

Enhancing Warehousing Operation In Cold Supply Chain Through The Use Of IOT And Lifi Technologies

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Abstract : Several concerns fall upon the supply chain, especially the cold supply chain. According to the literature, the main challenges in the cold supply chain are the distribution and storage phases. In this research, researchers focused on the storage area, which contains several activities such as the picking activity that faces a lot of obstacles and challenges. The implementation of IoT solutions enables businesses to monitor the temperature of food items, which is perhaps the most critical parameter in cold chains. Therefore, researchers proposed a practical solution that would help in eliminating the problems related to ineffective picking for products, especially fish and seafood products, by using IoT technology, most notably LiFi technology. Thus, guaranteeing sufficient picking, reducing waste, and consequently lowering costs. A prototype was specially designed and examined. This research is a single case study research. Two methods of data collection were used; observation and semi-structured interviews. Semi-structured interviews were conducted with managers and decision maker at Carrefour Alexandria to validate the problem and the proposed practical solution using IoT and LiFi technology. A total of three interviews were conducted. As a result, a SWOT analysis was achieved in order to highlight all the strengths and weaknesses of using the recommended LiFi solution in the picking process. According to the investigations, it was found that the use of IoT and LiFi technology is cost effective, efficient, and reduces human errors, minimize the percentage of product waste and thus save money and cost. Thus, increasing customer satisfaction and profits gained.

Keywords : cold supply chain, picking process, temperature control, IOT, warehousing, LIFI

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