Chapter five
Conclusions and Recommendations

5.1 Conclusions

This chapter covers the conclusions and the recommendations that are obtained by conducting this study.

A number of conclusions have been obtained from this research, regarding the Management factors to control the time:

1. Estimating the tender: Bill of Quantities (BOQ) and Specifications .Comprehensive and objective estimates are the start of sound construction management and cost control. Architects, owners, and contractors are aware of the need for well-prepared estimates during each phase of a project. The construction estimating service must including:-

- Budget, estimates.
- Preliminary (system) estimates.
- Detailed quantity surveys.

Budget estimates are prepared at the inception of the project in order to establish overall cost parameters. During the design phase it may be necessary to prepare preliminary estimates to evaluate design alternatives and insure the project is within previously established cost parameters. After completion of the design phase, a detailed quantity survey is required as an aid in evaluation of bids or negotiating contracts. Each of these estimating phases is integrally with the overall financial success of any construction project

2. Type of contract:companies top manager as decisions maker:Some common types of contracts are used in the engineering and construction industry

- Lump Sum Contract
- Unit Price Contract
- Cost Plus Contract
- Incentive Contracts
- Percentage of Construction Fee Contracts

Lump Sum Contract

With this kind of contract the engineer and/or contractor agrees to do the a described and specified project for a fixed price.

Unit Price Contract

This kind of contract is based on estimated quantities of items included in the project and their unit prices.

Cost Plus Contract

A contract agreement wherein the purchaser agrees to pay the cost of all labor and materials plus an amount for contractor overhead and profit (usually as a percentage of the labor and material cost). The contracts may be specified as

Cost + Fixed Percentage Contract

Cost + Fixed Fee Contract

Cost + Fixed Fee with Guaranteed Maximum Price Contract

Cost + Fixed Fee with Bonus Contract

Cost + Fixed Fee with Guaranteed Maximum Price and Bonus Contract

Cost + Fixed Fee with Agreement for Sharing Any Cost Savings Contract

Incentive Contracts

Compensation is based on the engineering and/or contracting performance according an agreed target - budget, schedule and/or quality.

The two basic categories of incentive contracts are

Fixed Price Incentive Contracts

Percentage of Construction Fee Contracts

Common for engineering contracts. Compensation is based on a percentage of the construction costs

4. Payment time:The contract may specify that either the owner or a 'specified person' may issue the notice to the contractor, or the contractor may issue the payment notice to the owner. This payment notice must be issued within enough period to let the consultant review the payment before the payment date

'Specified person' means a person specified in or determined in accordance with the provisions of the contract - typically this will be the person administering the contract on behalf of the Employer.

5. Political order:Many societies use labor market coordination to maximize economic growth and equality, yet employers' willing

cooperation with government and labor is something of a mystery. The Political Construction of Business Interests recounts employers' struggles to define their collective social identities at turning points in capitalist development. Employers are most likely to support social investments in countries with strong peak business associations, that help members form collective preferences and realize policy goals in labor market negotiations. Politicians, with incentives shaped by governmental structures, took the initiative in association-building and those that created the strongest associations were motivated to evade labor radicalism and to preempt parliamentary democratization. Sweeping in its historical and cross-national reach, the book builds on original archival data, interviews, and cross-national quantitative analyses. The research has important implications for the construction of business as a social class and powerful ramifications for equality, welfare state restructuring and social solidarity.

6-Project complete documents:It is the claimant's obligation to prove its claim. If he cannot do so, he will not prevail. Alternatively, complete records will be necessary to defeat an owner's delay claim. The lack of complete business records can result in additional costs in proving or disproving a construction claim. If the documents are complete and well organized, the claimant's consultant will spend less time preparing and documenting the claim, thus reducing the cost of presenting the claim.

7-How to select a suitable contractor for certain projectAlthough there are a lot of differences between the construction industry and otherindustries, the principle of selecting the contractor is the same: a client buys a productfrom a supplier. The whole process of contractor selection has been discussed in

literature for several years. includes the following steps:

1. Determining specification
2. Selecting the contractor
3. Contracting
4. Ordering
5. Expediting and evaluation
6. Follow-up and evaluation

Another model for contractor selection and is called the outsourcing framework. It contains the following steps:

1. Competence analysis
2. Assessment and approval
3. Contract negotiation
4. Project execution and transfer
5. Managing relationship
6. Contract terminationCriteria for selection of contractors

In each second step of these processes respectively 'Selecting contractor' and'Assessment and approval', the determination of criteria for the selection is a veryimportant issue.

5.2General Recommendations

1- With respect to "Time control tools", the researcher recommends that construction firms should train their engineers to use these tools to control the time and apply the corrective or preventive actions.

2- With regards to "Development of personnel", the researcher recommends the construction firms to train their projects participants to raise the effectiveness of the project performance and use foreign labors in the project for limited short period just to educate local labors Discipline activity .

3- Regarding the “currency”, the country has a big issue in dealing with foreign currency. The researcher suggests that the parties should include this item in contract to shed a light on how this may cause a delay or affect the whole time.

4- With respect to “payment time”, the researcher recommends the owner to be very serious in the right time when the contractor deserves the payment. To early plan for it and have a sufficient time to provide its availability.

5- Regarding the “Variance analysis”, the researcher recommends the construction firms to use the technique developed in this study to evaluate their projects situation with scheduling in order to monitor and control the project.

6- Regardingthe “Material imported”, the researcher recommends that the Engineering Council should implement several laws to help importation that saves time and to have the full specifications about every material imported to improve local material.

7- In regards to “Performance review”, the researcher recommends the construction firms to use this technique which is a popular technique used for monitoring and controlling the projects.

8- With respect to “Organizational commitment”, the researcher recommends the top management of the firms to motivate their project participants to ensure their loyalty.

9- With respect to “Subcontractor plan”, the researcher recommends the construction firms to take more care and show interest in the subcontractor’s plan which shows their abilities and capabilities, in order to avoid the poor performance of the project.

10-With regard to “complete documents”, the researcher recommends that the three parties of every project should prepare all documents in the right time to ensure the schedule is going as planned,to avoid improper planning which may lead to projects failure.

11- Regarding the “Risk plans”, the researcher recommends the construction firms to developa plan for risks that may lead to projects failure.

13- For “Schedule compression”, the researcher recommends the construction firms to use this technique to control the schedules.

14-With respect to “Favoritism”, the researcher recommends the construction firms to apply the tender and try to be honest in selecting the contractor and be aware of favoritism.

15- Finally, the “Allocation of risk and liability”, the researcher recommends the construction firms to allocate the risk and liability from the planning stage to avoid the delay on implementation time.

5.3 Recommendations for future researches

Recommendations for future researchers include:

1- Expanding the model to cover factors which weren’t discussed within the model.

2- Studying the external environment factors which should be managed.