15.565 Integrating Information Systems: Technology, Strategy, and Organizational Factors

15.578 Global Information Systems: Communications & Connectivity Among Information Systems

Spring 2002

Lecture 4

INTER- AND INTRA-ORGANIZATIONAL SYSTEMS
Different Levels of IT-enabled Business Transformation

• Role of IT in business has shifted over time

• Trajectory of IT’s role based on two dimensions
  • Range of IT’s potential benefits
  • Degree of organizational transformation

• Premise: The benefits of IT deployment are marginal if only superimposed on existing organizational conditions (e.g., strategies, structures, processes, culture, roles, etc.)
Different Levels of IT-enabled Business Transformation

- **High Degree of Business Transformation**
  - **Revolutionary Levels**
    - Business Scope Redefinition
  - **Evolutionary Levels**
    - Business Network Design
    - Business Process Redesign
    - External Linkage
    - Internal Integration
    - Localized Exploitation

- **Low Degree of Business Transformation**
  - **Range of Potential Benefits**
    - Low
    - High
IT-enabled Business Transformation

• Evolutionary Change
  • Localized Exploitation
    • standard IT applied with minimal changes to processes
  • Internal Integration
    • applying IT to integrate activities through technical interconnectivity and functional interdependence

• External Linkage
  • applying IT to automate exchange of information across organizational boundaries
IT-enabled Business Transformation

• Revolutionary Change
  • Business Process Redesign
    • use of IT to enable fundamentally different business processes and organizational designs
  • Business Network Redesign
    • use of IT to create a new interdependent process across multiple participants in a business network
  • Business Scope Redefinition
    • use of IT to redefine or expand the scope of business and thereby redesigning business processes and restructuring business networks
REMINDER: TECHNOLOGY IMPACTS STRATEGY BY

1. SUPPORTING COST AND DIFFERENTIATION STRATEGIES

2. ALTERING INDUSTRY STRUCTURE

3. SPAWNING ENTIRELY NEW BUSINESSES

EFFECTIVE STRATEGIES DO ALL THREE!
EXAMPLE

POTENTIAL NEW ENTRANT

SUPPLIER

MCKESSION DRUG WHOLESALING

CUSTOMER

OPPORTUNITY FOR NEW PRODUCTS AND SERVICES
MCKESSON - CASE (starting mid-1970s)

• CONGLOMERATE (REVENUES = $ 2B)
  • McKesson & Robbins Drug Company (39%)
  • Beverage (26%)
  • Chemical Wholesaler (10%)
  • Foods Manufacturer (22%)
  • Land Development (3%)

• UNFOCUSEDSED

• LACKLUSTER PERFORMANCE
  • Sales Growth 6% / yr
  • Profit growth 2% / yr
MCKESSON - CASE (continued)

- DRUG WHOLESALING
  - Industry ($9B)
  - Problem Area
  - “Kill or Cure” - Alternatives?
RELATIONSHIP BETWEEN DRUGSTORE AND WHOLESALER

• 3-5 Major Wholesalers, many small players
• “Good-Old-Boy” Relationship
• “Sales” calls to create hand-written orders
• Telephone calls for out-of-stock items

• Average 2 deliveries per day
• Average order less than $200
MCKESSON ECONOMIST SYSTEM

• SIMPLE STORY
  • Electronic order entry by customer using portable terminal.

• BENEFITS TO CUSTOMER
  • Pricing
    • Lower typically (1%)
    • Attractive discounts on volume purchases
  • Store Organization
    • Shelf-space stickers with re-order info
    • Pricing strategy system (gross margin)
  • Delivery
    • Delivered in Boxes
      – organized by department and with price stickers
  • Management
    • Reports on assortment, pricing, inventory
SUMMARIZE BENEFITS TO CUSTOMER

- PRICE
- STOCKING
- INVENTORY
- ASSORTMENT
- SHELF-SPACE
- MARGINS
- MANAGEMENT

MORE RATIONAL WAY TO OPERATE

- SUPPORT COSTS AND DIFFERENTIATION STRATEGIES
BENEFITS TO McKESSON

• DECREASED ORDER ENTRY COSTS AND ERRORS
• DELIVERIES REDUCED FROM 1-2 / DAY TO 1-2 / WEEK
• RETAILERS FOCUS ON ONE WHOLESALER
  • Customer reduced by 25% but average order size increased
  • Increase “Switching Costs”
• IMPROVEMENTS IN OPERATIONS
  • Telephone Order -taker Clerks: Reduced from 700 to 15
  • Purchasing Staff: Reduced from 140 to 12
  • Warehouses: Decrease 50% (“mother trucks”)
• OFFICE AND WAREHOUSE PRODUCTIVITY INCREASED
• ROLE OF SALESPERSONS CHANGED
  • Reduced by 50%
  • Sell “System”
LONG-TERM IMPACTS

• MARKET SHARE? (mid-1970s=20%)
  < 30%  30-50%  >50%

• REVENUES? (mid-1970s=$720M)
  <$10B  $10-20B  >$20B
IMPACT ON DRUG WHOLESALING INDUSTRY STRUCTURE

• RAISED “TABLE STAKES”
  • Number of wholesalers dropped from 180 to 90

• ALTERED CUSTOMER RELATIONSHIP
  • “Bundled” products and services
  • Reliance on wholesaler

• STRENGTHENED “CLOUT” OF WHOLESALER
  (REDUCED “DIRECT” MANUFACTURER SALES)
  • Direct sales decline from 60% to 33%
  • Spawn new businesses (value-added services)
VALUE - ADDED SERVICES & NEW BUSINESSES

• VALUE-ADDED SERVICES
  • Billing and A/R services
  • In-store prescription computer and drug inter-action warnings
  • Credit card authorization
  • Third-party insurance claim filing

• NEW BUSINESSES
  • “Value-rite” chain of 3000 independents (“virtual chain”)
  • Managed prescription care services, RECAP\textsuperscript{sm}
    (200 M/yr prescription)
OTHER LESSONS LEARNED

• Changing customer behavior difficult
• Changing corporate “culture” difficult
• Needs lots of top management patience
• Attempts to use these approaches not always successful
SUMMARY

• NEED TO EXPLORE NEW STRATEGIES AND PROCESSES -- MIGHT TRANSFORM COMPANY AND INDUSTRY

• APPROACHES:
  • Competitive forces (5-forces)
  • Value chain analysis
  • Changes what work gets done and by whom

• LONG-TERM IMPACTS ON COMPANY AND INDUSTRY
  • Support cost and differentiation strategies
  • Alters industry structure
  • Spawn entirely new businesses

• NOTE INTERDEPENDENCE OF STRATEGY, TECHNOLOGY AND ORGANIZATION