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Radio Frequency Identification (RFID) Applications and Public Policy Considerations, OECD Foresight Forum, Paris, 5 Oct 2005

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[Radio-Frequency Identification \(RFID\): Drivers, Challenges and Public Policy Considerations](#) | [Agenda and speaker presentations](#) | [Forum proceedings](#)

Description of the Technology, its Economic Potential & Applications

Radio Frequency Identification (RFID) is an emerging technology consisting of three key pieces: RFID tags (miniaturized chips); RFID readers; and a data collection, distribution, and management system that has the ability to identify or scan information with increased speed and accuracy. Compared to the bar code system, RFID promises long-term gains in supply chain management, transportation, defence and health care, to mention a few. RFID is increasingly used in commercial supply chain applications through pallet level tagging.

RFID, because it is a cross-cutting and enabling technology, adds to the important role ICT plays to promote innovation, economic growth, and global commerce. Looking toward the future, as the information infrastructures associated with RFID are increasingly accessed across IP networks, the OECD is well positioned to discuss with stakeholders how best to create a positive environment for growth, and promote best practices for the implementation and use of RFID.

RFID, like the Internet, requires smart privacy and security policies that address questions that arise as a result of the growth and interconnectedness of information and communications networks. Disclosure, transparency and choice are important considerations for consumers as RFID migrates to item level tagging over the next few years. Policies that are informed by industry best practices and consumer concerns will foster the potential of ICT and facilitate acceptance of emerging technologies such as RFID.

Critical Issues for Policy Makers

The ICCP Forum "Radio-Frequency Identification (RFID) Applications and Public Policy Considerations" will bring together government delegations, academia, private sector and non-governmental organisations to address important questions such as:

- What new approaches are required and/or are already available, such as smart privacy and security policies, to both sustain innovation, and offer awareness of technology applications for consumers to make informed choices?
- What role do technological solutions, industry self-regulatory best practices and policy interventions play in current implementation practices?
- What privacy and security issues have come to the forefront as RFID moves closer toward item level tagging?
- What are the factors affecting RFID rollout in value chains? How are gains measured?
- In the key sectors and supply chains that use/have implemented RFID technologies to-date (including retail, transportation, pharmaceutical and livestock), what are current Supply Chain Management (SCM) applications and their impacts?
- What are some of the future applications that RFID promises to offer, and what are

- the ensuing growth and productivity gains associated with them?
- What important developments are in progress that may prompt widespread deployment of RFID within the ICT infrastructure (including sensor networks, smart devices, and context-aware technologies)?
 - What are some of the important public policy and international cooperation discussions underway that may encourage widespread deployment of RFID, including interoperability, standards and data protection?

For more information about this event, please contact Karine Perset: karine.perset @ oecd.org

AGENDA [Forum proceedings](#)

1. WELCOMING REMARKS AND INTRODUCTION BY THE CHAIR [9:30 – 9:40]

Hugo Parr, Director General, Ministry of Modernisation, Norway, and Chair of OECD Committee for Information, Computer and Communications Policy - [Presentation](#)

2. DESCRIPTION OF RFID TECHNOLOGY AND ITS POTENTIAL [9:40 TO 11:00]

Introductory remarks and session moderator: **Jonathan Collins**, European Editor for RFID Journal

2.1. Panorama of RFID current applications and potential economic benefits [9:40 – 10:10]

- **Dan Caprio**, Deputy Assistant Secretary for Technology Policy and Chief Privacy Officer, U.S. Department of Commerce - [Presentation](#)
- **Naji Najjar**, Director of Wireless Broadband & Sensing Solutions, IBM Southwest Europe - [Presentation](#)

2.2. Future applications, ubiquity of RFID and potential economic and social benefits [10:10 – 11:00]

- **Taiichi Inoue**, Senior Consultant - Head of IT for Society Consulting Group, Nomura Research Institute, Ltd. - [Presentation](#)
- **Indro Mukerjee**, Executive vice president, Automotive & Identification business unit, Philips Semiconductors - [Presentation](#)
- **Elliot Maxwell**, Fellow of the Communications Program at Johns Hopkins University - [Presentation](#)

3. COSTS/BENEFITS IN DIFFERENT TYPES OF APPLICATIONS [11:30 – 12:30]

Introductory remarks and session moderator: **Richard Rees**, President, Scanology Group, and Chair British Standards Institution Technical Committee "Automatic Identification Techniques" - [Presentation](#)

3.1. Smart tags along the supply chain [11:30-12:00]

- **Claudia Loebbecke**, Professor, University of Cologne - [Presentation](#)
- **Masakazu Fujita**, Research Director, Next Generation Electronic Commerce Council of Japan (ECOM) - [Presentation](#) - [Appendix](#)

3.2. Smart tags at the item-level and smart cards in service applications [12:00 – 12:30]

- **Elie Simon**, Chief Executive Officer, TAGSYS SA - [Presentation](#)
- **Mark MacCarthy**, Senior Vice President for Public Policy, VISA USA - [Presentation](#)

RFID DEMONSTRATIONS IN ROOM 1 [13:15 – 14:15]

- **IBM Demonstration: RFID in supply-chain management applications**
- **Philips and VISA demonstration: payment applications with contactless pay cards and RFID-enabled mobile phone** - [Presentation](#)

4. CRITICAL ISSUES FOR POLICY MAKERS [14:15 – 17:00]

4.1. Infrastructure/standards panel discussion [14:15 – 15:30]

- Introductory remarks and session moderator: **Dave Wollman**, Scientific Advisor and RFID Coordinator, National Institute of Standards and Technology (USA)
- **Henri Barthel**, Technical Director EPCglobal, GS1 - [Presentation](#)
- **Simson Garfinkel**, Postdoctoral Fellow, Center for Research on Computation at Society at Harvard University - [Presentation](#)
- **Kyo-il Chung**, Director, ETRI (Electronics and Telecommunications Research Institute, Korea) - [Presentation](#)
- **Bernard Benhamou**, Senior Lecturer, Political Science Institute, Paris - [Speech](#)

4.2. Privacy panel discussion [15:45 – 17:00]

- Introductory remarks and session moderator: **Joseph Alhadeff**, Vice President for Global Public Policy and Chief Privacy Officer, Oracle Corporation
- **Marc Rotenberg**, Executive Director, Electronic Privacy Information Center - [Presentation](#)
- **Florent Frederix**, Scientific Officer for RFID, European Commission Infosoc D-G - [Presentation](#)
- **Stephanie Congia**, International Department of the Italian Data Protection Commission - [Presentation](#)
- **Jeroen Terstege**, Corporate Privacy Officer, Philips, and Member of the EICTA (Chair) and ICC Privacy and RFID Working Groups - [Presentation](#)

5. ROUNDTABLE DISCUSSION & CONCLUSION [17:00 – 18:00]

Chaired by Hugo Parr, Director General, Ministry of Modernisation, Norway, and Chair of OECD Committee for Information, Computer and Communications Policy

5.1 Summary of important elements from the Forum [17:00 – 17:20]

- **Peter Ferguson**, Director, Electronic Commerce Branch, Industry Canada
- **Richard Foggie**, Assistant Director, Electronics and IT Services, DTI
- **Tony Taylor**, European director, EPCGlobal Inc.
- **Jeremy Ward**, Director of Service Development, Symantec EMEA

5.3 Open discussion of important elements from the Forum [17:20 – 17:50]

5.4 Overall summary and next steps [17:50 – 18:00]

- Overall summary by **Hugo Parr**, Director General, Ministry of Modernisation, Norway, and Chair of OECD Committee for Information, Computer and Communications Policy
- Potential future work by the OECD: next steps

For more information about this event, please contact Karine Perset: karine.perset@oecd.org

Also available:

- [Forum OCDE "RFID : Applications et Considérations de Politique Publiques", le 5 octobre 2005, Paris \(French\)](#)

Related documents:

- [Radio-Frequency Identification \(RFID\): Drivers, Challenges and Public Policy Considerations \(English\)](#)
- [Proceedings: Foresight Forum "Radio Frequency Identification \(RFID\): Applications and Public Policy Considerations", 5 October 2005 \(English\)](#)

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RFID Cost / Benefits along the Supply Chain

Professor Dr. Claudia Loebbecke, M.B.A.

Department of Media Management
University of Cologne, Germany

President, **Association for Information Systems** (www.aisnet.org)

claudia.loebbecke@uni-koeln.de
www.mm.uni-koeln.de

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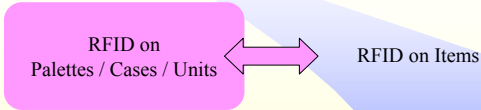
RFID Applications along the Supply Chain

- Logistics**
 - Unit quantity control
 - Item quantity control
 - Data acquisition - incoming
 - Sorting / distribution (questionable due to costs)
 - Reusable transport item, tracing
- Store Level**
 - Inventory registration
 - Article location
 - Cashing
 - Preparation of return delivery of goods to supplier
 - Visual sales support for customers
 - Customer service (warranty, kiosk systems)

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RFID along the Supply Chain



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Time Savings from RFID on Units (Fast Moving Consumer Goods)

	Warehouse Processes		Store Processes	
	Goods receipt	Verify DESADV	Goods receipt	Verify DESADV
Before	90 sec	15 min	80 sec	8 min
After	70 sec	3 min	60 sec	2 min
Time Saved	22%	80%	25%	75%

Source: Metro Group '05 © Prof. Dr. Claudia Loebbecke, M.B.A. - Dept. of Media Management - University of Cologne



RFID on Palettes / Cases / Units: Measurable Results (Fast Moving CGs)

Speed

- Accurately monitored warehouse inventories
- Fast passed replenishment orders
- Improved availability of goods in store

-9% to -14% out-of-stocks

Transparency

- Localization of goods
- Transparent warehouse and shop inventories
- Improved sales controlling

Effectiveness

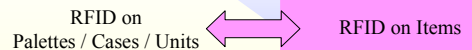
- Accurate control of quantities ordered
- Exactly matching production planning
- New types of customer services
- Improved theft protection
- Less storage space

-11% warehousing & handling costs

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RFID along the Supply Chain



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mm **Item-Level Tags in 'Future Store'**
- **Worldwide First Real-Life Retail Test -**

Test Product in Future Store	Focus
- 'Philadelphia' cream cheese (Kraft Food)	➤ Expiration dates and out-of-stock issues
- 'Pantene' shampoo (Procter & Gamble)	➤ Innovative marketing concepts
- 'Mach 3 Turbo' razor blades (Gillette)	➤ Anti-theft protection
- CDs, DVDs, VHS (various manufacturers / labels)	➤ Youth protection etc, theft prevention (similar to Electronic Article Surveillance - EAS)

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mm **Kaufhof*: Item Level Tagging**

2003 - 2004: **Pilot** with Gerry Weber

Nov 1, 2004: Twenty **initial suppliers** to Metro distribution centers (three suppliers - Gerry Weber, Esprit, Triumph - to Kaufhof)

2006: Integration of **stores** (most likely on item level only)

*Kaufhof = Department Store chain of METRO Group

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mm **Discussion: RFID Tags on Items**


Proposition: Walmart, Tesco, Marks & Spencer

868 Mhz*

Radio Wave Technology

- Reach: 7m
- Like palettes, cases, units
- Problem: Liquids, metal, etc.
 - Inventory Control
 - ≠ Theft Protection
 - ≠ Cashier

'Solution' on Case Level



* US: 915 Mhz, China / Japan: 950 Mhz

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mm **Discussion: RFID Tags on Items**

Proposition: Walmart, Tesco, Marks & Spencer

868 Mhz*

Pilots: Metro Group, GS1

13.56 Mhz

Radio Wave Technology

- Reach: 7m
- Like palettes, cases, units
- Problem: Liquids, metal, etc.
 - Inventory Control
 - ≠ Theft Protection
 - ≠ Cashier

Induction-Based Technology

- Reach: 0.8m-1.3m
- 100% data collection
 - Theft Protection
 - Cashier
 - ≠ Inventory Control
- BUT: Different from palettes, cases, units

* US: 915 Mhz, China / Japan: 950 Mhz

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mm **Main Points**

- (1) For real economic evaluation: Large roll-out necessary
- (2) Palettes, cases, packaging units VERSUS item level (retail unit)
- (3) To combine Point (1) and Point (2), also for item-levels in global consumer goods retailing: STANDARDS and agreement on frequencies

This will help to go back to point (1)

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mm **Future RFID Issues**

Technical

- Transmission problems depending on product material
- Metal or liquids often causing failures

Data management

- Information creation at new order of magnitude with individual products being tracked through complete product life-cycle
- Revolutionized data management required

Privacy issues

- Consumer perception level
- Legal level

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.... Questions, Comments, Complaints ?



Source: Metro Group '05

Thanks for your attention !

✉ claudia.loebbecke@uni-koeln.de

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