



RFID Considerations for Manufacturing Industry

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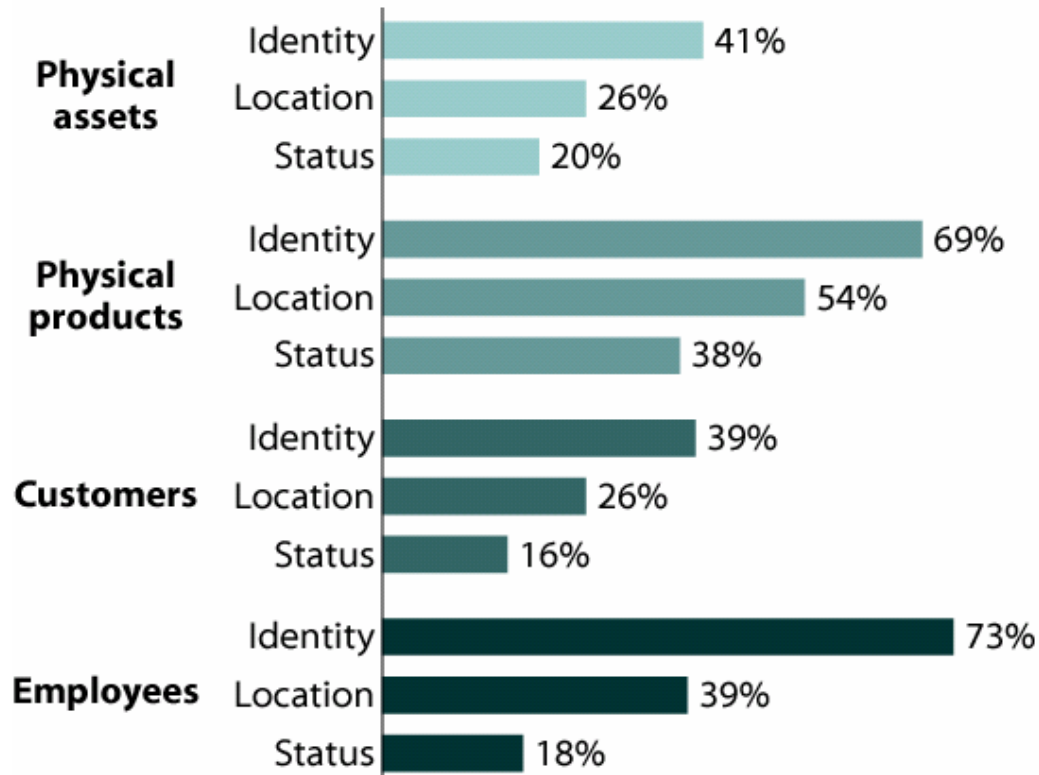


Discussion Topics

- Events driving RFID development
- What are the opportunities for Manufacturers?
- Lessons Learned
- AIAG Report on the status of RFID in North America
- Key benefits and value propositions

Drivers - Firms lack ties to the physical world

“Does your company collect in-depth data about the identity, location, and status of your physical assets, physical products, consumers, and employees?”

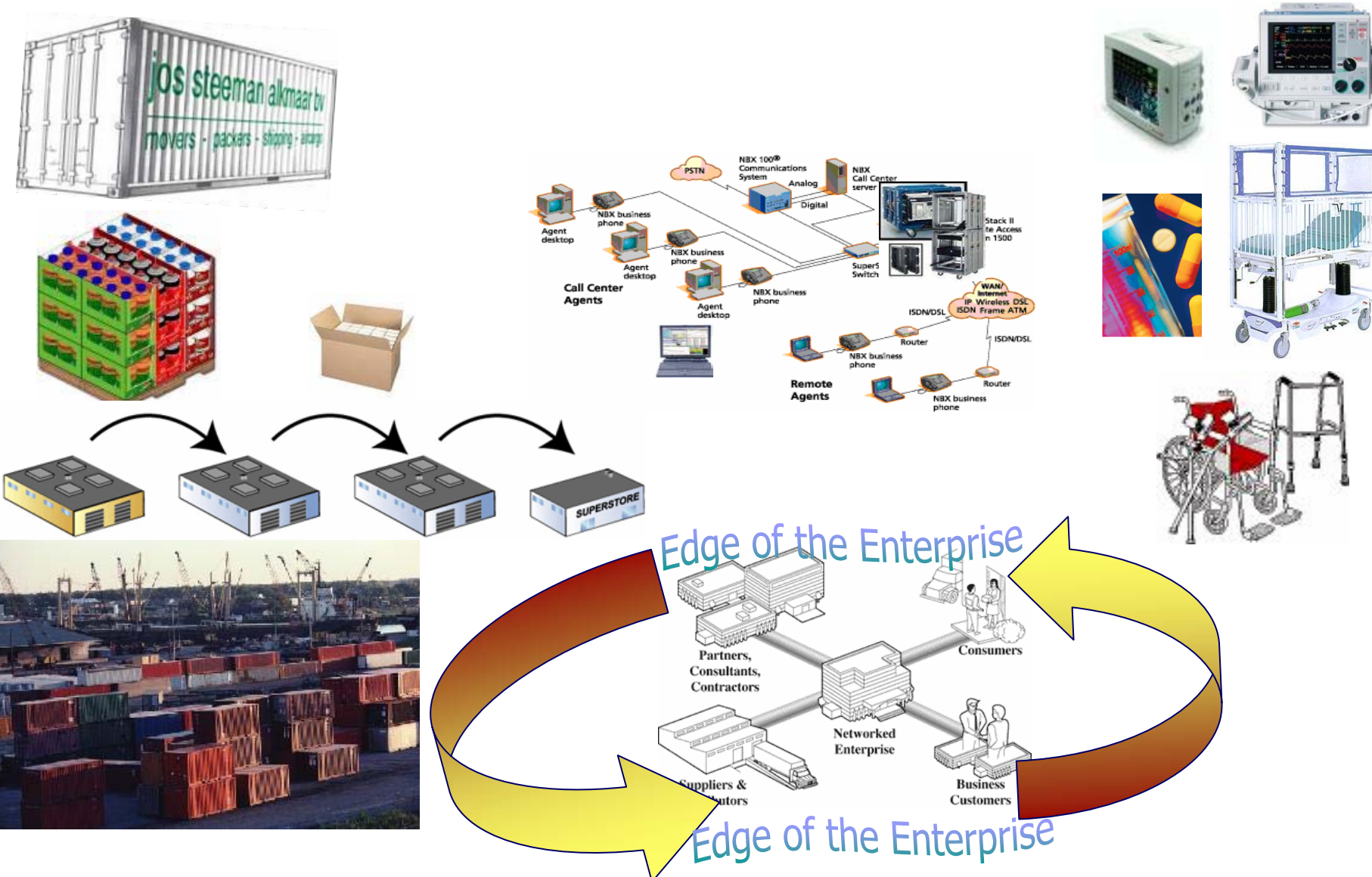


“Identity” refers to distinguishing characteristics, such as name, type, dimensions, and recommended usage. “Location” represents exact physical location or site, measured down to a few feet, at a given point in time. “Status” is physical condition -- temperature, readiness, and performance -- at a given point in time.

Base: executives at North American manufacturing companies

Source: Forrester’s Business Technographics September 2003 North American Study

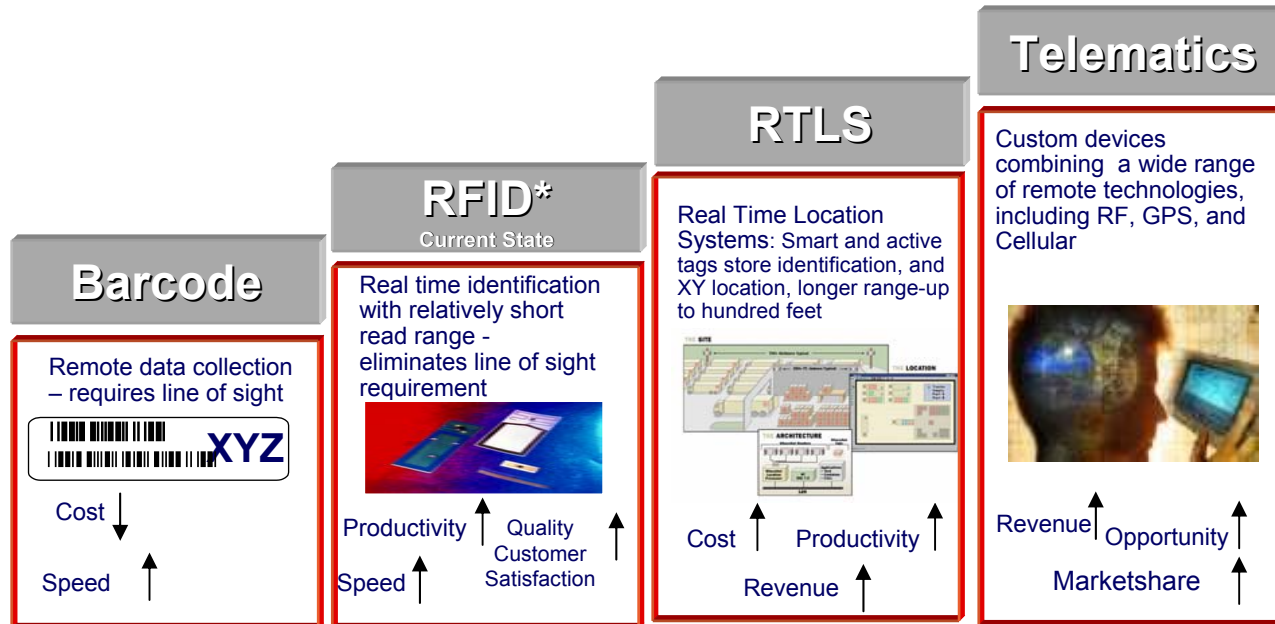
EDS' View - Achieving the Networked Enterprise (ties to the physical world) through EDGE Technologies



Where does RFID fit in?

EDS views RFID as one of the components along a continuum of **Edge Technologies** - which automatically capture data at the “**Edge**” of the enterprise

Edge Technology Continuum



Sample Applications:

- Production operations
- Inventory tracking
- Point-of-sale

- Supply Chain Visibility
- Error Proofing
- Traceability

- Container Tracking
- Yard Management
- Inventory Location

- Remote Diagnostics
- Wireless Logistics
- Vehicle Tracking

EDS has over 20 years experience in Edge Technologies

RFID Is Not New – *It Has Been Applied Successfully Across Multiple Applications in a Variety of Industries*

Automotive & Discrete Manufacturing



Library Books



Packaging Logistics



Cattle Tagging



Baggage Tagging



Entry Systems












Counterfeiting/Authentication

RFID is another generation of product ID and tracking technology

- RFID is not a new technology; It has existed for many years in warehouse operations, SpeedPass™ tags, and on CDs and clothing
- There are several methods of identifying objects using RFID -- the most common is to store a serial number that identifies a product on a microchip that is attached to an antenna

In the last 3 years, we have seen a dramatic increase in activity among manufacturers and retailers that foreshadow rapid and widespread adoption.

Sample of EDS' Experience in Deploying & Managing Automated Data Capture Solutions

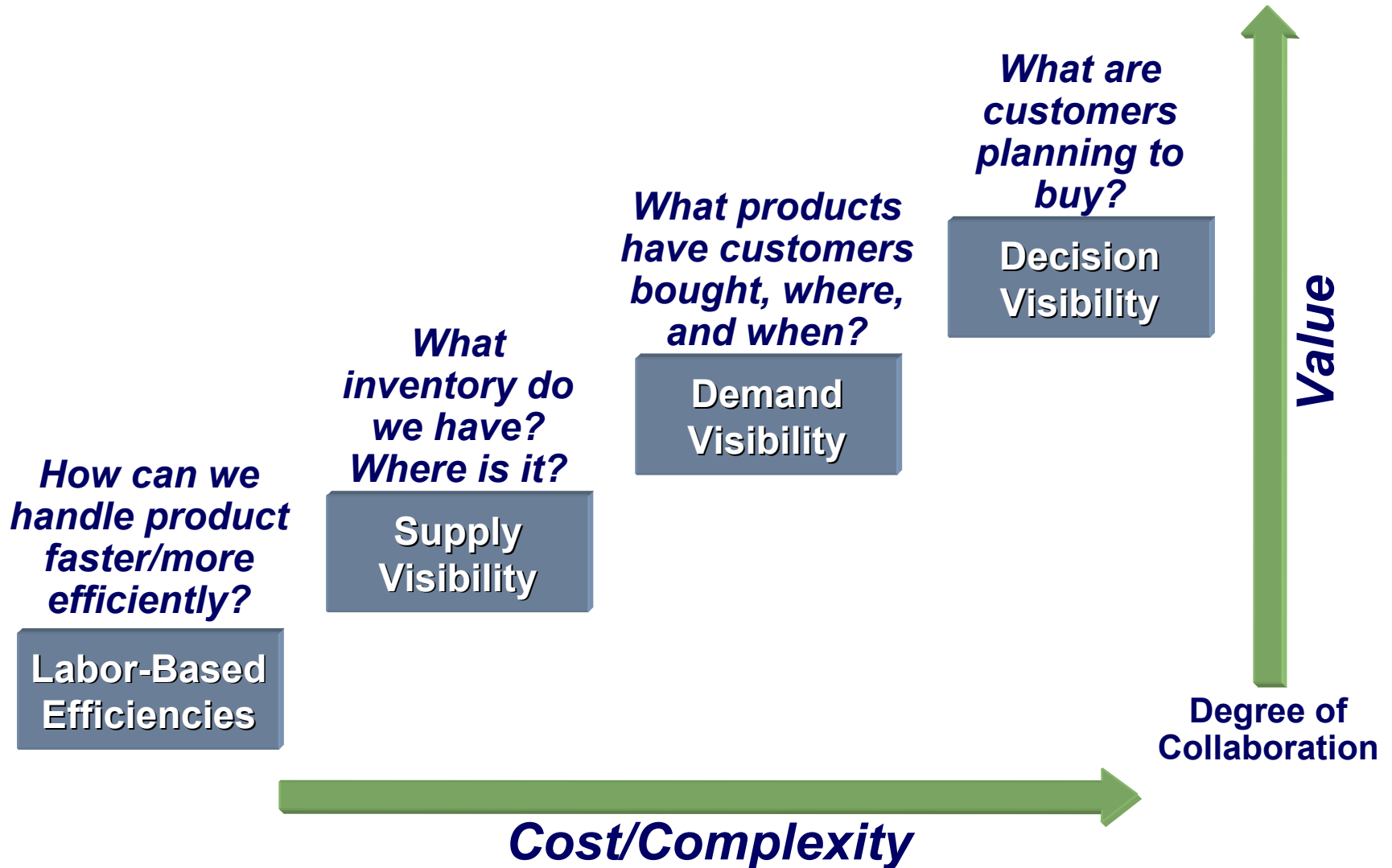
	<p>Created a state of the art RFID-enabled Asset Tracking system and developing a unique Cargo tracking system that will distinguish American Airlines from its competitors</p>
	<p>Developed an RFID proof-of-concept and implementation program to meet retailer mandates. Wal-Mart named the Pfizer project one of the “top 3” RFID projects in US.</p>
	<p>EDS & The Department of Veterans Affairs (VA) hospital system set out to systematically eliminate medication errors through Bar Code Medication Administration (BCMA). BCMA ensures patients receive the correct medicine in the correct dose at the correct time.</p>
	<p>EDS consultancy, A.T. Kearney, hired by Healthcare Distribution Management Association, to comprehensively assess implementation, cost, and revenue issues related to RFID. Developed industry rollout strategy, including focus on high-priority drugs.</p>
	<p>EDS linked RAPIDS to a centralized smart-card personalization and digital identity delivery system.</p>
	<p>Founded by GM, EDS and Hughes Electronics tracks over 2 million vehicles per annum using GPS and wireless technology.</p>
	<p>Development of solutions for material pull, material tracking, product identification, yard management, and gate check-in/check-out.</p>
	<p>The world's leading convenience store retailer needed a new, on-demand promotional mechanism to support a new product launch.</p>
	<p>Allows dealers and customers the ability to gather and track information regarding their assets for purposes such as maintenance scheduling and alerting of possible threats</p>



Automotive Industry Experience/ Lessons Learned

AIAG Report on the Status of RFID in North America

Four Benefit Categories Drive RFID Value



EDS/ A.T.Kearney Study Results

Manufacturers' savings also fluctuate from company to company, with many of the benefits dependent on participation by trading partners

Driven within Mfg. Four Walls

- **Inventory visibility:** The tags will allow better tracking of case and pallets throughout the warehouse and distribution systems
- **Labor efficiency:** Reduced cycle counting, manual recording and even bar code scanning will result in lower labor costs
- **Better fulfillment:** Reduced shrinkage, improved dock and truck utilization and improved product traceability and more precise product recall capabilities are all benefits to the manufacturer

Driven by Trading Partner Activity

- **Reduced store level out-of-stocks (OOS):** Tagging of pallets and cases will allow for better tracking of goods within stores, reducing times when goods are in-house but not available to consumers
- **Reduced claims:** Tracking of pallets will reduce unwarranted claims; claims processing costs will also be reduced
- **Reduced unsaleables:** Goods with expiration dates can be better managed (moved more quickly when code dates are near), reducing need for write-offs due to spoilage
- **Reduced diversion** Tracking and reporting compliance critical to success along with revised promotion incentives



Where are we working today with OEM's

- Manufacturing
 - Through-put & production tracking
 - Quality validation-audits gates
 - Sequence Suppliers-Right part, right container, on-time, right place
 - Yard Management
 - Container tracking (powertrain & stamping)
- Transportation and Logistics
 - Long Range -High Value Asset Tracking
 - Ship container tracking
 - Tractor/Trailer Long Range Telematics
 - Real time tracking of gasoline and other “volatile” transportation vehicles. Provides remote “shut-down” of truck
 - Auto auction vehicle location and tracking

••• Opportunities for Suppliers

- Reduce container costs
 - Optimize tracking, reduced quantities
 - Selected higher value containers
- Improve JIT delivery, validate ship and receive time
 - From suppliers
 - To OEM's
- Improve product quality in manufacturing assembly
 - Validation at quality checkpoints
 - Serialization and tracing



Lessons Learned

- Infrastructure to capture, store, manage, and disseminate information on a real-time basis
- Technology maturity – reliability rates and ability transmit through certain materials
- Cost and Business case – ROI
- Trading partner adoption level – A high ROI depends on benefiting the network
- Leveraging existing investments in barcode
- Processes/ Legal regulations may need to be changed
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