Online Bidding System

By

Bahirun Endashaw, Samuel Neri & Meskerem Debebe

Faculty of Informatics, Department of Computer Science

1. Introduction

The main concern of this project is studying a bidding system, which is widely used in current times; manual. Most organizations conduct bidding without using any ICT support. ETC (Ethiopia Telecommunication Corporation) have a lot of experience in bidding system. This system has different kinds of bidding system. These are Open tendering, Limited/Restricted Competitive Bidding (LCB), Direct Procurement/Single Source Procurement, Request for Proposal, Request for Quotation/Performa Purchasing and Two Stage Bidding/Tendering. Open Tendering is a method of procurement that could be used for National Competitive Bidding (NCB) and International Competitive Bidding (ICB). Limited/Restricted Competitive Bidding (LCB) methods where by an initiative to bid is sent to a limited number of qualified firms who are interested to participate/compete in the tender rather than floating the invitation through open media. Direct Procurement/Single Source Procurement method allows procurement of goods and services directly from a single firm for various reasons. Request for Quotation/Performa Purchasing method is commonly used for low value and low volume procurement (mostly operational and stock goods) made by requesting a limited number of supplier for quotations. Request for Proposal is a procurement method mainly applicable to the procurement of consultancy service. Two Stage Bidding/Tendering is a method where by two invitation to bids are issued for a single purchase. In this system, there exist some problem and also bidders can't have satisfaction in the current system. The current bidding system, bidders must attend specific place; otherwise, they can't participate for the bid. But, online bidding system avoid problems that both bidders and organizations might face. Due to this, we believe that people will use to this system.

2. **Current system of bidding**

As we mentioned before, the current bidding system is performed manually. This system has different kinds/methods of bidding system. These are

2.1. **Open Tendering**

Open tendering is a method of procurement that could be used for National Competitive Bidding (NCB) and International Competitive Bidding (ICB). This is a method of procurement where by qualified and eligible bidders are invited to bid through mass media, such as newspaper, radio and TV. In addition to these Medias, companies may also use websites for advertisement

2. 2 Limited/Restricted Competitive Bidding (LCB)

This is a method where by an initiative to bid is sent to a limited number of qualified firms who are interested to participate/compete in the tender rather than floating the invitation through open media. This method could be employed with or without prequalification as may be necessary.

2.3 Direct Procurement/single source Procurement

This method allows procurement of goods and services directly from a single firm for various reasons. Such method mainly depends on negotiation rather than competition.

2.4 Request for proposal

This is a procurement method mainly applicable to the procurement of consultancy services. Under such procurement, arrangement is limited to a number of interested consultants selected by the company.

2.5. Request for quotation/Performa purchasing

This method is commonly used for low value and low volume procurement (mostly operational and stock goods) made by requesting a limited number of supplier for quotations. The quotations are made through Performa invoices.

2.6. Two stage bidding/Tendering

This is a method where by two invitation to bids are issued for a single purchase. The first invitation requests for technical proposal (without price quotations) and is made open to all qualified and interested suppliers, while the second invitation shall be for complete quotation (including price) based on the technical specification for formulated on the basis of responses in the first invitation and is addressed to limited number of their technical proposal

3. Major functions of the existing system

3.1. Advertising Bid

The invitation to bid should be advertised or notice in at least one national newspaper of wide circulations for at least two consecutive times.

3.2. Sales of Bid Documents.

Bid document should be made available for sale by interested bidders at a price not exceeding the cost of reproduction and delivery of the document to bidders and in a manner specified in the bidding documents

3.3. Submitted bid document

Submitted in writing, in a signed and sealed envelop to the place and before the deadline stated in the invitation to bid.

3.4. Bid Security

Bid must be accompanied by a security in the form of cash, CPO or bank guarantees issued in favor of ETC from a reputable Bank and those who wish to deposit cash for bid security must deposit it before the bid opening date and produce the receipt/deposit slip during the bid opening. Any bid security will be forfeited if bidder withdraws his bid within the validity period of the bidder or in the case of a successful bidder, if the bidder is not willing to sign the contract or fails to furnish performance security, if so required. Unsuccessful bidders bid security, except of the second lowest evaluation bidder, will be returned to the bidders or their official representatives immediately after signing the contract with the winning bidder. The winning bidders bid security and that of the second

lowest evaluation bidder will be discharged upon the winning bidders of the contract and furnishing the required performance security.

3.5. Bid opening

Bids received before the deadline for bid submitted shall be opened in public by the assigned purchase committee at the time and date stipulated in the invitation to bid in the presence of interested bidders or their authorized representatives.

3.6. Examination and Evaluation of Bids.

The tender/bid evaluation committee shall develop and submit the detailed evaluation criteria to the purchase committee. Then, the purchase committee shall forward those signed technical bid documents to he tender/bid evaluation committee for examination and evaluation. Evaluation shall be made out 100% points and a relative weight of 60% and 40%. The 60% points allocated for technical evaluation. The 40% points allocated for commercial evaluation.

3.7. Evaluation Reports.

The end result of the examination and evaluation of bid offers/proposal is a tender/bid evaluation report that will be submitted to the purchase committee for their review, approval and further recommendation.

3.8. Review of the evaluation reports and assessing

Winners' qualification to perform the contract

3.9. Notification of awards and negotiations.

Once an approval is secured from appropriate officials, a notice of award shall be sent to the winning bidder/bidders by the procurement office/unit.

3.10. Performance security.

To protect ETC from the financial consequences of the suppliers breach of contract, the successful bidder is required to present a minimum of 10% performance bond of the contract amount within 5 (five) days after the signing the contract. The performance security should be in the form of CPO or bank guarantee issued. In favor of ETC from a reputable bank.

3.11. Signing of contract

Basically, the contract document should be prepared in accordance with the format and all the terms and conditions of contract provided in the bidding document. In addition, the following should also be considered. Conditions from bidders proposal that have been accepted by ETC. where there had been negotiations with the supplier, agreed upon points and conditions.

4. Statement of the problem

The current systems have some of the following problems. These are:-

- ✗ Every body can't participate on the bid because of distance (place), Time and personal case (most likely disable person).
- ✗ Can not easily get information.
- ✗ Lack of honesty.
- ✗ Maximize transport and material cost.
- ✗ Time Wasting.
- ✗ Difficult to administer bidders (progress and information).

5. Objectives of the project

The project has the following objectives:-

5.1 General objective

The general objective of this project is to develop a software system that would improve the process of bidding. The new system will reduce repeated face to face communication, provide information for all bidders and all users as well as can view that their result with detail information like view point and rank.

5.2 Specific objective

Specific objectives of the project are:-

- To study and analyze bidding practice in the real life;
- To identify the procedure in the bids;
- To protect corruption;

- To provide service and information with out limitation both time and place (distance);
- To minimize transport and material cost;
- To provide 24 hours service;
- To announce bid result;
- To provide fast and attractive service.

6. Methodology of the project

6.1 Data collection method

We collect relevant information from various sources. The followings are the major sources

- Observation of bid process.
- Newspaper
- Different announcements (about bidding)
- Documents and different source, like internet and broachers.

6.2 Object oriented analysis and design

- In object oriented thinking, a system is considered as a collection of classes and objects and the relationships that tie them together.

7. Tools and techniques

We use unified Modeling Language (UML) techniques. The UML is very important aspect in developing object oriented software and the software process.

7.1 Analysis

- UML techniques such as
- Use Case Diagram;
- Sequence Diagram;
- Collaboration Diagram;
- Activity Diagram;
- Class Diagram;
- User Interface Prototype.

7.2 Design

UML techniques such as

- Component Diagram.
- Deployment Modelimg
- Class Modelimg
- State Chart Modelimg
- Collaboration Modelimg

7.3 Implementation tools

- UHTML Language
- SMs VB.Net
- CODBC Server
- Microsoft office

8. Proposed system

8.1 Benefit of the proposed system

- **For the user**
  - ✗ Avoid time and place limitation
  - ✗ Easy to access service and organized information
  - ✗ Minimize transport and material costs.

8.2 Benefit of the proposed system …

- **For the organization**
  - ✗ Easy to handle
  - ✗ Reduce number of copies and printing material cost.
  - ✗ Require less storage device.
  - ✗ Reduce data inconsistency and data redundancy.

9. Functional Requirements

Online bidding system is an automated system that helps both users and organizations. Users can interact directly to the system. The system will give available information to interested bidders. Users easily access required information from the system.

9.1 Advertise

- Input Announcement on radio, TV, Newspaper….etc.
- Process Bidders read or this ten the announcement.
- Output Announce information to bidders.

9.2 Registering bidder

- Input Complete available document
- ProcessBidders submitted appropriate document to the system (registration Office if it's b
- Output registered bidder.

9.3 Buying bid document

- Input cash payment order (CPO)
- Process buy bid document
- Output read bid document

9.4 Submitting bid document

- Input document
- Process submission bid document
- Output submitted document

9.5 Display Result

- Input Bidder
- Process Bidders check final result of the bid
- Output display result

10.   Non-functional Requirements

Online bidding system is important both for users and organizations to save time, money
and other resource. Non-functional requirements explain customers as visible aspect of a
system, which don't have any association with the functional behavior of the system.
Here are the non -functional requirements which are basic to web based brokerage system
to be implanted

10.1 User interface and human factor

The user of the system will get user oriented and easily accessible user interface system
that provide easy and user friendly, graphical user interfaces which in turn helps the user

to have simple communication.

10.2 Documentation

The documentation part of the system will be used as maintenance and user's guide. The documentation will be prepared in the way for user to understand easily because each and every activity of the system is listed in the documentation part.

10.3 Resource consideration

The system use a mini-server machine which is accessed from different client computers based on windows client-server architecture. The system should have put mini size amount of RAM to make access time short. The application software could run using any internet browser in order to be accessed by any user on the server and client side. Generally, the system server should have the capacity to support windows 2003 operating system and SQL server 2000. All the connections should be made by Wide Area Network. The system database that is server side or user enters into the system should be stored on the Machine, it also have good back up mechanize in case of hazard. Since the system runs on the server machine, it requires large amount of memory due to the fact that bulky information about many users and the digitized maps the system uses are stored on its memory. Furthermore, the system needs enough CPU time as a resource to be more efficient and also require storage devices to take backups.

10.4 Error handling

The system handles all its error in short and clears way to precede the required task. This system will protect invalid input which could be made by user.

10.5 Performance characteristics

The system will have efficient response time for its entire user request. Moreover, it handles Parallel processing technique in order to let a lot of users to have access right within microsecond. To make all task request time fast the system hardware requirement also matter so as it is described in the hardware requirement all task processed on period of time. The other crude factor is the available Internet service. It is well known that it is

so poor to handle tasks with a lot of picture and multimedia data. These should be considered as external character that has some effect on the system efficiency.

10.6 Security issue

The system need to have a sufficient protection mechanism to prevent users' intervention from an authorized modification to the posted data or having direct access to the database due to its multi-user environment. In addition, the system will enforce authentication to admit every user in to the system before he/she starts any activity on the system. This protects the system from any unauthorized access.

11. Hardware and software requirement

11.1 Hardware requirements

- Internet connection
- Fax machine
- Printer and scanner
- One desk top computer
  - o 256MB RAM
  - o 2.39GHs
  - o 40GB hard disk.

11.2 Software requirements

- Server 2003 operating system
- DBMS
- Macromedia dream waver
- Ms Visual Studio. Net.

12. Conclusion

When we prepare this project, our group tries to collect available data related to our system. We use different technique to gathering information from individuals and organization. Based on this, we develop our system keeping the advantage both bidder and organization. This system performs different activities. User can get any information about ETC related to bidding and other relevant information about ETC from the home

page. User can easily consume time and cost.

13. Recommendation

This system is used for all government and non-government organizations as most organizations have similar bid process. Our groups recommend other organizations to implement this system with little or no modification, other organizations would benefit out of this system.

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