Bank of America’s RFID Data Center Inventory Project

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• One of the world’s largest financial institutions
• Serving individual, mid-market and large customers
• 58 million consumer / small business relationships
• Among world’s leading wealth management companies
• Global leader in corporate, investment banking
• Serves clients > 150 countries
The Challenge

- Improve data center asset inventory efficiency, accuracy
  - Sarbanes-Oxley compliance
  - Required very labor-intensive audit, very costly
  - Multiple, acquired data centers
- Want ability to quickly locate data center assets
- Manage movement of equipment
Project Scope

• Project launched April 2008
• Included all critical data centers in US and UK
• Drivers were SOX compliance, cost, and need to know what equipment was in what locations
• RFID tag all assets while doing on-site physical inventory — better track inventory and asset moves
• 80,000+ assets – Largest project in financial services
The Solution

– Visi-Trac™ application software
– Integrate with Workflow management
– Handheld readers for inventory
– Passive RFID Portals at egress points
– Passive EPC Gen 2 readers, tags
Vendors involved

- Application software, services
- RFID readers
- RFID Tag Specifications
- RFID tags
- Server vendors
Benefits

• We know what we have and where it is
  • Much firmer grasp on inventory

• Significant man-hour savings for audits
  – 90% reduction in inventory collection time / costs
  – Less time spent locating assets

• Real-time inventory control
  – Automated audit trail for IT assets, no touch labor

• Facilitate automated receipt notification
  – For supply chain and workflow management
Future Plans

• Real time integrated feeds to system of record and workflow management system
• Set up ‘decommissioned asset’ zones
• All vendors provide advanced shipping notices
• Expand to more equipment types, more data centers, branches
Lessons Learned

• Senior management sponsorship very important

• Get the right vendors who understand the technology and applications

• Deploy the system and achieve the cost savings
• Market leader in real time asset visibility solutions
  – Data Center asset tracking
  – Enterprise asset locating

• Leading RFID Industry innovator

• Visi-Trac and DataGuard solutions
Market drivers: Data growth, mobility and security

• Data Growth has rapidly surpassed expectations
• Increased data mobility
• Increased data breaches and costs
• Increasing regulations
Financial Services’ drivers

Financial institutions are adopting RFID in Data Centers to:

• Ensure regulatory compliance
• Reduce compliance and operational costs
• Locate assets in real time
• Protect data against possible security breaches
Key challenges in IT Asset management

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Visi-Trac™ and DataGuard™ solutions

- Turnkey solutions for tracking and securing all IT assets

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Visi-Trac™ - Data Center asset management

- IT Asset inventory and control solution for data centers
- Track servers, mobile IT assets through full life cycle
- Features
  - Distributed, web services architecture
  - Highly scalable
  - MS BizTalk, IBM Websphere
Visi-Trac™ - How it works

**Visi-Trac™ Mobile**
- Inventory Sweep
- Inv Sweep-Exception Rpt
- Locate Asset
- Add/Edit Asset
- Add/Edit Rack

**RFID IT Asset Collection**

**OTA or Wired Synchronization**

**Visi-Trac™ Server**
- Data Aggregation
- Web Based Reporting
- Mapping
- Alerts/Notifications
- Secure

*Inventory and control solution designed to manage IT assets using RFID technologies*
DataGuard rf™

• Data storage tape solution
  – Handheld software generates and uploads scan lists to Tape Mgmt Systems

• Volser Labels
  – Passive RFID tags integrated with Volser label enabling scanners to quickly read each cartridge
Benefits

Banks are using IT Asset Tracking solutions to achieve:

- 60% reduction in operating costs
- 90% reduction in compliance costs
- Dramatic improvements in data accuracy
- Increased assurance and security
  - De-commissioned hard drives and servers
Best Practices
RFID Tag Selection for IT Asset Tracking Applications

Andre Coté
Chief Technology Officer

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Identify with innovation
Why RFID For IT Asset Tracking?

• Facilitates operational efficiencies through improved business processes
  – Factor of ten reduction in inventory operations
  – Allows track/monitor points not previously feasible
  – Increase automation, increased productivity, accuracy

• Increases control, reduce risk and exposure
  – High value assets
  – Confidential/sensitive data
  – Authenticated parts
  – Reduction of lost or stolen assets
The Headlines Tell the Problem:

• Laptops Lost from Royal Air Force (RAF)
  – May 2009: Laptops containing 500 highly sensitive files were lost from RAF Innsworth in Gloucestershire
    • “…provides excellent material for Foreign Intelligence Services.”

• Farmers bank account details lost by Rural Payments Agency
  – Computer tapes containing the bank details, addresses, passwords and security questions of more than 100,000 farmers were discovered missing in May.

• Server Sold on eBay With Financial Data
  – August 27, 2008: A server holding the financial records of 1 million customers of NatWest and Royal Bank of Scotland was purchased on eBay
    • “…unaware that the server was no longer in their data center.”
IT Asset Tracking - Markets

- Financial Services
- Telecommunications
- Internet based solution providers
- Consumer Electronics
- Lease and Maintenance providers

Applications
- Total life cycle management
- Authentication, security, lease
- End of life, warranty, track & trace
Data Center IT Asset Tracking

• Typically end-to-end solution that includes software, services, and hardware

• Capture asset data, location and critical events

• Use Cases:
  • Inventory management and tracking
  • Lifecycle management

• Findings:
  • An investment can be paid back in less than a year in a large data center w/10,000 assets or more
Laptop Tracking at a Major Financial Institution

• Challenge was authentication and security
• Solution:
  • Tagging of laptops that move between facilities and through employee gates
  • Database and internal software application

“RFID tagging of laptops vastly improved the efficiency of our internal asset management systems.”
Lifecycle Management In Data Centers

• Challenges:
  • MFG Authentication, RoHS compliance, GMP
  • Receipt of electronic goods
  • Tracking of removable/portable media
  • Decommissioning/end of life
    • Proper erasure of sensitive data

• RFID Tagging of Hardware:
  • Improves management and authentication all the way to destruction
  • Tracks movement into and out of data centers
  • Improves receiving operations using EPC and ASN information
System Thinking Creates The Win

- Start with the problem/opportunity
- Be thorough in assessing TCO and benefits
- Assess business processes, human factors
- Consider how data will be processed, acted on (middleware/software)
- Engage a system integrator
- Decide on the appropriate technology
- Use the right tags!
Technology Considerations

• Technologies exist to make RFID work in almost any setting and environment
• Simplest, cheapest approach…that will get the job done right
• Critical to understand system requirements and use case for the technology
  – Physical and RF environment
  – Coverage area, read distance
  – Objects to be tagged
• Broadband versus regionally tuned
• Embedded RFID and source tagging
Nothing happens until the tag is read…

• Key tag considerations
  – Readability on the asset of interest
    • Adequate range/sensitivity for anticipated use
    • Tolerance to liquids, metals, orientation
  – Environmental/Durability (Encasement options)
    • Form factor and weight
    • Pressure and impact
    • Anticipated temps, moisture
    • Anticipated asset/tag life
  – Attachment method
  – Cost (in context!)