**Feasibility Analysis**

**Technical Feasibility**

1. **Technology Stack  
   1.1 Front-End:**
   * HTML5, CSS, JavaScript: Core technologies for building the website's structure, style, and interactivity.
   * React: Popular JavaScript framework for efficient and scalable front-end development.

**1.2 Back-End:**

* + Node.js: A JavaScript runtime environment for building server-side applications.
  + PHP

**1.3 Database:**

* + MySQL: Relational database for structured data storage.

1. **Development Resources  
   2.1 Front-End Developers**: Knowledge in HTML, CSS, JavaScript, and a front-end framework like React.  
   **2.2 Back-End Developers**: Knowledge in PHP, Node.js, or Python with Django or Flask. **2.3 Database Administrators:** Knowledge of database design, optimization, and security.
2. **Integrations  
   3.1 Payment Processors:** Integrate seamlessly with popular payment gateways like Stripe.

**Economic Feasibility**

1. **Development Costs**
   * **Front-End and Back-End Development: $0,000**
   * **Design and UI/UX: $0,000**
   * **Database Design and Implementation: $0,000**
   * **Testing and QA: $0,000**
   * **Project Management: $0,000**
   * **Total Initial Cost: $00,000**
2. **Operational Costs**
   * **Ongoing Costs:**
     + **Security Measures: $5/year**
     + **Maintenance and Updates: $0,00/year**
     + **Customer Support: $1,000/year**
     + **Marketing and Advertising: $0,00/year**
   * **Total Annual Operational Cost: $1,005**

**Organizational Feasibility**

1. **Company Goals Alignment:**
   * **The e-commerce project aligns with the organization's strategic goals and objectives (providing online products).**
2. **Staff Readiness:**
   * **Skill Set: The existing employees possess the necessary skills (e.g., digital marketing, e-commerce platform management, customer service) to manage the project.**
   * **Workload Capacity: The current staff can handle the additional workload, with no additional hiring required.**
3. **Internal Policies**
   * **Customer Service: Established customer service standards and processes are in place for handling inquiries, complaints, and returns.**

**Schedule Feasibility**

1. **Timeline for Development:**

**Phase 1: Planning and analysis**

* **Task 1: Project Kick-off Meeting**
  + Duration: 1 hour
* **Task 2: Requirements Gathering and Analysis**
  + Duration: 5 days
* **Task 3: Project Scope Definition**
  + Duration: 3 days
* **Task 4: Team Formation and Resource Allocation**
  + Duration: 2 days

**Phase 2: Design**

* **Task 6: DFD**
  + Duration: 5 days
* **Task 7: UI Design**
  + Duration: 15 days

**Phase 3: Development**

* **Task 8: Front-end Development**
  + Duration: 30 days
* **Task 9: Back-end Development**
  + Duration: 40 days
* **Task 10: API Development**
  + Duration: 15 days
* **Task 11: Database Design and Implementation**
  + Duration: 1 day

**Phase 4: Testing**

* **Task 12: Unit Testing**
  + Duration: 10 days
* **Task 13: Integration Testing**
  + Duration: 15 days

**Functional and Non-Functional Requirements**

**User-Side Responsibilities**

**Functional Requirements:**

1. **Account and Profile Management**
   * Users can register with email, password, and phone, with optional social media login.
   * Users can log in securely with email and password, with optional multi-factor authentication.
   * Users can update personal details, manage addresses, and view order history.
2. **Product Interaction**
   * Products display titles, descriptions, images, prices, stock quantities, and categories.
   * Users can search for products with autocomplete and filter by price, brand, rating, etc.
   * Users can submit and view reviews and ratings on product pages.
3. **Shopping Cart and Checkout**
   * Users can add, remove, and adjust items in the shopping cart.
   * The checkout process allows address selection, payment method choice, and order review.
   * Secure integration with Stripe payment gateway to handle payments, supporting multiple payment methods.
4. **Order Management**
   * Users can track their orders through stages like Processing, Shipped, and Delivered.
   * Users can initiate and track return or refund requests.
   * Past orders are displayed with product details, order date, and payment information.
5. **Customer Support**
   * FAQ section addresses common issues and provides assistance.
   * Users can access live chat or submit tickets for help.
6. **Engagement and Promotions**
   * Users can apply discounts and coupons at checkout.
   * Automated emails are sent for promotions, abandoned carts, and product recommendations.
   * Recommendations display personalized suggestions based on browsing and purchase history.

**Non-Functional Requirements:**

1. **Usability**
   * The interface is user-friendly, responsive, and consistent across mobile and desktop.
   * Clear error messages guide users during login, checkout, or other issues.
2. **Performance**
   * Pages and actions, like search or add-to-cart, load in under 2 seconds.
3. **Accessibility**
   * The platform is compatible with screen readers, high contrast modes, and keyboard navigation.

**System-Side Responsibilities**

**Functional Requirements:**

1. **Scalability and Performance**
   * The system handles high concurrent users and traffic spikes without performance degradation.
   * Real-time updates maintain accurate product stock and inventory levels.
2. **Security and Data Protection**
   * Sensitive data like passwords and payment details is encrypted.
   * Role-based permissions control access to data and features by user roles (admin, seller, customer).
3. **Reliability and Uptime**
   * 99.9% uptime ensures uninterrupted shopping and order processing.
4. **Compliance and Policies**
   * The system complies with GDPR, CCPA, and data protection standards.
   * Product listing policies ensure compliance with legal and regulatory requirements.

**Non-Functional Requirements:**

1. **Scalability**
   * Elastic infrastructure adapts to handle increasing traffic and user growth.
2. **Security**
   * Personal and payment data is encrypted at rest and in transit following industry standards.
   * Fraud detection mechanisms monitor and prevent unauthorized activities.
3. **Maintainability**
   * The system’s architecture is modular, enabling easier updates and feature additions.
4. **Compliance and Governance**
   * Designed to meet data privacy standards, adapting to future regulatory changes.