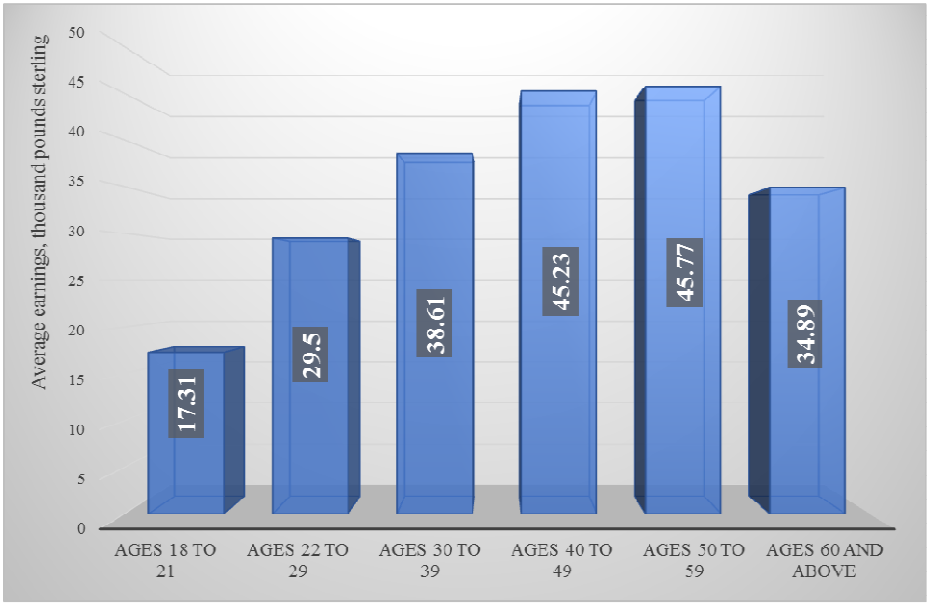
Source: adapted from Cliodhna (2022); Department for Digital, Culture, Media & Sport (n.d.).

As Figure 4 demonstrates, the statistical data show average earnings in the digital subsector of the United Kingdom over the period from 2011 to 2020. The provisional indicator for the subsector of information services in 2020 was more than £40,000. Nevertheless, the highest average earnings were observed in computer programming, consultancy and related activities – almost £41,100. It is also important to understand which age group is involved in the digital trade in the United Kingdom. This understanding is of highest urgency because introducing the experience of the United Kingdom into the development of digital trade in Ukraine will lead to the appearance of new jobs. Thus, it is necessary to find out which specific age group can hope for increased number of jobs when developing the digital trade in Ukraine. Average earnings in the digital sector of the United Kingdom in 2020 by age group are shown in Figure 5.

Figure 5 shows the distribution of average earnings in the U.K digital trade sector by age group in 2020. The average earnings in the United Kingdom for employees of 40 to 59 years of age exceeded £45,000.

Figure 5

Average earnings in the digital trade of the United Kingdom in 2020, by age group



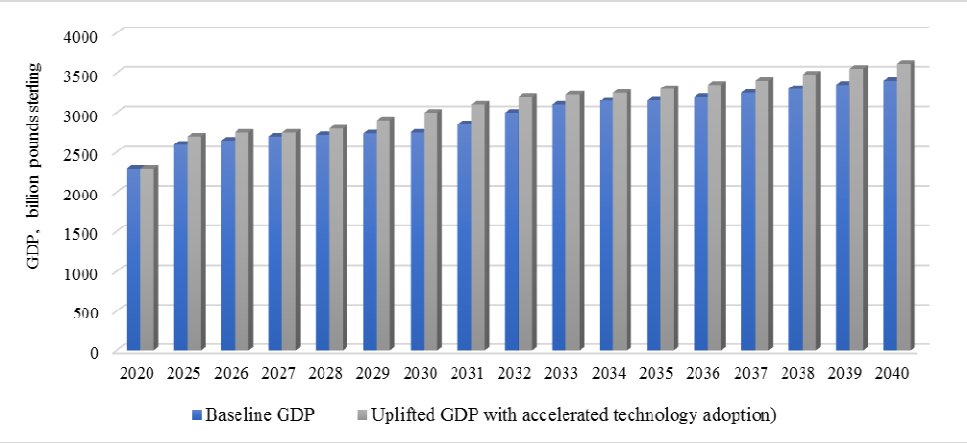
Source: adapted from Cliodhna, (2022); Department for Digital, Culture, Media & Sport (n.d.); Office for National Statistics (UK) (n.d.).

However, it is worth emphasizing that all work-able population from 18 to 60 years of age and above are engages in the digital trade sector. This can be explained by the fact that, because digital trade is currently the most relevant sector of the economy, a lot of young people strive to work in this field. However, the starting point for digital trade can be traced back to many years ago, thus, a large share of people of 40 to 50 years of age have the necessary competences to realize their capabilities and skills in the digital trade. It is worth to pay separate attention to the fact that today digital trade can be performed remotely, enriching the advantages of this work.

As it was noted at the beginning of this study, the GDP of the United Kingdom has decreased since 2019 due to the country's exit from the European Union, which now constitutes one of major impediments to the development of the country's economy in general and its digital trade in particular. In the authors' opinion, these aspect and experience should be taken into account as a factor of influence upon the development of digital trade in Ukraine. Today, Ukraine faces the prospects of accession to the EU, on the one hand, and the adverse effects of the Russia's military invasion, on another hand. Thus, these aspects should be taken into account when constructing the mechanism of introducing the experience of The United Kingdom into the development of digital trade in Ukraine. The authors constructed the graphs of the dynamics and tendency of GDP growth from investment in digital technology in The United Kingdom over the period from 2020 to 2040 (Figure 6).

Figure 6

Growth of GDP from investment in digital technology in the United Kingdom from 2020 to 2040



Source: designed using the data of Department for Digital, Culture, Media & Sport (n.d.); Office for National Statistics (UK) (n.d.).

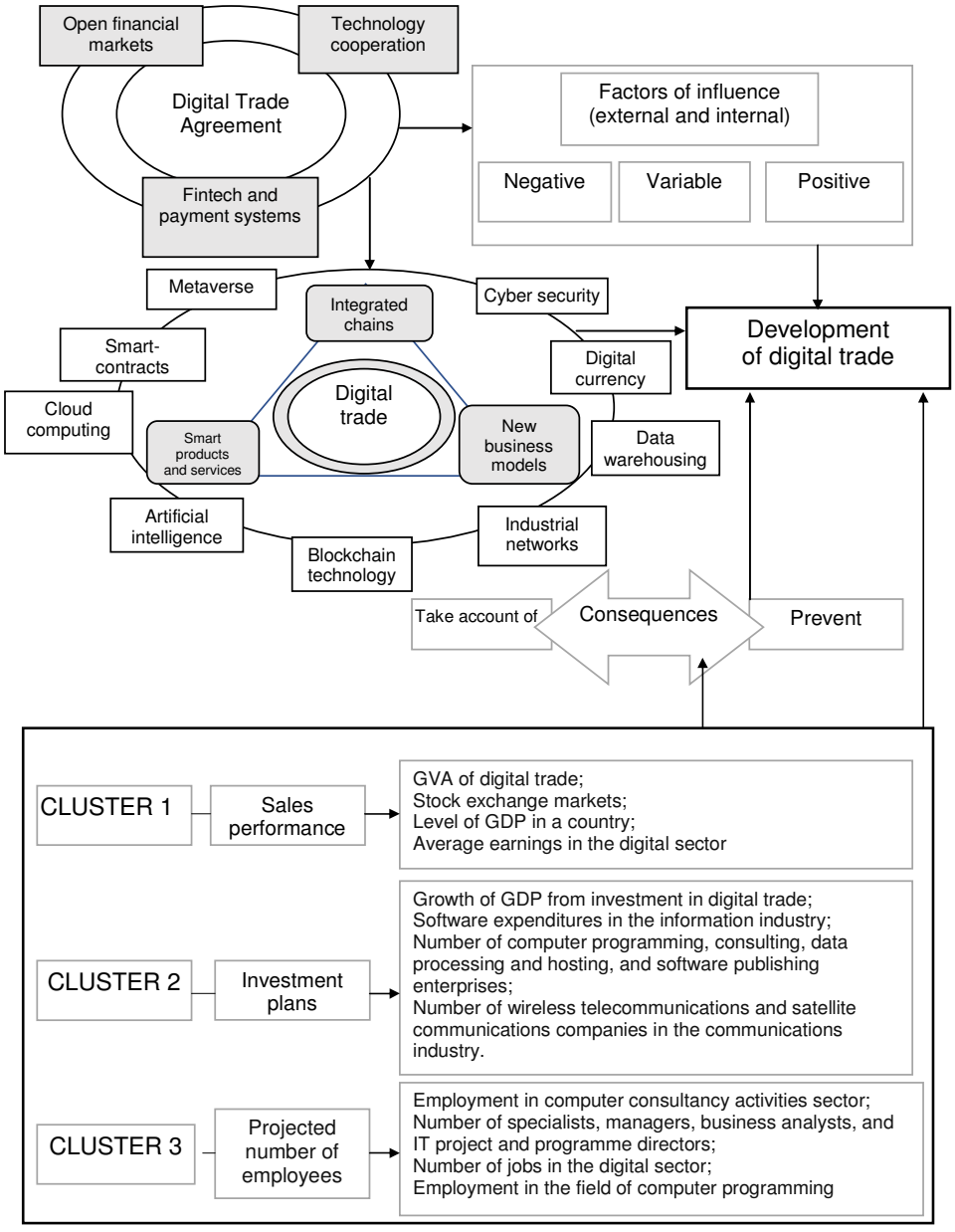
As it can be seen from Figure 6, it is projected that the GDP of the United Kingdom will reach £2,651 billion by 2025, and £3,361 billion by 2040. However, the COVID-19 coronavirus pandemic (COVID-19) induced accelerated investment in digital technology which has also affected the country's GDP. The GDP of the United Kingdom is expected to grow by 2.8% thanks to technology investments and by almost 7% in 2040. It is worth noting that it is impossible to forecast how exactly this factor will affect the process development. For example, although the coronavirus pandemic is a negative factor, it is also a precondition for positive effects in the development of digital trade, thus, in the authors' opinion, when working out the mechanism of introducing the experience of the United Kingdom into the development of digital trade in Ukraine, the factors of influence should be divided into three groups – the positive, the negative and the variable factors.

The authors of this study made an attempt to develop a mechanism for introducing the experience of the United Kingdom into the development of digital trade in Ukraine (Figure 7), however, already today, there exist key conditions that – if satisfied – would speed up the development of digital trade: The reduction of the tax which affects the digital trade, regulatory change, free access to foreign talent, better learning and skill support, increased support for science and research outcomes and innovations. In the authors' opinion, meeting these conditions will provide an opportunity to speed up the introduction of digital trade.

The developed mechanism of introducing the experience of the United Kingdom into the development of digital trade in Ukraine takes into account the clusters developed by the authors – sales performance, investment plans and projected number of employees, – with each cluster including basic indicators, part of which were considered in this study. Based on these indicator data, the consequences can be identified, which should be either taken into account in the process of digital trade development or prevented in order to ensure its efficiency. With the aid of cluster indicator analysis, the authors identified the factors that bear influence on the development of digital trade. These factors are subject to the Digital Trade Agreement concluded between Ukraine and the United Kingdom. The provisions of this Agreement cover three aspects: The creation of open financial markets, technology cooperation support and the creation of new and improvement of the existing financial technologies and payment systems. In its turn, this agreement will affect both the development of digital trade and the digital trade including integrated chains, smart products and new business models. Digital trade combines classical (cloud computing, industrial networks, data warehouses) and new (metaverse, smart-contracts, artificial intelligence, blockchain technology, cyber-security, digital currency) technologies, which ensures the development of digital trade in Ukraine taking into account the experience of the United Kingdom. The developed mechanism, in the authors' opinion, can lay the basis for the methodological approach to assessing the level of digital trade development in Ukraine.

Figure 7

The mechanism of introducing the U.K. experience into the development of digital trade in Ukraine



Conclusions

In conclusion, it should be noted that now is the time when the foundations for the Ukrainian digital economy in general and digital trade in particular start to gain momentum. The implementation of the world-class Digital Trade Agreement with the United Kingdom will provide an opportunity for Ukraine to harness the power of data for introducing a light pro-growth regulatory regime that protects the citizens while encouraging both investment and innovation. This will lead to competitive regulatory advantages in the digital and economic spheres and strengthening of the digital global market competition. There are also prospects for guaranteeing the technical and digital security from threats of the enemy state, as well as the proper protection for highly sensitive technical intellectual property. In the authors' opinion, further research should be directed towards considering the emergence and development of digital trade in Ukraine.

References

Cliodhna, T. (2022, January 28). *UK digital economy research: 2019*. Office for National Statistics. https://www.ons.gov.uk/economy/economicoutputand productivity/output/methodologies/ukdigitaleconomyresearch2019

Department for Digital, Culture, Media & Sport. (n.d.). Homepage. https://www.gov.uk/government/organisations/department-for-digital-culture-media-sport

Huaping, G., & Binhua, G. (2022). Digital economy and demand structure of skilled talents — analysis based on the perspective of vertical technological innovation. *Telematics and Informatics Reports, 7*, 100010. https://doi.org/10.1016/j.teler.2022.100010

Office for National Statistics (UK). (n.d.). https://www.gov.uk/government/ organisations/office-for-national-statistics#:~:text=The%20Office%20for%20 National%20Statistics,national%2C%20regional%20and%20local%20levels

Okorie, O., Russell, J., Cherrington, R., Fisher, O., & Charnley, F. (2022). Digital transformation and the circular economy: Creating a competitive advantage from the transition towards Net Zero Manufacturing. *Resources, Conservation and Recycling, 189*, 106756. https://doi.org/10.1016/j.resconrec.2022.106756

Peng, Y., & Tao, Ch. (2022). Can digital transformation promote enterprise performance? —From the perspective of public policy and innovation. *Journal*

of Innovation & Knowledge, 7(3), 100198. https://doi.org/10.1016/j.jik.2022.100198

Pyshchulina, O. (2020). *Digital economy: Trends, risks and social determinants* [in Ukrainian]. Razumkov Centre, Zapovit Publishing House. https://razumkov.org.ua/uploads/article/2020_digitalization.pdf

Sava, J. A. (2022, Apr 5). *Digital economy in the United Kingdom (UK) - statistics & facts*. The Statista. https://www.statista.com/topics/7208/digital-economy-in-the-uk/#topicOverview

Semenoh, A. Yu. (2020). State of development and formation of digital economy in Ukraine [in Ukrainian]. *Problems of Systemic Approach in the Economy, 3*(77)-1. https://doi.org/10.32782/2520-2200/2020-3-10

Shevchenko, I. O. (2022, Nov 21-23). Smart-contracts as a blockchain technology concept in digital trade [in Ukrainian]. In *The latest implementation of technologies in education: Abstracts of the IV International Scientific and Practical Conference, Munich, Germany* (pp. 116-119). European Conference. https://eu-conf.com/wp-content/uploads/2022/11/The-latest-implementation-of-technologies-in-education.pdf

Swabey, P. (2022, Jun 13). *UK unveils new strategy to grow its digital economy*. Tech Monitor. https://techmonitor.ai/policy/digital-economy/uk-digital-strategy-economy

Zhosan, H. (2020). Development of digitalization in Ukraine [in Ukrainian]. *Ekonomichnyi Analiz*, *30*(1)-2, 44-52. https://doi.org/10.35774/econa2020.01.02.044

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