

Revamping Agile Logistics for Emergency Management

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Abstract

This paper explores the potential of new technologies and agile logistics in revolutionizing emergency management. By adopting a systems architecture approach, the study aims to develop a comprehensive framework that enhances response capabilities and improves outcomes in disaster relief efforts. The proposed framework leverages commercial space technologies to deliver critical humanitarian aid worldwide. The research addresses the complexity of emergency management systems, highlighting the crucial role of stakeholders in the validation process and the role of simplicity in technology management. The study emphasizes the significance of agile logistics in adapting to the unpredictable nature of disasters and ensuring the swift delivery of essential supplies. Furthermore, the paper describes the development of a humanitarian manifest list and the application of deep reinforcement learning for route optimization. By integrating space technologies, agile methodologies, and advanced analytics, this research presents an innovative approach to emergency management to minimize response times, optimize resource allocation, and save lives in the face of catastrophic events. The findings of this study contribute to the advancement of emergency management practices and offer valuable insights for policymakers and disaster relief organizations.

Keywords

Agile Logistics, Emergency Management, Disaster Response, Modeling, Reinforcement Learning, Space Technologies