

# Improving the Retailer Industry Performance Through RFID Technology: A Case Study of Wal-Mart and Metro Group

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## **EXECUTIVE SUMMARY**

*This study focuses on RFID and its implementation at two retail chains, Wal-Mart in United States (U.S.) and Metro Group in Europe, who have successfully implemented this technology. It identifies the impact of RFID on improving supply chain performance in the retail industry. The researchers have concentrated on both explorative and indicative studies in an effort to understand the impact that the adoption of RFID technology will have on improving the performance of the supply chain by comparing two different case studies. This research study has found that coordination and integration operations are important for inventory management and related operations, and they are also important factors that contribute to performance improvement in both case studies. In addition, this research study has found that RFID's information-sharing support for buyers in the supply chain has promoted the accuracy of purchasing forecasts. Finally, it is found that RFID has provided increased flexibility of operations, using smart shelves and reducing the cost of inventory management.*

## **INTRODUCTION**

Radio Frequency Identification (RFID) technology is hailed by most industry experts and technology pundits as ‘one of the most exciting technologies for SCM’ (Wu & Subramaniam, 2009), but it is the sub-field of retail that has seen, and continues to show, the most potential for growth for the application of this technology. RFID provides accurate, up-to-date, practical information about product identification data, pricing, and dates of manufacture and expiration, and with the use of geo-navigational instruments, it allows producers to pinpoint and track their products and quickly calculate the current inventories on hand (Ilie-Zudor et al., 2011). As noted previously, introducing RFID technology into a business enhances and increases speed, accuracy, detailing, and visibility of operational information of specific units of production (Moberg & Speh, 2003). Implementing this technology in business leads to shorter production cycles, reduced overall labour costs, improved delivery and more reliable customer service (Bose & Pal, 2005).

This chapter will explore the benefits of RFID technology through its application to the supply chains in two leading global retailers: Wal-Mart and Metro Group.

## **TECHNOLOGY BACKGROUND**

Automatic Identification (Auto-ID) is a broad term given to technologies that are used to help equipment to identify objects. Auto-ID is often coupled with automatic data capture. That is: identify different items, capture information about them and transfer the data into an Information System (IS). Auto-ID technologies include different technologies such as Bar-Codes, smart cards, RFID, optical character recognition (OCR) and Biometrics such as (fingerprint procedure and voice recognition). This research focused on RFID technology.

### **Radio Frequency Identification Technology (RFID)**

RFID relies on the assignment of a radio frequency to every item tracked within a SC which acts as the item’s identity (Wu & Subramaniam, 2009). The most important advantages over the use of barcodes are the possibility of identify items without line of sight (Curtin et al., 2007; Karmakar, 2010), simultaneous reading of several tags, which is achieved by anti-collision mechanisms and the ability to identify items uniquely using the Electronic Product Code (EPC) concept. Because RFID systems can be run without the need for human interaction, the scanning process can be fully automated (Karmakar, 2010).

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