REICE
Revista Electrónica de Investigación en Ciencias Económicas
Abriendo Camino al Conocimiento
Facultad de Ciencias Económicas, UNAN-Managua

Vol. 11, No. 21, enero - junio 2023 REICE ISSN: 2308-782X
http://revistacienciaseconomicas.unan.edu.ni/index.php/REICE
revistacienciaseconomicas@gmail.com

Digital trade in global markets

Comercio digital en mercados globales

Fecha recepción: abril 01 del 2023
Fecha aceptación: abril 19 del 2023

https://doi.org/10.5377/reice.v11i21.16517

Iryna Shevchenko
Phd in Economics, Doctoral Student, Assistant Professor, Department of International Economics, West Ukrainian National University, Ternopil, Ukraine
https://orcid.org/0000-0001-8188-3551 , Irina_shev4enko@ukr.net

Yuliia Rusina
PhD, Candidate of Economic Sciences, Associate Professor, Department of Finance and Investment, Faculty of Management and Business Design, Kyiv National University of Technologies and Design (KNUTD), Kyiv, Ukraine.
https://orcid.org/0000-0001-9540-0899 rusinaulia80@gmail.com

Liliya Filipishyna
Doctor of Economic Sciences, Professor, Department of Economics, Accounting and Entrepreneurship, Faculty of Engineering and Economics, Admiral Makarov National Shipbuilding University, Mykolaiv, Ukraine.
https://orcid.org/0000-0001-9552-1367 ontariofilpi@ukr.net

Svitlana Marushchak
Associated Professor, Candidate of Economic Sciences, Faculty of Marine Economics, Department Economic Policy and Security, Admiral Makarov National University of Shipbuilding, Mykolaiv, Ukraine
https://orcid.org/0000-0002-0760-4427 , svitlana.marushchak@nuos.edu.ua

Oleh Pustovoit
Leading researcher, Doctor of Economics, Department of sectoral forecasts and market conditions, state organization "Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine", Kyiv, Ukraine.
https://orcid.org/0000-0002-2095-064x avvit@ukr.net

Resumen

La regulación del comercio digital varía significativamente a nivel nacional en países particulares y a nivel regional e internacional. Los autores muestran que el rápido desarrollo de Internet y los nuevos modelos de negocios implica la necesidad de cambiar las políticas tradicionales y las medidas regulatorias en temas como el acceso al mercado de bienes y servicios, el control del tráfico de datos, la censura, la protección de los derechos de propiedad intelectual, los estándares de privacidad, seguridad de la información, y muchos otros. La regulación del comercio digital en todo el mundo sigue siendo inicialmente. A nivel internacional, no existe una terminología común en el campo del comercio digital, ninguna metodología unificada para calcular cantidades estadísticas de comercio digital, ninguna evaluación del nivel de digitalización de varios sectores, ningún método unificado para identificar barreras al comercio digital y enfoques para evaluando su impacto en el negocio. Uno de los beneficios del comercio digital es una mayor transparencia, trazabilidad y control de las transacciones realizadas electrónicamente. Las plataformas digitales globales brindan oportunidades significativas para que las empresas de todo el mundo (especialmente las nuevas empresas y las pequeñas empresas) se expandan a nuevos mercados. La difusión de las tecnologías de impresión 3D y fabricación aditiva promueve el crecimiento de los flujos transfronterizos de bienes físicos comercializados electrónicamente. Una de las oportunidades más excelentes que ofrece la era digital es la capacidad de recopilar y procesar una gran cantidad de información (big data). El análisis de big data mejora significativamente la eficiencia de las decisiones de gestión, lo cual es extremadamente importante para las empresas y la administración pública. Hasta ahora, las grandes empresas corporativas de los países tecnológicamente desarrollados han demostrado ser más hábiles para aprovechar esta oportunidad. Como resultado, sus gobiernos han intensificado sus esfuerzos para superar el desequilibrio en la gestión del complejo sistema macroeconómico. Al mismo tiempo, como muestra la práctica de muchos países, las mismas tecnologías pueden usarse contra la seguridad nacional. La amenaza de desarrollar armas cognitivas para manipular el comportamiento humano, desestabilizar la situación política y cambiar el gobierno se vuelve bastante seria.

Palabras clave: comercio digital, regulación del comercio electrónico, barreras comerciales digitales, restricciones comerciales digitales, requisitos de comercio electrónico, apertura digital de los países.

Abstract

Digital trade regulation significantly varies at the national level in particular countries and the regional and international levels. The authors show that the rapid development of the Internet and new business models entails the need to change traditional policies and regulatory measures regarding such issues as access to the market for goods and services, data traffic control, censorship, intellectual property rights protection, privacy standards, information security, and many others. Digital trade regulation worldwide is still initially. At the international level, there is no common terminology in the field of digital trade, no unified methodology for calculating statistical amounts of digital commerce, no assessment of the digitalization level of various sectors, no unified methods for identifying barriers to digital trade and approaches to assessing their impact on business. One of the benefits of digital trade is increased transparency, traceability, and control of transactions made electronically. Global digital platforms provide significant opportunities for companies worldwide (especially startups and small businesses) to expand into new markets. The spread of 3D printing and additive manufacturing technologies promotes the growth of cross-border flows of electronically traded physical goods. One of the most excellent opportunities the digital era offers is the ability to collect and process a huge amount of information (big data). Big data analytics significantly improves the efficiency of management decisions, which is extremely important for business and public administration. So far, large corporate companies in technologically developed countries have proved to be more adept at using this opportunity. As a result, their governments have stepped up their efforts to overcome the imbalance in managing the complex macroeconomic system. At the same time, as the practice of many countries shows, the same technologies can be used against national security. The threat of developing cognitive weapons to manipulate human behavior, destabilizing the political situation, and changing the government becomes quite serious.

Keywords: Digital trade, e-commerce regulation, digital trade barriers, digital trade restrictions, e-commerce requirements, digital openness of countries.

Introduction

Introduction. Progressive humanity has entered the era of digital business, digital economy, and digital state. Ukraine has defined the digital economy as a strategy and the basis for its development in the nearest future. The country has significant potential and favorable conditions for the growth of the E-commerce segment. However, with the growth of digital networks and services comes increased risks and expenses related to cyber threats. Severe hacker attacks have hit Ukrainian businesses. The Ukrainian business community has faced the Petya virus, cyberattacks, and fake electronic SIM card signatures and has proven its ability to meet the highest global information security standards. Today, digital trade provides new opportunities for economic development. It is a concept that reflects the overarching role of the Internet in cross-border trade. Digital technologies have been determining the course of economic and social development for a long time and have repeatedly led to dramatic changes in people's lives.

The transition to a digital economy is a priority for many countries worldwide. As a rule, they are characterized by a long implementation period of the digital development agenda and consistency of priorities - from building the basic information and communication infrastructure to formulating a coordinated policy in this area and programs to support the widespread application of digital technologies. In recent years, a transformation of business and social activity models has been ongoing, driven by a new generation of digital technologies. These technologies are called "end-to-end" due to their scale and depth of impact: artificial intelligence, robotics, the Internet of Things, and wireless communication technologies. Their widespread adoption is estimated to increase labor productivity by 40%. Shortly, the effective use of new digital technologies will determine the international competitiveness of both individual companies and entire countries that are building the infrastructure and legal environment for further digitalization. Today, at

the new stage of digital technologies development, one of the main challenges is the exponential growth in the number, quality, and diversity of interconnections between businesses, organizations, citizens, and socio-economic systems. Such growth is accompanied by a leap in the number of transactions and information volumes, leading to more complex and synchronized integration. These transformations require new skills, competencies, and a willingness to use new technologies daily. Developing educational programs that meet global trends and personalized learning paths that can ensure digital literacy becomes extremely important.

This article aims to clarify the nature and content of digital trade in global markets.

Materials and Methods

While working on this research, the authors used the following general scientific methods: comparative, correlative, analytical, and historical.

Theoretical background: Leading domestic and foreign scientists have focused on the issues of digital trading by optimizing financial and economic results (Sofii, O., 2020), (Vyshlinsky, H., Repko, M., 2022), (Yue, Y. S. & Zhao, J. H., 2020), (Williams, Andrew J., 2020), (Tzifakis N., 2019), (Tamir, A., 2021), (Sun, J., 2020), (Shevchenko, I. O., 2022), (Qi, J. Y. & Qiang, H. J., 2022), (Popov, O. O., Iatsyshyn, A. V., Iatsyshyn, A. V., Kovach, V. O., Artemchuk, V. O., Gurieiev, V. O., Kiv, A. E., 2021), (Meng, X., Sun, L., & Wang, H., 2020), (Makiyama H.-L., Narayanan B., 2014), (Luong, T. & Nguyen, D. K., 2021), (Lewarne, S., Snelbecker, D., 2004), (Lally, 2010), (Kryshtanovych, M., Akimova, L., Akimov, O., Kubiniy, N., & Marhitich, V., 2021), (Irtyshcheva I., Kramarenko I., Sirenko I., 2003), (Chad, P. B. & Petros, C. M., 2019).

Result and discussion

Digitalization significantly impacts international trade and requires revising traditional trade policy measures and developing new regulations on various issues. In this article, the authors provide an overview of existing national approaches to regulating digital trade and international methods for assessing regulatory barriers to its development.

Increasing transparency, traceability, and control of transactions conducted electronically are among the benefits of digital trade. Global digital platforms allow companies worldwide (especially startups and small businesses) to expand into new markets. In addition, the spread of 3D printing and additive manufacturing technologies contributes to the growth of cross-border traffic of electronically traded physical goods.

The rapid development of the Internet and new business models entails changing traditional policies and regulatory measures in such areas as market access for goods and services, data flow regulation, censorship, intellectual property rights protection, privacy standards, information security, and many others.

Digital trade regulation globally is in the process of being formed. However, at the international level, there is still a lack of the following:

- common terminology for digital trade;
- a unified methodology for calculating statistical volumes of digital trade, assessing the level of digitalization of various sectors;
- unified methods for identifying barriers to digital trade and approaches to assessing their impact on business.

Digital trade regulation largely varies at the national level in certain countries and the regional and international levels. The elaboration of new global rules on trade-related aspects of E-commerce within the World Trade Organization (WTO) was officially launched in January 2019. The WTO negotiating forum is currently discussing such issues as the taxation of digital products and electronic data transmission, a ban on the requirement to disclose software source code, and the non-application of restrictions such as data localization by countries.

The United Nations Commission on International Trade Law (UNCITRAL) has developed several legal documents that facilitate the use of electronic means in trade and harmonize national regulation in the digital economy:

- The UNCITRAL Model Law on Electronic Commerce (adopted in 1996, 72 states have adapted their legislation thereto);
- The UNCITRAL Model Law on Electronic Signatures (adopted in 2001, 33 countries have adapted their legislation thereto);
- The United Nations Convention on the Use of Electronic Communications in International Contracts;
- The UNCITRAL Model Law on Electronic Transferable Records (adopted in 2017; so far, only Bahrain has adapted its legislation thereto).

In addition, it should be noted that countries are increasingly referring to the above documents in their free trade agreements. According to UNCTAD, 145 countries have adopted legal acts on electronic contracts, 138 have legislation against cybercrime, 107 have data protection and privacy legislation, and 97 have online consumer rights protection legislation.

Due to individual countries' socio-cultural characteristics, there is no consensus on the best ways to ensure online privacy at the international level. For example, according to the Chinese law on cybersecurity, privacy is considered an aspect of information security, which is the state's prerogative. At the same time, the APEC Privacy Framework (China is a member of this forum) considers privacy protection as an integral part of consumer rights protection, i.e., first and foremost, human rights.

Trade regulation under digitization determines the extent to which markets are open or whether barriers are created to circulating data, goods, services, investment, and even ICT professionals. Open markets facilitate access to the best available technologies and digital services, which, in turn, stimulates the development of the digital economy. Nevertheless, there are also risks related to the need to foster the development of new national technology markets and ensure information security.

Currently, two key indices are used by the international community to assess regulatory barriers to digital trade development, one of which is the Digital Trade Restrictiveness Index (DTRI), developed by the European Center for International Political Economy (ECIPE). The DTRI evaluates the barriers to digital trade on goods and services for 64 countries (the data has been available since 2000). The main groups of measures, according to the Index, include:

- fiscal restrictions;
- investment-related restrictions;
- limitations on data flows;
- trade restrictions.

In the global rankings of countries' digital openness, the highest places are occupied by developed countries, while developing countries occupy the lowest. Thus, according to the DTRI, the leaders in regulatory openness are New Zealand, Iceland, Norway, Ireland, and Hong Kong, which are small countries heavily dependent on global markets. On the other hand, the leaders in regulatory openness in digital trade of services, according to the Digital STRI index, are Costa Rica, Switzerland, Norway, Luxembourg, and the Republic of Korea.

The most closed countries in the digital trade sector, as ranked by Digital STRI, are China, Russia, India, Indonesia, and Vietnam. On the other hand, the countries with the highest restrictions, according to the DTRI index, are China, Indonesia, Brazil, Saudi Arabia, and Russia. The fact that China, Russia, and Indonesia are among the top countries with the most restrictive regulation of digital trade in both rankings is quite interesting.

Let us look at the leading areas of digital trade regulation in terms of the approaches used by different countries.

In Argentina, Brazil, and Pakistan, the average MFN rates for IT goods exceed 10-13%, and tariff peaks for certain goods are 30-35%. At the same time, only a small number of countries (Hong Kong, Norway, Singapore, and Switzerland) do not have import duties on digital products.

Since 1998, WTO member countries have applied a temporary moratorium on charges for international electronic data communications, which is extended every two years. Some free trade agreements contain moratorium provisions without any time limits. The United States, New Zealand, and Singapore have proposed a permanent ban on electronic data transfer tariffs. At the same time, some other countries (including India and South Africa) support the abolition of the moratorium. Due to the differences in the parties' opinions, implementing a permanent moratorium at the WTO level is unlikely. Still, agreeing on prohibiting digital duties among the interested countries is possible. Country-specific calculations show that the levying of import duties on digital goods and services may lead to negative economic consequences, such as higher prices and reduced consumption, which will not be offset by the financial losses to GDP from the collected duties.

The volume of parcels moving across customs borders is one of the indicators of global e-commerce expansion. "De minimis threshold," the minimum value of goods that can be imported duty-free, varies significantly among countries. For example, de minimis thresholds are low in Switzerland (around $5 per parcel), India (approximately $14), Canada (around $15), and Belarus (around $24). On the other hand, no de minimis thresholds exist in Chile, Peru, Indonesia, Fiji, and the Maldives (parcels of any value are subject to duty). For example, the highest de minimis threshold for importing packages is in the United States ($800) and Australia ($1,000). The single duty-free import limit for the EAEU countries (above which no value can be set under national law) as of January 1, 2020, is €200.

Differences in postal taxation create additional barriers to trade via electronic trading platforms. It should be noted that in the case of a low de minimis threshold, the administrative support costs for duty charges often significantly exceed the revenues actually collected by the state as a duty. For example, according to the CD Howe Institute, the Canadian government spends four times more than it actually collects in duties and taxes on small purchases within the e-commerce sector.

In addition, some countries impose additional fees on online shipments. For example, Argentina levies an extra tax of 50% on the value of goods (for goods under $3,000) purchased online abroad and delivered through the country's official Express Mail Service (EMS). In addition, a special tax of $1 in Thailand is charged for delivering documents up to 2 kg. However, the authorities have been striving to move away from taxation in recent years.

Most Favored Nation (MFN) is a legal regulation based on the World Trade Organization's system of rules, according to which each WTO member state undertakes to provide other WTO member states with no less favorable conditions for international trade than any third country. For example, certain bilateral agreements involving the EU, such as the Comprehensive and Progressive Trans-Pacific Partnership Agreement and the US-Mexico-Canada Agreement, on businesses' taxation based on the purchaser's location of the goods or services. The latter is particularly relevant for digital companies that can provide services anywhere worldwide without being physically present.

Taxing digital services (including electronic content) is widespread in developed and developing countries. It is mainly applied through indirect consumption taxes, such as value-added tax (VAT) or sales tax. The lowest VAT rate (5%) applies to Taiwan and the Gulf countries (UAE, Bahrain, and Saudi Arabia). The highest VAT on electronic services is levied, for example, in Norway (25%), Iceland (22,5%), Belarus, and Russia (20%). In the European Union, VAT is levied at different rates depending on the buyer's residence. In some countries (e.g., South Africa, Japan, Australia, and New Zealand), there is a threshold for registration with the tax authorities to pay VAT - a certain amount of electronic services sales. However, there is no such threshold in other countries - everyone has to pay VAT. In this case, the absence of a minimum tax threshold is an obstacle for small digital service providers in these countries.

The United States and Japan have a sales tax on electronic services instead of VAT. In Japan, a flat rate of 8% is applied. Sales tax on software and digital products is levied only in 27 states out of 50 (the rate varies from 1% to 7% depending on the state and the digital product and can be charged both at the company's and the buyer's location).

For example, the situation in Brazil can be used as an example of creating additional obstacles to e-commerce in services. The taxation system in the country is so intricate that double taxation issues frequently arise with online sales - companies cannot determine the applicable taxes on cross-border payments for software and cloud computing services, among others.

Conclusion

Thus, based on everything said, it can be summarized that additional restrictions in online advertising are encountered only in a few countries and are most often expressed as barriers to the presence of foreign participants in the advertising industry as a whole. For example, Icelandic legislation requires that all advertising in the country be in the Icelandic language.

There are also specific barriers in the field of online advertising. For instance, in Saudi Arabia, there is no regulation of spam. Additionally, the advertising industry in this country is heavily regulated, and only Saudis can directly manage and engage in advertising activities, while foreign companies can only be involved as consultants or advisors.

In Vietnam, providers of advertising services that distribute advertisements via email or text messages on the Internet can only send their messages from a Vietnamese domain name hosted on a local server.

In most countries, the liability of an information intermediary for copyright infringement and other intellectual property rights is limited. For example, in Australia, an internet service provider must remove access to content that infringes on intellectual property rights upon request from an interested party. Information intermediaries are held responsible for copyright infringement on general grounds provided by the law, with fault and taking into account the specificities of online hosting indicated in the law. However, according to existing norms, if an information intermediary provides information to consumers on a complimentary basis, such an intermediary would not fall under consumer protection laws. The possibility of establishing the liability of an intermediary within the framework of the Consumer Protection Act is being considered.

The digital economy has social consequences, such as mass job layoffs, exacerbation of social inequality, and threats to fundamental, universal values of social life.

References

Chad, P. B., & Petros, C. M. (2019). Governing Digital Trade. World Trade Rev, 18, 23–48.

Digital Economy and Society Index 2018 Report – European Commission. (2018). URL: https://ec.europa.eu/digital-single-market/en/news/digital-economy-and-society-index-2018-report.

Digital economy report (2019). Embargo Digital Economy Report (2019). United Nations Conference on Trade and Development. URL: https://unctad.org/en/PublicationsLibrary/der2019_en.pdf.

Irtyshcheva, I., Kramarenko, I., & Sirenko, I. (2022). The economy of war and postwar economic development: world and Ukrainian realities. Baltic Journal of Economic Studies, Vol. 8. No. 2. P. 78–82. DOI: https://doi.org/10.30525/2256-0742/2022-8-2-78-82.

Kryshtanovych, M., Akimova, L., Akimov, O., Kubiniy, N., & Marhitich, V. (2021). Modeling the process of forming the safety potential of engineering enterprises. International Journal of Safety and Security Engineering, 11 (3), 223–230. doi:10.18280/ijsse.110302.

Lally, M. A. Ukraine Reconstruction: Priorities, Institutions, and the Private Sector. American Foreign Service Association. URL: https://afsa.org/ukraine-reconstruction-priorities-institutions-and-private-sector.

Lewarne, S., & Snelbecker, D. (2004). Economic Governance in War-Torn Economies: Lessons Learned from the Marshall Plan to the Reconstruction of Iraq', Long Report Prepared for USAID, The Services Group, Inc., Arlington, 133 p.

Luong, T., & Nguyen, D. K. (2021). Special Issue: International Trade and Business in the Age of Digital Transformations. Singap. Econ. Rev, 66, 969–972.

Makiyama, H.-L., & Narayanan, B. (2019). The Economic Losses from Ending the WTO Moratorium on Electronic Transmissions. ECIPE Policy Brief. 3/2019. URL: https://ecipe.org/wp-content/uploads/2019/08/ECI_19_PolicyBrief_3_2019_LY04.pdf.

Meng, X., Sun, L., & Wang, H. (2020). The impact of digital service trade barriers and regulatory policy heterogeneity on digital delivery service trade. Asia Pac. Econ, 6, 42–52; 147.

Popov, O. O., Iatsyshyn, A. V., Iatsyshyn, A. V., Kovach, V. O., Artemchuk, V. O., Gurieiev, V. O., ... Kiv, A. E. (2021). Immersive technology for training and professional development of nuclear power plant personnel. Paper presented at the CEUR Workshop Proceedings, 2898, 230–254. Retrieved from: www.scopus.com.

Qi, J. Y., & Qiang, H. J. (2022). Cross border data flow restriction, digital service input, and technological complexity of manufacturing export. Ind. Econ. Res, 1, 114–128.

Shevchenko, I. O. (2022). Formuvannia metodolohichnoho pidkhodu do vyznachennia rozvytku tsyfrovoï torhivli na hlobalnykh rynkakh. Tsyfrova ekonomika ta ekonomichna bezpeka, 3 (03). DOI: http://doi.org/10.32782/dees.3-12 (in Ukrainian).

Shevchenko, I. O. (2022). Intehratsiia ekonomiky Ukrainy u hlobalnu svitovu ekonomichnu systemu [Integration of the economy of Ukraine into the global world economic system]. Implementation of modern technologies in science. Proceedings of the XIII International Scientific and Practical Conference. Varna, Bulgaria. P. 140–143. DOI: http://doi.org/10.46299/ISG.2022.2.13 (in Ukrainian).

Shevchenko, I. O. (2022). Rehuliatorna konkurentsiia v tsyfrovii torhivli na hlobalnykh rynkakh. [Regulatory competition in digital commerce in global markets]. Abstracts of IX International Scientific and Practical Conference. Belgium, Brussels. P. 64–67. https://eu-conf.com/ua/events/promising-ways-of-solving-scientific-problems/ (in Ukrainian).

Shevchenko, I. O. (December 19-21, 2022). Elektronna komertsiia yak instrument zabezpechennia rozvytku tsyfrovoi torhivli. [Electronic commerce as a tool for ensuring the development of digital trade]. VIII International Scientific and Practical Conference "Science, trends, and development methods," Tokyo, Japan. P. 84–88. https://eu-conf.com/ua/events/science-trends-and-development-methods/ (in Ukrainian).

Sun, J. (2020). From digital economy to digital trade: Connotation, characteristics, rules, and influence. Int. Econ. Trade Explor, 36, 87–98.

Tamir, A. (2021). The new distributed digital technology world trade and MNEs: Another step in the inventive process. Eur. J. Int. Manag, 15, 135–145.

The Factory of the Future. Industry 4.0 – The challenges of tomorrow. KPMG AG, 2016. 67 p.

Top 10 Strategic Technology Trends for 2020 Gartner, Inc. URL: https://www.gartner.com/en/doc/432920-top-10-strategic-technology-trends-for-2020.

Tzifakis, N. Post-Conflict Economic Reconstruction Princeton University Encyclopedia Princetotoniensis. URL: https://pesd.princeton.edu/node/586.

Ukraine Reform Conference. Ukraine's Recovery Plan Blueprint. URL: https://ua.urc2022.com/plan-vidnovlennya-ukrayini

UNDP Digital strategy – Future forward – United Nations. (2019). Development Programme. URL: https://digitalstrategy.undp.org.

Williams, Andrew J. (2005) “Reconstruction” before the Marshall Plan. Review of International Studies 31, No 3, 546 p.

WTO. Joint Statement on Electronic Commerce. WT/L/1056. January 25, 2019. URL: https:// trade.ec.europa.eu/doclib/docs/2019/january/tradoc_157643.pdf.

Yue, Y. S., & Zhao, J. H. (2020). Research on the characteristics and influencing factors of digital service export – Analysis Based on Transnational panel data. Shanghai Econ. Res, 8, 106–118.

Vyshlinsky, H., & Repko, M. (2022). Ukrainian Economy in War Times. October 2022. Centre for Economic Strategy, German Economic Team, 22 p.

Sofii, O. (2020). "Europe-2020" Strategy: Putting a Human at the Center. European Dialogue. URL: http://dialog.lviv.ua/strategiya-yevropa-2020-u-tsentrilyudina (in Ukrainian).

Strategy for the Development of the Innovation Sector by 2025, Approved by the Cabinet of Ministers of Ukraine on July 10, 2019. Document 526-2019-p. URL: https://zakon.rada.gov.ua/laws/show/526-2019-%D1%80#n12 (in Ukrainian).

Strategy for the Development of the Innovation Sector by 2030, Approved by the Cabinet of Ministers of Ukraine on July 10, 2019. Document 526-2019-p. URL: https://zakon.rada.gov.ua/laws/show/526-2019-%D1%80#n12 (in Ukrainian).