Agenda

- Overview
- ABPM research findings
  - RFID
  - Smart device
- Benefits of ABPM
Overview of ABPM
The problem

- Accounting provides systematic framework for measuring performance at business unit and firm level
- **IT implementations**—and many other interventions—have impact at activity level
  - Below business unit and firm level
  - Across BU/firm level
- No widely agreed-upon conventions for measuring performance of such interventions
The challenge—Measuring benefits

- Costs are easy, benefits are hard
  - Costs come from an activity’s **parts**
  - Benefits come from how an activity affects other activities

- Measuring benefits
  - Hard dollar vs. soft dollar benefits
  - Can **estimate** soft dollar benefits
    - Lots of work
    - Hard to persuade decision makers
Proposed solution—Using family resemblances

- **Family resemblances**—Common patterns in benefits associated with similar activities
- **Use standardized approach for measuring benefits across similar activities**
  - Difficult the first time, easier after framework developed on initial case
- **Firms do this today with business cases... we seek to do the same thing systematically and rigorously**
Storing knowledge about benefits

- How to keep track of many activities and their associated benefits?
- Carefully structured, on-line repository of knowledge about business activities
  - MIT Process Handbook
    50+ person years of research, 5000+ processes and software tools
  - Like periodic table of processes
  - For more see [http://ccs.mit.edu/ph/](http://ccs.mit.edu/ph/)
ABPM project status

- **Our vision**
  - Develop general ABPM approach
  - Test approach at several field sites as proof of concept (RFID, smart device)
  - Catalog benefits associated with key classes of activities (e.g., logistics, sales)

- **Team**
  - Thomas W. Malone, S. P. Kothari, Robert Laubacher, Brian Subirana
RFID findings
RFID field sites and approach

- Multiple field sites
  - Consumer goods manufacturer, large retailer, 2 SMEs
- Primarily case level RFID (some pallet)
- Three phase measurement approach
  - Identify processes affected by RFID
  - Map processes with and without RFID
  - Compare before and after—Costs (reductions) and sales (increases)
High level map of retail supply chain

- Shipments may go directly from factory to DC/store or directly from warehouse to store
- Third Party Logistics (3PL) Firms may also transport goods or operate warehouse/DC facilities

The analysis will start with detailed consideration of potential benefits inside the manufacturer’s warehouse and then move to the retailer DC and store.
Process reshaped by RFID in warehouse—Receiving

- Factory → Receive Goods → Store Goods → Fulfill Order → Retailer

Accept Shipment

- Reconfigure Goods

Check quantity received vs. quantity promised

As is (bar code scanning of carton count)
- Labor required/Speed = x seconds
- Error rate = y%

To be (RFID reader scanning of carton count)
- Labor required/Speed = x – d seconds
- Error rate = y – d seconds

Similar analysis of “Store” and “Fulfill” also undertaken
Seven primary types of RFID benefits

1. Enhance customer relationship!
2. Automation
3. Less shrinkage
4. Fewer claims (over/undershipments)
5. Smaller buffers
6. Less obsolescence/spoilage
7. Fewer out-of-stocks

Warehouse

Factory

Retailer

Receive Goods → Store Goods → Fulfill Order

Other
- Asset tracking
- Counterfeit prevention
- Plant scheduling

Inventory optimization
Process mapping beyond the warehouse

- Additional analysis shows underlying similarity between processes in manufacturer’s warehouse and
  - Store distribution center
  - Store backroom
  - Store shelf

- All are special cases of more general process, Hold inventory
“Hold inventory” and its family tree

Common underlying structure of processes means RFID will generate similar kinds of benefits in each location

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Family tree of benefits—Reduce out-of-stocks

- Reduce OoS at warehouse
- Reduce OoS at DC
- Reduce OoS in store back room

Hold stock

Retail Int
- 1% OoS sales loss
- 50% reduction
- Benefit 12.5 sales basis pts

GeneriMart
- 3% OoS sales loss
- 30% reduction
- Benefit 24.6 sales basis pts

Cornucopia
- 3% OoS sales loss
- 10% reduction
- Benefit 7.5 sales basis pts

WalMart Pilot
- 3.4% OoS sales loss
- 16% reduction
- Benefit 13.6 sales basis pts

85-98% of OoS

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Estimated benefits/costs of RFID

NPV of Case Level RFID Implementation at $10b Retailer and $10b Supplier

- Retailer costs: $44M
- Retailer benefits: $179M
- Manufacturer costs: $34M
- Manufacturer benefits: $101M

Inside 4 Walls
Dependent on Partner

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Smart device findings
Smart device field site and method

- Large IT company, fielding cell phone with wireless email capability to field sales force
- Highly adaptive, communications rich process (vs. structured RFID setting)
- Study in progress
  - Interviews spring (pre), fall (post) 2005
  - Now estimating/validating benefits
High level sales process

- **Assist prod devt**
  - Obtain customer input on next-gen product designs

- **Win contract**
  - Obtain order from customer

- **Eng support**
  - Ensure product works in customer design

- **Market customer products**
  - Encourage sales of customer’s products

- **Support**
  - Assist customers/end users when after sales problems arise
Sample decomposition—Win contract

Win contract

Present new product to customer → Address customer objections/concerns → Negotiate terms (price/quantity, marketing spend)

Understand objections/concerns → Consult with Sales experts or BU to develop response → Present response to customer

Iterated/repeated until all objections/concerns resolved/addressed
Generic description of core sales processes

Broker information to customer

- Get materials from BU
- Modify for customer
- Convey to customer

Broker information to BU

- Obtain input from customer
- Synthesize input
- Convey to BU

Solve customer problems

- Identify problem
- Develop solution
- Convey to customer
Role of communications in generic sales processes

Solve customer problems

- **Identify problem**
- **Develop solution**
- **Convey to customer**

Customer → Sales interaction

Intra-Sales interaction e.g.:
- or
- Sales → BU → Sales interaction

May involve many hand-offs

Two primary flavors—Routine and “critical moment”
Possible steps in solving customer problems

May be complex chain of communication, involving many links

Customer

Sales interaction surfaces problem

Sales liaison knows solution

Sales→customer interaction to convey solution

Liaison knows who know

Intra-Sales or Sales→BU interaction

Liaison does not know who knows

Intra-Sales or Sales→BU interaction

Liaison does not know solution
Benefits identified at smart device site

**Routine**
- Enhances everyday responsiveness, which customer surveys tie to increased future sales

**Critical moments**
- More wins on competitive bids
- Fewer delayed customer product launches
- Faster resolution of after sales supply/technical issues
Benefits of ABPM
Benefits of ABPM

- Focuses attention on where and how benefits are generated
  - Enables managers to focus on highest value activities during implementation

- Analysis of initial group of activities provides framework for examining benefits related to similar activities
  - No more re-inventing the wheel
  - Allows cumulative mapping of benefits associated with groups of processes