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MULTI-SIDED PLATFORM FOR INSTANT PURCHASES AND SALES IN COMMODITY MARKETS

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Abstract

The difficult economic situation in the world, active development of renewable energy technologies, geopolitical upheaval, COVID-19 pandemic - all of this, to one degree or another, has an impact on the global market of oil products. Such problems induce market participants to look for ways of creation strong, mutually beneficial relations between sellers and customers of oil products in the long term. One of the possible courses of events is the use of the principles of the digital economy, which are expressed in the development of digital platforms for the oil market. Within the framework of this article, the authors were faced with the following question: is the development of a multi-sided platform for instant purchases and sales in commodity markets promising? The research revealed that a total of 8 promising solutions in this area have been implemented on the Russian and foreign oil products markets. However, they do not fully meet the modern requirements of the market. We can distinguish the most important among them. Some of the digital platforms offer only a limited list of potential products, others are focused on a narrow specialization of customers, while the rest of them have a high barrier to entry, which alienates potential participants. In this regard, the development of a multi-sided platform for instant purchases and sales in commodity markets, which takes into account the weaknesses mentioned above and presented in other digital platforms, is a promising direction of development.

Keywords: Digital platform, oil market, digital economy

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1. Introduction

The development of the digital economy offers major opportunities for a comprehensive modification of almost all spheres of society (Betelon, 2017). The emergence of new technological opportunities allows companies to invest in the development of such activities as the development of digital platforms. Song et al. (2021) noted that they allow to create a unique ecosystem of the digital economy that brings together an unlimited number of participants. As a result of the development of the platforms, almost all traditional methods of business management, including strategy, marketing, manufacturing, research, human resources development, are undergoing a revolution. It allows to achieve the desired results with minimum effort and resources.

The role of digital platforms in the global commodity market increases every year. As was pointed out in the study of Berg and Wilts (2018), they provide the opportunity for manufacturers and customers to interact directly with each other, excluding intermediate links from the final value chain, which not only increase the time of the purchase and sale of products, but also affect its final cost. With the development of information technology, digital platforms are also undergoing changes, which makes it possible to achieve the following:

1.Increase the accessibility of these sites for more potential consumers to a significant level.
2.Provide sellers and consumers with analytic tools, using artificial intelligence.
3.Reduce the time of the transaction of purchase and sale of the required products.

The oil product market does not stay on the sidelines of digitalization. Aksa et al. (2021) note that the emergence of various digital platforms, with different product content and available functionality, leads to the formation of its own digital ecosystem, which develops at a progressive pace and brings new technological solutions, automation of business processes to the oil product market, etc. Ultimately, all this effects beneficially on the interaction of customers and sellers of oil products, which allows the market to develop in the right direction and become transparent for its participants.

2. Problem Statement

The oil market in the Russian Federation and abroad is an established institutional structure. All participants interact with each other over a significant period of time. Established business contacts, well-functioning supply chains of end products, an extensive network of oil product distribution indicate on a developed market. But, despite the mentioned above positive points, there are a significant number of problems that, to a different extent, affect the interaction between customers and sellers of oil products. Within the framework of this research, three main major problems were identified, which, in the opinion of the authors, most affect purchases and sales of products:

- Lack of understanding of the unit economics of the transaction by participants in the oil market and lack of the possibility to monitor prices in the market.

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- Insufficient speed of settlement of the transaction when trading products and significant communication costs between customers and sellers.
- Low quality of products and the lack of the possibility to control its quality from the moment of shipment to delivery to the end customer.

In the following, we will focus on each of the problems.

2.1. Lack of understanding of the unit economics of the transaction by participants in the oil market and lack of the possibility to monitor prices in the market

The oil market is not transparent, as it has a significant number of participants, and the initial prices of products provided from oil refineries are not always available for various reasons. This means that there is no possibility of automatic calculation of the profitability of the transaction. The share of fuel costs for some strategically important industries exceeds 50%; therefore, the increase in the efficiency of the oil product market for fuel consumers is quite significant. The availability of a tool that allows real-time tracking of price dynamics for various categories of goods allows market participants to close mutually beneficial deals. At the same time, the lack of the possibility to monitor prices creates an imbalance in the market, which leads to a significant difference in product prices, even within the same region.

2.2. Insufficient speed of settlement of the transaction when trading products and significant communication costs between customers and sellers

Calculating an effective trade takes time. Depending on the selling company, this time ranges from several hours to several days. Due to imperfect business processes in the market, the sellers have to spend significant time working with customers, and customers have to adjust to the working hours of the selling companies. The total term of the transaction is at least 1-2 business days; taking into account the receipt of original documents it is up to 1 month.

2.3. Low quality of products and the lack of the possibility to control its quality from the moment of shipment to delivery to the end customer

In 2015-2017, on behalf of the Government of the Russian Federation, companies operating in the oil products market were inspected throughout the country. According to the results of the check, 42.5% of all the petrol stations had violations. Including violations in the physical and chemical parameters of fuel - in 20%, of which 7% of violations were found at petrol stations owned by vertically integrated oil companies, the rest were found at independent petrol stations. One of the few solutions to these problems can be the creation of vertical control over the entire supply chain of oil products, which can only be done by a large intermediary between producers and end consumers. The current market structure includes many intermediaries and traders. The supply chain of raw materials and fuel to the final consumer can be very long, and it is impossible to control it properly. Well-coordinated work of all participants in the production and supply of finished products to the market will be required to solve the above problems. According to the authors, the most reasonable and modern approach is the development of a digital platform, which will

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provide solutions to solve the above problems. The availability on the market of such a tool for selling finished products will allow transforming the entire existing ecosystem, giving it a modern look with elements of digitalization.

3. Research Questions

In the course of the research, the following questions were posed:

- Are there foreign and domestic solutions for the development of digital platforms operating in the oil market?
- Is the development of a multi-sided platform for instant purchases and sales in commodity markets promising?

4. Purpose of the Study

The aim of the research is to assess the prospects for the development of a multi-sided platform for instant purchases and sales in commodity markets.

5. Research Methods

Research methods consist in the analysis of scientific publications and training aids relevant to the topic of research work.

5.1. Digital platforms on the commodity market in the Russian Federation and abroad

In order to solve one of the questions posed in this research, the markets of oil products of the Russian Federation, Europe and the countries of North America were studied in detail. The authors focused on the analysis of existing solutions for the development of digital platforms for the oil market. So, as of late 2020 and early 2021, various digital platforms, which differ from each other in functional content and types of products sold, operate in the Russian Federation and abroad on the basis of vertically integrated oil companies and other structural entities. Among them are the following:

1. Webneft - a project of PJSC Gazprom Neft (Russian Federation).
2. Eoil.ru - an electronic trading platform for placing oil products from various suppliers (Russian Federation).
3. Tatneft Platform - an electronic trading platform for trading oil products from oil refineries of PJSC Tatneft (Russian Federation).
4. Information and analytical platform of the RN-Komsomolsk Refinery LLC - a project of PJSC Rosneft Oil Company (Russian Federation).
5. Amerigas.com (USA).
6. Onlinefuels.com (UK).
7. Petromehras.com (USA).
8. Syncron.com (USA).

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During the research, the authors discovered other digital platforms in the oil market. However, they did not take them into account in this research for objective reasons (the initial stage of development, low potential reach, low sales). But it should be noted that over time these solutions can become serious competitors to the existing digital platforms.

Russian and foreign companies are actively involved in the development of digital platforms, which allow them, in one case, to optimize the production process, in the other case, to regulate the process of selling oil products, reducing the delivery period and the final cost, due to the exclusion of the intermediaries. The development paths of Russian and foreign platforms are congruent in key areas. And this direction is not only extremely promising, but also has almost unlimited opportunities for development.

5.2. Prospects for the development of a multi-sided platform for instant purchases and sales in commodity markets

It is necessary to develop a modern digital platform that meets not only the needs of the market, but also information security trends.

The target audience of the promising digital platform will be the following participants:

1. Sellers of oil products or products with a minimum level of refining.
2. Customers: traders, manufactures, transport companies and any other enterprises where raw materials or products are required (Light & Miskelly, 2019).
3. Logistics companies that can sell their services and participate in transactions (Scholz et al., 2018).
4. Banks that receive up-to-date information on transactions and potential clients for financing.

Thanks to this digital platform, a kind of ecosystem of the digital economy will be formed. And it will promote mutually beneficial cooperation between its participants (Ganichev & Koshovets, 2021). Having the opportunity to develop, this ecosystem can attract not only those participants who were originally planned by the developer company, but also others. At the same time, there are possibilities of organizing international cooperation.

The development of a multi-sided platform for instant purchases and sales in commodity markets is conceptually and technologically closest to innovative priority 5.2.2.7.3: Improving the efficiency of sales, marketing, and advertising processes, according to the regulations of the Skolkovo Foundation, because it offers a competitive technological product that transforms the market of goods and raw materials, influences on the product value chain, and increases market efficiency.

It is likely that during the implementation or the full functioning of the digital platform, the list of potential business problems, that will be solved with the help of this platform, will be supplemented. And also, it will touch on other potential areas of activity. For instance:

- provision of services for monitoring the production process of oil products throughout the entire production chain, with elements of the Internet of Things
- modelling the demand for products due to seasonality.

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Mizintseva and Gerbina (2018) note that in the future, the list of potentially solvable business problems will be limited only by the amount of information that will be collected and processed by the digital platform.

The conception of a multi-sided platform presupposes not just a user-friendly interface, but convenient business processes for the platform users. This means that the research is based on the idea that the business processes digitized for the platform should solve a specific user problem and bring additional benefits.

As a result, an ergonomic ecosystem of the digital economy will be created. It will connect manufacturers and end consumers through a platform, eliminating intermediaries, thereby shortening the long supply chain of raw materials, and increasing the benefits for both end customers and suppliers-manufacturers (Hanna, 2020).

6. Findings

6.1. Available solutions in the digital platform market for the oil market

Russian and foreign digital platforms operating in the oil production and refining markets make it possible to optimize not only the production of oil products, but also to reduce the delivery time and the final cost of the end product for the consumer. Over time, digital platforms will evolve and offer customers more and more options. For example, the use of artificial intelligence will allow to build a behaviour model of a particular group of customers, and a digital platform in real time will provide the exact information that will make it possible to profitably purchase one or another product.

The market of digital platforms for the oil production and refining industry in the Russian Federation is in its infancy. The available solutions are focused, first of all, on meeting the needs of certain vertically integrated oil companies or have a high barrier to entry, which can constitute an obstacle to the formation of a free and competitive market.

Russian and foreign digital platforms, in addition to their clear advantages, also have certain disadvantages that affect the attraction of potential customers. In this regard, the developer of a multi-sided platform needs to take into account the existing weaknesses of analogues in order to present to the market an almost universal solution that can fully satisfy the needs of both sellers and customers of oil products.

The rapid development of the digital economy contributes to the informatization of the oil products purchase and sale procedure. And the potential implementation of elements of the Internet of Things to this chain significantly increases the amount of information received by the processing capacities of the digital platform. In this regard, the developer company should envisage a serious analytical module that will provide both sellers and customers with information that contributes to the completion of a mutually beneficial transaction.

The increasing role of information technology and the development of new areas of science and technology, which make it possible to automate a significant number of production procedures, encourage organizations to invest effort and money in the development of such platforms.

The use of digital platforms in the oil market solves the following tasks:

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1. Minimization of costs in the implementation of the production process.
2. Elimination of intermediaries and reduction of the time required for the purchase and sale of oil products.

6.2. Development of a multi-sided platform for instant purchases and sales in commodity markets

As a result of the implementation of the entire range of works, an ergonomic ecosystem of the digital economy will be created. It will connect manufacturers of products and final consumers (legal entities and individual entrepreneurs) through a digital platform, excluding intermediaries, thereby shortening the long supply chain of raw materials, and increasing the benefits for both end customers and for suppliers-manufacturers. In the future, expansion of the platform's focus on commodity markets for metal, timber, agricultural products, etc. will significantly increase the list of goods and services provided.

Summarizing the above mentioned, it becomes possible to conclude that the development of a multi-sided platform for instant purchases and sales in commodity markets opens almost unlimited prospects. Its opportunities and potential for further development will make it possible to say that the development company has done an impressive job, which should ultimately bring not only significant profits, but also make a name as a major player in the market of digital platforms for the oil production and oil refining market. Like any other undertaking, at the very beginning there will be shortcomings and various technical incidents. But constant introspection and receiving feedback will minimize the negative impact of such things. The planned work on analytical tools, Big Data, and the implementation of artificial intelligence will make this digital platform almost automated (Choubey & Karmakar, 2020).

7. Conclusion

The digitalization of the economic system of the Russian Federation is a natural process that is dictated by modern requirements for the development of the international market for goods and services. The widespread use of digital technologies will reduce the costs of the production process and will allow to spend less time on the production of a unit of product or the provision of services. The object of this research is the digital economy. It is safe to say that it is one of the main trends in the development of the state. In a number of his speeches, President of the Russian Federation Vladimir Putin pays attention to the development of the digital economy.

One of its variations is digital platforms, which are the subject of our research. They are a fairly young phenomenon known since 2007. However, every year they play an increasing role in various areas of production. The oil production and oil refining industries are no exception. There are both Russian digital platforms and their foreign counterparts on the market. They also have different aims. Some of them allow optimizing and controlling the production process, which leads to a decrease in costs and an increase in the efficiency of an industrial enterprise. Others are sites that enable developers of software solutions for the oil industry to offer these solutions to potential consumers represented by vertically integrated oil companies. In addition, there are digital platforms that provide access to cloud solutions, after-sales services for manufacturing enterprises, and control over the production process through the Internet of Things. The

rest are marketplaces where vertically integrated oil companies and other potential suppliers can offer their products to customers. But these digital platforms also have their own ranking. For example, some of them are focused on meeting the needs for the sale of products of one vertically integrated oil company, while others have a low barrier to entry, and any manufacturer can offer their products on this digital platform. The analysis showed that all the listed digital platforms have their own clear advantages and disadvantages. The disadvantages of these sites are understandable, since such digital platforms are a relatively new phenomenon in the global economic system, and they are only at the very beginning of their development path.

As part of this research, the goal was to assess the prospects for developing a multi-sided marketplace for instant purchases and sales in commodity markets. Based on the results of the research, the following conclusion can be drawn that nowadays there is a favourable atmosphere for the development of a multi-sided platform for instant purchases and sales in commodity markets.

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