



## DESIGN AN E-COMMERCE WEBSITE ON AGRICULTURAL PRODUCTS

**Omkar Ankush Zingade , Jagadish Hallur, Sumedh Sanjaykumar Gaikwad, & Raturaj Anil Mali** Department of Electronics and Telecommunication SVERI's College of Engineering, Pandharpur

### 1] Abstract

The objective of Agricultural Web Development for E- Farming Marketing System is to streamline the current manual system through the utilization of computerized equipment and comprehensive software, catering to their specific requirements. This enables the storage of valuable information/data for extended periods, with effortless access and manipulation. The necessary hardware and software components are readily available and user-friendly.

The "Agricultural Web Development for E-Marketing product" is an integrated system associated with E- Farming Management, as mentioned earlier, and it offers an error-free, secure, reliable, and efficient management solution. It allows users to focus on other activities instead of being preoccupied with record- keeping tasks, thereby enhancing resource utilization. Users can maintain computerized records without duplicative entries, ensuring that they can swiftly access relevant information without unnecessary distractions. Technological advancements have significantly contributed to decision-making processes across various industries, particularly in agriculture.

However, agricultural development has faced challenges in recent years due to limited knowledge and environmental changes. This paper's primary objective is to raise awareness, assess usage patterns, and gauge perceptions of e-Agriculture among farmers. The study employed statistical survey design techniques to collect data on farmers' familiarity with E-Commerce.

The results revealed a relatively low level of awareness, indicating a pressing need for e-agriculture as a means of support. e- Agriculture serves as a platform for marketing agricultural products, and the ultimate goal is to establish an online platform that empowers farmers to sell their products while offering guidance on best practices in the farming process.

### 2] Introduction

Agriculture is the predominant occupation in India, and nowadays, a vast number of individuals are engaged in the farming system. The Agricultural website design for E-Marketing product aims to assist Indian farmers in achieving effective cultivation by providing them with real-time and relevant information. This E-Marketing system enables users and farmers to access online information about crops, tools, seeds, and more. It empowers farmers to directly purchase tools and seeds from sellers, eliminating the need for intermediaries or wholesalers. Furthermore, farmers can sell their products independently, without relying on agents or middlemen.

Several initiatives have been implemented to enhance food production and security by establishing stronger market connections and facilitating access to local and international markets for smallholder farmers' produce. These initiatives involve various levels of information management tasks. Therefore, our application serves as a comprehensive solution to address all the challenges outlined in the problem statement, making it highly beneficial for farmers. Additionally, the application offers supplementary features such as government notifications and bank updates regarding loans. However, it is important to note that a network connection is required for users to receive notifications.

#### 2.1 Existing System

At present, there is a noticeable absence of a well- functioning system that effectively harnesses past



farmer data, utilizing specific criteria for in-depth analysis. However, to bridge this gap, the Indian Government has introduced E-mandi, an application that caters to this specific need. E-mandi serves as a comprehensive platform designed to provide farmers with extensive information on crop rates. By leveraging this application, farmers can access valuable insights into prevailing crop prices across diverse regions. This wealth of information empowers farmers to make well-informed decisions regarding their agricultural practices.

## 2.2 Need of Project

Often, farmers remain unaware of the various schemes and compensations offered by the government. Despite numerous opportunities available to them, farmers struggle to take advantage of these resources. While domestic robots are rapidly making their way into households and becoming a part of people's daily lives, the same cannot be said for the agriculture market. The integration of domestic robots in agriculture is still a relatively new and underdeveloped market, posing unique challenges.

## 2.3 Problem definition

Frequently, farmers face a lack of knowledge concerning the government schemes and compensations that are accessible to them. As a result, they are unable to benefit from these opportunities. Although domestic robots have found their place in households and have become a common part of people's everyday routines, the agricultural market remains relatively nascent and underdeveloped.

## 2.4 Objectives

- The platform aims to facilitate agricultural marketing activities for farmers, ultimately leading to increased success and improved standards of living.
- It addresses the prevalent issue of business malpractices and cheating that farmers often encounter in the market.
- By enabling direct selling of their products or crops in the open market, this platform eliminates the need for intermediaries, providing farmers with greater control over their sales.
- Furthermore, the platform offers an article and blog section that assists farmers in enhancing productivity and profitability by providing valuable insights and guidance.
- It also facilitates online agricultural purchases, offering a secure and unique platform for farmers to engage in transactions.
- By promoting sustainable production practices, the platform ensures the long-term viability of agricultural activities, fostering a more sustainable and resilient farming industry.

## 3] Literature Review

### 3.1 E-Agriculture

E-Agro, also known as electronic agriculture, is a cutting-edge approach designed to propel agricultural information systems forward and foster agricultural modernization. This innovative platform serves as a comprehensive solution, enabling seamless sharing of valuable information among farmers. By harnessing the power of advancements in science and technology, e-Agro ensures the delivery of accurate, timely, and authoritative agricultural information, capitalize.

On features such as convenience and timeliness. The success of e-Agro heavily relies on a robust information Technology infrastructure, incorporating state-of-the-art network facilities and communication tools, to effectively integrate diverse types of information and resources. Key components of e-Agro encompass rural electronics, electronic farmers, and agricultural electronics, forming a cohesive framework to drive the transformation of the agricultural sector.



### 3.2 IT in Agriculture

The arrival of information technology has had a profound impact on the integration of automation across diverse business processes. The agricultural sector, in particular, has witnessed a significant transformation through the adoption of modern process automation driven by information technology. Various activities within the agricultural domain have undergone automation, encompassing soil sampling, variable-level fertilization, field mapping, crop scouting, harvesting, data management, and traceability. The notable progress achieved in the agricultural sector can be largely attributed to the widespread implementation of IT applications throughout the entire farm management process. This encompasses critical stages such as soil preparation, planting, irrigation, pest management, and harvest. Key IT tools employed in this context include decision support systems, sensors, data inventory systems, and expert systems. Moreover, information technology plays a pivotal role in the marketing of agricultural crops by leveraging e-commerce platforms. This utilization of IT enhances sales opportunities and expands the market reach for agricultural products, leading to improved profitability and growth in the sector.

### 3.3 Agricultural E-commerce

Agricultural e-commerce encompasses the application of electronic commerce principles and technologies within the agricultural sector. It involves the online trading of agricultural products, equipment, services, and information. Agricultural e-commerce platforms serve as digital marketplaces, connecting farmers, agricultural businesses, and consumers, enabling them to trade and access a wide array of agricultural goods and services. The expansion of agricultural e-commerce can be attributed to several factors. Firstly, it offers convenience and accessibility, granting farmers and agricultural businesses access to a broader market and allowing them to expand their customer base beyond geographical boundaries. Moreover, agricultural e-commerce provides a platform for farmers to directly showcase and sell their products to consumers, reducing reliance on intermediaries and promoting fair pricing practices. These e-commerce platforms offer a diverse range of products and services, including seeds, fertilizers, pesticides, farm machinery, livestock, agricultural produce, and value-added products. Detailed product descriptions, customer reviews, and ratings are often provided, aiding farmers and consumers in making informed decisions. Farmers can also access valuable information through these platforms to enhance their farming practices and stay updated on industry trends.

### 3.4 Offline Market Disadvantages

Traditional brick-and-mortar markets, commonly referred to as offline markets, are physical retail spaces where customers can personally engage with products and make purchases. While offline markets have been the predominant mode of commerce for centuries, they do possess certain drawbacks when compared to their online counterparts.

1. **Limited Accessibility:** Offline markets necessitate customers to physically visit a specific location to make purchases. This can be inconvenient, particularly for individuals residing in remote areas or those with limited mobility. The accessibility of offline markets may be restricted, resulting in limited choices and product availability for customers.
2. **Geographical Constraints:** Offline markets are bound by geographical limitations. Customers must travel to designated locations to access the market, which can be time-consuming and costly. This constraint impacts both buyers and sellers, as businesses may struggle to expand their customer base beyond their local area.
3. **Restricted Operating Hours:** Offline markets typically operate within fixed hours, which may not align with the schedules of all customers. Customers may find it challenging to visit the market during their working hours, resulting in missed opportunities for both buyers and sellers alike.

These factors highlight the limitations of offline markets in terms of accessibility, geographical reach,



and operating hours, which can be overcome by embracing the benefits of online markets.

### **3.5. Need for Marketing**

The necessity of a market arises from the core concept of supply and demand within any economy. A market acts as a platform where buyers and sellers converge to exchange goods, services, and resources based on their individual needs and preferences. The existence of a market holds significance for several reasons:

1. **Facilitating Trade:** Markets provide a space where buyers and sellers can participate in trade and exchange. They facilitate the smooth flow of goods, services, and resources among different parties, generating economic activity and contributing to overall growth and development.
2. **Efficient Resource Allocation:** Markets contribute to the efficient allocation of resources by determining prices through the interplay of supply and demand. The interaction between buyers and sellers in a competitive market allows resources to be directed to areas where they are most needed and valued. This process helps maximize productivity and optimize the allocation of resources.
3. **Price Discovery:** Markets play a vital role in price discovery, enabling buyers and sellers to establish fair prices for goods and services. Through the interplay of supply and demand forces, market prices reflect the relative scarcity, value, and desirability of various products. Price discovery ensures transparency, fosters competitiveness.

These factors underscore the importance of markets in facilitating trade, efficiently allocating resources, and establishing fair prices through the process of price discovery. Markets form the foundation of economic activity and contribute to the functioning and growth of economies.

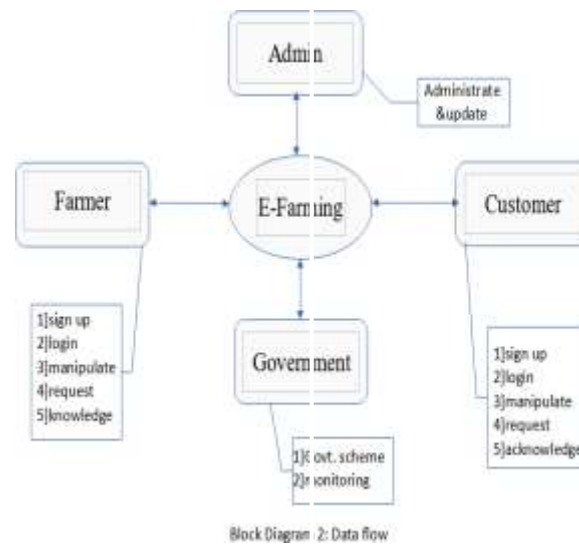
### **3.6 Real-time Market Analysis**

The concept of real-time market analysis revolves around the continuous monitoring and evaluation of market data and information as it unfolds, enabling timely insights and decision-making. It involves the utilization of advanced technologies and tools to collect, analyze, and interpret market data in real-time, providing up-to-the-minute information on market trends, dynamics, and opportunities. Here are key aspects to understand about real-time market analysis:

1. **Timely Decision-making:** Real-time market analysis empowers businesses and investors to make prompt decisions based on the most current market information available. By monitoring market data in real-time, they can swiftly respond to changing market conditions, capitalize on emerging trends, and mitigate potential risks.
2. **Access to Live Market Data:** Real-time market analysis heavily relies on live data feeds and market information sources, including stock exchanges, financial news platforms, social media, and other relevant sources. These sources offer real-time updates on market prices, trading volumes, news events, social sentiment, and other data points that influence market behavior.

By leveraging real-time market analysis, businesses and investors can enhance their decision-making processes, adapt to rapidly changing market conditions, and seize opportunities as they arise. Access to up-to-the-minute market data empowers them to stay ahead of the curve and make informed choices in a dynamic and fast-paced market environment.

#### 4] Proposed Methodology



##### 1. Administrator:

The administrator assumes the key role of overseeing the website, responsible for both administrative and technical duties to ensure the platform's smooth functioning and maintenance. They are tasked with managing user accounts, monitoring system performance, resolving technical issues, and ensuring the overall efficiency of the platform.

##### 2. Farmer:

The farmer holds a crucial position as a supplier within our system. They have specific privileges and authorities on the site, including functions such as logging in, engaging in trading activities, listing their products managing their inventory, and raising any concerns or grievances they may encounter.

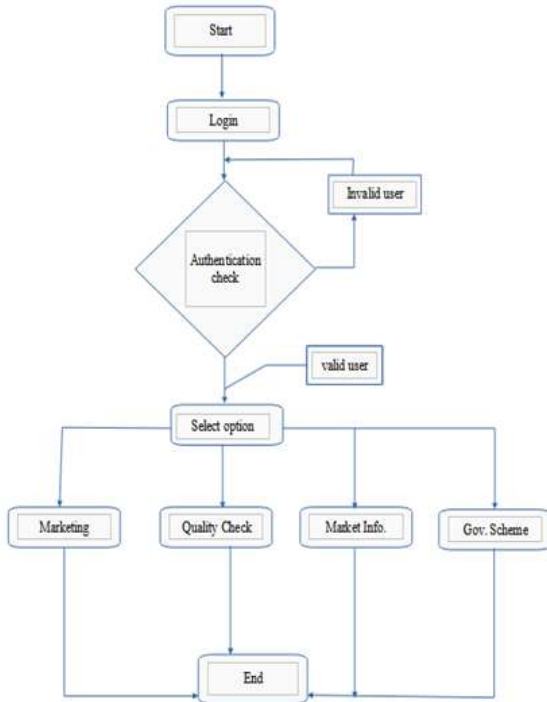
##### 3. Customer:

The customer or retailer plays a vital role as the buyer in transactions conducted through our platform. Similar to farmers, they possess limited authority within the site, allowing them to participate in transactions, browse and select products, make purchases, track orders, and access relevant functionalities such as customer support.

##### 4. Government:

The government assumes a limited authority role within our system, primarily focused on monitoring activities to detect and prevent any potential malpractices that may occur during trading. Their involvement ensures the integrity and fairness of the platform's operations. This includes monitoring compliance with regulations, addressing disputes or violations, and safeguarding the interests of all participants in the agricultural marketplace.

**Flow Chart :**



**4.1 The overview of site**

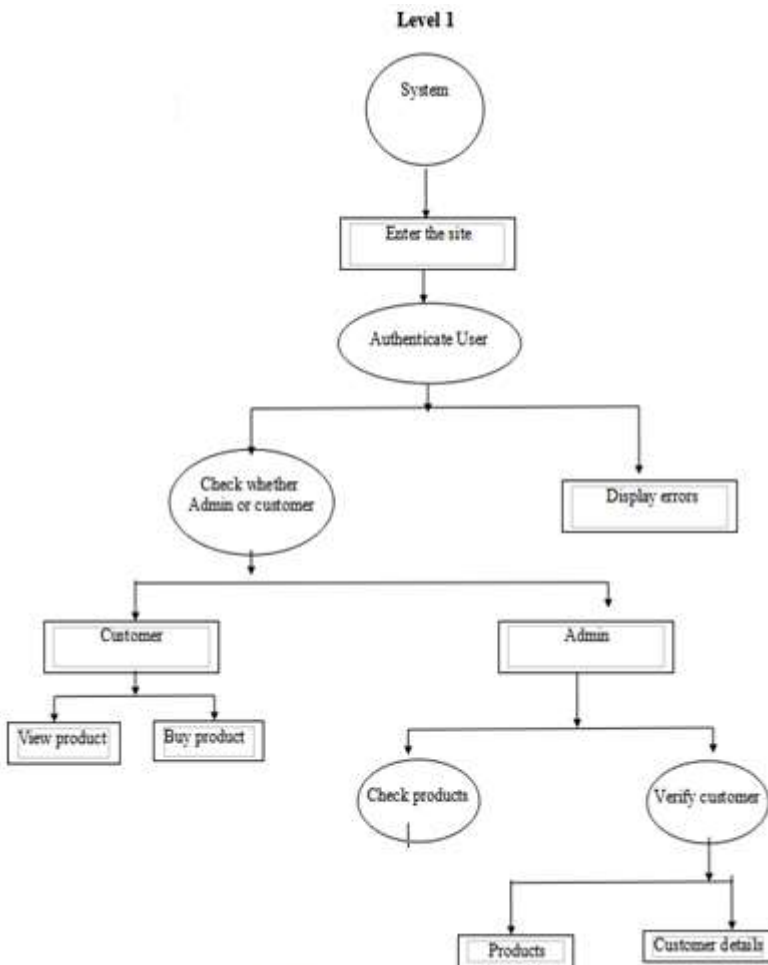
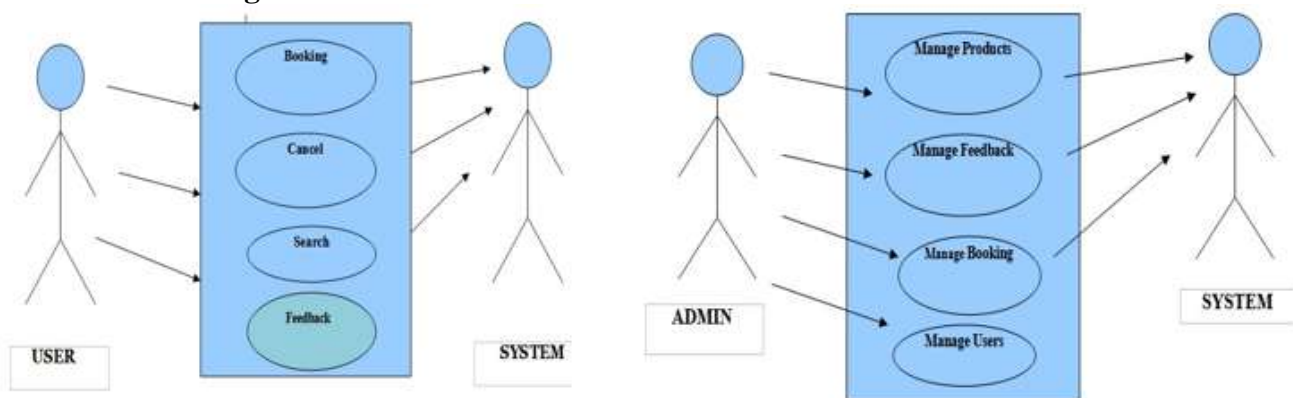


Fig. Data Flow Diagram of the Shopping Site



- The platform offers a convenient sign-up and log-in option for both new users and existing users, ensuring a seamless experience for all individuals accessing the site.
- In order to prioritize security and authentication, users are required to provide a password and enter a captcha code during the log-in process. Moreover, new users are sent a One-Time Password (OTP) as an additional layer of verification during the sign-up process.
- Once the authentication process is successfully completed, users gain unrestricted access to all sections and features of the site, allowing them to navigate freely and make use of the platform's functionalities.
- To ensure a secure and smooth logout process, users can easily click on the log-out option when they wish to exit from the site, enabling them to leave the platform while maintaining the highest level of security.

#### 4.2 Used Case Diagram



1. A use case diagram is composed of actors and use cases, illustrating the interaction between them. It serves the following key purposes:
2. Its primary objective is to demonstrate the interaction and communication between the use cases and the actors involved.
3. It represents the system requirements from the perspective of the users, providing a visual representation of how the system will be utilized and the functionalities it should possess.
4. The use cases represent the specific functions or tasks that need to be executed within the module, outlining the actions and behaviors that the system should support.

#### 4.3 Components

##### 1. Server:

The development of this website utilizes a local host server, which, in technical terms, is a computer system operating as a server within a local network environment. This server acts as a centralized repository, storing files, applications, and resources accessible to other devices connected to the same network. It serves as a secure and controlled platform for hosting websites, databases, and network services. By facilitating data storage and management, the local host server enables efficient data sharing, collaboration, and communication within the local network. Its role is vital in promoting information exchange, data security, and network efficiency in a localized setting.

##### 2. User Device:

Internet-accessible smart devices: Internet devices are electronic devices capable of connecting to the internet, allowing users to access and interact with online resources and services. These devices encompass a range of gadgets such as computers, smartphones, tablets, smart TVs, wearable devices, and Internet of Things (IoT) devices.

### 3. Internet Connection:

Internet connection: An internet connection refers to the ability to access the internet through a device or network. It enables users to establish a connection with online resources and services, facilitating the exchange of data and information. Having a reliable internet connection is essential for seamless access to online content and services.

## 4.4 Output/Result

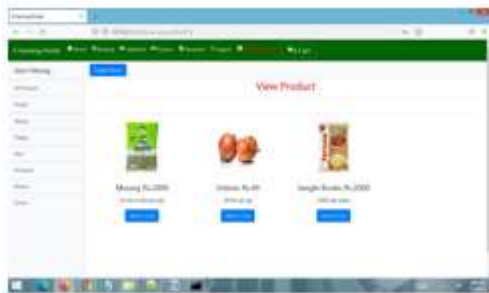
### 1.Home Page



### 2.Login & Sign up Page



### 3.Product Category Page



### 4.Payment Page



## 5] Applications

**1.User-Friendly Interface:** The website is meticulously designed to ensure a user-friendly experience, specifically catering to marketing needs. With an intuitive interface and well-organized layout, users can easily navigate and interact with the platform, enhancing their overall experience.

**2.Real-Time Market Insights:** By a mere click, users obtain facile entry to contemporary and precise market intelligence. The platform furnishes instantaneous data concerning prices, trends, demand, and supply, endowing users with the capability to render judicious decisions and maintain a competitive edge in response to the dynamic nature of the market.

**3.Eliminating Corruption and Inconvenience:** Our platform aims to minimize corruption, inconvenience, and uncertainty associated with accessing market information. By offering a transparent and reliable source of information, we foster trust and eliminate the barriers often encountered in traditional markets.

**4.Government Schemes and Benefits:** Users can effortlessly access and apply for various government schemes and benefits available in the agricultural sector. The platform simplifies the process, reducing complications and difficulties, enabling farmers to avail themselves of the entitlements they deserve.

**5.E-Learning for Agricultural Education:** In addition to market information, the platform offers valuable agricultural education through e-learning resources. Users can access a diverse range of educational materials, including tutorials, courses, and resources, to enhance their knowledge and skills in the agricultural field. This promotes continuous learning and supports the personal growth and development of individuals in the agricultural sector.

## 6]Future Scope

Moving forward, our website will continue to evolve and expand, incorporating new features and





receiving regular updates from the administrators. The platform has the capability to integrate specific blocks dedicated to e-farming, with the only limitation being the storage capacity of our server.

A notable block we have implemented is the Machine Learning (ML) block, which assesses the quality and freshness of vegetables. Over time, this ML block has significantly improved its accuracy, thanks to robust and efficient ML algorithms and an extensive database. This enhancement greatly enhances the site's potential, ensuring users receive reliable and precise information about the produce's quality.

Aligned with our ambitions, we strongly advocate for an accessible and open market. Currently, we are working on an updated and improved version of the website that will include additional features, enhanced hardware capabilities, and various advancements to provide users with an even better experience and more comprehensive information.

Moreover, as an integral component of our enduring strategies, we aim to submit a proposition for a synergistic amalgamation between our platform and a governmental domain to the state government. The primary objective of this collaboration is to augment the digitization of agricultural practices within our domicile. By harnessing the respective capabilities of both platforms, we can establish a heightened level of integration and efficiency, thereby fostering a cohesive and optimized encounter for farmers and other key participants within the agricultural industry.

If our vision becomes a reality, the nation will witness the emergence of Green Revolution 2.0. This revolution will be characterized by the widespread adoption of e- agro product trading and free marketing facilitated by our platform and its collaboration with government initiatives.

## **7] Conclusion**

This project serves as an invaluable resource for farmers to access crucial market information, serving as a distinctive interface for schemes and compensation. It Guarantees that farmers remain well-informed about the latest farming techniques and trends. However, new users might encounter some initial challenges when navigating and utilizing the site. Nevertheless, the overall system is designed to be swift, secure, and user- friendly, offering a seamless and efficient experience for farmers, ensuring their comfort and convenience.

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