Modern Systems Analysis and Design

NINTH EDITION

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major project activity with continuation contingent on successful completion of the prior phase is called *incremental commitment*. It is much easier to stop or redirect a project at any point when using this approach.

Walk-throughs are used throughout the duration of the project for briefing team members and external stakeholders. These presentations can provide many benefits to the team, but, unfortunately, are often not well done. With the proliferation of computer technology and the availability of powerful software to assist in designing and delivering presentations, making an effective presentation has never been easier. Microsoft's PowerPoint has emerged as the de facto standard for creating computer-based presentations. Although this program is relatively easy to use, it can also be misused such that the "bells and whistles" added to a computer-based presentation actually detract from the presentation. Like any project, to make an effective presentation it must be well-planned, well-designed, and well-delivered. Planning and designing your presentation is equally important as delivering it. If your slides are poorly laid out, hard to read, or inconsistent, it won't matter how good your delivery is; your audience will think more about the poor quality of the slides than about what you are saying. Fortunately, with a little work it is easy to design a high-quality presentation if you follow a few simple steps, which are outlined in Table 5-8.

TABLE 5-8   Guidelines for Making an Effective Presentation

Presentation Planning	
Who is the audience?	To design the most effective presentation, you need to consider the audience (e.g., What do they know about your topic? What is their education level?).
What is the message?	Your presentation should be designed with a particular objective in mind.
What is the presentation environment?	Knowledge of the room size, shape, and lighting is valuable information for designing an optimal presentation.
Presentation Design	
Organize the sequence.	Organize your presentation so that like elements or topics are found in one place, instead of scattered throughout the material in random fashion.
Keep it simple.	Make sure that you don't pack too much information onto a slide so that it is difficult to read. Also, work to have as few slides as possible; in other words, only include information that you absolutely need.
Be consistent.	Make sure that you are consistent in the types of fonts, font sizes, colors, design approach, and backgrounds.
Use variety.	Use both textual and graphical slides to convey information in the most meaningful format.
Don't rely on the spell checker alone.	Make sure you carefully review your presentation for typographical and wording errors.
Use bells and whistles sparingly.	Make sure that you use familiar graphical icons to guide and enhance slides; don't lose sight of your message as you add bells and whistles. Also, take great care when making transitions between slides and elements so that "special effects" don't take away from your message.
Use supplemental materials appropriately.	Take care when using supplemental materials so that they don't distract the audience. For example, don't provide handouts until you want the audience to actually read this material.
Have a clear beginning and end.	At the beginning, introduce yourself and your teammates (if any), thank your audience for being there, and provide a clear outline of what will be covered during the presentation. At the conclusion, have a concluding slide so that the audience clearly sees that the presentation is over.
Presentation Delivery	
Practice.	Make sure that you thoroughly test your completed work on yourself and others to be sure it covers your points and presents them in an effective manner within the time frame required.
Arrive early and cue up your presentation.	It is good practice, when feasible, to have your presentation ready to go prior to the arrival of the audience.
Learn to use the "special" software keys.	Using special keys to navigate the presentation will allow you to focus on your message and not on the software.
Have a backup plan.	Have a backup plan in case technology fails or your presentation is lost when traveling.
Deliver the information effectively.	To make an effective presentation, you must become an effective public speaker through practice.
Personal appearance matters.	Your appearance and demeanor can go a long way toward enhancing how the audience receives your presentation.

ELECTRONIC COMMERCE APPLICATIONS: INITIATING AND PLANNING SYSTEMS DEVELOPMENT PROJECTS

Initiating and planning systems development projects for an Internet-based EC application is very similar to the process followed for more traditional applications. In Chapter 4, you read how PVF's management began the WebStore project—to sell furniture products over the Internet. In this section, we highlight some of the issues that relate directly to the process of identifying and selecting systems development projects.

PINE VALLEY FURNITURE

Initiating and Planning Systems Development Projects for Pine Valley Furniture's WebStore

Given the high priority of the WebStore project, Vice President of Marketing Jackie Judson, and senior systems analyst, Jim Woo, were assigned to work on this project. Like the CTS described earlier in this chapter, their initial activity was to begin the project's initiation and planning activities.

Initiating and Planning PVF's E-Commerce System   To start the initiation and planning process, Jim and Jackie held several meetings over several days. At the first meeting they agreed that "WebStore" would be the proposed system project name. Next, they worked on identifying potential benefits, costs, and feasibility concerns. To assist in this process, Jim developed a list of potential costs from developing Web-based systems that he shared with Jackie and the other project team members (see Table 5-9).

WebStore Project Walk-Through   After meeting with the project team, Jim and Jackie established an initial list of benefits and costs (see Table 5-10) as well as several feasibility concerns (see Table 5-11). Next, Jim worked with several of PVF's technical specialists to develop an initial project schedule. Figure 5-16 shows the Gantt chart for this 84-day schedule. Finally, Jim and Jackie presented their initial project plans in a walk-through to PVF's board of directors and senior management. All were excited about the project plan, and approval was given to move the WebStore project into the analysis phase.

TABLE 5-9   **Web-Based System Costs**

Cost Category	Examples
Design	❏ Number of pages / content ❏ Style of design / graphics design ❏ System comprehensiveness / functionality ❏ Copyrighting of pages ❏ Responsive design (mobile devices)
Development	❏ Programming ❏ Database integration ❏ Hosting ❏ Technical site manager ❏ Content / support staff
Marketing	❏ Search Engine Optimization ❏ Launch and ongoing public relations ❏ Search engine advertising / paid links from other Websites ❏ Promotions ❏ Marketing / advertising staff

TABLE 5-10 PVF WebStore: Project Benefits and Costs

Tangible Benefits	Intangible Benefits
❑ Lower per-transaction overhead cost ❑ Repeat business ❑ New customers	❑ First to market ❑ Foundation for complete Web-based IS ❑ Simplicity for customers
Tangible Costs (one-time)	**Intangible Costs**
❑ Site and usability design ❑ Programming ❑ Initial Marketing / Search Engine Optimization ❑ Database integration	❑ No face-to-face interaction ❑ Not all customers use Internet
Tangible Costs (recurring)	
❑ Hosting fee ❑ Site management ❑ Annual Marketing / Search Engine Optimization ❑ Maintenance ❑ Decreased sales via traditional channels	

TABLE 5-11 PVF WebStore: Feasibility Concerns

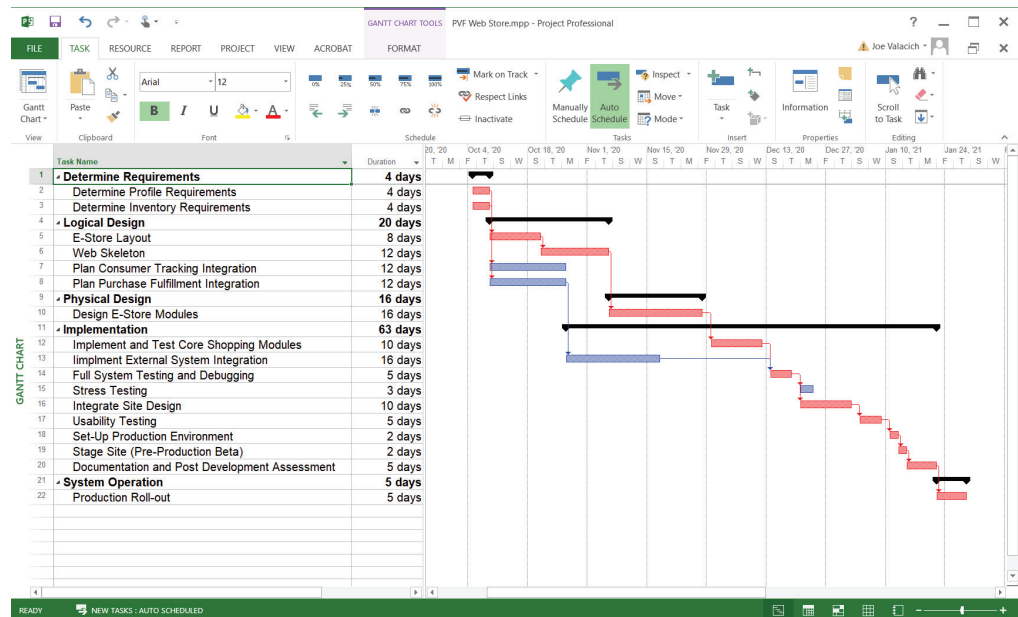| Feasibility Concern	Description
Operational	Online store is open 24/7/365 Returns/customer support
Technical	New skill set for development, maintenance, and operation
Schedule	Must be open for business by Q1, 2021
Legal	Credit card fraud
Political	Traditional distribution channel loses business

FIGURE 5-16
Schedule for WebStore project at Pine Valley Furniture
(*Source*: Microsoft Corporation.)

SUMMARY

The project initiation and planning (PIP) phase is a critical activity in the life of a project. It is at this point that projects are accepted for development, rejected as infeasible, or redirected. The objective of this process is to transform a vague system request into a tangible system description clearly outlining the objectives, feasibility issues, benefits, costs, and time schedules for the project.

Project initiation includes forming the project initiation team, establishing customer relationships, developing a plan to get the project started, setting project management procedures, and creating an overall project management environment. A key activity in project planning is the assessment of numerous feasibility issues associated with the project. The types of feasibility that should be examined include economic, technical, operational, schedule, legal and contractual, and political. These issues are influenced by the project size, the type of system proposed, and the collective experience of the development group and potential customers of the system. High project costs and risks are not necessarily bad; rather it is more important that the organization understands the costs and risks associated with a project and with the portfolio of active projects before proceeding.

After completing all analyses, a BPP can be created. A BPP includes a high-level description of the proposed system or system change, an outline of the various feasibilities, and an overview of management issues specific to the project. Before the development of an information system can begin, the users, management, and development group must review and agree on this specification. The focus of this walk-through review is to assess the merits of the project and to ensure that the project, if accepted for development, conforms to organizational standards and goals. An objective of this process is also to make sure that all relevant parties understand and agree with the information contained in the plan before subsequent development activities begin.

Project initiation and planning is a challenging and time-consuming activity that requires active involvement from many organizational participants. The eventual success of a development project, and the information systems function in general, hinges on the effective use of disciplined, rational approaches such as the techniques outlined in this chapter. In subsequent chapters, you will be exposed to numerous other tools that will equip you to become an effective designer and developer of information systems.

KEY TERMS

5.1 Baseline Project Plan (BPP)
5.2 Break-even analysis
5.3 Business case
5.4 Discount rate
5.5 Economic feasibility
5.6 Intangible benefit
5.7 Intangible cost

5.8 Legal and contractual feasibility
5.9 One-time cost
5.10 Operational feasibility
5.11 Political feasibility
5.12 Present value
5.13 Project Scope Statement (PSS)
5.14 Recurring cost

5.15 Schedule feasibility
5.16 Tangible benefit
5.17 Tangible cost
5.18 Technical feasibility
5.19 Time value of money (TVM)
5.20 Total cost of ownership (TCO)
5.21 Walk-through

Match each of the key terms above with the definition that best fits it.

____ The concept that money available today is worth more than the same amount tomorrow.

____ The process of evaluating how key stakeholders within the organization view the proposed system.

____ A document prepared for the customer that describes what the project will deliver and outlines generally at a high level all work required to complete the project.

____ The justification for an information system, presented in terms of the tangible and intangible economic benefits and costs, and the technical and organizational feasibility of the proposed system.

____ A process of identifying the financial benefits and costs associated with a development project.

____ The process of assessing the degree to which a proposed system solves business problems or takes advantage of business opportunities.

____ A cost resulting from the ongoing evolution and use of a system.

____ The rate of return used to compute the present value of future cash flows.

____ A benefit derived from the creation of an information system that cannot be easily measured in dollars or with certainty.

____ The process of assessing the degree to which the potential time frame and completion dates for all major activities within a project meet organizational deadlines and constraints for affecting change.

____ A cost associated with an information system that can be easily measured in dollars and with certainty.

____ A peer group review of any product created during the systems development process.

____ A process of assessing the development organization's ability to construct a proposed system.

____ A cost associated with project start-up and development or system start-up.

____ The current value of a future cash flow.

____ A benefit derived from the creation of an information system that can be measured in dollars and with certainty.

____ The process of assessing potential legal and contractual ramifications due to the construction of a system.

____ A cost associated with an information system that cannot be easily measured in terms of dollars or with certainty.

____ This plan is the major outcome and deliverable from the project initiation and planning phase and contains the best estimate of the project's scope, benefits, costs, risks, and resource requirements.

____ A type of cost–benefit analysis to identify at what point (if ever) benefits equal costs.

____ The cost of owning and operating a system, including the total cost of acquisition, as well as all costs associated with its ongoing use and maintenance.

REVIEW QUESTIONS

5.22 Contrast the following terms:
   a. Break-even analysis; present value; net present value; return on investment
   b. Economic feasibility; legal and contractual feasibility; operational feasibility; political feasibility; schedule feasibility
   c. Intangible benefit; tangible benefit
   d. Intangible cost; tangible cost

5.23 List and describe the steps in the project initiation and planning process.

5.24 What two documents make up the main deliverables from the planning phase, and what are they used for?

5.25 What three questions must be answered to judge whether a certain activity belongs to the initiation phase or the analysis phase? Why are these questions important?

5.26 List and discuss the different types of project feasibility factors. Is any factor most important? Why or why not?

5.27 About how much of the total time and money spent on a project should be devoted to the project initiation and planning study?

5.28 What does the term "business case" refer to?

5.29 What is the main point of working with the structured review processes of a development project?

5.30 What is the main use of a break-even analysis, and how is it executed?

5.31 What are the four parts of the BPP, and what are their purposes?

5.32 Describe the structured walk-through process. What roles need to be performed during a walk-through?

PROBLEMS AND EXERCISES

5.33 Consider the purchase of a PC and laser printer for use at your home and assess the risk for this project using the project risk assessment factors in Table 5-7.

5.34 Create a task responsibility matrix for some work you are involved in (it could be a group assignment for the course you are taking or for activities you are involved in during your free time). Be sure to include the various portions of the matrix as depicted in Figure 5-12. In what way do you think it could help your project (or other work)?

5.35 Assume you are put in charge of launching a new Website for a local nonprofit organization. What costs would you need to account for? Make a list of expected costs and benefits for the project. You don't need to list values, just sources of expense. Consider both one-time and recurring costs.

5.36 Performing individual interviews and group interviews may result in both tangible and intangible benefits and costs being discovered. Explain how and give some examples.

5.37 Explain the concept of time value of money (TVM). Discuss other reasons why money is worth more today than it will be in a few years' time.

5.38 Assuming monetary benefits of an information system at $85,000 per year, one-time costs of $75,000, recurring costs of $35,000 per year, a discount rate of 12 percent, and a five-year time horizon, calculate the net present value of these costs and benefits of an information system. Also calculate the overall return on investment of the project and then present a break-even analysis. At what point does breakeven occur?

5.39 Running calculations for return on investment and performing break-even analysis are used for more or less the same thing. What are they for, and what are the merits of each of the concepts?

5.40 Change the discount rate for Problem and Exercise 5.34 to 10 percent and redo the analysis.

5.41 Change the recurring costs in Problem and Exercise 5.34 to $40,000 and redo the analysis.

5.42 Change the time horizon in Problem and Exercise 5.34 to three years and redo the analysis.

5.43 Assume monetary benefits of an information system of $40,000 the first year and increasing benefits of $10,000 a year for the next five years (year 1=$50,000, year 2=$60,000,

year 3=$70,000, year 4=$80,000, year 5=$90,000). One-time development costs were $80,000 and recurring costs were $45,000 over the duration of the system's life. The discount rate for the company was 11 percent. Using a six-year time horizon, calculate the net present value of these costs and benefits. Also calculate the overall return on investment and then present a break-even analysis. At what point does breakeven occur?

5.44 Change the discount rate for Problem and Exercise 5.42 to 12 percent and redo the analysis.

5.45 Change the recurring costs in Problem and Exercise 5.42 to $40,000 and redo the analysis.

5.46 Look at the money amounts listed in Figures 5-4, 5-5, and especially 5-3. Do you see a pattern here when it comes to doing predictions and budgeting?

5.47 A start-up company approaches you as a systems analyst. They want to have a Website developed to sell fashion clothing to children. What risks, based on the discussion on feasibility, do you see here?

5.48 In an economy where the stock market reacts heavily to quarterly reports, CEOs need to perform well according to some set metrics. This means that what may look good is not always what is financially best for the company. For example, in the smartphone race of the last two decades, it has been important for companies to outsell their competitors. One of these major companies now wants to invest in a very large customer relationship management system from your consultancy firm. What kinds of risks are involved under such circumstances?

5.49 As stated in the chapter, projects may be selected "due to the power or persuasiveness of the manager proposing the system." In other words, there are more factors influencing the choice of what systems to implement than just an objective evaluation of economics, technical issues, etc. As a systems analyst, how would you tackle this problem?

FIELD EXERCISES

5.50 Describe several projects you are involved in or plan to undertake, whether they are related to your education or to your professional or personal life (e.g., purchasing a new vehicle, learning a new language, renovating a home). For each project, sketch out a BPP like that outlined in Figure 5-9. Focus your efforts on item numbers 1.0 (Introduction) and 2.0 (System Description).

5.51 Imagine that a new system is to be developed for handling student grades at your institute. Try to assess the risks involved with this particular project using your acquired knowledge of economic, technical, operational, scheduling, legal and contractual, and political feasibility. Your answer may vary greatly depending on many factors: Should the new system be part of a current system or should it be a stand-alone system? How many students are there at your institute? Who should have access to the system? Who will build it? Who will be part of the development team, and when are they available? Are there any legal issues, perhaps involving storing student data, that must be taken into consideration? In your opinion, should the new system be accessed from the employees' computers only or should it be online? Hint: Consider the bullet points and tables in this chapter as well as the matrix for assessing relative risks depicted in Figure 5.8.

5.52 Network with a contact you have in some organization that conducts projects (these might be information systems projects, but they could be construction, product development, research and development, or any type of project). Interview a project manager and find out what type of BPP is constructed. For a typical project, in what ways are baseline plans modified during the life of a project? Why are plans modified after the project begins? What does this tell you about project planning?

5.53 Investigate a privately held organization and try to find out how they go about initiating IS projects. Answer the following questions: Do they perform roughly the same kind of calculations that have been shown in this chapter (TVM, break-even analysis, etc.)? Do they work with BPPs and PSSs? Who seems to be in charge of initiating the projects? What is the company's take on risk assessment (economic, technical, political, and so on)?

5.54 Now investigate an organization belonging to the government and answer the same questions as in the exercise above. What differs between these two organizations and their attitude toward the project initiation process? Does one of them work more strictly than the other, and if so, what could be the reason for this?

5.55 Find an organization that does not use BPP for their IS projects. Why doesn't this organization use this method? What are the advantages and disadvantages of not using this method? What benefits could be gained from implementing the use of BPP? What barriers are there to implementing this method?

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