

RFID: 101 to Warp Speed



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Council of Logistics Management
San Francisco Round Table

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Big Chief Partners - RFID

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- Consultants and Software Engineers
- Focused on RFID since early 2001
- Clients include
 - Tag and Reader Manufacturer
 - RFID Infrastructure Developer
 - Opportunistic Software Vendors
 - RFID End Users
 - Venture Community

What is RFID?

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"In simplest terms, there are two key hardware elements to RFID – programmable transponders and receivers. Transponders "broadcast" their data via assigned radio frequencies when they receive a "cue" from a receiver. In essence, until they are appropriately "pinged" the transponder is inert. However, once a transponder receives that signal, it sends its data; and, it can also record data sent by the receiver in turn.

"This two-way data streaming, re-programmability of the transponder, and the ability to carry and store much broader and diverse levels of data have great appeal to many industries, especially in retailing, in tracking inventory."

Source: Acsis Inc.

What is RFID?

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“RFID is a term for technologies that use radio waves to automatically identify individual items. There are several methods of identifying objects using RFID, but the most common is to store a serial number that identifies a product and perhaps other information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The antenna enables the chip to transmit the identification information to a reader. The reader converts the radio waves returned from the RFID tag into a form that can then be passed on to computers that can make use of it.”

Source: RFID Journal

What is RFID?

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“Libraries, schools, the government and private sector businesses are adopting radio frequency identification tags, or RFIDs — a technology that pinpoints the physical location of whatever item the tags are embedded in. While this may seem like a convenient way to track items, it's also a convenient way to do something less benign: track people and their activities through their belongings. EFF is working to ensure that embrace of this technology does not erode your right to privacy.”

Source: Electronic Frontier Foundation

Current Uses for RFID

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- Toll roads
- Public transport
- Automotive immobilizers
- Access control
- Cashless commerce
- Supply chain
- Digital identity
- Self-service retail

Benefits of RFID

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- Visibility
- Avoiding loss and shrinkage
- Authenticity
- Reducing errors
- Reducing labor costs
- Compliance
- Convenience

Cisco's View

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- By 2009 the predominant traffic on our networks will be ePC related
- By 2014 reader populations may approach 300 million
- It is important to preserve bandwidth by making decisions as close to the edge as possible
- Savant (RFID Middleware) is a Router for RFID

Emmitt Smith – RFID Evangelist

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- 70% of sports memorabilia is counterfeit
- RFID tags can be used to guarantee authenticity

RFID in China

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- RFID-based identity cards for 1.3BN population by government mandate
- Handheld readers for 3MM police officers
- 50MM – 100MM yearly demand from damage and newborns
- Privacy is not an issue

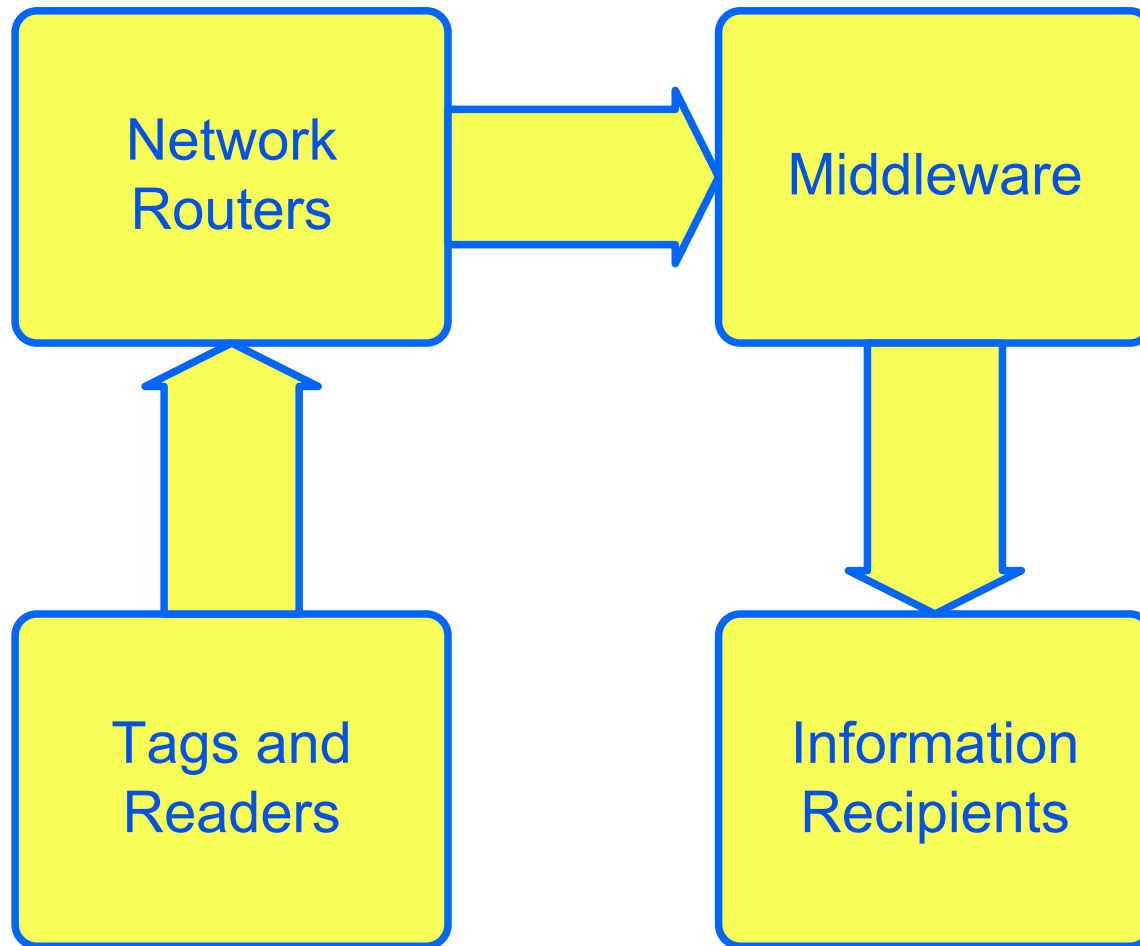
How Does RFID Work?

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- RFID Tags
- Readers
- Network routers
- Middleware software
- Enterprise applications

How Does RFID Work?

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Vendors Pushing RFID

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- Tags
- Readers
- Network devices
- RFID Middleware pure plays
- Database Management
- Messaging Infrastructure
- Application Server
- Supply Chain Management
- Systems Integrators

Customers

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- Manufacturers
- Distributors
- Transportation and Logistics
- Retailers
- Marketers
- Credit Card Companies
- Public Transport Systems
- Governments

An Assortment of Standards – Same as the Public Internet

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- Numbering system
- Reader interfaces
- Registries and repositories
- Industry initiatives

Issues Needing Resolution

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- Standards are nascent or non-existent
- The standards process is stalling and fragmented
- Costs are unpredictable and potentially high
- Must identify your own ROI

Benefits for Manufacturers, Distributors and Transporters

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- RFID offers better visibility
- Can reduce inventory costs
- Can speed deployment and distribution
- Enables new business efficiencies
- Could enable new service offerings

Benefits for Retailers

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- Since retailers manage inventory, some benefits are the same as above
- Consumers might come to expect automated checkout
- Consumers already prefer SpeedPass type payment systems

Benefits for Marketers

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- Someday consumers will have readers
- This could enable new product and service offerings

Issues for Consumers

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- Everyone should be paying attention to privacy issues in the online world
- For better or worse, our current political climate is accelerating automatic, digital identification
- Digital identity for people and objects can increase security and convenience
- Passive digital identification is risky – it must be accompanied by security and trust
- Government-required passive digital identity should be avoided

Questions

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Presentation to SVC Wireless

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