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Fair Competition for Business in the Field of Information and Communication Technologies in the Era of "Postcontemporary Society" Economy

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Abstract: This article examines the fairness of business competition in the field of information and communication technologies. In the era of "postcontemporary society" economy, the dominant factor of development is the use of information. The share of business in the field of information and communication technologies in the economy is constantly growing. For businesses, its integration into the Internet, which has become an important market for the sale and promotion of goods and services, is becoming increasingly important. Various digital innovations, social networks, mobile applications, information and communication technologies have become commonplace in today's society, which affects the need to study their impact on business. For small businesses, in order to achieve high results of their activities, the basis of innovation is technology transfer. It is noted that in order to win in the competition, personal brand and trademarks, strategic management and balanced business plans are of special importance. A characteristic feature of leading high-tech companies is the use of digital platforms through which they provide their services. Digital platforms are used for interaction in social networks, use of search and payment systems, exchange of information materials. The need for high start-up costs leads to the difficulty of entering this market and the concentration of large amounts of data in the hands of a small number of players, which carries the threat of monopolization in the market of digital platforms.

Keywords: *Globalization, informatization, information and communication technologies, digital platforms, competition.*

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Introduction

In the era of the economy of "Postcontemporary society" the dominant factor of development is the use of information, the development of people's own abilities comes to the fore and the most effective investments are investments in people (Gerasymova, 2019; Nerubasska, Maksymchuk, 2020; Nerubasska, Palshkov, & Maksymchuk, 2020; Sheremet, 2019). As a result, the share of the population engaged in the production of high-tech goods and services is expanding. The share of business in the field of information and communication technologies in the economy is constantly growing.

Information and communication technologies have become a lever of contemporary economic and social development. Its involvement and integration into the Internet, which has become an important market for the sale and promotion of goods and services, is becoming increasingly important for business. Various digital innovations, social networks, mobile applications, information and communication technologies have become commonplace in today's society, which affects the need to study their impact on business. Numerous works are devoted to the development of information and communication technologies and their impact on the activities of enterprises, namely M. Rudenko (2018), O. Honchar, V. Khachatryan (2018), F. Bellalouna (2021), P. Gregori, P. Holzmann (2020), T. Ablyazov, V. Asaul (2018) and others.

The processes of total digitalization lead to the involvement of high technology in all areas of business, on the one hand, and in turn to the spread of enterprises in the field of information and communication technologies, which leads to increased competition between them. The need to stimulate consumer demand and encourage potential customers to make choices leads to a struggle between businesses for the target audience. The issue of competition is considered by such authors as S. Vagstad (1995), M. Morikawa (2021), O. Radchenko, A. Vygoniylo (2018), M. Neffati (2015), A. Kholodenko, N. Stepanok, N. Oliynikova (2016), K. Schwab, S. Zahidi (2020) and others.

Despite the large number of studies on competition, it should be noted that in the field of information and communication technologies there is a phenomenon of unique developments, which particularly affects the competitiveness of companies that own them and has the potential for monopolies in certain markets. This situation creates the need to study the

issue of competition in the field of information and communication technologies, which is the purpose of this article.

Features of business competition in the contemporary world

The contemporary world is changing rapidly, affecting all spheres of life and society. Its influence is direct and indirect, some areas of a man's activity benefit from contemporary changes, some are declining, some areas do not keep up with the changes, and some areas are leading and determining in these changes.

One of the most important characteristics of the contemporary world, which has a huge impact on business, is widespread globalization. The world is becoming not only global, but also open, which in the economic environment means the openness of markets, where new opportunities for businesses appear, on the one hand, and competition intensifies, on the other hand. Globalization entails transforming the levels of connections and interactions of business with partners, suppliers and consumers. Opportunities for access to new markets have their advantages and disadvantages for firms. On the one hand, the business has more sales opportunities, expanding the target audience of potential consumers of their products and services. On the other hand, competition is intensifying in markets that are changing from local to global, and where new players are entering. Consumers benefit from globalization through open access to a variety of goods and services, the quality and price of which become more favorable as a result of increased competition among firms.

The pervasive spread of globalization processes is closely linked to the rapid spread of information and communication and digital technologies, which affects the conditions of business in the economic space. In contemporary conditions, the digital economy is actively developing, and society is adopting the features of the post-industrial, in which knowledge and information play a leading role. This trend has led to the transformation of methods of transactions, forms of employment and factors of competitiveness of enterprises. Informatization of society and the economic environment force businesses to adapt and meet contemporary innovation requirements.

The business environment in the "Postcontemporary Society" Economy is undergoing significant changes. Under the influence of the global spread of technologies, new opportunities for business activity are emerging, which manifests itself in the automation and virtualization of

contacts and maintaining communication between consumers and manufacturers, managers and subordinates, suppliers and customers, and other contractors. Gontareva I. (2021) notes the special role of the development of small innovative entrepreneurship. Dissemination of applied technological knowledge among small businesses is a method of attracting and introducing innovations in their activities. The transfer of technologies to commercial use, as well as the dissemination of existing technologies in business processes, allows small businesses to gain additional opportunities to attract customers and gain a stable position in the market. When developing a development strategy, enterprises should carry out intellectual work that will build an optimal system for using innovative methods and technologies. The synthesized approaches in the field of technology transfer make it possible to identify the needs for the implementation of information and communication technologies in order to achieve effective results.

In order to win in the competition, personal brand and trademarks are of special importance. N.Yu, S. Wang, Z. Liu (2021) note that the introduction of brands not only puts more pressure on other manufacturers, and at the same time gives consumers the ability to choose a more fair type of transaction among different brands. The authors' research shows the direct influence of a national manufacturer's brand that can induce consumers to delay the entry of a reseller's trademark if there are concerns about consumer honesty. Using the Stackelberg game model, retail market entry strategies and producer incentive strategies are analyzed and how concern for consumer honesty affects firms' behavior and performance. Consumer honesty in transactions negatively affects the retailer's bottom line and drives down retail prices for both brands. Manufacturer's exposure may weaken the concern of consumers' honesty about the national brand, and it may deter the seller from creating his own brand.

Informatization priorities cover a wide range of areas that need constant solution in the field of business in the period of globalization. S. Jaculjakova, J. Štofková (2021) emphasize the special role of the influence of strategic management on competitiveness in contemporary conditions. The authors investigate the importance of strategic management based on strategic partnerships with e-government in the context of globalization. It is shown that the automation of public administration processes will optimize the provision of public administration services. Quality improvement is achieved through the ability to categorize services based on issues, goals and situations.

K. Fichter, I. Tiemann (2020) note that today entrepreneurs and startups are key participants in the implementation of environmental innovations and new approaches to cleaner production. Therefore, the integration of sustainable development considerations in the early stages of a new enterprise is important. Understanding how this can be effectively implemented in startup support systems is key to successful operation. Business plan competitions are an important element in business support systems and are a powerful force in stimulating entrepreneurship. The authors conducted a survey of more than 1,000 participants in the Wettbewerb Berlin Brandenburg business plan, which is the oldest and largest general business plan competition in Germany. The model of the structural equation and the method of partial least squares were used for the analysis. It turned out that the promotion of sustainability in general business plan competitions affects the integration of sustainability into startups.

In business interaction, negotiations take place, in which each counterparty makes his offer based on his interest. As a result of consensus, the offer can be accepted and each of the negotiators realizes their potential. However, one should be wary of situations where one side makes an offer for which the other gets the minimum. At the same time, in case of refusal to cooperate, both lose. Experiments by G. Caginalp, S. J. Ho (2018) have shown that the proposition is fairer, and behaviorists explain it as altruism. In their work, the authors synthesize these two conflicting conclusions. The study of a business situation in which several counterparties interact and at the same time strive to win the competition for winning among those who make an offer made it possible to identify the theoretical result of the prevalence of monetary selfishness over altruism. Thus, in the process of competition, the negotiating parties seek to maximize net profit, not fairness.

Features of business activity and competition in the field of information and communication technologies

The activities of large technology companies are creating revolutionary consequences in many sectors of the economy, leading to changes in the global business environment.

Contemporary entrepreneurs are incorporating digital technologies into their business models to achieve sustainability as well as promote social and environmental value. Gregori, P. Holzmann (2020) note the prospects

for the development of sustainable business models, showing that digital technologies can attract new configurations of business model components.

According to PwC Global Top 100 companies by market capitalization in 2021 in the top ten ranking of companies by market capitalization are companies such as Apple Inc., Microsoft Corp., Amazon.com Corp., Alphabet Inc., Facebook Inc. and other high-tech companies that have overtaken many industrial, financial and even oil companies (Table 1).

Table 1. Top 10 global companies by market capitalisation

Rank	Company name	Location	Sector	Market capitalisation (\$bn)
1	APPLE INC	United States	Technology	2051
2	SAUDI ARAMCO	Saudi Arabia	Energy	1920
3	MICROSOFT CORP	United States	Technology	1778
4	AMAZON.COMINC	United States	Consumer Discretionary	1558
5	ALPHABET INC	United States	Technology	1393
6	FACEBOOK INC	United States	Technology	839
7	TENCENT	China	Technology	753
8	TESLA INC	United States	Consumer Discretionary	641
9	ALIBABA GRP	China	Consumer Discretionary	615
10	BERKSHIRE HATHAWAY	United States	Financials	588

Source: Global Top 100 companies by market capitalization. 2021, PwC, p. 22

A characteristic feature of many companies in this ranking is the use of digital platforms through which they provide their services. Digital platforms are used for interaction in social networks, use of search and payment systems, exchange of information materials. For example, Google, owned by Alphabet Inc., uses digital search engine platforms, Apple Incuses

platforms for app stores, Facebook Inc. uses platforms for social networking sites, Amazon.com Corp. and Alibaba Grp uses trading platforms. Thus, digital platforms have become a kind of infrastructure for a number of business services in the field of information and communication technologies.

Digital platforms use algorithms that collect and process large arrays of data on the basis of which decisions are made. The establishment of digital platforms requires a high initial investment, and their further operation already has low marginal costs, which makes it possible to improve the storage and processing of additional data and provide consumers with better and more personalized services. The need for high initial costs leads to the difficulty of entering this market and the concentration of large amounts of data in the hands of a small number of players. Thus, this situation carries the threat of monopolization in the market of digital platforms, which requires control by antitrust regulation, E. Gokce (2019).

M. Kozlova, D. Kozhemyakin, O. Sergacheva and A. Bortenev (2021) note that antitrust regulation faces problems in the context of digitization and algorithmization. The authors study the impact of digital platforms and pricing algorithms on the competition, their usage from the point of view of market monopolization and the possibility of resisting such practices in terms of antitrust law. One approach is the impossibility of creating regulatory measures due to the lack of data on the impact of pricing algorithms on competition. Another involves testing each new pricing algorithm to determine its impact on the competitive environment, on the basis of which a decision must be made to allow or prohibit it. The third approach involves further monitoring of antitrust authorities using new legislation and standards that differ from existing ones. The authors raise the issue of liability for such actions when cartels are formed as a result of computer software. Software owners must be responsible for any actions of the algorithm, as each program is controlled by its creator or copyright holder.

The online services Booking.com, Airbnb.com, Hrs.com, which are vital for the success of hotels, also use digital platforms. V. Shamsi, B.S. Nenonen, R. G. Starr Jr (2021) note that platforms are digital hubs that allow a large number of hotels and customers to interact with each other. However, in the hotel services market, there is a problem of how hotels balance cooperation and competition when dealing with platforms. On the

one hand, the placement of hotels on platforms helps to revive the competitive environment of hotel services, on the other hand, hotels become dependent on digital platforms, which become monopolists in the market, and abandon their services for the hotel becomes tantamount to disappearing from the market.

Switching from one platform to another for the user is costly and time consuming, so some platforms are gradually becoming dominant, which is a matter of fairness and competition.

An important prerequisite for establishing inter-organizational relations in high-tech industries is the development of an information exchange system to support joint interaction without leakage of information. J. Y. Lee, C. Saunders, N. Panteli, T. Wang (2021) explore the role of communication in supporting the shared exchange of information, while maintaining the problems of competitive information. The authors study two contrasting dyads of a Taiwanese buyer and a Korean supplier in the digital home entertainment industry - one that was successful in inter-organizational relations and led to further cooperation, and the other that was unsuccessful and thus stopped. The authors note the importance of means of communication with communication content and effective communication processes that promote trust, information exchange and open communication in successful inter-organizational relations.

The problem of competitive behavior of business in the field of information and communication technologies is the use of data about competitors, sellers to gain an advantage in selling their products and providing equal opportunities for all market participants. For example, the online services amazon.com, allegro.pl, rozetka.com.ua are both an online store of own products and a trading platform for other sellers. This dual role of these services raises the question of their ability to use their position to gain an advantage when selling their own products and imposing unfavorable conditions on competing sellers.

The problem of fair competition was raised by Spotify, an online streaming audio service that allows you to legally and for free listen to music, about Apple Inc. On the Time to Play Fair page (<https://www.timetoplayfair.com/>), Spotify blames Apple Inc. in an unfair demand from Spotify for a 30% commission for using their platform, while Apple Music which proposes similar services as Spotify does not pay any commission. Apple Inc. does not require a fee from many other companies, for example such as Uber or Deliveroo, which indicates

discrimination against a competitor and the creation of barriers and unequal conditions.

One of the most important postmodern technologies for digital transformation of various systems is augmented reality (AR) technology. Thanks to the active development of equipment for displays and other equipment, today augmented reality technology has such a high level that only very large laboratories could have thought of just a few years ago. F. Bellalouna (2021) explores the application of AR in the industrial environment and its potential as a technology of digital transformation throughout the product life cycle and emphasizes the practical value of developing and implementing AR technology in engineering.

M. Morikawa (2021) presents conclusions about the firms' competition strategy in terms of price or quality ratio. Competitive strategy is a combination of various factors. The competitiveness of a firm is significantly influenced by its profitability and productivity. Many firms adopt a strategy of competition in terms of quality, especially in the service sector. Firms that adopt a quality competition strategy choose to invest in research and development and advertising and are more likely to innovate. The profitability and productivity of firms that adopt a strategy of competition in terms of quality is higher than that of firms that adopt a strategy of price competition.

Conclusion

The activities of large technology companies are creating revolutionary consequences in many sectors of the economy, leading to changes in the global business environment. The world is becoming not only global, but also open, which means the openness of markets, where new opportunities for businesses are emerging, on the one hand, and competition is intensifying, on the other. Globalization entails transforming the levels of connections and interactions of business with partners, suppliers and consumers. The digital economy is actively developing, and society is adopting the features of the post-industrial, in which knowledge and information play a leading role.

The business environment in the "Postcontemporary Society" Economy is undergoing significant changes. Under the influence of the global spread of technologies, new opportunities for business activity are emerging, which manifests itself in the automation and virtualization of contacts and maintaining communication between consumers and

manufacturers, managers and subordinates, suppliers and customers, and other contractors. Dissemination of applied technological knowledge among small businesses is a method of attracting and introducing innovations in their activities. The transfer of technologies to commercial use, as well as the dissemination of existing technologies in business processes, allows small businesses to gain additional opportunities to attract customers and gain a stable position in the market.

Contemporary entrepreneurs are incorporating digital technologies into their business models to achieve sustainability as well as promote social and environmental value.

A characteristic feature of leading high-tech companies is the use of digital platforms through which they provide their services. Digital platforms are used for interaction in social networks, use of search and payment systems, exchange of information materials. The need for high initial costs leads to the difficulty of entering this market and the concentration of large amounts of data in the hands of a small number of players. Thus, this situation carries the threat of monopolization in the market of digital platforms, which requires control by antitrust regulation.

Nowadays relatively large number of firms adopts a strategy of competition in terms of quality, especially in the service sector. Firms that adopt a quality competition strategy tend to have highly educated employees, invest in intangible assets such as R&D and advertising, and are more likely to innovate. The profitability and productivity of firms that adopt a strategy of competition in terms of quality is higher than that of firms that adopt a strategy of price competition.

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