

The Truth about RFID

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Introduction

RFID is considered the “next big thing” in retail markets, and sets the standard for future supply chain inventory management and reduction of theft. Supporters of RFID technology, such as retailers and manufacturers, envision a world where all consumer products are tagged with a RFID chip and supported by a global network of RFID readers. Consumers can expect to see total RFID integration in the next ten to twenty years. This paper will address the ethical implications of RFID utilization within the retail space, as well as its potential to track consumers within the public realm.

RFID Technology

Radio Frequency Identification (RFID) functions by using radio waves to automatically identify people or objects.¹ The primary use of RFID is in the form of a tag, which is created by using an antenna that transmits the information found on the microchip within the RFID tag to a reader.¹ The reader then converts the radio waves into digital information that is passed on to computers, which will store and use the information as needed.¹ RFID tags and readers must be tuned to the same frequency to communicate (similar to a walkie talkie) and there are three types of RFID frequencies, low, high, and ultra-high.¹ The range of a RFID tags varies dependant on the frequency. Generally the range is anywhere between 1 foot (low frequency) to 300 feet (ultra-high frequency)¹.

In addition to three varieties of frequencies, a RFID tag can be designed either as a passive tag or active tag¹. Passive RFID tags do not contain batteries and instead draw power from the reader, while the opposite holds true for active RFID tags which have their own battery power source. Furthermore, the microchip within the RFID tag has two capabilities as well. First being read-only; the information stored on a read-only microchip is established during the manufacturing process and can never be changed.¹ The second type is a read-write chip which allows the existing information to be changed or added when the tag is within range of a reader.

Current Uses

RFID technology is currently used to monitor inventory in the supply chain. Companies such as Wal-Mart and Proctor & Gamble require that each palette or container of inventory is equipped with a RFID tag instead of barcodes, in order to better facilitate inventory control and supply chain management. One key benefit RFID tags provide over barcodes is the efficiency and scope of tracking inventory throughout the supply chain, such as the ability to scan inventory all at once by sending it through a RFID reader as opposed to scanning each individual barcode. Other current uses of this technology include the E-Zpass transponders in cars, keyless car entry, and Exxon Mobile's SpeedPass.

Recently, RFID has found its way into the retail space. Individual products are now being fitted with RFID tags, as a result RFID is now interacting with the end consumer. For example Levi's jeans has announced that it will begin selling jeans with RFID tags embedded in the material itself.

Ethical Implications

The first argument will explore the use of RFID within the retail space, and its capabilities to store personal information which can be sold to third parties, the possibility of increased targeted and direct marketing, and RFID's ability to track consumer's movement throughout the retail space. The second argument will focus on RFID's ability to track consumers after they leave the retail environment. Through this exploration into the ethical concerns of RFID technology we hope to clearly define the benefits of the technology, address the fallacies in current consumer perceptions, and ultimately facilitate the integration of RFID technology.