MIT RFID Academic Convocation

Opportunities and Issues in the Retail Supply Chain

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Where have we come from?

- 2002 – Auto ID Center Field Trials
  - Installation points took hours to install
    - and minutes to destroy
  - Not scalable, deployable, supportable
- 2003 – Wal-Mart focused on deployable solutions and future proof
- 2004 – Wal-Mart drove for mobile solutions
  - Still in early stages

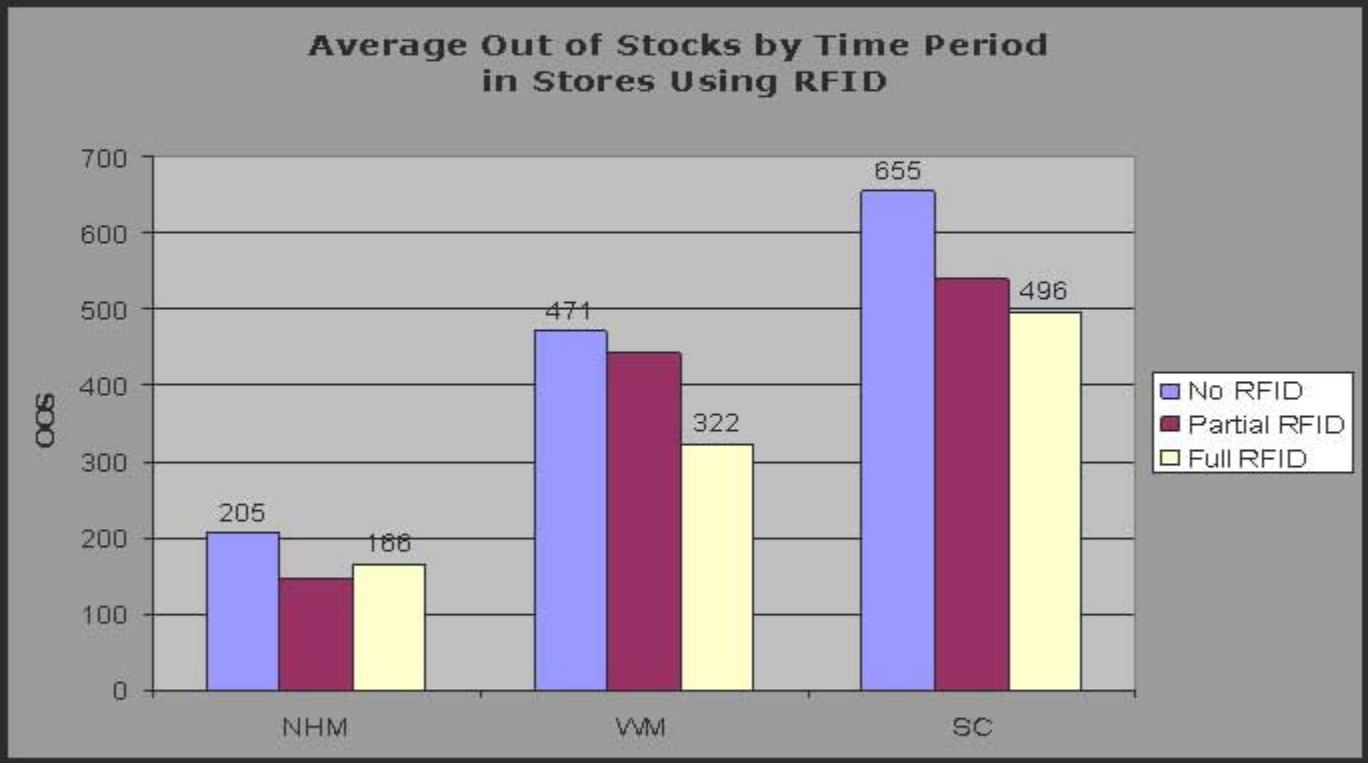
Current Situation

- Robust fixed reader solutions
  - Allowing installation of 20 read points in a matter of hours
- Common OS
- Deploying handhelds
- Close to deployable forklift solution
  - To read pallet and location tags
- Early stages with wearable readers
- Gen 2 rolling out
  - Tag prices falling

What has this delivered so far?

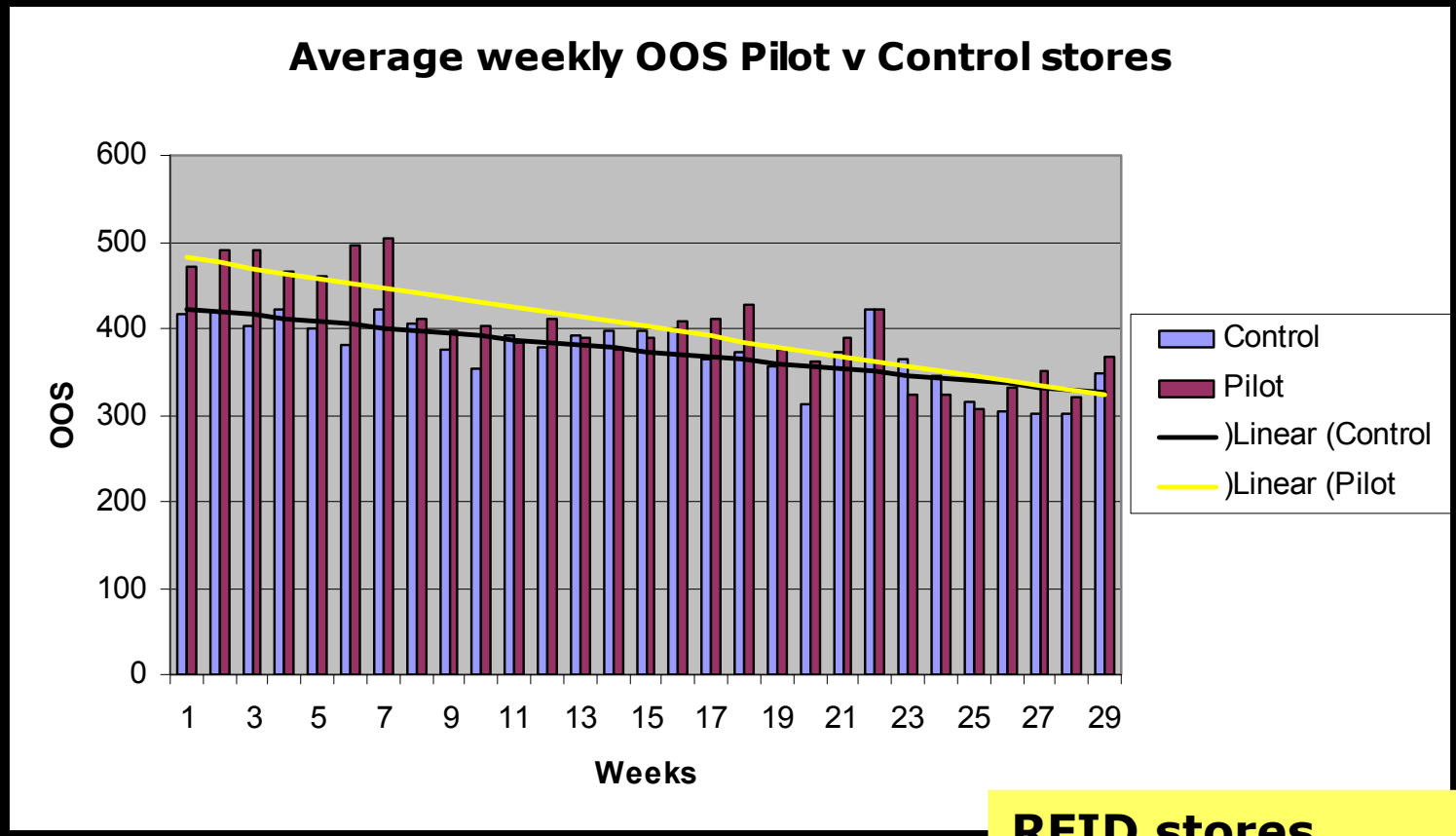
- Allowed to automation of tasks allowing store associates to work more efficiently
- Improved customer service
- Taken the theory out of the Lab into the Real World
- University of Arkansas studied our performance and the effects RFID was having

Results in RFID Stores: Out of Stocks Reduced by 16%



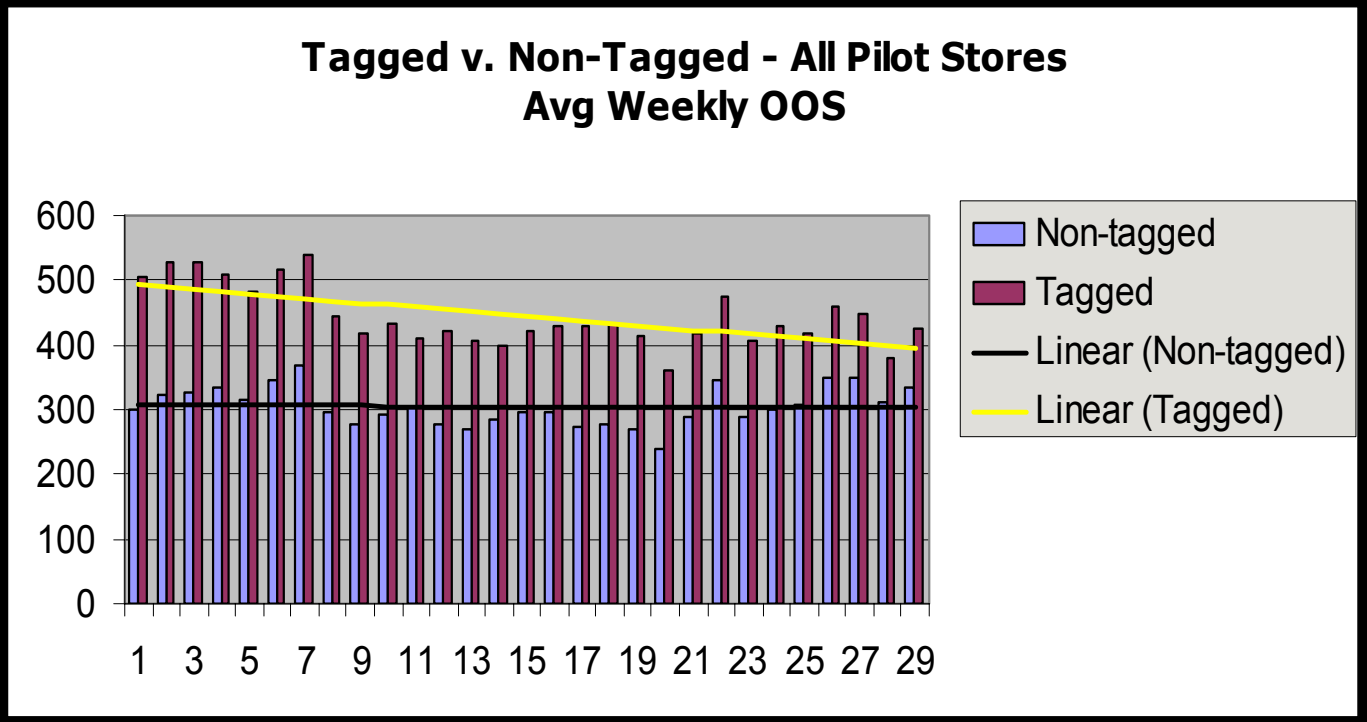
	Actual Drop	Net RFID Effect
ALL	**26%**	**16%**

RFID Accelerates Out of Stock Reductions by Rate of 63%



RFID stores performed 63% better than control stores

Tagged Products: Replenished 3 Times Faster



Tagged products replenished 3x faster than non-tagged products

Issues and Opportunities

Issues remain the same

- Data accuracy
  - Drives both availability and inventory costs
- How we use the data we have is key
  - RFID opens up a whole new world of granularity
- Inefficiencies on manual processes
  - Inaccuracies this causes
- Opportunity to reduce lead-times in the whole supply chain

Short Term

- RFID Handheld to assist in finding product locations in backroom and work product out from the reserve
- Fast tracking product to the sales floor
- Execution tools for promotions and new items
- Driving execution
- Electronic proof of delivery
- Pallet locator system in SAM's clubs

What does the future hold?

- Benefits today are the tip of the iceberg
- Many benefits are reliant upon technology development and or reducing the cost on deployment

What do we need to work on?

Gen2 showing a step change in performance – still need to drive for:

Cheaper, Faster, Better.

Added Features

What are the barriers to adoption?

- Tag cost still the primary barriers for suppliers
- Many process efficiencies in the retail supply chain require critical mass of tagged product
- Need to be smart in how we introduce RFID in to many areas of the business to limit operating duel system

What do we need to work on?

Transformational

- Sensor Tags
  - Passive
  - Semi Passive
  - Temperature
- Theft prevention systems
  - How do we replace EAS?
- True RFID Sortation - at High Speeds
- Robust Mobile Devices
  - Handhelds
  - Forklift
  - Wearable devices
- International
  - True Global tags – not tuned to regions
- EPC Network – move to reality

What do we need to work on?

Transformational

- UHF Tags for Pharma
  - Small tag form factors
  - Need for security
- International
  - True Global tags – not tuned to regions
- EPC Network – move to reality
- Direction detection
- Reading all cases on a pallet
- How do we get to sub 5c tags ??

What do we need to keep on doing?

Ongoing

- Education
  - Governing bodies
  - End Users
- Quality improvements
- Testing
  - True interoperable systems
- Ensure privacy concerns are taken into account and addressed

Lowering the cost of implementation

Summary

- We are just scratching the surface today
- Need for true mobile devices
- Lower costs
- Never loose sight of why we are using the technology