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| |  | | --- | | **Application Domain** |  |  | | --- | |  | | |  | | --- | | **Complex Problem Identified** |  |  | | --- | |  | | JUSTIFICATION |
| 1. Retail & E-commerce E-commerce Application (Online Shopping Platforms like Amazon, Flipkart) | **1. Difficulty in understanding customer preferences**  **2. Managing vast inventories efficiently**  **3. Preventing fraudulent transactions** | **AI-driven recommendation systems analyze user behavior to suggest products, increasing customer satisfaction.**  **Automated inventory management helps sellers optimize stock levels, preventing overstocking or shortages.**  **Secure payment gateways with AI fraud detection prevent unauthorized transactions and protect users’ data.** |
| 1. Artificial Intelligence & Customer Service | **1. Handling large-scale customer queries without human intervention**  **2. Reducing response time for customer support**  **3. Providing personalized assistance to users** | **AI chatbots use natural language processing (NLP) to handle thousands of queries simultaneously.**  **Automated replies ensure customers receive instant responses, improving user experience.**  **Machine learning allows chatbots to understand customer preferences and offer personalized solutions.** |
| 1. Information Technology & Cloud Computing | **1. High infrastructure costs for businesses**  **2. Scalability issues in traditional server-based systems**  **3. Ensuring data security and recovery in case of failures** | **Cloud services eliminate the need for expensive hardware by offering cost-effective, pay-as-you-go solutions.**  **Businesses can scale resources up or down based on demand, optimizing performance and cost.**  **Cloud storage solutions provide automatic backups, reducing the risk of data loss due to system failures.** | |