Automated System for Buying products through IoT Commerce

Likhesh N. Kolhe, Ashok Kumar Jetawat, Vaishali Khairnar

Abstract: IoT commerce is the Internet of thing commerce in which buying and selling of products take place in automize way. IoT Commerce plays a vital role in the field of Internet commerce. IoT commerce is going to capture the market in 2022, and the whole world is becoming dependent on IoT commerce. So it is necessary to implement a method where prediction in IoT commerce takes place. In our research, we have implemented a method where buying and selling of products take place in an automated way. If server issue or network problem arises in this case by applying prediction techniques automatically product is delivered to the customer on time. The final result is the successful delivery of the product to the customer. For acquiring prediction results we have used linear regression technique. Where on the basis of previous data in the absence of network automatically order is placed on website and product will be delivered.

Keywords: Internet Of things, E-Commerce, HTTP Protocol, M-Commerce, Sensors

I. INTRODUCTION

In today's era, the whole world is dependent on automated environment. Where without having human interference needs can be satisfied. To satisfy all this needs a new technology is introduced into the picture is called as IoT(Internet of things). IoT is communication between any two sensors with the help of internet. In this technology, sensors are communicated with each other. Each sensor acts as a server and satisfies the role of server. Whereas E-Commerce is selling and buying of products by electronic means. E-Commerce is a centralized way for communication between E-Retailer and customer[3]. According to the World Health Organization, More than a billion peoples in the world is gaining a positive experience for purchasing the products online. It is a very tedious task to keep track of all the products available in the kitchen regularly. Many times peoples are suffering from situations where a particular thing in the kitchen is finished and the customer is aware of it at last moment. So it will create a problem for a customer, Because if we will buy the product online it will take minimum one day to deliver the product. If we want to visit shop, we need to

visit manually. To avoid this headache we have to combine E-Commerce with IoT for ease of access and for the benefits of society. This technology is called as IoT Commerce. In IoT commerce, automated selling and buying of products take place with the help of Sensors and Internet.

II. BACKGROUND AND MOTIVATION

This section gives a brief idea about IoT, M-Commerce and E-Commerce. We studied several researches to emphasize on importance of IoT in E-Commerce.,
E-Commerce is an emerging field in the world of internet. As per the survey done in 2019 many users are releving on internet. As per shown in fig 2.1 India's internet users expected to register double digit growth to reach 627 million in 2019, driven by rapid internet growth in rural areas, market research agency Kantar IMRB Wednesday said [1].
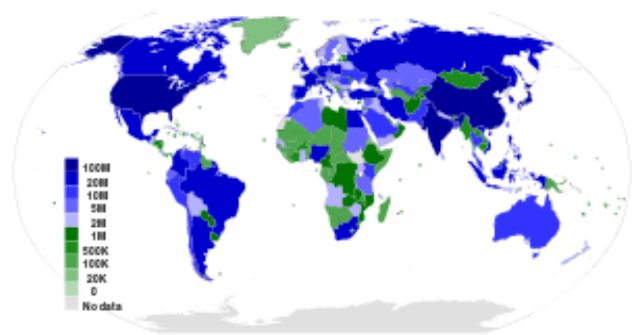

Fig 2.1 : Countries By Numer of Internet Users

Looking towards this scenario there is a most need of implementing a methods where automated buying and selling of products take place. In addition with E-Commerce maximum users has started a use of M-Commerce . Where in M-Commerce market is on the fingertips of users, where user can buy any thing through internet. Letter on many researchers has developed a different prediction techniques to increase the seel of market. Also recommendation techniques are developed. In recommendation techniques, relevant products are recommended to the customer on the basis of previous historical data. Also, Collaborative filtering technique is used to perform relevant recommendation [2].
Many Researchers has done several researches but no one has focused on automated processing of E-Commerce process for B2C type. Where user is still dealing with traditional process. In this process user has to check for the consumption of products on daily basis. As well as per the changes in environment user has to check for the quality and properness of the product on regular basis. Here, user is suffering with lots of issues. To solve this issue we have implemented a new method called as Internet of Things(IoT) Commerce[4].

III. IOT COMMERCE FRAMEWORK

IoT Commerce is an intelligent approach where automated buying of products takes place.In this approach we have used various sensors like Ultrasonic level sensor to check the consumption of product, Edinburgh sensor is used to check the quality of products and the electronic nose is used to check the smell of product. All these sensors are used to check the adequate quota of product and its quality. In our system, we have used AWS cloud to store the data and HTTP protocol is used for transferring data.

As per shown in Fig 3.1 we have stored grain in storage. Storage is connected with different sensors which are used to check the level of grain, quality of the grain and smell of the grain. All these sensors are connected with a server with the help of Arduino. Arduino is used to connect

storage with server. Data generated by sensors is passed to the database with the help of Internet. Here Arduino is connected to ESP shield for wireless connection. Also, it is connected to a mobile app to track the live status of grain storage. Now, whenever the level of grain is lower or any fault is been observed in the grain automatically the notification is sent on mobile regarding the quality and consumption of grain. Here we have used a web service for the communication between server and E-Commerce websites to transfer the data. Once the request is been forwarded to E-Commerce website automatically amount is deducted from the account and request is forwarded to merchant. Once the process is completed automatically product is delivered to the customer
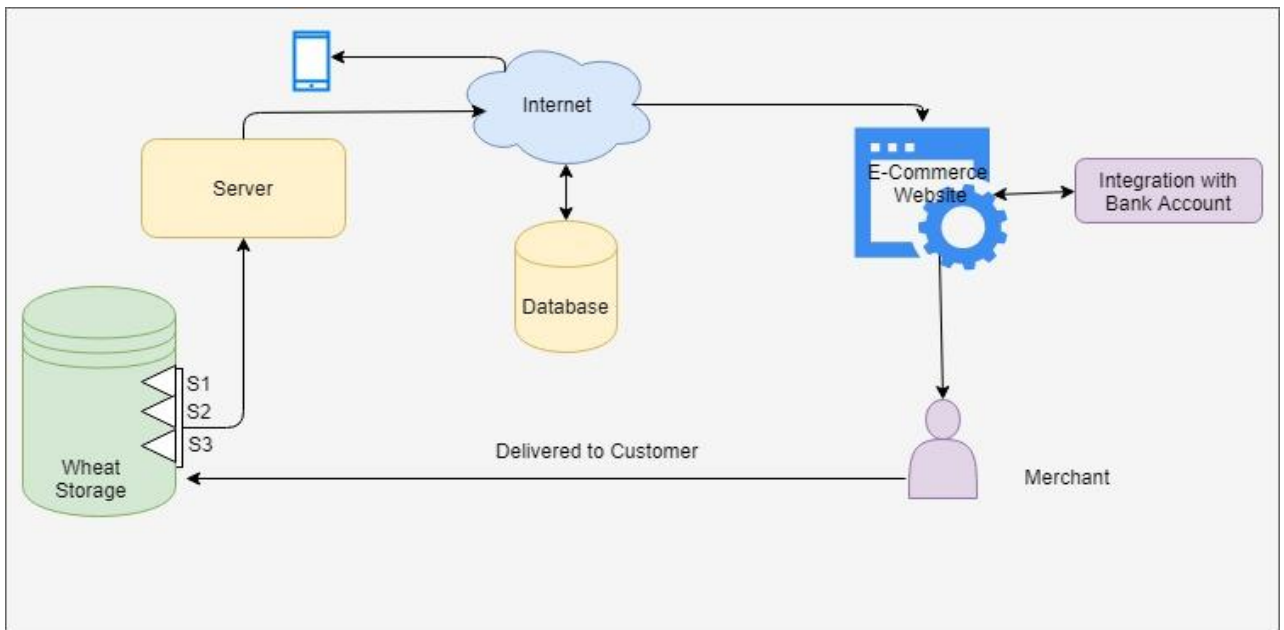

Fig 3.1: Architecture of IoT Commerce.

IV. RESULTS AND DISCUSSION

The above approach will give highly relevant results with good accuracy. It also helps to prevent grain damages and gives notification on time. Which helps us to take preventive measures for conserving the grains. As per shown in fig 4.1 traditional process gives 81% Accuracy for the checking

qualities whereas our method will give 93% Accuracy. Also, in the survey it has been found that 22% of users are failed to procure the requirements of grain on time. Whereas our system will gives 88% accurateness. This data is collected through the survey. I have collected 67 samples through different users and then we have compared these surveys with our proposed system.
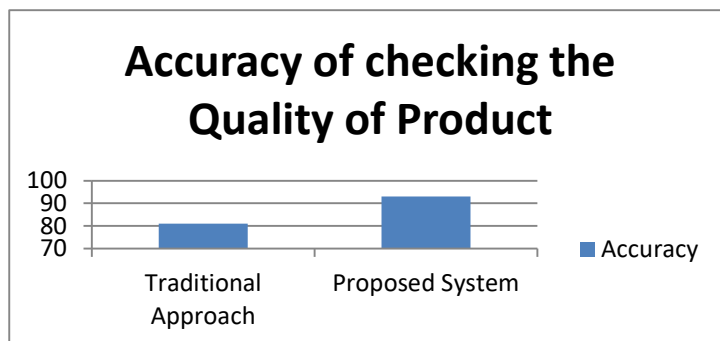

Fig 4.1: Comparative analysis between Traditional Approach and Proposed System
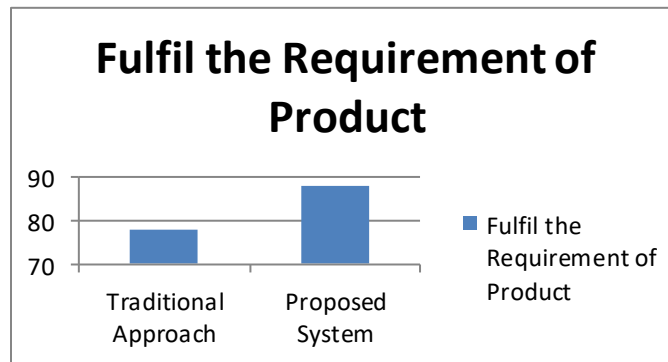
Fig 4.2: Comparative analysis between Traditional Approch and Proposed System

V. CONCLUSION AND FUTURE SCOPE

As per the above results Proposed system will give the best results as compared to the traditional approach. Proposed study and research are clearly influenced that till 2022 whole world is migrated to IoT Commerce. In coming era instead of conventional approach, all products are ordered through IoT Commerce. The proposed system also checks the quality of products from time to time and also check the availability of products. It also releases the tension of customers for checking the quota of products on a continuous basis. Our proposed system will increase the relaxation of user in the future by more than 50 %. Currently, we have tried with a single source of tin. In future, we are planning to implement the same method for a complete kitchen. Using a single controller and low budget sensors. Our aim is to implement our project with less cost, high relevancy, and accuracy.

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Retrieval Number: C3965098319/19©BEIESP
DOI:10.35940/ijrte.C3965.098319
Journal Website: www.ijrte.org

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