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RFID Current and Future Uses

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RFID technology is already used daily in ports, distribution centers, and fleet operations around the world. It is used to identify employees, secure facilities, manage assets, and track parts and materials. RFID tagging is growing 30 percent annually with supply chain applications accounting for only one percent of the total implementations.

RFID provides a secure, wireless means to exchange information. Data is encoded in a computer chip that is connected to a transponder or RFID tag. Tags are available in many forms, ranging from brick-like enclosures to thin, flexible styles that are easily embedded in adhesive labels. Tags can be disposable or reusable.

Data are accessed by a reader that captures and decodes a broadcasted RF signal. Antenna size, frequency, protocol, and power all affect data transmission range, speed, and accuracy. There are two types of tags: active and passive.

Active tags are self-powered and broadcast their data to readers. Because they have batteries, active tags are larger, more expensive, and less flexible. Currently reusable large active tags for cargo containers cost about \$100 each.

Passive tags receive their power from the reader, not from a battery, so they can be very small. Flexible passive tags in the UHF frequency band can be read from more than 20 feet away. Until recently, the range for passive technology was limited to a few inches.

Recent performance improvements are significant because RFID is now a viable and powerful option where it was previously ineffective or cost prohibitive. RFID can be an effective tool to secure, allow access, prohibit access, track, automatically route and identify. And all this in real-time.

Applying a tag to a container or individual product enables the automatic logging of the assets throughout the supply chain and associates it with specific customers and suppliers. This results in faster returns and fewer losses, and provides the information necessary to resolve customer discrepancies. The net effect of these improvements is that RFID-users can minimize asset inventory, reduce tracking and handling costs, and free up cash to spend elsewhere.

Vehicle, equipment and material tracking along with people identification are emerging as promising RFID applications. In less than one second, an RFID system can check credentials stored on an employee ID card and either allow or prohibit entry into a secure area, access to parts or materials, or the operation of equipment. The real-time location data can similarly provide an instant and accurate view of where all tags are at any given time.

The first retail consumer-wide application of RFID technology will most likely be at your Wal-Mart store. Earlier this summer, Wal-Mart informed its 100 top suppliers to start using RDIF technology. Imagine not needing to go through a checkout line.

POINTS FOR THE CLASSROOM (send comments to forum@futuretakes.org):

- *What else do you see possible as a result of RFID technology? What other impacts will it have? If you like, think in terms of a futures wheel, with “advances in neuroscience” as the event, or try brain-writing if you prefer.*