Facilitating Consumer Acceptance of RFID and Related Ubiquitous Technologies

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ABSTRACT

The issue of consumer acceptance in the implementation of RFID and related ubiquitous technologies, driven primarily by privacy concerns, is a complex social problem involving consumers, companies, advocacy groups and government agencies – each of whom has different and often incompatible goals. This research decomposes the problem and explores it from the perspective of one of these stakeholders, that is, a company seeking to implement RFID in order to achieve specific business objectives. The authors establish a theoretical framework, based on social justice theory in business ethics, that identifies the factors contributing to consumer and societal resistance to an RFID implementation. Within this framework, they outline the technical and managerial elements of an implementation plan, and relate those elements to the underlying components of social justice theory. The result is a strategy for technology managers that 1) considers the complex mix of consumer, societal and governmental concerns hindering adoption of the technologies, and 2) indicates areas of potential compromise.

Keywords: Privacy, RFID, Social Justice, Ubiquitous Computing

INTRODUCTION

While the benefits of ubiquitous technologies such as radio-frequency identification (RFID) are well-known and generally accepted, so too are the real and perceived threats to privacy presented by these technologies (Lockton & Rosenberg, 2005). Unlike credit cards and rewards cards, where consumers can choose to opt in, buying tagged items is usually done unknowingly and without the consent of the shopper. Advocacy groups contend that since RFID tagging is arguably the first use of a ubiquitous technology in the commercial arena, it provides a dangerous precedent as a technology that violates consumers’ privacy rights for the sake of more efficient marketing and customer service (CASPIAN, 2003). In this regard they argue that ubiquitous technologies result in a fundamental cost/benefit
imbalance, with companies acquiring most of the benefits and consumer most of the costs. As a result, implementation of the technology “is currently at a crucial point, as the industry is faced with a public that is…angry about perceived abuses of the technology” (Lockton & Rosenberg, 2005).

Because the issue of privacy in ubiquitous computing is an exceptionally complex social problem involving multiple stakeholders with varied and often incompatible goals, it becomes necessary to decompose the issue and focus on specific stakeholders. Toward that end, our research explores the problem from the perspective of a company seeking to implement RFID or other ubiquitous technologies in order to achieve specific business objectives, such as increased market share, profitability and/or competitive advantage through enhanced knowledge of its customers. In this respect an RFID application has objectives similar to traditional computer-based applications. But it also shares the broad challenges, both technological and social, that are involved in the implementation of almost any application. Many otherwise technologically-successful implementations have failed because management did not attend to important ancillary social issues such as process redesign, training and, notably, end-user acceptance of the new technology. (Venkatesh, Morris, Davis, & Davis, 2003) Ubiquitous technologies such as RFID significantly increase the social impact of the implementation, primarily due to three inherent characteristics: 1) the scale of the implementation (i.e., more individuals interact with the technology), 2) the intrusiveness of the implementation (i.e., data can be collected more easily and efficiently), and 3) the automated, inconspicuous nature of the interaction (i.e., an individual does not necessarily recognize when data is collected) (Eschet, 2005).

Therefore, our research adopts the perspective of technology managers who are involved in the implementation of ubiquitous technologies. It is based on the premise that management’s failure to address the broader societal concerns about fairness and justice in its interactions with individuals will significantly reduce the likelihood of the company achieving its business objectives. The purpose of this paper is two-fold. First, we establish a theoretical framework, based on social justice theory in business ethics, within which technology managers can consider the factors contributing to resistance to an RFID implementation. Second, within this framework, we propose a process-oriented approach that management should consider as it pursues implementation of an RFID application. This approach encompasses the complex mix of consumer, societal and governmental concerns that hinder adoption of the technologies, and suggests areas of potential compromise.

Casting the problem in terms of business ethics raises a number of societal questions that are directly relevant to managers seeking to implement ubiquitous technologies. What is ‘ethical’ in this environment? Who incurs the benefits and who incurs the costs? Does each party involved in the transaction know the tradeoffs? In short, if a business wishes to implement a ubiquitous technology, it must make the case that implementation of the technology is an inherently ethical act on the part of the business. From the perspective of ethics theory, ‘acting ethically’ entails a broad range of behaviors on the part of the business; i.e., how it collects, protects and disseminates consumer information, the degree to which it shares the benefits of the technology with its customers and mitigates the costs, and the level of respect and openness with which the company demonstrates in its interactions with its customers. As discussed below, an implementation plan that considers each of these elements of ethical behavior is critical to the successful deployment of the technology. The field of business ethics field is founded, not surprisingly, on the premise that a discourse on business cannot take place without a consideration of ethics. That premise motivates the discussion which follows.
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