E-procurement in developing the outsourcing of transport services

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Abstract. The article deals with the development of information technologies in the field of electronic procurement, which are an efficient logistics tool. Modern Internet technologies make it possible to gain competitive advantage in the implementation of business processes through taking the best decision when choosing alternative options related to the outsourcing of transport services. Global trends, which are aimed at digitalising logistics activities, are adapted and applied to the realities of the Russian economy. In the course of the study a comparative analysis of electronic trading platforms of the Russian Federation was carried out and their major characteristics were outlined. The paper touches upon the advantages of logistics outsourcing. One of the major players of e-commerce services in the Russian market was taken as an example to conduct a research covering the issues of e-procurement of transport services.

1. Introduction

E-commerce is a complex and multi-purpose tool of developing economic relations between economic entities, it is also a powerful driver of economic growth at the present stage of informatisation and globalisation of the world economic cooperation [1, 2]. Currently the ongoing processes of globalisation and informatisation have a significant impact not only on the content of economic activity of an economic entity, its structure, relations with external objects, politics, etc., but also evolve into an entirely new digital form. The transfer of economic interactions, such as search and exchange of information, tendering and trading, from a real-world to a virtual space is an important factor in improving trade and procurement activities requiring a global analysis and application of new conceptual approaches [3]. Being a powerful modern means of international trade, e-commerce blurs geopolitical, social and geographical boundaries and forms fundamentally new approaches to the interaction between suppliers and consumers. The number of e-commerce operations carried out with the help of Internet technologies is growing at an incredible rate and has a considerable effect on the world economy [2, 4, 5]. In the modern world, e-commerce is an essential prerequisite for the successful operation of the majority of companies; it opens up new vistas for business development, directly affecting the advancement of the Russian economy [6].

The increasingly deeper immersion of business processes into the infosphere emphasises the need to transform, modify and adapt logistics to modern digital technologies. E-commerce is a fundamentally new set of business processes that requires a completely different approach to management principles, as well as indicators and criteria for evaluating the effectiveness of business
activity. Execution of an order via Internet-based technologies reduces the cost of placing an order by one third, with its execution time reduced threefold [7]. It becomes obvious that in the logistics sphere of any organisation, including procurement, transformations and qualitative changes are necessary, and they are already taking place in the document flow, order placement and document handling procedures. When using Internet-based technologies in procurement, organisations can perform many logistics functions such as the selection of suppliers, calculation of the cost of alternative procurement options, electronic documents transfer and tracking the movement of purchased products at a fundamentally different level [8]. A Malyshev in his reasoning about the modern trends in logistics attributes the key role to digitalisation [9]. He pays attention to the current trend which indicates the growth of logistics functions the customer companies delegate to specialized organisations that provide the best tasks execution in the field of logistics.

Digitalisation of modern business generates a new phenomenon known as electronic procurement portals [10]. The use of electronic trading platforms (hereinafter referred to as ETPs) significantly simplifies the customers’ activity of ordering products and services due to automation, and has a positive impact on the competition development among supplier companies in producing and selling their goods [11, 12].

2. Methods and materials
When selecting suppliers, the following methods are traditionally used: the rating method, the cost estimation method, the method of dominant characteristics, the method of preference categories [13]. Nowadays, the methods based on information technologies are increasingly used. There is a large number of different electronic trading platforms in the Russian Federation, which makes it possible to search for partners and contractors, including outsourcers of logistics services. Ten out of ninety-six electronic trading platforms of the Russian Federation, which are the leaders in terms of total worth according to the published notices in 2018, are shown in figure 1 [14].

![Figure 1. The largest electronic trading platforms in the Russian Federation.](image-url)
The study below presents the main characteristics of Russian ETPs. Electronic platforms are divided both by industry (electric power industry, oil and gas sector, metallurgical industry, aircraft construction, agro-industrial sector, insurance, pulp and paper industry, construction, etc.) and by territory, i.e. geographically. Some large holdings have their own ETPs designed to place their own orders.

Apart from the interface, all electronic trading platforms differ in the possibilities of operation. Thus, for example, the search can be carried out by the trade procedure number assigned by the ETP. It is also possible to find purchases in question by whole words or by parts of a word (morphological search), the morphological search takes into account the form of a given word (case, gender, number, declination, etc.). Many platforms can be searched by abbreviations (“CAW”- Construction and Assembly Works, “FEED”- Front End Engineering and Design), word combinations and parts of a word. Other common search criteria for ETPs include the names of organisations and their individual tax number, OKVED (Russian National Classifier of Types of Economic Activity) and OKDP (All-Russian Classifier of Types of Economic Activity, Products and Services).

Some platforms, on the contrary, have the function of excluding search results by certain words. It is the price of a lot which is another additional search filter at most platforms. Many ETPs provide for the search of procedures using a time range (indicating the starting and the ending date of the bidding period). Thus, some of them can be used to select the procedures published in the system within a certain period of time or ongoing procedures, where the submission deadline for the trade procedure comes before a specified date (if the date is not specified in the field "before", all the relevant procedures are displayed).

The most common “filters” refer to the search by the “Purchase” or “Sell” criteria, which display the procedures of the corresponding categories. Additional filtering of purchases or offers by certain types of procedures is also possible.

Another popular option at the ETP is to search only for those procedures that are conducted in accordance with the requirements of Federal Laws № 223-FZ “On procurement of goods, works, services by certain types of legal entities” and/or № 44-FZ “On the contract system of the Federal and municipal procurement of goods, works, services”. At more advanced platforms, the search criteria can be narrowed down to procedures that require a system operators to confirm the status of small and medium-sized enterprises (SMEs) as suppliers (under 223-FZ, SME status expands the opportunities for participation in procurement, and this status is also necessary for the participation in procedures available only to SMEs) [15, 16]. Some ETPs offer a search for procurement for the nuclear industry, where it is possible to search only for those procedures whose suppliers were accredited by ROSATOM.

Another distinctive feature of electronic trading platforms is the preservation of the search query in templates. Not all systems have such a function. All ETPs provide for electronic document exchange systems using electronic signatures.

Electronic trading platforms differ in the registration procedure of procurement participants. The platforms have an accreditation system of their own, which implies a set of actions to be effected in accordance with the rules established by a particular organiser and aimed at verifying whether a participant in the system is eligible to participate in the procurement of the organiser. Such verification is based on the analysis of the documents provided by the participant to the organiser, and it results in organiser’s granting a special status to the participant of the system, confirming the access to the participation in the procurement of the organiser.

The ETPs make provision for various methods of protection against an unfair counterparty. Secured transaction services guarantee protection for unknown buyers and sellers during reciprocal payments. The guarantor of the fulfillment of bilateral obligations is a third party (escrow agent), which is a company that accepts money for the storage on its account before the parties fulfill their obligations. Therefore, each platform provides for the possibility of making security payments. Thus, within this framework, a special account for tender security, as well as a sub-account for escrow funds and free collateral are provided. These accounts ensure security for the procurement procedures.
participation application. For this purpose, the systems may have an electronic safe deposit box for the organiser. An independent bank guarantee can be used at the ETP which is one of the ways of ensuring the fulfillment of obligations of the system participant to the organiser of the procedure, whereby at the principal's request the guarantor issues a commitment letter to pay the beneficiary a sum of money when he or she submits a request for its payment. All reliable systems have their own stop-lists and the corresponding regulatory instructions aimed at improving the level of bona fide participants.

The resources of various procurement systems can be used for the monitoring of the price market, which involves a sequence of actions taken by the organiser in accordance with the rules and regulations established by the organiser of the ETP. As a result, information on the product costs is collected in order to form the total cost of the subsequent procurement procedure.

In addition to the above mentioned characteristics, the ETFs differ in offering various methods of competitive procurement that allow for competition among the participants of the procedures.

Competitive tendering is one of the methods of competitive procurement which implies a compulsory signing of a contract with the winner (if any). In the course of such tender the organiser informs suppliers about the need for products in advance and invites them to submit bids; the tender committee appointed by the organiser beforehand considers them and determines the winner as an entity which meets the requirements of the documentation and offers the best conditions for the execution of the contract on the basis of a set of criteria established by the documentation.

Other common methods include the seller's auction, which may provide for a compulsory conclusion of the contract with the winner or the buyer's auction, with or without a compulsory conclusion of the contract with the winner, the Dutch auction, which does not provide for the compulsory conclusion of the contract, requests for proposals, requests for quotations without the need of signing a contract as well.

The majority of ETPs offer such procurement method as competitive negotiations, where the organiser informs suppliers about the need for products or services in advance, invites them to submit bids, then considers them and, based on the results of negotiations with the participants, determines the winner as an entity which meets the requirements of the documentation and offers the best conditions for the execution of the contract on the basis of a set of criteria established by the documentation. As a result of competitive negotiations, the customer has no obligation to determine the winner and sign a contract with him.

In addition to the methods mentioned above, some ETPs offer an opportunity for a multi-lot procurement procedure, which makes it possible for the organiser to pursue the procurement of numerous individual lots and conclude a contract with the winner (winners) for individual lots to obtain the greatest economic effect. In this case, the participants can submit a bid for individual lots of the procedure.

Most electronic trading platforms make it possible to conduct non-public procurement procedure with the participation of only full-fledged members specially invited by the organiser. The procedures providing for pre-qualification of participants can be both independent, when the organiser forms a list of participants in future procurement/sales procedures in accordance with the requirements and criteria established by the documentation, and serve as an additional element of the procurement/sales procedure, which is the admission of the participants in the procedure in accordance with the requirements and criteria established by the documentation prior to the submission of applications with technical and commercial proposals. The participants whose submission of technical and commercial proposals was approved as a results of pre-qualification are admitted to further participation in a tender.

There is also a multi-criteria way of conducting the procedure at the ETP. It allows the organiser to use the following formalised values parameters to assess the received applications while selecting participants. These parameters are:

- economic, technical, organisational, financial and legal attractiveness of the proposal in terms of meeting the needs of the customer (seller);
• reliability of the participant, based on work experience, business reputation, availability of facilities, production resources, human resources, financial assets and information resources.

Some systems have the possibility of using a multistage procedure. Such procedures are conducted in two or more stages. Based on the results of each stage (except for the last one), the organiser is supposed to clarify the terms of documentation for the procedure (including negotiations with the participants of the procedure) and, accordingly, to submit the refined proposals of the participants of the procedure to the next stage.

One of the additional elements of the procurement procedure is rebidding. It consists in voluntarily increasing the participants’ bids preference within a specially organised procedure, whereby the participants can decrease/increase the price of their initial bids in the procurement and, if it is provided for in the documentation to the procedure, improve other conditions of the bid.

3. Results and Discussion

The given features of ETPs can be used by the customer in the selection of the supplier, including an outsourcing contract. The essence of logistics outsourcing is to optimise the cost of transportation of commodities and materials through the partial or full transfer of logistics functions to a specialised organisation that renders high-quality logistics services [17]. In addition to reducing their cost, the profiling of rendered services in outsourcing improves the quality of services provided and potentially increases the market stability of a company in a competitive environment [18].

The capabilities of electronic platforms make it possible to take a well-grounded decision about the transition to outsourcing of transport services, for example. Further maintenance of the services quality provided by the third parties is performed based on regular monitoring of offers in the electronic environment and sustaining healthy competition among suppliers using the possibilities of e-commerce. As a rule, delivery companies, due to high competition in the market, are more motivated and work more efficiently than structural delivery units [17].

Statistical data on the selection of an outsourcing company which provides product transportation services were analyzed using the example of Sberbank AST, one of the largest ETPs operating in the Russian Federation, ranked fifth in terms of the total worth of published notices in 2018. Table 1 presents the procurement of transportation services carried out at Sberbank AST over a five-year period starting from 2014 [19]. It is worth noting that when tendering, different lot names may be used which are actually synonyms and denote the same concepts. Therefore, in order to obtain a complete picture when collecting data such lot names as "transport services", "transportation services", "supply services" and "haulage services" were used.

**Table 1. Transport service procurement at ETP «Sberbank AST» during the 2014-2019 period.**

| Name of the procedure | Number of lots | Initial price | Number of tender organisers | Average price of one lot, million roubles | Average amount for one organiser, million roubles |
|-----------------------|----------------|---------------|-----------------------------|------------------------------------------|-----------------------------------------------|
|                       | number | % | Million roubles | number | % | |
| 223-FZ:               |        |   |                |        |   | |
| Auction               | 922    | 2.8 | 22189.17 | 192    | 2.5 | 24.07 | 115.57 |
| Competitive tender    | 108    | 0.3 | 1715.41 | 23     | 0.3 | 15.88 | 74.58 |
| Request for proposals | 687    | 2.1 | 749.20 | 87     | 1.1 | 1.09 | 8.61 |
| Request for quotations| 472    | 1.4 | 923.44 | 199    | 2.6 | 1.96 | 4.64 |
| Total under 223-FZ:   | 2189   | 6.6 | 25577.22 | 501    | 6.5 | 11.68 | 51.05 |
As it can be seen from the table, trading on this electronic platform is performed by three main categories of customers, namely:

1. Organisations in whose authorised capital the per cent owned by the Russian Federation, or by a constituent region of the Russian Federation or a municipal entity in total exceeds fifty percent. These are client-organisations, which are obliged to carry out procurement activities in accordance with the Federal Law № 223-FZ “On the procurement of goods, works, services of certain types of legal entities”[15];

2. State clients or local government customers, state-funded institutions, state or municipal unitary enterprises, i.e. organisations that are obliged to perform procurement activities in accordance with the Federal Law No. 44-FZ “On the contract system of the Federal and municipal procurement of goods, works, services”[16];

3. Commercial organisations engaged in procurement activities on the basis of economic feasibility.

As it can be seen from the data presented, the maximum volume of purchases was accounted for by 44-FZ [16], so the volume of purchased transport services (at the maximum initial price) amounted to 85 595.97 million rubles, which is 76.6% of the total volume of placed procedures; the total of 30 628 procedures were carried out, which is 92.6% of the total number of placed orders; the number of organisers of auctions is 7199, which is 93.1% of all customers who held auctions on the electronic platform. At the same time, almost all purchases were implemented by means of electronic auction, where the only criterion for choosing a supplier was the price for the service provided. Thus, the participating companies gradually reduce the initial contract price, and the winner is the participant who offered the lowest cost of transport services.

The second place in the initial maximum contract price and the number of placed procedures is occupied by procurement made in accordance with 223-FZ [15]. Since 2014, 2189 procedures have been placed on the electronic platform in accordance with the Federal Law, which is 6.6% of the total...
number of tenders for the procurement of transport services; the total initial maximum contract price amounts to 25 577.22 million rubles, which is 22.9% of the total amount of purchases at this ETP. At the same time, 501 companies were the organisers of the tender, which amounts to 6.5% of the total number of customers of transportation services. The electronic auction accounted for the largest volume of purchases at the initial price, which amounted to 19.8% of the total number of performed procedures. However, when assessing the number of lots, it can be seen that the auction accounted for 2.8%, competitive tendering - 0.3%, request for proposals - 2.1%, and request for quotations - 1.4% respectively of the total number of performed procedures for the purchase of transport services.

The share of commercial procurements placed at this ETP is absolutely insignificant and makes less than 1% in both quantitative and monetary terms of the total number of procedures carried out to select a company providing transport services. This is the evidence of the fact, that in public procurement, due to the necessity of staying within the framework of the law, the transition to e-commerce has been much more intensive and has found a wide application not only among state customers, but also among suppliers willing to work in the e-commerce environment.

4. Conclusion
The results of the research make it possible to conclude about the increasing development of e-commerce on a global scale. E-trading serves as a powerful tool in increasing the competitiveness of organisations and business development, it is also a strong driver of economic growth of different countries. Along with the informatisation of logistics and the transition of logistics processes into a virtual information field, organisations are faced with the task of optimising their activities by reducing logistics costs as well, which can be achieved through the outsourcing of logistics functions, using the advantages and tools of e-commerce. On the basis of the study of procurement of an outsourcing company for transport services carried out at one of the largest ETPs of the Russian Federation, it is evident that this area of logistics activities is not widely used among commercial organisations, procurement being carried out mainly by state customers. The research shows that there is a large number of suppliers in the market who provide outsourcing services and are ready to participate in electronic bidding at the corresponding platforms. All this indicates the great potential of commercial companies of the Russian Federation in terms of using electronic auctions for the procurement of outsourcing of transport services, which may become the strongest factor allowing companies to achieve a competitive advantage through the development of e-business.

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