Project Success Factors

- Project management important for success of system development project
- 2000 Standish Group Study
  - Only 28% of system development projects successful
  - 72% of projects canceled, completed late, completed over budget, and/or limited in functionality
- Thus, project requires careful planning, control, and execution

Reasons for Project Failure

- Incomplete or changing requirements
- Limited user involvement
- Lack of executive support
- Lack of technical support
- Poor project planning
- Unclear objectives
- Lack of required resources

Reasons for Project Success

- Clear system requirement definitions
- Substantial user involvement
- Support from upper management
- Thorough and detailed project plans
- Realistic work schedules and milestones

Role of the Project Manager

- Project management – organizing and directing people to achieve a planned result within budget and on schedule
- Success or failure of project depends on skills of the project manager
  - Beginning of project – plan and organize
  - During project – monitor and control
- Responsibilities are both internal and external

Internal Responsibilities

- Identify project tasks and build a work breakdown structure
- Develop the project schedule
- Recruit and train team members
- Assign team members to tasks
- Coordinate activities of team members and subteams
- Assess project risks
- Monitor and control project deliverables and milestones
- Verify the quality of project deliverables

External Responsibilities

- Report the project's status and progress
- Establish good working relationships with those who identify the needed system requirements
  - The people who will use the system
- Work directly with the client (the project's sponsor) and other stakeholders
- Identify resource needs and obtain resources

Project Management Body of Knowledge (PMBOK)

- Scope management
  - Control functions included in system
  - Control scope of work done by team
- Time management
  - Build detailed schedule of all project tasks
  - Monitor progress of project against milestones
- Cost management
  - Calculate initial cost/benefit analysis
  - Monitor expenses

Project Management Body of Knowledge (continued)

- Quality management
  - Establish quality plan and control activities for each project phase
- Human resource management
  - Recruit and hire project team members
  - Train, motivate, team build
- Communications management
  - Identify stakeholders and their communications
  - Establish team communications

Project Management Body of Knowledge (continued)

- Risk management
  - Identify and review risks for failure
  - Develop plans to reduce these risks
- Procurement management
  - Develop requests for proposals (RFPs)
  - Evaluate bids, write contracts, monitor performance
- Integration management

Project Initiation and the Project Planning Phase

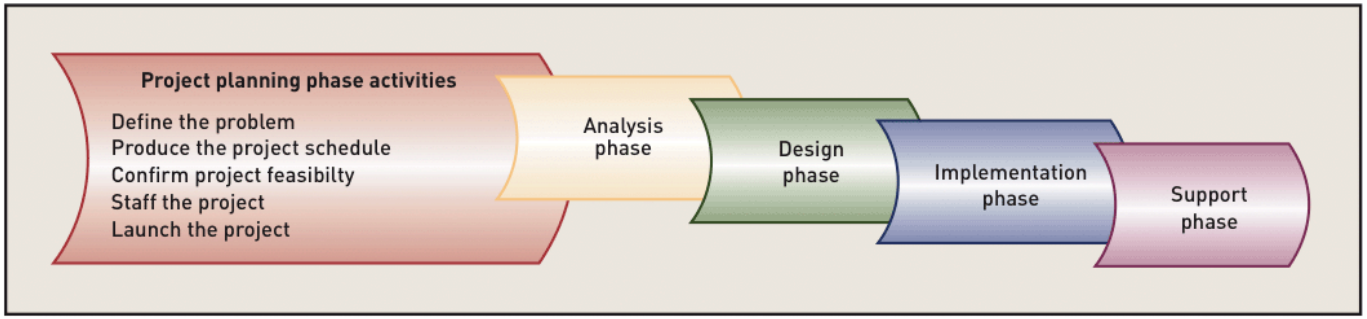
- Driving forces to start project
  - Respond to opportunity
  - Resolve problem
  - Conform to directive
- Project initiation comes from
  - Long-term IS strategic plan (top-down) prioritized by weighted scoring
  - Department managers or process managers (bottom-up)
  - Response to outside forces (HIPAA)

Activities of the Project Planning Phase and Their Key Questions

Project planning phase activities	Key questions
Define the problem	Do we understand what we are supposed to be working on?
Produce the project schedule	Can the project be completed on time given the available resources?
Confirm project feasibility	Is it still feasible to begin working on this project?
Staff the project	Are the resources available, trained, and ready to start the project?
Launch the project	Are we ready to start the project?

Figure 3-6

Activities of the project planning phase



Defining the Problem

- Review business needs
  - Use strategic plan documents
  - Consult key users
  - Develop list of expected business benefits
- Identify expected system capabilities
  - Define scope in terms of requirements
- Create system scope document
- Build proof of concept prototype (we will not do this in MIS 160)
- Create context diagram (we will not do this in MIS 160)

Producing the Project Schedule

- Develop work breakdown structure (WBS)
  - List of tasks and duration required for project
  - Similar to outline for research paper
  - WBS is foundation for project schedule
- Build a PERT/CPM chart
  - Assists in assigning tasks
  - Critical path method
  - Gantt chart and tracking GANTT chart

Partial PERT/CPM Chart

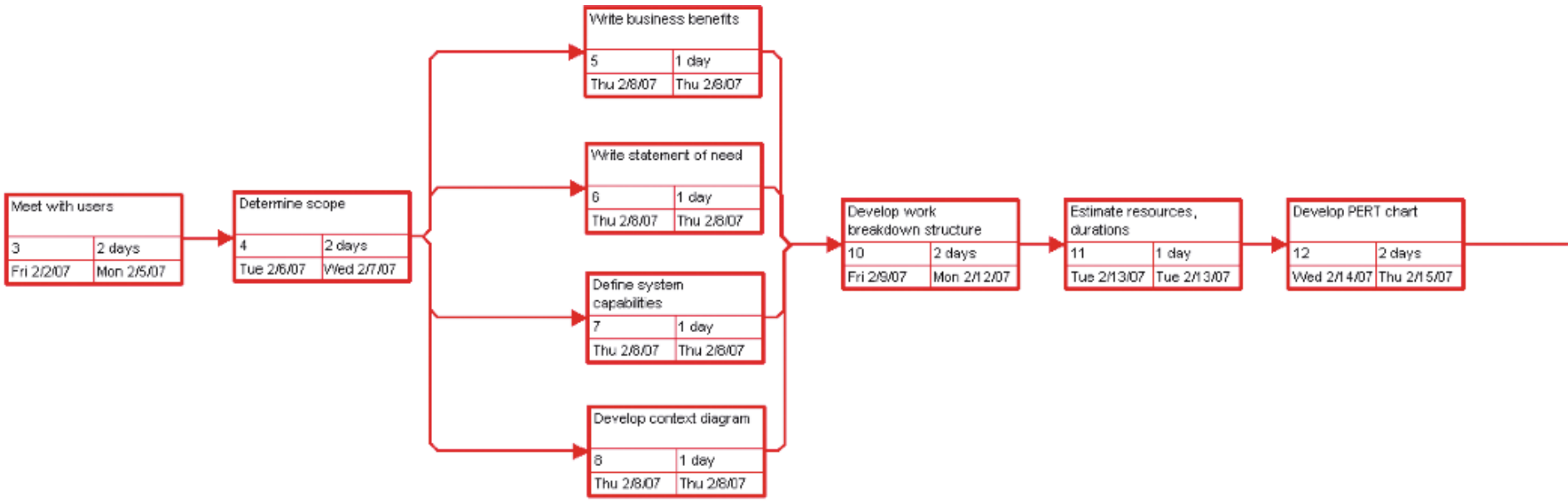


Figure 3-11

Partial PERT/CPM chart for the customer support system project

Gantt Chart for Entire Project (with overlapping phases)

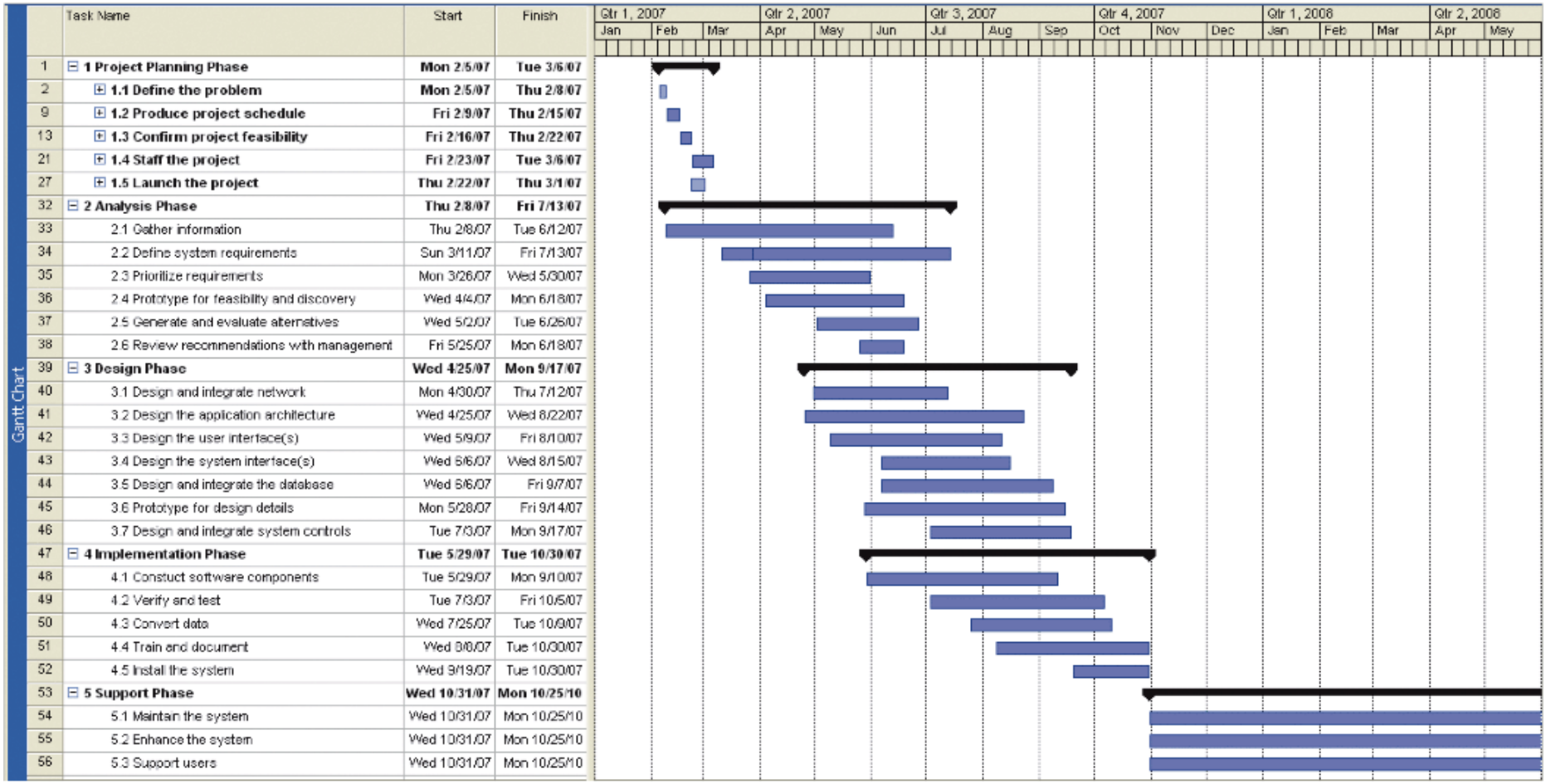


Figure 3-13

Gantt chart for the complete customer support system project

Confirming Project Feasibility

- Risk management
- Economic feasibility
  - Cost/benefit analysis
  - Sources of funds (cash flow, long-term capital)
- Organizational and cultural feasibility
- Technological feasibility
- Schedule feasibility
- Resource feasibility

Risk Management

Figure 3-15

Simplified risk analysis

Risk description	Potential impact on project (high, medium, low)	Likelihood of occurrence (high, medium, low)	Difficulty of timely anticipation (hard, medium, easy)	Overall threat (high, medium, low)
Critical team member (expert) not available	High	Medium	Medium	High
Changing legal requirements	High	Low	Hard	Low
Organization employees not computer savvy	Medium	Medium	Easy	Medium

Economic Feasibility

- Cost/benefit analysis
  - Estimate project development costs
  - Estimate operational costs after project
  - Estimate financial benefits based on annual savings and increased revenues
  - Calculate using table of costs and benefits
- Uses net present value (NPV), payback period, return on investment (ROI) techniques

Net Present Value

$$PV_n = YX\frac{1}{(1+i)^n}$$

PV_n = present value of Y dollars n years from now based on a discount rate of i.

NPV = sum of PVs across years.

Calculates *time value of money*.

Supporting Detail for Salaries and Wages for RMO (Figure 3-16)

Supporting detail for salaries and wages for RMO customer support system project	
Team member	**Salary/wage for project**
Project leader	$101,340.00
Senior systems analyst	$90,080.00
Systems analyst	$84,980.00
Programmer analysts	$112,240.00
Programmers	$58,075.00
Systems programmers	$49,285.00
Total salaries and wages	$496,000.00

Summary of Development Costs for RMO
(Figure 3-17)

Summary of development costs for RMO customer support system project	
Expense category	**Amount**
Salaries/wages	$496,000.00
Equipment/installation	$385,000.00
Training	$78,000.00
Facilities	$57,000.00
Utilities	$152,000.00
Support staff	$38,000.00
Travel/miscellaneous	$112,000.00
Licenses	$18,000.00
Total	$1,336,000.00

Summary of Annual Operating Costs for RMO (Figure 3-18)

Summary of estimated annual operating costs for RMO customer support system	
Recurring expense	**Amount**
Connectivity	$60,000.00
Equipment maintenance	$40,000.00
Programming	$65,000.00
Help desk	$28,000.00
Amortization	$48,000.00
Total recurring costs	$241,000.00

Sample Benefits for RMO (Figure 3-19)

Sample benefits for RMO		
Benefit/cost saving	**Amount**	**Comments**
Increased efficiency in mail-order department	$125,000.00	5 people @ $25,000
Increased efficiency in phone-order department	$25,000.00	1 person @ $25,000
Increased efficiency in warehouse/shipping	$87,000.00	
Increased earnings due to Web presence	$500,000.00	Increasing at 50%/year
Other savings (inventory, supplies, and so on)	$152,000.00	
Total annual benefits	$889,000.00	

RMO Cost Benefit Analysis (Figure 3-20)

	RMO cost/benefit analysis	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1	Value of benefits	$ -	$ 889,000	$ 1,139,000	$ 1,514,000	$ 2,077,000	$ 2,927,000	
2	Discount factor (10%)	1	0.9091	0.8264	0.7513	0.6830	0.6209	
3	Present value of benefits	$ -	$ 808,190	$ 941,270	$ 1,137,468	$ 1,418,591	$ 1,817,374	$6,122,893
4	Development costs	$(1,336,000)						$(1,336,000)
5	Ongoing costs		$ (241,000)	$ (241,000)	$ (241,000)	$ (241,000)	$ (241,000)	
6	Discount factor (10%)	1	0.9091	0.8264	0.7513	0.6830	0.6209	
7	Present value of ongoing costs	$ -	$ (219,093)	$ (199,162)	$ (181,063)	$ (164,603)	$ (149,637)	$(913,559)
8	PV of net of benefits and costs	$(1,336,000)	$ 589,097	$ 742,107	$ 956,405	$ 1,253,988	$ 1,667,737	
9	Cumulative NPV	$(1,336,000)	$(746,903)	$ (4,769)	$951,609	$2,205,597	$ 3,873,334	
10	Payback period	2 years + 4796 / (4796 + 951,609) = 2 + .005 or 2 years and 2 days						
11	5-year return on investment	(6,122,893 - (1,336,000 + 913,559)) / (1,336,000 + 913,559) = 172.18%						

Intangibles in Economic Feasibility

- Intangible benefits cannot be measured in dollars
  - Increased levels of service
  - Customer satisfaction
  - Survival
  - Need to develop in-house expertise
- Intangible costs cannot be measured in dollars
  - Reduced employee morale
  - Lost productivity
  - Lost customers or sales

Organizational and Cultural Feasibility

- Each company has own culture
  - New system must fit into culture
- Evaluate related issues for potential risks
  - Low level of computer competency
  - Computer phobia
  - Perceived loss of control
  - Shift in power
  - Fear of job change or employment loss
  - Reversal of established work procedures

Technological Feasibility

- Does system stretch state-of-the-art technology?
- Does in-house expertise presently exist for development?
- Does an outside vendor need to be involved?
- Solutions include
  - Training or hiring more experienced employees
  - Hiring consultants
  - Changing scope and project approach

Schedule Feasibility

- Estimates needed without complete information
- Management deadlines may not be realistic
- Project managers
  - Drive realistic assumptions and estimates
  - Recommend completion date flexibility
  - Assign interim milestones to periodically reassess completion dates
  - Involve experienced personnel
  - Manage proper allocation of resources

Resource Feasibility

- Team member availability
- Team skill levels
- Computers, equipment, and supplies
- Support staff time and availability
- Physical facilities

Staffing and Launching the Project

- Develop resource plan for the project
- Identify and request specific technical staff
- Identify and request specific user staff
- Organize the project team into workgroups
- Conduct preliminary training and team building exercises
- Key staffing question: “Are the resources available, trained, and ready to start?”

Launching Project

- Scope defined, risks identified, project is feasible, schedule developed, team members identified and ready
- Oversight committee finalized, meet to give go-ahead, and release funds
- Formal announcement made to all involved parties within organization
- Key launch question: “Are we ready to start?”

Summary

- Project management tasks
  - Start at SDLC project planning phase
  - Continue throughout each SDLC phase
- Organizing and directing other people
  - Achieve planned result
  - Use predetermined schedule and budget
- Knowledge areas needed
  - Scope, time, cost, quality, human resources, communications, risk, procurement
- Project initiation
  - Information system needs are identified and prioritized in strategic plans
- Project planning phase
  - Define problem (investigation and scope)
  - Produce project schedule (WBS)
  - Confirm project feasibility (evaluate risks)
  - Staff project (know people's skills)
  - Launch project (executive formal approval)