China Research Lab

Business Process Reengineering

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Outline

- Two examples of BPR
- What is Business Process Reengineering?
- How to do BPR?
- How about the implementation?
- Future: radical or incremental?

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  - Ford Motor purchase-to-payment process
  - IBM credit process
- What is Business Process Reengineering?
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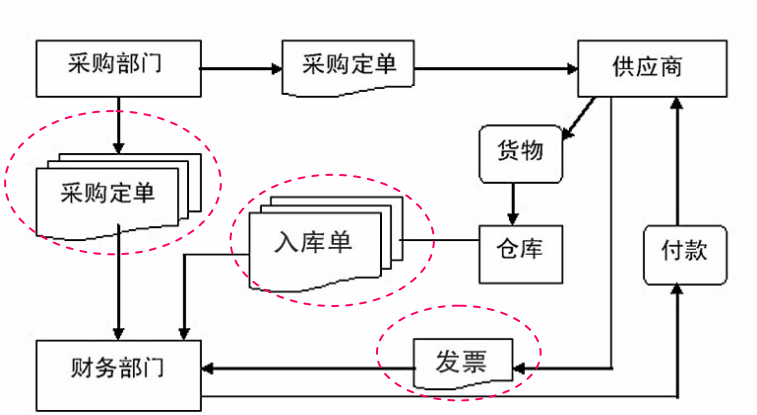
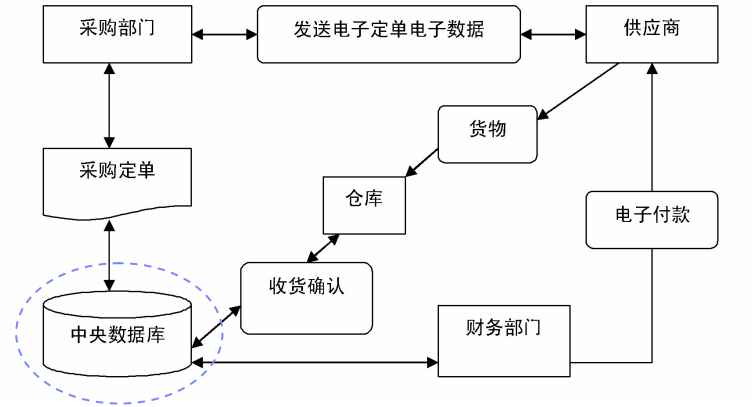
Example from Ford motor company





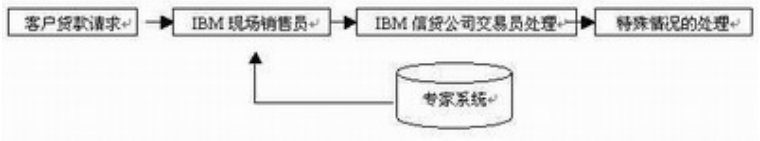
- Prior to BPR
  - At ford, the Accounts Payable department was tediously slow largely because it relied upon multiple copies of paper to flow back and forth among the purchasing agent, the vendor, the receiving dock, and the accounts payable clerk.

- After BPR
  - A change in the process flow substituted automatic computer telecommunications for the paper copies of the bill of lading, purchase order, and invoice. With the eradication of each of these pieces of paper came the elimination of the time and labor to type, mail, open, read, and respond to them.

- Concrete Results
  - Check items: 14 pieces → 3 pieces
  - Human resource: 500 people → 125 people
  - Performing cycle: 2 weeks → 2 hours

Example form IBM Credit Corporation

- Prior to reengineering, it took IBM Credit from 6 days to two weeks to issue credit. Often they would lose customers during the lengthy approval process.



- Today, the process takes only minutes or hours.
  - –Now instead of sending an application from office to office, one person called a deal structurer, processes the entire application from beginning to end
  - –Decision support systems is developed for the deal structurer to guide them through the credit issuance process

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- Two examples of BPR
- What is Business Process Reengineering
  - Definition
  - Target Categories
  - Principles
- How to do BPR?
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What is Business Process Reengineering (BPR)

- BPR was first introduced to the business world by Frederick Taylor when he published his article *The Principles of Scientific Management* in the 1900s.
- The Scientific Management method gave birth to Total Quality Management in Japan after World War II, whose main goal is to improve the manufacturing operations.
- In the 1990s, Michael Hammer and James Champy introduced their book *Reengineering the Corporation*, which gave birth to the term Business Process Reengineering
  - The fundamental rethinking and **radically** redesign of business processes to achieve **dramatic improvement** in critical, contemporary measures of performance such as **cost, quality, service** and **speed**.
  - The implementation of **deliberate** and **fundamental change** in business processes to achieve breakthrough improvements in performance.
  - Enabled by **IT**

Key target categories of BPR (Davenport)

- **Business Process Redesign can be defined as "the analysis and design of workflow and processes within and between organizations" (Davenport & Short, 1990). BPR has three key target categories:**
  - **Customer Friendly**
    - One of the main goals of introducing BPR is to get a competitive edge which can only be gained by providing the customers more than the others in the market.
  - **Effectiveness**
    - How effective is the product or service provided by the company to the customer?
    - If the provided product or service is successful, then the customers would automatically want to buy that product or service again.
  - **Efficiency**
    - How efficient is the company that is manufacturing the product before introducing it to the market to maximize costs?
    - That is believed to be more important than any others. If a manufacturing company can master the skill of being efficient then they can automatically be more customer friendly and effective.
    - Efficiency is not just about being efficient at the production floor level but the management level also has to be efficient.

Seven principles of BPR (Hammer & Champy)

- Hammer and Champy felt that the design of workflow in most large corporations was based on assumptions about **technology, people, and organizational goals** that were no longer valid. They suggested seven principles of reengineering to streamline the work process and thereby achieve significant levels of improvement in **quality, time management, and cost**:
  - Organize around outcomes, not tasks.
  - Identify all the processes in an organization and prioritize them in order of redesign urgency.
  - Integrate information processing work into the real work that produces the information.
  - Treat geographically dispersed resources as though they were centralized.
  - Link parallel activities in the workflow instead of just integrating their results.
  - Put the decision point where the work is performed, and build control into the process.
  - Capture information once and at the source.

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- What is Business Process Reengineering
- How to do BPR?
  - Methodologies
  - Enabling technologies
- How about the implementation?
- Future: radical or incremental?

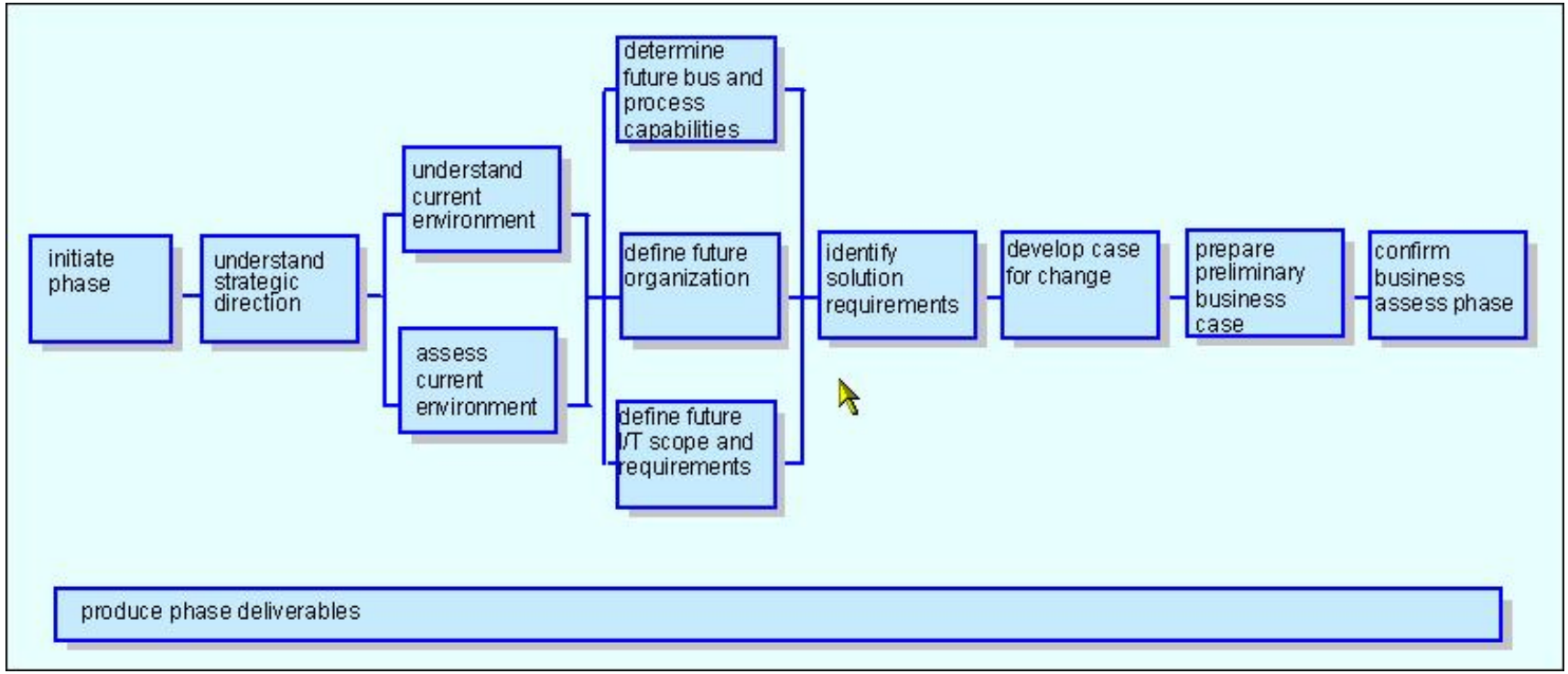
Methodologies for BPR

- Davenport five-step approach to BPR
- IBM Global Methods

Davenport five-step approach to BPR

- **Develop the Business Vision and Process Objectives**: BPR is driven by a business vision which implies specific business objectives such as Cost Reduction, Time Reduction, Output Quality improvement,
- **Identify the Processes to be Redesigned**: Most firms use the High- Impact approach which focuses on the most important processes or those that conflict most with the business vision. Lesser number of firms use the Exhaustive approach that attempts to identify all the processes within an organization and then prioritize them in order of redesign urgency.
- **Understand and Measure the Existing Processes**: For avoiding the repeating of old mistakes and for providing a baseline for future improvements.
- **Identify IT Levers**: Awareness of IT capabilities can and should influence process design.
- **Design and Build a Prototype of the New Process**: The actual design should not be viewed as the end of the BPR process. Rather, it should be viewed as a prototype, with successive iterations. The metaphor of prototype aligns the BPR approach with quick delivery of results, and the involvement and satisfaction of customers.

Business Assess
--from IBM Global Method



- The purpose of the Business Assess phase is to understand, assess, and document the current and future business and organizational capabilities. This activity will involve understanding and assessing the business strategy, critical processes, readiness for proposed change and the current IT-infrastructure and application portfolio.

Enabling technologies for BPR

- Key enabler: Information Technologies
- Benchmarking
- Key Performance Indicators (KPI) analysis
- Activity Based Costing (ABC) analysis
- Program Evaluation and Review Techniques (PERT)
- Balance Scorecard
- Strength Weakness Opportunities Threaten (SWOT) analysis
- Etc.

Key enabler of BPR: IT

- Hammer considers IT as the key enabler of BPR which he considers as "radical change."
- Davenport & Short outline the following capabilities that reflect the roles that IT can play in BPR:
  - Transactional
  - Geographical
  - Automatical
  - Analytical
  - Informational
  - Sequential
  - Knowledge Management
  - Tracking
  - Disintermediation.
- Otherwise, advanced IT technologies might drive the change of business, for instance, IBM RFID (Ratio Frequency Identification) Solution for the Consumer Driven Supply Chain

Enabling technologies for BPR

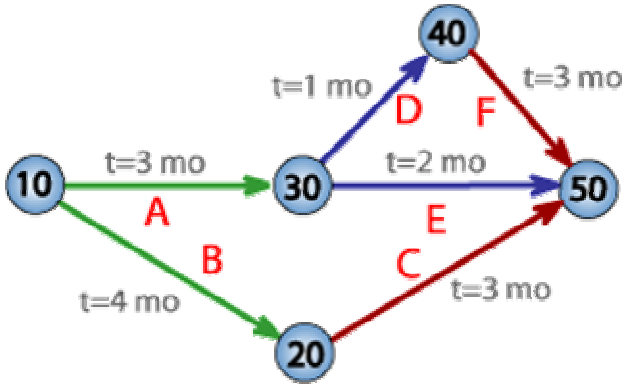
- Benchmarking
  - Benchmarking: The search for industry best practice that lead to superior performance
  - Continuous measurement of a process, product, or service compared to those of the toughest competitor, to those considered industry leaders, or to similar activities in the organization in order to find and implement ways to improve it (APICS, the Association for Operations Management)

- Key Performance Indicators (KPI),
  - also known as Key Success Indicators (KSI) are financial or non-financial metrics used to reflect the critical success factors of an organization.
  - These are used in Business Intelligence to assess the present state of business and to prescribe the course of action

Enabling technologies for BPR (cont.)

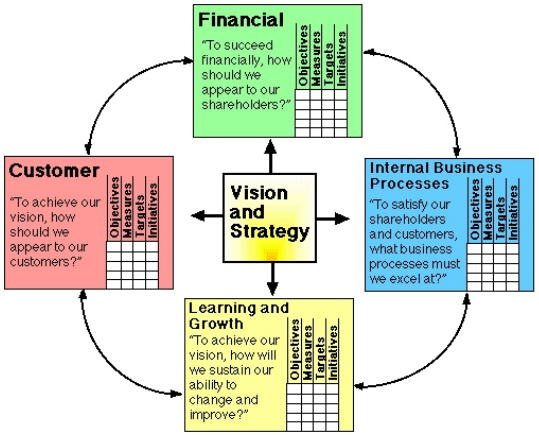
- Activity Based Costing
  - Activity-based costing (ABC) is a method of allocating costs to products and services. It is generally used as a tool for planning and control

- Program Evaluation and Review Techniques
  - PERT is basically a method for analyzing the tasks involved in completing a given project, especially the time needed to complete each task, and identifying the minimum time needed to complete the total project.

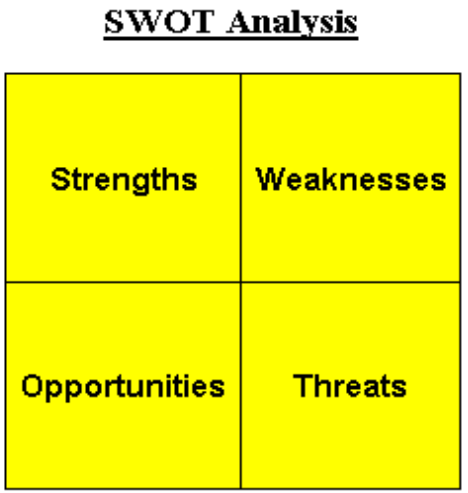


Enabling technologies for BPR (cont.)

- Balance Scorecard
  - A method for measuring a company's activities in terms of its vision and strategies. It gives managers a comprehensive view of the performance of a business



- SWOT analysis
  - The method of SWOT analysis is to take the information from an environmental analysis and separate it into internal (strengths and weaknesses) and external issues (opportunities and threats).
  - Once this is completed, SWOT analysis determines what may assist the firm in accomplishing its objectives, and what obstacles must be overcome or minimized to achieve desired results



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- How about the implementation?
  - Key findings
  - Major problems
- Future: radical or incremental?

Key findings

- The need to **reduce cost/expense** was the most frequently cited business driver for reengineering projects with competitive pressure, **poor customer satisfaction** and **poor quality of products and services** rounding out the top-four.
- The top activity that project teams would do differently on the next project is more **effective change management**.
- Teams whose projects were driven or heavily **supported by top management** were more likely to complete their project at or above expectations.
- Participants overwhelmingly indicated that the **planning stage**, where scope and roles were set, was the most important phase in the project.
- **Resistance to change** within the organization was cited six times more often than any other as the number one obstacle to successful implementation.

From *Best Practices in Business Process Reengineering,* Prosci Reengineering Learning Center

Major problems

- The biggest problem that businesses usually face with BPR is overzealous expectations.
  - BPR is a business tool with a high price and gradual returns.
  - BPR is quoted as having a 30% success rate due to the time and cost involved
- Human constituent of the business process wasn't taken into account.
  - "Dr. Hammer points out a flaw: He and the other leaders of the $4.7 billion re-engineering industry forgot about people"
- BPR is also time sensitive.

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  - From BPR to BPM
  - Comparison

From BPR to BPM

- Over the last few years, the reengineering concept has evolved from a "**radical change**" to account for the contextual realism (Caron et. al 1994, Earl 1994), and to reconcile with more **incremental process change** methods such as TQM, towards a **broader**, yet **more comprehensive process management** concept (Davenport 1995)
  - Quality management, often referred to as total quality management (TQM) or continuous improvement, refers to programs and initiatives that emphasize incremental improvement in work processes and outputs over an open-ended period of time.
  - In contrast, Reengineering, also known as business process redesign or process innovation, refers to discrete initiatives that are intended to achieve radically redesigned and improved work processes in a bounded time frame

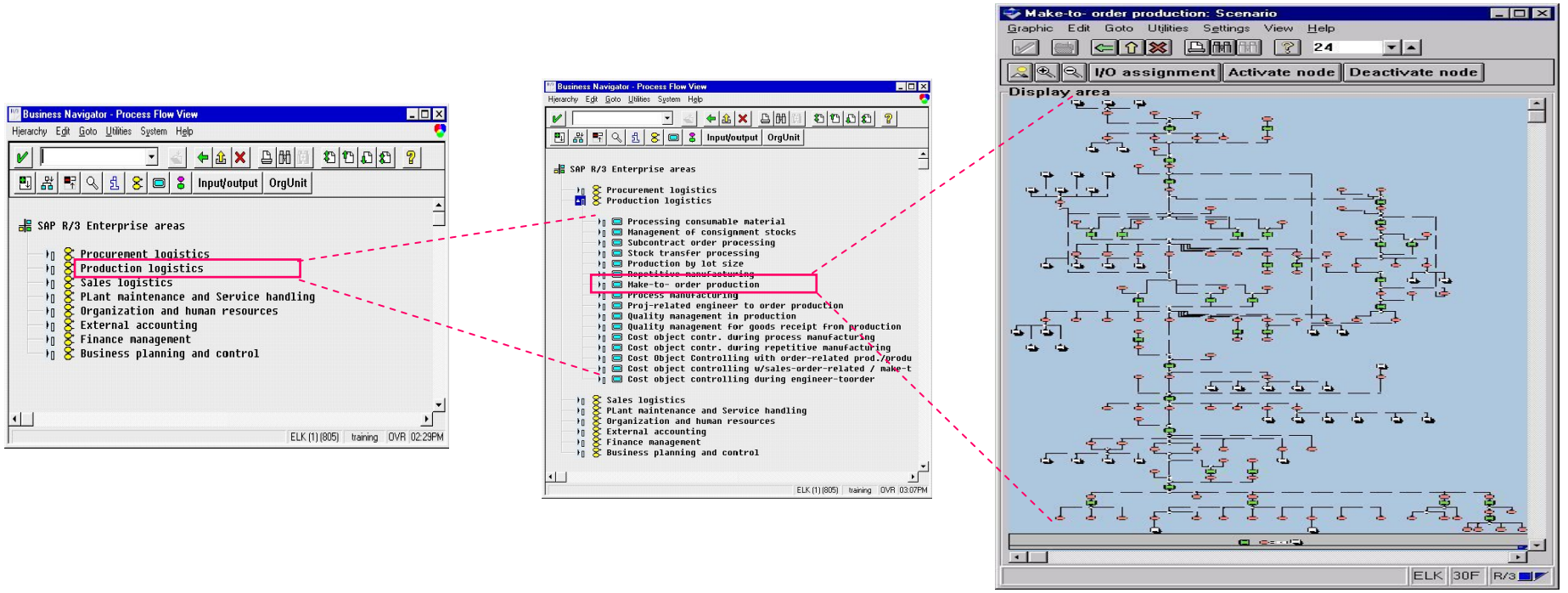
Comparison from Davenport (1993)

	Process Improvement (TQM)	Process Innovation (BPR)
Level of change	Incremental	Radical
Starting point	Existing process	Clean Slate
Frequency of change	One-time/continuous	One-time
Time required	Short	Long
Participation	Bottom-up	Top-down
Typical scope	Narrow, within functions	Broad, cross-functional
Risk	Moderate	High
Primary enabler	Statistical Control	Information Technology
Type of change	Cultural	Cultural/structural

- Back up

SAP R/3 reference model

- The R/3 Reference Model is the graphical depiction of the the best practices within the R/3 system. Through GUI, users can view the Reference Model from different perspectives. The R/3 system allows two views of the Reference Model, the Component View and the Process Flow View.

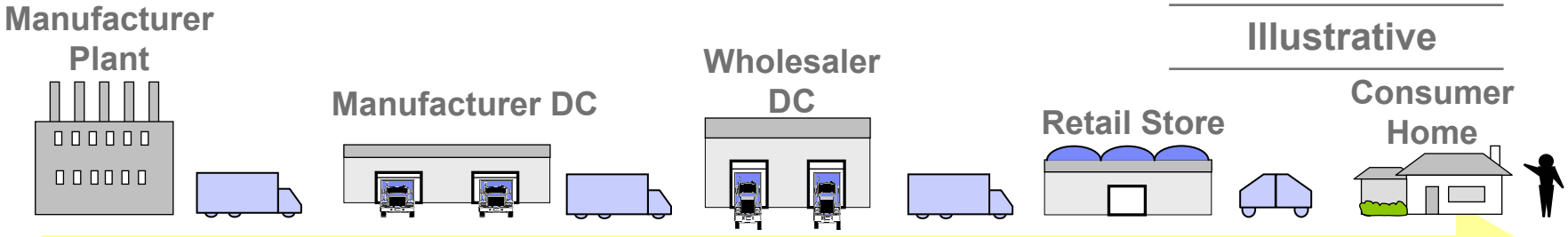


How to identify business processes

- **Manufacturing**: as the *procurement-to-shipment* process
- **Product development** as the *concept-to-prototype* process
- **Sales** as the *prospect-to-order* process
- **Order fulfillment** as the the *order-to-payment* process
- **Service** as the *inquiry-to-resolution* process

RFID Observations

…Benefits Cut Across Value Chain Boundaries…



Physical Product Flow

- **Production Line Efficiencies**
- **Asset Mgt**
- **Improved Trading Partner Productivity**
- **Improved On Shelf Availability/ Promotions**
- **Reduced Shrinkage**
- **Reduced Inventory**
- **Improved Inventory, Receiving, and Shipping Accuracy**
- **Reduced Credit/ Claims**
- **More Efficient Reverse Logistics**

RFID impact

Significant RFID impact

Demand/ Information Flow

The TQM System