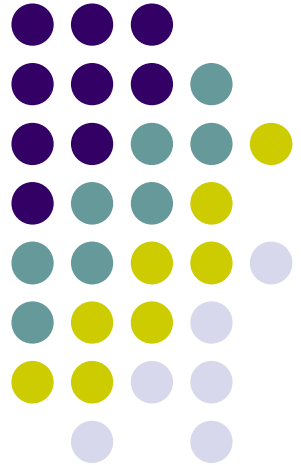
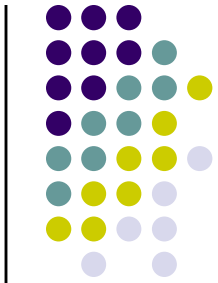
Feasibility and Managing Analysis and Design Activities

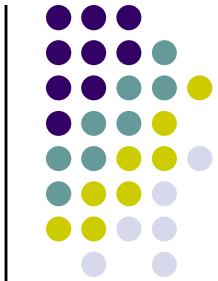


Major Topics



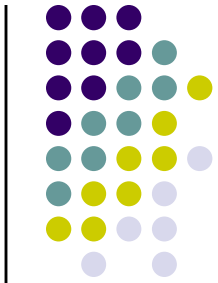
- Project initiation
- Determining project feasibility
- Project scheduling
- Managing project activities
- Manage systems analysis team members

Project Initiation



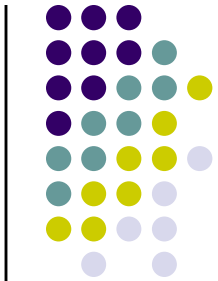
- Projects are initiated for two broad reasons:
  - Problems that lend themselves to systems solutions
  - Opportunities for improvement through
    - Upgrading systems
    - Altering systems
    - Installing new systems

Organizational Problems



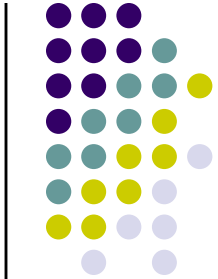
- Identify problems
- Check output against performance criteria
  - Too many errors
  - Work completed slowly
  - Work done incorrectly
  - Work done incompletely
  - Work not done at all

Organizational Problems



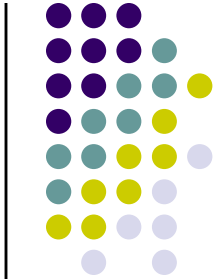
- Observe behavior of employees
  - High absenteeism
  - High job dissatisfaction
  - High job turnover

Organizational Problems



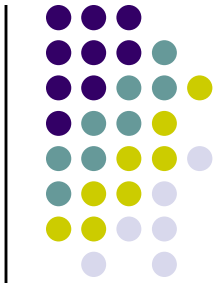
- Listen to feedback from vendors, customers, and suppliers
  - Complaints
  - Suggestions for improvement
  - Loss of sales
  - Lower sales

Project Selection



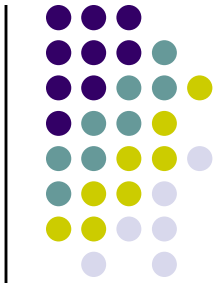
- Five specific criteria for project selection
  - Backed by management
  - Timed appropriately for commitment of resources
  - It moves the business toward attainment of its goals
  - Practicable
  - Important enough to be considered over other projects

Possibilities for Improvement



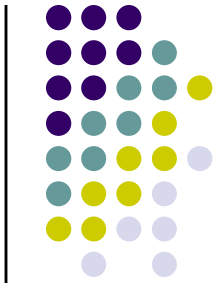
- Many possible objectives exist including
  - Speeding up a process
  - Streamlining a process
  - Combining processes
  - Reducing errors in input
  - Reducing redundant storage
  - Reducing redundant output
  - Improving system and subsystem integration

Feasibility Impact Grid (FIG)



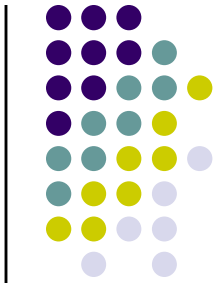
- A feasibility impact grid (FIG) is used to assess the impact of any improvements to the existing system
- Can increase awareness of the impacts made on the achievement of corporate objectives

Feasibility Impact Grid (FIG)



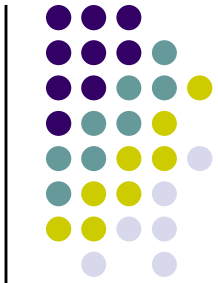
- Current or proposed systems are listed on the left
- Objectives are listed on the top
- Red arrows indicate a positive impact
- Green arrows indicate implementation

Feasibility



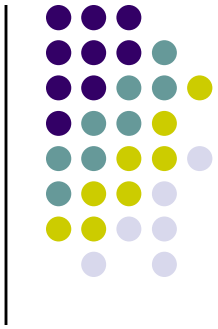
- A feasibility study assesses the operational, technical, and economic merits of the proposed project
- There are three types of feasibility:
  - Technical feasibility
  - Economic feasibility
  - Operational feasibility

Technical Feasibility



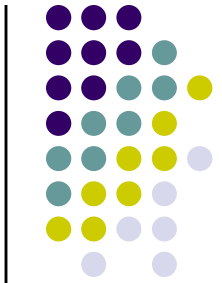
- Technical feasibility assesses whether the current technical resources are sufficient for the new system
- If they are not available, can they be upgraded to provide the level of technology necessary for the new system

Economic Feasibility



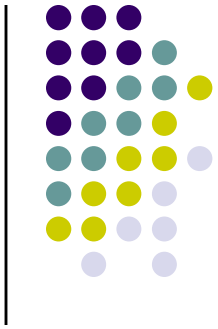
- Economic feasibility determines whether the time and money are available to develop the system
- Includes the purchase of
  - New equipment
  - Hardware
  - Software

Operational Feasibility



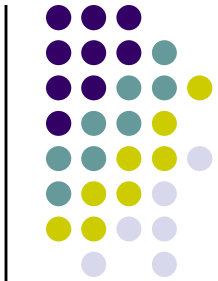
- Operational feasibility determines if the human resources are available to operate the system once it has been installed
- Users that do not want a new system may prevent it from becoming operationally feasible

Activity Planning



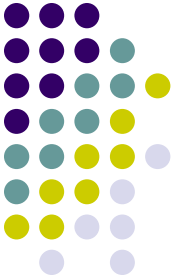
- Activity planning includes
  - Selecting a systems analysis team
  - Estimating time required to complete each task
  - Scheduling the project
- Two tools for project planning and control are Gantt charts and PERT diagrams

Estimating Time



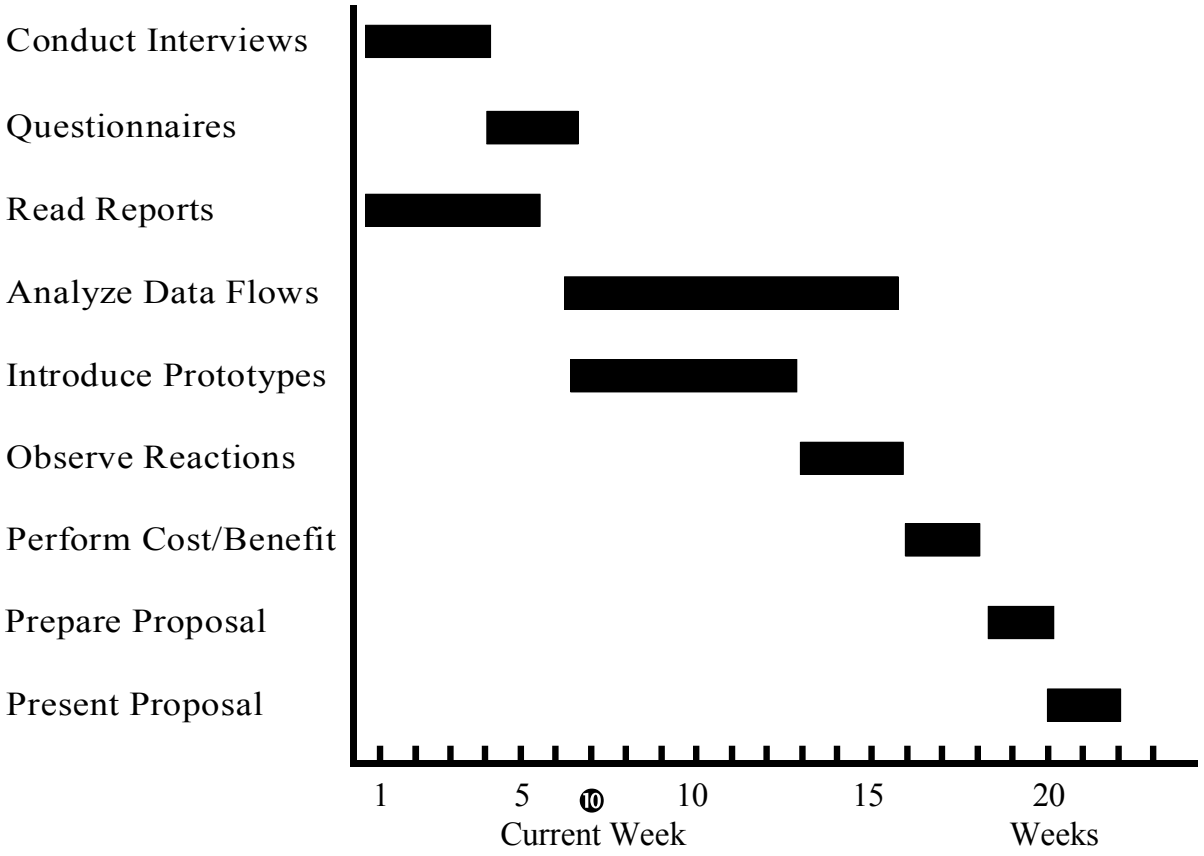
- Project is broken down into phases
- Further broken down into tasks or activities
- Finally broken down into steps or even smaller units
- Estimate time for each task or activity
- May use a most likely, pessimistic, and optimistic estimates for time

Gantt Charts

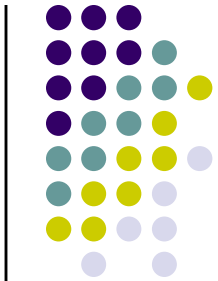


- Easy to construct and use
- Shows activities over a period of time

Gantt Chart Example



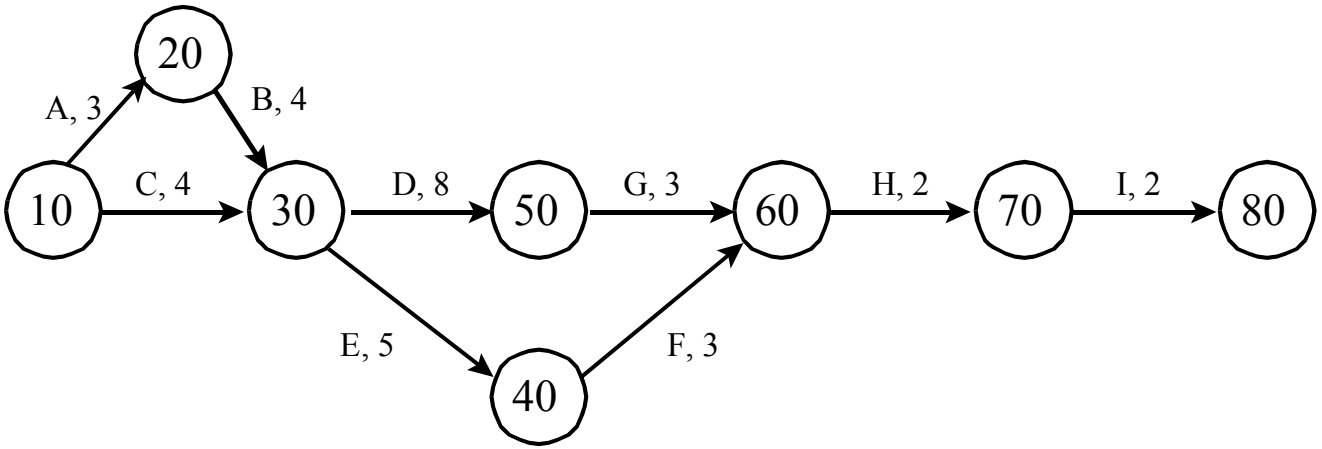
PERT Diagram



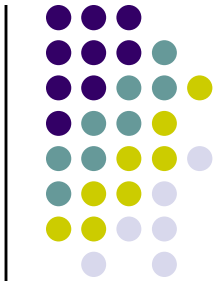
- PERT - Program Evaluation and Review Technique
  - PERT diagrams show precedence, activities that must be completed before the next activities may be started
  - Used to calculate the critical path, the longest path through the activities
  - This is the shortest time to complete the project

PERT Diagram Example

A	Conduct Interviews	None	3
B	Questionnaires	A	4
C	Read Reports	None	4
D	Analyze Data Flows	B, C	8
E	Introduce Prototypes	B, C	5
F	Observe Reactions	E	3
G	Perform Cost/Benefit	D	3
H	Prepare Proposal	G	2
I	Present Proposal	H	2

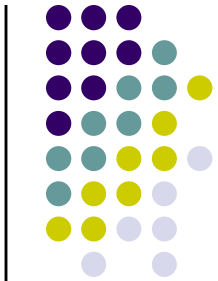


PERT Diagram Advantages



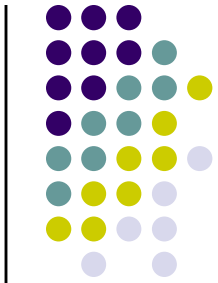
- Easy identification of the order of precedence
- Easy identification of the critical path and thus critical activities
- Easy determination of slack time, the leeway to fall behind on noncritical paths

Timeboxing



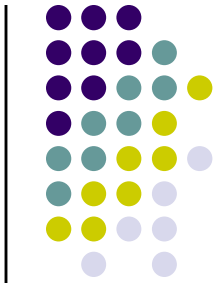
- Timeboxing sets an absolute due date for project delivery
- The most critical features are developed first and implemented by the due date
- Other features are added later

Personal Information Manager Software



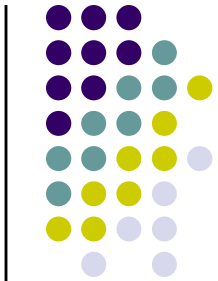
- Personal information manager (PIM) software is useful for scheduling activities and includes features such as:
  - Telephone and fax number lists
  - To-do lists
  - Online calendars

Team Management



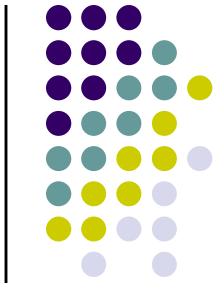
- Teams often have two leaders:
  - One who leads members to accomplish tasks
  - One concerned with social relationships
- The systems analyst must manage
  - Team members
  - Their activities
  - Their time, and resources

Goal Setting



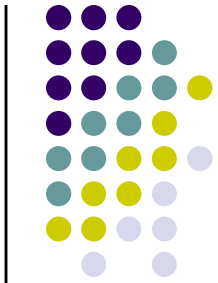
- Successful projects require that reasonable productivity goals for tangible outputs and process activities be set
- Goal setting helps to motivate team members

Ecommerce Project Management



- Ecommerce and traditional software project management differences:
  - The data used by ecommerce systems is scattered across the organization
  - Ecommerce systems need a staff with a wide variety of skills
  - Partnerships must be built externally and internally well ahead of implementation
  - Security is of utmost importance

Project Failures



- Project failures may be prevented by
  - Training
  - Experience
  - Learning why other projects have failed