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Smart Inventory and Logistics Management System for MSMES (Micro, Small and Medium Enterprises) in Remote Locations

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Abstract: *Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in driving economic growth and employment, particularly in developing regions. However, MSMEs operating in remote or underserved areas often face significant challenges in managing inventory, preventing stockouts, and coordinating logistics efficiently. These challenges lead to delays, increased operational costs, and loss of customer trust. This paper presents the design and development of a comprehensive digital solution tailored specifically to address these issues for MSMEs in remote locations. The proposed system integrates real-time inventory tracking, predictive analytics fordemand forecasting, and intelligent logistics planning to streamline the supply chain. By enabling accurate visibility into stock levels, the system minimizes the risk of overstocking or understocking, and ensures that products are replenished proactively. Furthermore, the logistics module employs route optimization and delivery scheduling to guarantee timely deliveries, even in geographically challenging regions. The solution is designed with scalability, affordability, and usability in mind, ensuring it is accessible and practical for resource-constrained enterprises. Initial evaluations and simulations demonstrate significant improvements in delivery times, inventory turnover rates, and customer satisfaction. This work contributes a robust framework for digitally empowering MSMEs and fostering sustainable business practices in remote environments.*

Keywords: MSMEs, remote locations, inventory management, stockout prevention, logistics optimization, real-time tracking, supply chain management, demand forecasting, digital solutions, small business support, delivery efficiency, smart logistics, sustainable business, resource-constrained environments

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