Prospects of Small Business Development in Russian Distribution Sector in the Context of Development of Communication Technology and Trade and Information Globalisation

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Abstract

The paper outlines research findings concerning the aspects and impact of the global environment for small, micro, individual, and family businesses and the self-employed engaged in the distribution sector. It also explores the potential of the information and communications sector for their online transformation. These findings allow the conclusion that internal and global information and communications resources combined with digital tools help to create conditions for a successful online transformation of small, micro, individual, and family businesses and the self-employed in the distribution sector on single digital platforms. This online transformation would help them avoid a direct competitive fight with major retail chains enjoying meaningful advantages in the online environment. One of the successful directions of online transformation for small, micro, individual, and family businesses and the self-employed in the distribution sector is the C2C market operating on global digital platforms.

Keywords

Introduction

The main references of the modern economic transformation are the "digital economy", "knowledge economy," "industry 4.0", "market globalisation", etc. They specifically involve small businesses in the distribution sector. Companies with a strong awareness of these key references and taking them as guidance in their business transformation gain competitive standing.

An extensive body of research has recently focused on the impact and plausibility of digitalisation at the national economic level and individually for market players. Arguably, digitalisation is a destined course in the Russian economy, which is particularly relevant compared to developed digital economies in the context of the COVID-19 pandemic (Rodionova, 2020). Another point is the need for more active engagement of market participants, specifically in the development of state programmes of digitalisation (Mytenkov et al., 2018) and raising investment to speed up digital transformation (Sadeno, 2020); building digital business models (Kuzmenkova, 2019); stimulating digital literacy; developing digital technologies and digital platforms (Evseeva et al., 2019; Zlobina et al., 2020); understanding the trends and problems of digital transformation (Nissen et al., 2018; Vasiuta et al., 2019).

Researchers (Mastepanov et al., 2020) point at the mixed development record of artificial intelligence and the digital economy in the Russian Federation. On the one hand, the Russian research community has not made an active segment of the global research scene in AI and the digital economy. On the other hand, it shows strong potential in these spheres. The main reasons cited for the lagging-behind in the digital transformation of the national economy include insufficient investment in innovation (Rudenko, 2019), low innovation activity of small businesses compared to developed countries (Charochkina, Bykovskaia, 2018), and ill-structured systems of statistical information on the development of the information society and digital economy (Minashkin et al., 2018).

Analysts point out that even though small and medium-sized business development is seen as a priority of the national socioeconomic policies, its state and advance fail to meet programme targets (Seroshtan, 2019). Solutions for the challenges of small business are associated with the systemic approach (Turenko, 2015); support of innovation development (Belikova, 2015) based on the enhancement of organisational economics in the regulation of innovations (Usmanova, 2016); stimulation of innovation initiative and activity (Liamanova, 2020); principles of strategic management (Sysoeva, 2019); complex support of its development (Nekrasova, 2020); adoption of innovation and investment projects in
trade (Chkalova et al., 2019); adoption of neurotechnology (Panasenko, 2018); use of intangible assets (Nikishin, 2010); development of employees' professional competences (Zaitseva, 2017); planning of balanced development (Boris et al., 2018); analysis of regional differences (Mayorova, 2018); considering economic sanctions (Seifullaeva, 2018), specifics of retail markets (Bragin et al., 2019), and corporate social responsibility (Mayorova, E., 2018); use of modern assortment building techniques (Komissarova, I.P., 2017). Innovative approaches to trade regulation also play a role (Karashchuk, O., 2019).

The relatively small contribution of small businesses in the national economy (approximately 21%) compared to other countries (more than 60% of GDP in China, 57% in the EU, 45% in the USA) is a point in the argument to provide support to small businesses in trade in their transformation to digital-driven formats (Saraseko, 20). Small business is also analysed in the context of cross-border e-commerce and globalisation processes (Dolgov, 2020). As shown by researchers (Lopatkova, 2019), the advance of the internet and information and communications technology has changed the business models and potential of small businesses. However, in Russia, social responsibility strategies are still a weak component in the course of the online transformation of small businesses.

Some authors (Vasilenok, 2018) argue that small businesses not only need support in the adoption of innovative business models but also show strong potential to develop and implement innovation programmes and contribute on a major scale toward new operations and services. Accordingly, they emerge as an important driver of innovation activity and investment potential in the economy and social stability (Uvarova, 2018) and a key determinant of innovation development in the Russian economy (Arnaut, 2019). Researchers conclude that the potential of small business development in the context of a global information and communications environment depends on the effectiveness of innovation and digital interaction of science, business, and other market participants (Ivanchenko, 2020).

Most recently, researchers have analysed small businesses in terms of their readiness for digital transformation and further operation in the context of the digital economy. In particular, the importance of research into the problems of the integration of digital technologies and services by small businesses is shown (Antonenko, 2020). The biggest focus is on the readiness of Russian small and medium-sized businesses for digital transformation (Khramov, 2019; Kostin, 2018). As pointed out by K. Bley et al. (2016), small businesses' competitiveness requires competence in efficiently harnessing ICT. However, they often overestimate their digitalisation level and ICT competence and, as stated by N. Urbach et al. (Urbach, 2017), should actively rely on IT management.
Moreover, the use of digital technology by small businesses is seen to be a requisite condition of developing and maintaining competitiveness in the context of digitalisation (Novoseltseva, 2020). According to some researchers (Mytenkov, 2018), small businesses create more favourable conditions for the digital transformation of the economy on a national scale. Although, compared to many countries, digitalisation programmes have certain drawbacks hindering the progress in the transformation of the economy in general.

Small businesses, much as the economy in general, operate in a rapidly changing global environment that used to be relatively predictable before the COVID-19 pandemic (Popenkova, 2020). However, the pandemic shook the global scene unexpectedly and forced a reassessment of the digital stance across the society and among market participants in terms of digital technology, digital economy, and transformation as a global digital environment. Many researchers working on this problem are usually concerned with the following perspectives: potential consequences of the COVID-19 pandemic for the global and national economy, as well as specific industries and businesses; conditions for faster recovery from the fallout; the role of ICT and digital transformation, etc.

Many researchers have independently arrived at similar conclusions:

• According to V.V. Pechatkin (2020), the problem of digital inequality in Russia was exacerbated by the pandemic. To eliminate it, the "Digital Economy" project should incorporate measures to smooth out such inequality considering global practices in addressing this problem (specifically China);
• O.L. Chulanova (2020) believes that the digital economy combined with the COVID-19 pandemic have spurred the growth of gigonomics (freelance work technology), which is a trend of digital globalisation;
• V.I. Salygin et al. (2020) showed that the experience of automation and digitalisation of business processes helped companies, specifically in the fuel and energy sector, to better weather the challenges of the COVID-19 pandemic;
• I.P. Komarova et al. (2020) explores the significant impact of the pandemic for employment and the role of digitalisation in navigating the implications with the help of remote work;
• M.N. Koniagin et al. believe that the unique changes of the 21st century resulting in the digital transformation of the economy were intensified by the COVID-19 outcomes;
• A. Auzan (2020) believes the pandemic is the price for globalization and may be followed by serious civilizational consequences. During the crisis, governments face an unsolvable dilemma: saving lives or preserving the economy. I.A. Rodionova et al.
(Rodionova, 2020) support this view and believe that the digital transformation of the Russian economy is an inevitable process and the COVID-19 pandemic has uncovered the weaknesses and abilities of the state, society, and individual market participants in handling digital transformation. N.A. Shapiro (2020) also believes that the COVID-19 pandemic causes major disruptions in the global economy, and industries' and companies' abilities to cope with the fallout depend on their success in digital transformation enabled by ICT.

However, digitalisation and digital transformation would not solve everything and overcome all consequences of COVID-19. Specifically, according to U.W. Chohan (2020), the post-COVID-19 economy and politics draw upon the lessons of this outbreak and international response to the challenges it caused. Consequently, the problem is global in scope and needs to be studied in the context of global processes. There needs to be an understanding of the extent to which the Russian economy and specifically small businesses are integrated into the global environment and of its information and communications potential in the digital space. According to V. Nissen et al. (2018), ICT management in developed countries has become an instrument of innovation and digital transformation (which is not the case in developing countries).

An important focus for businesses and governments is the impact of COVID-19 on small businesses and their ability to cope with it using digital transformation. Many researchers have focused on these aspects of small business development in their works. In particular, N.P. Pozdnikova et al. (2020) conclude that COVID-19 has proved more devastating for small businesses than for major businesses. A similar view is taken by A. Asaliev et al. (2020).

According to the report of the World Economic Forum (WEF) (https://www.weforum.org/), COVID-19 is accelerating the digital transformation of business models. An estimated 70% of new value created in the economy over the next decade in the post-COVID-19 period will be based on digitally enabled platform business models. However, 47% of the world’s population remains unconnected to the internet (https://www.weforum.org/platforms/shaping-the-future-of-digital-economy-and-new-value-creation), which is a barrier in the way to the economic transformation toward digital business models.

The review of previous research findings allows the conclusion that the operation of small businesses in the distribution sphere is influenced by several factors changing at a faster pace than earlier. The strongest effect on the functioning of small businesses is associated
with digital and ICT, economic, information, trade, and other globalisation processes, intensifying competition, and other processes. These processes were more or less obvious to adapt to, however, the COVID-19 pandemic made it much more difficult to understand what is happening to small businesses and in their operating environment. Many in the research and business community see a solution in digital transformation. Accordingly, we find it relevant to gain an understanding:

- Of the information and communications environment and global processes influencing the development of small, micro, individual, and family businesses and the self-employed;
- Of the ways these processes would affect the choices made by small, micro, individual, and family businesses and the self-employed in the course of digital transformation.

**Hypothesis.** One of the powerful ways to support the resilience of small, micro, individual, and family businesses and the self-employed in the distribution sphere amid the intensifying offline competition and development of the global information and communications environment is their transformation as a C2C sector operating on single digital platforms.

**Methods**

The following methods were used in this research:

**The method of dynamic statistical series** was used to assess the condition and potential of small business development and measure the dynamics and trends in the factors affecting small business development. The information sources included databases of the Russian Federal State Statistics Service (Rosstat), Eurostat, Ministry of Digital Development, Communications, and Mass Media, and so on.

**The index method** was used to measure the pace of qualitative and quantitative change and information and communications and business activity of small businesses; the dynamics of its digital environment, specifically, the information and communications, scientific and technological, and investment and innovation environment.

**The KOF Index of Globalization (KOFGI)** was used to measure the degree of the country's participation in information, trade, and economic globalisation. The KOFGI is a composite index that measures globalisation along the economic, social, and political dimensions. The index is calculated by the Swiss Economic Institute (SEI). The KOFGI is based on 42 variables with weights. The KOFGI consists of several subindices, including


**ICT Development Index (IDI)**, developed by the International Telecommunication Union (ITU) (https://www.itu.int/en/Pages/default.aspx). IDI- Score is a composite index integrating 14 indicators reflecting the level of ICT, competences, and activity of people and organisations in the use of ICT. IDI- Score makes a single combined criterion lending guidance in comparative analyses at the global, regional, and national levels. This research employs data available in the public domain at the ITU (https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx).

**Networked Readiness Index (NRI)**. The World Economic Forum (WEF) partners with the European Institute of Business Administration (INSEAD) and Portulans Institute to calculate the NRI, which measures the capacity of countries to leverage ICT. The NRI is a composite index based on 60 indicators in four groups (Technology, People, Governance, and Impact). The findings are published annually in the Global Information Technology Report.

**Market concentration ratio** ($K_c$). $K_c$ is the ratio of standalone enterprises (objects) to the number of organisations (subjects) operating in the economy in general and individual industries. $K_c$ is calculated as follows (1).
where $K_{cpi}$ is the concentration ratio of the $i$-th industry; $N_{ni}$ is the number of enterprises in the $i$-th industry; $N_{oi}$ is the number of organisations operating in this industry.

**Correlation analysis** was used to establish qualitative and quantitative relations between the variables of small business and environmental factors.

**Calculations and Interpretation**

Industry concentration processes can impact the development of small businesses in general and individual industries, including the distribution sector. The resulting measurements of concentration ratios in the Russian economy in general and specifically in the distribution sector are laid out in Figure 1.

**Figure 1 Dynamics of concentration in the Russian economy in general and the distribution sector**

Figure 1 shows the gradual concentration of the Russian economy. This process in the economy and specifically the distribution sector had shown a steady positive trend until 2016. In 2016, some changes followed in the economy, which slowed down the pace of concentration. Starting in 2017, there is a synchronous recovery of the positive trends of concentration. We believe this new stage of concentration in the Russian economy and its industries, specifically the distribution industry, will be sustained. The findings also show
that the distribution industry shows stronger concentration compared to other industries (Table 1).

Table 1 Industry specifics of concentration in the Russian economy

<table>
<thead>
<tr>
<th>Item</th>
<th>2005</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for organisations</td>
<td>1.407</td>
<td>1.908</td>
</tr>
<tr>
<td>Agriculture, forestry, hunting, fishing, and fish farming</td>
<td>1.040</td>
<td>1.268</td>
</tr>
<tr>
<td>Mining</td>
<td>1.792</td>
<td>2.197</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1.267</td>
<td>1.545</td>
</tr>
<tr>
<td>Energy, gas, and steam supply; air conditioning</td>
<td>-</td>
<td>2.566</td>
</tr>
<tr>
<td>Water supply, waste collection and removal, clean-up operations</td>
<td>-</td>
<td>1.292</td>
</tr>
<tr>
<td>Construction</td>
<td>1.487</td>
<td>1.433</td>
</tr>
<tr>
<td>Distribution sector</td>
<td>1.768</td>
<td>3.026</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>-</td>
<td>2.380</td>
</tr>
<tr>
<td>HoReCa</td>
<td>1.127</td>
<td>1.561</td>
</tr>
</tbody>
</table>

The distribution sector is the most concentrated industry of the Russian economy. This aspect is likely to significantly influence other aspects of development in the sector, specifically in the small business segment.

From 2010 to 2020, a significant institutional change occurred, which might have had a strong impact on small business development in distribution. The strongest changes occurred in the retail sector, the main operating market for small, micro, individual, and family businesses and the self-employed (Figure 2).
The dynamic was especially stark starting in 2015. In particular, the number of organisations engaged in retail had contracted by 1.8 times by 2020. The number of standalone businesses owned by trade organisations, on the contrary, had risen by 1.3 times. The share of retail turnover in the retail chain segment in the total retail turnover had risen by more than 1.4 times. The number of individual entrepreneurs engaged in retail had become 1.4 times lower over the period, same as the number of retail marketplaces (1.4 times lower) and stalls in marketplaces used by small, micro, individual, and family businesses and the self-employed (1.4 lower). This dynamic is likely to continue in the long run. The mutual interdependence between these changes and their effects for small, micro, individual, and family businesses and the self-employed in the offline environment is underscored by the observed correlation between them (Table 2).

Table 2 Correlation between the dynamics of institutional changes in the distribution sphere

<table>
<thead>
<tr>
<th>Number of standalone enterprises</th>
<th>Share of retail turnover of the retail chain segment in the total retail turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisations engaged in retail</td>
<td>-0.886</td>
</tr>
<tr>
<td>Individual entrepreneurs engaged in retail</td>
<td>-0.966</td>
</tr>
<tr>
<td>Retail marketplaces</td>
<td>-0.839</td>
</tr>
<tr>
<td>Number of stalls in marketplaces, thousands</td>
<td>-0.826</td>
</tr>
<tr>
<td>Number of standalone businesses</td>
<td>-</td>
</tr>
<tr>
<td>Share of retail turnover of the retail chain segment in the total retail turnover</td>
<td>0.980</td>
</tr>
</tbody>
</table>

(Primary data sources: Rosstat: https://rosstat.gov.ru/folder/23457)

These results particularly indicate that changes in the "number of standalone enterprises" and the "share of retail turnover of the retail chain segment in the total retail turnover" show a close inverse correlation with the "number of individual entrepreneurs engaged in retail," the "number of retail marketplaces," and the "number of stalls in marketplaces."

The key to assessments of the country's potential in the digital transformation of the economy and specifically the distribution sector is the ability of its information and communications environment to provide digital support to companies and individuals and the readiness and activity of market participants in using these services.

European countries served as an example used to test for correlation between the changes of certain variables of the information and communications environment and changes of certain indicators of individual activity in buying and selling products and services online (Table 3).
Table 3 Correlation between the variables of the information and communications environment and changes of certain indicators of Europeans' activity in buying and selling products and services online

<table>
<thead>
<tr>
<th>Variables</th>
<th>Individuals using the internet for ordering goods or services</th>
<th>Individuals using the internet for selling goods or services</th>
<th>Individuals using the internet for ordering goods or services from other EU countries</th>
<th>Individuals using the internet for finding information about goods and services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Websites and functionalities</td>
<td>0.841</td>
<td>0.720</td>
<td>0.732</td>
<td>0.778</td>
</tr>
<tr>
<td>Level of internet access, households</td>
<td>0.720</td>
<td>0.706</td>
<td>0.694</td>
<td>0.818</td>
</tr>
<tr>
<td>Households with broadband access</td>
<td>0.880</td>
<td>0.716</td>
<td>0.700</td>
<td>0.822</td>
</tr>
<tr>
<td>Share of enterprises' turnover on e-commerce, %</td>
<td>0.668</td>
<td>0.636</td>
<td>0.544</td>
<td>0.600</td>
</tr>
<tr>
<td>Enterprises using software solutions, like CRM, to analyse information about clients for marketing purposes</td>
<td>0.663</td>
<td>0.558</td>
<td>0.711</td>
<td>0.660</td>
</tr>
<tr>
<td>Network Readiness Index</td>
<td>0.924</td>
<td>0.755</td>
<td>0.765</td>
<td>0.777</td>
</tr>
</tbody>
</table>


Table 3 shows a strong correlation between the variables of the information and communications environment by countries and changes in certain indicators of individual activity in buying and selling products and services online and via online aggregators. This strong correlation suggests that the variables of the information and communications environment create the potential of people's engagement in the digital environment.
Efforts are taken in Russia to ensure the attainment of strong levels of networked readiness underpinning the ability of economic subjects, specifically, small, micro, individual, and family businesses and the self-employed, to advance digital transformation. Considering the dependence and reliance of the digital economy on the state of the information and communications sector, another test was conducted for correlation between the variables of information and communications and activity in buying and selling products and services online in Russia (Table 4).

Table 4 Correlation between the levels of activity in buying and selling products and services online in Russia and the variables of the information and communications environment

<table>
<thead>
<tr>
<th></th>
<th>Share of the population engaging in buying products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.)</th>
<th>Share of the population engaging in selling products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.)</th>
<th>Share of the population using the internet to order products and (or) services</th>
<th>Share of the population conducting searches of product or service information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of broadband subscribers per 100 population</td>
<td>0.972</td>
<td>0.968</td>
<td>0.978</td>
<td>0.968</td>
</tr>
<tr>
<td>Level of digitalisation of the local phone line, %</td>
<td>0.913</td>
<td>0.908</td>
<td>0.987</td>
<td>0.987</td>
</tr>
<tr>
<td>Volume of postal services per resident, rubles</td>
<td>0.952</td>
<td>0.948</td>
<td>0.979</td>
<td>0.984</td>
</tr>
<tr>
<td>Fixed capital investment to purchase ICT equipment, in actual prices, million rubles</td>
<td>0.974</td>
<td>0.971</td>
<td>0.903</td>
<td>0.889</td>
</tr>
<tr>
<td>Population avoiding the use of the internet for security reasons as a share of the total population, %</td>
<td>-0.218</td>
<td>-0.219</td>
<td>-0.281</td>
<td>-0.351</td>
</tr>
<tr>
<td>Share of organisations using the internet as a share of the total surveyed sample, %</td>
<td>0.915</td>
<td>0.910</td>
<td>0.891</td>
<td>0.835</td>
</tr>
<tr>
<td>Share of organisations using internet connections with a rate at or above 2 Mbps, % of the total</td>
<td>0.952</td>
<td>0.947</td>
<td>0.993</td>
<td>0.984</td>
</tr>
<tr>
<td>Share of active internet users, % of the total population</td>
<td>0.926</td>
<td>0.923</td>
<td>0.985</td>
<td>0.966</td>
</tr>
<tr>
<td>Share of households with broadband internet connections, % of the total</td>
<td>0.749</td>
<td>0.746</td>
<td>0.876</td>
<td>0.856</td>
</tr>
</tbody>
</table>
Table 4 underscores the clear dependence of transformation potential in the distribution sector on the state of the information society in Russia.

1. Considerable positive impact over this process depends on the following factors: - availability of broadband mobile connections; - level of digitalisation of local phone network; - efficiency of postal services; - fixed capital investment to purchase ICT equipment; - speed of connections and internet usage by organisations; - individual activity of internet usage; - accessibility of broadband connections for households.
2. No connection is observed with the level of internet security in buying/selling products online.

The analysis specifically focused on certain variables of digital activity in the distribution sphere in Russia (Table 5).

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of organisations using websites for marketing purposes, %</td>
<td>49.5</td>
<td>48.0</td>
<td>47.7</td>
<td>54.6</td>
<td>50.2</td>
<td>52.2</td>
<td>1.055</td>
</tr>
<tr>
<td>Share of organisations using CRM, ERP, and SCM systems for marketing purposes, %</td>
<td>19.5</td>
<td>18.8</td>
<td>19.8</td>
<td>23.6</td>
<td>22.1</td>
<td>23.3</td>
<td>1.195</td>
</tr>
<tr>
<td>Costs of adoption and use of digital technology, million rubles</td>
<td>77.7</td>
<td>161.0</td>
<td>99.8</td>
<td>176.8</td>
<td>151.1</td>
<td>165.1</td>
<td>2.124</td>
</tr>
<tr>
<td>Number of organisations using the internet for marketing purposes</td>
<td>15,816</td>
<td>22,390</td>
<td>27,688</td>
<td>34,350</td>
<td>32,642</td>
<td>33,642</td>
<td>2.127</td>
</tr>
<tr>
<td>Number of organisations using cloud services</td>
<td>-</td>
<td>-</td>
<td>9,267</td>
<td>15,395</td>
<td>15,177</td>
<td>15,977</td>
<td>1.724</td>
</tr>
<tr>
<td>Number of information and communications professionals</td>
<td>31,836</td>
<td>34,124</td>
<td>37,179</td>
<td>41,910</td>
<td>44,047</td>
<td>46,547</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Sources: calculated by the authors from Rosstat data:

Table 5 underscores certain changes in digital activity in the distribution sphere in Russia:

- The share of organisations with websites had shown minor growth by 2020 to reach 52.2%. On average across industries, the figure for the Russian economy was 48.1%, which is significantly lower than the average for the EU (77%) and specifically
developed European countries: Denmark (94%), Netherlands (92%), and Germany (88%).

- The share of organisations using CRM, ERP, and SCM systems for marketing purposes in the distribution sector followed a positive trend over the past five years and reached 23.3% by 2020. It is 1.8% above average for the economy but it is lower than the levels of most European countries where the use of CRM systems alone exceeds 25%.

- The costs of adoption and use of digital technology in the distribution sector show a positive trend, with more than a twofold increase in five years.

- The number of organisations using the internet for marketing purposes shows a positive trend, with more than a twofold increase in five years.

- The number of organisations using cloud services rose by 1.7 times in the four years of observation. However, there has been a slowdown in recent years.

- The number of information and communications professionals in the distribution sector shows a steady positive trend.

To understand the impact of Russian engagement in the overall (KOFGI), trade (KOFTrgI), and information (KOFInGI) globalisation on the digital development of small, micro, individual, family businesses and the self-employed in the distribution sector, the variables describing these processes were analysed for a relation (Table 6).

**Table 6 Correlation between the variables describing Russian engagement in globalisation and the numbers of small, micro, individual, and family businesses and the self-employed in the distribution sector**

<table>
<thead>
<tr>
<th>KOFGI</th>
<th>KOFEcGI</th>
<th>KOFTrgI</th>
<th>KOFInGI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of organisations receiving orders for products and services online, %</td>
<td>Number of small businesses in the distribution sphere</td>
<td>Share of the population engaging in buying products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.)</td>
<td>Share of the population engaging in selling products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.)</td>
</tr>
<tr>
<td>0.689</td>
<td>0.921</td>
<td>0.471</td>
<td>0.486</td>
</tr>
<tr>
<td>0.727</td>
<td>0.541</td>
<td>0.629</td>
<td>0.639</td>
</tr>
<tr>
<td>0.845</td>
<td>-0.791</td>
<td>0.810</td>
<td>0.814</td>
</tr>
<tr>
<td>0.753</td>
<td>0.691</td>
<td>0.895</td>
<td>0.896</td>
</tr>
</tbody>
</table>

Table 6 shows a strong correlation between the variables describing Russian engagement in globalisation processes and activity levels of organisations and the population engaged in the distribution sector. The strongest direct relation is observed between KOFTrGI and KOFInGI and the levels of online activity in buying and selling products and services via online auctions (eBay, Amazon, etc.) and online aggregators (Avito, Yandex. Market, etc.) and placing orders via the internet. However, a strong inverse correlation is found between the changes in the number of small and micro businesses and KOFTrGI.

This study attempts to assess the readiness of the Russian economy for a global digital transformation compared to other countries. For this purpose, NRI was used, which, we believe, can serve as one of the best indicators to sum up the economy's potential in the global environment. According to the Portulans Institute report titled "The Network Readiness Index 2020. Accelerating Digital Transformation in a post-COVID-19 Global Economy" (https://networkreadinessindex.org/wp-content/uploads/2020/10/NRI-2020-Final-Report-October2020.pdf), Russia remained at the 48th place in the ranking (NRI – 54.23; Technology – 46.62; People – 59.68; Governance – 56.98; Impact – 53.65) at the top of the country group with a medium level of readiness to the use of ICT.

Table 7 represents a comparative description of the NRI sub-pillars for Russia and leading global economies.

<p>| Table 7 Ranks and comparative performance in NRI and NRI sub-pillars for Russia and the world's major economies |</p>
<table>
<thead>
<tr>
<th>NRI Rank</th>
<th>NRI Score</th>
<th>Technology</th>
<th>People</th>
<th>Governance</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>1</td>
<td>82.75</td>
<td>83.82</td>
<td>78.07</td>
<td>88.88</td>
</tr>
<tr>
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<td>78.91</td>
<td>82.88</td>
<td>74.59</td>
<td>86.23</td>
</tr>
<tr>
<td>Germany</td>
<td>9</td>
<td>77.48</td>
<td>79.18</td>
<td>70.54</td>
<td>83.52</td>
</tr>
<tr>
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<td>15</td>
<td>73.54</td>
<td>65.55</td>
<td>76.79</td>
<td>77.53</td>
</tr>
<tr>
<td>China</td>
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<td>58.44</td>
<td>49.80</td>
<td>58.47</td>
<td>66.33</td>
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<tr>
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<td>48</td>
<td>54.23</td>
<td>46.62</td>
<td>59.68</td>
<td>56.98</td>
</tr>
</tbody>
</table>


According to the WEF, INSEAD, and Portulans Institute (https://networkreadinessindex.org/), Russia has considerably improved its standing by NRI Ranks over the past ten years, rising from the 80th place in 2010 to the 48th place in 2019. However, a slowdown is observed. Still, the trend is positive for NRI Score (Figure
3). Similar results are obtained by the ITU for IDI. Russia's IDI-Rank places it at the 45th place by 2019, meanwhile, DID-Score equals. The most probable scenarios of the development of the information society are charted in Figure 3 based on NRI-Score and DID-Score.

![Graph showing expected changes in IDI and NRI](image)


Table 7 and Figure 3 confirm a positive trend in the development of the information and communications environment in Russia.

An assessment of the condition and potential of extension in the capacity and supply levels in the C2C segment of the distribution sector of Russia in the online environment was accomplished based on the levels of activity in buying and selling products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.), and other digital platforms. The forecast was based on the assumption that the C2C segment would follow a positive trend, as in European countries (Figure 4).
The comparative outlook shows Russia’s significant underperformance but stronger growth rates compared to Europe in terms of activity levels of buying products and services online.

To make forecasts for the C2C segment of the distribution sector, individual activity trends were analysed in using the internet for purposes relating to buying, selling, or searching information on products and services (Table 8).

The following equation developed by the authors was used to estimate the forecast capacity and supply levels in the C2C segment of the distribution sector online (1).

where: $E_{c2c}$ is the capacity of the C2C market for the forecast period, billion rubles; $V_{c2c}$ is the actual turnover of the C2C market in the base period, billion rubles; $A_b$ is individual activity levels in the C2C market in buying/selling products and services in the base period, %; $A_i$ is personal buying activity in the C2C market in the analysed period, %; $K_{ac}$ is the rate of change of the average check; $O_{ea}$ is the turnover of the C2C segment per 1% of the

![Figure 4 Forecasts of individual activity levels online for Russia and Europe](https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tin00098&plugin=1) and Rosstat (https://rosstat.gov.ru/free_doc/new_site/business/it/fed_nabl-croc/index.html)
active population in the base period, million rubles; $I_{ac}$ is the average rate of change of the average check level.

According to Data Insight (DATA) and KEH eCommerce, OOO, (Avito.ru, a division of the Swedish Avito Holding AB) (Source: E-Commerce in Russia in 2019: https://www.datainsight.ru/ecommerce_2019), the capacity of the C2C market in Russia in 2019 equaled 295 billion rubles. According to Rosstat, individual activity levels in buying/selling products and services via online auctions, aggregators, etc. in 2019 were as follows:

- 33.1% in buying products and services: 8.912 billion rubles per 1% of buyers in the base period;
- 7.3% in selling products and services: 40.411 billion rubles per 1% of sellers in the base period;
- The rate of change of the average check equaled 0.994 ($K_{ac} = 0.994$).

The calculations are laid out in Table 8.

| Table 8 Forecast estimates of activity levels and development of the Russian C2C segment in the distribution sector online, billion rubles |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1. Share of the population engaging in buying products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.), % | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| C2C capacity changes, billion rubles | 383.6 | 446.9 | 529.3 | 606.1 | 679.0 | 758.6 | 833.5 | 909.7 | 987.0 | 1062.5 |
| 2. Share of the population engaging in selling products and services via online auctions (eBay, Amazon, etc.), online aggregators (Avito, Yandex. Market, etc.), % | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| C2C supply change, billion rubles | 386.7 | 450.5 | 536.3 | 616.0 | 690.8 | 773.5 | 850.7 | 929.5 | 1009.5 | 1087.5 |

(Calculated by the authors from Rosstat data: (https://rosstat.gov.ru/free_doc/new_site/business/it/fed_nabl-croc/index.html)

If the existing trends are maintained in activity levels in buying/selling products and services via online auctions, aggregators, and other digital platforms (Table 8), then:
• The capacity of the С2С segment in the distribution sector operating on single digital platforms will show a positive trend with the potential to reach 758.6 billion rubles by 2025 and exceed 1 trillion rubles by 2029;
• Supply levels in the С2С segment in the distribution sector will also show a positive trend on single digital platforms, with the potential to reach 773.5 billion rubles by 2025 and 1 trillion rubles by 2029.

The analysis of institutional change in the distribution sector shows the fastest transformation occurred towards chain formats (Figure 3).

Another vital feature of the operating environment of small businesses for a successful digital transformation is the access of the population to ICT resources and its online activity levels. Table 3 outlines the comparative performance of Russia and European countries by the access of the population to ICT resources and its online activity levels.

The **mutual interdependence of factors of the information and communications environment and individual activity levels confirmed by the close direct or inverse correlation** between the respective key variables served as the guidance in the assessment of the potential of online transformation among small, micro, individual, and family businesses and the self-employed on global digital e-commerce platforms, aggregators, etc. In particular, the development of the C2C segment is analysed (Table 2).

**Discussion**

An analysis of institutional changes (Figure 1) taking place in Russia shows the process of concentration in the economy is continuing. It occurs faster in the distribution sector (Table 2) and is accompanied by intensifying competition in trade services, by acquisitions and marginalisation of small, micro, individual, and family businesses and the self-employed from the offline environment.

Such marginalisation has speeded up with the development of chain formats in retail (Figure 2 and Table 2). The main reason for the transformation of small, micro, individual, and family businesses and the self-employed from away from the offline environment reflects the need for being physically close to major retail chains endowed with considerable resources to compete. Global retail chains often use the strategy of retail ring-fencing to squeeze out small businesses from the market. They launch new projects with a diverse, deep, and balanced range of products at reasonable prices, practice high service standards, and implement diverse loyalty programmes and sales incentives. After they succeed in
squeezing out the competition, they get back to the standard level of operation to earn profits often by leading on costs.

In this context, the online transformation of small, micro, individual, and family businesses and the self-employed from the offline environment becomes more plausible, as it does not require being in physical proximity to the more competitive retail chains.

Table 3 confirms the obvious presence and plausibility of the online transformation of small, micro, individual, and family businesses and the self-employed from the offline environment. Specifically, the results confirm that European countries with high individual activity levels in buying/selling products online are characterised by stronger variables of the information and communications environment.

Accordingly, we analysed the local Russian and global information and communications environment to assess the potential of the online transformation of small businesses and the self-employed in the distribution sector. The results confirm a positive trend in many variables describing the information and communications environment. In particular, we found a correlation between individual online activity levels in buying/selling products online and the main variables of the information and communications environment of Russia (Table 4). This is a clear sign confirming the strong potential of the online transformation of small, micro, individual, and family businesses and the self-employed. Besides, we found that the majority of the Russian population (more than 98%) do not see any security-related obstacles in the use of the internet when buying/selling products and services online.

The analysis shows a considerable increase in digital activity among organisations in the distribution sector over the past five years across most directions. Some slowdown is observed in the development and use of websites, which is a powerful driver of success in the digital transformation of the distribution sector. To make a comparison, 52.2% of organisations in the distribution sector in Russia had had websites by 2020 vs. 77% on average for the EU and much stronger levels in developed European countries (Denmark – 94%, Netherlands – 92%, and Germany – 88%). Although, the somewhat slowed down digital activity in some dimensions is set off by rapid growth in other dimensions, specifically, use of the internet for marketing purposes, costs of adoption, and use of digital technology. Overall for Russia, organisations show a positive trend in digital activity levels which is important for digital transition.
Russia is profoundly engaged in the international processes of economic, trade, and information globalisation, which exert considerable stimulating or restrictive effects on its globally-oriented digital transformation. Table 6 underscores the strong support provided by the global environment for online activity in buying and selling products and services via online auctions (eBay, Amazon, etc.) and online aggregators (Avito, Yandex. Market, etc.) and placing orders via the internet. However, a strong inverse correlation is established between the changes in the number of small and micro businesses in the offline environment and KOFTrGI, which underscores the restrictive effect of trade globalisation on the development of small businesses in the distribution sector due to the arrival of transnational trade companies into the Russian market of trade services. There is a strong stimulating effect of information globalisation on the digital activity of people and organisations. The results show that Russian engagement in the international globalisation process helps to create conditions for the online transformation of small, micro, individual, and family businesses and the self-employed from the offline environment. This trend should be enabled by global digital platforms and specifically involve the C2C segment.

The combined analysis of NRI (Table 7) and IDI (Figure 3) reflecting the potential of an economic transformation toward the global digital environment underscores a positive trend in the development of the information and communications environment in Russia, though with significant lagging-behind compared to developed economies. The findings confirm that the information and communications environment in Russia holds the potential for online transformation of the distribution sector to be enabled by global digital platforms. However, this potential is insufficient to gain strong competitive standing.

Figure 4 underscores the significant lagging-behind but higher growth rates of individual digital activity in Russia in buying/selling products online compared to the EU. The rapid growth of individual activity is a sign of the considerable potential for developing the C2C segment in the distribution sector.

The potential of a shift from the vulnerable and accessible offline environment toward the online environment among small, micro, individual, and family businesses and the self-employed in the distribution sector is underscored by the assessment of the condition and potential of extension in the capacity and supply levels in the C2C segment of the consumer market operating on global digital platforms. The C2C segment on global digital platforms is significantly outpacing the rates of development of the local information and communications environment. The overall, economic, trade, and information globalisation and the global information and communications environment lend some support for the
online transformation of small, micro, individual, and family businesses and the self-employed in the distribution sector from the offline environment.

Conclusion

The research findings show that the most powerful line of transformation for small, micro, individual, and family businesses and the self-employed in the distribution sector in the context of globalisation in the world economy, development of the global information and communications environment and digital technology, and intensifying competition posed by global chains expanding offline is the transformation into a C2C sector operating on global digital platforms. The online transformation of small, micro, individual, and family businesses and the self-employed from the offline environment makes it possible to avoid the direct competitive pressure from major retail chains. Moreover, such an online transformation supported by digital business models would enable their advance into global markets at the lowest possible costs. Operations enabled by single digital platforms would be able to seamlessly complement each other and join efforts.

We find it necessary to continue research in this direction specifically to account for global changes influenced by the COVID-19 pandemic and shifts in consumer behaviour in the online environment.

The findings would be useful for researchers, scholars, and practitioners in the distribution sector.

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