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Price, privacy are issues, but RFID already in use

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Imagine a world where a shirt with a smart tag tells your washing machine to set the cycle for permanent press.

The tags containing tiny chips can do other things, as well.

A carton of milk warns when its expiration date has passed and adds itself to an electronic shopping list for your grocer. A bottle of pills tracks your doses and warns against mixing with another medicine.

These and other scenarios using radio frequency identification chips are possible, but only if privacy concerns are addressed and the technology becomes cheap and ubiquitous.

"RFID is a lot more than keeping track of boxes as they move through the supply chain," said Mark Roberti, editor of RFID Journal. "Many of the things that make businesses better will be incorporated into consumers' lives."

Already the technology is used by nearly 7 million people who buy gas using Exxon Mobil's Speedpass and by drivers whizzing through automated toll systems.

An industry pilot project at a grocery store in Germany features shopping carts and check-out systems that automatically debit groceries from customers' accounts before they leave the store.

Smart tags rely on a 96-bit electronic product code capable of identifying 268 million manufacturers and an infinite number of items.

The EPC code is recorded on a tag's microchip, and the tag's antennae communicates the information using radio waves to a computer network.

Despite their names, the tags aren't smart but the networks are. Using an Object Name Service similar to the Web's Domain Name Service, the EPC code points to locations on the network where information about the object is stored.

The system was developed at the Massachusetts Institute of Technology's Auto-ID Labs, where researchers wanted a system to allow robots to be just as efficient in homes as they are in industrial settings.

"The vision is, if I connect all of my objects to the Internet, we now have a truly intelligent world," said Auto-ID Labs Director Daniel Engels.

Yet the technology also increases opportunities for electronic surveillance and government and corporate abuse.

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Consumer outcry has prompted retailers to move cautiously.

Consumers Against Supermarket Privacy Invasion and Numbering, known as Caspian, helped organize a protest in January against the German grocery store, which stopped using RFID chips in customer loyalty cards.

Clothing retailer Benetton was considering putting RFID chips into some apparel until Caspian threatened a boycott.

Wal-Mart Stores Inc. will hand out literature explaining smart tags to shoppers at stores in North Texas when its pilot test starts at a Dallas warehouse this month.

Wal-Mart is tagging cases, not individual items. But some tags will find their way into stores on bulky items or when shoppers ask to buy cases.

"The technology is in its infancy, but as it matures the security will be built into it for pure economic concerns," Engels said.

"Businesses want to know their tags are not talking to their competitors' readers as someone walks around their competitors' store."

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