**SOFTWARE ENGINEERING**

**(IT-314)**

**“SMART CAFETERIA PAYMENT SYSTEM AT DA-IICT*”***

FEASIBILITY REPORT OF REJECTED IDEA

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**Date: 30/01/2016**

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**Version History**

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**1). Motivation**

The main motivation driving the idea of this project was the unavailability of sufficient loose change money with both students and counter owners and managing a huge crowd at peak breakfast, lunch, dinner hours at DA-IICT cafeteria. We can see a large number of people standing in the line in front of food counters waiting for their turns to get food. Since most of the food items on the menu at DA-IICT cafeteria are not in round figure, it creates a major problem of shortage of loose change money with both, students and counter owners. As a result, most of the times we can see either students or counter owners denying the availability of change and adjusting the balance money either as loan or deposit. This creates a major issue of keeping track at both the ends of the system.

Hence we came up with the idea of paying the required amount for the food item ordered using a card payment system.

**2). Product Description and Services**

The product idea that we came up with to solve this problem was that the students would obtain a rechargeable card from a central payment managing committee for cafeteria. This card will then be used at various food counters to make the payments in exact amount. In this way there won’t be any problem of shortage of change during transactions. This would make the transactions quicker and hence it would facilitate serving food in less time to a large crowd at peak dining hours. There will be systems installed at each food counter having the software containing menu of the food items served at that counter and their prices. When a customer comes, the counter owner can simply swipe the card of the customer by entering the type and quantity of the food item ordered by him/her. The required amount to be paid will be deducted from his/her account.

**3). Technology Considerations**

To develop this product, we will need cards with magnetic stripes which will be detected by the system when swiped through it. These cards will have a barcode/unique id which will be linked to the account of the user having some money in it. But due to security reasons, we thought of an alternative approach of shifting to payment using a mobile app for cafeteria.

Tools used for development:-

1. Linux/Windows platform
2. Java/Xml
3. Android studio/Eclipse
4. Any payment gateway providers
5. Android 4.0.0 or later versions

**4). Product Marketplace**

The smart payment system will be used by the food counter owners at DA-IICT to make exchange of money easier and quicker.

**5). Rejection causes**

We decided not to proceed further with this project idea because of the following reasons:

**5.1 Operational Feasibility**

Even if we go with our alternative approach of making the payment using a mobile app then it will create a major chaos of anyone making payment from anywhere and demanding their food to be served first as they have already made the payment.

**5.2 Technical Feasibility**

To implement this system, we need a smart card that would contain the details of the student, a barcode reader to read the contents of the card and also a system to store the database of all the students.

Also the accounts need to be synchronized with the corresponding bank accounts of users hence a payment gateway is to be set. Considering no prior experience and lack of adequate skill set this may be difficult to implement.

**5.3 Economic Feasibility**

This system would require a good amount of investment. Barcode reader is usually costly and would also require maintenance over time. By this system, the counter owner’s work would become too easy, i.e. just scan a card instead of collecting money, counting and also returning the change. If the institute will think of spending and implementing this system in the cafeteria, they will naturally look for a more reliable and well tested software rather than the one coming from newcomers. But all the transactions made during the entire day for him will be in the form of electronic cash. He will have little hard cash available with him at the end of the day to buy the daily necessities like milk, vegetables etc.

**5.4 Security reasons**

One of the major security issue that we encountered in this card payment system is what will happen if a person gets his/her card stolen or loses it. This card has electronic money in it and can be misused by any person who will find it. Nobody will be able to find if that person is authorised to use the card or not. If we involve the payment management committee in this issue to lock the card then it will be a tedious job for them because of a large number of frequent users in the college campus.

**6). Feasibility Study Result**

|  |  |  |
| --- | --- | --- |
| **Feasibility type** | **Feasible (Yes/No)** | **Level of feasibility** |
| Operational Feasibility | No | Low |
| Technical Feasibility | Yes | Medium |
| Economic Feasibility | No | Low |