

Upgrade the Saudi Arabian Procurement System Delivery Method

by

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A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Approved June 2015 by
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August 2015

ABSTRACT

Saudi Arabia has been having many issues with large construction projects such as delays, low performance and high cost. Some studies show that around 70% of the public projects in Saudi Arabia are delayed. These issues have resulted from many factors. One of the factors believed to be delaying projects is the Saudi procurement system. The Saudi procurement system only selects contracts based on the lowest bid price offered. However, the Saudi procurement system has been found to not only produce delayed low quality projects, but also has resulted in higher costs.

This paper shows how to modify the Saudi procurement system by implementing a clarification phase, which is the most important phase in the Performance Information Procurement System (PIPS). The clarification phase requires the bid's winning contractor to submit a project scope, a project schedule, to identify risks that not their responsibility, performance measurements and a milestone schedule. The PIPS system has been one of the most successful systems around the world and has shown a 98% success rate in six different countries with risks and cost reductions up to 30%.

This research conducted a survey of 157 engineers, 33 consultants, 9 owners, 5 vendors, 13 academics, and 28 architects to develop the public procurement system in Saudi Arabia. The participants work in government sectors with an interest in the Saudi Arabian procurement system. 80.61 % of participants believe that the traditional Saudi procurement system consistently selects poor performing contractors. Moreover, 95.97% of participants think that the selection of contractors based only on the lowest price criterion affects projects negatively. Also, 96.20% of participants in the survey feel that

there needs to be a change in the traditional Saudi Arabian procurement system. 88.7% of participants agree to require the contractor to identify risks, and 96.03 % of participants agree that the contractors must have a plan. Moreover, 95.45% of participants agree to require a contractor review the scope of a project and verify that it is correct. Finally, 82.18% of participants agree to require a contractor to resolve all owner concerns before signing a contract to improve construction projects performance. The paper shows the need to change the Saudi procurement system and a solution to this growing problem.

ACKNOWLEDGMENTS

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Chapter 1

INTRODUCTION

One of the biggest markets in construction industry in the Middle East is Saudi Arabia. Moreover, Saudi Arabia has been predicted to lead much of the growth in the Middle East through 2015 (World Construction, 2012). Zain Al-Abedien (1983) observed that about 70% of projects taken up by the Ministry of Housing were delayed. Al-Sultan (1989) performed another study that shows a comparable percentage; he concluded that around 70% of public projects in Saudi Arabia were delayed.

On the other hand, Al-Ghafly (1995) surveyed contractors, owners, and consultants to determine the degree of construction delay issues. The contractors said that about 37% of projects suffered from delay issues whereas the consultants admitted that 84% of the total projects under their supervision suffered from delays. Also, he declared that the estimated average time extension versus the gross time specified for a construction project was 39%. Assaf and Al-Hejji (Assaf and Al-Hejji, 2006) conducted a survey in Saudi Arabia to estimate the performance of several diverse projects; they have observed that the average percentage of delays in projects is between 10% and 30% of the original time that is supposed to end the projects.

Al Turkey (2011) conducted a survey by distributing a questionnaire to over 300 construction projects supervisors from diverse sectors. The questionnaire addressed implementation issues associated with projects in Saudi Arabia, such as project structure and organization; this study concluded that cost overrides were found in 80% of the projects, while 97% faced time issues. There was another study conducted in Saudi Arabia

to identify the main causes of the delay in Saudi construction industry. This study identified 63 factors that adversely affect projects, and these factors were classified into four main criteria. The most important criterion is the factors that related to the client (Albogamy et al., 2012).

Problem:

One of the main factors that affects the Saudi Arabian public construction performance is the Saudi Arabian procurement system delivery method, which shows that the contractors who have been selected based on the lowest price are not qualified and are low performers (Assaf and Al-Hejji, 2006). According to Albogamy et al. (Albogamy et al., 2012) the major risk that affects the project performance is the use of the low price bid in the Saudi government bidding system.

The researcher has found one of the best procurement systems around the world: the Performance Information Procurement System (PIPS). Since 1994, Dr. Dean Kashiwagi has been testing the PIPS model with the Performance Based Studies Research Group (PBSRG) more than 1,750 times in 31 U.S. states and six countries on \$ 6.3 billion construction projects and non-construction projects with customer's satisfaction rating of 98% (PBSRG, 2014). Kashiwagi (2014) the PIPS model consists of four steps and the clarification phase is the most important phase that requires the winning vendor to submit mutable requirements to identify the expert vendor.

Chapter 2

THESIS METHODOLOGY

Thesis objectives:

The major objectives of this research are as follows:

1. To identify the main differences between Saudi procurement system and PIPS.
2. To upgrade the current public procurement system in Saudi Arabia.
3. To study the opinions of the major parties in the construction industry (contractors owners, and consultants) by conducting a survey to get their opinions on the upgraded model.

Research methodology:

The following research methodology was proposed:

1. Review the current Saudi Arabian procurement system (DBB).
2. Review PIPS.
3. Compare the two delivery methods and identified the fundamental differences.
4. Conduct a survey with the aim of measuring the view of the construction industry participant on the proposed model.
5. Propose a model based on PIPS concepts and survey.

Chapter 3

THE GOVERNMENT PROCUREMENT SYSTEM IN SAUDI ARABIA

The Ministry of Finance in Saudi Arabia has published on its website the Government Procurement System, which was published in MAR/1977 and issued by Royal Decree No. M/14. The system received some minor changes in SEP/2006 because of rules issued by Royal Decree No.58M. The Government Procurement System shows that there are three different types of purchasing methods in the government procurement system in Saudi Arabia such as public procurement competitions, direct purchases and specific purchases, which are in special and unique items. Most of the purchases are specified as general competitions. However, some of the purchases have exceptions. The Saudi procurement system aims to obtain several principles such as justice and equality approaches, the separation in personal interests and the interests of the government enhance transparency between vendors and maximizes benefits through competition (Ministry of Finance 2006).

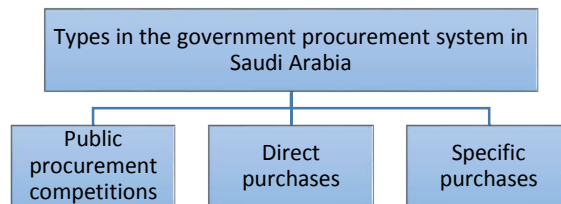


Figure 1. Different Types in the Government Procurement System in Saudi Arabia

(Ministry of Finance 2006)

Government Procurement Under Public Procurement Competitions:

The announcement of the public competition results in comprehensive advertising on the date of submission of presentations. With these types of purchases, they would hold pass presentations, so they would select the winning contractor, through three different stages checking, drafting contracts and contract duration, without being able to identify the contractor based off of anything other than their credentials. This system relies on lowest bid to select a winner. In general, this is a traditional System, which is based only on the lowest price (Ministry of Finance 2006).

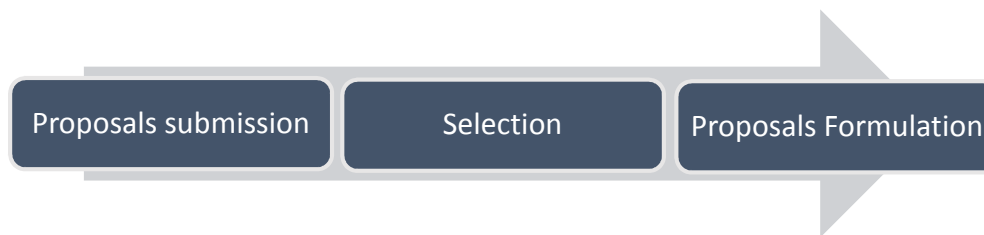


Figure 2. Vendors' selection phases (Ministry of Finance, 2006).

1. Proposals submission:

Committee members see the offers all on one day. First, bidders must submit their proposals at the same time and place. Second, documents have to be submitted with primary financial security between 1-2%. Third, the total price has to be submitted in only one paper. The primary financial security is not required for the direct purchase or public welfare associations such as charities (Ministry of Finance, 2006).

The committee members consist of three people and manager (on the tenth level in the Saudi career ladder) and a member of a reserve; committee members refer to the manager if the need arises. Also, one of the requirements is to re-form the committee members

once every three years. If any vendor wants to withdraw from the offer providers within three months after the date fixed for offers, the financial guarantee is not traced back to the vendor (Ministry of Finance, 2006).

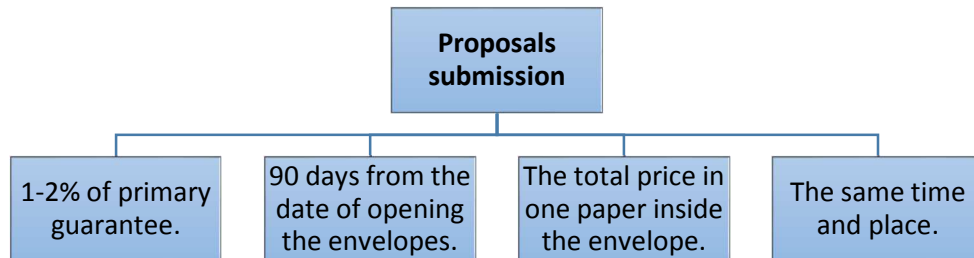


Figure 3. Proposals submission phase (Ministry of Finance, 2006)

2. Selection:

Ministry of Finance (2006) the members of the evaluation committee have to review the vendors' offers. If all the provided offers prices are more expensive than market prices, there are two different ways to handle this situation as follows:

- A. The members of the evaluation committee are going to negotiate with the vendor who has the lowest proposal to reduce his price to be close to market prices. If the vendor has refused to lower the price, they are going to negotiate the second offer.
- B. If the government is not able to find a vendor who has a cost similar or close to the market price, they are going to remove one or more of the project specifications by the Commission provided that the removal does not affect the project in the future.

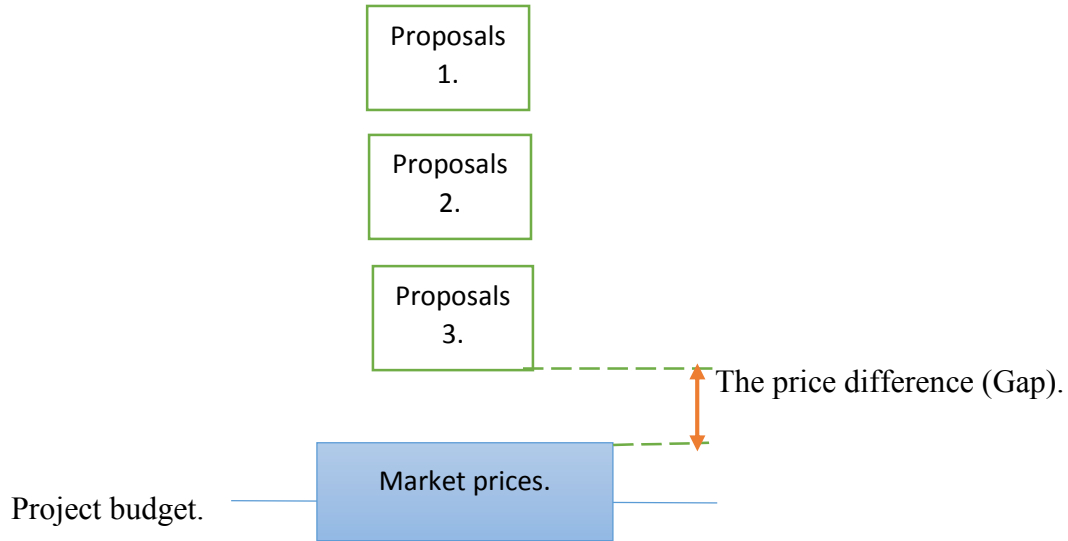


Figure 4. Handling with proposals (Ministry of Finance 2006)

3. The formulation and implementation of contracts:

Ministry of Finance (2006) the only language that is acceptable is Arabic, but they do not mind providing another language alongside Arabic. The documents that must be in Arabic are all contracts, time of the tasks, determine the specifications, drawings, and correspondence. The maintenance contracts can only be a maximum of five years (there may be an increase in the period as the Ministry of Finance deems appropriate).

Contractor's size:

Contractors rating is an indicator to determine the competency and capabilities of the contractor (financial, technical, managerial and operational capability), as stated in the rating agency contractors in Saudi Arabia. Therefore the government does not allow the contractor to enter into the race to win one of the government projects, unless they prove that the project is commensurate with the capabilities of the contractor (Ministry of Municipal and Rural Affairs, 2010).

Chapter 4

PERFORMANCE INFORMATION PROCUREMENT SYSTEM (PIPS)

The PIPS model is very simple and easy to apply, showing the experts who know their work clearly and accurately (Kashiwagi, 2014). The amount of transactions in the whole supply chain can be reduced by using the PIPS system. The model consists of four different steps: Pre-qualification, Selection, Clarification and Execution (Kashiwagi, 2014). Kashiwagi's (2014) PIPS model leads to obtaining some objectives as follows:

- Reduce trades and the efforts of the parties.
- Reduce decision-making and control to minimize risks.

Clarification phase:

Kashiwagi (2014) states there are many great risks in the traditional delivery method for the delivery of projects, which depends only on the lowest price. Moreover, the traditional delivery method does not seek to improve the value or quality of the project because it uses direction, management and control that leads the project to several risks in the future.

Kashiwagi (2014) states that the clarification phase is the most important step in the PIPS delivery method, and it has some objectives as follows:

- Explain the proposal of the project to the owner to identify the project scope.
- Clarify to all parties the tasks to be accomplished and how they will be done.
- Gain acceptance from the owner to the vendor's proposal.
- Know what the risks are in the future of the project and handling with them.

- Gain the final approval of the offer.

Clarification phase process:

In order to apply the clarification phase in PIPS, the contractor who has the lowest price in the competition must submit the following documents:

- Explanation of the determinants of the project.
- List of potential risks.
- A plan to reduce future risks.

Chapter 5

A comparison of the PIPS and the procurement system in Saudi Arabia

The following table explains the comparison between the Saudi procurement system and PIPS delivery method.

Table 1. A comparison of PIPS and procurement system in Saudi Arabia.

Phases	PIPS procurement system	Saudi Arabian procurement system
Pre-Qualification and Proposals submission	<ul style="list-style-type: none"> • Education and training. • Using matrices • May include financial info and insurance. 	<ul style="list-style-type: none"> • There is an education for contractors among the finance ministry. • Bidding must be at the same time and place with all the required documents, such as total price, 1-2% of the primary financial guarantee. • The owner may exclude contractors if the project size is larger than their financial and technical capabilities.
Selection	<ul style="list-style-type: none"> • The minimum number of vendors is one. • Vendors selected for their expertise, how they can control risks with value added, the cost of the project and interview (five criteria). • Zone prices are only more or less than the project budget, around 10% 	<ul style="list-style-type: none"> • The minimum number of vendors is two. • Selection based on the lowest price and the price should be in the market prices. • In some cases, removing some elements from the project. • The contractor's proposals should be in the market prices or less up to 35%. • Prices are negotiable

Phases	PIPS procurement system	Saudi Arabian procurement system
Clarification	<ul style="list-style-type: none"> • Scope • Project schedule. • Identify risks that are with and without control. • Performance measurement. • Milestone schedule. • (WRR) that includes (RMP) weekly. 	<ul style="list-style-type: none"> • N/A
Execution and implementation	<ul style="list-style-type: none"> • WRR(weekly risk report) • DR (director report) 	<ul style="list-style-type: none"> • There is an inspection of the contractor's performance by the consultant.
Risk handling	<ul style="list-style-type: none"> • WRR (weekly risk report). • Using experts to identify risks. 	<ul style="list-style-type: none"> • Punishments system.

CHAPTER 6

RESEARCH METHOD

The survey was administered to develop the public procurement system in Saudi Arabia. The information collection in this paper included 157 engineers, 33 consultants, 9 owners, 5 vendors, 13 academics, and 28 architects. 245 out of 664 respondents work in government sectors with an interest in the Saudi procurement system.

The study shows the years of experience of the participants; 124 participants had less than 3 years of experience, 128 participants had between 4 to 15 years of experience and 34 participants had more than 16 years of experience. All participants have practical experience in the most common types of construction such as residential buildings, commercial building, healthcare construction, industrial construction and heavy civil construction.

Survey results:

Approximately eighty-one percent (80.61%) of participants in the survey believe that the traditional Saudi procurement system selects poor performing contractors as is shown in Figure 6. Moreover, 95.97% of participants think that the selection of contractors based only on the lowest price criterion affects projects negatively.

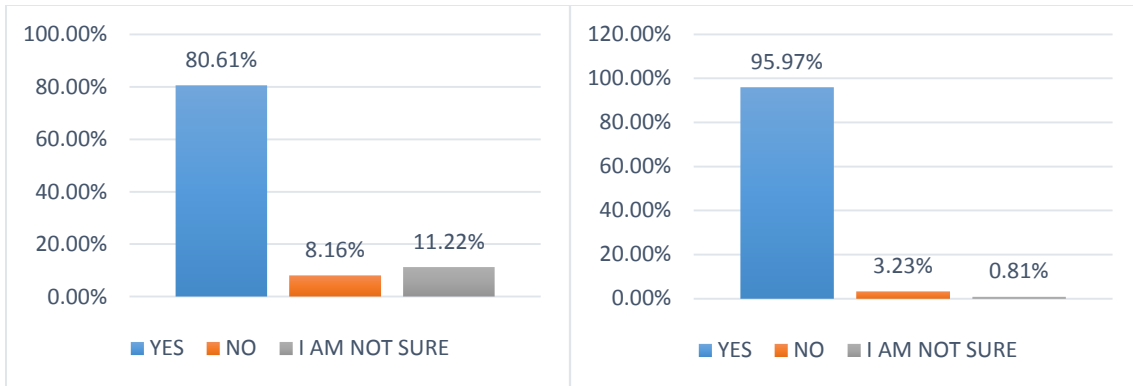


Figure 6. The traditional system selects poor performing contractors. **Figure 7.** A selection of contractors say low price bids affect projects negatively.

Around forty one percent (40.68%) of participants strongly agree and 48.02% agree to require the contractor to identify risks before a contract is signed in order to improve projects, while only 3.93% of them disagree and 7.91% of participants are not sure.

In addition, 69.89% of participants strongly agree and 26.14% of them agree that the contractors must have a plan before a contract is signed because that will improve the performance of the project, thus minimizing losses in time and money. Only 0.57% of participants disagree, and 3.41% of participants are not sure.

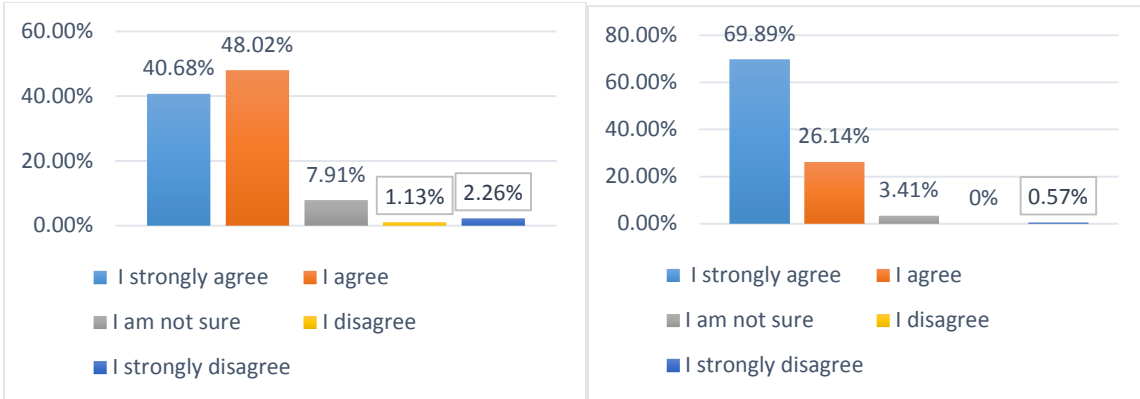


Figure 8. Require contractors to identify risks. **Figure 9.** Contractors must have a plan.

Moreover, 62.50% of participants strongly agree and 32.95% of them agree to require a contractor that review the scope of a project and verify that it is correct because the participants believe that will improve project performance while 0.57% of them disagree, and 3.98% of participants are not sure.

Finally, 40.8% of participants strongly agree, and 41.38% of them agree to require a contractor to resolve all owner concerns before a contract is signed. Only 5.17% of them disagree, and 12.64% of participants are not sure.

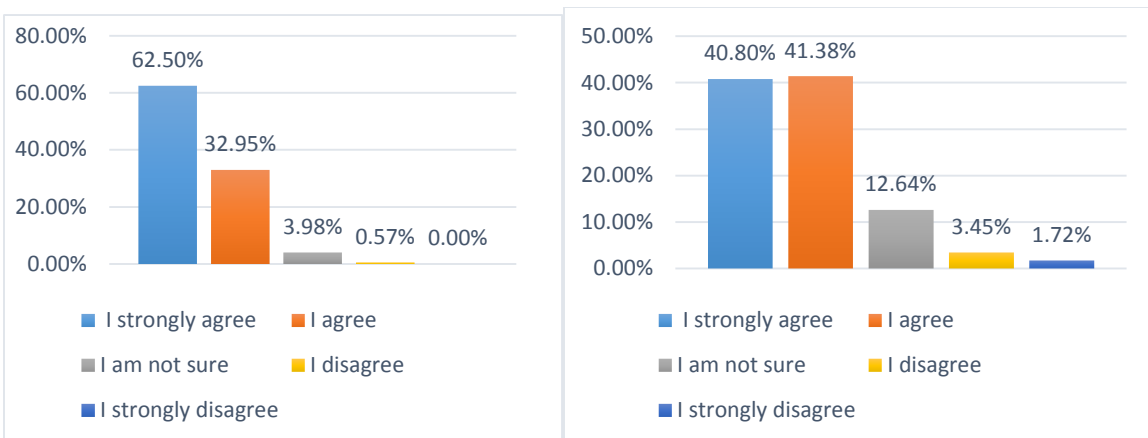


Figure 10. Require a contractor to review the project scope.

Figure 11. Require a contractor to resolve all owner concerns.

Chapter 7

UPGRADE THE SAUDI ARABIAN PROCUREMENT SYSTEM DELIVERY METHOD

Based on the results of the survey, which supports making some improvements into the Saudi procurement system, a new phase will be added to the Saudi procurement system model, the clarification phase, after the selection phase. This phase confirms if the contractor is an expert and knows his work accurately, thus ,reducing potential risks that caused by contractors.

The current model has been upgraded and consists of five different phases: Proposals Submission, Selection, Clarification, Contract Formulation and Implementation. All vendors have to pass the five phases before one of them can sign the project contract.

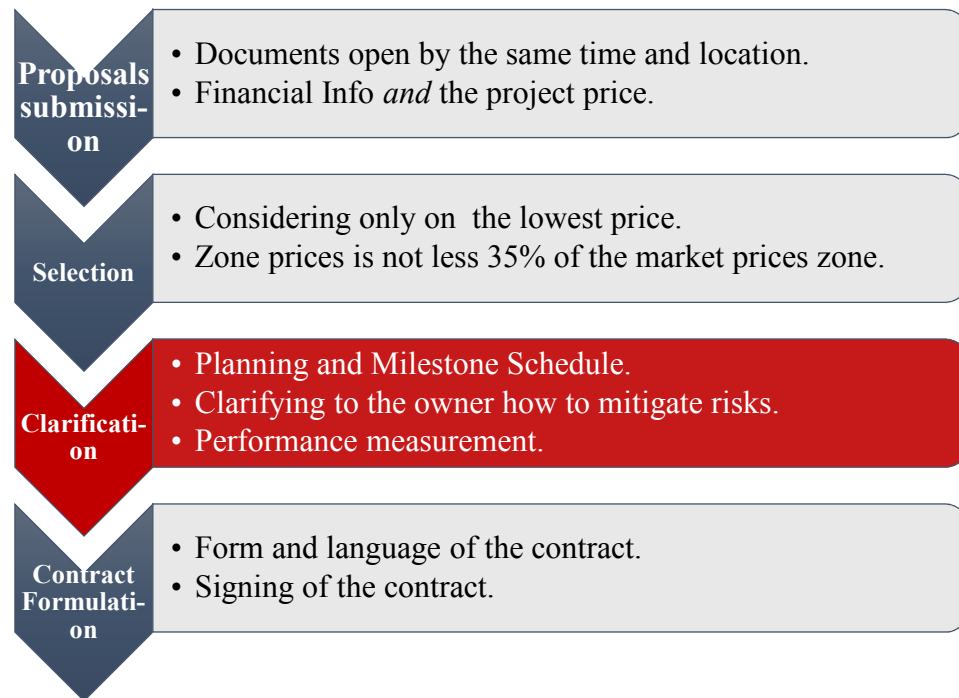


Figure 11. Upgrading the Saudi Arabian Procurement System

Table 2. Upgrading the Saudi Arabian Procurement System.

Upgrade the Saudi Arabian Procurement System	
Phase	Delivery Method
Proposals submission	<ul style="list-style-type: none"> Proposals must be submitted at the same time and location. The owner may exclude contractors if the project size is larger than their financial and technical capabilities. May include financial info and the project price on one page.
Selection	<ul style="list-style-type: none"> The minimum number of vendors is two. Vendors selected are based on only lowest prices. Zone prices are no less 35% of the project budget in market prices zone.
Clarification	<ul style="list-style-type: none"> Scope. Project schedule. Identify risks that are within the contractor's control. Identify risks that are out of the contractor's control. Performance measurement. Milestone schedule.
Contract Formulation	<ul style="list-style-type: none"> Form and language of contracts. Signing of the contract.

Proposals submission phase:

The proposals submission phase is all about attached documents, which consists of:

- Financial security (about 1% of the total price of the project).
- Price, which is offered by the vendor.

Moreover, all documents must be submitted in the same place and time that are specified in the announcement of the project.

Selection phase:

Contractors/ vendors are selected based on the lowest price, as is the current situation in the Saudi government procurement system to win the project requirement. This will fulfill the following conditions:

- Two contractors is the least acceptable number for a competitive system.
- The winning contractor must have the lowest price compared with other offers.
- The proposed price of the contractor must be near market prices.
- The proposed price must not be less than the market price by 35%.

Clarification phase:

The winning contractor who has the lowest price has to pass the clarification phase, and he/she must provide the following:

- Planning and milestone schedule.
- Clarification to the owner on how to mitigate risks.
- Performance measurements.

Contract Formulation:

After the contractor/ vendor has passed all phases successfully, he has to formulate contracts to be able to sign them with the owner. In this step, the contract is documented in the Arabic language and the winner can attach the contract in a secondary language, as well. The second step is for all parties (the contractor or the vendor) to sign the contract.

Chapter 8

CONCLUSION & RECOMMENDATIONS

Saudi Arabia has several problems related to the current procurement system outputs, such as delays, poor performance, and increased costs for the project's budget. Moreover, the procurement system in Saudi Arabia selects contractors and vendors depending on the lowest bid without considering another high-value criterion (Assaf and Al-Hejji, 2006; Albogamy et al., 2012).

In order to upgrade the procurement system, the government of Saudi Arabia should consider the addition of a clarification phase, which is the most important phase in the PIPS system, which has been proven to be the most successful system around the world. This paper conducted a survey including 157 engineers, 33 consultants, 9 owners, 5 vendors, 13 academics, and 28 architects who support making improvements to the Saudi Arabian procurement system. 95.97% of participants think the selection based on the lowest price affects projects negatively, 88.7% of them agree to require vendors to identify risks, and 96.03 % of participants agree to require contractors to have plans. Moreover, 95.45% of participants agree to require vendors to review the scope of projects, and 82.18% of participants agree to require a contractor to resolve all owner concerns before signing a contract to improve performance. The following points support an upgraded Saudi Arabian procurement system:

- Choose the expert vendors/contractors by improving the procurement model
- Require contractors to identify risks by submitting plans, which show how the expert contractors handle risks

- Contractors have to review the scope of a project and verify that it is correct
- Require a contractor to resolve all owner concerns before signing a contract to improve projects performance

Based off of this research, it is evident that the Saudi procurement system needs to change. Implementing a clarification phase would not only be a good idea for the performance of projects, decreasing costs and decreasing delays, but it would be relatively easy to implement. It would only make sense for Saudi Arabia to implement this phase to increase the quality, decrease delays and actually decrease project costs.

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APPENDIX A
SURVEY QUESTIONS

1. Do you think that the traditional Saudi procurement system selects poor performing contractors?

- Yes.
- No.
- I am not sure

2. Do you think that the selection of contractors based only on the lowest price criterion, affects project negatively?

- Yes.
- No.
- I am not sure

3. Requiring the contractor to identify risks before signing a contract, would improve project performance.

- I strongly agree
- I agree
- I am not sure
- I disagree
- I strongly disagree

4. A contractor having a plan before signing a contract will improve the performance of the project, thus minimizing losses in time and money.

- I strongly agree
- I agree
- I am not sure
- I disagree
- I strongly disagree

5. Requiring a contractor that review the scope of a project and verify that it is correct, will improve project performance.

- I strongly agree
- I agree
- I am not sure

- I disagree
- I strongly disagree

6. Requiring a contractor to resolve all owner concerns before signing a contract, will improve project performance.

- I strongly agree
- I agree
- I am not sure
- I disagree
- I strongly disagree