Business Processes/Systems

- Network of:
  - Activities
  - Resources
  - Facilities
  - Information
- Interacting to achieve a business function
- Examples:
  - Inventory management
  - Manufacturing
  - Sales & support

Network of:
Activities, Resources, Facilities & Information

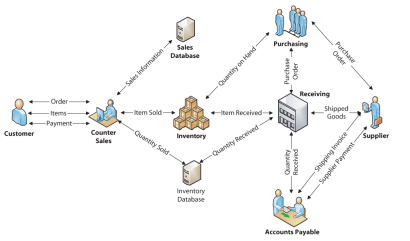


Figure 2-1
Portion of Inventory-Management Business Process

Activities

- Transform
  - resources & information of one type into another
- Follow rules & procedures
- Manual and/or automated
- Example:
  - Payment(activity) transforms QuantityReceived(information) and ShippingInvoice(information) into PaymentToSupplier(resource)

Resources

- Items of value
- External to organization
- Examples:
  - Workers
  - Customers
  - Suppliers

Facilities

- Structures used within business process
- Examples:
  - Inventories
  - Databases
  - Factories
  - Equipment

Information

- Used by activities
- Determines transformation
- Example:
  - Payment(activity) transforms QuantityReceived(information) and ShippingInvoice(information) into PaymentToSupplier(resource)

Data vs Information

- Important to understand the difference
- Example:
  - Data – hourly wage
  - Information – average wage

Data

- Facts or Figures
  - Collected
  - Recorded
  - Stored
  - Processed
- Not meaningful on its own

Information

- Knowledge derived from data
- Data presented in meaningful context
- Data organized & processed to provide meaning
- Data processed by summing, ordering, averaging, grouping, comparing
- A difference that makes a difference

Good Information

- Accurate
- Timely
- Relevant
  - To context
  - To subject
- Just sufficient
- Worth its cost

The Role of Information in Business Processes

- Business processes generate information:
  - Bringing together items of data in a context
  - @ higher level
    - Useful for management & strategy decisions
- Example:
  - Payment transforms QuantityReceived & ShippingInvoice into PaymentToSupplier

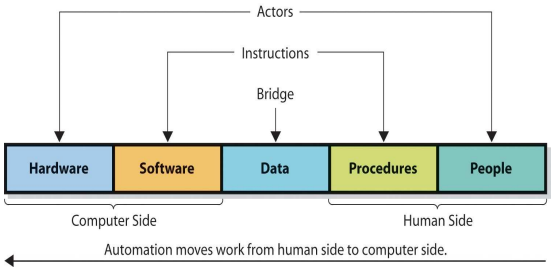
Business Process Management (BPM)

- A field of management that promotes the development of effective and efficient processes through continuous improvement and innovation.
- Methods of BPM
  - Total Quality Management (TQM)
  - Six Sigma
  - Lean Production
- Information about the process helps to better manage the process itself

Information Systems Support for Business Processes

- IS used by activities
  - Several activities may use one system
  - Activity may have own system
  - Activity may use several systems
- Relationship of activities to IS determined by Systems Designers during systems development

Automating a Process Activity



Example: Information System Supporting Counter Sales

Hardware	Software	Data	Procedures	People
– Cash register computer – Database host computer	– Sales-recording program on cash register	– Sales data – Inventory database	– Operate cash register	– Cashier

Mostly an automated system.
Almost all work is done by computers and software.

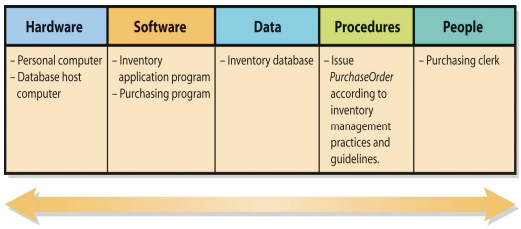
Example: Information System to Support Payment Activity

Hardware	Software	Data	Procedures	People
– Personal computer	– Adobe Acrobat Reader – Email	– *QuantityReceived* – *ShippingInvoice*	– Reconcile receipt document with invoice. – Issue payment authorization, if appropriate. – Process exceptions.	– Accounts payable

Mostly a manual system.
Little work is done by computers and software.
Most work is done by Accounts Payable clerk.

Example: Information System to Support Purchasing

Hardware	Software	Data	Procedures	People
– Personal computer – Database host computer	– Inventory application program – Purchasing program	– Inventory database	– Issue *PurchaseOrder* according to inventory management practices and guidelines.	– Purchasing clerk



Balance between computer and human work.

Information Systems & Decision Making

- Data important part of any IS
- Data transformed into information
- Information
  - important starting point for decision making
- IS support decision
  - providing the information (the raw material) to make decisions

Operational Decisions

- Day-to-day activities
  - Examples:
    - How much coffee to purchase?
    - Which invoices should be paid today?
- IS: Transaction Processing Systems (TPS)
  - Collect, store, modify & retrieve transactions
  - Transactions
    - Events that generate or modify data
  - Examples: electronic payments, airline reservations

Managerial Decisions

- Allocation and utilization of resources
  - Examples:
    - How to budget for computer hardware?
    - How many individuals to assign to a project?
- IS: Management Information Systems (MIS)
  - Narrower definition
  - Support of management decision making

Strategic Decisions

- Broader-scope, organizational issues
  - Examples:
    - Should a new product line be started?
    - Should a new warehouse be built?
- IS: Executive Information Systems (EIS)
  - MIS for senior executives
    - Easy access to information
    - Supports decision making process
    - Provides access to internal & external information

Structured Decisions

- Understood and accepted decisions
- Applying knowledge to make an informed decision
  - Examples:
    - Formula for computing reorder quantity
    - Standard method for allocating furniture

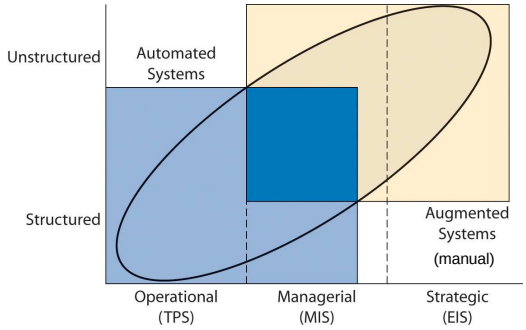
Unstructured Decisions

- No agreed-on decision-making method
- Not standardized
  - Examples:
    - Predicting future direction of economy
    - Assessing employee's performance

Structured vs Unstructured

- Terms refer to decision making process
- Not to the subject
- Example:
  - Forecasting weather : structured decision
  - Weather: unstructured subject

Relationship of decision level, process and IS type



Decision Steps

- **Intelligence Gathering**
  - What is to be decided?
  - What are the criteria?
  - What data is available?
- Alternatives Formulation
- Choice
- Implementation
- Review

Decision Steps

- Intelligence Gathering
- **Alternatives Formulation**
  - What are the alternatives?
- **Choice**
  - Analyze alternatives
  - Select alternative
- **Implementation**
  - Implement the alternative
- Review

Decision Steps

- Intelligence Gathering
- Alternatives Formulation
- Choice
- Implementation
- **Review**
  - Evaluate decision
  - Repeat process to correct and adapt

Relationship of IS to Decision Steps

Decision Step	Description	Examples of Possible Information Systems
Intelligence gathering	• What is to be decided? • What are the decision criteria? • Obtain relevant data	• Communications applications (email, video-conferencing, word processing, presentation) • Query and reporting systems • Data analysis applications
Alternatives formulation	• What are the choices?	• Communications applications
Choice	• Analyze choices against criteria using data • Select alternative	• Spreadsheets • Financial modeling • Other modeling
Implementation	• Make it so!	• Communications applications
Review	• Evaluate results of decision; if necessary, repeat process to correct and adapt	• Communications • Query and reporting • Spreadsheets and other analysis

Our Role

- We are part of system
  - People
- Most important component of IS
  - Must be able to use information system
  - Quality of your thinking

Importance?

- Consumer of IT and IS
- Identify
  - Business Process (automated, augmented)
  - Level of decision (operational, managerial, strategic)
  - Type of decision (unstructured, structured)
  - IS – TPS, MIS, EIS
  - IS – applications

This Could Happen to You!

- Employment
  - Impact of Social Networking
    - Reference Checks (search engines)
    - Staying Employed (blogs, etc..)
    - Facebook – MySpace
      - What's on your page? – Your Personal Profile
      - What might be on your friends & family pages?
- Office of the Privacy Commissioner of Canada