Role and significance of mobile technologies in digitalization of procurement systems in oil and gas companies

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Summary. The article studies the issues of implementation of the Procurement mobile application for the B2B segment as a necessary stage of digitalization of business processes in oil and gas companies. The article analyses features of the existing mobile application and its further development tasks in view of increasing competition among suppliers, improving transparency and efficiency of procurement procedures. The authors have systematized the tasks to be solved for implementing the mobile application and considered their influence on digitalization of the procurement system in oil and gas companies. The subject matter of their analysis is represented by materials on development and implementation of the Procurement mobile application in PJSC Gazprom Neft.

1. Introduction
Mobile applications are gradually becoming an integral part of peoples’ lives and more and more getting into new business processes.

As per the Deloitte assessment, the share of adult smart phone users in developed countries will exceed 90% by the end of 2023 which is 5 p.p. higher than in 2018. In 2023, 1.85 bln. smart phones will be sold (i.e. more than 5 mln. ones per day), which is 19% higher than in 2018 [1]. The basic factor influencing sales performance all over the markets will be the increasing use of gadgets by older persons. The proportion of smart phone users of the age between 55 and 75 in the developed countries is expected to reach 85% in 2023, which is 10 p.p. higher than in 2018, and the people will use their gadgets, on average, 65 times a day (20% higher than in 2018). The share of smart phone owners who use their gadgets every day will go up from 93% in 2018 to 96% by 2023. This rise will be caused by the increase in the quantity of applications used by the statistically average smart phone user (for example, corporate applications, contactless payment options) as well as by more often use of existing applications like photo apps. It means that 86% of adult owners will use their smart phones every day in 2023 against 79% in 2018 [1, 2].

Mobile applications in the B2C segment are necessary for competing companies in many fields. The B2B segment case is different. Mastering capabilities of intellectual and communication interaction via mobile applications in the B2B segment is slow going and cautious which is characteristic of big enterprises [3].
The more is the importance of analyzing the experience of mobile apps implementation by the Gazprom Neft Company. The company has chosen a course toward global technological leadership. It aims at implementation of advanced technologies according to the Industry 4.0 strategy and takes part in developing the Digital Economy of the Russian Federation program. Within the framework of generating an integrated milestone program of economy digitalization, the company is now carrying out various innovative projects [4, 5].

2. Research methods and materials
One of the most important systems of the company is the Procurement function: it involves more than 3,000 employees and about 70.0% of the company budget.

Implementation of digital technologies in some parts of the system dealing with procurement of materials, equipment, works and services improves business efficiency on the one hand; on the other they are necessary and prerequisite for further digitalization of the whole Procurement System. It also helps to transform the traditional procurement system into a new entity, i.e. an Integration Many-component Subsystem of the General Company Control System [3, 6, 7].

One of the running projects is creation and development of the Procurement mobile application. The tactical target of this application is improving efficiency of the existing business processes while the strategic one is arrangement of conditions for digitalization of the whole procurement system [8].

At present, the total number of company counterparties of the runs into thousands, while their potential number can reach tens of thousands.

Being an integration tool, the application makes it possible to continuously and extensively increase the coverage of the audience of potential suppliers/contractors as well as to develop communication channels in order to raise awareness about bidding procedures [3].

The application provides potential partners with all mobile service advantages, namely:
– exemption from the obligation to independently monitor the tender procedures on the company’s website;
– changing of email address or job does not create problems;
– the ability to be in the information environment 24x7 anywhere;
– unauthorized users can scan procurement lists;
– authorized users have access to all support documentation on a procurement of interest [9].

There are special utility functions making possible to get information on new procurements via push-notifications or SMS, to share procurement information with colleagues, to enable a personal calendar on the mobile device in order to remind about expiration of bidding periods.

The strategic task of the mobile application is implementation of digital technologies improving the procurement efficiency.

Tactical tasks of the application are dual:
– creating a new tool for interacting with potential partners
– creating an information and communication environment for the company employees.

Relationship of tactical and strategic tasks at particular stages of the mobile application implementation is shown in table 1 below [5].

Table 1. Tactical and strategic tasks to be solved by the Procurement mobile application at its implementation stages.

| No. | Stage I – Launching and Development and implementation of the Procurement mobile corporate application supported by the iOS. | Tactical tasks Improving efficiency of existing business processes | Strategic tasks Creating conditions for digitalization of the procurement system |
|-----|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1.  | Stage I – Launching and Development and implementation of the Procurement mobile corporate application supported by the iOS. | New approach to generating an interface of business users’ access to |
The application has also more features to analyze all running procurements in the digital format. Consolidated, from the company's internal and external systems, large procurement data form the basis for analyzing the effectiveness of counterparty selection procedures and the plan for adjustments to future procurement [10, 11]. Data on every procurement consists of the information on its initiator, the timing and departure from the election deadline, the number of bidders and participants, the financing and budget limits as well as the winning bidder and the calculations of performance indicators of the procurement and execution of an agreement. With the help of the mobile application, it is possible to make arrangements meant to entice counterparties to participate in procurement.

These arrangements include announcements, SMS and push-notifications, advertisements, emphasis and customizing of procurements ranking for a particular user.

In order to monitor key performance indicators of a project, a tool is used to view statistics on downloading procurement documentation depending on the device used.

The development and implementation of a mobile application has shown the importance of training for work in the digital environment. This is one of the most important tasks for a company when introducing digital technologies [4].

### 3. Results and discussion

It is essential for the company that the election procedure be the most transparent and comprehensive, that the number of competent potential counterparties taking part in it be as many as possible. That is why the company seeks to make participation in the procurement procedures the uttermost convenient. The mobile application also serves as an image-building and media tool drawing users on to go to the site and study company’s suggestions. To hold the audience, it is important that users feel comfortable with an application and want to use the product features constantly. In this regard, developers of the application have focused extensively on its design, personal settings, the omni-channel service, and biometric authentication [12].

According to the principle of “minimum action” to obtain the necessary information, in 2018 a new version of the Mobile application “Procurement” (version 2.0) was developed. The experience of using the previous version suggested focusing on such important aspects as convenience, promptness, simplicity, and up-to-datedness. The basic task of the new version is implementation of new features in order to get maximum customizability, i.e. to improve the targeting.

So, in the new version, such functions as sorting by the deadline for accepting offers, announcements of planned purchases and information on pre-qualification selections were introduced. Users can now see the current status of their pre-qualification applications in the Materials and Resources section.
In order to enhance customer loyalty and to make the mobile application easier to use, the Live Helper feature (chat bot) has been implemented. Thanks to the online consultant integrated into the application, the user can get instant answers to sample questions. The chat bot can search through existing procurements and qualifications (recognizing abbreviations regardless of the letter case) and answer questions on the e-trading platform and the personal cabinet any time 24/7. To ensure continuous communication with potential suppliers and contractors, the company supports the omni-channel feature in the application. Having the one-touch function the user can dial the phone number of the person responsible for the purchase or send an email. In the dialogue, you can ask a robot consultant and get an answer immediately, or in the form of feedback write a question and get an answer by mail.

4. Conclusions

1. The content and tasks solved by the “Procurement” mobile application in the B2B segment, the development and implementation of which is focused on potential contractors – contractors / suppliers and performers are considered.

2. The article analyses relationship between tactical and strategic tasks to be solved by the Procurement mobile application at various implementation stages, namely, the tactical tasks of improving the efficiency of existing business processes and the strategic tasks of arrangement of conditions for digitalization of the whole procurement system of an oil and gas company.

3. The article clarifies the advantages of the mobile service for potential partners, the additional services and their modification in Version 2.0.

4. The article elaborates on the following strategic targets of digitalization of procurement by use of the mobile application in the oil and gas company: development of networking cooperation of business partners; accumulation of data on cooperation with partners (big data); development of a platform for computer-aided learning and implementation of an intelligent procurement system; ensuring efficiency due to implementation of robotic systems to do the routine.

5. As a source of analysis, we used materials on the development and implementation of the Procurement mobile application of PJSC Gazprom Neft.

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