

Chapter 4

The Internet of Things (IoT) Is Revolutionizing Inventory Management

Imdad Ali Shah

School of Computing Science, Taylor's University, Malaysia

Areesha Sial

Mehran University of Engineering and Technology, Pakistan

Sarfraz Brohi

University of the West of England, UK

ABSTRACT

Every part of the supply chain has been affected by the rise of Industry 4.0 technologies. Many businesses have been trying out this modern technology to see if it can help them make more money. IoT devices make it simple for companies to keep track of an item's specific location, which helps inventory management (IM). The time it takes to find inventory is shortened as a result. The abundance of real-time data makes it possible to offer insightful information that supports strategic and tactical business decisions. Developing a supply chain into a fully integrated supply chain has several benefits. The differences between fourth-generation technology and earlier generations make it seem like traditional ways of restocking inventory don't adapt well enough to new technologies and can't handle IoT systems. Thanks to technological advancements, supply chains are undergoing rapid transformation.

1. INTRODUCTION

The application of AI to inventory management has emerged as one of the most widely used corporate strategies today. Computers and other devices, such as robots

DOI: 10.4018/979-8-3693-3816-2.ch004

controlled by computers, are essentially what artificial intelligence (AI) is all about. One of the most widely used technologies nowadays is AI. This machine performs jobs based on human experience and intelligence while processing vast volumes of data and identifying various data patterns. The management of inventory gives companies the ability to choose what products to order, when to order them, and in what numbers. The inventory is monitored from the time a product is purchased until it is sold. This technique identifies patterns and adjusts production accordingly to ensure that there is sufficient stock on hand to fulfil customer orders and that they are given timely warnings of any potential shortages (Stankovic, J. A, 2016, Mármol, F. G., 2016, Nespoli, P., 2017). The worldwide supply chain and every area of inventory management are being rapidly transformed by IoT. The Fourth Industrial Revolution is ushered in by the Internet of Things in a world where new technologies and ongoing innovation exist (Díaz-López, D., Dunhill J, 2020, Huertas Celdran A, 2018, Fernandez Maim, 2019). Additionally, a McKinsey Global Institute estimate estimates that the IoT might contribute between \$560 billion and \$850 billion annually to logistics, supply chain management, and inventory management by 2025.

IoT will develop as soon as almost all technological goods on the market have internet access (Nguyen H, 2016, Cheng L, 2017, Cabaj K 2018). By 2020, there are predicted to be 26 billion linked devices worldwide, providing more communication than we had previously thought possible between the devices and their users (Xiao F, 2020, Luo P, 2020, Lee S, 2017). New technological innovations and inventions in the logistics and supply chain sector range from specialized integrations of tried-and-true methods (such as bitcoin AI platforms) to more sector-specific innovations. And it appears that technology is utterly transforming the logistics sector each year (Prabadevi, B., 2020, Lv, Z., 2020). We acknowledge that the term “Internet” is synonymous with revolution and the future, even though it may appear to be a regular part of our daily lives. And the truth is that since the Internet has become more accessible to everyone, our way of life has completely changed.

With the interconnectedness of all the assets in the supply chain, the Internet of Things provides “intelligent” to businesses and opens a world of opportunities. For example, it allows for real-time control of a product’s path from when it leaves the warehouse to its destination. Utilizing the Internet of Things has advanced the sector’s digitalization by enabling remote organisation, control, and automation of operations from any device with an internet connection, cutting costs and time so that human labour only contributes value (Tan, Y., Cheng, 2017, Li Y, Liu H, 2017, Anwar, 2018). In general, recruiting is finding and selecting the best candidates for a position so they can focus their efforts on realising their professional and organizational objectives. With the introduction of technologies like the internet of things (IoT), corporate analytics, and deep learning in the HR sector, Employers use them to improve their hiring practices and find the best candidates for open

23 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/the-internet-of-things-iot-is-revolutionizing-inventory-management/341415

Related Content

Framework for Military Applications of Social Media

Namosha Veerasamyand William Aubrey Labuschagne (2018). *International Journal of Cyber Warfare and Terrorism* (pp. 47-56).

www.irma-international.org/article/framework-for-military-applications-of-social-media/204419

Economic Impact of Cyber Attacks on Critical Infrastructures

Merve ener (2019). *Applying Methods of Scientific Inquiry Into Intelligence, Security, and Counterterrorism* (pp. 291-314).

www.irma-international.org/chapter/economic-impact-of-cyber-attacks-on-critical-infrastructures/228475

The Covert Strengthening of Islamic Extremists under Ronald Reagan and George W. Bush

Jason Cooley (2014). *International Journal of Cyber Warfare and Terrorism* (pp. 17-28).

www.irma-international.org/article/the-covert-strengthening-of-islamic-extremists-under-ronald-reagan-and-george-w-bush/127384

Possibilities, Impediments, and Challenges for Network Security in Big Data

Anuj Kumar Dwivediand O. P. Vyas (2020). *Cyber Warfare and Terrorism: Concepts, Methodologies, Tools, and Applications* (pp. 823-832).

www.irma-international.org/chapter/possibilities-impediments-and-challenges-for-network-security-in-big-data/251465

Ascertaining Trust Indicators in Social Networking Sites

N. Veerasamyand W. A. Labuschagne (2013). *International Journal of Cyber Warfare and Terrorism* (pp. 22-37).

www.irma-international.org/article/ascertaining-trust-indicators-in-social-networking-sites/101938