
Editorial

Timon C. Du

Department of Decision Science and Managerial
Economics, Faculty of Business Administration,
The Chinese University of Hong Kong,
Shatin, Hong Kong
Fax: +852-26035104 E-mail: timon@cuhk.edu.hk

Biographical notes: Timon C. Du received his MS and PhD Degrees in Industrial Engineering from Arizona State University in 1992 and 1995, respectively. He is a Professor of Decision Sciences and Managerial Economics at the Faculty of Business Administration, the Chinese University of Hong Kong. His research interests are business intelligence, privacy and security, e-logistics, culture and e-commerce, and semantic web. He was the Executive Editor for the *International Journal of Internet and Enterprise Management*, and is the Managing Editor for the *International Journal of Electronic Business* now.

Radio Frequency Identification (RFID) using radio frequency technology for automated identification has been acknowledged in many uses such as inventory control and asset tracking to replace the use of traditional barcode technology. The technology allows multiple objects to be identified without line of sights by embedding with a product for a unique identity to be imprinted. Further, transient information can be updated or changed during the transition throughout production systems, warehouses, airliners, trucks, distribution centres, retailers, and finally to the end customers.

The use of RFID brings the second source of information to enterprise management. It is said the second source is because, in the conventional approach, the information is shared among the various departments through an integrated enterprise system or is shared among the partners to enhance the performance of the whole supply chain. However, very often, the information is not synchronised with the physical flow until track and trace function is activated. A familiar scenario is that a production line is eager but cannot use some parts on dock since the arrival of the parts has not been input into the enterprise system yet. With RFID, the logistic information of the arrival parts can actively pull the information from the system and synchronise both information flow and physical flow at all time.

When the use of RFID is blooming and known to enterprise, this special issue of IJEB would like to address the questions of applying RFID in supply chain networks. It includes five research papers from theory building to case analysis. In summary:

Ashish Kumar Tewary, Parag Kosalge and Jaideep Motwani, in their paper 'Challenges in piloting a RFID implementation: a case study of an aerospace and defence supply chain' introduces RFID implementation in the biggest aerospace and defence manufacturer using case study methodology.

Frédéric Thiesse and Cosmin Condea in their ‘RFID data sharing in supply chains: What is the value of the EPC network?’ addresses the extent that companies draw benefits from the use of systems on top of an existing RFID hardware infrastructure. It provides an overview of the technical architecture of the EPC Network and then develops a list of 18 RFID use case scenarios on the foundations of recent RFID studies.

Waiman Cheung, Sung-Chi Chu and Timon Du in their ‘A technology roadmap for RFID adoption in supply chains’ proposes a technology roadmap to prescribe the technological development in RFID adoption. This roadmap follows a three-phase adoption process: stand-alone adoption, supply chain adoption, and global adoption. The advantages and issues of each phase of adoption are analysed to provide insight into the crucial factors that must be addressed to realise the benefits of RFID adoption.

Janice Warner in her ‘Secure RFID systems for supply chain applications’ proposes an authentication process to protect the data through encryption and a mutual authentication process that takes place between a secured tag and an authorised reader. The design combining passive and active RFID circuitry uses a combination of random and known attributes of the supply chain to make the responses from the tags and readers appear random to unauthorised parties.

Yacine Rekik and Zied Jemai in their ‘A periodic review inventory model subject to shrinkage type errors: impact of RFID’ propose three ways to manage the inventory system based on the information of shrinkage errors. The model considers the factors of the physical and information flows, and perturbs the synchronised evolution between these two flows. The study is applied to a finite horizon, single-stage, and single-product periodic-review inventory in which inventory records are inaccurate.

Acknowledgement

The guest editor of this Special Issue would like to thank all the authors that submitted their papers to this special issue. To the authors with their papers selected to be published in this issue after the reviews by international referees, we would like to show appreciation for their enthusiasm, commitment, and cooperation.

The referee board of this special issue includes Jingquan C. Li, Anthony Narsing, W.E. Lee, Kaushik Sengupta, Seong Hyun Nam, Xiling Cui, Benjamin Yen, Pietro Romano, Robert E. Spekman, Sathasivam Mathiyalakan, Robert D. Leinwand, Hao-Chiang Koong Lin, Vincent Lai, Marzie Astani, and Deming Zhou.