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Criteria for evaluation and selection of the best offer for the Contract Engineer service

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Abstract. The purpose of the legal regulations regarding public procurement in EU countries is to ensure effective funds' spending. When assessing and selecting the best offer, the contracting entities have at their disposal many different criteria, including non-price criteria. Their proper selection and application is necessary to ensure the high quality of the ordered product, delivery or service. Making an order for intellectual services, including performed by the Contract Engineer (CE), should be based primarily on the criterion of qualifications and experience. The actions and decisions taken by CE are particularly important for the quality and timeliness of the contract. The purpose of the research is to indicate to what scope and extent the awarding entities in Poland use the possibility of a wide selection of different criteria for the evaluation of intellectual services, consisting of performing the CE function. On the basis of selected proceedings, the authors discuss the criteria for evaluation and selection of the best offer applied in practice, classify them, analyze and evaluate them. The results of the conducted research indicate that the price and experience are often used in practice as the CE selection criteria. The authors, however, give numerous examples of other criteria. In many cases, these criteria are difficult to verify at the stage of evaluating offers and enforcing them in practice in course of works, raising doubts as to their effectiveness, sometimes making it impossible to make a reliable assessment and select the most advantageous offer. The authors indicate that despite many possibilities offered by the legal status in force in Poland, in practice, in some cases, criteria that have a large impact on the increase of the proposed service price, but not reflected in its quality, apply. As a consequence, it results in the lack of effective spending of public funds.

1. Introduction

One of the EU's priorities currently implemented under the Europe 2020 strategy is sustainable development, including supporting a competitive economy.

The objective of EU legislation is to provide contractors, suppliers and service providers with the opportunity to compete effectively for public contracts carried out in other Member States and to increase the efficiency of spending public funds. As a result of the conducted procedure, the contracting authority should select the contractor's offer, which competently and in a timely manner is connected with the accepted commitment, and at the same time submits a proposal allowing to obtain the best results in relation to the incurred expenditures.



The principle of "best value for money" provided in [1], relating to the criterion of profitability (cost-effectiveness), which is a measure of the effectiveness of managing the available funds, enables the application of many criteria for the evaluation of offers and takes into account the individual character of the contract subject. Carefully selected and in appropriate proportions applied criteria, significantly affect the success of the project, but also significantly increase the chances of the ordering party to receive the object of the contract (construction, service and delivery) of the highest quality [2].

2. The criteria for evaluation and selection of the best tender in public procurement

The ordering party has a certain freedom to determine the criteria for the evaluation of offers, however, each used criterion must refer to the subject of the contract. According to art. 67 sec. 4 of Directive [1], the tender evaluation criteria that constitute the basis for awarding the contract must be precise and must not lead to the restriction in competition

The fundamental principle of public procurement is making selection on the basis of objective criteria, respecting the principle of equal treatment of all tenderers. The criteria used by the customer can be measurable (e.g. price, warranty period, performance date, technical parameters) and immeasurable (e.g. quality, aesthetic properties, functional properties). In any case, the criteria must be quantifiable [3-6].

Examples of criteria for the assessment of tenders and the award of an intellectual service contract may include [7]:

1. The cost criteria, which include:

- a) the offer price,
- b) the amount of the discount granted to the ordering party.

2. The subject criteria, which may include, among others:

- a) quality, determined e.g. by:
 - methodology, including additional, useful and exceeding the minimum required by the contracting authority, predicted methods of risk identification and assessment, assessment of the expected impact of risk on schedule and cost,
 - a method proposed by the service provider that increases the effectiveness of cooperation and management communication, quality, budget, schedule,
- b) organization, professional qualifications, education and experience of persons assigned to the subject of the contract, as determined, for example, by the experience of key personnel of the service provider.

3. The Contract Engineer (CE)

In practice, a CE (according to the FIDIC Contract Conditions) is a qualified person running his own office - alone or with other Engineers, employing staff to assist in the performance of activities related to the contract. The main duties of the CE related to contract administration include [8]:

- participation in the transfer of the construction site,
- implementation of the document flow management system in the contract,
- giving opinions on the employment of subcontractors,
- controlling the compliance of the works carried out with the design documentation and the conditions of the building permit,
- systematic monitoring of the progress of design works and construction works (in a "design and build" contract), construction works (in a "build" contract),
- assessing the progress of the contract in relation to the Program (schedule),
- making constant budget control,

- assessment of the necessity to make a change, forecasting cost and term effects,
- agreeing the rules for making a change, issuing a change order,
- assessing and reviewing contractor's claims,
- controlling compliance with the provisions on safety and health protection, environmental protection and proper relations with the public,
- checking the quality of materials, validity of approvals, certificates of conformity and certificates,
- conducting technical inspections, participating in trials and receptions,
- checking monthly settlements submitted by the contractor, issuing an interim payment certificate as a basis for issuing an invoice by the contractor,
- preparation of payment certificates, protocols of necessity, acceptance reports for works, current and periodical reports on progress of works and use of the budget, final report,
- issuing a certificate of fulfilling the obligations by the contractor during the warranty period for quality and warranty for defects.

The scope of activities undertaken by the CE is very wide. How important is the role and quality of services provided by the CE in the course of preparation, implementation and settlement of large construction projects, are shown by the results of the survey conducted in 2018 [9]. The questionnaire was addressed to over 600 entities operating in the construction industry in Poland, directly (by executing investments) or indirectly (managing the project, handling disputes, providing consultancy services, participating in negotiations of the parties) related to construction projects. The largest group of respondents who responded to the survey, i.e. 64%, were contractors of works, 10% of respondents represented the contracting authority and the CE, and 26% of respondents - different parties to the contract [10].

It should be noted that the basic factor of disputes in the construction industry indicated by respondents from various groups is the human factor. Respondents indicated that for the main reasons: no taking or delay in making key decisions by the contractor (71% of the analyzed cases), lack of understanding and/or lack of compliance by the party/parties with contractual terms (29% of respondents), incorrect contract administration (20% of respondents) [9]. At the same time, the report results [9] show that in 78% of cases, the dispute resolution method used by contractors is a common court, in 36% of cases negotiations of parties, and only in 4% of cases: mediation or arbitration. It can be assumed that, to a large extent, the reasons for disputes between the parties to the contract are related to the lack of decision-making by the key personnel of the ordering party and the CE (in the case of investments carried out on the basis of the FIDIC Contract Conditions). The task of the CE is making decisions regarding the legitimacy of claims made by the party to the contract, documenting events and collecting documents related to the construction process.

From the diligence and reliability of the taken actions, the possibility of avoiding a dispute between the parties to the contract depends to a large extent. In practice, in some cases some CE's concerns are observed before taking a decision unfavorable for the contracting authority. This is the effect of decisions and actions of the ordering party already taken at the stage of selecting CE.

4. Results and discussions

In order to determine the type of criteria for the evaluation and selection of the best offer for performing the function of a CE, used by Polish awarding entities, the authors analyzed 54 proceedings conducted under unlimited and restricted tendering in the period from the first quarter of 2017 to the fourth quarter of 2018.

The sources of information were notices contained in the Public Information Bulletin of the Public Procurement Office. The results of the survey showed that in 87% of the examined cases, the entity

providing the service consisting in the performance of the CI function was selected on the basis of proceedings conducted under the open tender procedure. In 100% of analyzed cases, the criterion for the evaluation of offers and the selection of the most advantageous one was the price, in 79% - the experience of members of the CE team. The authors observed, however, that in some cases other criteria were applied

4.1. The criteria for the offer evaluation for the CE service – the analysis of selected cases

In the following part, selected examples of proceedings are presented, in which the contracting authorities used non-standard, sometimes questionable, possibilities of objective evaluation and quantification, criteria for the evaluation of offers and the choice of a service provider [8].

Example 1 - "Performing the function of a Contract Engineer for the task of building bicycle paths under the Project entitled "Reduction of air pollution emission in the municipalities of the south-western part of the Warsaw Functional Area through the construction of the Integrated Bicycle Route System - Stage I" [11]. The detailed criteria and their weights are given in table 1.

Table 1. The criteria for the evaluation of offers and their weights applied by the awarding entity

No.	Criterion name	Criterion weight [%]	Maximum number of awarded points	Additional information
1.	Price	60	60	-
2.	Payment deadline	20	20	Points will be awarded for the tenderer's declaration of a minimum of 14 days, a maximum of 30 days
3.	The amount of contractual penalty for late payment of obligations under the contract for reasons attributable to the service provider	20	20	Points will be awarded for declaring the amount of the contractual penalty from 0.2% to 1.5% of the total gross remuneration for each day of delay

Example 2 - "Unlimited tender for performing the function of a Contract Engineer, Inspector of Project Supervision in the implementation of an investment named Creating a center of activity of non-governmental organizations at 6 Zamkowa Street" [12]. The criteria used in the proceedings are given in table 2.

Table 2. The criteria for the evaluation of offers and their weights applied by the awarding entity

No.	Criterion name	Criterion weight [%]	Maximum number of awarded points	Additional information
1.	Price	60	60	-
2.	The presence of the Contract Engineer at the construction site	20	20	For declared attendance points will be awarded: - 2 attendance per week - 5 points, - 3 attendance per week - 10 points, - 4 attendance per week - 15 points, - 5 attendance per week - 20 points
3.	Professional experience of the supervision inspector of the construction	20	20	For each given investment, at which the said person acted as an inspector, points will be awarded: - 1 project - 5 points, - 2 projects - 10 points, - 3 projects - 15 points, - 4 projects and more - 20 points.

Example 3 - "Unlimited tender for performing the function of a Contract Engineer regarding the task of expanding the sanitary sewage system along with the modernization of the sewage treatment plant in Krasnystaw" [13]. The criteria for selecting the assessment and selecting the best offer applied by the awarding entity are presented in table 3.

Table 3. The criteria for the evaluation of offers and their weights applied by the awarding entity

No	Criterion name	Criterion weight [%]	Maximum number of awarded points	Additional information
1.	Price	60	60	-
2.	Experience	25	25	The contracting authority will award points for demonstrating the performance of CE and/or Investment Supervision services for construction works in the field of water and sewage management with a value of not less than PLN 10 million net and for works in the scope of reconstruction/extension/modernization of sewage treatment plants with a value not less than PLN 5 million net: - one service - 5 points, - two services - 15 points, - three or more services - 25 points
3.	Social criterion	15	15	For employment for the duration of the contract on the basis of a employment contract of at least 0.5 full-time members of the CE team will be awarded points (separately for each category of team members): - for employment of CE - 5 points, - for employment of a Finance and Settlement Specialist and risk management - 5 points, - for the employment of the Supervision Inspector - Sanitary Specialist - 5 points.

Example 4 - "Unlimited tender for performing the function of Contract Engineer for the Project: Protection of sea coasts in the area of the Hel Peninsula" [14]. The criteria used in the proceedings are given in table 4.

Table 4. The criteria for the evaluation of offers and their weights applied by the awarding entity

No	Criterion name	Criterion weight [%]	Maximum number of awarded points	Additional information
1.	Price	60	60	
2.	Making movies	5	5	For declaring cyclic films to be made using a drone of min. 30 minutes, 2 times a month will be awarded points: - yes - 5 points, - no - 0 points
3.	Experience of the inspector of investor supervision in the hydrotechnical sector	15	15	For the supervision of hydrotechnical works worth not less than 7 million PLN gross will be awarded points: - 1 construction - 0 points, - 2-3 construction - 2 points, - 4-5 construction sites - 6 points, - 6-7 construction sites - 10 points, - 8-9 construction sites - 12 points, - 10 and more construction sites - 15 points
4.	The risk of additional studies	20	20	The points will be awarded for declaring the execution of additional studies by CE. The number of points awarded depends on the value of additional studies in relation to the value of the gross offer submitted: - 0% - 0 points, - up to 5% inclusive - 5 points, - up to 10% inclusive - 10 points, - up to 15% inclusive - 15 points, - up to 20% inclusive - 20 points

The examples presented prove that in some cases, the procuring entities, apart from the typical, reach for other - less popular criteria. However, not all of them allow for an effective examination of the potential of the bidders and their possibilities for the correct implementation of the service. The criteria related to the payment date of the invoice or the amount of the contractual penalty (Example 1) were used only to meet the requirements of legal regulations, i.e. the obligation to apply additional

criteria for the evaluation of offers, in addition to the price criterion. The criterion of a CE presence at the construction site (Example 2) can be considered as right and allows effective assessment of the degree of the CE involvement in the preformed services. However, in practice, there are no effective and reliable methods to control the presence of the CE, i.e. the verification of the another criterion used by the awarding entity is the employment of members of the CE team (supervising inspectors, clearing specialists and CE associates) in the form of an employment relationship (Example 3). In practice, such a "requirement" is likely to cause the CE to take into account, at the service evaluation stage, a higher cost resulting from additional financial burdens. Engineers performing independent functions in construction often conduct one-man activities or undertake to perform a specific service (e.g. acting as an inspector of investor supervision) on the basis of an order, in many cases there is no need to establish an employment relationship.

Among the given examples, there is also a criterion that protects the ordering party against additional costs of activities that may occur during the performance of services by the CE (Example 4). According to the expectation of the ordering party, the risk involved should not be directly included in the offer price but included under another criterion (additional studies). In practice, this will probably result in the risk being included by the contractor in both components. From the customer point of view, this may also mean a reduction in involvement in the cooperation, due to the transfer of the risk of increasing the cost of the service to the contractor (CE).

The criterion for making periodic films documenting the progress of works (Example 4) should be a condition of participation in the procedure, not a criterion for selecting the most advantageous offer. It is obvious that all contractors submitting their offers will declare their readiness to make films and the price associated with them will be included in their offer. In fact, many of the additional criteria presented do not affect the quality of the service provided by the CE.

4.2. The analysis and evaluation of proceedings for the function of CE on selected examples

In order to determine the extent of the discrepancy between the price calculated by the ordering party and the prices offered by the service providers, i.e. entities interested in the CE function, the authors made a cost analysis of two selected tender procedures.

Example 1. The tender procedure titled "Performing the function of the Contract Engineer, investor's supervision over the construction and assembly works of thermo-modernization, as part of the project" Sea of Profit - with Eco recovery. Thermomodernization of public utilities in the Puck district" [15]. It concerned the performance of the IK service and investor's supervision over the implementation of works in 9 public buildings in the municipal commune of Puck and the Krokowa commune. The project was divided into two tasks:

- Performing the function of a CE on the construction and assembly works of thermo-modernization for 6 facilities located in the city of Puck - Task 1,
- Performing the function of a CE on the construction and assembly works of thermo-modernization for 3 facilities located in the Krokowa commune - Task 2.

The investment is implemented in the "build" system based on the FIDIC contract conditions (the red book). The main objective of the project is to reduce the demand for buildings for energy and reduce greenhouse gas emissions through thermal modernization, replacement of window and door carpentry, modernization and construction of new heating and ventilation systems, central heating, electrical installations and the use of renewable energy sources. The ordering party is a local government unit, both tasks are co-financed from EU funds, therefore the tendering procedures were conducted on the basis of the provisions of the PPL [16]. The total estimated value of construction and assembly works for both tasks is approximately 15 million [PLN] gross.

In order to select the entity performing the function of CI along with investor's supervision over construction and assembly works, the contracting authority carried out two proceedings in 2017 under an open tender procedure. The Awarding Entity has accepted the criteria for the evaluation and selection of the best offer given in table 5.

Table 5. The criteria for the evaluation of offers and their weights applied by the awarding entity

No.	Criterion name	Criterion weight [%]	Maximum number of awarded points	Additional information
1.	Price	60	60	-
2.	Experience of the Resident Engineer	40	40	The Awarding Entity awarded points for demonstrated experience in the position of a Supervisor or Resident Engineer in the implementation of a thermomodernization and/or renovation project related to thermal modernization in a building with a minimum volume of 5000m ³ : - in the implementation of 1 task - 20 points, - in the implementation of two tasks - 30 points, - for the implementation of 3 and more tasks - 40 points

Prior to the initiation of the proceedings, in order to compare the offers and select the most advantageous one, the contractor estimated the value of the CE service for both tasks. Table 6 presents the results of tenders for both tasks, including the prices proposed by the bidders and calculated by the contracting authority.

Table 6. Price list for the service of the Contract Engineer for Tasks 1 and 2

Task No.	The value of the service according to the ordering party in thous. [PLN] gross	No of submitted offer	The value of the service according to the bidders in thous. [PLN] gross	Experience of the Resident Engineer [no of completed tasks]	The amount of the selected offer in thous. [PLN] gross
Task 1	478,076	Offer 1	167,895	3	119,925
		Offer 2	119,925	3	
		Offer 3	251,910	1	
Task 2	424,956	Offer 1	143,910	3	79,950
		Offer 2	79,950	3	

Parallel to the proceedings aimed at selecting a CE, the contracting authority conducted 9 separate tendering procedures, aimed at selecting contractors for construction works for Task 1 (comprising 6 facilities) and Task 2 (covering 3 facilities). The summary price list is presented in table 7.

Table 7. Summary of prices for the implementation of works covered by Tasks 1 and 2

Task No.	Total value of construction works according to the ordering party in thous. [PLN] gross	Total value of works from won bids in thous. [PLN] gross
Task 1	9 948,923	12 753,333
Task 2	4 511,658	4 420, 967

The value of works calculated by the winning contractor exceeds by more than 28% the value determined by the ordering party. However, in the case of proceedings to perform the function of a CE, all three submitted bids were significantly lower than the value estimated by the ordering party. The contract for performing the function of a CE for the scope of works covered by Task 1 amounts to PLN 119.925 thousand. [PLN] gross, which is 25% of the value of the service estimated by the ordering party. This offer is 33% lower than the average of submitted offers, which is PLN 179.910

thousand. [PLN] gross. Only two offers were received for the execution of the CE service under Task 2. For the most advantageous ordering party, the value of 79,950 thousand. [PLN] gross was considered. This amount is 19% of the value of the service estimated by the ordering party. At the same time, the amount of the winning offer for Task 2 is lower by 29% than the average of offers, which amounts to 111.930 thousand. [PLN] gross.

In the case of Task 1, the price of the CE service won offer is 1% of the value of construction works for this task. In case of Task 2, the price of the selected offer is 2% of the value of works covered by this task. Such a wide range of discrepancies in the price estimated by the ordering party and the bidders shows that in practice it is extremely difficult to calculate the cost of intellectual services.

Example 2. The subject of the investment is the implementation of the project under the name "Revitalization of the Old Town and the PKP station in Skarszewy". The investment is implemented in the "design and build" system based on the FIDIC contract conditions (yellow book). The ordering party is the Skarszewy Commune. The undertaking is planned for 2018-2020 and includes construction, assembly and conservation works for 6 tasks. Their main goal is to increase the social and economic activity of residents by adapting infrastructure for the needs of social tasks and creating friendly and safe urban spaces. The contracting party plans to implement the following works: renovation of common elements of buildings and development of the immediate surroundings of 14 multi-family buildings, adaptation of medieval defensive walls for educational and cultural purposes, development of the Wietcisa river bank, renovation and reconstruction of street infrastructure along with the development of the surroundings. The undertaking is co-financed from the European Regional Development Fund. The total estimated value of construction and assembly and conservation works is approximately 10 million [PLN] gross.

In order to select a CE, in 2018 the orderer carried out the proceedings in an unlimited tender. The Awarding Entity has established two main criteria for the evaluation and selection of the best offer (table 8).

The first tender procedure was cancelled due to the high prices offered by the bidders and the lack of funds from the ordering party. In the next proceeding, the ordering party kept the previous requirements and selected the most advantageous offer. The value of offers for the provision of the CE service, filed in both procedures and the cost of the service, calculated by the ordering party, is presented in table 9.

Table 8. The criteria for the evaluation of offers and their weights applied by the awarding entity

No.	Criterion name	Criterion weight [%]	Maximum number of awarded points	Additional information
1.	Price	60	60	-
2.	Experience of the Contract Engineer	40	40	The Awarding Entity awarded points for demonstrated experience in the form of performing the function of the Contract Engineer in the implementation of the project in the "design and build" system with the value of works of at least 5 million [PLN] gross: <ul style="list-style-type: none"> - in the implementation of 1 task - 0 points, - for the implementation of 2 tasks - 10 points, - in the implementation of 3 tasks - 20 points, - in the implementation of 4 tasks - 30 points, - with 5 and more tasks - 40 points

It should be emphasized that in the case of this proceeding (Example 2) the price proposals submitted by the bidders were significantly above the price calculated by the ordering party. The price

proposed by the Tenderer 1 was 82% higher than the amount specified by the ordering party. In the case of Offer 2 - the price was higher by 69%, and in the case of Offer 3 by 60% of the amount determined by the ordering party.

Table 9. The collective list of prices for the service.

Proceedings No.	The value of the service according to the ordering party in thous. [PLN] gross	No the submitted offer	The value of the service according to the bidders in thous. [PLN] gross	CE [no of completed tasks]	The amount of the selected offer in thous. [PLN] gross
Proceedings 1	319,800	Offer 1	492,000	5	Proceedings cancelled
		Offer 2	1 045,500	1	
		Offer 3	538,125	2	
Proceedings 2	319,800	Offer 1	582,257	5	542,000
		Offer 2	542,000	5	
		Offer 3	510,450	1	

5. Conclusions

The analysis of selected examples justifies the formulation of the following conclusions.

1. In the majority of tender procedures conducted in Poland, the awarding entities apply the price and experience criterion. Sometimes, there are also criteria recommended by PZP, corresponding to social, innovative, organizational and timely aspects. In this context, for example, the criterion of the presence of a CE or members of the team on the construction site seems valuable. This criterion could be a perfect tool for the "mobilization" of a CE, provided that it is possible to effectively verify and enforce the ordering party at the service provision stage. Other, presented criteria, e.g. the date of invoice payment, the amount of the contractual penalty for late payment of tasks, raise serious doubts as to the possibility of making a reliable assessment at the stage of selecting the most advantageous offer.
2. Taking into account the requirements of the ordering party contained in the set criteria (e.g. employment of staff on the basis of an employment contract, the risk of performing additional studies), directly increases the price of the CE service. In fact many of the additional criteria do not affect the quality of the service provided. In the case of the evaluation of offers for the provision of the CI service, the "classic" criteria, i.e. price and experience, still apply. They are clear and easy to verify, which significantly increases the chances of the ordering party to choose the entity that will ensure proper quality and timeliness of the service.
3. The use of a larger number of suitably selected criteria of different nature, gives the orderer the opportunity to make a comprehensive evaluation of offers and contributes to increased competition. In proceedings in which the evaluation and selection of the best offer is based on only two criteria, most often the weight of the first one is so big that the second is not significant. In the case of procedures in which, when evaluating offers, a greater number of criteria are taken into account, the contracting authority has the option of choosing "the most economically advantageous offer", i.e. one that gives a chance for high quality of service (e.g. due to the presence of more people with extensive experience) additionally, it includes pro-social and innovative aspects. The contractor who meets the additional - non-price requirements set by the contracting authority, may win the proceedings despite offering a higher price than the competitors.
4. The use of price and other carefully selected criteria of significant weight gives the ordering party numerous benefits, i.e. it contributes to the efficiency of spending public funds through the ability to precisely match the features of the service to the specific needs of the customer. Such a

solution also allows to take into account the specific nature of the subject of the order - a service provided by a CE. This is particularly important in the context of the key role played by a CE in the contract administration process and the resolution of disputes between parties to a construction contract.

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