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McMaster RFID Applications Lab

RFID Business Case Overview

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Agenda

- Who We Are
- Success Factors for RFID Initiatives
- 2 Case Studies
- Final Thoughts
- Questions

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Who We Are

Leading edge Lab with cross-functional teams including world class Faculty, researchers, managers, graduate students, and volunteers






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Lab Resources

Value Proposition: Leverage the strength of one of Canada's largest research universities and the internationally renowned RFID applications lab

 CEDT Centre for Electronic Device Technology	Research centre dedicated to optoelectronic and electronic device research 40 internationally recognized full-time faculty members Key partner in designing custom hardware solutions for clients
 EEL Electronic Engineering Laboratory	Commercialization centre dedicated to translating research into commercially viable hardware and applications 20 internationally recognized full-time faculty members Key partner in deploying hardware and application solutions
 M&RC Mobile & Retail Research Centre	Research centre dedicated to mobile commerce, user interfaces, portals, identity theft, online negotiation, supply chain management, interface design, online trust and privacy, and change management
Dofasco Centre for Engineering and Public Policy	Research centre dedicated to bridging the gap between technology, business and society 10 internationally recognized full-time faculty members

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Major Projects Currently Underway

Health Care

- Hamilton Health Science
- Helping determine the appropriate RFID technologies for multiple applications such as asset management, pandemic planning, patient care etc.
- Leading the pilot deployment at MUMC and developing the business case for a full deployment

Transportation

- Major airline
- Helping determine the appropriate RFID solution for baggage tracking at hub airports
- Developing the business case for a full deployment


Retail

- Canadian office of a leading international retailer
- Actively engaged in helping determine the actual benefits of deploying RFID for the retailer, its partners and customers

Supply Chain Management

- Consulted on a pilot for the first global explosives tracking project

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Success factors for RFID initiatives

Success of RFID initiatives is highly dependent on generation and management of useful information

- Automated Data Capture ➤ Do you have the correct infrastructure in place to capture useful data?
- Data Management ➤ Do you filter unnecessary data and only manage useful data? Are you sharing this data with appropriate internal and external parties?
- Data Warehousing ➤ Do you have a plan for storing additional information that would be captured as a result of RFID initiatives? Is your data warehousing solution scaleable?
- Change Management ➤ How is the mandate of your initiative being communicated internally and externally? Are your end users on side with the proposed process changes? Are employees being educated and trained about these changes?

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Business Process Re engineering



Business Process Re engineering required for RFID projects can be complex

- Map out current processes. Get employees at all levels involved in this exercise
- Analyze the current processes and determine where your processes could be optimized
- Discuss the outcomes with your employees and determine their reactions to the changes
- Plan for appropriate training and communication. Unless your employees follow the updated process you will not see the complete benefits
- Change your process slowly. Track the response, learn from your experience and introduce further changes
- Determine realistic ROI metrics for your business case. Saving 30 minutes of your employees time does not directly translate to \$ savings as you can not send your employee home for those 30 minutes!

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Case Study #1



Ask: Determine the benefits of using RFID in Healthcare and develop a business case for RFID implementation at Hamilton Health Sciences

- **Initiated in Jan. 2006**
- **Multi Phased Multi Year Project**
- **Initial Phase: Asset Management**
- **Future Phases: Patient Identification and Care, Pandemic Planning**
- **Team consists of**
 - Academics (Faculty of Engineering Physics at McMaster, DeGroote School of Business, Center for Engineering Entrepreneurship & Innovation)
 - Graduate Students from multiple disciplines including Engineering, Business and Nursing
 - Undergraduate Students from Engineering (including a summer student from IIT Bombay)
 - Staff from all ranks at HHS (Senior VP to Nurses and Porters)
 - Industry leaders: Deloitte, RF Code, LRNI
- **Future additions would include**
 - Faculty and students from Engineering and Public Policy
- **End Goal: To explore and help develop Better Business Intelligence Tools for Healthcare**

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Case Study #1



What We Did

- Proof of concept project to employ active RFID asset tracking program with RFID
- Deployed network of RFID readers and antennas in ward and attached RFID tags to mobile assets
 - Business case developed after successful pilot using project data and assuming a successful BP review and deployment
 - Support included executive sponsorship of Bill MacLeod (HHS) and vendor support from LRNI, RF Code

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Case Study #1



Issues We Encountered

- Change management critical
- Numerous time savings identified with staff, however critical that staff use and understand technology
 - Installations challenging – for example needed to have each patient room empty before installing antenna – impact depend on ward utilization rates
 - Software essential – need to track assets that leave the ward – esp. during weekend or night shifts with alerts showing that asset has left ward

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Case Study #1



How We Built the Business Case

- Broke benefits down into eight areas and extrapolated for hospital accordingly
- Labor impact
 - Reduced capital expenditure for equipment
 - Patient (Throughput, Quality of Care, Wait Time Improvements)
 - Supply Chain and Hospital Process Improvements
 - Equipment and Item Loss Prevention
 - Risk Management
- Advantage is that stakeholders can calculate ROI on all dimensions, or limit benefit calculation to key areas

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Case Study #1



Key Learnings

- Change management and transforming data into useful information actually more important than technology
- Active RFID mature enough to take plunge
 - Privacy issues are real and need to be addressed
 - Software applications readily available but gaps in functionality
 - Customized applications raising costs and support issues
 - Both internal and external communication about the project is important
 - Change management is more complex than technology deployment
 - Opportunities: RF enabled biosensors that can monitor patient conditions, Smart Shelf for reliable drug dispensing

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Case Study #2



Ask: Recommend strategy to minimize lost baggage with airline and develop business case for full implementation at hub airports

- **Initiated in 2007**
- **Client: Major Airline**
- **Problem: Customer Service and Financial losses due to lost baggage**
- **End Goal: To explore and help provide more visibility into baggage tracking**

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Final Thoughts



Successful RFID initiatives depend on clear understanding of business problem, business processes, and setting realistic ROI metrics

- Understand size of business problem trying to solve and set reasonable expectations as to % of problem that can be fixed
- Map out current processes and opportunities to optimize with RFID. Clearly highlight synergies, dependencies, and trade-offs
- Keep employees engaged. At all levels.
- Plan for change, with heavy focus on change management
- Change the process slowly. Learn from experience before introducing further change
- Determine realistic ROI metrics for the business case
- Put in place right tools and processes to generate and manage useful and actionable information, from data capture to management and warehousing
- Ensure effective benefits tracking and appropriate feedback mechanisms are put in place before leaving project

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Questions?



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