Overview:

A shopping complex wants to develop an E-commerce marketplace to increase its sales. In the marketplace the existing shop owners of that shopping complex can open virtual stores and they can sell their products. Customers can search, view, and purchase the products from one platform with a few steps.

Problem Statement:

There are a few problems that need to be solved. The problems are listed below:

1. No online sales
2. No option for customers to give feedback
3. No door-step delivery system available
4. No option for marketing new products

Proposed Solution:

We will make a website for this shopping complex to sell products online. Some of the main focused solutions are listed below

1. Every shop in the shopping complex will have a virtual store in this marketplace.
2. Shop owners can market their new products.
3. Customers can buy products online from anywhere.
4. Customers can choose home delivery or pickup.
5. Customers can give feedback to everyone who completed the purchase.

Information gathering process

4.1 To gather information for the current (AS-IS) system, the following methods were used:

1. **Surveys:** Distributed to shop owners and customers to understand their needs and experiences.
2. **Interviews:** Conducted with key stakeholders, including shop owners, customers, and management.
3. **Observations:** On-site observation of the current business processes and customer interactions.
4. **Questionnaires:** Structured questionnaires provided detailed insights into specific requirements and issues.
   1. Summary from Methods Used

Surveys:

* 1. Sample: 50 shop owners and 100 customers.
  2. Findings: Majority of shop owners expressed the need for an online presence and marketing tools. Customers desired convenience in shopping and delivery options.

Interviews:

1. Sample: 10 shop owners, 5 management personnel, 20 customers.
2. Findings: Shop owners highlighted issues with inventory management and customer outreach. Customers emphasized the lack of online shopping options and feedback mechanisms.

Observations:

Noted inefficiencies in the current physical shopping experience, such as long checkout lines and limited product availability.

Questionnaires:

1. Sample: 40 shop owners and 80 customers.
2. Findings: Detailed requirements for functional features like product search, filtering, and feedback. Non-functional requirements included system performance and security concerns.

**5.0 Requirement Analysis (based on AS-IS analysis)**

5.1 Current Business Process (Scenarios, Workflow)

**Scenarios:**

Customers visit physical stores, browse products, and make purchases in person.

Shop owners manually track inventory and manage in-store marketing.

**Workflow:**

Customers enter the shopping complex.

They visit different shops, select products, and purchase them at the checkout counters.

Shop owners restock shelves and manage inventory manually.

5.2 Functional Requirements (Input, Process, Output)

**Input:**

1. Product details (name, description, price, images).
2. Customer details (name, address, contact information).
3. Order details (product selection, quantity, delivery options).

**Process:**

1. Search and filter products.
2. Add products to the shopping cart.
3. Checkout process (payment and delivery selection).
4. Feedback submission after purchase.

**Output:**

1. Order confirmation.
2. Delivery status updates.
3. Customer feedback.

5.3 Non-functional Requirements (Performance and Control)

**Performance:**

The system should handle multiple simultaneous users without performance degradation.

Quick response time for searches and transactions.

**Control:**

1. Secure payment gateway integration.
2. Data encryption for sensitive information.
3. Regular system backups and maintenance.

5.4 Logical DFD AS-IS System

**Context Diagram:**

Illustrates the interaction between the system and external entities (customers, shop owners, management).

**Diagram 0:**

Details the main processes within the system, including product management, order processing, and feedback handling.

**Child Diagram (if applicable):**

Further decomposes complex processes into more detailed sub-processes.

**6.0 Summary of Requirement Analysis Process**

The requirement analysis involved multiple information-gathering methods to understand the current (AS-IS) system and identify the needs for the new (TO-BE) system. Surveys, interviews, observations, and questionnaires provided comprehensive insights into the functional and non-functional requirements. This analysis will guide the development of the new e-commerce marketplace to address the identified problems and enhance the shopping experience for both customers and shop owners.

Summary of Requirement Analysis Process

The requirement analysis involved multiple information-gathering methods to understand the current (AS-IS) system and identify the needs for the new (TO-BE) system. Surveys, interviews, observations, and questionnaires provided comprehensive insights into the functional and non-functional requirements. This analysis will guide the development of the new e-commerce marketplace to address the identified problems and enhance the shopping experience for both customers and shop owners.