A PROBLEM DESCRIPTION ON
"MARKET YARD MANAGEMENT SYSTEM"

COURSE:
IT 314 : Software Engineering

GROUP: 5.13

Abhin Kakkad	201501419
Manthan Mehta	201501420

TABLE OF CONTENTS

1 Introduction

A market is a place where farmers and vendors come together for buying and selling of the farm produce. These markets generally take place in certain decided places. Geographical distances prevent traders and farmers to take part in such markets. The reason may range from lack of money to impossibility to travel. So the farmers from a particular village may give a certain person all their crops and he would sell it to them on their behalf in the market. It may so happen on several occasions that the intermediary would charge a lot for the goods and get profits as well as commissions from the farmers, thus resulting in their exploitation.

With the advent of internet technology, it is reasonable to shift these markets to the electronic medium. The benefits for the same are several which we would discuss shortly. We need to design a virtual marketplace which is capable of fulfilling all the functionalities of this physical market.

2 Description

2.1 Buying and Selling

The farmers' market has four major entities:

1) **Farmers**
2) **Big Vendors (Referred as wholesalers)**
3) **Small Vendors (Referred as Retailers)**
4) **Customer(Buys in small quantities)**

The farmers bring their produce to sell it to the wholesale vendors and they in turn sell it to other smaller retail vendors. Apart from these three entities there are consumers (customers). They do not buy from the farmers directly but they buy from the wholesalers and the retailers.

There are various transactions that take place in these markets. A proper management of all the transactions has to be maintained. The main transactions involve:

1) **Inventory Management:** The stock of the amount of goods that come and go from a market need to be maintained. For this purpose , a register has to be maintained for all goods. Each commodity has entries against it about who bought or sold that goods and in what quantity and what price.
2) **Price Changes:** No commodity stays at a fixed price. There are continuous changes in the prices and they need to be reflected. The prices have to be updated at the Mandi. The placement of this board/chart should be such that everyone is able to read it.
3) **Invoice generation for the sale (for each different entity):** After the sale, the farmer and the trader need to be given invoices of their transaction. This serves as the proof fortransation incase of any future conflicts.
4) **Maintain Account of each farmer and trader:** It is also beneficial to have a database of each and every farmer and vendor. This helps in maintaining proper accounts for each entity.
5) **Commodity In – Out Data:** Similar to inventory management. But this is for a smaller transactions when a consumer buys from the wholesaler or retailer.
6) **Daily Income Register:** Daily income of the whole Mandi. This helps in understanding the amount of transactions at a particular Mandi and analysing whether it is feasible to have a Mandi or not.
7) **Generate Report of Pending Market Fee:** Many of the transactions are done on a credit basis. It is necessary that we maintain a log of all such transactions so that there are no issues at a later stage.

2.2 Auction

The other type of transaction is of a bidding type. Here, the farmers showcase their goods to the wholesale vendors and they in place put a bid for that commodity, the person with the highest bid will get the order and he would buy those goods.

With an online auction system in place there would be more transparency in the dealings. The farmers would be getting the amount directly from the traders which can reduce the need of the middle men in the process. It has been found out that these intermediaries which take commission from both the parties for the deal eat up a lot of money in the between which increases the commodity price and also leaves the farmer with very less money for his product.

The auction system needs to have the following stages:

1) **Gate Entry**: This is done when the commodity comes in the market. It has to be documented in terms of quantity, quality, farmer, proposed price, etc.
2) **Quote Entry**: The quotes should be added to the system according to what the farmer/selling party proposes.
3) **Cess Assessment**: There is a certain tax that is applied by the government on the person who grows that crop. Once the auction is completed the cess is calculated and the transaction is completed.
4) **Farmer and Buyer Receipt**: The seller and buyer would require the proof of the completed transaction That needs to be provided to them once this process is completed.
5) **Delivery of Goods**: Once the sale is completed the delivery of the products is done.

3 Objectives

Using this physical model we plan to convert the whole process to an online version. The features would include all the required functionalities as discussed above. There needs to be certain changes and tweaks required to shift to an online medium.

3.1 Functionalities

1) For the auction type of transaction, there is a requirement of testing the crop/goods which wouldn't be possible in the electronic way. An alternate way to do this would be to send out samples to all the interested bidders, on receiving the samples they can place the bid and on arrival of all the bids the winner can be declared.
2) For the buying/selling type of transaction we need to maintain the stocks for all commodities. This would include the incoming and outgoing quantity of goods.
3) A database of all the vendors and farmers associated with the portal would need to be maintained.
4) Price increase and decrease notifications should be sent to the farmers and vendors so that they can plan their purchases accordingly. Current price trends and figures should be available on the portal for all the goods.
5) Invoice management and customer management should also be available.

3.2 Proposed Implementation

- ➢ The transaction of the Mandi System currently in place would be shifted to the online medium. The buying and selling part would be converted to a proposed e-Commerce website with a better interface than the other systems in place.
- ➢ The auction system , although currently online still has the need of physical presence of the traders. By implementing a system in which the traders would be sent a sample of the goods and they would be bidding from their own terminals at home the process can be completed without the need of any presence at the Mandis.
- ➢ The graphs of all the commodities available in the Mandis would be available to everyone.

4 Advantages

This virtual marketplace would be beneficial to the farmers, vendors as well as the consumers. The reasons for the same being:

1) It will eliminate the intermediaries who used to take a lot of commission.
2) Farmers would be able to sell directly to the vendors, thus all the money would go directly to them. This would give rise to transparent transactions between both the parties.
3) Since the commodity is being bought directly from the farmers the selling prices of that commodity would decrease and thus reducing the overall market price of the commodity. This is very beneficial to the end user.
4) In the auction system, if we automate the delivery also then there would be no need to stock the goods at the Mandi. The goods samples can be sent out to the

interested bidders and then once the sale is completed they can be directly transported to the buyers. Thus removing the need of large warehouses and also if online transactions are done, they would be faster and contribute to a cleaner economy.

5) With the implementation of the online auction system we can save physical space of the Mandis because of lesser need of storage space, lesser electricity costs and also decrease in transportation cost.

This system would not be able to eliminate all the intermediaries (since they are required in the functioning of this system), but it tries to reduce the requirement of intermediaries as far as possible. There are several intermediaries which shouldn't be eliminated, ones like transportation, quality assessment, etc.