Chapter 68

Consumer Value Trumps Perceived Privacy Risk:
Item–Level RFID Implementation in the FMCG Industry

Wesley A. Kukard
University of Otago, New Zealand

Lincoln C. Wood
iD https://orcid.org/0000-0003-3385-6561
University of Otago, New Zealand & Curtin University, Australia

ABSTRACT

This chapter reviews past radio frequency identification (RFID) literature within the fast-moving consumer goods (FMCG) industry and the impact of consumer benefits on the perceived risks of item-level RFID. Two new categories are used to measure this impact; the separation of consumers' interactions with the technology to in-store and after-sales allows the consumers expectation of privacy to changes depending on the surrounding environment. A quantitative survey on primary household grocery purchasers within the USA revealed that while consumers are aware of the associated privacy risks after sale, they would be willing to use the technology, given sufficient benefits. This important step in RFID literature changes the conversation from a privacy risk management focus to a balanced integration of the technology, focusing on consumer benefits to manage the roll-out within the FMCG industry.

INTRODUCTION

As technology moves forward, modern society will see a future where all devices are connected to the Internet – a 'connected future' (Burrus, 2014). While the concept of a connected future remains in its infancy, it is built on an expectation of the future and our way of life. In much in the same way social media networks have evolved to become a fundamental part of day-to-day life, the 'Internet of Things' (IoT) paradigm will soon become embedded as a part of life over the globe, as "by 2025 Internet nodes

may reside in everyday things – food packages, furniture, paper documents, and more" (National Intelligence Council, 2008, p. v.).

The "Internet of Things" term is used to describe an eco-system of Internet-connected devices that can either send or receive information between one another. This information is gathered, stored and processed over time to create a complex information database to allow the device to produce a more accurate outcome for the end user/business (Morgan, 2014).

To understand the implications for global firms shifting their products and services in recognition of the IoT, there is a focus on implementation opportunities within the Fast Moving Consumer Goods (FMCG) industry. Due to a large number of goods and the way that FMCG touches the lives of everyone, this is likely where the IoT will become a part of everyday life (Kukard & Wood, 2017, p. 22). For FMCG companies to gain the most out of IoT integration, they are going to have to incorporate item-level RFID / Near-Field Communication (NFC) into their packaging, each tag with its electronic product code (EPC). The EPC is a string of numbers, similar to a barcode but much longer. It is this unique identifier that gives the IoT ecosystem its power. Item-level passive RFID and NFC has been chosen as the main focus in this chapter, as opposed to active RFID, Wi-Fi or Bluetooth technology as it has a much lower production cost. As we are looking at the FMCG industry, consumer goods usually have a much lower absolute sales price. Therefore, it is likely a low cost and easily mass-produced technology such as RFID / NFC would be used.

This chapter will focus on the history of RFID research, consumers' perceptions of item-level RIFD and the role it will play in the future of the FMCG industry. The focus on consumers' perceptions remains important as,

One of the major continuing conversations with RFID research is the potential for mass data collection on a level that, in theory, could cause major privacy issues for consumers. When RFID tags are introduced at an item-level, the ability to track objects or consumers through their use of the items could become a lot easier. The introduction could lead to consumers becoming responsible for the objects they purchase, information collection while within stores to build a personalized advertising campaign or objects that punish misbehavior and criminals using the system to their advantage. These types of privacy concerns are well documented. (Kukard & Wood, 2017, p. 23)

This chapter first addresses the background use of RFID in the FMCG industry. The focus is on current RFID research trends and related technologies; there is a strong emphasis on understanding how to implement the technology given consumer concerns about their privacy. Next, several hypotheses are generated and the research method is explained. We then present the research results and discuss the implications.

BACKGROUND

The use of RFID, especially on the scale required for integration into the FMCG industry will require the development of global information databases that will support the adoption of RFID and the IoT. While there are recognized cost barriers to firms seeking to adopt these technologies (Owunwanne & Goel, 2016; Lanfranchi, Giannetto, & De Pascale, 2016), a key challenge will continue to be the consumer acceptance of these changes. Such consumer acceptance of the technology has historically proven difficult

19 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/consumer-value-trumps-perceived-privacy-risk/280237

Related Content

3D Avatars and Collaborative Virtual Environments
Koon-Ying Raymond Liand James Sofra (2007). *Encyclopedia of Information Ethics and Security (pp. 1-6).*
www.irma-international.org/chapter/avatars-collaborative-virtual-environments/13444

Competence E-Assessment Based on Semantic Web: From Modeling to Validation
Mounira Ilahi-Amri, Lilila Cheniti-Belcadhiand Rafik Braham (2018). *Multidisciplinary Perspectives on Human Capital and Information Technology Professionals (pp. 246-267).*
www.irma-international.org/chapter/competence-e-assessment-based-on-semantic-web/198260

DDoS Attack Simulation and Machine Learning-Based Detection Approach in Internet of Things Experimental Environment
Hongsong Chen, Caixia Mengand Jingjiu Chen (2021). *International Journal of Information Security and Privacy (pp. 1-18).*
www.irma-international.org/article/ddos-attack-simulation-and-machine-learning-based-detection-approach-in-internet-of-things-experimental-environment/281038

Nonparametric Correspondence Analysis of Global Risk Management Techniques
Kenneth David Strang (2012). *International Journal of Risk and Contingency Management (pp. 1-24).*
www.irma-international.org/article/nonparametric-correspondence-analysis-global-risk/70230

Security, Privacy, and Trust Management and Performance Optimization of Blockchain
Priti Gupta, Abhishek Kumar, Achintya Singhal, Shantanu Saurabhand V. D. Ambeth Kumar (2023). *Research Anthology on Convergence of Blockchain, Internet of Things, and Security (pp. 1115-1127).*
www.irma-international.org/chapter/security-privacy-and-trust-management-and-performance-optimization-of-blockchain/310498