



RFID in the Supply Chain: Issues and Opportunities

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Session Agenda / Participants

- 8:10-8:30 Bill Hardgrave, Univ of Arkansas
- 8:30-8:50 Simon Langford, Wal-Mart
- 8:50-9:10 Terri Crawford, Publix
- 9:10-9:30 Dick Cantwell, P&G/Gillette
- 9:30-9:50 Claus Garbisch, DHL
- 9:50-10:10 Brian Subirana, MIT
- 10:10-10:30 Q & A

Please hold questions until the end of the session



RFID at the University of Arkansas

- ✓ Research
- ✓ Teaching
- ✓ Service



Research

- Technology deployment (static vs. mobile; Gen2)
- Data analytics
- Making the business case for RFID:
 - Reducing out of stocks
 - Promotions
 - “Big ticket” items
- Middleware / open source
- Public policy issues
- Animal ID
- Trailer tracking / load status
- Manufacturing (parts, assembly process)



Data Analytics

- 100% reads (implicit vs. explicit)
- Noisy data
- Business rules for data interpretation
- Control charts
- How much data will RFID generate?
- Data consistency
- Data integration

Filter -> Cleanse -> Integrate -> Interpret -> Understand



Making the Business Case ...

Does RFID Reduce Out of Stocks?

- Out of stocks study
 - 12 pilot stores / 12 control stores
 - 29 weeks; scanned OOS every day throughout all store formats (NHM, WMT, SC)

- Findings:
 - Pilot stores (pre-post): 26% improvement
 - 63% improvement (pilot v. control)
 - Pilot stores: tagged reduced at 3x the rate of non-tagged



Making the Business Case ...

- Promotions
- Big ticket items
- Product rotation (especially for date sensitive product)
- Targeted use of merchandisers
- Reduction of unnecessary manual orders => better forecasting/replenishment

- Considerations:
 - Abbreviated supply chain
 - Tag at source vs. slap and ship
 - Transportation piece



Teaching

- Dedicated courses in:
 - Business (open to all business students; undergraduate and graduate): students do “live” projects for companies
 - Computer Science Computer Engineering (primarily focusing on middleware)
- Interwoven into courses in
 - Industrial engineering
 - Electrical engineering
 - Logistics
 - Operations management
 - etc.



Training & Testing Services

- Determine tag and tag placement performance at various key read points – conveyor, dock door (pallet, case, handcart), impact door, shrink wrap
- Tests of multiple reader types
- Overall: prepare products to be sent through an RFID-enabled supply chain
- Coupling testing with training to provide full RFID learning experience



RFID Lab

- 7800 sq. ft. lab in Hanna's Candle Co.
- 4500 sq. ft. lab in Zero Mountain (cold storage facility)
- Replicates RFID in supply chain: dock doors, conveyor, impact doors, forklifts, pallet wrappers, etc.
- Serves as research and teaching facility
- UA RFID Lab became only 1 of 4 accredited labs in the world on Sept 13, 2005.



RFID Lab





RFID Lab





RFID Lab





RFID Lab





RFID Lab

