An integrated bid/no bid decision process for construction contractors based on lessons learned

Morteza Shokri-Ghasabeh ¹, George Zillante ², Nicholas Chileshe ³

¹ Morteza.ShokriGhasabeh@unisa.edu.au, ²George.Zillante@unisa.edu.au, ³Nicholas.Chileshe@unisa.edu.au
¹,² & ³ University of South Australia
School of Natural and Built Environments, Adelaide, South Australia 5000, Australia

ABSTRACT AND KEYWORDS

Purpose

This study provides a framework to enable construction contractors to bid more efficiently for future projects. A new bid/no bid decision process is suggested, which is based on the application of lessons learned from contractors' previous projects. The “Integrated bid/no bid decision process” is explained in four phases and the advantages associated with this model are discussed.

Design/methodology/approach

The paper, which is the summary of the first phase of a thorough research study in Australia, is based on a review of current literature about contractors’ bid/no bid decision process and the construction lessons learned. Crucial bid/no bid criteria that construction contractors must consider when choosing a new project to bid for are introduced.

Findings

The findings indicate that the lessons learned from previous projects are important sources of information and should be considered as part of the bid/no bid decision process. The importance of lessons learned by construction contractors is emphasized and the method of application in the contractors’ decision making process is discussed.
Originality/value

The study enables contractors to choose more feasible projects thereby minimizing both the financial and technical risk exposure of projects whilst maximizing the efficiency of contractors’ project execution. The study also suggests that contractors can select more feasible projects with a higher likelihood of success by integrating these lessons learned into their bid/no bid decision process.

Keywords

Bid/No bid, decision, Lessons learned, Integrated bidding

1. INTRODUCTION

1.1 Contractors’ Bid/No bid Decision

Considering the openness of the construction market and the potential opportunities, construction contractors often find themselves bidding for a number of concurrent projects. As a result, construction organizations are required to be selective when choosing work that they should tender for (Smith 1995 and Wanous et al 2003). The underlying fact is that contractors need to choose a potentially profitable project to bid for. Egemen & Mohamed (2007) agree and suggest that the only possible way for a contractor firm to survive and achieve its aims is by winning tenders and making a profit. On the other hand, Johnston & Mansfield (2001) suggest that contractors need to determine if the project that they are hoping to bid for is the kind of work that they have been successful in completing in the past. This is in addition to whether the contractors can make a reasonable profit.

Accordingly, the decision is not only about considering the probability of winning the tender but also considering if they can finish the job as planned with the expected profit margin (Egemen & Mohamed 2007). All of the ideas mentioned above suggest that one of the critical decisions for a construction contractor to make is whether to bid or not to bid for a project when an invitation is received.

1.2 Problem Statement

The bid/no bid decision is clearly becoming crucial for construction contractors. However as Wanous et al (2003) noted, despite the crucial importance of the bid/no bid decision in the construction industry, it has received little attention from researchers.

It is important to keep in mind that not bidding for a project could result in losing an opportunity to make a profit; whilst bidding for unsuitable projects
could result in a significant loss or consume time and resources that could be invested in more profitable projects. Thus, improvements in how the contractors select projects could provide significant benefits to the construction industry and consequently to the clients (Lowe & Parvar 2004). As mentioned by Ahmad & Minkarah (1988), Fellows and Langford (1980) and Shash (1998), the bid/no bid decision is, in practice, often made in a largely subjective manner rather than by the use of objective information.

2. RESEARCH METHODOLOGY

In this ongoing research study the exploratory approach has been applied. The exploratory stage, as demonstrated by Chileshe (2004), is an extensive literature review in the context of management. For the purpose of this research, the aim was to identify the common prevailing construction bid/no bid decision criteria and to apply the lessons learned (by exploring the benefits) in future bidding decisions. Another objective was to review the existing modes of implementation and to identify their inadequacies in terms of integration into the contractors’ decision making process. There are three distinct phases namely literature review, pilot study and the main study identified in this research process. In achieving the aims and objectives of this research study, a robust methodology is being developed as part of an on-going process.
Figure 3.1 presents this methodology. The findings reported in the paper are drawn mainly from an extensive literature review in phase one.

3. LITERATURE REVIEW

3.1 Previous Studies on Bid/no bid Decision

Numerous researchers have striven to establish a systematic bid/no bid decision process based on critical criteria that influence construction bid/no bid decisions. Table 3.1 presents a list of research studies on critical bid/no bid decision criteria. These research studies were undertaken in different geographical and cultural regions of the world (e.g. the UK, Turkey, USA, Syria, and Cyprus). Nevertheless, many of the criteria, which were identified by the researchers, are the same.

Some researchers (e.g. Egemen & Mohamed 2007) attempted to divide a criterion into some sub-criteria and that is why they discovered a larger number of influencing criteria. Moreover, some researchers such as Ahmad & Minkarah (1988) discovered 17 new bid/no bid decision criteria as a result of their research participants’ feedback to the survey.
3.2 The Bid/no bid Decision Criteria

In this research study the most important bid/no bid influencing criteria have been identified through studying a range of literature on construction bid/no bid decisions. These criteria can be classified into 5 different categories namely "Project", "Market", "Contractor", "Client" and "Contract" related criteria. Table 3.2 presents 26 criteria in the 5 categories, as identified from the literature review.

Different researchers attributed unequal importance to the identified bid/no bid criteria. Nevertheless, regardless of the importance of bid/no bid criteria there is a degree of uniformity amongst the researchers in identifying the criteria mentioned in Table 3.2 as the most influencing criteria.
Table 3.2 Generic bid/no bid decision criteria

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>1</td>
<td>Project Size</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Project location</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Project Type</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Complexity of the project</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Future Benefits/Profitability</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Project risk</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Project Duration</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Historic profit &amp; Failure</td>
</tr>
<tr>
<td>Market</td>
<td>9</td>
<td>Market Condition</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Competition</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Number of competitors</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Bidding Condition</td>
</tr>
<tr>
<td>Contractor</td>
<td>13</td>
<td>Current Workload</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Contractor Size</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Financial availability</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Staff availability</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>Material availability</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Strengths/weaknesses</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Need to work</td>
</tr>
<tr>
<td>Client</td>
<td>20</td>
<td>Client Reputation</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Relationship with contractor</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Client financial capability</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Client design team</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Clarity of Documents</td>
</tr>
<tr>
<td>Contract</td>
<td>25</td>
<td>Contract type</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Contract payment terms</td>
</tr>
</tbody>
</table>
3.3 The Importance of Lessons Learned for Organizations

Most, if not all organizations try to increase their benefits and decrease their losses. One of the main characteristics of such companies is to collect the lessons they learned from their previous experience through a project review process and subsequently apply them in future projects. According to APM (2006), there are five types of project reviews namely “Evaluation Review”, “Gate Review”, “Audit”, “Post-project review” and “Benefits realization review”. The Post-project review is one of the most important project reviews which, as mentioned by Von Zedtwitz (2003) is a review of the project that examines the lessons that may be learned and used to benefit future projects. Oakes (2008, p. 34) adds that a post-project review happens once a project closes down and the review assesses the overall project success and identifies what did or didn’t work during the project time. Basically, a post-project evaluation is primarily used for the assessment of the success and efficacy of a completed project and Von Zedtwitz (2003) states that post-project reviews should capture learning from failed projects as well as from successful projects.

Reviews help organizations to clarify what is going on, disseminate this information and hence to learn from experience (Oakes 2008, p. 32). The results from the post-project review can be very useful for the future projects of an organization and as reported by Von Zedtwitz (2003) improve performance in future projects. Ladika (2008) advises that organizations must integrate past experiences into their current and future projects. This process is very necessary for an organization and Kerzner (2006) recognized it as “continuous learning and improvement” and placed it as the highest level of Project Management maturity. Nevertheless, in real life, despite its dramatic influence on the performance of companies and their future projects, post-project reviews are not being prioritized (Anbari et al, 2008; Chanet al. 2005; Huysman 2000; Kotnour & Vergopia 2005; Oakes 2008; Newell et al. 2006; Von Zedtwitz 2002 and Williams 2004) and this fact surprised some researchers (Von Zedtwitz 2003).

4. THE INTEGRATED BID/NO BID DECISION MODEL

The bid/no bid decision model can be considered as a project selection process. The difference is that there is no need to choose a project from among different projects to bid for and instead, a project is evaluated for its feasibility and hence its suitability for tender. In the bid/no bid decision making process, in a similar way to multi-criteria project selection, a list of important prevailing criteria is prepared to evaluate a project. The Integrated Bid/No bid decision, which is introduced in this paper, is a creative way of project selection involving collecting and evaluating post-project reviews and applying the results in future bidding decisions so as to consolidate the maturity of bidding strategy in a specific construction
contractor. Shokri-Ghasabeh et al. (2009) suggest a success-based feedback project selection process, which can also be generalized and applied in the bid/no bid decision process. In their 2009 paper, Shokri-Ghasabeh et al. introduced four phases for their model. That modified version of the four-phase project selection process was designed so that it could be applied in the construction bid/no bid decision process. Table 4.1 also demonstrates an overview of the integrated bid/no bid decision model.

4.1 Phase 1: Setting the bid/no bid criteria list

In order to start the process, it is recommended that a number of generic bid/no bid decision criteria be collected. For example, the twenty-six generic bid/no bid criteria, which were introduced in the literature review, can be incorporated into this list. The list is produced by a group of experts, who are responsible for the decision to bid. The group might include the directors, senior managers, project managers or estimators of the organization. The list is the deliverable of phase 1.

4.2 Phase 2: Lessons learned from previous similar projects

The second step of the process is to evaluate the contractor’s previous similar projects against the bid/no bid criteria. These projects can be evaluated and rated against criteria such as the project client, size, location and so forth. A group, that might be different from the group who made the bid/no bid criteria list, can be assigned to determine how well the previous projects satisfied the criteria. This evaluation can be undertaken against the criteria either in a descriptive format (words) or a numerical (rating). The deliverable of phase 2 is the structured feedback from previous similar projects.

4.3. Phase 3: Bid/no bid decision process

Phase 3 includes the actual process of the bid/no bid decision. In this phase, in a similar manner to the contractors’ well-structured bid/no bid process, the decision making team, that undertook phase 1 of this process, decides whether or not it is advantageous to bid for a particular project. For this phase it is recommended that an evaluation be made of the offered/prospective project against the list of bid/no bid criteria (phase 1) as well as considering the lessons that the contractor learned from its previous similar projects (phase 2). Phase 3 results in having a project accepted or rejected against bid/no bid criteria. It is the decision making group’s decision how to grade the project and what grade should be used as the acceptance threshold.
4.4. Phase 4: Recording lessons learned

The last phase might be the most worthwhile phase in this model; that is to document the lessons learned by the contractor about the project that was tendered for and subsequently undertaken by that contractor. To record the lessons learned the contractor might assign a group (the same group that undertook phase 2 or the group that undertook phase 1 and 3) to record the lessons resulting from the executed project. The assigned group might register the lessons learned from their perspective or might be assisted by other people who were involved in the project. It is recommended that the information collected should come from a variety of sources i.e. different people in different positions from different levels of seniority. The lessons learned file can be produced by the team as a result of their investigation. This file should be archived so that it can be used to assist the future contractor’s bid/no bid decisions. Phase 4 comprises the collection of feedback on the selected project and this phase makes the entire Integrated bid/no bid decision model a dynamic process.
### Table 4.1 Integrated Bid/no bid decision model

<table>
<thead>
<tr>
<th>Phases</th>
<th>Precedent(s)</th>
<th>Process</th>
<th>Deliverable – Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>---- or Phase 4 (if available)</td>
<td>Corporate brainstorming to find bid/no bid decision criteria</td>
<td>List – of bid/no bid criteria</td>
</tr>
<tr>
<td>2</td>
<td>---- or Phase 4 (if available)</td>
<td>Study on contractor’s previous similar projects</td>
<td>Feedback - against the criteria</td>
</tr>
<tr>
<td>3</td>
<td>Phase 1 and Phase 2</td>
<td>Bid/no bid decision</td>
<td>Decision - to/not to choose a project to bid for</td>
</tr>
<tr>
<td>4</td>
<td>Phases 1 and Phase 2 and Phase 3 (if the project was undertaken)</td>
<td>Post-project review</td>
<td>Lessons learned – will be used for the next bid/no bid decision process as an input to phase 2</td>
</tr>
</tbody>
</table>

According to Table 4.1 the first and second phase can be undertaken concurrently. The results from phase 1 and 2 can be incorporated into phase 3 to assist in deciding whether or not to bid for a new project. Phase 4 might start some time after the third phase i.e. once the selected project, which was won by the contractor, is undertaken. Accordingly, the results from phase 4 can be archived for future Phases 1 and 2. In fact, the information from phase 4 might convince the decision makers to add some bid/no bid decision criteria, which were deemed important or delete criteria that were found to be of little influence. The application of this bid/no bid process will benefit construction contractors by reducing project cost, minimizing project risk and increasing the efficiency of the contractor-client relationship. Eventually, the model enables the contractors to achieve a higher degree of project success.
5. CONCLUSIONS

The four phase integrated bid/no bid decision process, which is based on the application of earlier lessons learned collected by construction contractors, was introduced and recommended in this paper. The bid/no bid decision is crucial for assisting construction contractors to choose the project that is most beneficial projects to them from the range of new project offerings and opportunities. In this paper, as the first phase of a thorough research study, based on an extensive literature review, a number of research studies on bid/no bid decisions were identified and discussed and an authentic list of generic bid/no bid decision criteria, which can be very useful for contractors, was derived. The study also explained the integrated bid/no bid decision process in four phases in which the contractors need to list the important criteria and evaluate the projects while they are assisted by the lessons they have learned from their previous experience. As the last phase, the contractors are encouraged to make the bid/no bid decision dynamic by collecting the lessons they learned from previous similar projects that they had bid for and delivered. The paper’s findings indicated that the lessons learned files, which are collected from previous projects through a post-project review, are very valuable sources of information and should be considered as part of the bid/no bid decision process. As a result, the contractors can select more feasible projects with a higher likelihood of success by integrating these lessons learned into their bid/no bid decision process.

6. RECOMMENDATIONS AND FURTHER STUDIES

There are some points that require further research in order to assist contractors to consolidate their bid/no bid process:

- Construction contractors should formalize their bid/no bid decision by conducting a structured evaluation of their prospective bidding projects.
- The lessons learned files should be produced at the completion of each project by the contractor. These files can help the contractor to be alert when they bid for their next project. The files will allow them to make more objective decisions against the selection criteria.
- It is recommended that a contractor establishes a data-storage system to accommodate lessons learned files that they collect from different post-project reviews.
- The contractors can benefit from the lessons learned files when there is a change within their organization. As a result, the new people may learn from the lessons that the previous generation learned.

Moreover, the authors of the paper aim to continue their research study.
7. ACKNOWLEDGEMENTS

The authors of this paper wish to acknowledge the extensive support and guidance provided by Ms. Kristy Hansen.

8. REFERENCES


Eastham, R. A. 1986, "Contractor's perception of factors which influence tender prices for construction works", Thesis submitted for the degree of MSc, University of Salford, Department of Civil Engineering.


