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## Characterization of procurement process in the construction company

### Abstract

The aim of this paper is to create a model designed to identify and estimate the amount of hidden costs in the company related to the missed opportunities. The construction industry is characterized by a unique contracts that standardize complicated and therefore are characterized by different processes, that are changing from project to project. One type of the processes that doesn't change regardless of the size of the contracts is the contract procurement oriented processes. The performance of the process of acquiring contracts in the construction the company significantly affects the overall performance of the company. That is the reason why the authors chose to increase the efficiency of these processes. One way how to approach the problem is to describe the procurement process of a construction company and increase its performance by minimizing missed opportunities. That is the reason why this paper is devoted to characterization of procurement process and its characteristics.

**Keywords:** performance, hidden costs, missed opportunities, construction company.

**JEL Classification:** D72, D73, H57, O31.

### Introduction

Companies which want to improve their own competitiveness must be able to adapt to rapidly changing market environment and technological progress. Globalizing markets of individual countries, working free trade, make the competition more intense, what makes the need for producing quality products and services so obvious. In current highly competitive environment, it is important that each business identifies a set of key indicators that reflect its performance. For a correct evaluation of business performance, it is important to use not only financial indicators, but also non-financial indicators. It is the connection of financial indicators with the non-financial ones, which allow creating of a dynamic view of the competitive position on the market and help to link short-term performance with long-term strategic vision of business. Properly determined set of key performance indicators help to increase the business's competitiveness through continuous growth of its performance.

For construction businesses (in view of their performance), it is important to prepare the correct preparation of tenders for the procurement. That is the only way how to succeed in tenders issued by not only public investors (public procurement), but also in private ones. The process of creation and win of offer is in construction the only way how to gain a new costumers.

In the process of applying for a tender it can be found a lot of missed opportunities that have a

significant impact on measurement of business performance. The purpose of this paper is to describe the process of procurement and determine its characteristics.

The terms performance and evaluation of company's performance are used relatively frequently. In its most general form, the term business performance is used for the definition of the very essence of business existence and represents the success and ability to survive in the future. The basic assumption of existence (survival) of the business in the marketplace depends on its ability to assess its activities and its resources in order to make a profit. In some businesses there is still the issue of performance often narrowed on the issue of measuring profit (Hajduova, 2014).

Zalai (2008) defines the performance like the efficiency with which the inputs are converted into outputs. In the definition he focuses on the actual transformation process and the efficiency.

To support this claim, we prefer definition of Neumaierová and Neumaier (2002), where the value of the business is determined by its own performance. In order to increase the value of the business, the performance of company must increase as well. If company wants to increase its business performance, it must make its business processes more efficient and effective.

The measurement of company performance by Hammer (2007) is not enough. The goal is not only to measure the performance, but also support its improvement. Measurement by use of appropriate indicators must always be part of an ongoing program of analyzing, evaluating and improving operational performance.

Wisner (2010) says that many businesses measure their success based on a narrow set of indicators of

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financial performance such as operating and net profit, return on investment and earnings per share. Indicators of financial performance are valuable because they capture the economic consequences of business decisions. On the other hand, they are perceived as lagging performance indicators because they indicate the financial impact of business decisions weeks or months after the decisions were made.

Efficient use of resources in public procurement for construction projects has become in recent years an important issue of construction in the UK. The rating provided by Sir Michael Latham (1994) and Sir John Egan (1998), found that the construction industry of Great Britain must improve its performance and reduce the incidence of confrontation, which is commonly observable among stakeholders, and especially between the main contractor and its specialized subcontractors and suppliers. Both Latham and Egan have advocated the use of partnerships to achieve these improvements. According to Grey and Flanagan (1989), involvement of technical and business subcontractors represents up to 90% of the total value of the construction project. That is the reason why the major suppliers focus their efforts on the management of operations before the work will be performed during the process of offer creation (Tkáč, 2001).

### 1. Description of procurement processes

The paper is focused on the analysis of individual activities of the process of offer creation in order to optimize the various sub-processes, which eventually cause more efficient business performance and minimize missed opportunities of the mentioned process.

The construction industry is characterized by a unique contracts that are standardized, but also very complex. Because the product is usually unique the construction process is characterized by different processes and change from one project to another. One of the main processes that can't be changed regardless the size of the contract is the procurement process, to be more concrete public procurement process. Although the private procurement process usually consists of the similar steps, the private investors are able to exclude or add some steps according to their wishes. That is the reason why this paper describes mainly public procurement processes. The general description of process of offer creation in public procurement is described in Figure 1.

The scheme is divided into the two phases: the cost phase and result phase. The first phase defines the processes between which the notification of the procurement notice and completion of tender documents. This phase is where cost of creating

offer arises. It is also a part of offer creation process that should be improved by construction companies. As soon as the offer provided by a construction company does not win the competition, all the costs incurred during this phase are sunk costs and for a construction company it is nothing more than a loss. That is the reason why it is so important to quantify individual sub-processes and identify missed opportunities and sunk costs. The second phase of the procurement scheme represents processes from submitting offer to evaluation of the offer by customer. It is called result phase because it tells the company how well it improves the procurement process. Based on the communication with the customers, company can find out why it does not succeed in the competition, and uses this reason to analyze the causes of failure and improve the performance of procurement processes as well as performance of whole organization.

At the beginning of the process of offer creation, the customer (in public procurement it is state body) prepares procurement notice. Procurement notice includes requirements for applicants and procurement calls. From these calls potential applicants (construction companies) select the attractive construction opportunities. In public procurement, the Office of public procurement creates a list, which in electronic form includes these notices, and all other information regarding to them. The form of a list is determined by Slovak Public Procurement Act. The Office of public procurement has to make the list also in the form of structured data that enables its further automated processing.

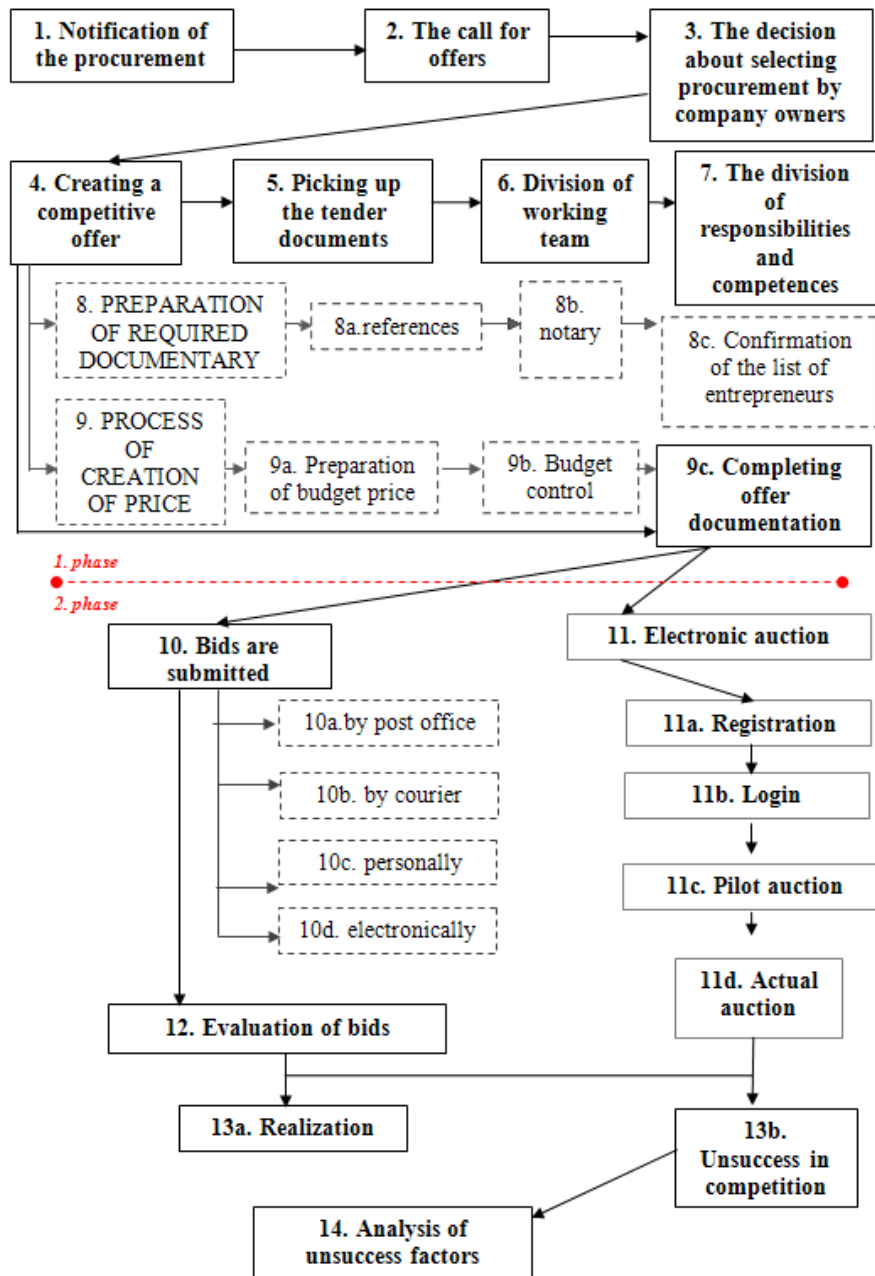
Based on the attractiveness of the construction opportunities, the decision makers in the construction company decide which opportunities fit their focus. Although this type of decision is too complex to determine all the criteria which influence final verdict, we can illustrate few of them:

- ◆ regional criterion;
- ◆ size of the order;
- ◆ technical difficulty;
- ◆ competition conditions;
- ◆ sufficient capacity to implement it, etc.

The process of creating an offer will start only if all requirements and conditions are clear. This process begins with acquiring of the offer specifications, then continues with selection of team members and the delegation of tasks, responsibilities and competencies. The process of actual offer creation consists of two parts. First part covers preparation of required documentary and second part represents the process of creation of price. Basing on analysis of more than hundred offers of one

construction company situated in Michalovce, we can determine that for Slovak construction companies documentary part of offer usually encompasses these documents:

- ◆ certificate of business license;
- ◆ certificate of good character of all statutory (managers);
- ◆ evidence of the technical and professional capacity;
- ◆ a document confirming quality management system, applicant shall submit to the public procurement employee a certified copy of a business license within the scope of the contract. A copy must not be older than three months, at the date of submission of tenders.



Source: Own processing.

Fig. 1. Process of offer creation in public procurement

In order to establish validness of the documents, all documents must be less than 3 months old than the date of offer finalization. Business spends considerable financial resources to verify these documents. Applicants can replace all the previously mentioned documents by the submission of certified copy of a valid certificate of inclusion on the list of

entrepreneurs, which was provided to company by the Public Procurement Office according to §133, par. 2, the Public Procurement Act. Applicants must also provide references to investor. References are, according to mentioned act, information about the contractors, for which they already carry out certain activities. The content of references must include

the name of previous customer, its profession, and number of people that he employs. It also has to encompass the information regarding contact persons, indicating their phone numbers to verify the references.

The price part of the offer represents estimation of the budget price based on the Bill of quantities which includes estimation of sources, which are needed to complete project together with their quantities. In Bill of quantities, each item is clearly determined and measurement unit together with regarding quantity are provided. Employees of a construction company must assign the cost for each item. Employees have at their disposal various *financial software* such as Cenkos, Odis and Rosoft. They are software created for quality valuation and management of construction production. These systems cover all activities associated with the preparation and realization of the offer. The programs allow companies to quickly create high-quality bid, then calculate the costs. They enable effective utilization of spending and invoicing procedures and prepare price estimates using financial indicators. The systems are created for budget planner, cost accountants, realization planner, procurement managers and suppliers.

After preparation of budget, the next step is budget control conducted by head of the working team or controllers in the enterprise. In case of doubt, manager contacts responsible person and solves with him the problems that occurred. Finally, the manager who is responsible for the creation of a competitive offer will finalize all the materials and needed documentation according to the requirements. The documentation is based on exact customer requirements, because even the smallest error can cause the exclusion of company from the competition. If everything is fine, offer documents are submitted. The period between a manager's decision regarding participation in competition to a finalization of offer varies from a few days to a few months. During that time, the whole team is involved in the successful development of offer's documents.

Based on type of procurement, there are two types of offer preparation processes. The first type is represented by classic public tender. The second type has a form of electronic auction. "The tender process is focused on procurement of an outstanding contractor to ensure the construction quality and control the construction investment" (Liu, 2015). The basic characteristic of tender is that it is a onetime offer only. The electronic auction for the purpose of this study can be defined as: "an online, real-time auction between a buying organization and two or more invited suppliers, where suppliers can

submit multiple bids during the time period of the auction, and where some degree of visibility exists among suppliers regarding the actions of their competitors" (Carter, 2004). It is a process during which all candidates can compete in real time about the contract. In auction, applicants may be informed of their placement regarding the best offer.

Applicants can during the electronic auction submit new offers. The new offers are usually defined by the price and/or certain other predetermined offer's parameters. The applicant can in any time during the auction submit an unlimited number of offers, or improve his already submitted bids. The auction setting can predetermine the range of minimal and maximal price change for a modification of actual bids. The same range of price change can be defined not only for whole bid, but also for every item in the offer. The number of modification is usually not limited; therefore the values can be modified, until their reach thresholds predefined by decision makers of participating companies.

In the case of an electronic auction, the business must be first registered in e-auction software, in order to acquire needed credential. After completing the registration process, the bidder receives email with information regarding the competition. Further procedure depends on the conditions of the competition. During the period for submission of offers the submitter applicants have the opportunity to provide required documents and after their verification they are allowed to provide their bids. If the applicant during the predetermined time submitted several offers, only the last offer is taken into account.

Sometimes the procurement process includes a pilot auction. It usually takes 60 minutes before the start of the actual auction. Applicants may arbitrarily change their offers. After completion of the pilot auction the system determines the value of the original offer and starts actual auction. It follows the format of pilot auctions. Result of the electronic auction differs according to different settings of an auction, but usually it represents a list of applicants ranked according to their offers. This evaluation is done automatically and immediately after the auctioning stops. Based on the results of competition, the company starts with preparation or analyzes the causes of failure.

In the classical public tender, the bids are submitted by mail, personally, by courier or electronically. After the submission process continues with first and only the evaluation of the offer. The result of evaluation is delivered to each participating company, in written or electronic form. The results also include notification which business was in first place and what was the winning bid. Disqualified

applicants receive notifications that also describe reasons for the disqualification of their bids. The notices also include the identification of the winning companies, the basic characteristics and benefits of accepted offer, and the period within which any objection may be filed. The structure of the notice is determined by §138 paragraph, 2 point f) of Public Procurement Act. In case of winning, the winning company can begin with preparation for the realization of the construction.

Apart from public procurement companies also take part in competitions, where the contractor is a private investor. Here, the procedure for evaluation of the offer is not governed by any specific law. Private investor determines himself the conditions under which competing companies will be selected, as well as chooses himself the company that wins the contract.

Whereas the process of offer creation is the only way for the construction company to attract customers and thus generate profits, efficiency and effectiveness of this process, that also significantly affects the overall performance of companies. That is the reason why we chose to increase the efficiency of this process. Within the procurement process, there are two fundamental moments that may affect performance of the whole process:

1. Rejection of the contract that company should take, but it decides not to (the offer wasn't even prepared).
2. Acceptance (preparation) of the offer, which company should decline because it lost in competition (lost offer).

Both of these moments represent missed opportunities. The first one describes the situation where company gives up an offer, which company should have accepted. It is the case when company usually doesn't have enough information or overestimates

the difficulty of the offer and then afterwards company finds out that it could overcome winning bid. The second case describes the failure of the company to evaluate the market environment and competition. It represents the condition when company decided to spend their resources into the process of offer creation and in the end the offer lost the competition. In order to reduce these missed opportunities, the company needs to individually assess winning and losing competitions as well as winning offers of the competitions they decided not to participate in. The assessment does not only help the companies to reduce missed opportunities, but also provides them with better understanding of local business environment, which consequently allows them to prepare the appropriate offer and be as successful as possible.

### Conclusion

The paper is focused on detailed analysis of the procurement process in the construction industry. The motivation for its creation lies in the fact that available literature deals with description of the construction procurement processes only in a small manner. Moreover most of the conducted studies usually cover investors' point of view. Therefore this paper provides step by step analysis of public procurement processes from the applicants point of view. Described model was created based on analysis of more than hundred offers created in one Slovakian construction company. The end of this paper is dedicated to the brief analysis of missed opportunities identified within the procurement processes.

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