

PHILIPS

Making (future) history with RFID

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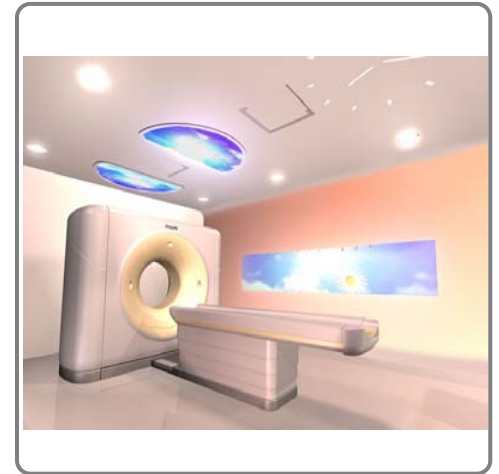
RFID - Enabling the sensor age

- 19th century: machines do
- 20th century: machines think
- 21st century: machines sense
 - presence of goods: controlling flow, authenticity, security, ...
 - presence of people: act on their preferences, desires, needs, necessities, authorization, obligations, health & wellness, ...



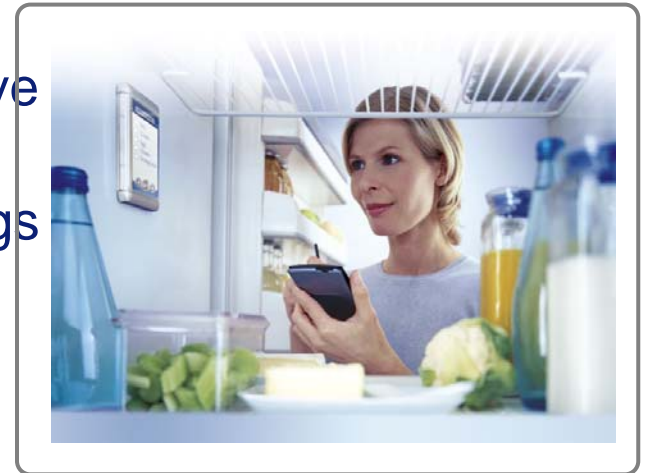
RFID is more than supply chain...

- Health care and wellness
 - Authentication for medication
 - Anti-counterfeiting of drugs
 - Secure medical 'passports' for appropriate emergency treatment
 - Food chain fully protected from animal diseases
- Enhanced shopping experience
 - Item level information via mobile device
 - Fast cashier-less check out and payment

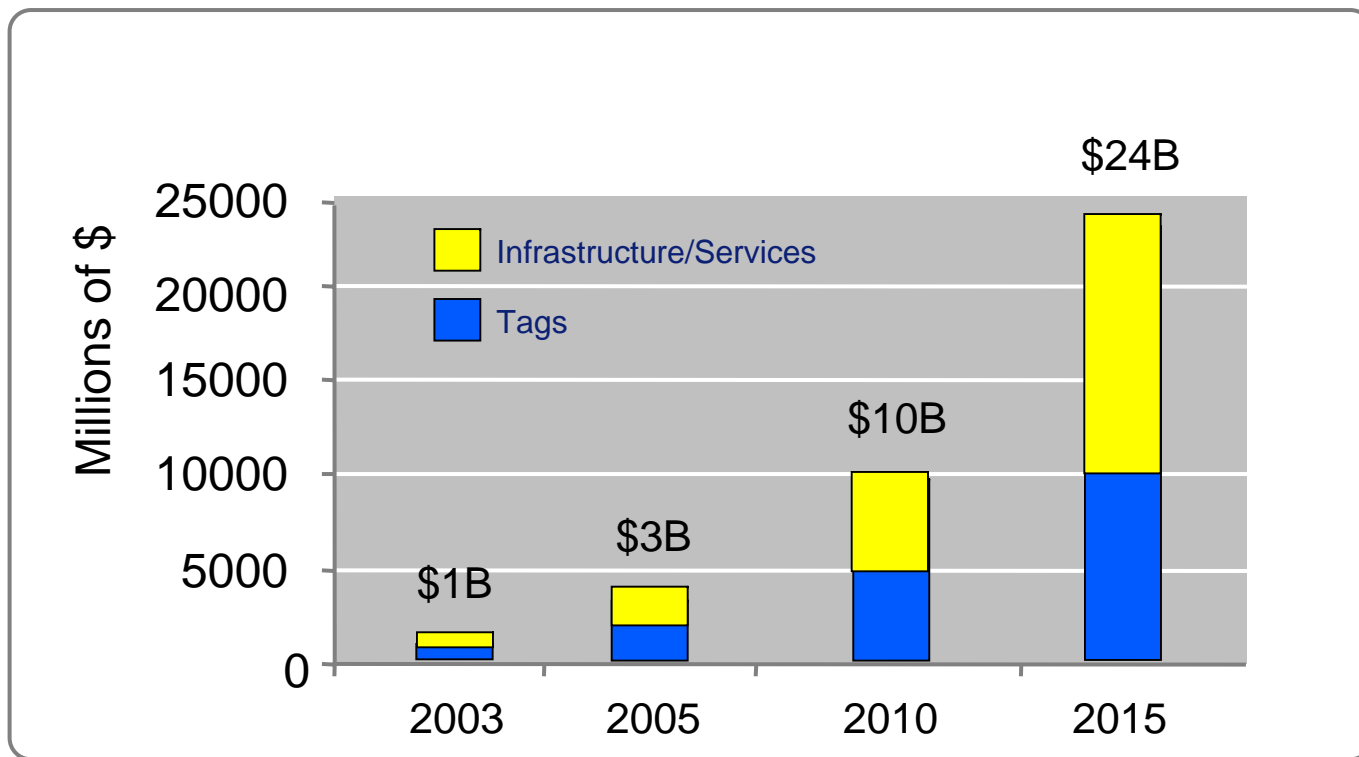


RFID is more than supply chain...

- Ambient Technology
 - Environments are sensitive and responsive according to consumer's preferences
 - Keys which remember your car settings
 - Intelligent washing machines
 - Connected fridges



RFID, *the* most pervasive electronic technology ever

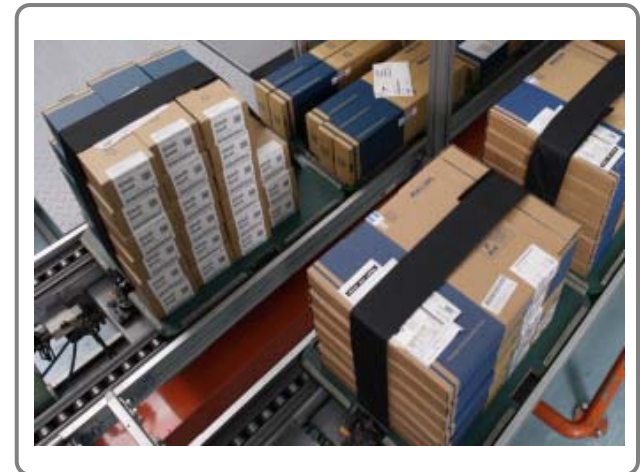


Source: IDTechEx

1 trillion tags in 2015

Triggers for widespread adoption

- Benefits to consumers and industries
 - Bottom line – increased product availability
 - Top line – innovative services and applications
- International application and technology standards in industries and the medical world
- Education and Public opinion
- Technology cost



Challenges in mass adoption of technology

Some lessons from history

- **Cars**
 - Mobility and freedom
Vs. Environmental issues
- **Mobile Phone**
 - Mobility & connection
Vs. Scarce private time
 - Locally optimized solutions
Vs. International standards
- **Internet**
 - Information, services any time
Vs. Lack of information control



Future as the mirror of history ...?

Social benefits of RFID

- + Protecting health and safety
- + Automating and simplifying interaction between citizens and government (ePassports)
- + Simplified consumer experience
- + Easier man-machine interface
- + Embedded, context-aware devices
 - + Activated based on your personal preferences
 - + Adapting in response to you and your environment
 - + Anticipating your desires, needs, ...



Future as the mirror of history ...?

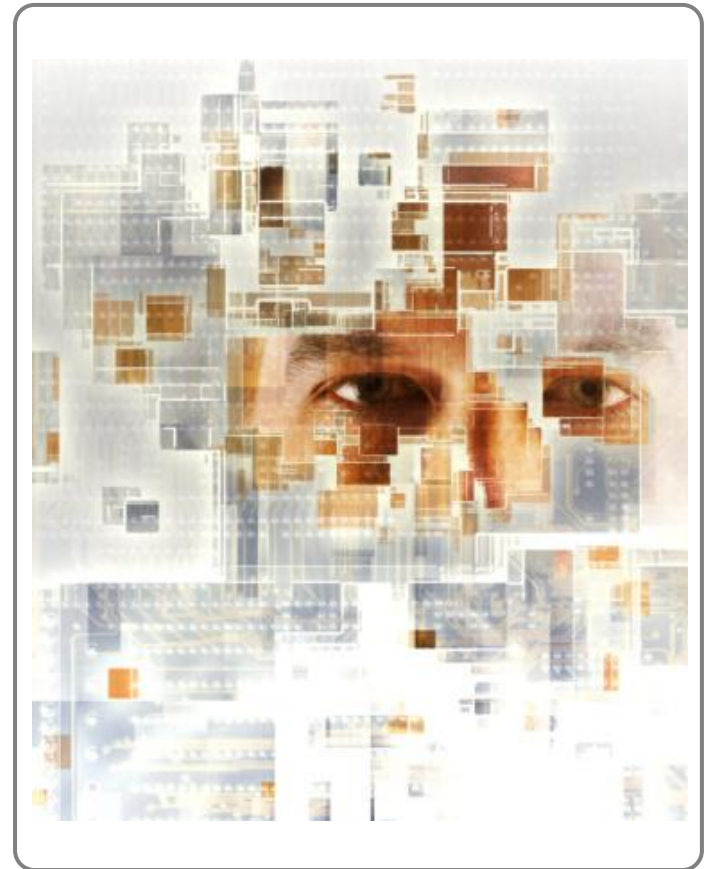
Economic benefits of RFID

- + Productivity gains
 - + Automated inventory check-in
 - + Reduced out of stocks
- + RFID will enable new applications and services
 - + Ticketing and payment with your wireless handset



Future as the mirror of history ...? But also ...

- Privacy concerns
- Security of data
- Identify, track & trace everything?



Industry, Governments and Academia

We have not always worked effectively in the past:

- 50Hz versus 60Hz electricity (connectors!)
- NTSC, PAL, SECAM TV-standards
- Imperial versus metric measurements
- GSM, CDMA, iMode, 3G/UMTS mobile phone standards
- ...

But... does history have to repeat itself?

Now is the chance to get it right

- Do not let multiple non-compatible standards happen - ensure global interoperability of RFID standards
 - Support development and adoption of harmonized global standards (ISO, EPC, etc.)
 - Starting point can be government-related RFID mandates and requirements above
- Do not impose stringent regulation on usage - allow flexible regulatory frameworks
 - Allow for industry self-regulatory approach
 - Spectrum allocated to RFID globally
 - Monitor environmental impact of RFID (recyclability of tags, EMF emissions)

But... does history have to repeat itself? Now is the chance to get it right

- Maintain government leadership on RFID adoption in public safety, procurement supply chain, and homeland security
 - Multilateral coordination on implementation of pharmaceutical "ePedigree" track-and-trace requirements
 - Combat BSE and other animal diseases through globally interoperable animal identification systems
 - Enhance and secure military supply chains (US Department of Defense RFID mandate)
- Do not ignore consumer concerns - address any remaining data privacy issues
 - Existing data privacy laws cover RFID; no RFID-specific legislation needed
 - Misuse of RFID-technology should be punished (criminal law)
- Do not assume RFID is completed - stimulate R&D to drive innovation

The time is right



to get it right

