V. Scoping the Problem

Types of information system projects

Choosing Among Alternatives

Example: The Hotel Checkout System

Example: The Computer Books By Mail Corporation

Business Process Reengineering

Where Do We Start?

- Scope the problem - what is the objective of the project? ... the "vision" of those who are pushing for it? (Provided by the "customer")
  e.g., "Meeting scheduling is too costly right now"
- Scope the solution - given the vision, how much do we tackle?
  e.g., "Build a system that schedules meetings", vs "Build a system that maintains people's calendars" vs ...
- Choose a business process - what is the scheduling process?
  e.g., "Anyone who wants to schedule a meeting goes to the secretary, gives details and the secretary handles the rest" vs "Anyone can submit a meeting request, participants are informed and a negotiation settles meeting details."
- Choose among alternative computerized solutions, given a business process - assuming that the secretary handles timetable gathering...
  e.g., "Computer takes in scheduling request details, outputs a solution" vs "Solution arrived at interactively by secretary and computer" ...

Why Start an Information System Project?

- Types of information system projects:
  - Computerize a function within an organization;
  - Integrate existing information systems;
  - Develop a new application for an existing information system;
  - Convert an existing application to a new platform;
  - Modify or extend an existing application.
- Reasons for initiating an information system project:
  - Problem-driven: competition, crisis, ...
  - Change-driven: new needs, growth, change in business, change in environment;
  - Opportunity-driven: new technology;
  - Part of a previous plan.
Hotel management wants to change the system because there are often billing errors, such as customers leaving without paying some charges; also, sometimes customers are double-billed because they declare a certain charge, for which they have already been billed. In addition, management expects business to grow because of a major extension to the hotel facility, and management worries about this dimension (in practice, this may not be realistic).

Consider the purchasing department of a university:

The first (and most important) is between different types of equipment, she requests a purchase order from the purchase order department, which is shipped to researcher; the purchase order is issued, vendor sends equipment to purchase order department, purchase order is fixed, so the systems analyst does not have to worry about this dimension (in practice, this may not be realistic.)

In addition to these, we assume that organizational goals and objectives are fixed, so the systems analyst does not have to worry about this dimension (in practice, this may not be realistic.)

Go with on-line system...

Reduction of losses due to unreported charges;
- Cost of feeding information into the checkout system;
- Potential problems with business expansion.

Current (batch) information system has problems, including:
- Loss of income because of inaccurate and untimely reporting;
- Cost of feeding information into the checkout system;
- Potential problems with business expansion.

Alternatives
- Stay with current batch system;
- Stay with current system but increase number of batch updates per day;
- Build new on-line check-out system.

Selection criteria
- Cost (development costs for new system vs higher operating costs for batch system);
- Customer convenience/satisfaction;
- Reduction of losses due to unreported charges;
- Recommendation
- Go with on-line system

Choosing Among Alternative Computerized Solutions

For each proposed business process, we can look into what tasks can be computerized, or facilitated by the system to be built;

Consider the textbook store example again: assuming that we only need to automate the submission of textbook lists from instructors, we can have:

- Instructors submit via email, an employee edits all incoming messages and prepares purchase order lists for publishers, or
- Instructors submit via email and a program analyzes incoming messages and prepares purchase order lists for publishers, or
- Instructors submit via email and a program analyzes incoming messages and prepares purchase order lists for publishers which are sent out electronically too

... (web-based alternatives) ...
The Computer Books By Mail Corp.

The CBM (Computer Books by Mail) Corporation was recently acquired by a national holding corporation and is now a division. Established 12 years ago, the company’s business has been to act as book-jobber, receiving orders from librarians for books about computers, ordering the books from the appropriate publisher, at a discount, and filling the order on receipt of the books from the publisher. Invoices are produced by a service bureau computer from forms filled out by CBM staff. Business is currently running at about 100 invoices per day, each with an average of 4 book titles and an average value per invoice of $150.

The new management plans to expand the operation considerably, improving service levels by holding stocks of the 100 most frequently ordered book titles and making it possible for all professionals (not only librarians) to order by calling a toll-free number, 1-800-372-6657 (800-DP-BOOKS, of course) as well as by mail, as at present. This will create problems of credit checking and create the need for an inventory control system of some sort. The people who take the orders over the phone will need rapid access to a catalog of books to verify authors and titles and to be able to advise callers what books are available on any given topic.

Business Process Reengineering

- Requirements analysis explores alternatives which may involve changes in the way an organization does business (remember that one of the roles of the requirements analyst is to be a “change angel!”).
- Changing an organization’s business processes is very popular today and is referred to as business process reengineering (BPR).
- BPR calls for a drastic, global restructuring of an organization which eliminates boundary lines between departments and makes the organization focus on the global business processes that define its business.

- For an insurance company, these business processes might be: setInsurancePolicy, processRenewal, handleInsuranceClaim. For a telephone company the business processes might include: setSubscription, processMonthlyPayment, handleServiceCall, handleProblem.

Alternative Scopes

- Computerize the order verification process.
- Computerize accounts receivable.
- Integrate order verification, requisitions and accounts receivable.

Of course, each one of these alternatives will have different budget and project-length implications.

Breaking Local Boundaries

- “Conventional” work structure tries to divide up tasks into ever smallerd subtasks which are assigned to departments, teams or individuals.
- BPR proposes work teams which collectively take responsibility for a business process and carry it out from start to finish.
- For example, the conventional way of handling insurance claims might be to give each claim to an assessor, who checks it out and passes it on to a lawyer, who makes his recommendation and passes it on to the finance department, etc.
- The BPR way, has a team of people handle all aspects of an insurance claim and process it from start to end.
- Often, this restructuring reduces wasteful paper shuffling, replaces it with (computerized) information handling.
- The members of a team can now identify with each case they handle, get credit/blame for the handling.

Additional Readings
