

Use of Internet of Things (IoT) in the Design of an Inventory Management System for Omni-Channel Retailing

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Abstract

This research studies the use of Internet of Things (IoT) in the design of an Inventory Management System for Omni-Channel Retailing by learning the factors in the use and its benefits or outcomes taken from one of the Technology Adoption Model which is Technology-Organization-Environment. Despite the stagnation of the retail sector all over the world, we have witnessed the steady growth of the Philippine retail industry. With the continued growth of retail in our region, the popularity of e-commerce affects the future of the retail industry in the Philippines, which means that businesses must adopt a digital strategy. To identify factors that predict the use of IoT in the design of an Inventory Management system for an Omni-channel retailing in a sample of individuals in management position, a binary logistic regression analysis was conducted, simultaneously including Organizational, Technological and Environmental context into the model. Retail companies who are gearing towards an omni-channel retailing should review the Organizational context as it greatly affects the decision to use IoT based on the result of the test. Also, Customer preference is the top to be associated by the management to influence their reason to use IoT. Most customers nowadays expect stores to provide an ease in shopping experience. We have seen customers who have changed their shopping behavior from the traditional brick and mortar but also in digital. Working both offline and online strategy should be considered to have a unique customer-centric service delivery.

Keywords

Internet of Things, Retail, Omni-channel, Inventory Management

Biographies

Sheila Mae Carungay. Shine is a Full-Time Faculty Member in the Department of Industrial Engineering at the Adamson University, Manila, Philippines. She earned B.S. in Industrial Engineering from Mapua University and M.S. in Management Engineering from Adamson University. Sheila is a Professional Industrial Engineer with over 15 years of industry experience before entering the academe. She had joined companies where she earned her expertise in Supply Chain and Operations Management through various industries such as semi-conductor manufacturing, hosiery manufacturing, food restaurant and retail for health and beauty. She has taught courses in Engineering Management, Methods Engineering, Human Resources Management and Engineering Economy. She is a member of PIIE (Philippine Institute of Industrial Engineers), a local organization of Industrial Engineers in the Philippines.

Francispito Quevedo. Mr. Quevedo, Bayad Centers' Senior Vice President and COO has over 20 years of combined experience in Information Technology, IT/IS Operations, Systems Development & Administration, and Methods & Industrial Engineering. Prior to Bayad Center, Pit was sent by CIS to the Lopez Group's Executive Development Program - Managerial Leadership Program of the Asian Institute of Management. He obtained both his Master of Science in Industrial Engineering and his Bachelor of Science in Industrial Engineering degrees at the University of the Philippines, Diliman. Concurrent to his professional career, Mr. Quevedo has been teaching numerous Masters- and College level programs in the Industrial Engineering Department of the Adamson University since 1983. He is affiliated with the Philippine Institute of Industrial Engineers (PIIE).

Venusmar Quevedo. Dr. Venusmar is a Associate Professor of the Industrial Engineering Department at Adamson University, Manila, Philippines. Dr. Quevedo holds a Bachelor of Science degree in Industrial Engineering from

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