

**ONLINE TENDERING: COST EFFECTIVE AND TIME SAVING  
ALTERNATIVE TOWARDS FAIR TENDERING**

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## DECLARATION

In accordance with the requirements of the degree of Bachelor of Computer Science and Engineering in the division of Computer Science and Engineering, I present the following thesis entitled '*Online Tendering: Cost Effective and Time Saving Alternatives Towards Fair Tendering*'. This work was performed under the supervision of Dr Yousuf Mahbubul Islam.

I hereby declare that the work submitted in this thesis is my own and based on the results found by myself. Materials of work found by other researcher are mentioned by reference. This thesis, neither in whole nor in part, has been previously submitted for any degree.

Signature of  
Supervisor

Signature of  
Author

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Author: Mahabub Alam

## **ABSTRACT**

A tender is a document that a purchasing agent publishes to announce his request for certain goods or services and through this process an offer is made by the buyer to accomplish work at an acknowledged price by the supplier. The intent of the Online Tendering is to develop, promote and manage an internet-based tender registration, document distribution, proposal submission and Internet based payment of Tender document and earnest money deposit system for the benefit of suppliers and buyers. In our proposed Online Tendering system the buyers can publish their tender notice and the offer is made by the suppliers is arranged by the system according to the buyers specification. The system also handles the payment procedure and generates reports at each step to control the Tender process in a well-organized manner.

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## CHAPTER I

### 1. INTRODUCTION

Technology has improved our lives in every aspect. Manually driven systems are now being overtaken by computerized system. Now a day's computer does most of the work through software.

The previous system of tendering is both cost & time consuming. The buyer needs to manage a manual system for tender as well as seller also. Another thing is that to maintain the whole system with unfairness is critical for the buyer in the prospect of Bangladesh.

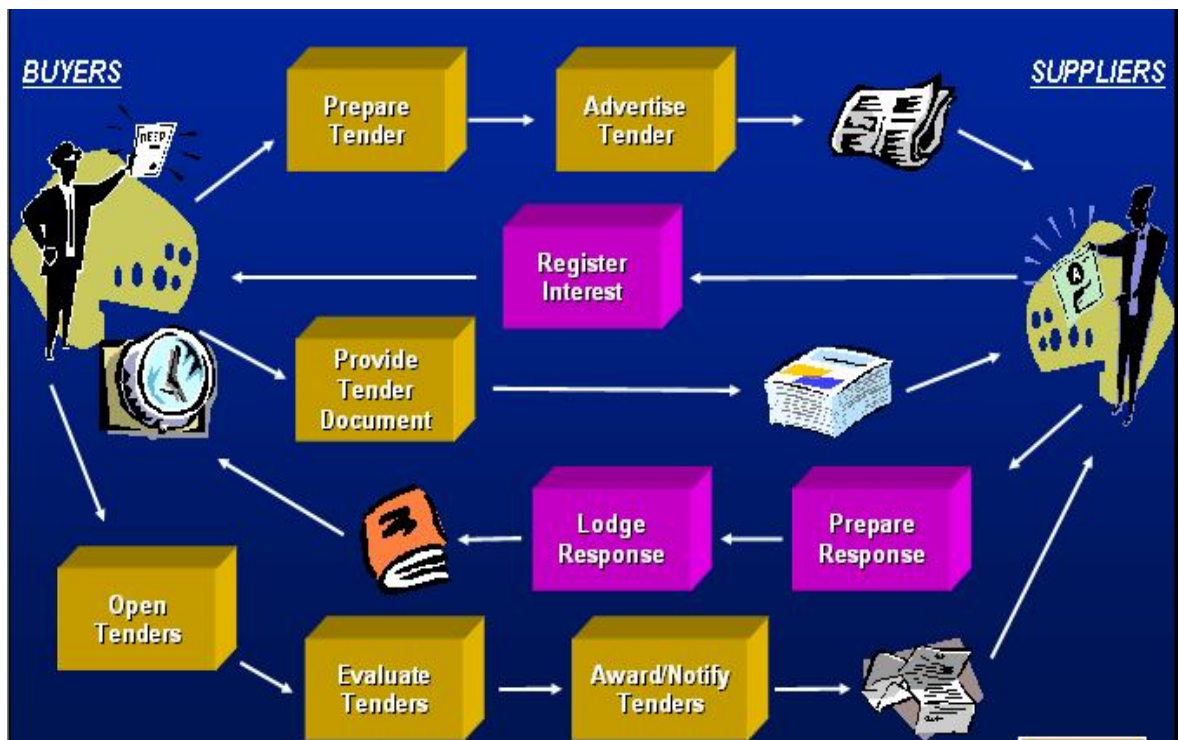


Fig 1.1: Current Manual System

In the current manual system the buyer first prepares the tender and advertises in the newspaper. Then seller shows his/her interest for registration and buys the document from the company. After that the seller has to submit the tender proposal to the company within specific time. The company then opens the tender and evaluates it and award notifies the tender and makes a contract with the seller.

### **1.1 Statement of the Problem**

The current system includes the following problem:

- The current tendering system suffers with lack of transparency & openness
- High tender advertising, paper & overhead costs
- The process is lengthy and time consuming
- Have to wait long time to get Tender document
- Lower participation rate
- Because of the criminal activity ,sometimes bidder can not participate in the tender
- Its take time and money to search appropriate tender for bidder
- Time consuming payment system
- Long time tender lodgement process
- Lengthy Tender Evaluation process

## **1.2 Purpose of the Study**

From this project we will learn:

1. The real life processes involved in Tendering
2. The process for collecting system requirements
3. The process for analyzing a system efficiently
4. How to optimize a system
5. Effective online system designing process
6. Implementation details of Web Based System
7. How to maintain Web based system
8. Data-mining processes
9. Relational Data Base Management System (RDBMS)
10. Scripting Language (e.g. PHP) for implementing the system.
11. Effective planning process for a project.

## **1.3 Objective and Scope:**

The objective of Online Tendering System is to make the tendering process easier and to have a wider access to tender information. The system provides better decision-making quality to the buyers and promotes transparency of such procedures. The tender template helps the buyer to guide them to prepare a tender. It cut down the total cost of tendering and lessens the time required compare to the current tendering system. In addition, the system diminish the payment complexity involve in existing tendering system.

The scope of the project is to provide tender information to the participator in so far as possible, make the payment procedure easier for the competitor, make the procedure for getting the tender document effortlessly, make the tender submission procedure trouble-free and flexible and offer a apparent way to select the bidder.

Discuss the goal - emphasize practical outcomes or products.

## **1.4 Methodology**

The procedures or methodologies for the project “*Online Tendering: Cost effective and Time saving Alternative towards fair Tendering*” are described below,

### 1.4.1 Analysis

**To complete the project we will follow the SDLC process. The first phase of SDLC is Analysis. In this phase we will carry out the followings,**

1. First we will gather thorough knowledge of the existing system to have clear idea about the system. For this, we will arrange interview session with the tender participators and buyers who announce tender.
2. We will study on the standard tender document published by the people republic of Bangladesh and some tender document to get the standard procedures and format of the tender.
3. From our gathering knowledge we will find the pitfalls of the existing system.
4. We will review the system to find a suitable solution to overcome these pitfalls.

5. Then we will determine the requirements for the proposed system. We will follow both the traditional and modern way to determine the requirements. In the traditional way we will arrange interview session with a pre-selected questioner. Then we will arrange a JAD (Joint Application Development) to get the sensitive information to determine the requirements. This process of gathering requirements is known as the modern method of determining system requirements. We will use prototype during the requirement-gathering period. After the JAD session we will have the requirements in our hand and we could turn these requirements into formal analysis and design specifications.
6. At last, we will structure system requirements:
  - a. First, we will do Process modeling. The deliverables for Process modeling are Context diagram, DFD's of current physical and logical system, new physical and logical system and thorough description of each DFD component.
  - b. We will do Logic modeling. The deliverables for Logic modeling are Decision table representation or the system sequence diagram for each process on the lowest level data flow diagram.
  - c. Then we will do Conceptual Data modeling. The primary deliverable from the Conceptual Data modeling step is an E-R Diagram (Entity Relationship Diagram).

### **1.4.2 Design**

**The second phase of SDLC is Design. In this phase we will carry out the followings,**

1. First, we will design the logical database. To do this, we need to consider all inputs, outputs and every data element on the E-R Diagram. Then we will design the physical database. Here we will use the relational database model.
2. We will design the forms and reports. The kinds of forms and reports were established as part of the design strategy formed at the end of the analysis phase. To design forms and reports we will follow the prototyping approach. We will have to design the Interfaces and Dialogues at this stage.
3. Then we will finalize the design specification. The only deliverable is a set of physical design specifications for each separate part of the entire system.

#### 1.4.3 Implementation

**The third phase of SDLC is Implementation. In this phase we will carry out the followings,**

We will code the system according to the design specification. Then we test the new system and after the successful testing we will install the system. At last we will prepare the Documentation for the System.

## CHAPTER II

### 2. PROJECT INITIALIZATION AND PLANNING

**The project initiation and planning is a critical activity in the life of a project. The objective of this process is to transform an unclear system request into a tangible system description clearly outlining the objective test plan, feasibility issues, benefits, cost and time scheduling for the project.**

2.1 System:

**2.1.1 Project Name:**

Online Tendering: Cost Effective and Time saving Alternative towards Fair Tendering.



## 2.2 Business Need:

Company needs to save time and get the required service as quick as possible through tender to increase productivity.

## 2.3 Functionality:

The new Online Tendering System will be more satisfactory because of the following functionalities:

1. The tender committee of the company can easily post the tender notice and the tender document to the web.
2. The Chief of the tender committee of the company can get all the necessary information by getting reports through the new system. The system information will contain:
  - Adding new Tender notice process
  - Personal Information about bidder
  - Category of bidder (optional)
  - Bidder list of Tender Document Buyer
  - Bidder list of Tender Proposal Submitter
3. Using Online Tendering System, authority can keep record about its bidders.
4. The authority can update tender notice
5. All the information will be stored in the Server
6. Only the authorized person of the company will logon with ID and Password
7. The authorized person will be able to post and update tender notice to the web
8. Finally, the authorized person will be able to see all the reports at any time and will be able to submit these reports to the tender committee.
  - The over all bidders report.

- Tender Notice report.
- Tender Document Buyer report.
- Tender Proposal submitter report.
- Reports of the proposal according to bidder profile.
- Tender Document Delivery reports

#### **2.4 Expected Value:**

##### Tangible:

- It will save large amount of money such as to reduce the tender preparation cost, tender notice publishing cost which are currently prepared manually.
- It will also save large amount of money of bidder such as, currently the bidder has to go through every newspaper for tender notices which increases cost, but all the notices can be easily found in this site.

##### Intangible:

- It will improve management satisfaction.
- The system will provide better decision-making quality to the buyers and promotes transparency of such procedures. The tender template helps the buyer to guide them to prepare a tender, which increases satisfaction and save time.
- It will take less time for the tender committee to complete the instant report.
- The system reduces the make the payment procedure easier for the competitor.
- The system makes the procedure for getting the tender document effortlessly.
- The system makes the tender submission procedure trouble-free and flexible.

## 2.5 Special Issues or Constraints:

The concept of Online Tendering System is new in Bangladesh. Tendering procedures are paper-based till now. So it will take time to understand the system.

## 2.6 Feasibility Analysis:

### Technical Feasibility: (Can We Build It?)

#### Familiarity with Application

- The company people are familiar with web-based system. They have some experience with online system.
- The bidders are also familiar with web-based system.

#### Familiarity with Technology

- Most of the company has never used an automated application of this scope before.

#### Project Size

- We estimate that the project is moderate in size.
- With some effort we can design the system to be fairly independent and simply.

**2.7 Information Gathering Plan:**

Step	Technique	Specific Activities
	Interviews	➤ We will interview Tender caller & Bidder to get a precise scenario of the system.
	Questionnaires	➤ For the clarification of the information that will have gathered through interviews and document analysis we will prepare specific questionnaires for them.

Understand the Current System	Document Analysis	<ul style="list-style-type: none"> <li>➤ We will review the whole process for the current system, which the current system will interact.</li> <li>➤ We will create the behavioral and structural models for the Online Tendering.</li> </ul>
	Observation	<ul style="list-style-type: none"> <li>➤ We will observe the current system by analyzing the gathered information.</li> </ul>
Identify Improvements	Root Cause Analysis	<ul style="list-style-type: none"> <li>➤ The project team will identify the problems of manual tendering system.</li> <li>➤ Include “Root Cause analysis” in the interview and questionnaire session.</li> </ul>
	Duration Analysis	<ul style="list-style-type: none"> <li>➤ Identify the amount of time it takes to process inputs in the current As-Is business process.</li> <li>➤ Include Duration Analysis in the interview session.</li> </ul>
	Activity-based Costing	<ul style="list-style-type: none"> <li>➤ Identify the major processes or steps and costs associated with them.</li> <li>➤ Include “Activity-based Costing” in the questionnaire session</li> </ul>

Develop a To-Be System Concept	Interviews	<ul style="list-style-type: none"> <li>➤ Interview with some Tender caller &amp; Bidder</li> </ul>
	Questionnaires	<ul style="list-style-type: none"> <li>➤ We need some important information from the user.</li> <li>➤ Here the questionnaires will be used for collect some common information form the user.</li> <li>➤ The question on questionnaires must be clearly written and closed-ended question tend to be used.</li> </ul>

Table 2.1: Information Gathering Plan

### 2.8 Analysis Plan:

Step	Technique	Specific Activities
Understand the Current System	Gather Information	<ul style="list-style-type: none"> <li>➤ We will review the information gathered from interview, questionnaire and document analysis and produce an overview of the current system.</li> </ul>
	Develop Process Model	<ul style="list-style-type: none"> <li>➤ We will organize DFD into behavioral model for current system.</li> </ul>
	Develop Data Model	<ul style="list-style-type: none"> <li>➤ We will identify data to develop a data/structural model for the current system.</li> </ul>
	Problem Analysis	<ul style="list-style-type: none"> <li>➤ We will work with related people to identify the basic set of features for the automated tendering system.</li> </ul>
	Root Cause Analysis	<ul style="list-style-type: none"> <li>➤ We will identify the basic set of drawbacks of Current system that is going to be solved in the automated system.</li> </ul>

Identify Improvements	Duration Analysis	➤ We will break complex process into several sub processes to accomplish the process in a relatively simpler way.
	Activity-based Costing	➤ Analyze the cost that is associated with the major processes or steps.
	Technology Analysis	➤ We will develop a list of innovative development technologies.
Develop a New System Concept	Activity Elimination	➤ We will develop the list of activities to be eliminated without causing any problem of the normal process.
	Gather Information	➤ Analyst will analyze the As-Is system information, behavioral and structural models to develop the information of the To-Be system.
	Develop Process Model	➤ We will organize the developed DFD into behavioral / process model for the To-Be system.
	Develop Data Model	➤ We will develop a data / structural model for the new system.

Table 2.2: Analysis Plan

## CHAPTER III

### 3. ANALYSIS

#### 3.1 Interview Report

**Interviewer:** Md. Abu Sayed, Md. Sadat Mursalin, Mahabub Alam

**Date:** 28<sup>th</sup> November, 2004

**Purpose:** To gather detail information about the current tendering system and identify the problems and solutions for the new system.

#### **Question Format:**

**Q 1. When your company calls a tender?**

**Ans:** It depends to our company's requirement. When our company needs some instrument, office equipment and services then we call for a tender to get the equipment or services.

**Q 2. Why company itself does not buy the product but buy from tender call?**

**Ans:** it is time consuming and company may not always know well about that product.

**Q 3. What is the procedure to call a tender?**

**Ans:** At first our company forms a tender committee. Then the committee members make a tender notice to call a tender. The committee will then



approved it and give it to news paper for publishing. The bidder who wants to participate in this tender after viewing the notice, buy our document from our office within due date. Then a pre tender meeting is held for bidders who buy the document. In this meeting they want the general overview about the tender. Then they submit their proposal in our office within due date given in the tender notice and weight for tender opening date. All bidders who submit their proposal will attend at that time. Then after few days the committee select a bidder for tender and publish the result.

**Q 4. Does the tender notice published in all newspaper?**

**Ans:** No. The tender notice is published in maximum two newspapers.

**Q 5. What is the problem in this system?**

**Ans:** The main problem in this system is that we can't publish our tender notice more than two newspaper.

**Q 6. Any other problems you face?**

**Ans.** For tender submission and buying some people of our company is always involved. So they can't give proper work time for company.

**Q 7. Do you think that automated system will improve this situation?**

**Ans:** Obviously, if new automated system is created then it is helpful for both company and bidder to participate in a tender system.

**Interviewer: Md. Abu Sayed, Md. Sadat Mursalin, Mahabub Alam.**

**Date:** 30<sup>th</sup> November, 2004

**Purpose:** To gather detail information about the current tendering system and identify the problems and solutions for the new system.

**Question Format:**

**Q 1. How do you find the tender notice?**

**Ans:** Mainly from newspaper, and some time from the company also.

**Q 2. How does your organization participate in the tender system?**

**Ans:** At first we buy the tender document from the office. Then we participate in the pre-tender meeting. After that we prepare the proposal letter for the tender and submit it within due date. Then in the tender opening date our company representative present in the office, and waiting for the publication of result.

**Q 3. Does your company feel any problem in this system?**

**Ans:** Yes. To find the notice from different newspaper is difficult sometime. The main problem is that sometime for government tender it is hard to submit the tender proposal in the tender box.

**Q 4. What other problem you face in tendering system?**

**Ans:** The payment system for buying tender proposal is some time bit difficult for us. The company gives fixed time for submission proposal, but for bad weather or jam we can't submit it on time.

**Q 5. Do you have any suggestion or solution for this?**

**Ans:** If it is possible for us to buy from anywhere, or can submit the proposal from any where then it is easy for us.

**Q 6. If the system is automated then will it acceptable or help you anyway?**

**Ans:** Yes, automated system can help us. Because we use internet for information and if the system is internet based then it will be acceptable.

### 3.1.1 Notes from observation:

From the question answer section and interview we gather detailed knowledge about the tendering system. Now we give the detailed description about the tender calling procedure. The procedures of company are given below:

1. When the government organization or private company want to buy some product or want some services then the organization or company call for a tender to get the product or services.
2. The company then makes a tender committee. After that the committee will handle the total tender procedure that the company can go thorough the tender procedure smoothly and can take decision easily about tender.
3. The committee will then makes exact tender notice and gives it to newspaper for publishing.
4. After selling the tender document company opens the tender in front of the bidder and then calls a pre bid meting for bidder.
5. Then the company survey and investigate about bidder and select the best bidder for tender.

Now the procedures of bidder are given below:

1. The bidder first find the tender notice from newspaper, If the bidder's company want to participate in the tender then they buy tender document from the office within due date.
2. Then the bidder participates in the pre bid meting.
3. After buying the document, bidder prepares their proposal report for the tender and submits it to the office within due date and time.
4. Then the bidder present in the tender open day while the tender opened by office.
5. In the one envelope system the bidder submit first technical proposal.

6. After selected by the tender committee the bidders are proposed to give the financial proposal.
7. But in the two envelopes system the bidder have to give both technical and financial proposal.
8. After selected by the tender committee, the bidder has to give certain amount of earnest money in the bank for security purpose.
9. Finishing some formality with tender company and tender committee the bidder's company gets the job for tender.

The problems in the existing system we find are followed:

1. The tender company can't publish their tender notice not more than two newspaper. So information about a new tender notice is hard to find or get for bidder from newspaper.
2. From the tender call to tender selection some employees of the company is always engaged for tender purpose. So those employees can't be use for office work.
3. The company has to maintain a data sheet for the bidders.
4. To take participate in tender the bidders have to find the notice but it is critical sometime for bidders to get the exact notice. So they may not always participate in the tendering system.
5. To buy a tender document the bidders have to do a bank draft. This system is very lengthy and time consuming for bidders.

From bidders opinion it is clear to us that for government tender it is not always possible to submit the tender document in the office for terror.

### 3.2 Data Flow Diagram of Current Physical System

#### 3.2.1 DFD of View Notice

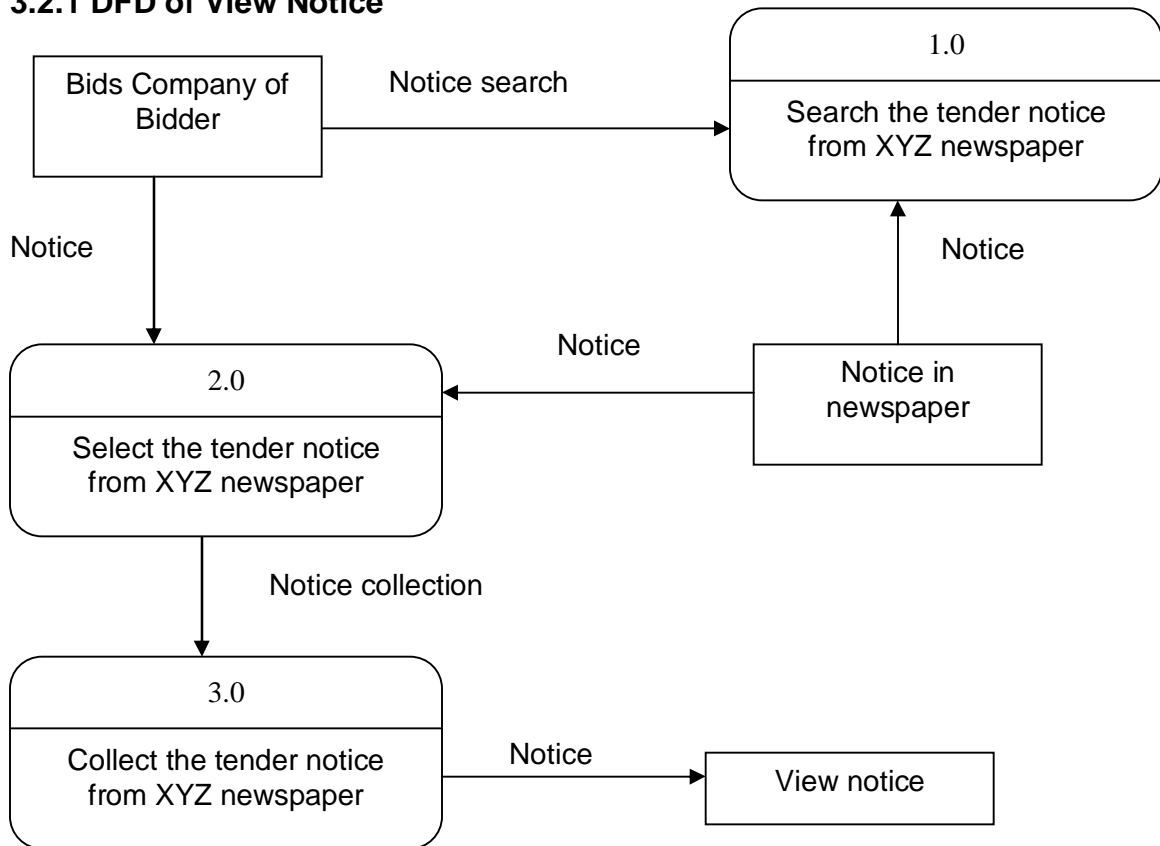


Fig 3.1: Data flow diagram (Physical Model)  
View notice in the current manual system

### **3.2.1.1 Thorough Description:**

Data flow diagram (Physical Model)

View notice in the current manual system

1. Bids Company: Suppose the Bids is the company name who wants to participate in the tendering system.
2. Search notice: In this system the Bids Company searches the tender notice from different newspaper.
3. Select tender notice: The Company then particularly selects a tender notice which he wants from the newspaper.
4. Collect the notice: After selecting the tender notice the company carefully collects the notice.
5. View notice: In this section the company views the tender notice

### 3.2.2 DFD of Tender Notice Preparation

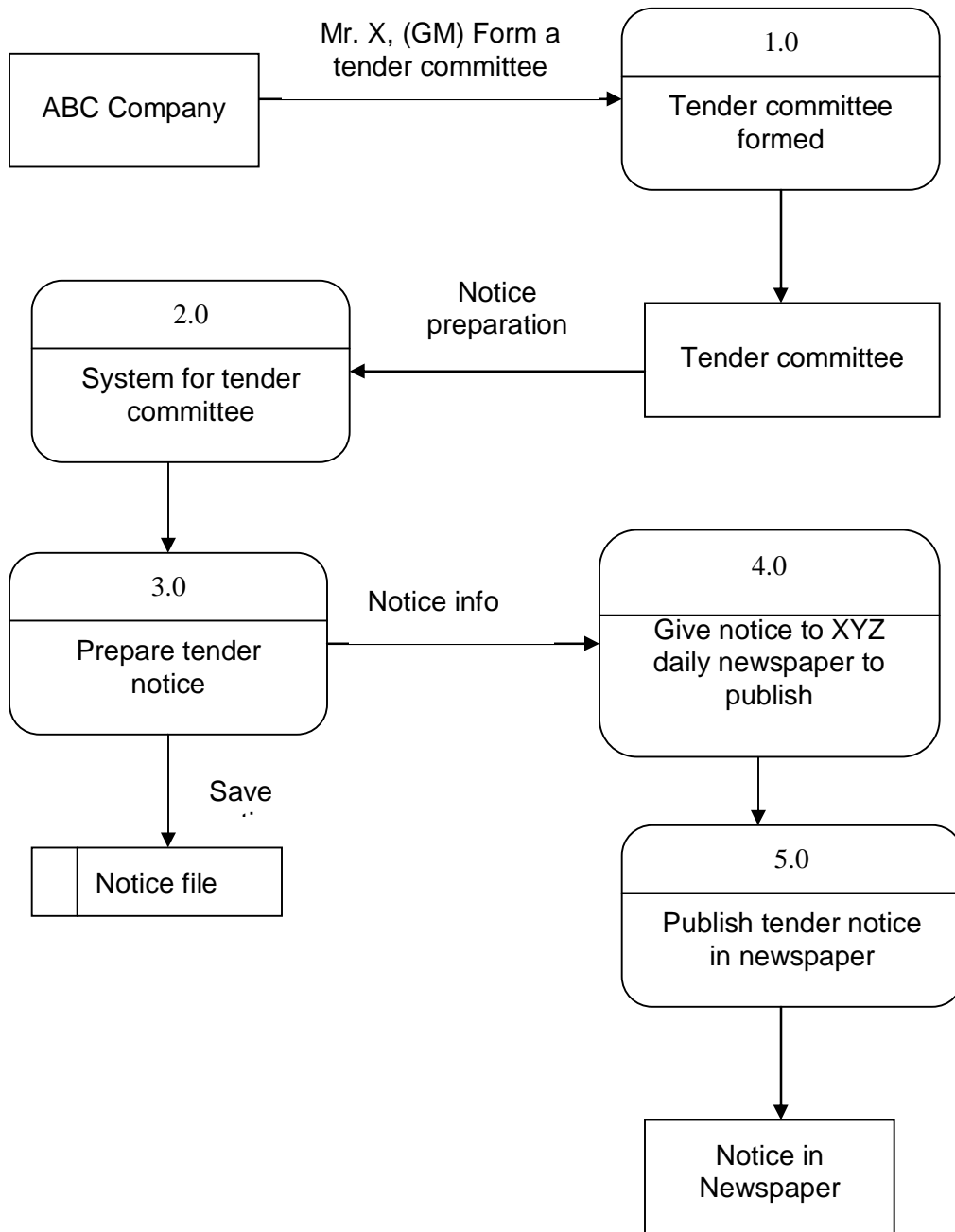


Fig 3.2: Data flow diagram (Physical Model)

Tender notice preparation and publication in the current manual system



### **3.2.2.1 Thorough Description:**

Data flow diagram (Physical Model)

Tender notice preparation and publication in the current manual system

1. ABC is the company name. The company who wants to publish the tender notice to call a tender.
2. Mr. X is the person of the company whose post is General Manager (GM). The GM forms a tender committee to easily operate the tendering procedure.
3. Tender committee formed: Means a new committee created with some members and the committee handles all the procedure from tender call to bidder select.
4. System for tender: The committee has the work plan, which is followed by the committee.
5. Prepare tender notice: In this section the committee prepares the tender notice and to call a tender.
6. Give notice to XYZ daily newspaper: Means tender company gives the notice to a recognize daily XYZ for publishing purpose.
7. Publish tender notice: Here the daily process the notice and publish in the paper.
8. Notice file: The tender company saves a copy of notice in their records.

### 3.2.3 DFD of Tender Document Delivery

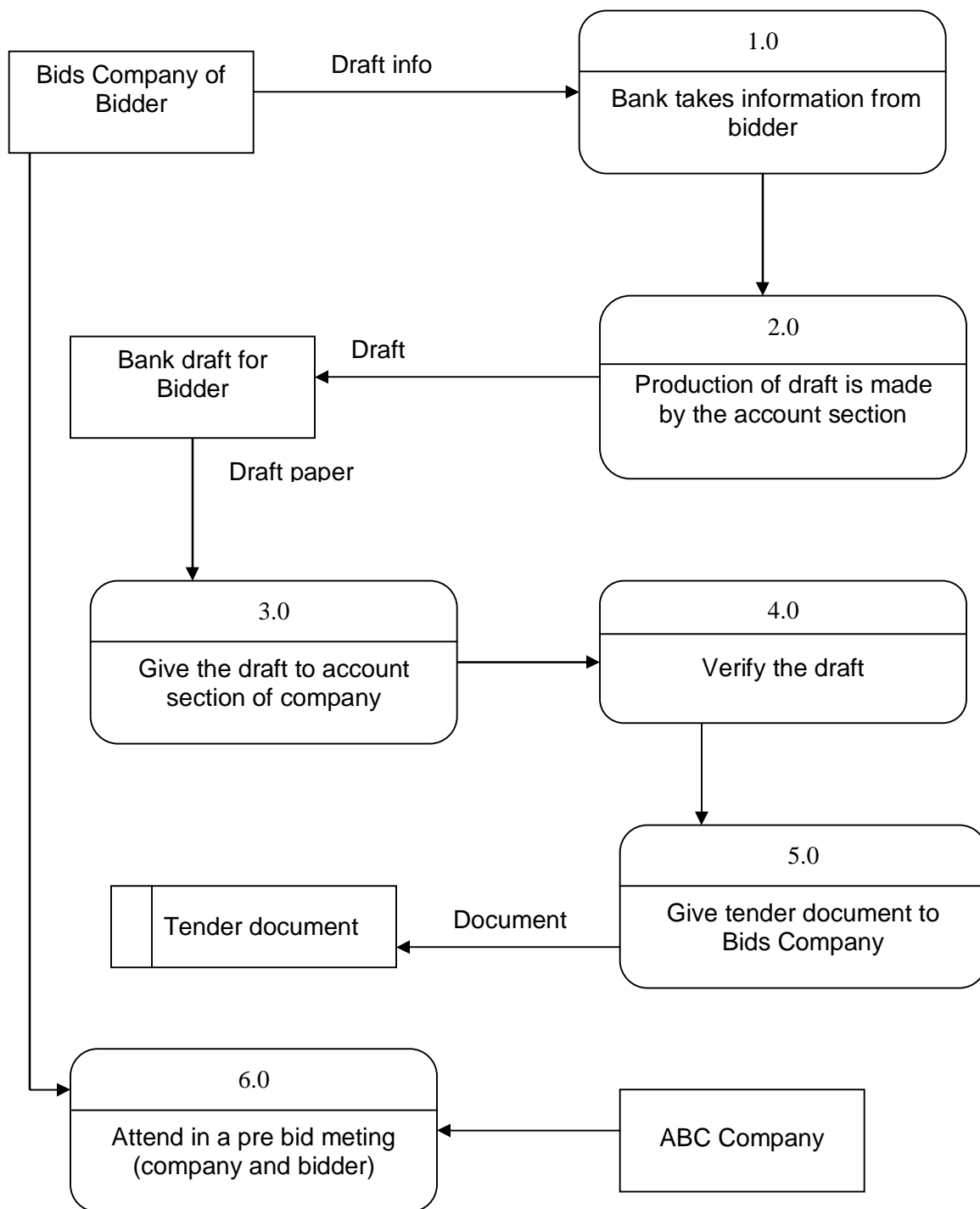


Fig 3.3: Data flow diagram (Physical Model)

Tender document delivery in the current manual system

### **3.2.3.1 Thorough Description:**

Data flow diagram (Physical Model)

Tender document delivery in the current manual system

1. Bank takes information: here bank has to take information from Bids Company to process the draft.
2. Production of draft: in this system the account section make the draft for the bids company.
3. Give draft to the company: means the bidder now give the draft in the tender company to buy the document.
4. Verify the draft: now the tender company verifies the draft for security purpose.
5. Give tender document: here the tender company gives the document to Bids Company.
6. Attend in a pre bid meting: after get the document from tender company the bids company and ABC Company attend in a pre bid meting for answer and question session to know about the overall tender requirement.

**3.2.4 DFD of Tender Document Submission & Selection:**

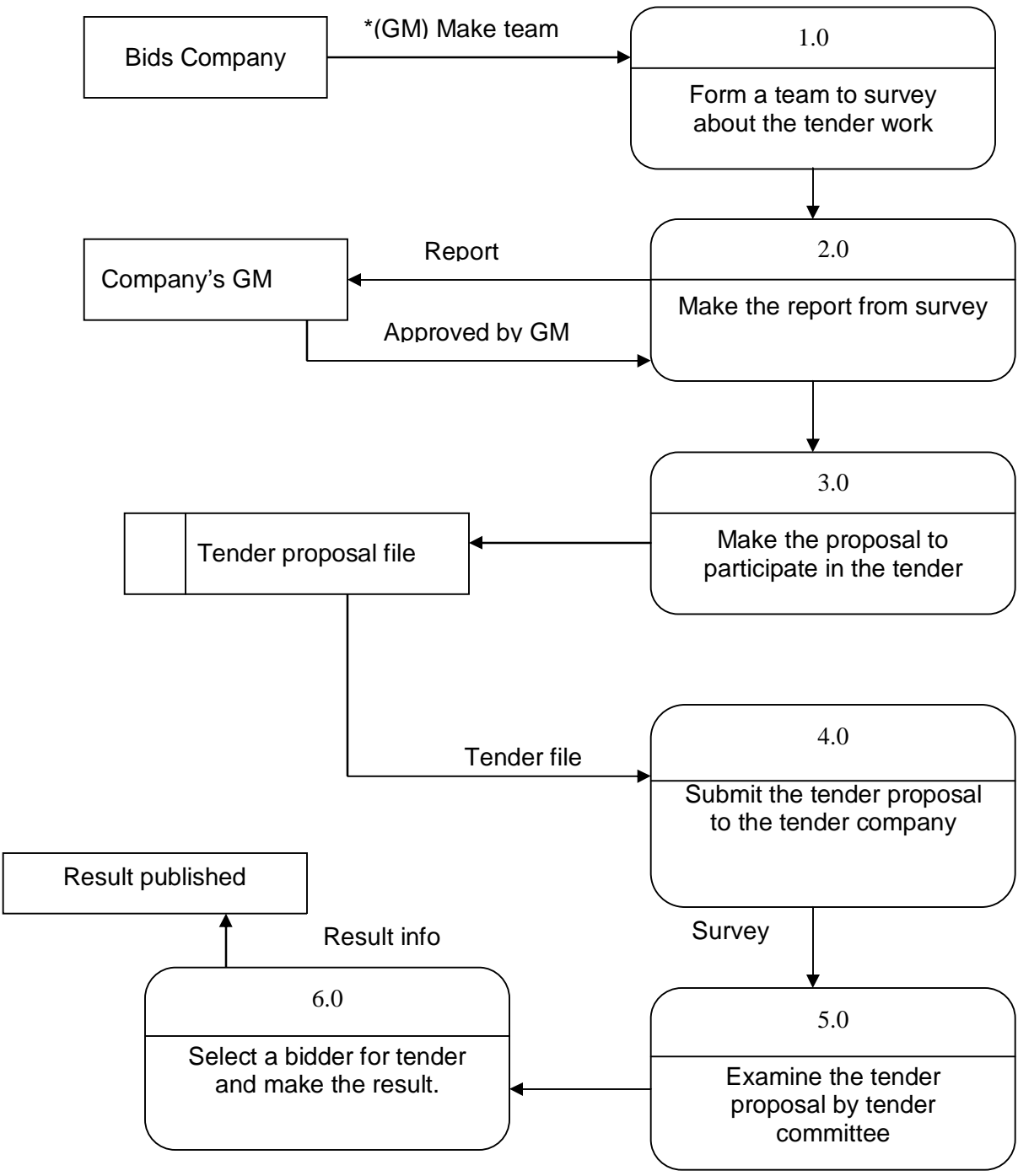


Fig 3.4: Data flow diagram (physical Model)  
Tender document submission & selection in the current manual system

### **3.2.4.1 Thorough Description:**

Data flow diagram (physical Model)

Tender document submission & selection in the current manual system

1. At first the bids company's GM (general manager) make a team to survey the tender project, whether their company can capable of doing the project or not.
2. Form a team: in this process the company makes a team with some company's employee.
3. Make report: the team is now survey about the tender and make the report.
4. Company's GM reviews the report and approves it for next step.
5. Make proposal: now the team makes the proposal for tender.
6. Summit proposal: in this session the bids company submit the tender proposal within due date and time in the tender box.
7. Examine the report: after submission of the tender proposal the tender committee inspects the proposals.
8. Select the proposal: after the finishing the inspection tender committee selects a bidder for tender.

### 3.3 Data Flow Diagram of Logical System

#### 3.3.1 DFD of Tender Notice Preparation & Publication

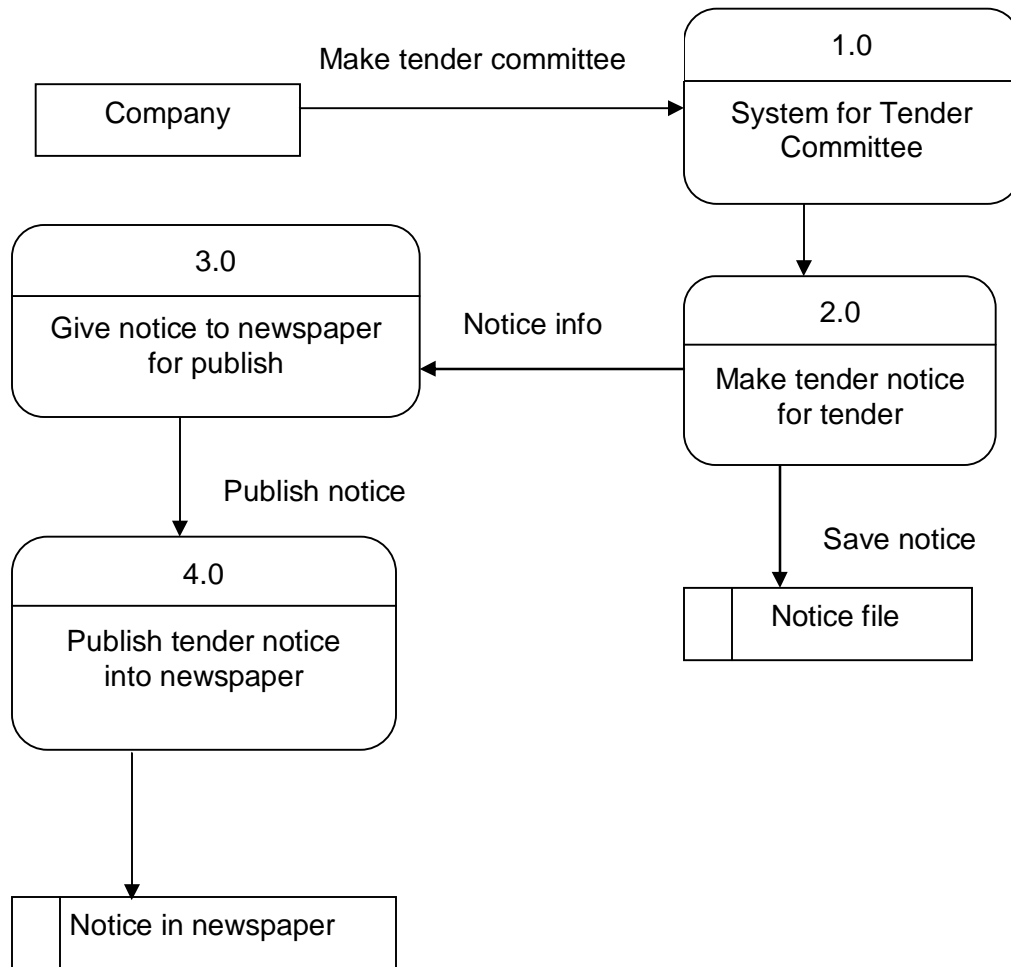


Fig 3.5: Data flow diagram (Logical Model)

Tender notice preparation and publication in the current manual system

**3.3.1.1 Thorough Description:**

Data flow diagram (Logical Model)

Tender notice preparation and publication in the current manual system

1. Here the company who wants to publish the tender notice to call a tender.
2. System for tender: here a committee formed to handle the overall tendering procedure.
3. Make tender notice: now the committee makes the notice.
4. Give notice to newspaper: the company gives the notice to newspaper for publishing.
5. Publish the notice: the advertisement section of daily newspaper now publishes the notice.

### 3.3.2 DFD of View Tender Notice

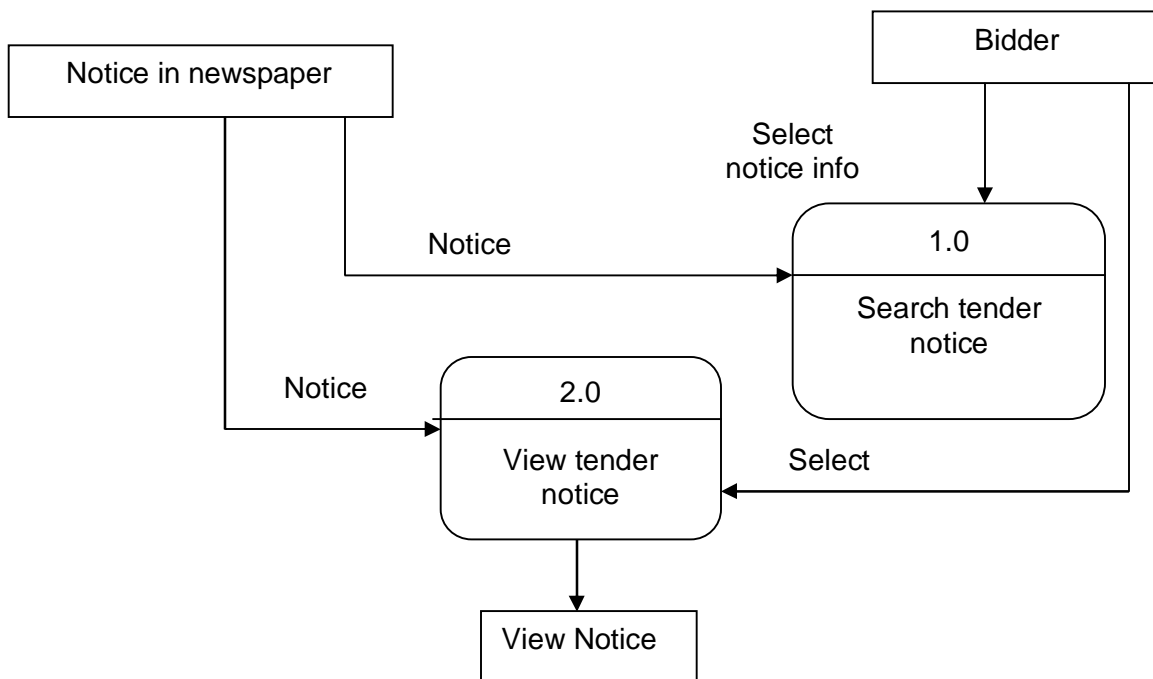


Fig 3.6: Data flow diagram (Logical Model)  
View notice in the current manual system



**3.3.2.1 Thorough Description:**

Data flow diagram (Logical Model)

View notice in the current manual system

1. Notice in newspaper: now the notice is physically in newspaper.
2. Search the notice: bidder now searches the particular notice from the newspaper.
3. View notice: here the bidder select and view the notice.

### 3.3.3 DFD of Tender Document Delivery

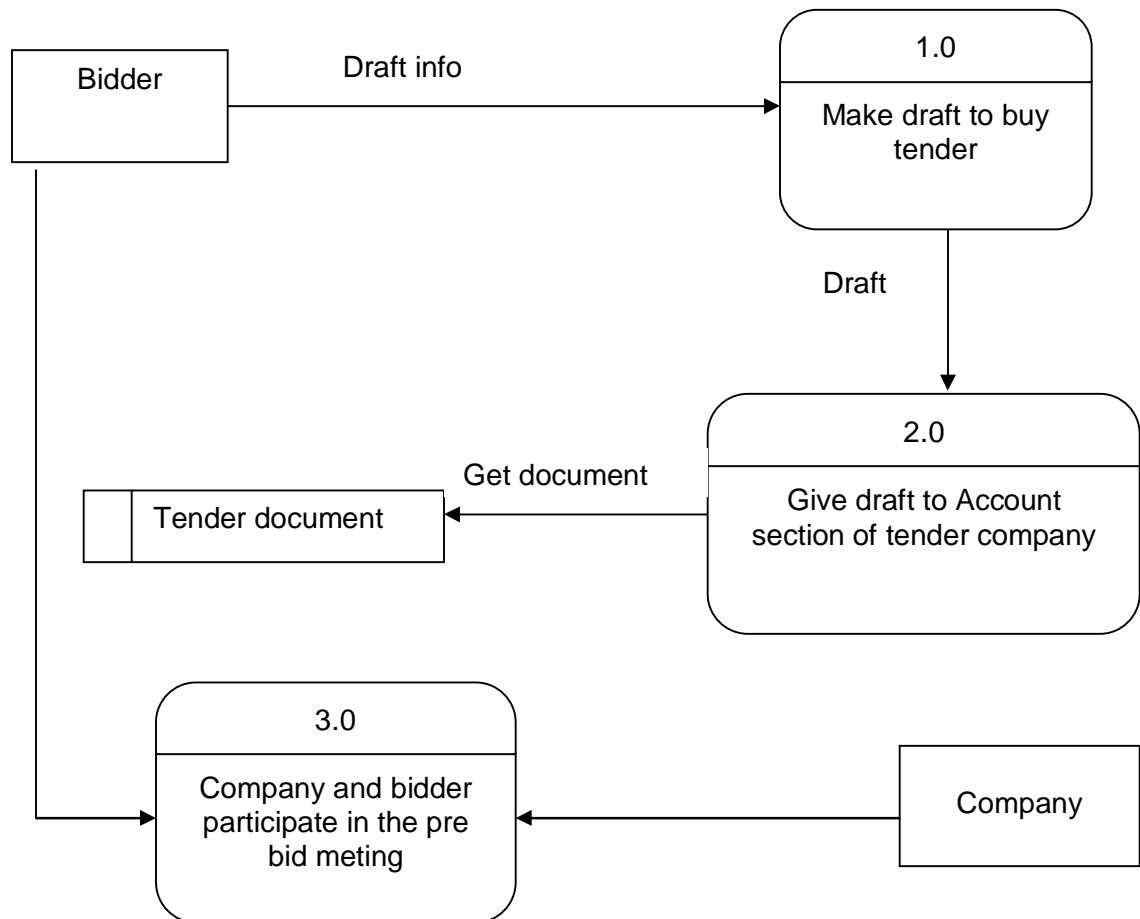


Fig 3.7: Data flow diagram (Logical Model)

Tender document delivery in the current manual system

**3.3.3.1 Thorough Description:**

Data flow diagram (Logical Model)

Tender document delivery in the current manual system

1. Make draft: the bidder makes the draft from bank.
2. Give draft to tender company to get the document.
3. After getting the document bidder and tender company sit for a meeting to answer the question session.

3.3.4 DFD of Tender Document Submission & selection

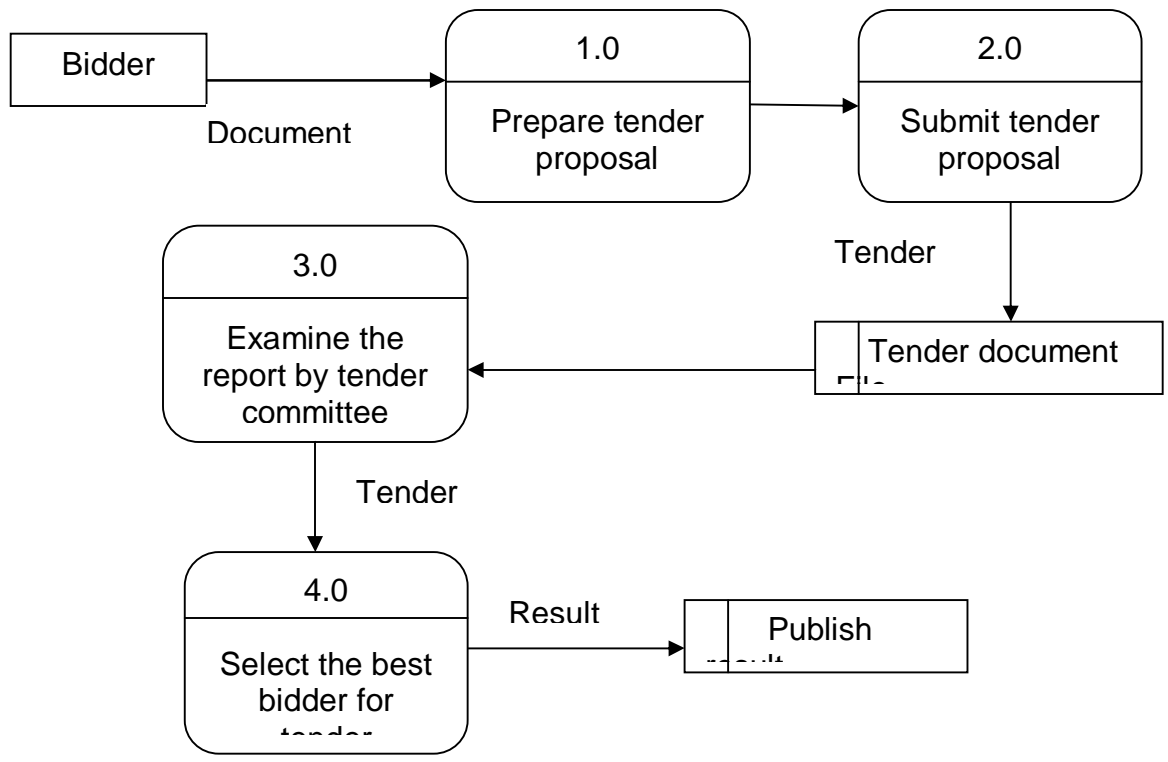


Fig 3.8: Data flow diagram (Logical Model)  
Tender document submission & selection in the current manual system

**3.3.4.1 Thorough Description:**

Data flow diagram (Logical Model)

Tender document submission & selection in the current manual system

1. Prepare tender proposal: by this process the bidder prepare the proposal for tender.
2. Submit tender proposal: here the bidder submit the proposal to the tender caller company.
3. Examine the report: now the tender committee examines the report.
4. Select the best bidder: after ending the inspection of proposal report the tender committee selects the best bidder.

**3.4 Context Diagram of Proposed System:**

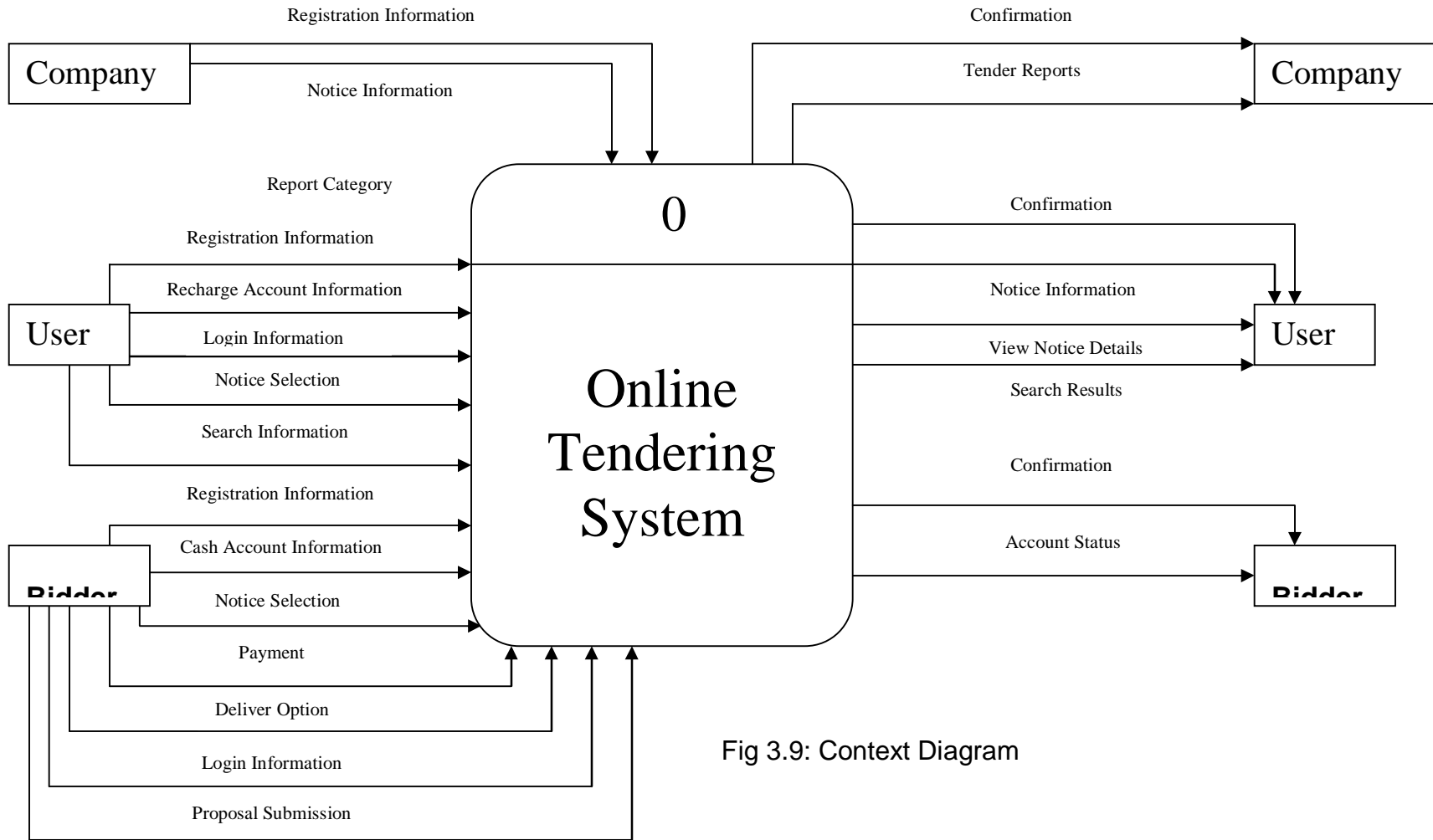


Fig 3.9: Context Diagram

### 3.4.1 Level 0 Data Flow Diagram of View Notice

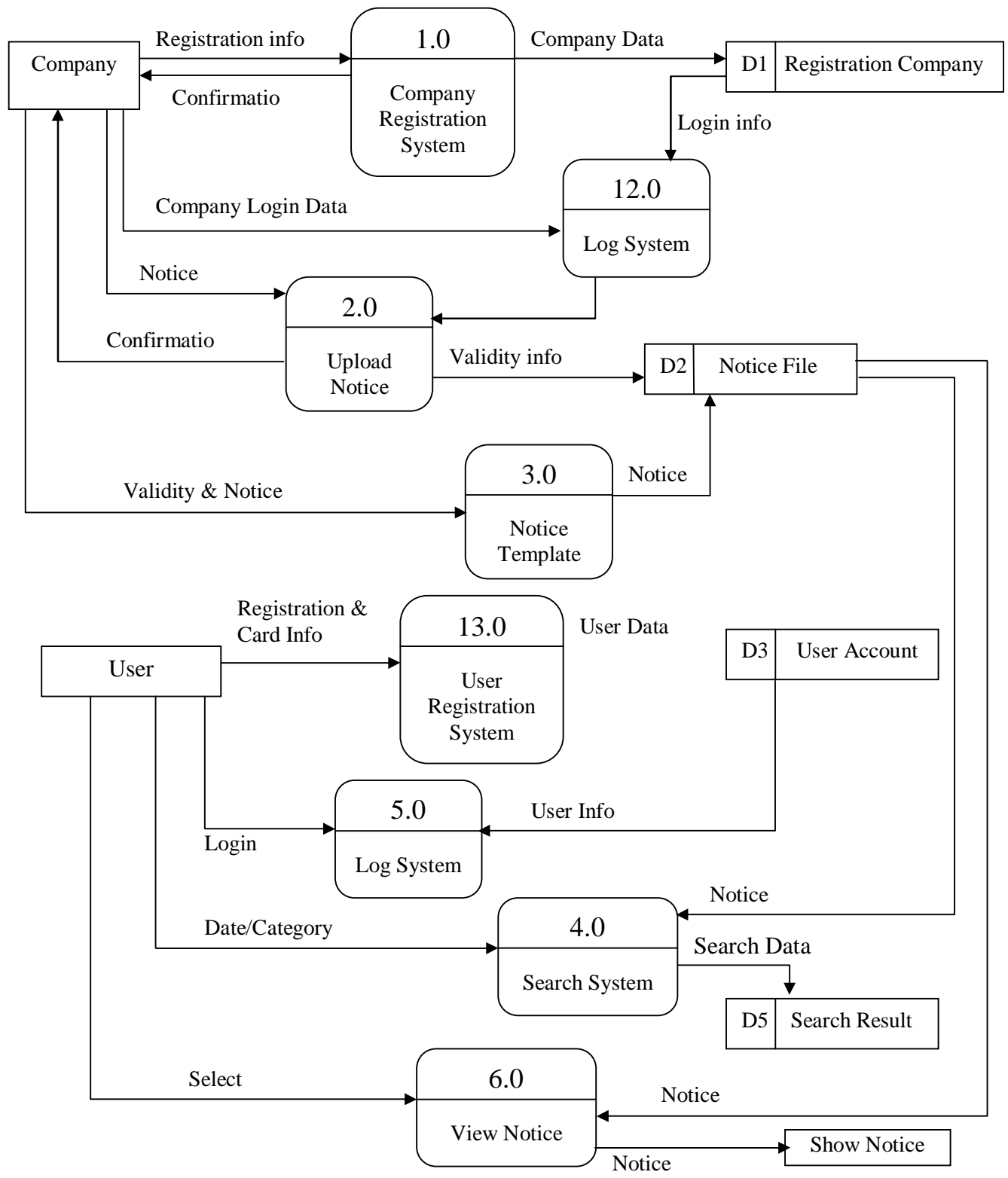


Figure 3.10: Level-0 Data Flow Diagram of View Notice





### 3.4.1.1 Level 1 Data Flow Diagram of View Notice (Upload Notice)

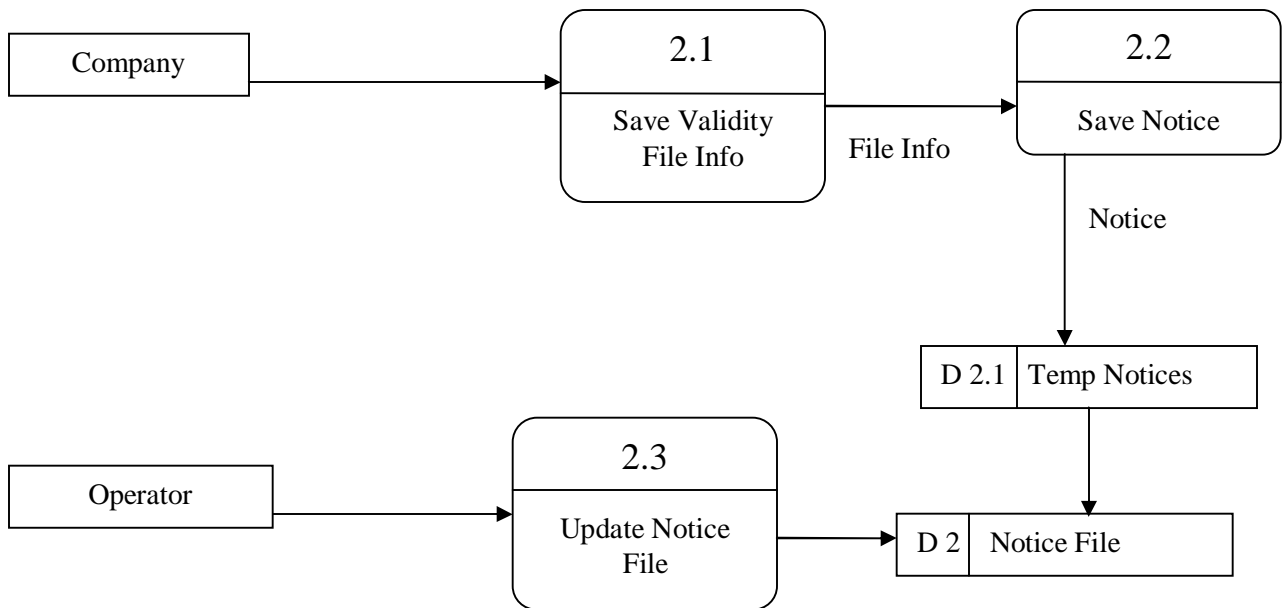


Fig 3.11: Level-1 Data Flow Diagram (Upload Notice) Of View Notice

### 3.4.1.2 Level 1 Data Flow Diagram of View Notice (Registration System)

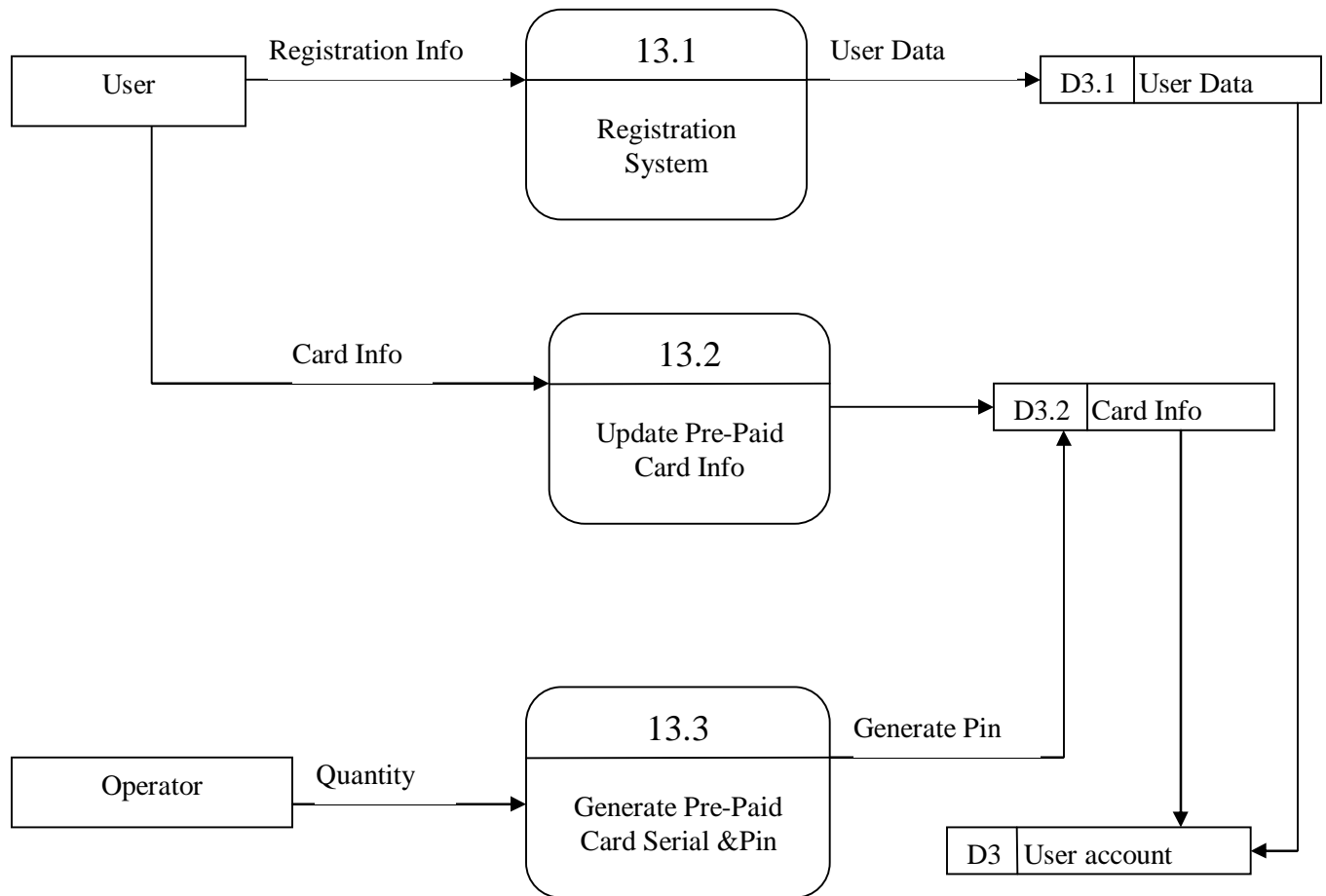


Fig 3.12: Level-1 Data Flow Diagram (Registration System) of View Notice

### 3.4.2 Level 0 Data Flow diagram of Tender Document Delivery

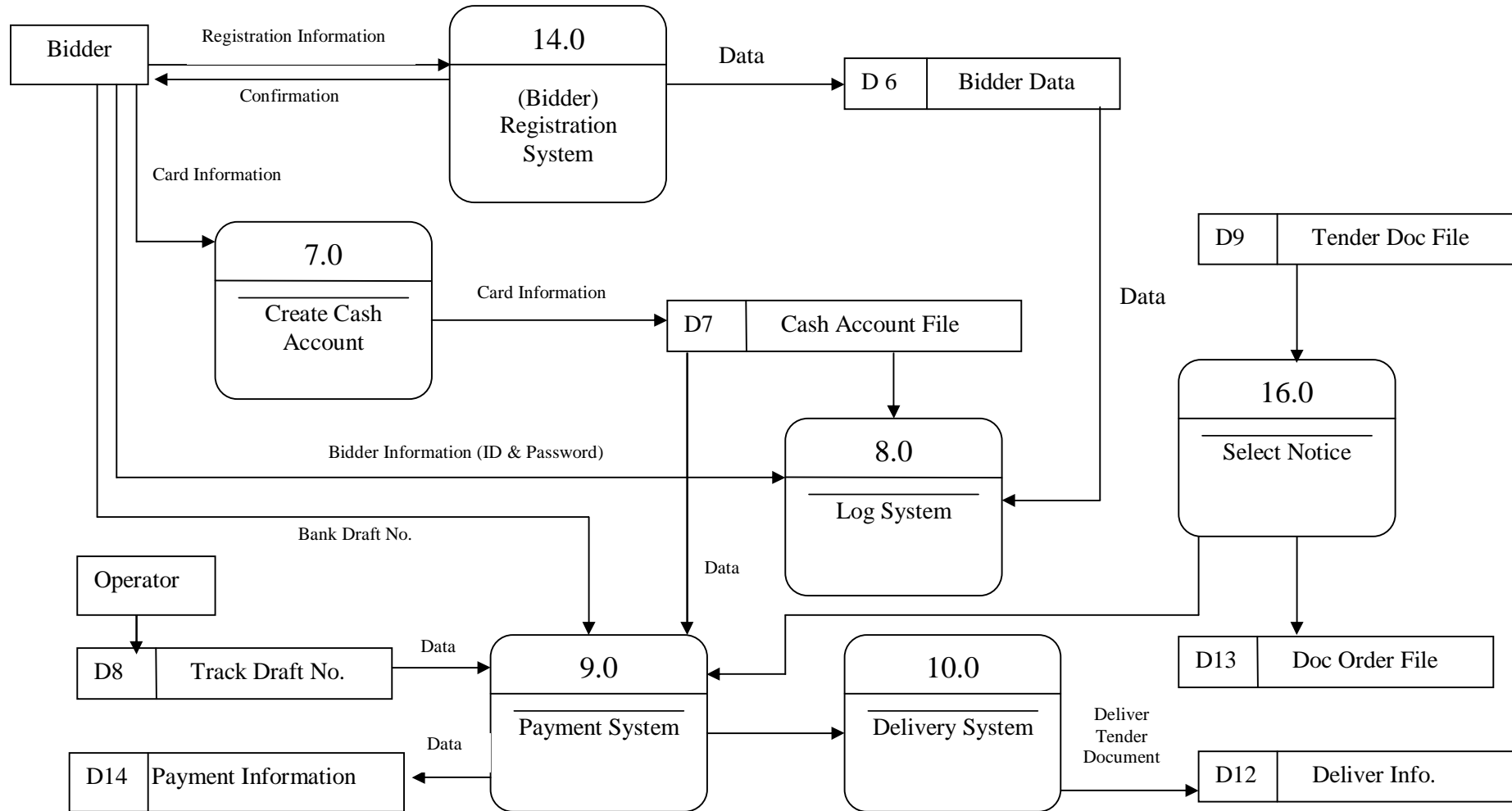


Fig 3.13: Level-0 Data Flow Diagram of Tender Document Delivery

### 3.4.2.1 Level 1 Data Flow Diagram of Tender Document Delivery

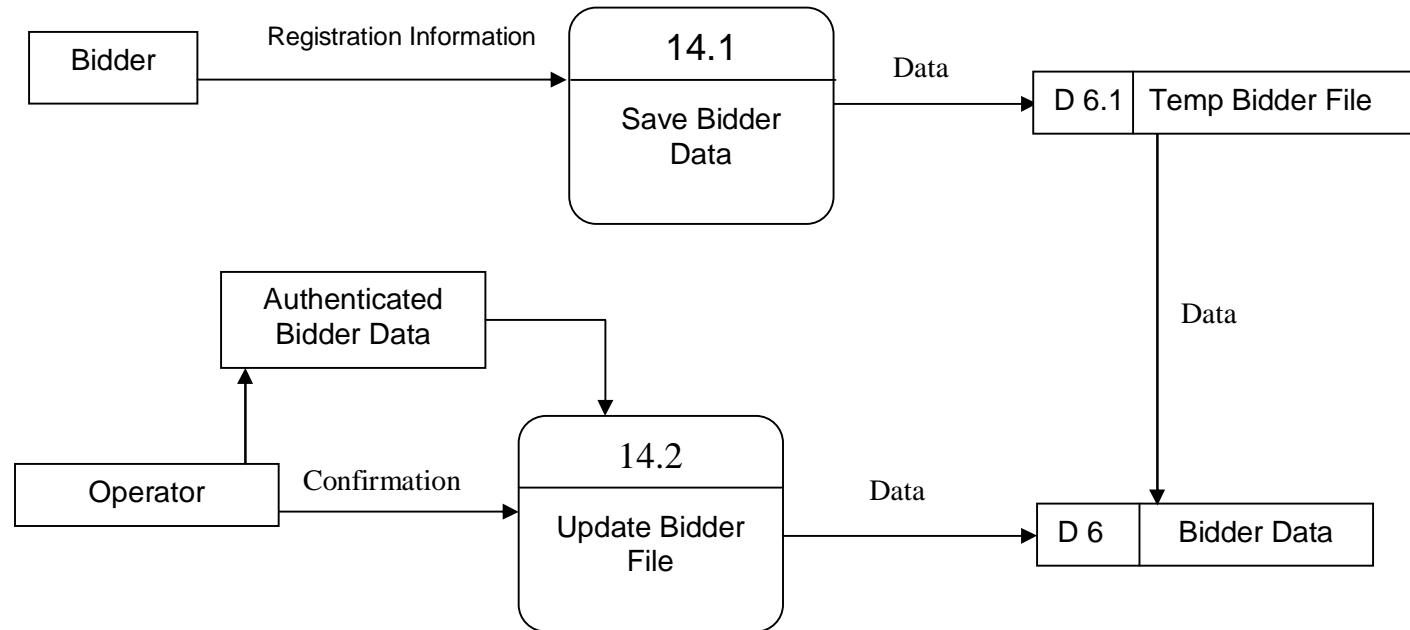


Fig 3.14: Level-1 Data Flow Diagram of Tender Document Delivery

### 3.4.2.1.1 Level 1.1 Data Flow Diagram of Tender Document Delivery

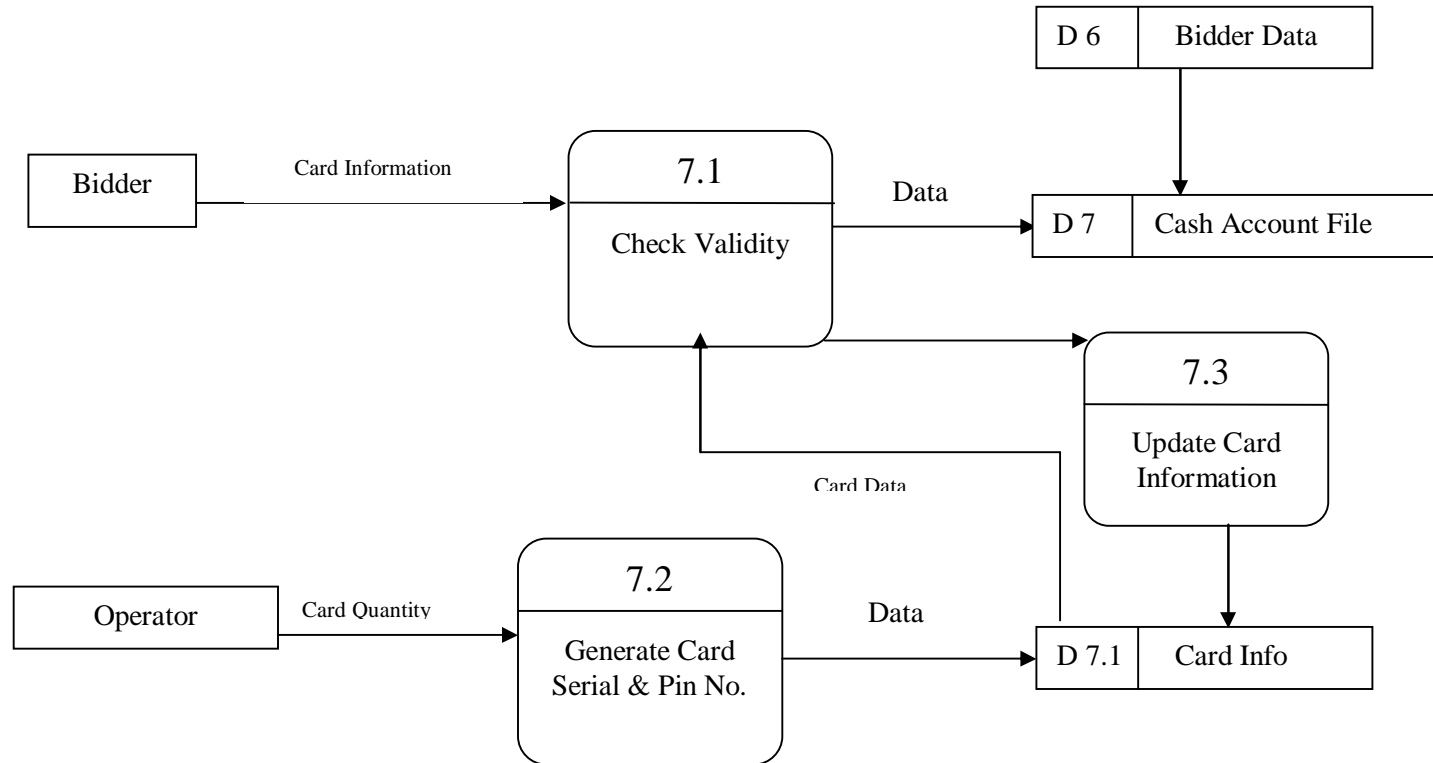


Fig 3.15: Level-1.1 Data Flow Diagram of Tender Document Delivery

### 3.4.2.1.2 Level 1.2 Data Flow Diagram of Tender Document Delivery

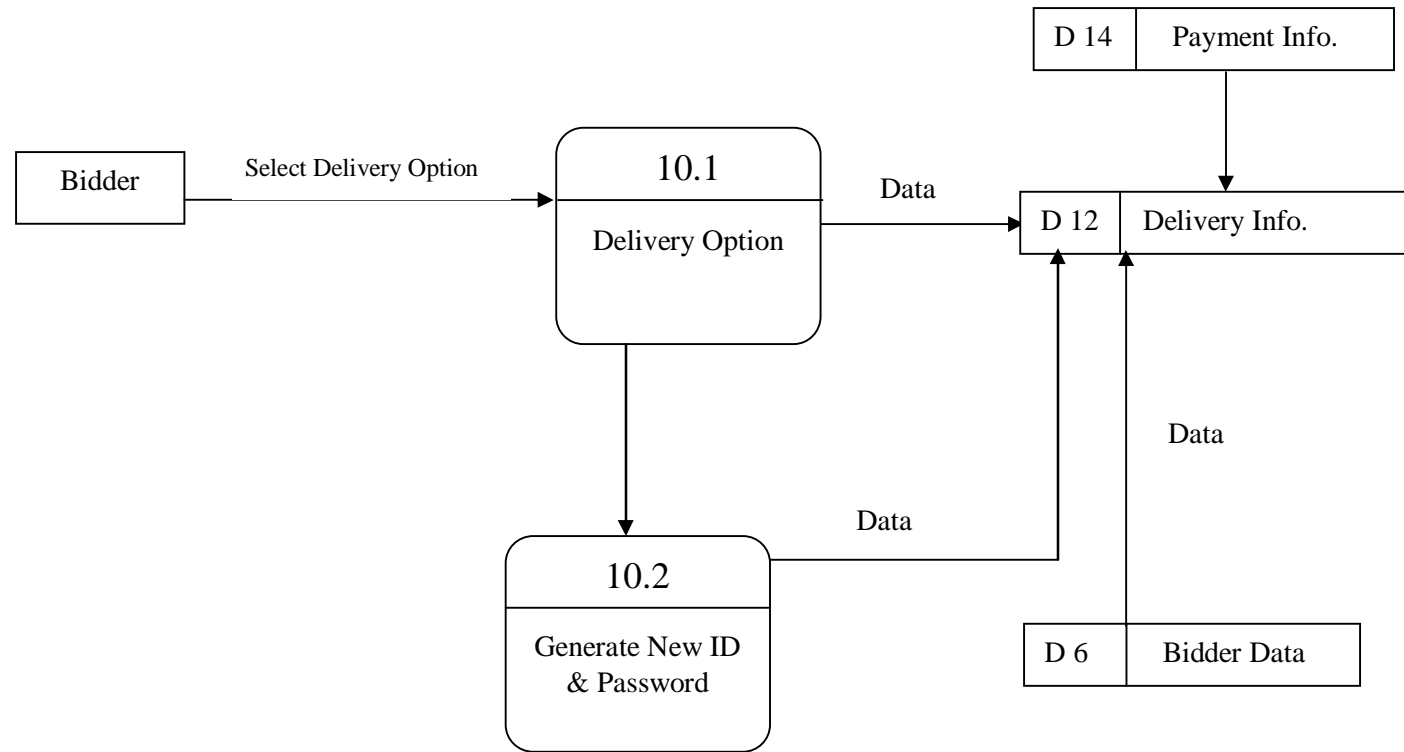


Fig 3.16: Level-1.2 Data Flow Diagram of Tender Document Delivery

### 3.4.3 Level 0 Data Flow Diagram of Tender

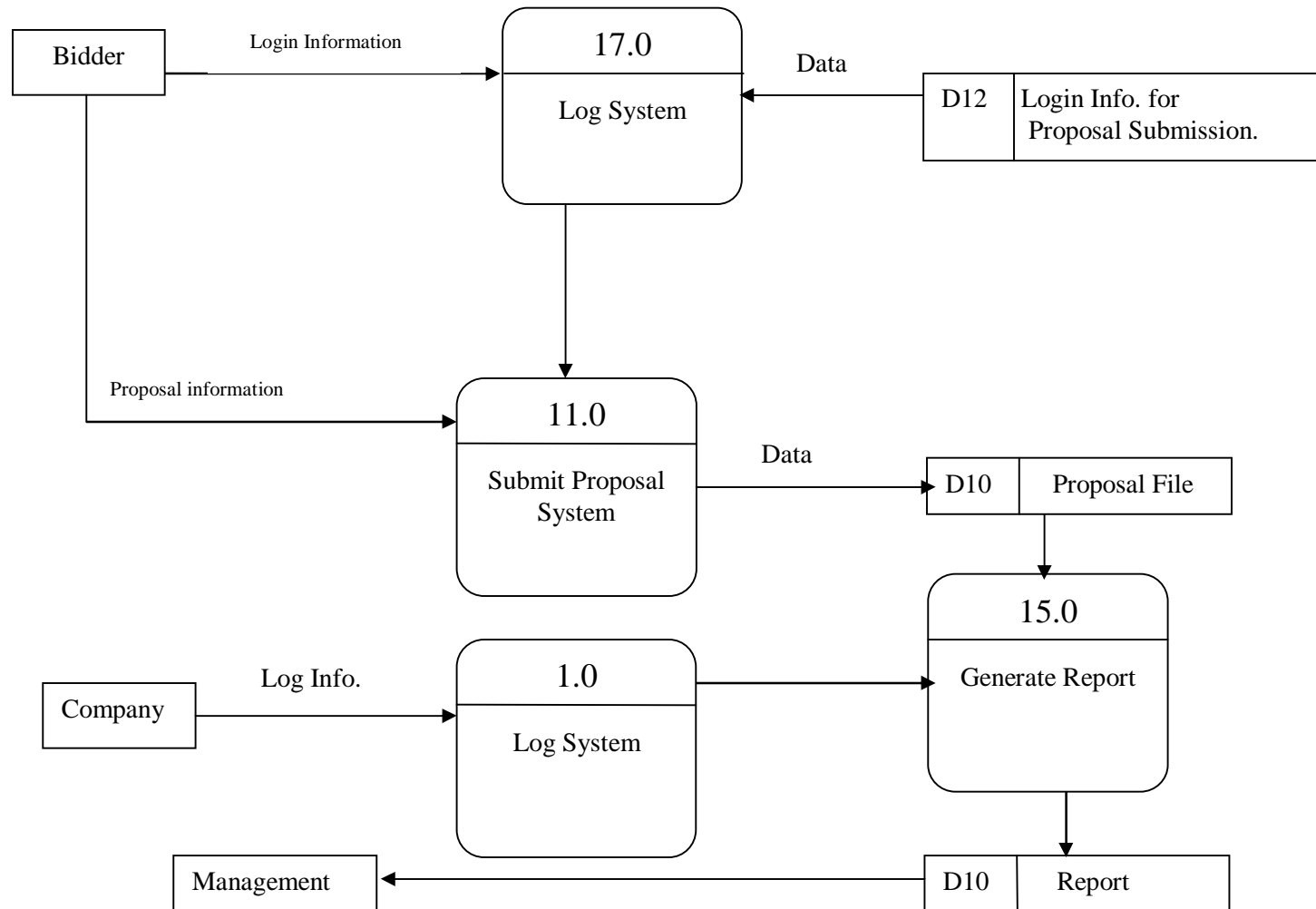


Fig 3.17: Level-0 Data Flow Diagram of Proposal Submission and Processing

### 3.4.3.1 Level 1 Data Flow Diagram of Tender Proposal Submission & Processing

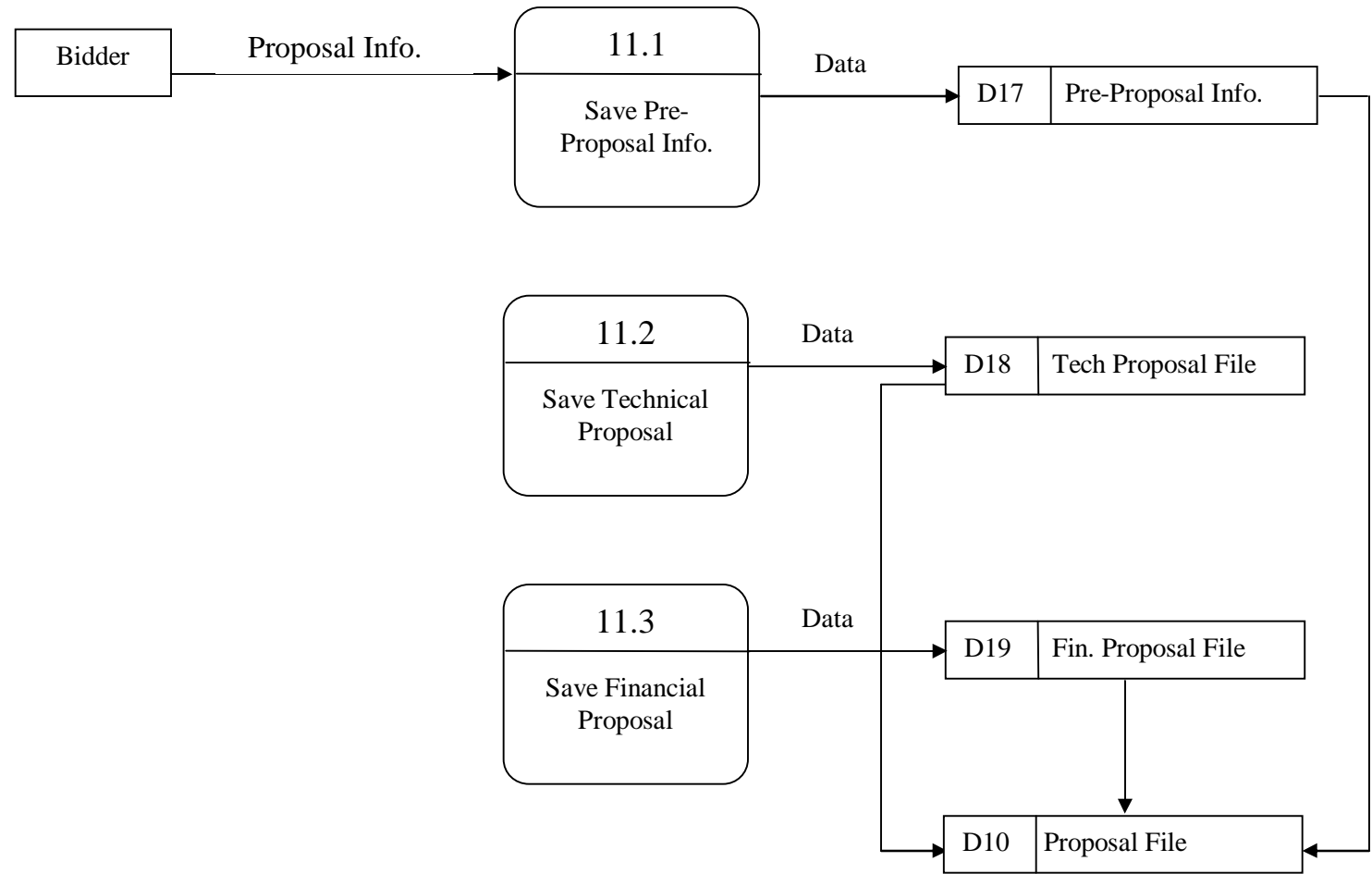


Fig 3.18: Level-1 Data Flow Diagram of Proposal Submission and Processing



### 3.5 Structured English representation of Context Diagram

#### 3.5.1 Process 0: Online tender System

DO

RECEIVE Registration -info from Company  
RECEIVE Notice -info from Company  
SEND Confirmation to the Company  
SEND Tender Reports to the Company  
RECEIVE Registration -info from User  
SEND Confirmation to the User after registration  
GET Account Recharge information from User  
RECEIVE Login Information from the User  
SEND Confirmation  
SELECT Notice Information from User  
VIEW Notice Details  
GET Search Information from the User  
DISPLAY Search Result  
RECEIVE Registration -info from Bidder  
SEND Confirmation to the Bidder  
GET Cash Account Info from the Bidder  
SHOW Account Details to the Bidder  
GET Notice Selection Info from the Bidder  
VIEW Notice Details  
GET Payment Info from the Bidder  
SEND Confirmation to the Bidder  
RECEIVE Delivery Option from the Bidder  
SAVE Delivery Option to the File  
GET Login Info from the Bidder  
SEND Confirmation after login  
RECEIVE Proposal Submission Details from the Bidder

SEND Confirmation to the Bidder after Getting the Hard Copy of the Proposal

UNTIL End- of-Process

### **3.5.2 Process 1.0 Company Registration System**

DO

    READ next Company- information

    BEGIN IF

        IF Company information not Valid

        ADD information to Company-Info-registration

        GENERATE conformation to company

        ELSE send error message

    END IF

UNTIL End-of-file

#### **3.5.2.1 Process 1.1: Log System (Company)**

DO

    READ Next Company Information from Company

    CHECK for the valid Company-info

    BEGIN IF

        IF the Company Information is valid

        THEN DISPLAY generated report to the Company

        ELSE DO nothing

    END IF

UNTIL End-of-file

### **3.5.3 Process 2.0: Upload Notice**

DO

    READ next Notice -info from the Company

    SAVE Notice-to-Notice -file record

    SEND conformation to Company

UNTIL End-of-file

#### **3.5.3.1 Process 2.1: Save validity info**

DO

    READ next tender Pre-notice information

    CHECK validity Information

    SEND information to SAVE notice process

UNTILL End -of -file

#### **3.5.3.2 Process 2.2: Save Notice**

DO

    READ next tender notice-info

    SAVE tender notice-info to temp tender notice-record

UNTILL End -of- file

#### **3.5.3.3 Process 2.3: Update notice file**

DO

    GET permission from Operator

    ADD notice-to-notice file-record

UNTILL End -of-file.

### 3.5.4 Process 3.0 Notice Templates

DO

    READ next Validity-info & Notice data -info

    SAVE notice -info to Notice -file record

UNTIL End-of-file

### 3.5.5 Process 4.0: Search System

DO

    READ next Date /Category

    MATCH notice from notice- file record.

    DISPLAY Search result

UNTIL End-of-file

### 3.5.6 Process 5.0: Log System (User)

DO

    READ next Login-Data-info

    BEGIN IF

        IF Login-Data-info Valid

        ALLOW user to enter into the system

UNTIL End-of -file

### 3.5.7 Process 6.0: View Notice

DO

    READ select notice -info

    FIND selected notice from Notice-file-record

    DISPLAY Notice

UNTIL End-of-file

### **3.5.8 Process 7.0: Create Cash Account**

DO

    READ next card-info

    BEGIN IF

        IF card is not is not equals cash-account-info

        ADD cash card information to cash account-record

    END IF

UNTIL End-of-file

#### **3.5.8.1 Process 7.1 Cheek Validity**

DO

    READ next Cash card info from Bidder

    BEGIN IF

        IF card info is valid

        THEN SAVE cash card information to cash account-info-record

        CALL Update card-info process

    END IF

UNTIL End-of-file

#### **3.5.8.2 Process 7.2 Generate Card SL & Pin no.**

DO

    READ Quantity of Cash Card to be needed from the operator

    GENERET Cash Card Pin no

SAVE Pin no to Cash card-info-record  
UNTIL End-of-File

### **3.5.8.3 Process 7.3: Update Card Info**

DO  
    READ next Cash Card Information  
    SAVE Card information to Card info-record  
UNTL End-of-file

### **3.5.9 Process 8.0: Log system (Bidder)**

DO  
    READ next Bidder-info  
    FIND Bidder info with Bidder data  
    BEGIN IF  
        IF cash card account-info is valid  
        THEN call select notice process  
    END IF  
UNTIL End-of-file

### **3.5.10 Process 9.0: Payment system**

DO  
    SELECT notice  
    READ payment system  
    SELECT CASE  
        CASE 1 (payment by cash card)

DEDUCT amount from cash card  
CASE 2 (payment through Draft)  
MATCH Draft no with bidder draft- record  
END CASE  
SAVE Payment information to payment info –record  
CALL Delivery System for delivery option  
UNTIL End-of-file

### **3.5.11 Process10.0 Delivery system**

DO  
GET payment process Info  
SELECT Delivery option  
SELECT CASE  
CASE 1 (by post)  
SEND document to Bidder by post  
  
CASE 2 (by download)  
ALLOW user to download document  
  
CASE 1 (by mail)  
SEND document to Bidder through e-mail  
  
END CASE  
SAVE delivery information to delivery info-record  
UNTIL End-of-File

**3.5.11.1 Process 10.1: Deliver Option**

DO

    READ next Delivery option selected by bidder

    SEND Delivery option to deliver info-record

UNTIL End-of-file

**3.5.11.2 Process 10.2: Generate New ID & Password**

DO

    GET ID & password info from bidder

    GENERATE new ID& Password

    SAVE ID &Pass ward to deliver info record.

UNTILL END-of-File.

**3.5.12 Process 11.0: Submit Proposal System**

DO

    READ Proposal- Information from Bidder

    GET Proposal from Bidder

    SAVE Information to Data repository

UNTIL End-of-file

**3.5.12.1 Process 11.1: Save Pre-Proposal Info**

DO

    READ Proposal Info from Bidder

    SAVE Proposal Information to pre-proposal info-record



UNTIL End-of-file

### **3.5.12.2 Process 11.2: Save Technical Proposal**

DO

    READ Technical Proposal from Bidder

    SAVE Technical Proposal to Technical proposal info-record

UNTIL End-of-file

### **3.5.12.3 Process 11.3: Save Financial Proposal**

DO

    READ Financial Proposal from Bidder

    SAVE Financial Proposal to Financial-proposal info-record

UNTIL End-of-file

### **3.5.13 Process 12.0: Log System**

DO

    READ next company Login data -info

    BEGIN IF

        IF Company login data -info is valid

        THEN ACCESS Company to Upload Notice

    END IF

UNTIL End-of-file

### **3.5.14 Process 13.0: User Registration System**

```
DO
  READ Next Registration & card -info
  BEGIN IF
    IF Registration-info is not equals User Account
    THEN ADD User-data to User-record- info
  UNTIL End-of-file
```

#### **3.5.14.1 Process 13.1 Registration System (User)**

```
DO
  READ next Registration-info
  BEGIN IF
    IF Registration Info is not in User data -info
    ADD Registration info to User data -info
  END IF
UNTILL END -of -file
```

#### **3.5.14.2 Process 13.2 Update Prepaid Card -info**

```
DO
  READ Next card -info
  BEGIN IF
    IF Card -info is valid
    INSERT Card info to card-info-Record
  END IF
UNATILL End -of -file.
```

### 3.5.14.3 Process 13.3: Generate Prepaid Card SL & Pin

DO

    READ amount of SL & Pin needed from Operator

    GENERATE Pin & SL number

    ADD new generated Card -info to Card info-record

UNTIL End-of-file

### 3.5.15 Process 14.0: Registration System (Bidder)

DO

    READ Next Registration -info

    BEGIN IF

        IF Registration -info is not equals Bidder Data Record

        THEN ADD Bidder info to Bidder Data record

        GENERATE conformation to Bidder

    END IF

UNTIL End-of-file

#### 3.5.15.1 Process 14.1: Save Bidder Data

DO

    READ next Bidder-registration-info

    BEGIN IF

        IF Bidder registration information is not equals Temp-bidder-info

        THEN ADD Bidder info to Temp bidder-info-record

    END IF

UNTIL End-of-File

**3.5.15.2 Process 14.2: Update Bidder File**

DO

CHECK Validity of Bidder data-Info

GET Confirmation of Bidder data-info from the operator

SAVE Bidder data file to bidder data-info

UNTIL End-of-file

**3.5.16 Process 15.0: Generate Report**

DO

GET Proposal Information

CREATE report from the information

SAVE the report

UNTIL End-of-file

Thorough Description

**3.5.17 Process 16.0 Select Notice**

DO

READ Selected Notice from Tender doc -record

ENTER Payment Process for payment option

SAVE document delivery record to doc order-list

UNTIL End-of-File

### 3.5.18 Process 17.0: Log System (Bidder)

DO

    READ Next Bidder Login Information from Bidder

    CHECK for the valid Bidder-info

    BEGIN IF

        IF the Bidder Information is valid

        THEN SUBMIT the Proposal

        ELSE DO nothing

    END IF

UNTIL End-of-file

## 3.6 Thorough Description

### 3.6.1 Level-0 of View Notice

1. At first any company sends information to register itself with the system.
2. All the company information then saved in a company info file and allow user to login with the system
3. After Successful registration, sends a confirmation to the user
4. Now company sends notice information to upload a notice and after checking the validity of the notice it's save the notice to the notice info file and send a confirmation message to the company that their notice has been uploaded
5. If company wants to publish notice, then they fill the notice template and check if the notice is valid or not. Only the valid template notice will be saved in a notice info file.
6. Before show any notice, user have to register him/her self with the registration system first. After successful registration the user will be allowed to login with the system.

7. The user now allow to search the notice in Date or Category base and get their desired result from notice file info and save it in a search result info file to display notice
8. If any user wants to view the notice directly without searching the notice then get it directly from the notice info file and show the user

#### **3.6.1.1 Level-1 Upload Notice**

1. Company will send the pre notice info and after checking the validity of the notice, the information will be saved to a temporary notice info file
2. After confirmation from the operator, the notice will be publish in the website and save in a notice file

#### **3.6.1.2 Level-1.1 Registration System**

1. Operator will give the amount of total cash card to be generated and the Card generation process will generate Pin and card serial no.
2. After generation pin and card serial no, save card information to Card info file
4. Incase of registration new user all the user, user will give the information and all the info will be saved in user data info file
3. To View notice, user will give the cash card serial and pin no and the update prepaid card info process will check the validity of the cash card. If card info is valid then user are allowed to view the notice.

### 3.6.2 Level-0 Tender Document Delivery

The Bidder can download the tender documents of his choice for which he will be charged some amount through his Cash card.

1. Bidder send information to register with the system and all the bidder information will be saves to Bidder data info file. After success full registration the bidder will get confirmation message from registration system.
2. To get document, the bidder can use cash card or bank draft and for this Bidder has to send his card or bank draft information
3. Before starting the transaction bidder have to login with his valid ID and Password.
4. After successful login, bidder will select the notice that he wants to get.
5. For getting notice, Bidder has to select the payment option to pay the document .In case of use of cash card; card info will be check with cash account file. If the card info is valid, then the bidder will chose the delivery option from the delivery system.
6. After choosing one particular option all the delivery information will save in a delivery info file
7. Incase of bank draft as a payment option, the operator will check the validity of the bank draft info .if the draft info is valid then bidder will choice the delivery option and all the delivery information will be saved in delivery info

### **3.6.2.1 Level-1 Tender Document Delivery**

1. Bidder sends all the information to register with the system.
2. All the Bidder information will save in a temporary Bidder file info.
3. Operator will check the bidder information .If bidder is valid, operator enable bidder and all the bidder information will be saved from temporary bidder file to permanent bidder data info

#### **3.6.2.1.1 Level-1.1 Tender Document Delivery**

1. Operator will give the numbers of card to be generated and all the generated pin and serial number will be saved in a card info file.
2. To recharge account, Bidder enters the card information and check the card info with card info file. When the card info is valid then call the update information process and save information to the card info file.
3. Bidder send Cash card info and the valid information will be save in cash account file

#### **3.6.2.1.2 Level-1.2 Tender Document Delivery**

1. Bidder will select the delivery option to get the document and the information will be saved in delivery info file.



2. After buying the document, the bidder will get a new ID and Password and save this info to the delivery info file.
3. When the bidder will submit the proposal then this new generated id and password will be checked with bidder data info taken from bidder data info file.

### **3.6.3 Level-0 Proposal Submission & Processing**

1. Bidder gives all login information to the system and the log system will check the information with login info file. When the login info is valid then the Bidder can enter into the submit proposal system.
2. Bidder will send the proposal to submit proposal info and all those proposals will be saved in a proposal file record
3. The generate report system will get the proposal from the proposal file record and generate report in a report file
4. The company will login with the system and enter into generate report system to see the list of bidder participating in response to their notice.
5. After all the management will get the generated report from the report file.

#### **3.6.3.1 Level-1 Proposal Submission & Processing**

1. Bidder will send proposal info and the information will be saved in Pre-Proposal Info.

2. Bidder will submit the technical proposal and all the proposal info will be saved in technical proposal info file
3. Bidder will submit the financial proposal and all the proposal info will be saved in technical proposal info file
4. All these pre-proposal info, technical proposal and financial proposal info will be saved in a common proposal file

### **3.7 Prototype Design of the System**

#### **3.7.1 Form Name: User Login**

User: normal user

Purpose:

- In this form user can login with the system by giving his valid id and password into log id and log password field.
- In case of new user he/she has to make new registration to enter into the system by clicking registration button.
- Current User can also recharge his/her account through refill button.
- User can terminate the system by clicking exit button.

System: Online Tendering

Environment: Windows

The image shows a Windows-style application window titled "UserForm2". On the left side, there are two text input fields: "Log ID" and "Log Password". Below these fields are three buttons: "LOG IN", "EXIT", and "NEW REGISTRATION". On the right side, there are two large rectangular panels. The top panel is titled "New Registration" and contains a "Registration" button. The bottom panel is titled "Refill Account" and contains a "Refill" button.

Fig 3.19: User Login Form

### 3.7.2 Form Name: Bidder Login

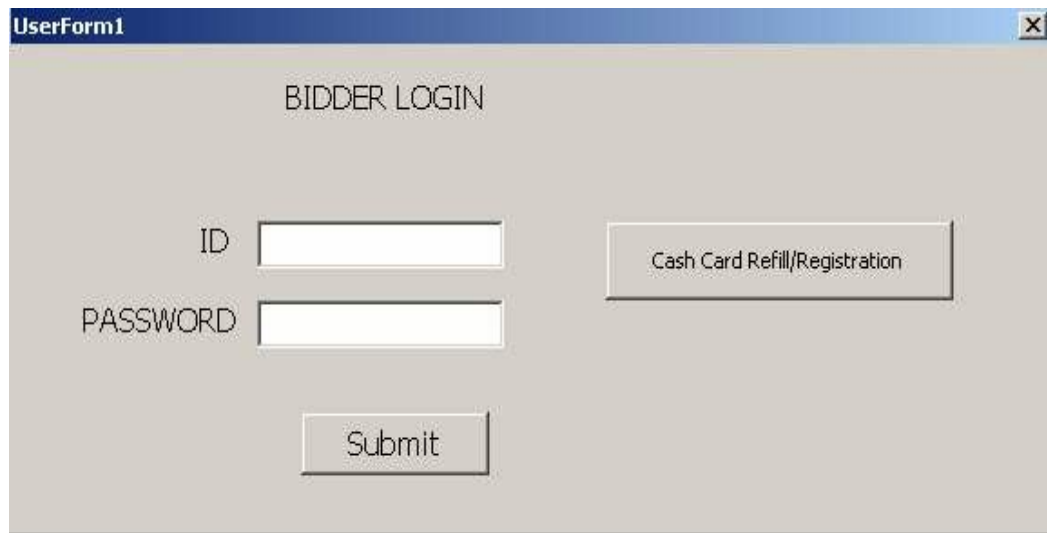
User: Bidder

Purpose:

- In this form Bidder can login with the system by giving his valid id and password into log id and log password field.
- The current Bidder can also refill his /her cash card by clicking Cash card refill button
- In case of new Bidder they can also register them self with the help of registration button

System: Online Tendering

Environment: Windows



The image shows a screenshot of a software window titled "UserForm1". The window has a blue title bar with a close button (X) in the top right corner. The main content area is light gray and contains the text "BIDDER LOGIN" centered at the top. Below this, there are two input fields: one labeled "ID" and one labeled "PASSWORD". To the right of these fields is a button labeled "Cash Card Refill/Registration". Below the "ID" and "PASSWORD" fields is a button labeled "Submit".

Fig 3.20: Bidder Login Form

### 3.7.3 Form Name: Company Registration

User: Company

Purpose:

- Company can register them with the help of the following form.
- Company input their information of the following Sl.no, PIN, ID, Password, Name, Address, Company Type, E-mail field and click on submit button to register them with the system.

System: Online Tendering

Environment: Windows

The image shows a screenshot of a Windows application window titled "UserForm1". The window contains a "REGISTRATION FORM" with the following fields and a submit button:

- SL. NO:
- PIN:
- ID:
- PASSWORD:
- NAME:
- ADDRESS:
- COMPANY TYPE:
- E-MAIL:
- SUBMIT:

Fig 3.21: Company Registration Form

#### 3.7.4 Form Name: Bidder Registration

User: Bidder

Purpose:

- Before getting their schedule, at first Bidder has to register him/herself
- Bidder supply their information in the ID, Password, Company Name, License no, Address, Phone number, Email address field and click on the submit button to register with the system.

System: Online Tendering

Environment: Windows



The image shows a screenshot of a Windows application window titled "UserRegistration". The window contains a form titled "BIDDER REGISTRATION FORM". The form has seven input fields, each with a label to its left: "ID", "PASSWORD", "COMPANY NAME", "LICENSE NO", "ADDRESS", "PHONE NO", and "EMAIL". Below these fields is a "SUBMIT" button. The window has a standard Windows title bar with a close button (X) in the top right corner.

Fig 3.22: Bidder Registration Form

### 3.7.5 Form Name: Add Notice

User: Company

Purpose:

- Company can add their notice by using this form
- Company will give the Category of the notice in category field, the name of the notice in notice field ,the price of the notice in Price field ,and the validation of the notice in the Valid Till field .
- After giving all the information ,company can submit their notice by clicking the submit button
- Company also can exit the form through exit button

System: Online Tendering

Environment: Windows



The image shows a software window titled "Add Notice". Inside the window, there are four input fields and two buttons. The first field is a dropdown menu labeled "CATEGORY". The second field is a text box labeled "NOTICE NAME". The third field is a text box labeled "Price". The fourth field is a text box labeled "VALID TILL" with the placeholder text "MONTH-DAY-YEAR". Below the input fields are two buttons: "Submit" and "EXIT".

Fig 3.23: Add Notice Form

### 3.7.6 Form Name: Category Select

User: Bidder

Purpose:

- This form allow Bidder to get information of their selected field of interest
- Construction button holds all the construction related tender information. So by clicking this button, bidder can get their construction related information here.
- House hold button contains all the Households related tender information. So by clicking this button, interested bidder can get their construction related information here.

- Entertainment button holds all the entertainment related tender information. So by clicking this button, interested Bidder can get their construction related information here.
- Others button holds all other tender information. So by clicking this button, Interested Bidder can get their construction related information here.
- By clicking the exit button bidder can safely terminate from this form.

System: Online Tendering

Environment: Windows

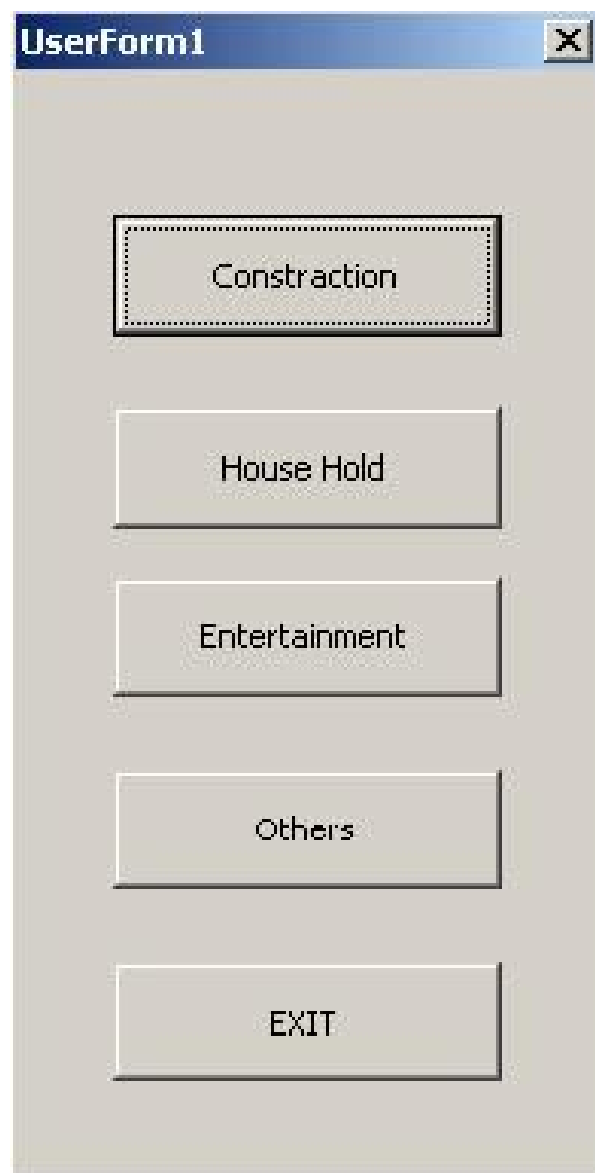




Fig 3.24: Category Select Form

### 3.7.7 Form Name: Bidder Payment

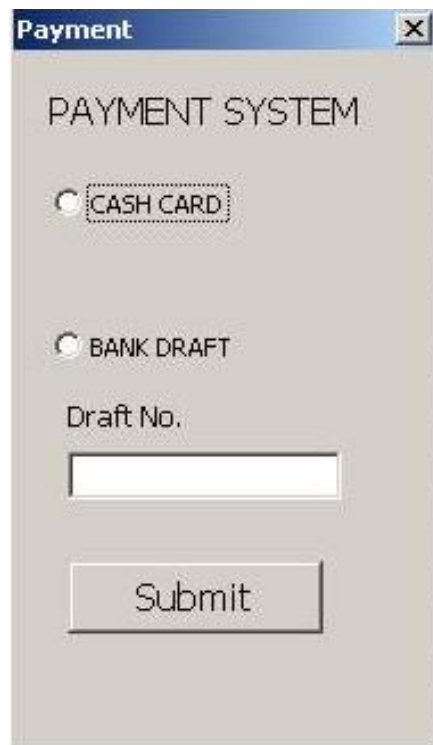
User: Bidder

Purpose:

- This form allows Bidder to select payment option for tender document delivery.
- Bidder select Cash Card button if they want to pay through cash card.
- If the Bidder want to pay through Bank Draft then the Bidder Select Bank draft option and supply their Bank Draft no to Draft No field
- After choosing any option, Bidder click on submit button to accomplish the payment system

System: Online Tendering

Environment: Windows



The image shows a screenshot of a Windows application window titled "Payment". The window has a standard Windows title bar with a close button (X) in the top right corner. The main content area of the window is titled "PAYMENT SYSTEM". Below the title, there are two radio button options: "CASH CARD" and "BANK DRAFT". The "CASH CARD" option is currently selected, indicated by a small circle next to the text. Below these options, there is a text label "Draft No." followed by an empty rectangular input field. At the bottom of the form, there is a rectangular button labeled "Submit".

Fig 3.25: Bidder Payment Form

### 3.7.8 Form Name: Receive Document

User: Bidder

Purpose:

- Tender document can be get many different way
- Bidder can get document through Download, Email, Fax, or by post.
- This form allows Bidder to select any one of the options and get the document in their desired way.

System: Online Tendering

Environment: Windows



The image shows a screenshot of a Windows application window titled "UserForm1". The window contains a form titled "Receive Document". The form has four radio button options: "Download", "E-Mail", "Fax", and "Post". The "Download" option is selected, indicated by a small square next to the radio button. Below the options is a "Submit" button.

Fig 3.26: Receive Document Form

### 3.7.9 Form Name: Cash Refill

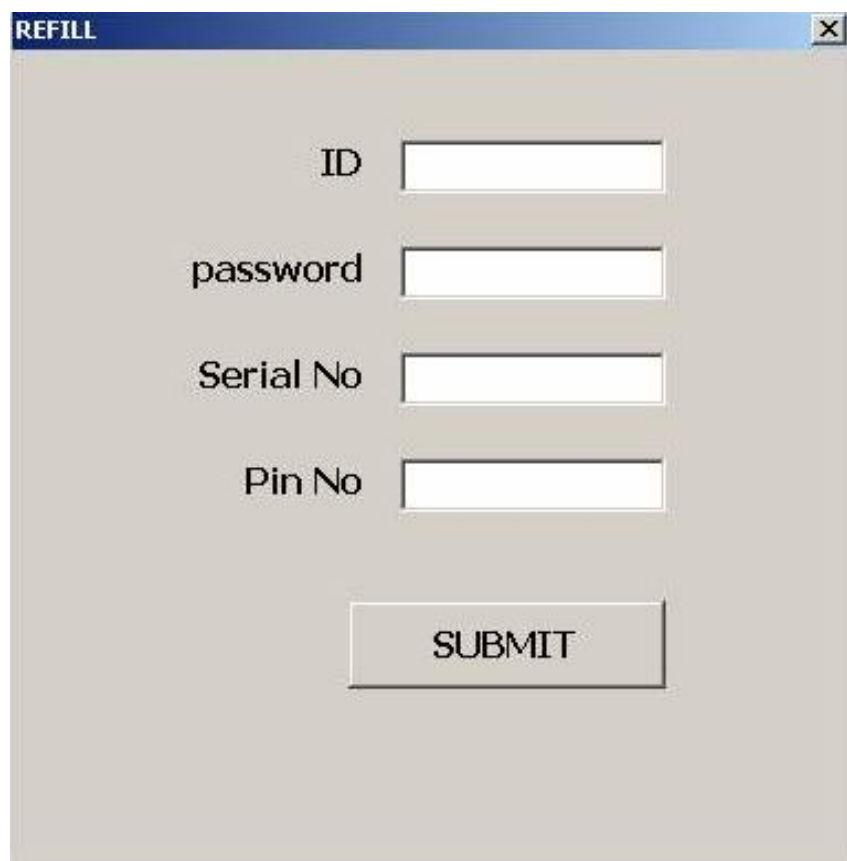
User: Normal User

Purpose:

- This form allow user to refill their cash card.
- User will supply information of Id, Password, Serial No, Pin No field and click on submit button to recharge their account.

System: Online Tendering

Environment: Windows



The image shows a screenshot of a Windows application window titled "REFILL". The window has a blue title bar with a close button (X) in the top right corner. The main content area is light gray and contains four text input fields stacked vertically. Each field is preceded by a label: "ID", "password", "Serial No", and "Pin No". Below these fields is a rectangular button with the text "SUBMIT" centered on it.

Fig 3.27: Cash Refill Form

### 3.7.10 Form Name: Proposal Submission


User: Bidder

Purpose:

- Bidder can submit their proposal with help of this form
- Bidder input their Id, Category and Notice number and click on the submit button to submit their proposal

System: Online Tendering

Environment: Windows



The image shows a screenshot of a web browser window titled "Proposal Submit". The window contains a form titled "PROPOSAL SUBMISSION". The form has three input fields: "ID" with the value "1", "CATEGORY", and "NOTICE NUM". Below the input fields is a "SUBMIT" button.

Fig 3.28: Proposal Submission Form

### 3.7.11 Form Name: Notice Template1

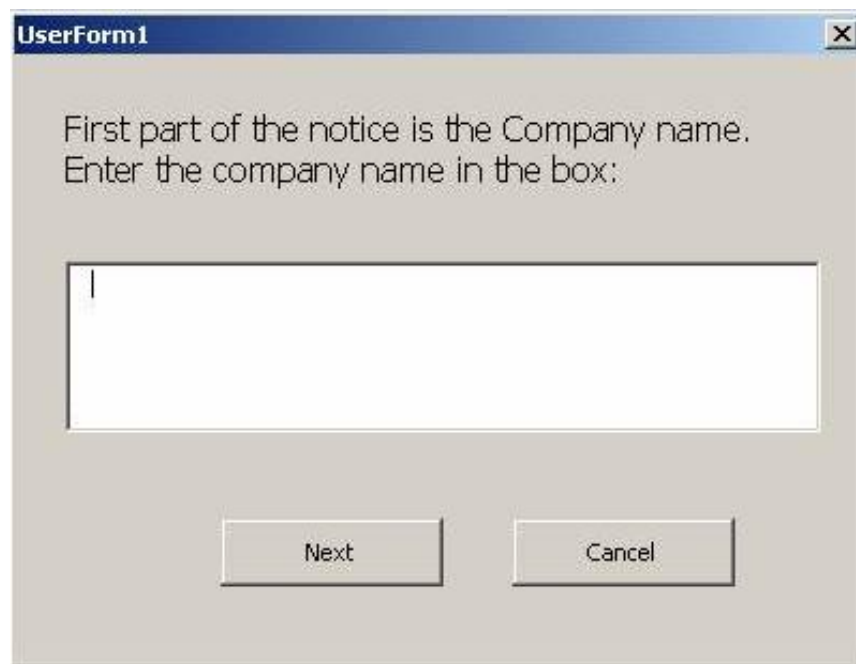
User: Company

Purpose:

- Company can create their notice with the help of notice template
- Company give the company name and click on the next button to go for the next part of the notice template

System: Online Tendering

Environment: Windows



The screenshot shows a standard Windows application window titled "UserForm1". The window has a light gray background and a blue title bar with a close button (X) in the top right corner. The main content area contains the following text: "First part of the notice is the Company name. Enter the company name in the box:". Below this text is a large, empty rectangular text input field. At the bottom of the window, there are two buttons: "Next" on the left and "Cancel" on the right. Both buttons are rectangular with a thin black border and a light gray fill.

Fig 3.29: Notice Template Form 1

### 3.7.12 Form Name: Notice Template2

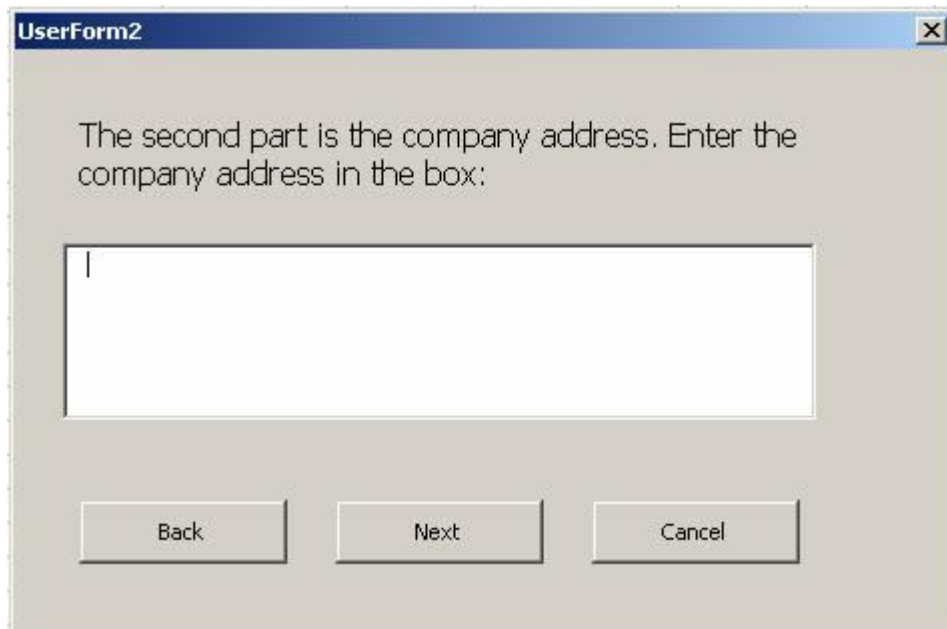
User: Company

Purpose:

- Company can create their notice with the help of following notice template
- Company give their company address and click on the next button to go for the next part of the notice template
- Company also uses the back button if they made any mistake in the previous template

System: Online Tendering

Environment: Windows



The screenshot shows a standard Windows application window titled "UserForm2". The window has a light gray background and a blue title bar with a close button (X) in the top right corner. The main content area contains the following text: "The second part is the company address. Enter the company address in the box:". Below this text is a large, empty text input field with a vertical cursor at the beginning. At the bottom of the form, there are three buttons: "Back", "Next", and "Cancel", arranged horizontally from left to right.

Fig 3.30: Notice Template Form 2

### 3.7.13 Form Name: Notice Template3

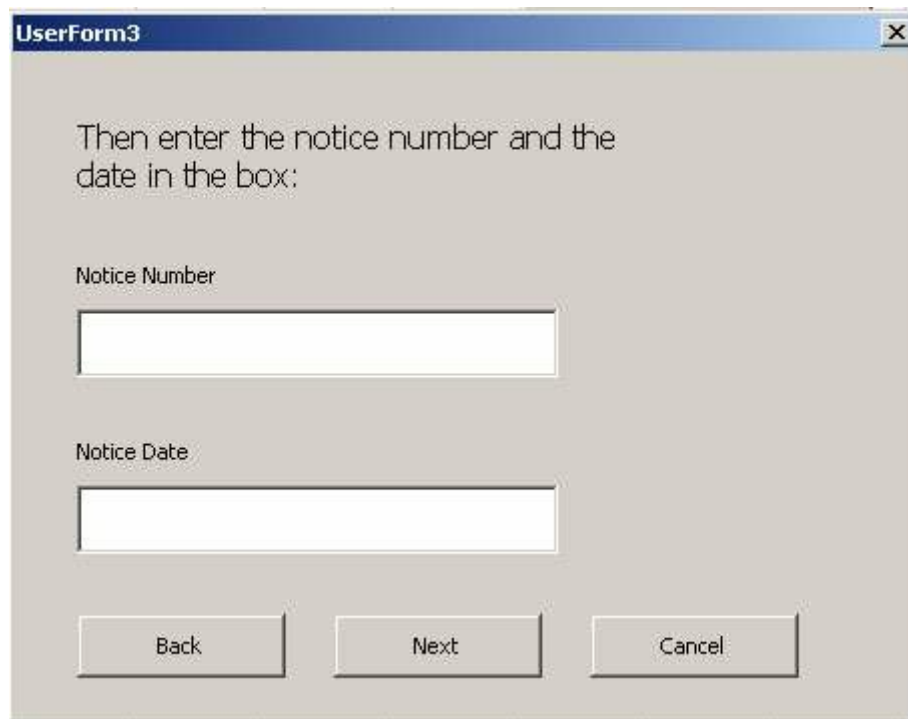
User: Company

Purpose:

- Company can create their notice with the help of notice template
- Company put their notice number and notice information in the following box and click on the next button to go for the next part of the notice template
- Company also uses the back button if they made any mistake in the previous template.

System: Online Tendering

Environment: Windows



The image shows a Windows-style dialog box titled "UserForm3". The dialog has a light gray background and a blue title bar with a close button (X) in the top right corner. The main content area contains the following elements:

- Text: "Then enter the notice number and the date in the box:"
- Label: "Notice Number" above a white text input field.
- Label: "Notice Date" above a white text input field.
- Buttons: Three buttons are located at the bottom of the dialog: "Back", "Next", and "Cancel".

Fig 3.31: Notice Template Form 3

### 3.7.14 Form Name: Notice Template4

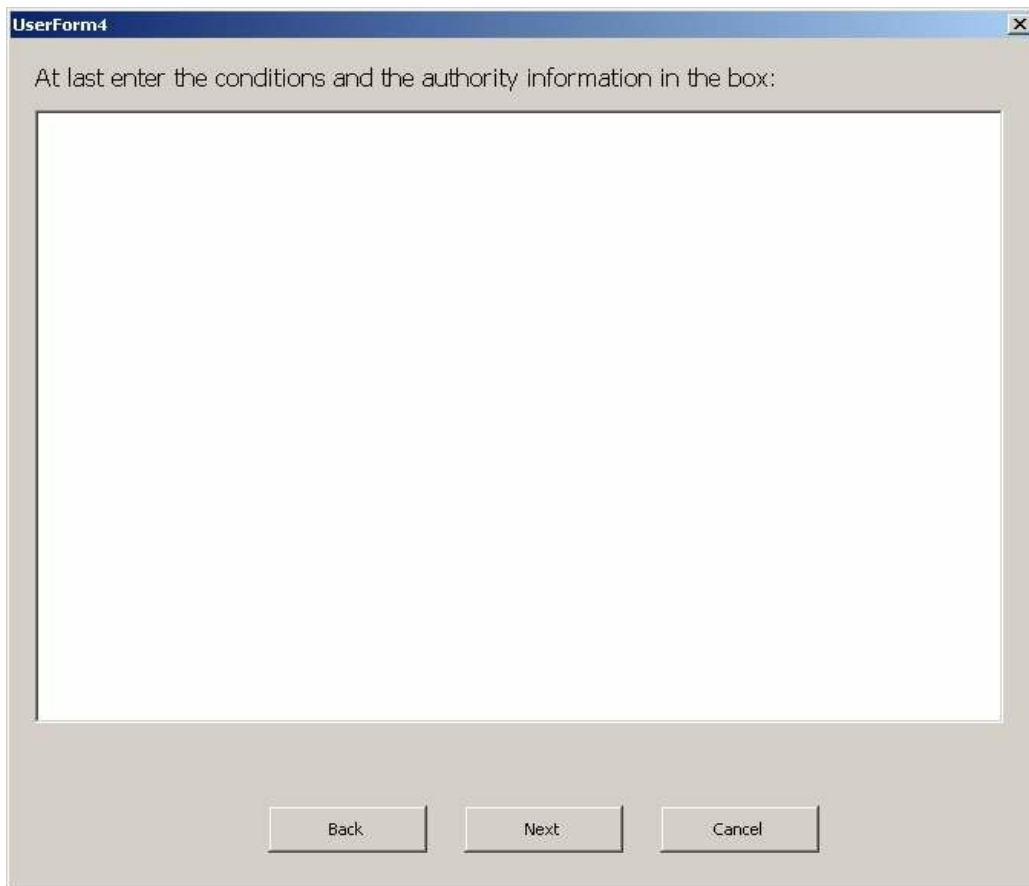
User: Company

Purpose:

- Company can create their notice with the help of notice template
- Company put the conditions and authority information in the following box and click on the next button to go for the next part of the notice template
- Company also uses the back button if they made any mistake in the previous template.

System: Online Tendering

Environment: Windows



The image shows a screenshot of a Windows application window titled "UserForm4". The window has a standard Windows-style title bar with a close button (X) in the top right corner. The main content area of the window contains the text "At last enter the conditions and the authority information in the box:" followed by a large, empty rectangular text input box. At the bottom of the window, there are three buttons: "Back", "Next", and "Cancel".

Fig 3.32: Notice Template Form4



### 3.7.15 Form Name: Notice Template5

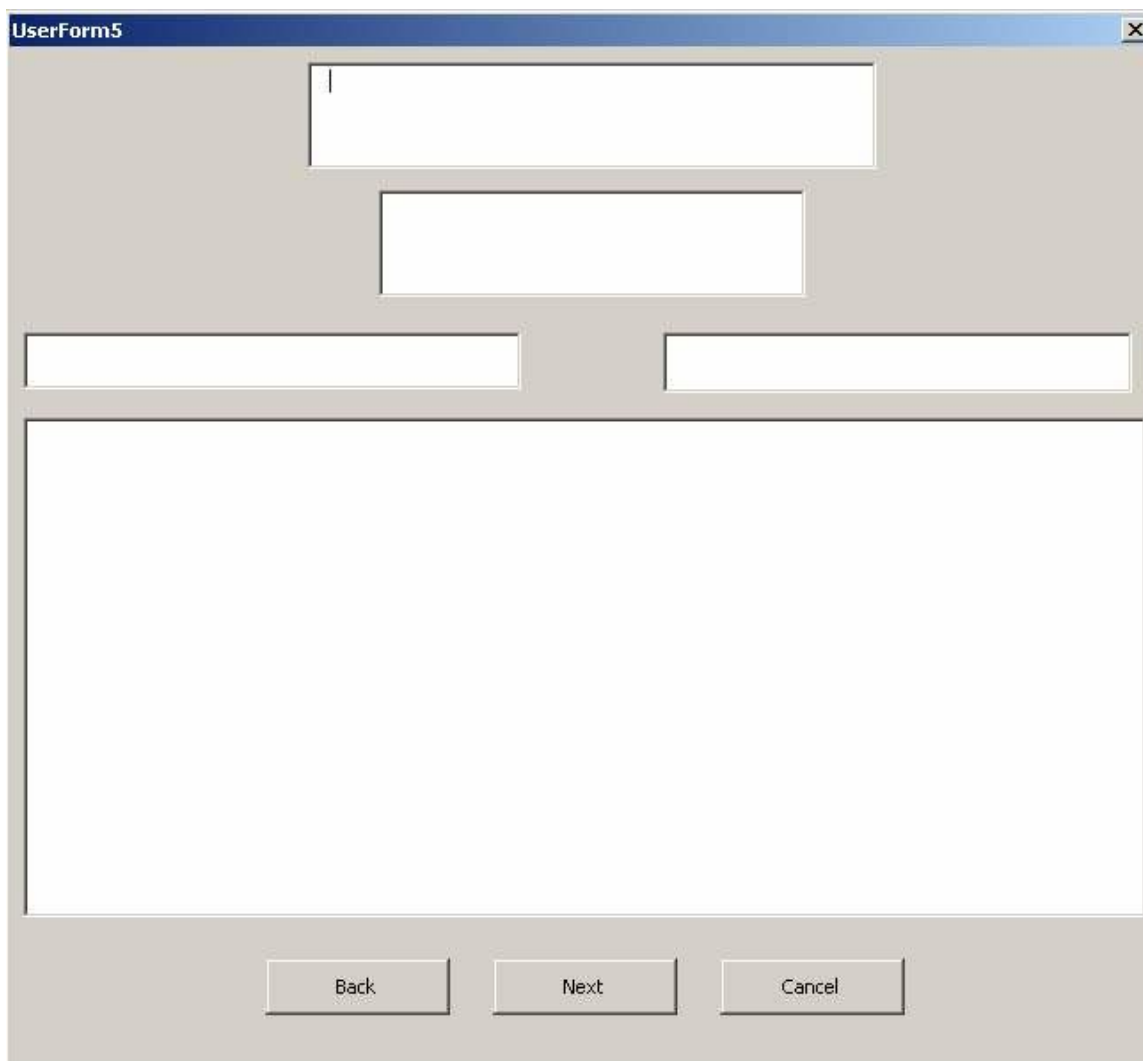
User: Company

Purpose:

- The following form will show the whole notice created with the help of notice template form 1 to 4

System: Online Tendering

Environment: Windows



The screenshot shows a Windows application window titled "UserForm5". The window has a standard Windows-style title bar with a close button (X) in the top right corner. The main content area of the window is a form with a light gray background. At the top, there is a single-line text input field containing a vertical cursor. Below this is another single-line text input field. Further down, there are two single-line text input fields side-by-side. The largest part of the form is a large, empty rectangular area, likely a text area or a container for a notice. At the bottom of the form, there are three buttons: "Back", "Next", and "Cancel", arranged horizontally from left to right.