



# **RFID Overview & Trends**

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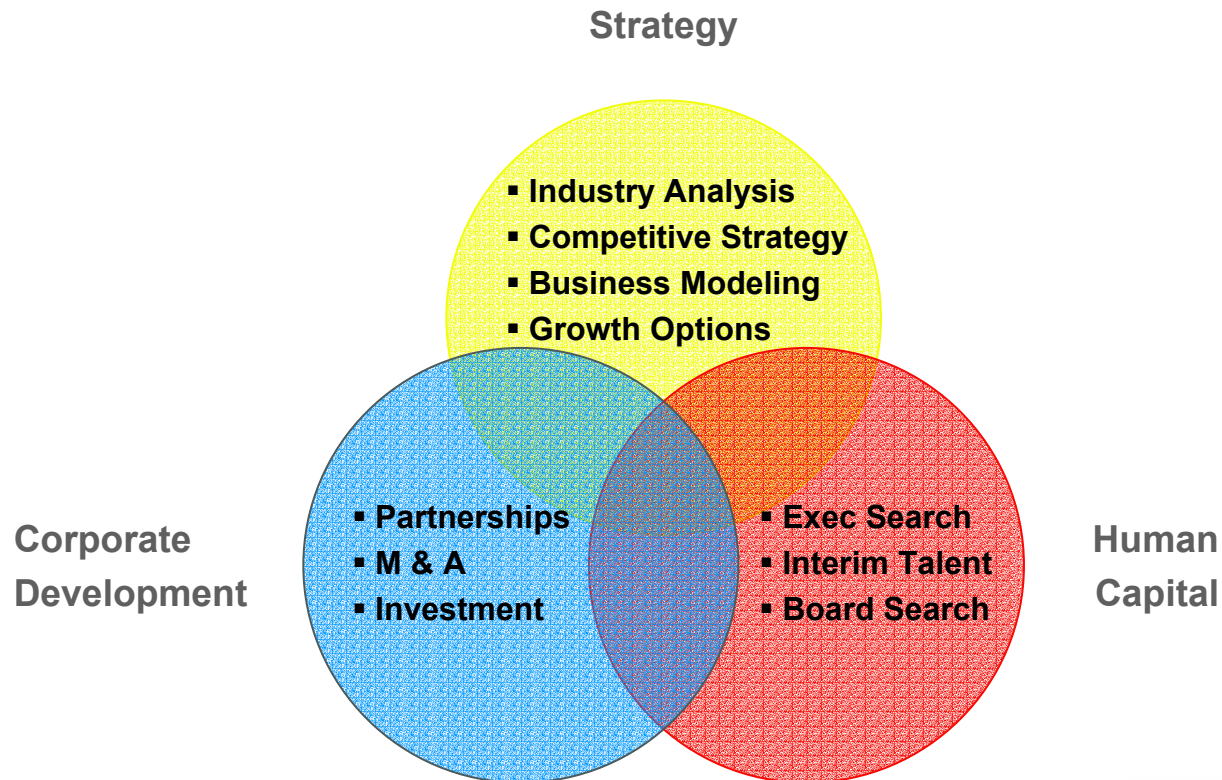
# Outline

- **About McLaren Sachi**
  
- **What is RFID?**
  - **Nuts and Bolts**
  - **What's the Big Deal? Idea?**
  - **Market Segments and Applications**
  - **Business Drivers / Case**
  
- **A Smart Approach to RFID**
  - **Strategy**
  - **Implementation**
  
- **New Venture & Investment Themes**

# Our Services and Focus

McLaren Sachi provides consulting and advisory services, including: Strategy, Corporate Development and Human Capital.

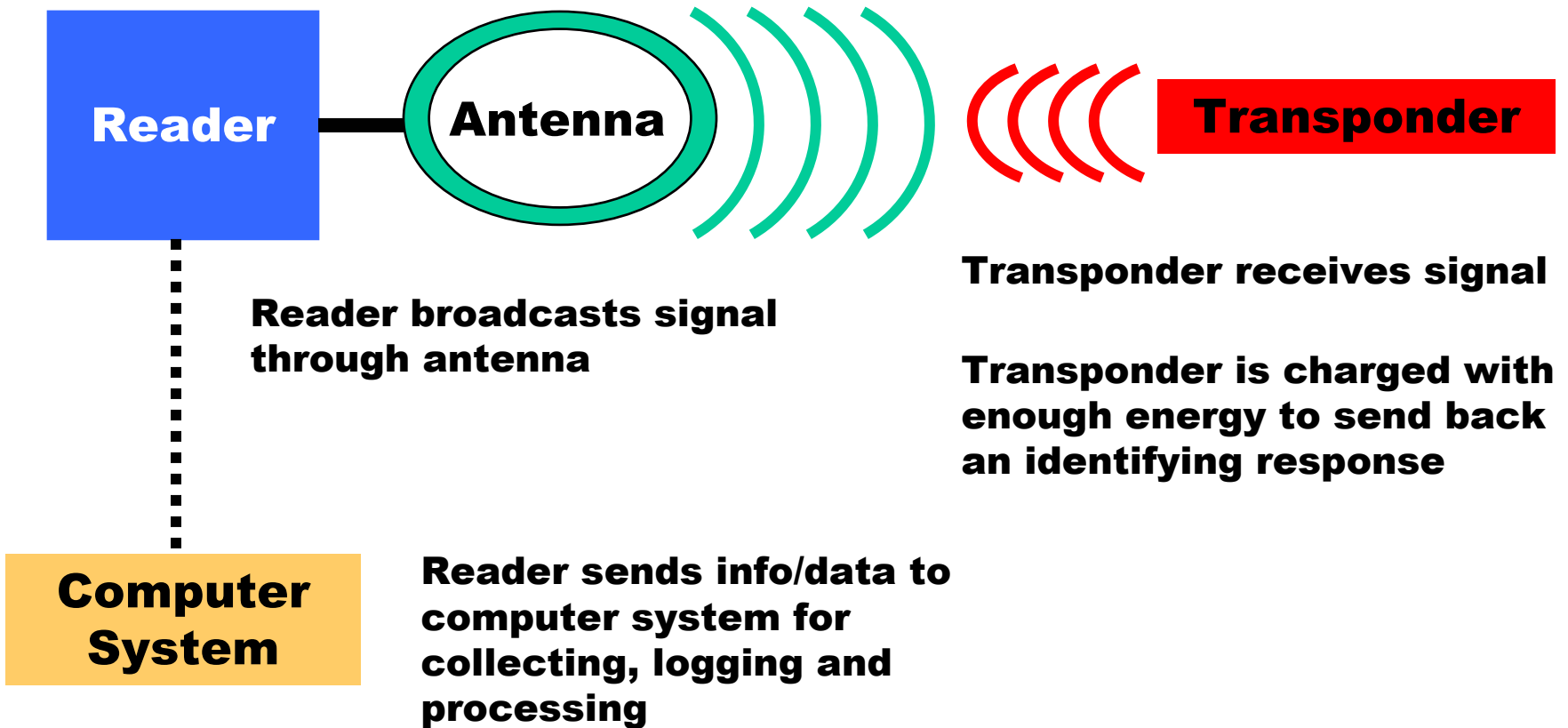
→ Our Focus is on Mobile & Wireless Convergence.



# What RFID Does?

- An automatic way to collect information or data on:
  - Products
  - Places
  - Times
  - Transactions
- An identification performed in milliseconds:
  - No line-of-sight required
  - Contactless
  - Works in a harsh environment
  - Less susceptible to human error
- Uses ID “tags” that can:
  - Store unique ID information
  - Read and write data to the tag
  - Maintain historical information

# How RFID works...



# RFID Operating Frequencies

- Low Frequency (125 – 134 kHz)
  - Used in Access control, livestock, race timing, pallet tracking, automotive immobilizers, wireless commerce
- High Frequency (13.56 MHz) – Smart Labels
  - Used in supply chain, wireless commerce, ticketing, product authentication
- Ultra-High Frequency – UHF (900+ MHz)
  - Wal\*Mart Standard ←
- Microwave (2.45 GHz)
  - Not widely deployed, chipless technology

# RFID Cost Considerations

- Core Hardware Cost Elements:
  - Tags \$.25 to \$.75 per tag
  - Readers \$200 to \$10,000 per reader
  - Antennae \$25 to \$500
  - Multiplexers \$500 to \$2000
  - Controller PC \$1000 to \$3000
  - Cabling \$10/foot between reader and controller
  
- Other Cost Elements:
  - Installation \$\$\$ varies
  - Tuning \$\$ varies
  - Software \$\$\$ varies
  - Back End Integration \$\$\$\$ varies
  - Maintenance \$\$ varies
  - Process Changes \$\$ varies

# What's the BIG Deal / Idea?

- **A digital URL linking the physical and virtual worlds**
  - Pointer / locator
  - Content
  - Infrastructure
  - Services
- **Bread and Butter**
  - Vertical enablers and applications
  - Cost reduction, efficiency
- **New economy applications, services and business models**
  - e.g. Netscape, Amazon, Yahoo!, eBay, DoCoMo, Google

# Typical Segments & Applications

- **Consumer Packaged Goods**
  - P&G, Gillette, Wal-Mart, Johnson & Johnson
  
- **Logistics and Supply Chain**
  - FedEX, UPS
  
- **Government / Military and Defense**
  - Asset Tracking
  - Homeland Security
  
- **Mobile Payment**
  - MasterCard: SmartPass
  - Contactless IC for retail POS (NTT DoCoMo)
  
- **Other**

# Issues!

- Concern about ROI ('just another technology wave')
- IT budget restrictions & high infrastructure/solution costs
- Not always a clear business case within the enterprise
- Uncertainty around standards
- Difficult to achieve competitive advantage through technology alone
- Security and privacy



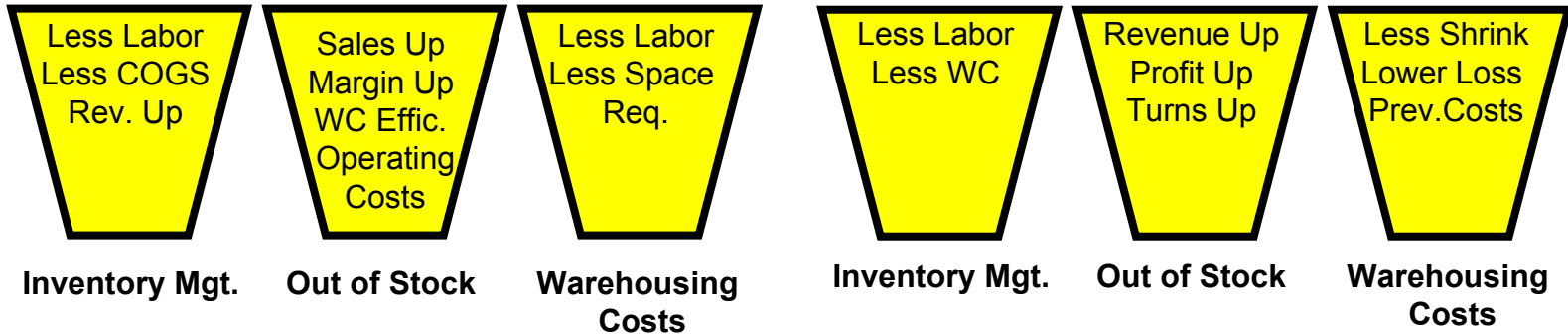
## Practical Implications of RFID

- What do I do first? Second? And how can I take a phased approach?
- What do I need to do to comply? What are the mandate requirements? What will this cost me? How much can I charge to the organization driving the mandate?
- What needs to change in my existing systems and business processes to integrate RFID?
- How long will it take to make that happen? Will I be ready in time?
- What else will be required in the future? What other retailers will soon require RFID?
- And most importantly, how can I leverage the technology for my own benefit? What is the business case?

# RFID Considerations

- **Strategic:**
  - How pervasive will RFID be in the value chain?
  - Impact on industry structure and business model?
  - Competitive advantage or strategic imperative?
  
- **Tactical:**
  - How will I collect RFID data?
  - How will I integrate data into my current supply chain management?
  - How will I share data with my partners in the supply chain?

# Typical Business Drivers



## Manufacturers

- Receiving & Checking in
- Put away
- Order filling
- Shipping Accuracy

## Retailers

- Labor costs
- Inventory accuracy
- Order fill accuracy
- Shrink
- Inventory velocity

# Typical Business Benefits (e.g. SCM)

- **Inventory Management (focused on the lowering distribution costs)**
  - Easier Cycle Counting
  - More Accurate Shipments to Retailers
  - Streamlined Receiving / Picking / Shipping -- Labor represents approx. 50-80% of all DC costs
  - Improved Labor Utilization
- **Order Management**
  - Higher Order Fill Rates
  - More easily facilitated Recalls/Returns
  - Reduction in Claims and Claims Handling
- **Trading Partner Collaboration / Planning**
  - Better Consumer Sales Data from Retailers
  - Increased Demand Planning Accuracy
  - Reduced Safety Stock positions
  - Shorter Lead Times
- **Theft & Counterfeiting**
  - Better Brand Management / Protection
  - Fewer 'gray market' goods

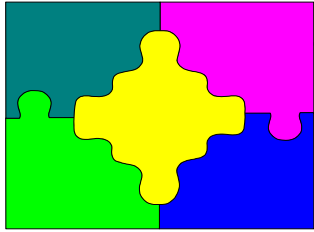


# Our Typical Project Approach

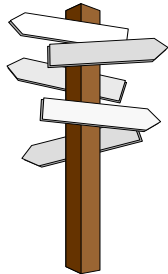
**Go Live - On site, dedicated support.**




**Test/Train - These are the most important tasks of any project. RFID is no exception.**



**Integration - Utilizing RFID within the framework of your current business.**



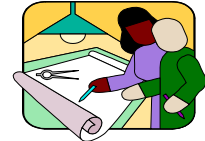
**Kick Off Meeting - Introductions, Proposals, Scope Determination, Facility Tours, Technology Overview**



**Areas of Interest - Shipping Dock, Security, Documents, Fixed Assets, Receiving, WMS, Yard Management, Inventory Control**

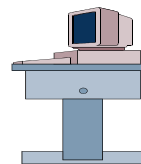


**Enterprise Team - Chose the RFID Technology champions from each area of interest.**

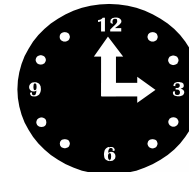


**Kick Off Meeting  
Enterprise Team  
Areas of Interest  
Compliance  
Hardware  
New Software  
Integration  
Test/Train  
Go Live**

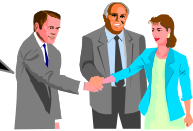
**New Software: WMS, ERP Upgrades, Data Warehousing? What are your needs?**



**Hardware - Design the infrastructure with an eye towards the future**



**Compliance - Who is the customer, what are the requirements, when are the deadlines, how do we get there?**



# New Venture / Investment Themes

- ***Emerging* applications and segments**
- **Convergence**
- **Information Value-add**
- **Disruptive business models**
  - e.g. Netscape, Amazon, Yahoo!, eBay, DoCoMo, Google



**Questions???**

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