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A Global Perspective on the RFID Market

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www.rfidjournal.com

Adoption Trends

RFID is spreading more slowly than many people had expected.

RFID is spreading more quickly than many people had expected.

What explains this contradiction?

What is driving adoption?



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Why is RFID growing slowly

- EPC technology was expected to soar as Wal-Mart and others required tagging
- Wal-Mart has not pushed for more products to be tagged
- Sam's Club has delayed item-level tagging until 2011
- Few other retailers have issued tagging mandates



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What's happening at Wal-Mart?

- Wal-Mart had some issues when moving RFID from a dedicated team to part of the business
- Wal-Mart changed its focus from all cases to promotional items and fast-moving goods
- Wal-Mart has launched a major pilot with seven suppliers to track all cases in categories
- Could lead to ramp up starting later this year
- Sam's Club will require all pallets tagged next year

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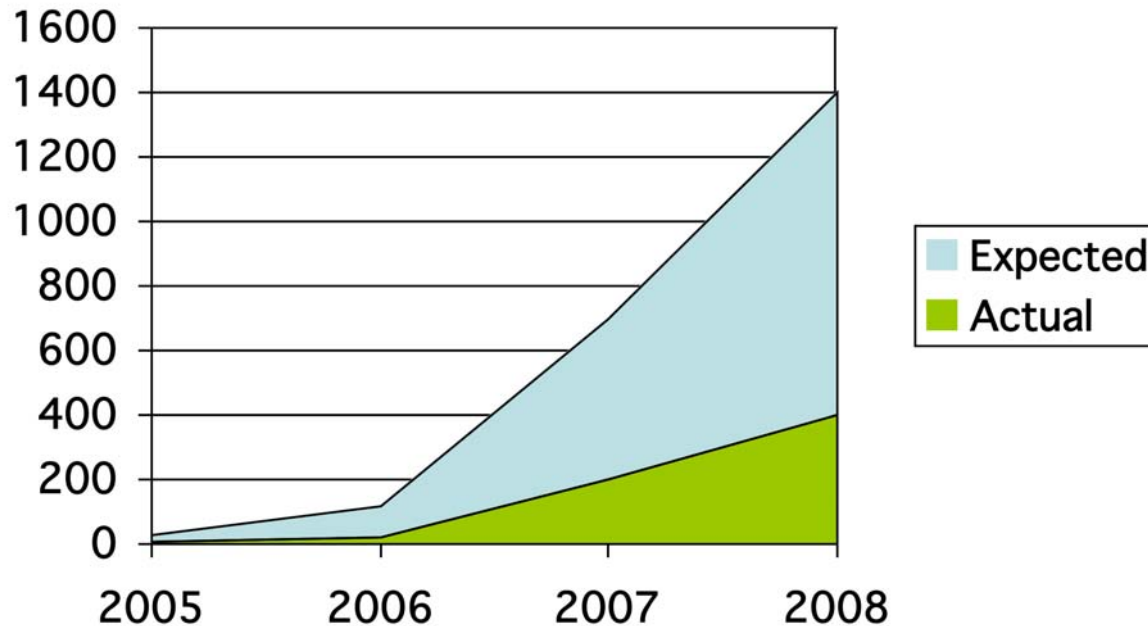
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Why have other retailers not issued mandates?

- Some started down the road and got little support (Best Buy)
- Some ran into financial issues and gave up (Albertson)
- Some had changes in upper management and lost focus (Tesco)
- Some have worked quietly behind the scenes to determine the value (Target)
- Many are just focused on other issues

Result

- EPC has not caught on as a technology for tracking goods in the open supply chain



EPC in the retail/CPG supply chain is only one part of the story

- RFID technology, including UHF EPC, is taking off in many countries and for many applications



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RFID is spreading to all countries

Attendees at RFID Journal LIVE! 2008 came from
38 countries:

Argentina

Australia

Austria

Bahrain

Belgium

Bosnia Herzegovina

Brazil

Canada

China

Colombia

Cote d'Ivoire

Denmark

Dominican Republic

Ecuador

Egypt

Japan

Korea Kuwait

Mexico

New Zealand

Nigeria

Norway

Pakistan

Portugal

Sierra Leone

Singapore

South Africa

South Korea

Spain

Spain

Switzerland

Taiwan

Thailand

The Netherlands

Turkey

United Arab Emirates

United Kingdom

United States

Venezuela

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RFID Journal readers live in 214 countries and territories.

Afghanistan	Botswana	Dominican Rep.	Honduras	Lesotho	Namibia	Rwanda	Tanzania
Albania	Brazil –	Ecuador	Hong Kong	Liberia	Nepal	Saint Helena	Thailand
Algeria	Brunei	Egypt	Hungary	Libya	Netherlands	Saint Kitts/Nevis	Togo
Amer. Samoa	Bulgaria	El Salvador	Iceland	Liechtenstein	Netherlands Antilles	Saint Lucia	Tonga
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Angola	Burma	Eritrea	Indonesia	Luxembourg	New Zealand	Samoa	Tunisia
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Antigua	Cambodia	Ethiopia	Iraq	Macedonia	Niger	Saudi Arabia	Turkmenistan
Argentina	Cameroon	Falkland Islands	Ireland	Madagascar	Nigeria	Senegal	Turks/Caicos
Armenia	Canada	Faroe Islands	Isle of Man	Malawi –	Norfolk Island	Serbia	Tuvalu
Aruba	Cape Verde	Fiji	Israel	Malaysia	Norway	Seychelles	Uganda
Ascension Isl.	Cayman Islands	Finland	Italy	Maldives	Oman	Sierra Leone	Ukraine
Australia	Central African Rep.	France	Jamaica	Mali	Pakistan	Singapore	UAE
Austria	Chile	French Polynesia	Japan	Malta	Palau	Slovakia	United Kingdom
Azerbaijan	China	Gabon	Jersey	Marshall Isl.	Palestine	Slovenia	United States
Bahamas	Christmas Island	Gambia	Jordan	Mauritania	Panama	Solomon Islands	Uruguay
Bahrain	Colombia	Georgia	Kazakhstan	Mauritius	Papua New Guinea	Somalia	Uzbekistan
Bangladesh	Congo	Germany	Kenya	Mexico	Paraguay	South Africa	Vanuatu
Barbados	Cook Islands	Ghana	Kiribati	Micronesia	Peru	Spain	Vatican City
Belarus	Costa Rica	Gibraltar	Korea, North	Moldova	Philippines	Sri Lanka	Venezuela
Belgium	Côte d'Ivoire	Greece	Korea, South	Monaco	Pitcairn Islands	Sudan	Vietnam
Belize	Croatia	Greenland	Kosovo	Mongolia	Poland	Suriname	Virgin Islands
Benin –	Cuba	Grenada	Kuwait	Montenegro	Portugal	Swaziland	Yemen
Bermuda	Cyprus	Guam –	Kyrgyzstan	Montserrat	Puerto Rico	Sweden	Zambia
Bhutan	Czech Republic	Guatemala	Laos	Morocco	Qatar	Switzerland	Zimbabwe
Bolivia	Denmark	Guyana	Latvia	Mozambique	Romania	Syria	
Bosnia Herz.	Djibouti	Haiti	Lebanon	Myanmar	Russia	Taiwan	

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RFID is spreading to all industries

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Aerospace	Food	Research
Agriculture	Forestry	Retail
Apparel / Footwear	Government	RFID Vendor/Data Collection
Automotive	Health Care	Security
Aviation	High Technology	Telecommunications
Building Maintenance	IT Services	Transportation
Chemicals / Adhesives	Laundry	Utility
Construction	Library	Waste Management
Consulting / Business Services	Logistics	
Consumer Electronics	Manufacturing	
Consumer Packaged Goods	Mining	
Defense / Homeland Security	Oil and gas	
Education	Packaging	
Entertainment / Media	Pharmaceutical	
Financial Services	Pulp and Paper	

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What's Driving Adoption?

Most companies are deploying RFID for internal benefits or to solve common business problems.

- Lost or misplaced assets
- High value goods stolen by staff, shippers
- Inefficient parts management
- Inefficient management of work-in-process
- Poor customer service

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RFID Use by industries

Aerospace	↑
Agriculture	↑
Apparel / Footwear	↑
Automotive	↑
Aviation	↑
Building Maintenance	→
Chemicals / Adhesives	→
Construction	→
Consumer Electronics	→
Consumer Packaged Goods	→

RFID Use by industries

- Defense / Homeland Security →
- Education →
- Entertainment / Media ↓
- Financial Services ↑
- Food ↑
- Forestry →
- Government →
- Health Care ↑
- High Technology →
- Library ↑

RFID Use by industries

Logistics/Transportation	→
Manufacturing	↑
Mining	↑
Oil and gas	↑
Pharmaceutical	→
Retail	↑
Security	↑
Telecommunications	→
Utility	→
Waste Management	↑

Regional Adoption

Rates vary depending on where you are

- Europe is leading the way
 - Retail adoption, NFC, laundry, ticketing
- North America is focused on asset tracking
- Asia has cooled a bit
 - Mainly transit and payment systems
 - Focus is on selling RFID systems
- Latin America is still lagging

Europe is leading in retail adoption

Many item-level implementations

- Metro, a German mass merchandise company, and its Galleria Kaufhof subsidiary
- Karstadt
- Byblos, a Portuguese book retailer
- Throttleman, a Portuguese clothing retailer
- Selexyz, a Dutch book retailer

Asia is moving slowly

Some retail implementations have gone ahead

- Mitsukoshi of Japan
- Reliance Retail of India
- ITC of India
- Bella East Fashion Studio of Singapore
- 77th Street of Singapore

North America is moving toward adoption in apparel retail

- Dillards, a clothing and furniture retailer has launched several pilots
- American Apparel recently announced a rollout
- Other apparel retailers have launched pilots

Several Latin American retailers have started pilots or projects

- Almacenes Exito, the Colombian retail chain
- CBD, Brazil's largest retailer
- Coto C. I. C. S.A., an Argentine retailer
- Falabella, a large Chilean retailer

Major Applications: Retail

- Inventory visibility
 - Better promotions management
 - Better on-shelf availability
 - Reduced time to serve customer
- Loss prevention
- Improved customer experience

Major Applications: Manufacturing

- Tool tracking
- Asset tracking
- Inventory management — FIFO
- Work-in-process tracking



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Major Applications: Food

- Track and trace
- Recall management
- Temperature tracking



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Major Applications: Health care

- Asset tracking
- Blood tracking
- Patient monitoring
- Automated billing



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Major Applications: Financial Services

- Tracking IT equipment
- Tracking data storage device



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What is ahead?

Current expansion into new industries and applications will slow due to downturn, and EPC will gain traction slowly

- Still great interest in using RFID to improve processes but some projects delayed
- Wal-Mart might push suppliers to tag more SKUs in 2009
- Sam's Club pushing item-level tracking in 2011 which could transform RFID adoption

What should you do?

- Look at ways RFID can cut costs, streamline processes and make you more competitive
- Companies that invest in tough times crush the competition in the good times
- Don't be the next Circuit City

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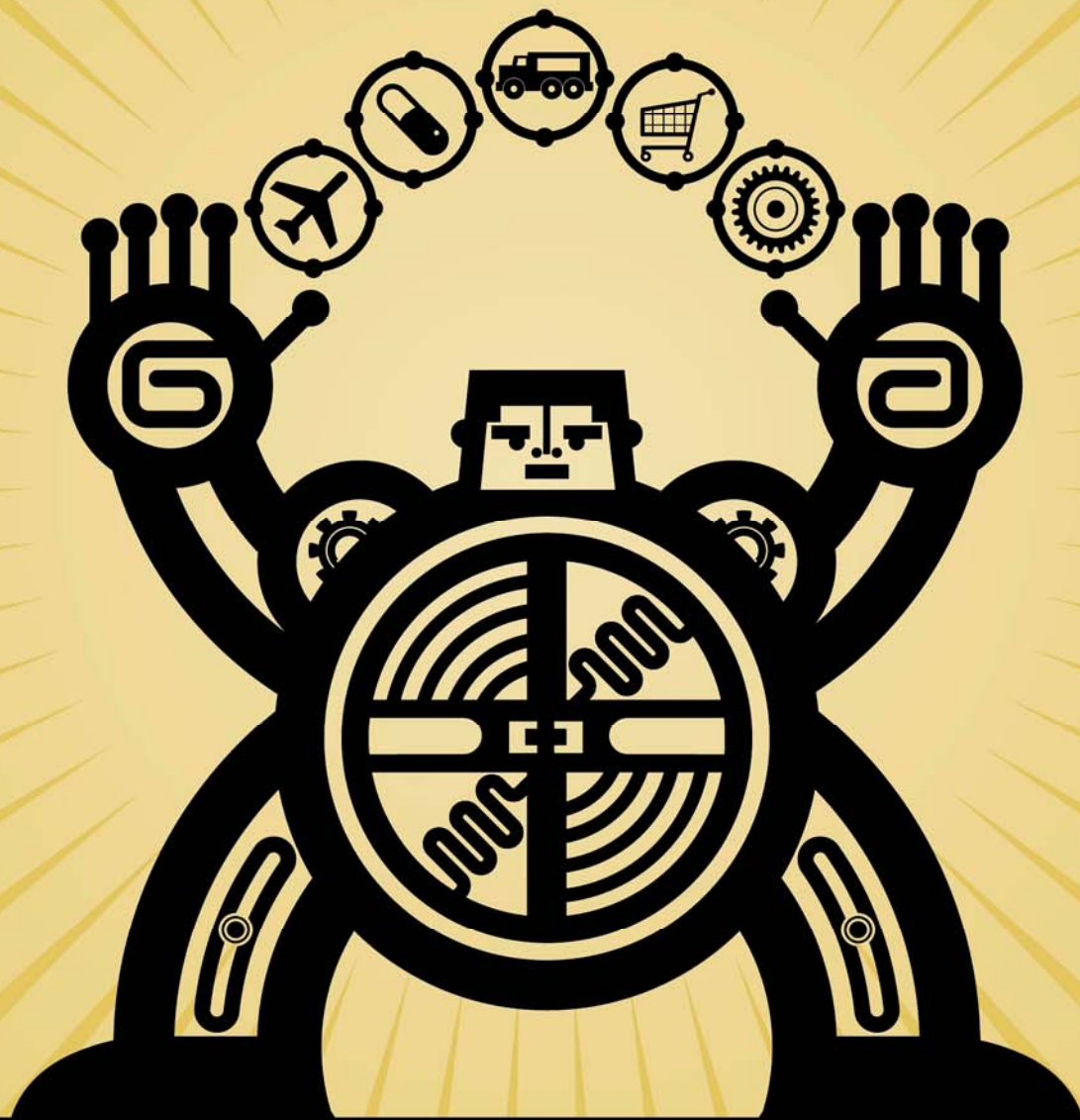


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Questions?

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A bright yellow sunburst background with a central sun-like glow and radiating lines.

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