**Flowcharts for Processes: Milk ATM**

Name

Institution

Course

Tutor

Date

Flowcharts for Processes: Milk ATM

Select Milk Quantity

Select the Bagging Option

Personal Bag

Purchase Bag

Bag the Milk

Select Bag Price

Submit Payment

Paying With Cash

Paying With Credit Card

Insert Cash

Insert Card

Enter Pin

Take Card

Take Receipt

Goodbye

**Analysis of the Flowchart**

The flowchart was about a milk ATM that sought to sell milk to consumers through an electronic process where the customers needed no shop attendant. In most cases, the shops always have someone attending the customers that purchase at the ATM. However, the study proposed an ATM to sell milk to the customer by communicating to the customers as the bank ATMs operate. The first question that the machine asks the clients is to enter the quantity of milk that they wished to purchase. The machine provides milk in all possible quantities depending on the customers' budget. The machine would then ask the customers to choose the bagging option whether they use bags from home or the machine. Upon bagging the milk, the machines further require the clients to submit payment. There are two options, including cash payment and use of credit card. The first option needs customers to insert cash, while the second will need card insertion and authorization through entering the pin and finally taking the card. Further, the customer will take the receipt before getting milk from the ATMs, as indicated in the above flowchart.

**Factors Affecting the Process Design**

**Budget**. It is a primary determinant of the process design since a big budget will lead to a highly refined process while low budgets lead to a less refined process. A client with a big budget will get an IT process that is more vigorous and communicates better with the target consumers. For example, the above milk ATM will require no human assistance, such as a shop attendant to guide the users. However, a low budget would have attracted a process design that fails to provide a complete guide to the consumers.

**Type of the project.** The processes vary in type as some deal in the construction, such as buildings and roads. However, this project is an IT system development that would need a significantly different design. The only similarity in all projects is that the design must indicate the process flow that connects different activities.

**Sustainability**. The process design should be sustainable regarding the budget and the available system to run. For example, the budget could develop a highly complex milk ATM, but the available IT platforms fail to support it. Hence, it would be a waste of resources to develop an expensive system that is unsustainable.

**Metrics of Measuring the Process**

The best metric to measure this process is the use of surveys (Loomis & Paterson, 2018). Two types of surveys can help get the users' views on the suitability of the process of purchasing milk through this process. The first one is online surveys that are pretty easy to administer to clients based in different locations. The other process is the physical surveys involving providing survey papers to consumers to pick them upon using the machine to provide their feedback. Through the surveys, it is possible to understand whether the process is a failure or a success. The customers will admit through the surveys if they find the machine straightforward to use and the impact on such efficiency levels on their purchasing.

**Forecasting Method**

The best forecasting method for the process design is simple linear regression. It compares the independent variables such as the customer response and another dependent variable like the suitability of the process design (Rahimi, 2017). For example, it is possible to determine the number of sales of the proposed milk ATM based on the clients' comments on it from the surveys. The simple linear regression will provide a reliable forecast that can guide the producers to manufacture the correct quantity of the machines.

**Managing the Process through Use of PERT/CPM**

**The critical path method (CPM) is essential in determin**ing the process timing during the process design (Jana & Liběna, 2016). The critical path can help determine the shortest possible time that the client can take when purchasing milk. Most customers are always impatient, and they will even walk away when they find the process excessively long and wasteful in the purchase process. Hence, the use of PERT will enable the designers to establish the critical path that the process should follow while the other processes happen concurrently. For example, the customers will not need to undergo the long process of purchasing bags when carrying bags or milk containers. The exact process happens when selecting the payment option. A customer that has bought milk with cash needs no information about entering the card and the ATM pin. They will insert cash and get the milk. It will avoid actual waste of time in the purchasing process, which would irritate customers to force them away.

PERT helps the process designers to get the ultimate path that the process needs to follow. It, however, fails to exclude the other processes in the project. It will include all the processes but only bring the most critical ones while hiding the others for the users who do not need them. Therefore, the path will vary significantly according to each user. The primary goal of every process is to minimize the time that users need to undergo through them. PERTH will foster ultimate time management when purchasing milk through ATM defined by the process highlighted in the above flowchart.

References

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