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AN INVESTIGATION INTO CURRENT TENDERING PROCESS IN SAUDI CONSTRUCTION PROJECTS

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Abstract: Underachievement in project performance, lengthy delays and financial loss in construction projects in Saudi Arabia has been realised due to the approach of current tendering process. This research aims to investigate the current process adopted for tendering construction projects in Saudi Arabia. The study employs a qualitative study of three organisations utilising semi-structured interviews with managers to gauge clients, contractors and consultants' perspectives on current tendering practice and associated challenges and impacts. Results revealed a number of challenges and impacts facing stakeholders to the adoption of a holistic approach to tender planning process. These include: stakeholders' dissatisfaction, lack of effective strategic plan for tendering system; rigid, inappropriate and bureaucratic tendering process; complicated legalisations used for entering large international construction firms in Saudi construction markets; unscheduled tendering of huge number of projects by both public and private sectors; failed and breakdown projects; low quality of building and expected high expenditure on maintenance and operation. Solutions focus on formulating a strategic planning involved the key factors. The study is one of the few studies that have investigated Saudi tender process from a practical views and dynamic perspective. It reveals not only the challenges and impacts of current situation, but also draws a road map for a better solution.

1 INTRODUCTION

The construction sector plays an important role in the Saudi economy and is closely related to other economic sectors. Additionally, construction is one of the major industrial sectors of the Saudi Arabian economy, worth more than $20 billion accounting for 11.7 per cent of Gross Domestic Product (GDP) in 2011. It is also regarded as an important and reliable indicator of trends and the success of the national economy. The Saudi construction industry has faced several changes since 2006 due to the national dependency on the nearly stable prices of oil revenues. A significant number of construction projects are currently being implemented in both public and private sectors. Despite the high government expenditures on the construction sector, there are concerns about the underachievement of project performance, breakdowns, delays, cost and time overruns, and client dissatisfaction.

The Saudi construction is facing serious challenges in terms of project tendering process. Lack of emphasis on strategic planning to improve the tendering process resulted in some negative impacts such as aborted projects or incomplete tender documents, and lengthy delays that have caused underachievement in project performance and financial loss. Indeed, official government statistics reveal tender inadequacies and shortcomings in over 3000 public projects. Al-Kharashi and Skitmore (2009) agreed with the Ministry of Economic and Planning (MOEP) (2011) report about the most influence on

underachievement performance in Saudi construction projects is the lack of innovative process related to tendering strategy.

Among the required development in construction industry is the need to apply the partnering with international firms. Nevertheless, the globalization of construction, the pressure on resources on one hand as against rising expectations of quality on the other, the need to adopt a long-term perspective to position the economy appropriately and so on, have created a situation where nations and their construction industries need to adopt tendering strategies. However, literature appears that little has been published relating to current tender process in the context of the Saudi construction industry. Specifically, a review of literature revealed that no publications have addressed the challenges, impacts and solutions related to the Saudi construction projects.

2 LITERATURE REVIEW

The construction industry is an important part of the economical backbone in many countries (Ngai *et al.*, 2002), often accounting for between 7-10 percent of the Gross Domestic Product (Voordijk *et al.*, 2000). In many countries the construction industry has, however, attracted criticism for inefficiencies in outcomes such as time and cost overruns, low productivity, poor quality and inadequate customer satisfaction (Chan *et al.*, 2003). In order to achieve successful governance of construction projects a holistic and systemic approach to procurement procedures is crucial (Eriksson and Pesämaa, 2007,).

In construction management literature several studies have indicated that procurement systems have significant effects on construction project performance. Noted in this direction are studies of Rasid, Taib, Ahmed, Nasid, Ali and Zainordin (2006) and Hashim (1999). Studies of Ogunsanmi, Iyagbaand Omirin (2003), and Dada (2012) all confirm the use of various types of procurement methods for project delivery in Nigerian construction industry which significantly affect the performance of most projects. The study of Hashim, M.B. (1999) also confirms the effects of procurement methods on performance of construction projects in Malaysia.

The common approach to procurement used in Saudi construction sector is the Design-Bid-Build (DBB). Ibbs et al. (2003) describe DBB as the method in which a project is separated into design and construction phases which means that construction can start when the design is completed. Idoro and Iyagba (2008) state that in the DBB, the project delivery process in both design and construction are separated. However, this method was criticised by a number of researchers especially in Saudi construction. Al-Ghamdi (1999) and Arain (2002) reported that conventional procurement practice in the Saudi construction industry does not involve the contractor in the design conceptual phase. Involvement of a contractor may assist in developing better design and reduce the interface problems with designers (Arain 2002; Adrian 1983; AL-Hazmi 1987). On the other hand, Design build (DB) was described by Chan (2001) as a recent arrangement that is conceived as a solution to the numerous shortcomings in DBB. Moreover, it has been defined as an arrangement whereby a developer contracts a single part or entity to perform both design and construction of a facility or project under a single DB contract (Bennett 1992). Nevertheless, although the general acceptance of the main feature of the method that focuses on the integration between design and construction stages, it observes that the method has variants (Akintoye, 1994 and Turner, 1997).

Practically, there has been a concern with the problems of bidding strategy since the time of Friedman (1956) to explore bidding decisions and establish methods within the modelled bidding decisions. Egan (1988) reported that a competitive tendering must be replaced with long-term relationships based on clear measurement of performance and sustained improvements in quality and efficiency.

In the Saudi construction, projects are usually awarded to the lowest bidder, neglecting other considerations such as technical measures and historical records, such considerations are facing a real challenge. In an early study conducted Aitah (1988), it was found that projects awarded only to the lowest bidder had, in general, a lower performance. Similarly, Alotaibi et al. (2013) identified the current procurement practice used in Saudi construction as one of the critical failure factors that contributes to the underachievement of projects' performance.

Considering the lowest price or bid as a criterion for selecting a contractor has been criticised by many authors (e.g. Hatush and Skitmore 1998; Stein et al. 2003; Al-Reshaid and Kartam 2005). They collectively argued that the serious problems which arise within the construction phase as a result of accepting the lowest bid can lead to serious overruns of time and cost, serious quality problems and eventually to increased litigation. Many of the research studies criticized the lowest cost tendering process as the main procurement tool and suggested some other criteria to select contractors in order to achieve better performance (Egan 1998, Sebastian 2011, Eriksson and Nilsson 2008, Tikkanen and Kaleva 2011).

Padhi and Mohapatra (2010) claimed that past work performance of contractors is not taken into consideration during the selection procedures and thus, the project will be delivered with poor quality because of the contractor's poor record of past work performance. Ogunsemi and Aje (2006) highlighted that past performance; contractors' experience; workmanship quality; tender sum and plant and equipment were the most important criteria for contractors' prequalification evaluation in Nigeria.

The research studies that aim to assess the holistic strategic plans for tendering construction projects are still limited. Most of the tendering research studies concerned are on evaluating the technical aspects for tendering, evaluating bids and tendering models.

This research aims to investigate the current process adopted for tendering construction projects in Saudi Arabia. But without a better understanding of this phenomenon, it would be hard to address precisely the issue in theory and practices. Hence, an appropriate research strategy and method was required.

3 RESEARCH METHODOLOGY

To achieve the study aim, the research methodology was developed as shown in Figure 1. Consequently, a case study strategy was adopted in this research as an in-depth investigation into the Saudi tendering process to provide an in-depth insight into the current tendering process; and identify challenges and impacts, and forward solutions to address the identified tendering hindrances.

Eight case studies were conducted that used two data collection methods: semi-structured interviews and eight case studies-related documents. For the eight cases, relatively big Saudi companies carrying multiple projects in the housing, industrial and office buildings were considered. From each company three projects were considered. The study of cases was focused on projects already performed or near the end of the completion from which it was possible to obtain required information regarding the procurement process. Three such projects were taken from each company/case totalling 24 projects for eight cases.

Semi-structured interviews were selected as a style of interviewing to give form to the interviews whilst allowing probing questions (Hussey and Hussey 1997; Fellows and Liu 2008). The semi-structured nature of the interview technique enabled researchers to allow the interviewees to elaborate on any topic, but required all predetermined topics to be covered (Love et al. 2002). Therefore, it enables the researcher to probe for further insights and clarification while maintaining some structure in the views collected.

The semi-structured interviews were held with 72 key stakeholders as shown in Table 1 who are involved in the planning and implementation of projects. In each case study project (three projects for each Case Study), 3 representatives were selected, one each from the client, consultant and contractor. Candidates were selected based on multi-criteria: their accumulative experiences in identifying challenges and impacts in such topic, their positions, and their qualifications, involved in tendering committees. Each interview lasted between 90 to 120 minutes to cover the identified issues and to ensure that the necessary information was obtained. The interview sessions were taped, at the interviewee's discretion, transcribed and coded. The template developed for the interviews includes personal background, current tendering process, challenges, impacts, and suggested solutions which are related to tendering process. A framework analysis technique was used to analyse the interviews as reported by (Ritchie and Spencer

1994). Furthermore, eight case studies- related documents such as governmental purchases system, invitation documents, tendering documents, project contract documents, prequalification request documents were used and analysed as case studies-related archives to gather the needed information relevant to the eight cases. Qualitative content analysis was used to analyse these documents. During the analysis of data, the factors involving challenges and impacts were not ranked but only identified.

Table 1: Classification of participants

Organisation	Position	Experience Year	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
Client	Project Manager	18	3	3	3	3	3	3	3	3
Consultant	Project Manager	15	3	3	3	3	3	3	3	3
Contractor	Project Manager	14	3	3	3	3	3	3	3	3

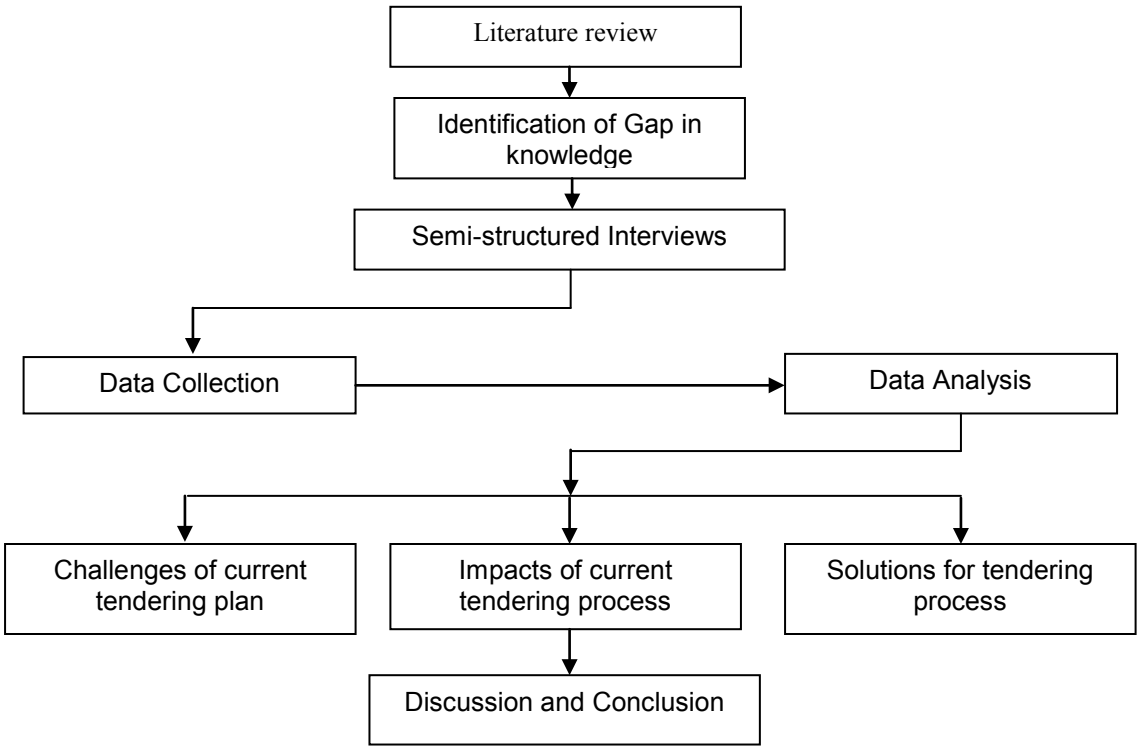

Figure 1: Research methodology flowchart

4 FINDINGS

The findings obtained from the eight case studies for both the documents and semi-structured interviews were categorised into three groups: current tendering process challenges; impacts of the current tendering process; and suggested solutions.

4.1 Current Tendering Process Challenges

Table 2 below shows a list of challenges that were identified by the interviewees.

Table 2: Current tendering process challenges (respondents' perspectives)

No.	Challenges of Tendering Process	Stakeholder
1	Bids evaluation and contractor selection depend mainly on lowest price	client & consultant & contractor
2	Lack of information for contractors' past performance, volume of currently contracted work and their financial situation	client & consultant & contractor
3	Long tendering duration	contractor
4	Lack of an effective strategic plan tendering construction projects	client & consultant & contractor
5	Contractors' classification is not accurate	client
6	Decline of working in the Saudi markets by large international construction firms	client & consultant
7	Using package system for project tenders	consultant & contractor
8	The huge number of projects offered by both the public and private sectors	client & consultant & contractor
9	Insufficient details for projects	contractor
10	Lack of experience of the tendering staff	consultant & contractor
11	Inflexibility/ Bureaucratic process used in the current government purchasing system	client & consultant & contractor
12	Shortcomings in professional contractors	client & consultant
13	Lack of an efficient and comprehensive system for tenders	client & consultant & contractor
14	Uncertainty of the process used by public sectors	contractor
15	Difficulties in maintaining the competitiveness through the tendering process	client
16	Lack of an effective role taken by the Ministry of Planning and Economics	client & consultant & contractor
17	Non use of FIDIC Standard Forms of Contracts	client & consultant & contractor

The respondents agreed that the current tendering process is unsatisfactory and could not lead to a successful outcome for projects. All respondents agreed that the main problem is the lack of an effective strategic plan that contributes towards organising the tendering process. Most of respondents considered the bids evaluation and contractors' selection based on lowest price as a major challenge. Contractors stressed that the long and slow tendering procedures adopted, especially by governmental sectors as a major challenge. Contractors also considered the use of DBB method as one of the main challenges and called for using Design and Build (DB) method to avoid serious mistakes that could occur during the design process. This was rejected by the consultants and clients who argued that generally contactors lack insufficient skills and relevant experiences. On the other hand, clients disagreed with contractors in relation to slow procedures with regards to awarding the projects, which are considered sensible for identifying the targeted competitors. Consultants and contractors criticised the mechanism adopted for offering very large projects as a single package. Clients concurred with other stakeholders about the adopted mechanism, which in their view is due to end-users' requirements, as well as economic considerations.

These stakeholders' conflicts would suggest that strategic planning for tendering is impeded by lack of clear collaborative framework. All respondents agreed that the inflexibility and bureaucratic process used in the governmental purchasing system is a significant challenge. In this respect and as a reference to a good practice, the respondents referred to the successful projects implemented by private sectors, which is due to the flexibility and organized process used in tendering projects. Clients and consultants pointed out that despite the shortage of experienced contractors in the Saudi market, there is a complicated legislation used by the government to grant large international firms part of construction contracts

independently, without using the approach of joint ventures. All respondents considered the lack of a central database or league table used for assessing the contractors' performance is also a critical barrier in the tendering process. Additionally; they identified other challenges, namely lack of references of ruling and issuing the tendering plans, and who should be responsible for managing these processes.

4.2 Impacts of Current Tendering Process

The second classification identified from the findings is an impact of the challenges due to using current tendering process on the projects in the Saudi construction industry as shown in Table 3.

Table 3: Impacts of current tendering process (respondents' perspectives)

No.	Impacts of Current Tendering Process	Stakeholder
1	Lengthy delays for projects	client & consultant & contractor
2	Re-tendering for projects several times	client & consultant & contractor
3	Select of inefficient contractors	client & consultant
4	Low quality	client & consultant & contractor
5	Failed Projects	client & consultant & contractor
6	Shortages in resources (labours, equipment, materials...etc)	consultant
7	Increased disputes and claims between contracting parties	client & consultant
8	Underachievement in project performance	client & consultant
9	Financial loss for owner	client & consultant & contractor
10	Financial loss for contractor	client & consultant
11	Change in project scope	contractor
12	Failure to achieve the project objectives	client and consultant
13	Long tendering durations may cause the withdrawal of contractors due to increasing price changes	contractor
14	Increase in maintenance and operational costs	client & consultant
15	Stress on the public services such as water, sanitation, electricity and transportation	client & consultant
16	Stress on the government sectors such as Customs	client & consultant

All respondents agreed on a number of direct impacts on the implementation of projects. They emphasised the lengthy completion delays or failed projects. This resulted in retendering a huge number of projects due to insufficient offered bids or withdrawn failed projects. The majority of respondents, particularly clients and consultants argued the financial loss due to failed and retendered projects which finally influences the cycle of the national economy. Contractors discussed the unclear process used for tendering in terms of criteria which affected the fairness of awarding the bids. Consultants and clients criticised the strategy of competition used by contractors in which the contractor could evaluate his capabilities. This resulted in a number of bankrupt contractors which has led to direct impacts on delivering successful projects. This has created several disputes and claims between contractors and clients which often have to be solved in litigation.

Contractors stated that the use of DBB method contributed to mistakes and discrepancies in design documents, delays in producing design documents, unclear and inadequate details in drawings, and the complexity of projects design, insufficient data collection and surveys in the early stages of design resulted from the current tendering process.

A shortage of resources was identified as one of the impacts resulting from the use of the current tendering process. This has placed considerable pressure on achieving the sustainability of natural resources. Respondents discussed the breakdown of many projects due to the shortage of resources as a result of huge demands coming from the construction sector. Moreover, they agreed that the use of the

current tendering process influences the quality of delivered projects due to awarding projects to incapable contractors. Nevertheless, this has occurred because of using the lowest price system. Most of respondents discussed the cost of operation and maintenance which will be affected negatively due to the low quality of project implementation. Public services (water, sanitation, electricity and transportation) have been affected by the tendering process. Furthermore, the process of importing materials from abroad has been affected by the current tendering process, thus resulting in long queues of containers waiting for customs clearance. In addition, labour market prices have been affected by the tendering process and this has resulted in a shortage of labours both skilled and unskilled. Respondents stated that shortage of specified lands owned by clients for tendered projects appeared as a major impact and was a hindrance at the start of projects. They fully agreed that the current situation increases the price of materials and labour and has a direct influence on the cost of the projects execution, for either ongoing or future projects. Additionally, the current situation contributed towards realising the large differences between estimated cost of projects and the final executed cost.

4.3 Suggested Solutions for the Tendering Process

Many solutions and suggestions were delivered by the respondents as shown in Table 4.

Table 4**:** Suggested solutions to enhance the tendering process (respondents' perspectives)

No	Suggested solutions to enhance the Tendering Process	Stakeholder
1	Develop an effective system for the evaluation of bids (Not dependant mainly on lowest price)	client & consultant & contractor
2	Support small and medium local contractors	client & consultant & contractor
3	Develop programs to improve the performance of local contractors	client & consultant & contractor
4	Implement projects in stages (avoiding large packaged systems)	client & consultant
5	Attract large international construction firms to work in the construction sector in Saudi Arabia	client & consultant
6	Develop an effective strategic plan for tendering construction projects	client & consultant & contractor
7	Improve the classification system for contractors	consultant & contractor
8	Improve the classification system for engineering Offices and contractor	client
9	Develop a holistic data base for contractors	client
10	Employing some monetary funds in other investments	client
11	Lessons learnt should be activated between contractors	consultant & contractor
12	Adopting innovative procurement techniques (partnering)	client

All respondents suggested that developing a comprehensive strategic plan based on the real needs is necessary. This plan involves developing an effective system for bid evaluation which is not dependant only on the lowest bid price. Additionally, this plan should focus on supporting and encouraging small and medium local contractors. This can be done by aligning local firms with the participation of international firms to improve the performance of construction projects, as well as allowing the transferring of their experiences to the Saudi construction sector. Indeed this will reflect positively on the performance of local contractors.

However, most of contractors disagreed with the participation of international firms and were concerned that it would reduce the opportunity of winning a large number of projects for Saudi builder. Adopting innovative procurement techniques are delivered by client as a best tool for delivering successful projects (partnering). Consultants and clients stated that attracting the international firms is considered as part of strategic plan. At the same time, they focused on the prequalification of those contractors as major criteria for their selection.

Clients suggested that a workable system should be developed to organise and manage the engineering offices and contractors. This could start with establishing a central database containing the required information about consultants and contractors such as: qualifications, classification, past and current performance, financial abilities, skilled staff and available construction equipment. Consultants and clients suggested that the way of tendering projects as a single large package should be avoided because it has been recognised that projects are affected by the failure of other projects implemented by the same contractor. Respondents suggested that rescheduling the tendered projects should be done based on determined criteria to mitigate the current fragmentation, and improve the overall performance of construction sector. The criteria should depend on crucial factors such as high priority projects, project documents' readiness, site' readiness and the clients' capabilities for supervising the projects. Clients suggested that government could place additional monetary funds in other investments rather than the current blending of monetary funds. Respondents agreed that the aforementioned should be involved in an effective strategic plan that should be formulated, implemented and evaluated, to improve the current tendering process.

5 DISCUSSION

The findings reveal that all participating stakeholders were dissatisfied with the current tender process. Additionally, the agreement focused on the serious challenges due to the lack of an effective strategic plan that improves the current tendering process and contributes toward successful implementation. Similarly, Egan (1988) criticised the methodology of using competitive tendering when there was no practical strategic plan adopted by the construction industry. Results also show that the bids evaluation and contractors' selection based on lowest price are a major challenge. Aitah (1988) pointed out that a lower project performance is considered as the expected outcome of the lowest bid price. It has been argued that the serious problems which arise within the construction phase as a result of accepting the lowest bid can lead to serious overruns of time and cost, serious quality problems and eventually to increased litigation (Hatush and Skitmore 1998; Stein et al. 2003; Al-Reshaid and Kartam 2005). In the context of the Saudi construction, it seems that the lack of a central database for contractors and consultants is regarded as a serious problem.

Impacts of the current tendering process directly affect the overall Saudi construction sector. Re-tendering huge numbers of projects is a serious challenge of continuing to support the current tendering system. Disputes and claims made by contractors have arisen as a result of delayed and failed projects which resulted in these claims having to go to litigation to be resolved. It was identified that the Saudi construction suffered from a lack of skilled and experienced staff involved in the undertaking of projects (Al-Kharashi and Skitmore 2009). Major mistakes, inadequate design and insufficient data collection and surveys were identified as having a negative impact on the current tendering process. This has resulted in producing low quality buildings and structures and thereby increasing the cost of operation and maintenance of facilities (Assaf and Al-Hejji 2006). Shortage of resources was another issue that affected the performance of Saudi construction projects. The resources of construction materials in Saudi were affected by the current tender system and therefore this affects the sustainability. The need for resources to be concentrated up-front on projects is necessary for any project to deliver greater efficiency and quality.

Solutions delivered by respondents focused on drawing up a strategic plan that contributes towards improving the performance of construction projects and results in leading to the stakeholders' satisfaction. The inclusion of international construction firms were put forward as a suitable solution to avoid the current challenges which leads to the financial bleeding of the project budget. Rescheduling projects based on proper criteria in parallel with a sound methodology for tendering is a high priority. Establishment of a central database for having information about consultants and contractors is a crucial factor and is a clear priority.

6 CONCLUSIONS

The findings of this research show that there is a common stakeholders' discontent with regard to the current tendering process, which is adopted in publicly funded projects. A practical strategic planning is necessary to mitigate the negative impacts resulting from the current tendering process, which is based on low bid competitive tendering. This topic will be covered in a further paper. The findings also indicate that the current tendering process is an inappropriate method for the extensive programmes that are implemented in the Saudi construction sector. Furthermore, results highlight the serious problems that may appear in the future when large expenditures are wasted on failed and incomplete projects. Valuable lessons learnt from what is occurring in the Saudi construction sector in terms of challenges and impacts as well as suggested solutions should be activated to achieve sustained improvement. It is recommended that further research should be conducted to validate the identified factors that were derived from this paper through specific case study projects. This further research can be extended to the quantification of the performances of the projects due to current practice of tendering process particularly with respect to the factors like time loss, delays, cost, quality, failure rate, retendering, litigation cases etc. Based on an in-depth investigation that takes into consideration the strengths, weaknesses, opportunity and threats (SWOT) to produce solid and robust a strategic plan for tendering to be implemented in the Saudi construction projects. This plan should involve the key factors mentioned by respondents such as (effective system for bid evaluation, rescheduling the tendered projects, extend the invitation to international firms and activate lessons learnt as an improvement tool). A central database centre of contractors and consultants is an essential need to overcome part of that problem facing the Saudi tendering processes.

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