

# **Raw Food Items E-Mart**

## **Feasibility Report**

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# **1. Introduction:**

## **1.1. Overview of the Project:**

Freshmart is an online e-commerce platform that deals primarily with the sales of raw materials and packed food materials. It provides an easy-to-use and intuitive interface for the consumers to purchase required goods from all over India, especially the famous raw materials and packed products like Keshar of Kashmir, Munnar from Kerala, etc. Moreover, the deliveries are met on time through the vast network of Bluedart, our delivery partner.

The user can choose the items from the web application and put them in the cart to checkout through cashless payment options. The quality of the product is our top priority. Our service encloses the whole market ranging from daily household to wholesale distributions and restaurants. Even the niche market like food hobbyists are lured toward the service with the proposal of hard to procure goods.

## **1.2. Objectives of the Project:**

This project aims to:

- Fulfill the demands of various cooking raw materials like spices, seeds, nuts, pulses, and provide packed food items like cup noodles, soups, noodles.
- Make it accessible for businesses and consumers to buy the required items from all over the country with a button click.
- Provide timely deliveries to the businesses like restaurants, catering services, etc., to meet their daily needs.
- Make the payment interface as fast, secure, and hassle-free as possible.
- Ensure that the web app is mobile-friendly.
- Implement a transparent review system.

- Implement a delivery tracking system.
- Implement a loyalty program to keep regular customers and offer them exclusive deals and discounts.
- Thorough categorization of various products available in the shop and advanced filtering options.
- Ensure that the quality of products is on par with the standards put up by India's Food Safety and Standards Authority.

### **1.3. The Need for the Project:**

India is a vast country with a multitude of cultural varieties. These cultural dissimilarities transcend to the Indian cuisine as well. In such a scenario, the demand for raw materials in the food industry is skyrocketing. The current supply chain system mainly relies on the local network of people.

Say a restaurant wants some special spices from a particular state of India. The process of meeting such specific demands is cumbersome. Our solutions aim to streamline the process by handling the procurement to the delivery process of such customers. Moreover, it also seeks to reach the households market by packed products.

### **1.4. Overview of Existing Systems and Technologies:**

Most of the current e-commerce solutions provide raw food materials as secondary products to the hot goods industry like electronics, fashion, etc. This results in quality inferior to the standards set by fine dining restaurants. Our product is centered on the particular segment, which enables us to ensure top-notch quality products. This also allows us to break into the household market since the quality of our products would be significantly better.

The leading technologies associated with Freshmart are:

- Web programming technologies (JavaScript, HTML, CSS)

- Databases (MongoDB)
- Diagram and design tools (LucidChart, JIRA)

## **1.5. Scope of the Project:**

The primary use cases associated with this project are:

- **Supplier Side:** The project provides the supplier a platform to showcase their goods. This ensures a wide range of audiences. It also enables cost reduction since the platform fee is significantly less than the mediators. The loyalty program ensures a stable income stream for the supplier. The review system provides valuable feedback to the supplier, enabling them to improve the production.
- **Customer Side:** The choices available to the consumer see an exponential increase due to the wide variety of suppliers available on the platform. It enables them to compare and choose the best value for money product specific to their needs. The vast choices also breed a healthy competitive environment that is beneficial for the customer.

## **1.6. Deliverables:**

A web application that contains an intuitive interface for the various stakeholders involved in the transaction.

# **2. Feasibility Study:**

## **2.1. Financial Feasibility:**

The entire platform will be based on a web application; thus, it will associate web hosting and management cost. Since it will require heavy multimedia data transfer (primarily images), the cost of operation and bandwidth requirement will be moderate.

The registration for potential customers will be free. However, sellers registering on the platform would have to pay a one-time registration fee and minor charges for the goods they sell, depending on their type and quantity.

Despite the charges for potential sellers, it would benefit them as this platform will allow them to sell their products to a much larger audience. The registration process and User Interface will be easy and intuitive, thus, attracting and catering to a larger audience who may not be familiar with web applications and the internet.

Consistent monitoring, bug-fixing, and maintenance would incur an additional cost, though the cost would be low. The scope and growth potential of this business model is very high. Targeting even a tiny section of sellers and customers would generate enough revenue to make the business profitable and financially feasible.

## **2.2. Technical Feasibility:**

The project will be based on freely available and reliable tools and APIs, except for the web hosting service.

The main technologies used are:

- React Native (Free JavaScript framework)
- ReactJS (front-end JavaScript library)
- Bootstrap (CSS framework)
- MongoDB(Database management)
- REST APIs
- AWS (Amazon Web Services, for web hosting)

Most of these technologies are freely available, reliable, and trusted by users globally. Web-hosting costs will be based on our requirements and plans. However, initially, it will be lower.

Thus, our model will be technically feasible.

### **2.3. Resource and Time Feasibility:**

Primary resources required for our project are:

- Programming devices (Laptops and Desktops)
- Hosting Space (AWS, usage-based pricing)
- Programming team
- Programming tools (available freely)

So, our project has the required resource feasibility.

### **2.4. Risk Feasibility:**

#### **1. Data backup related risks:**

Versatile and reliable backup practices and systems will be deployed to eliminate the risk of losing data.

#### **2. Size related risk:**

##### **2.1. Estimation of the size of the database:**

Initially, the data requirements will be lower.

However, with an increase in the number of customers and sellers, the database requirement is expected to increase.

Relations and entities will be minimized by using the best database design practices.

##### **2.2. Estimated size of the product in the line of code:**

The product is designed to scale continuously according to changing demand and requirements. The



codebase is expected to use reusable modules. The file size of the product will not exceed 300 MB.

2.3. Users of the product:

- Sellers
- Consumers
- Delivery personnel

2.4. Amount of reused software:

The product will maximize the use of reusable libraries to keep the code robust, versatile, and easily maintainable.

3. Business impact risk:

3.1. Effect of this product on revenue:

The product is designed to register, accommodate and cater to the different needs of different customers and sellers.

Since the product will increase the sales of goods significantly, the revenue generated by the product will be high.

3.2. Delivery deadlines:

The development life-cycle of the product will follow an agile model. This will enable us to release the product under a 30 days deadline and further allow us to improve and update the product dynamically, regularly, and reasonably fast.

3.3. The number of customers who will use this product:

This product is expected to support a large number of users simultaneously.

3.4. The sophistication of the product for end-users:

As mentioned earlier, many end-users may not be familiar with using web applications and services. So, the GUI will be simple and intuitive, enabling end-users to familiarize themselves with the application with little effort.

3.5. Amount and quality of product documentation to be produced:

Sellers registering on the platform will be provided with a complete tutorial to familiarize themselves with the product. Similarly, consumers will also be provided with a thorough overview of its features. The code will remain the sole property of the product developer. Thus, the code will not be available freely.

3.6. The cost associated with the product:

The main cost associated with the product will be web hosting and maintaining the product.

3.7. Customer-related risk:

The web application will include a payment gateway. So, it is necessary to keep the payment gateway secure and fraud-resistant.

Transparent order tracking will be available for the customers to view. Sellers will be required to provide the necessary details about their products.

3.8. Development environment risk:

- Are testing tools available and appropriate for the product to be built?
  - We will use Jest as our primary testing tool to speed up and automate the testing process. It is available freely.
- Is a software management tool available?
  - JIRA will be used as our primary project management tool.
- Is a designing tool available?
  - Our Project will require several designing tools based on our needs, including:
    - Lucidchart (For creating various diagrams)
    - DRAW.IO (For creating workflow chart)
- Are configuration management tools available?

- We will use GIT for configuration management that is available freely.
- Does the environment make use of databases or repositories?
  - The system will be database-oriented, employing MySQL for maintaining it.
- Are all the software tools integrated?
  - All the functionalities will be packaged in a single product. Though, new features will be added over time.

#### 4. Process issue risk:

As mentioned previously, the product development will follow an agile model. It allows the developers to deliver the product and improvements timely.

This methodology fulfills the demand for additional features while keeping the application functional and stable.

#### 5. Technical issue risk:

- Are specific conventions for code documentation defined and used?
  - The code documentation will be maintained.
  - The end-users will receive information about any changes and updates in the application.
- Are configuration management software tools used to control and track change activity throughout the software process?
  - We will use GIT as our version control system to track changes and the development progress.
- Do you use specific methods for test case design?
  - We will use Jest as our primary testing tool to speed up and automate the testing process.

#### 6. Technology Risk:

- Is the technology to be built new?

- As mentioned previously, all the technologies and APIs employed are reliable and on par with current and future requirements.
- Do the system requirements demand the creation of new algorithms, input, or output technology?
  - Some algorithms will be required for facilitating order tracking and some other features.

## **2.5. Social/Legal Feasibility:**

All the technologies used in developing the product are licensed by their respective owners under law.

This service will enable the sellers to sell their products on a significantly larger scale, and they only need to pay a minuscule fee for the sale of their products.

Thus, the system is legally and socially feasible.

## **3. Consideration:**

### **3.1. Performance:**

The project requires moderate bandwidth hence the performance will not degrade with an increasing number of users. At the development stage, we will use a free hosting service and a free database will be used but when we publish our website it will be hosted on AWS to increase the performance.

**AWS (Amazon Web Service):** As compared to traditional hosting services AWS provides better performance to our website as AWS adjusts to the website traffic more efficiently as compared to traditional hosting services

**MySQL:** MySQL is the most secure and reliable database management system. In terms of speed and performance, MySQL will be the best database because our website will be receiving a large number of queries every day.

### **3.2. Security:**

Security measures are provided in many aspects of this system:

#### **3.2.1. User Authentication**

Users will have to authenticate using username and passwords, or by using a Google account.

Depending upon the nature of the user they will gain different functionality as we have two types of user Sellers and Buyers.

Passwords can be changed by the user.

#### **3.2.2. Payment Check**

For Payments, we will use the third-party payment gateway with an encrypted checkout tunnel to process payment.

As these Payment gateways are completely secured and do not leak any sensitive data.

### **3.3. Usability and Ease of Use:**

The interfaces are designed to make it easy for any potential user to get familiar with the system in no time The ease with which a visitor can read, navigate, and interact with a website. No additional training is required to use the website, neither to the Sellers nor to the buyers.

When developing a website that is easy to use it should have a feasible interface that is easy to read for those people who do not have any knowledge of computers.

Sellers that are listed to us can easily list their products on our website. As well as easy payment options will be provided to our website which will convert the traffic into the sale.

### **3.4. Capacity and Scalability:**

The website can accommodate multiple users simultaneously as when we receive many visitors; the performance is scaled vertically with a large number of users or horizontally by adding more servers to it. The system is designed to make it easy to integrate into an existing system.

### **3.5. Availability:**

The system will be online throughout the day. Meantime to failure and mean time to repair will be decided, to increase the availability. With a paid hosting space, the availability can be guaranteed to great precision.

## **4. References:**

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- [Quality software — 12 non functional requirements every app should have](#)
- [72 Must-Have Ecommerce Website Features \[Infographic\] | WebAlive](#)
- [Types of Feasibility Study in Software Project Development - GeeksforGeeks](#)
- [Steps to Prepare Feasibility Study Report for Software Development Project](#)
- [Choosing a Technology Stack for eCommerce Development](#)

## **5. Contributions:**

- Introduction portion and document formatting are done by Abhishek (2020-IMG-002).

- The feasibility study is completed by Siddharth Butoliya (2020-IMG-061).
- The consideration portion is completed by Aman Pachori (2020-IMG-007).