

Achieving Competitive Advantage

- From Chapter 3
 - Determine competitive strategies
 - Changing the product:
 - By introducing new products or services or enhancing current products or services
 - Business processes:
 - Organizations use technology to help lock in customers, reduce costs, and create entry barriers for competitors in the market

Information systems effect on Competitive Advantage

- Making the primary and support activities more productive than those of competitors
- Increased productivity realized when business processes become more effective and more efficient
- True for commercial companies, non-profit organizations and government

Calculation Systems

- Antiquated systems
- Relieved workers of repetitive calculations
- Labor-saving devices
- Produced little information
- Examples
 - computing payroll and writing checks
 - inventory tracking

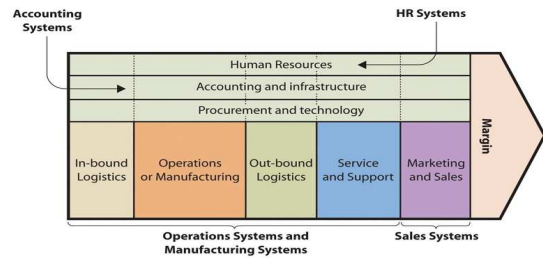
Functional Systems

- Facilitated work of single department or function
- Next step
 - Functions added to calculation system programs providing more value
 - Example: payroll expanded to become human resources

Functional Systems

- Problem is their isolation
 - **Functional silos:**
 - Systems designed to work independently of one another
- In reality, Functional systems are inter-related
 - Purchasing influences inventory, which influences production, which influences customer satisfaction, which influences future sales
- Decisions that are appropriate for only single business function may be inefficient for an entire business process

Reorganized Porter's Value Chain: Relationship to Functional Systems



Basic Types of Functional Systems

- Marketing & Sales Systems
- Operations systems
- Manufacturing systems
- Human Resource systems
- Accounting systems

Marketing Information Systems

- Product management
 - Product & brand management
 - Assess
 - Effectiveness of marketing messages
 - Advertising
 - Promotions

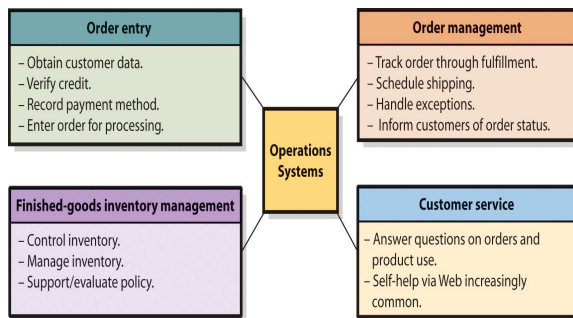
Sales Information Systems

- Sales forecasting
 - planning production
 - managing inventory
 - financial reporting
- Customer management
 - Generate follow-up business
 - Turn prospects into customers
 - Managing customers

Functions of Sales & Marketing Systems

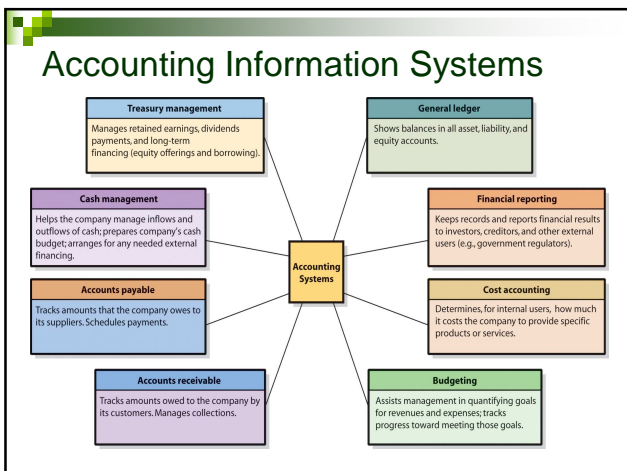
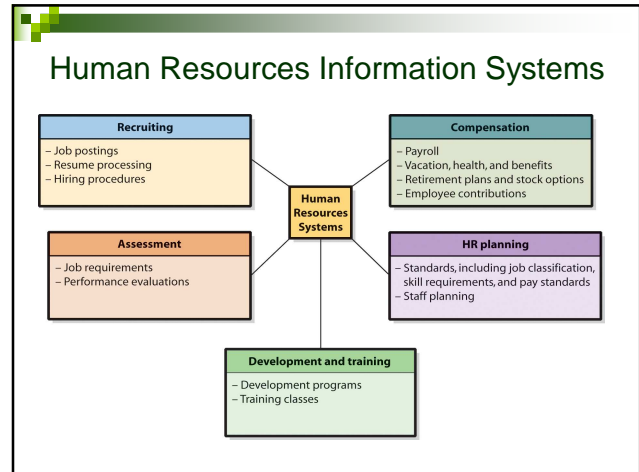
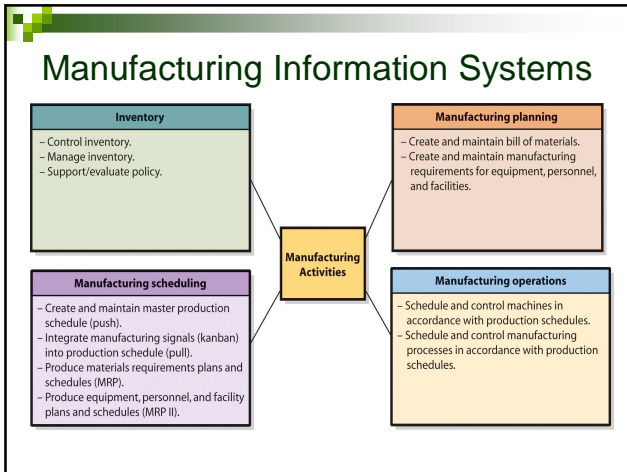
- **Prospect (or lead) generation**
 - Mailings
 - Emailings
 - Web site
- **Lead tracking**
 - Record leads
 - Track product interests
 - Maintain history of contacts
- **Customer management**
 - Maintain customer contact and order history
 - Report credit status
 - Track product interests
- **Sales forecasting**
 - Record individual sales projections
 - Roll up sales projections into district, region, national, and international
 - Track variances over time
- **Product and brand management**
 - Obtain sales results from order processing or receivables systems
 - Compare results to projections
 - Assess promotions, advertising, and sales channels
 - Assess product success in market segments
 - Manage product life cycle

Operations Information Systems



Manufacturing Information Systems

- Process data about inventories
- Manufacturing scheduling and operations
- Support production and planning
- Manufacturing philosophies:
 - **Push** production planning
 - organization creates schedule and pushes goods through manufacturing and sales
 - **Pull** production planning
 - responds to customer demand
 - reduction in inventory triggers production
 - “One-off” producers fall into neither category



Accounting Systems

- General ledger
- Financial reporting
- Accounts receivable
- Accounts payable
- Cost accounting
- Cash management
- Treasury management
- Budgeting applications

Importance of legislation:

- enacted to prevent corporate fraud
- creation of internal controls
- Sarbanes-Oxley Act (US)
- Bill 198 or Budget Measures Act
- (Chapter 9)

Functional Systems

- Many benefits
- Limited since they operate in isolation
 - Data duplication
 - Each application has its own database
 - Potential lack of data integrity
 - Business processes disjointed across functions
 - Produces lack of integrated enterprise information
 - Limited information available at any one source
 - Inefficient decisions based on limited knowledge
 - Increased costs to organization

Business Process Design/Redesign

- Do not simply automate or improve existing functional systems
- “Paving the cowpath”
 - process of making efficient what already exists
 - making things easier, not necessarily changing how it is done
- Consider creation of new, more efficient business processes
 - Integrate activities of all departments involved in a value chain
 - Cross-departmental business processes
 - Take advantage of as many activity linkages as possible

Challenges of Business Process Design/Redesign

- Process design projects
 - Expensive and difficult
 - May take a long time
- Employees resist change
- Ultimate outcome is uncertain

Industry Standard Processes

- Many early business process design projects were tailor-made
- By mid-1990, software vendors designed integrated applications, with built-in **industry standard processes**
 - Integrate activities across departments
 - Save costs & time of tailor-made process design
 - Examples: Oracle, SAP

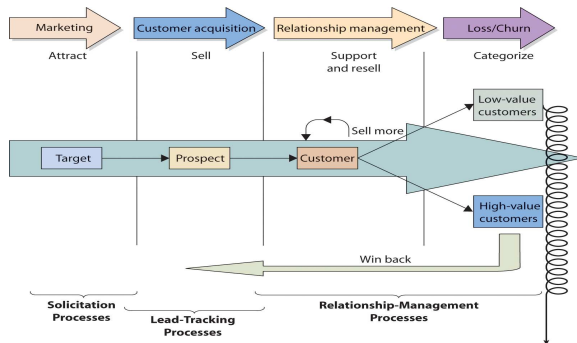
Customer Relationship Management Systems (CRM)

- Organization Customer Centered
- Support processes
 - Attracting, Selling, Managing, Delivering and Supporting Customers
- Direct value chain activities involving customer
- Integrates four Customer Life Cycle phases
- Single repository for customer data
 - Eliminates inconsistent data
 - All departments access to all customer information

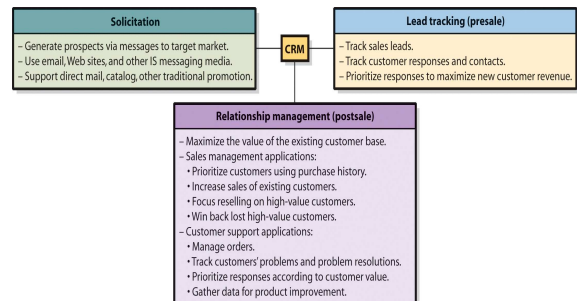
Customer Relationship Management Systems (CRM)

- Customer life cycles
 - Marketing sends messages to target market
 - Prospects order and need to be supported
 - Support and resale increases value to existing customers
 - Win-back processes categorize customers according to value

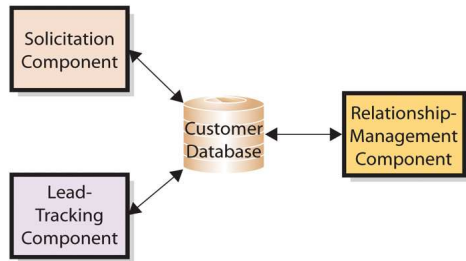
Customer Life Cycle



CRM Components



CRM – integrated Customer Database

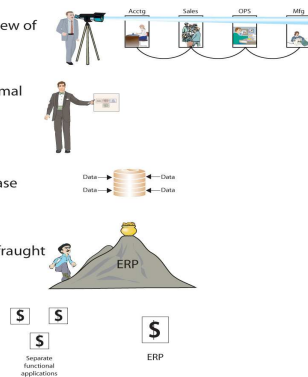


Enterprise Resource Planning Systems (ERP)

- Support
 - Primary business processes
 - Human resources
 - Account support processes
- Enterprise-wide, Cross-departmental
- Integrates
 - Sales, orders, inventory, manufacturing & customer service activities
- Based on documented, tested business models
 - provide software, pre-designed databases, procedures, and job descriptions for organization-wide process integration

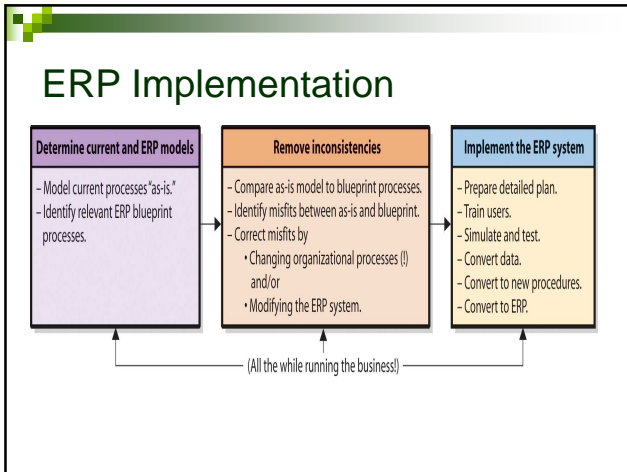
ERP - characteristics

- Provides cross-functional, process view of organization
- Has a formal approach based on formal business models
- Maintains data in centralized database
- Offers large benefits but is difficult, fraught with challenges, and can be slow to implement
- Often VERY expensive

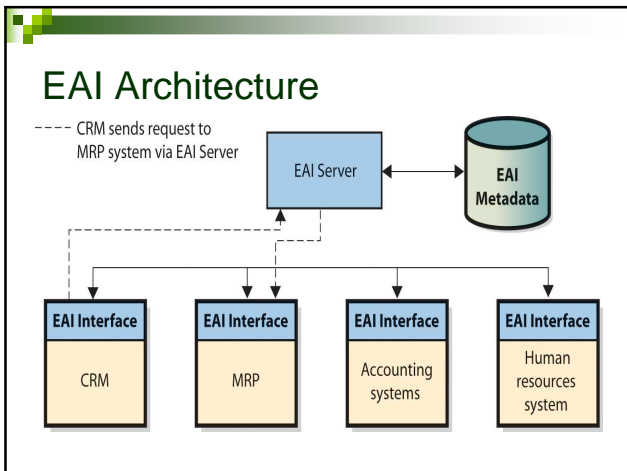


ERP's Potential Benefits

- Potential Benefits
 - Organizations do not need to reinvent processes
 - Tried and tested
 - Processes effective and efficient
 - Inventory reduction
 - Better planning
 - Lead time reduction
 - No data inconsistency problem
 - Integrated database
 - Lower costs - Higher profitability
 - Smaller inventories, reduced lead times, cheaper customer support
- Problems
 - Costly
 - Change is challenging



- ### Enterprise Application Integration (EAI) Systems
- Solves problems of isolated systems
 - Provides layers of software that connect applications together
 - Enables existing applications to communicate
 - Provides integrated information
 - Leverages existing systems
 - Enables gradual move to ERP
 - No centralized database
 - Files of metadata describing where data kept



- ### E-commerce & Web 2.0
- Systems working across organizations
 - involve selling and purchasing
 - integrate multiple-company operations
 - Interorganizational Systems
 - Provides a competitive advantage to both parties
 - Easy to see benefits for one of the organizations but often difficult to see benefits for other
 - Disparity makes it difficult to implement

Interorganizational systems

- Systems that cross organizations
 - involve selling and purchasing
 - integrate multiple-company operations
- Types of Interorganizational Systems
 - E-commerce
 - Supply Chain Management (SCM)

E-Commerce

- Buying & Selling
 - goods and services
- Over computer networks
 - Public & private
- Interorganizational system that links
 - parties that buy goods and services
 - parties that sell those goods and services

Web 2.0

- Describe applications & platforms on the web
- Concept established by Tim Reilly
- Focuses on providing services, not simply software applications, that can be accessed by a large number of people
- Recognizes the importance of the user as a part of the system, providing data and information that makes the service better
- Creation of unique & difficult-to-develop data improves when more people use the system (eg. Youtube, Facebook)
- Natural evolution of e-commerce
- Example: Flickr – website that allows users to upload & share photos

E-Commerce

- Types of E-commerce
 - Merchant
 - Sell their own goods & services
 - Nonmerchant
 - Sell services of others
 - Arrange sale of goods

E-Commerce - Merchant

- B2C
 - Business-to-consumer
 - Sales between supplier & customer
 - Stats Canada - [E-commerce](#)
- B2B
 - Business-to-business
 - Sales between companies
- B2G
 - Business-to-government
 - Sales between companies & government agencies

E-Commerce -Nonmerchant

- E-commerce auctions
 - Online versions of auctions
 - Supports competitive bidding
 - Example: [eBay](#)
- Clearinghouses/Electronic Exchanges
 - Provide goods and services
 - Matches buyers and sellers
 - Example: [priceline.com](#)

Benefits of E-Commerce

- Greater market efficiency
 - Disintermediation
 - Elimination of layer of the supply chain
- Improved flow of price information
 - Web based Price comparisons

Benefits of E-Commerce

- For the Seller, knowledge of price elasticity
 - Price Elasticity
 - Measures amount that demand rises or falls with price changes
 - Losing-bidder auction prices
 - Price experimentation
 - More information obtained directly from customer

E-Commerce – Economic Factors

- Industry/Channel - conflict
- Price - conflict
- Logistics - expenses
- Customer service - services

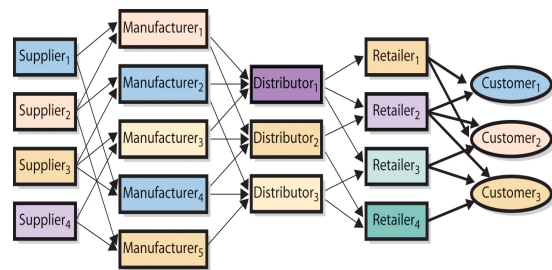
Supply Chain Management (SCM)

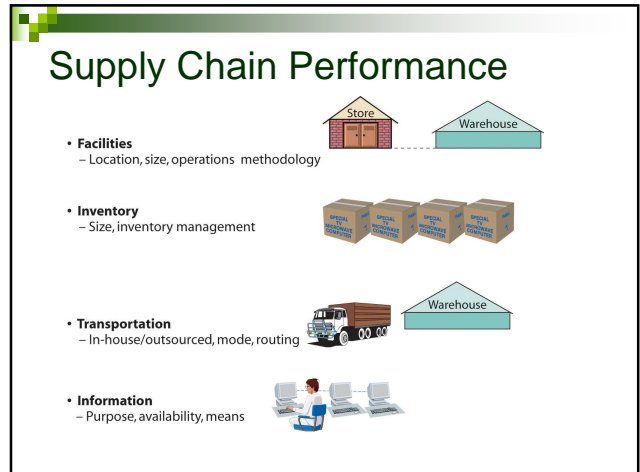
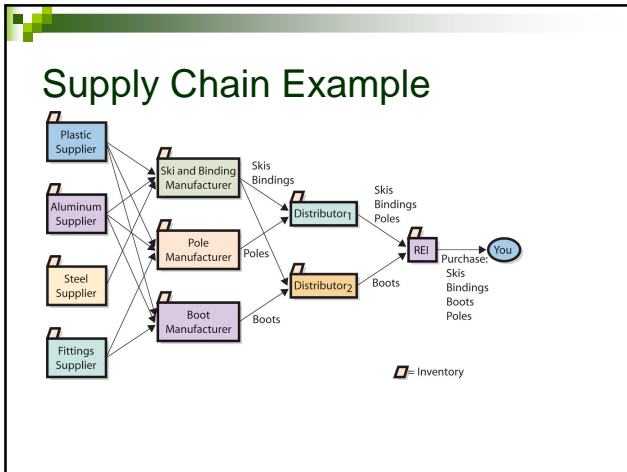
- Supply Chain
 - Network of organizations and facilities
 - Transforms raw materials into products
 - Products delivered to consumer

Supply Chain Management

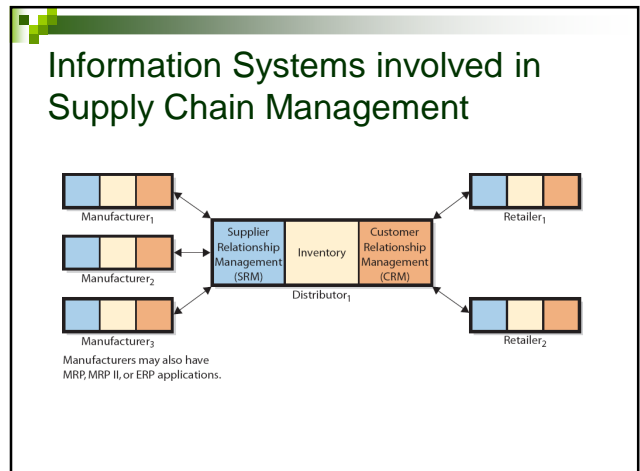
- Integrates primary inbound logistics business activity
- Involves
 - Customers, retailers, distributors, manufacturers, suppliers
 - Transportation, companies, warehouses, inventories
 - Method for transmitting messages and information among organizations

Supply Chain Relationships





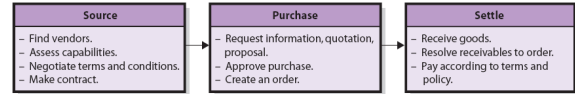
- ### Information
- Purpose**
 - Transactional (eg. Orders & order returns)
 - Informational (eg. Customer order data)
 - Availability**
 - Access and sharing
 - Means**
 - Methods of transmission
 - XML



Supplier Relationship Management (SRM)

- Business process for managing contacts between an organization and suppliers
 - Supplier any organization that sells something to an organization that has a SRM application
 - Example: manufacturer supplier to distributor
- Supports
 - in-bound logistics primary activity and the procurement support activity

Summary of SRM Processes



SRM

• Sourcing Function

Find Vendors:

- Who have the products we need
- Who will give us a favorable price
- Who are reliable regarding schedule and quality
- Who will stand behind their product



• Ordering Function

Send and Receive:

- Requests for information (RFI)
- Quotes
- Proposals
- Orders



• Settlement Function

Process:

- Receipt of goods
- Reconciling goods received with purchase orders
- Schedule payment



Benefits of Information Systems on Supply Chain Performance

- Reduced cost of buying and selling
 - Sourcing, buying, settling faster, easier, more effective
- Expanded supply chain speed
 - \$\$ of goods exchanged in given period of time
- Reduced size and cost of inventory
 - Improve delivery scheduling
 - Enables just-in-time inventory
- Fix bullwhip effect
- Supply Chain profitability not optimized

Bullwhip Effect

- Variety in the size and timing of orders increases at each stage up supply chain
- Natural dynamic of multistage supply chain
 - Unrelated to erratic customer demand
 - Large fluctuations force distributors, manufacturers, and suppliers to carry large inventories
 - Reduces overall profitability
- Eliminate effect by giving participants access to consumer-demand information
 - Interorganizational information systems share data

Bullwhip Effect

