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RFID AS GREEN IT: LESSONS LEARNED FROM CASE STUDIES

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Abstract

RFID can play an important role as a green ICT solution to environmental sustainability. The traditional perception about ICT is that whatever ICT did came at a cost to the environment (Aronson 2008). This negative view is supported by computer societies which mandate the reduction of carbon footprint for IT industry and active lobbyist groups which call on reduced use of IT. Being part of ICT, RFID has faced similar negative reputation since today's RFID tags are by and large neither biodegradable nor recyclable, causing the recycling of the tags difficult (Thomas 2008). Nevertheless, there is an emerging trend of new IT that is eco-friendly to our globe. The concept and practice of Green IT emphasises minimal impact on the environment, economic viability, and improved system performance and use (Murugesan 2008). It is further suggested that the greening of IT industry itself is barely enough but IT's role in improving the environmental sustainability in other industries has greater impact (Ruth 2009). In the context of Green IT, RFID's proliferated applications have unlimited potential in certain areas such as e-waste control (Krikke 2008). Yet the application of "green RFID" is challenging. Increased complexities in operational processes and possible sacrifice on economic benefits have both deterred the diffusion of RFID as green technologies. However, investors and consumers are demanding more of carbon footprint disclosures from companies, increasing the public pressure for green practice adoption (Murugesan 2008). Tightening regulatory restrictions, rising energy costs, and strong need for realizing social responsibility (Ruth 2009), green technology has become a favored solution in which RFID is an important component. In this research, several cases of successful implementations of RFID for green use will be studied. Different areas of applications have been identified including, but not limited to, material waste cut, increased operational efficiency, reduced

energy consumption, recycling boost, tracking of hazardous materials, and collection of item-level information. The companies under investigation span from well-known multi-national corporations to small localized business, from public service organizations to private profit maximizing enterprises. The analysis of the cases will be based on a few important criteria including environmental sustainability, economic viability, and social value, with a view to see their overall impact since there is a necessary trade-off between the multiple criteria. Both the positive and negative consequences resulting from the use of RFID will be reviewed. Mature and practical applications of green RFID will be highlighted. Promising and potential use of RFID will be discussed with hope and care. Less impressive consequences resulting from use of Green RFID will be considered for further improvement as well as re-consideration.

Keywords: Case studies, Green IT, RFID.

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