Systems Analysis and Design 11th Edition Tilley Solutions Manual
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Chapter 2: Analyzing the Business Case

Chapter 2 – Analyzing the Business Case: Chapter 2 explains how systems projects get started and how to evaluate a project proposal to determine its feasibility.

Questions

1. How does strategic planning influence day-to-day business operations? Why is it important for systems analysts to understand a company's strategic plan?

   Strategic planning identifies long-term organizational goals, strategies, and resources that serve as a framework for day-to-day operations. Because information technology is essential, IT managers, and systems analysts, must understand and participate in strategic planning. The case of the two stonecutters is a good example – all you have to do is substitute systems analysts for stonecutters and change the cathedral to a major IT-related project.

2. What is a SWOT analysis? Prepare a SWOT analysis of your school or your employer.

   During strategic planning, top managers ask a series of questions that is called a SWOT analysis because it examines a company's strengths (S), weaknesses (W), opportunities (O), and threats (T). Each question leads to an IT-related issue, which in turn requires more review, analysis, and planning.

3. What is an effective way to assess user requests for additional features and functions?

   The most common approach is to use a systems review committee to evaluate user requests. With a broader viewpoint, a committee can establish priorities more effectively than an individual, and one person's bias is less likely to affect a committee's decisions. On the other hand, action on requests must wait until the committee meets. To avoid delay, committee members use memos, e-mail, and teleconferencing to communicate with each other. Another potential disadvantage of a committee is that members could favor projects requested by their own departments, and internal political differences can delay important decision.

4. What are four types of feasibility? Which type focuses on total cost of ownership? Which type is influenced primarily by users?

   A systems project must be feasible from an operational, technical, economic, and schedule standpoint. Operational feasibility means that a proposed system will be used effectively after it has been developed. If users have difficulty with a new system, it will not produce the expected benefits. Technical feasibility refers to the technical resources needed to develop, purchase, install, or operate the system. Economic feasibility means that the projected benefits of the proposed system outweigh the estimated costs and usually consider the total cost of ownership (TCO), which includes ongoing support and maintenance costs, as well as acquisition costs. Economic feasibility focuses on total cost of ownership. Operational feasibility is influenced primarily by users, and how the proposed system will support them.

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5. Describe the six steps in a typical preliminary investigation. Why should an analyst be careful when using the word *problem*?

The steps are described in detail, starting with Figure 2-12. When interacting with users, analysts should be careful in using the word "problem," because it has a negative meaning. When you ask users about problems, some will stress current system limitations rather than desirable new features or enhancements. Instead of focusing on difficulties, an analyst should question users about additional capability they would like to have.

6. What is project scope? What are constraints? Provide an example of a mandatory, external, future constraint. Also provide an example of a discretionary, internal, present constraint.

A project's scope defines the boundaries, or extent, of the project as specifically as possible. For example, the statement, "Payroll is not being produced accurately" is too general, compared with the statement, "Overtime pay is not being calculated correctly for production workers on the second shift at the Yorktown plant." Similarly, the statement, "The project scope is to modify the accounts receivable system" is not as specific as the statement, "The project scope is to allow customers to inquire online about account balances and recent transactions."

A constraint, or requirement, is a condition that the system must satisfy or an outcome that the system must achieve. A constraint can involve hardware, software, time, policy, law, or cost. Constraints can be classified as present versus future, internal versus external, and mandatory versus desirable. Constraints are present or future depending on whether the constraint must be met as soon as the system is developed, or modified at some future time. Constraints are internal or external, depending on whether the constraint arises from within the organization or from an external force, such as a government regulation. Constraints are mandatory or desirable depending on whether the constraint is absolutely essential, or merely desirable.

An example of a mandatory, external, future constraint might be a government tax reporting requirement that goes into effect next year.

An example of a discretionary, internal, present constraint might be a management decision to begin work on a new system not, rather than waiting until year-end.

7. Identify and briefly describe five common fact-finding methods.

The methods are:

- *Analyze organization charts. In many instances, an analyst will not know the organizational structure of departments involved in the study. He or she should obtain organization charts to understand the functions and identify people you want to interview. If organization charts are not available, or are out-of-date, you should obtain the necessary information from department personnel and construct your own chart. Even when charts are available, you should verify their accuracy.*
- *Conduct interviews. The primary method of obtaining information during the preliminary investigation is the interview. The chapter provides several hints and tips that can make interviews more effective.*

- *Review documentation. Although interviews are an extremely important method of obtaining information, you also might want to investigate the current system documentation. The documentation might not be up to date, so you should check with users to confirm that you are receiving accurate and complete information.*
- *Observe operations. Another fact-finding method is to observe the current system in operation. You might see how workers carry out typical tasks. You might choose to trace or follow the actual paths taken by input source documents or output data.*
- *Conduct a user survey. Interviews can be time consuming. Sometimes you can obtain information from a larger group by conducting a user survey. In this case, you design a form that users complete and return to you for tabulation.*
- *Other techniques. Several other fact-finding techniques, including sampling and research, are described in Chapter 4.*

8. What fact-finding methods are well-suited for complex technical issues? Which might be appropriate for the pursuit of new, cutting-edge features?

In handling technical issues, an analyst should start by reviewing any and all documentation that is available, and ask these types of questions: Is it complete? Is it up-to-date? Do people know about it? Do they use it? Is it clear? The answers to these questions might transform what looked like a technical issue into a communications problem.

When dealing with new features, it is critical to investigate user needs and requirements. What look like an expensive add-on might be a bargain, if it will improve productivity and boost user satisfaction?

9. What type of tool might a systems analyst use to identify a relationship between two variables? What tool is useful for identifying and prioritizing causes of problems?

The XY chart, or scatter diagram, is a tool that can show correlation between two variables. For example, suppose you are getting complaints about network response time, and you want to determine the cause. You would try to identify variables, such as the number of users, to look for a correlation or pattern.

A Pareto chart is a widely used tool for identifying and prioritizing causes of problems. Named for a nineteenth century economist, a Pareto chart is drawn as a vertical bar graph, as shown in Figure 2-17. The bars, which represent various causes of a problem, are arranged in descending order, so the team can focus on the most important causes.

10. What is a fishbone diagram, and why would you use one? Think of a problem you have experienced at school or work, and draw a sample fishbone diagram with at least two levels.

A fishbone diagram is an analysis tool that represents the possible causes of a problem as a graphical outline. When using a fishbone diagram, an analyst first states the problem and draws a main bone with sub-bones that represent possible causes of the problem. In the example shown in Figure 2-14, the problem is unhappy workers, and the analyst has identified four areas to investigate: environment, workers, management, and machines. In each area, the analyst identifies possible causes and draws them as horizontal sub-bones. For example, ***too hot*** *is a possible cause in the*

*environment bone. For each cause, the analyst must dig deeper and ask the question: What could be causing this symptom to occur? For example, **why** is it too hot?*

Discussion Topics

1. Suppose that the vice president of marketing asks you to write a program to create labels for a onetime advertising promotion. As IT manager, you know that the labels can be prepared more efficiently by exporting the data to a word processing program and using a mail merge feature. How would you handle this situation?

   If the company has a systems review committee, then the committee would review all systems requests, including this one. As IT manager, you probably are a member of that committee. If you can demonstrate to the committee that the systems request is impractical, then it would be rejected. The rejected systems request would then be returned to the vice president of marketing along with the committee's reasons for rejection.

   If the organization does not use a systems review committee, then as IT manager you probably have the authority to accept or reject projects. If you decide that this particular systems request is impractical, then return the request along with the reasons for rejection. So, in this case too, it is your responsibility to demonstrate that this systems request is not practical.

   If a project truly is impractical, then time and cost estimates should reveal that. In this situation, prepare estimates of the costs to prepare the mailing labels on the computer by writing and using a computer program versus the cost of having a staff person prepare the labels using a word processor. If the systems request can be shown to be an inefficient use of the firm's time and money, the vice president of marketing will agree that the project should not be done.

2. The vice president of accounting says to you, the IT director, "This request procedure takes too long. My people know what they are doing and their systems requests are necessary and important." She suggests that the IT department bypass the initial steps and immediately get to work on her requests. What would you say to her?

   You must answer two points in the vice president's statement. The first point is that the accounting department requests should bypass the approval and priority-setting process. The second point is that the initial phases of the systems development life cycle are unnecessary.

   To respond to the first point, you should point out that the purpose of the approval cycle is to recognize and reject those projects that are unnecessary or impractical. The approval cycle, therefore, poses no threat to worthy accounting department projects. Even more critical is the setting of priorities for the approved systems requests, all of which presumably are important and necessary. Most often, the total time necessary to complete approved systems requests exceeds the available information systems staff time. Information systems staff time is a scarce resource that must be managed wisely. Priority must be given those projects that are considered the most necessary and most valuable to the entire organization. Even one systems request bypassing the approval and priority-setting cycle could, therefore, harm the organization.

   It is possible that the vice president of accounting complained because the organization's approval and priority-setting cycle takes too long, unnecessarily delaying the start of critical projects. You should check this out; perhaps these procedures could be streamlined and improved.

To answer the second point, you should explain a problem cannot be solved without first understanding it. The systems development life cycle was developed as a logical series of steps to respond to feasible systems requests. Unnecessarily bypassing any one step could result in an inferior solution to the systems request.

3. One of your coworkers says, "Mission statements are nice, but they really don't change things down here where the work gets done." How would you reply?

Remind students of the famous story of the airline pilot who informed the passengers that there was bad news and good news. The bad news was that they were lost, but the good news was that they were making great time. The obvious point is that without a long-term mission, an organization cannot establish goals, objectives, and milestones. The real challenge for a company is to motivate employees to feel that they are contributing directly and significantly to the organization's success.

4. Would you continue to work for a company if you disagreed with the firm's mission statement? Why or why not?

This discussion topic is intended to stimulate a discussion of corporate politics and professional ethics. Obviously, more information would be needed. But pose some examples, such as "Suppose the company president wanted to make a long-term commitment to a technology that you believed was weak and likely to be superseded in a few years. How far would you be willing to go in voicing your opposition, and what factors would influence your answer?"

5. If an organization currently lacks the skills necessary to make a project technically feasible, how would you rectify the situation?

Skills can be acquired in several ways. Personnel can be trained. New employees can be brought into the company. Consultants and contractors can be hired. Parts of the project can be outsourced.

Projects

1. Use the Internet to find two examples of corporate mission statements.

Students should have no trouble locating numerous examples of mission statements. Perhaps the easiest method would be to search on the phrase "mission statement." You also might encourage students to share the mission statement of the company for which they work, and analyze the mission statement of your school or organization, if it has one.

2. Many articles have been written on how to develop, understand, and evaluate a business case. Visit the Web sites for *TechRepublic, CIO*, or another IT magazine, and find an article that discusses business cases. Describe the article and what you learned from it.

Answers will vary. Students should easily locate more than enough sources to come up with a good understanding of what a business case is, and why it is important.

3. Suppose you own a travel agency in a large city. You have many corporate clients, but growth has slowed somewhat. Some long-term employees are getting discouraged, but you feel that there might be a way to make technology work in your favor. Use your imagination and suggest at least one strength, weakness, opportunity, and threat that your business faces.

Students should have no trouble identifying the weaknesses and threats to this troubled industry. Opportunities and strengths might be a bit more difficult.

Travel agencies have been battered by the airlines' profit squeeze, and a traveling public that travels less and looks for discounts every step of the way. Nonetheless, innovative travel firms can and do come up with ways to survive and even grow in niche markets.

Encourage students to think of ways that information technology could be a potent weapon for a small firm. For example, some travel agencies are offering "name-your-price" options that depart from the traditional commission-based concept. Vacation.com is an industry group that offers member travel agents various IT tools and solutions designed to strengthen their competitive ability.

4. Write a mission statement and three goals for the travel agency described in Project 3.

Answers will vary, depending on the strengths, weaknesses, opportunities, and threats identified in the previous question. Encourage students to use some of the screen shots in the chapter and the SCR case as models for the mission statement and goals.

5. Identify a situation where one of the external factors (as shown in Figure 2-6) that affected a system project was a natural disaster.

Imagine a hurricane hitting the east coast of Florida. If the project was situated on Florida's west coast, which was unaffected by the hurricane, the project could still be negatively impacted. For example, one or more of the project's external suppliers could be offline due to a lack of electricity or fuel. If the supplier can't operate properly, the entire project could be jeopardized.

Apply Your Knowledge

1 Last Chance Securities

The IT director opened the department staff meeting today by saying "I've got some good news and some bad news. The good news is that management approved the payroll system project this morning. The new system will reduce clerical time and errors, improve morale in the payroll department, and avoid possible fines and penalties for noncompliance. The bad news is that the system must be installed by January 1st in order to meet new federal reporting rules, all expenses from now on must be approved in advance, the system should have a modular design if possible, and the vice president of finance would like to announce the new system in a year-end report if it is ready by mid-December."

Tasks

1. Why is it important to define the project scope? How would you define the scope of the payroll project in this case?

   It is important to define the project scope to establish specific boundaries, or extent, of the project. Without a defined project scope, the payroll project could get too broad. In the case of the payroll system project, you need to know exactly what requirements the system must meet. The next step is to determine all deadlines budget limitations, any other constraints, and obtain a clear understanding of the new system's features and capability. Your main objective is to obtain a clear definition of system requirements, and by establishing the project scope, you will determine the boundaries of the preliminary investigation itself.

2. Review each constraint and identify its characteristics: present vs. future, internal vs. external, and mandatory vs. desirable.

CONSTRAINTS	*CHARACTERISTICS*
The system must be installed by January 1st in order to meet new federal reporting rules	*Future, external, and mandatory*
The system should have a modular design if possible	*Future, internal, and desirable*
All expenses from now on must be approved in advance	*Present, internal, and mandatory*
The vice president of finance wants to announce the new system in her year-end report if it is ready by mid-December	*Future, internal, and desirable*

Note: *You might point out that the last constraint could be more than "desirable" because in the real world, it is always important to meet a vice president's expectations. You should encourage debate on issues like this, and point out that the answers are not always black and white.*

3. What questions would you ask to determine the feasibility of this project?
   - *Is the payroll system project desirable in an operational sense?*
   - *Is it a practical approach that will solve a problem or take advantage of an opportunity to achieve company goals?*
   - *Is the proposal technically feasible? Are the necessary technical resources and people available for the project?*
   - *Is the proposal economically desirable?*
   - *What are the projected savings and costs?*
   - *Is the problem worth solving, and will the request result in a sound business investment?*
   - *Can the proposal be accomplished within an acceptable time frame?*

4. Given the time constraints, could you shorten any of the typical steps in the preliminary investigation? Which ones? Explain your answer.
   The chapter mentions that time constraints sometimes require a tighter schedule .In this case, answers will vary, but students might suggest streamlining the fact-finding tasks, and trimming any non-critical areas in the feasibility study.

2 Way Out Bikes

The owner of Way Out Bikes asked you for advice about acquiring an information system for her business. The company specializes in helping customers select exactly the right bicycle for their needs and lifestyles. Way Out cannot compete on price with mass merchandisers, but it seeks to offer value and expertise for which customers are willing to pay. You ask the owner whether she has long-range plans for the company, and she replies that she has not really thought beyond a one-year time frame.

Tasks

1. Develop questions to ask Way Out's owner to help her conduct a SWOT analysis.
   The first step in developing a SWOT analysis is for top management to respond to questions like these:
   - *What are our strengths, and how can we use them to achieve our business goals?*
   - *What are our weaknesses, and how can we reduce or eliminate them?*
   - *What are our opportunities, and how do we plan to take advantage of them?*
   - *What are our threats, and how can we assess, manage, and respond to the possible risks?*

2. How could a mission statement help Way Out?
   Answers will vary. Mission statements describe the purpose of an organization and are considered an important part of strategic planning. The mission statement should include a brief description of the company's overall purpose, products, services, and values. Mission statements are often grouped with vision statements and statement of values and considered to be guiding principles for companies and organizations.

3. What are the critical success factors for Way Out?

Answers will vary. Critical success factors are vital objectives that must be achieved for the company to fulfill its mission. Answers may include bike sales, marketing objectives, customer satisfaction and others.

4. What questions would you ask the owner to help her develop a business case for an information system?

- *What are the main goals and objectives for this information system?*
- *How would an information system address key business issues?*
- *How much do you expect it will cost and how long do you expect it to take?*
- *What would you expect the return on investment and payback period to be for the new system?*
- *What do you expect the risks to be of doing the project? What are the risks of not doing the project?*
- *How will we measure success?*
- *What alternatives exist to a new information system?*

3 The Monday IT Department Staff Meeting

Your boss, the IT manager, was ready to explode. “Why can’t we get our priorities straight?” he fumed. "Here we go again, working on a low-value project, just because it’s a favorite of the marketing group. I wish we could get away from departmental politics! I want you to draft a memo that proposes a systems review committee for this company. Explain the advantages, but don’t step on anyone’s toes!”

Tasks

1. Write a draft of the proposal explaining the advantages of a review committee, as your boss requested.

You can approach this task in many ways. Students should demonstrate that they understand the concept of a systems review committee and how it can help a company maximize its IT resources. Although answers will vary, a sample answer follows:

SYSTEMS REVIEW COMMITTEE PROPOSAL

To be competitive, we must use all corporate resources, including IT resources, to produce the greatest possible benefit for our company and our stakeholders. We believe that the best strategy is to create a systems review committee (SRC), with one representative from each major department. The SRC will work as a team to review systems requests, set priorities, and oversee IT projects across the company. In order to avoid any departmental bias, the committee will select a chair, who will report directly to the president.

2. What would you tell your boss about the potential disadvantages of the committee approach and what are the alternatives?

You should explain to your boss, even where a systems review committee is in place there are disadvantages that have to be considered. The IT director usually serves as a technical consultant to ensure that committee members are aware of crucial issues, problems, and

opportunities. Action on requests must wait until the committee meets to discuss. To avoid delay, committee members use memos, e-mail, and teleconferencing to communicate with each other. Another potential disadvantage of a committee is that members might favor projects requested by their own departments, and internal political differences can delay important decisions.

3. What are some of the questions that are typically asked on a formal systems request form?

Answers will vary. Systems request forms typically ask for information that will assist a systems review committee in identifying the nature of the problem, determining the priority of the issue and information that will assist in conducting an initial feasibility study. Questions have to determine if the request is for a new system, improvement in a system, or to correct an error in an existing system. Questions that will help determine the urgency may include asking if there are workarounds in place and is the current system losing money. The request has to ask for a detailed explanation of the problem and what the requestor sees is a possible solution.

4. Explain how a company can systematically determine what project requests get approved and which ones do not. How can they prioritize the projects that are approved?

The best way for a company to determine which projects should be pursued and what the priorities are is to conduct a feasibility study of each request. Feasibility studies use four main yardsticks to measure a proposal: operational feasibility, technical feasibility, economic feasibility, and schedule feasibility. To obtain more information about a systems request, an initial fact-finding study is conducted by looking at organization charts, performing interviews, reviewing current documentation, observing operations, and surveying users. If the systems request is approved, more intensive fact-finding will continue during the systems analysis phase.

4 The Friday IT Department Staff Meeting

By the end of the week, things quieted down. The IT staff discussed how to prioritize IT project requests, taking into account technical, operational, economic, and schedule feasibility. The group decided that a standard set of questions would be a good starting point.

Tasks

1. Provide three sample questions to determine whether a project has technical feasibility.

Sample questions might include:

- *Does the company have the necessary hardware, software, and network resources, or it will be difficult to acquire these elements?*
- *Does the company have the needed technical expertise?*
- *Will the proposed platform have enough capacity for future needs, and can it be expanded?*
- *Is the hardware and software environment unreliable, and will it integrate with other company information systems?*
- *Will the system interface properly with external systems operated by customers and suppliers?*
- *Does the combination of hardware and software supply adequate performance?*
- *Does the proposed system have clear expectations and performance specifications?*
- *Will the system be able to handle future transaction volume and company growth?*

2. Provide three sample questions to determine whether a project has operational feasibility.

Sample questions might include:

- *Does management support the project? Do users support the project? Is the current system well liked and effective, and will users see a need for change?*
- *Will the new system cause a workforce reduction, and are employees seriously concerned?*
- *Will the new system require extensive training for users, and is the company prepared to provide the necessary resources for training people?*
- *Are users going to be involved in planning the new system?*
- *Will the proposed system will place new demands on users and require major operational changes? Will information be less accessible and produced less frequently?*
- *Will customers experience adverse effects?*
- *Is there a risk to the company's image and goodwill?*
- *Is the development schedule reasonable?*
- *Have legal and ethical issues been considered?*

3. Provide three sample questions to determine whether a project has economic feasibility.

Sample questions might include:

- *Do the projected benefits of the proposed system outweigh the estimated costs involved in acquiring, installing, and operating it?*
- *Does the project meet the company policy for acceptable payback period, return on investment, and present value?*
- *Based on the future cost of ongoing support and maintenance, will the TCO be excessively high?*
- *Will expensive training be required?*
- *Will licenses, fees, consulting expenses, and facility costs add substantially to project cost?*
- *Do other, less expensive alternatives exist, and is the estimated risk of not developing the system or postponing the project unreasonable?*

4. Provide three sample questions to determine whether a project has schedule feasibility.

Sample questions might include:

- *Can the project be completed by a specific date?*
- *Will the new hardware be available before the deadline date for the project?*
- *Is the network going to be ready do system development can start working on the project?*
- *Is there anything that will cause an unacceptable delay in the launch date for the project?*

Case Studies

Chapter Case: Town of Eden Bay

Tasks

1. Upon investigation, you learn that the town does not have a strategic plan or a mission statement. In your view, does this affect the current situation? Why or why not?

   Observant students will note that the town has many good, dedicated employees who are frustrated by the lack of an overall vision or purpose. Students should be able to link the lack of a strategic plan directly to some of the problems the town is facing. The situation is not unlike the humorous example of the stonecutters mentioned on page 50. Without a plan, day-to-day activities continue, but they might not lead to a specific set of goals or long-term results.

2. Based on the fact statements provided, summarize the maintenance department's most important strengths, weaknesses, opportunities, and threats.

   Answers will vary, but the facts presented in the chapter offer ample material for students to develop a SWOT analysis. This might be good team exercise for the class, with a group of students pretending to be IT consulting firms called in to provide the town with their input. Encourage students to use imagination, but also suggest that they follow the guidelines on page 51 and ask questions similar to the ones in the bulleted list.

3. Describe the specific steps you will follow during a preliminary investigation, including any fact-finding techniques you will use. Be sure to include the tools mentioned in this chapter.

   The purpose of a preliminary investigation is to study the systems request and then recommend specific action. After obtaining an authorization to proceed, you should interact with managers and users. Your objective is to gather facts about the project scope and constraints, project benefits, and estimated development time and costs. The end product of your preliminary investigation is a report to management.

   To obtain the information you need, you might perform initial fact-finding by analyzing organization charts, conducting interviews, reviewing documentation, observing operations, and surveying users.

4. Compared to a profit-making company, it is more difficult or less difficult for a government entity to develop a strategic plan or mission statement? Explain your answer.

   This might make a good topic for a class debate. One way to approach the issue is to identify the external and internal factors that would apply for a government entity, and compare them to the private sector.

   Examples of external factors might include:

   - *Political issues, including a tendency to focus on the short term rather than the long term, and a politician's typical aversion to being the bearer of bad news.*
   - *Frequent changes in leadership based on election results.*

- *Major expenses that cannot be controlled, such as the cost of storms and other emergencies, law enforcement overtime, and the impact of the overall economy on tax collections and revenues.*

Examples of internal factors might include:

- *Possible lack of motivation on the part of long-time civil servants.*
- *Soaring cost of municipal worker benefits.*
- *Another politically-linked issue might be the tendency to put off tough decisions, because it is easier to postpone hard, unpopular decisions.*

In fact, some of these issues are present in the private sector too, but they seem to have less impact, at least in a well-managed company.

Continuing Case: Personal Trainer, Inc.

Tasks

1. Review the fact statements in Chapter 1, and perform Internet research to find out as much as you can about fitness center operations. Using this background, conduct a SWOT analysis with at least three entries in each area.

Answers will vary. Some possible responses follow:

Personal Trainer, Inc. owns and operates fitness centers in a dozen Midwestern cities.

Strengths

- *Personal Trainer is an experienced fitness provider, and has done well at its dozen Midwestern centers.*
- *It appears that a strong management team is in place.*
- *It also appears that Cassia is providing strong leadership, and has a keen awareness of the need to plan carefully and develop IT resources that will be necessary.*

Weaknesses

Not many are obvious, but here are some potential issues:

- *Is Cassia spread too thin with so many direct reports?*
- *The firm has no experience with online access. Could this be a major concern?*
- *The firm has never assembled so many activities, including brand-new ones, under the same roof. Should that be a concern?*

Opportunities

- *The company is planning an international expansion by opening a new "supercenter" in the Toronto area.*
- *If the supercenter approach is successful, it will become the model for Personal Trainer's future growth.*
- *As the first in the industry, Personal Trainer will have a significant lead on any potential competitors in the future.*

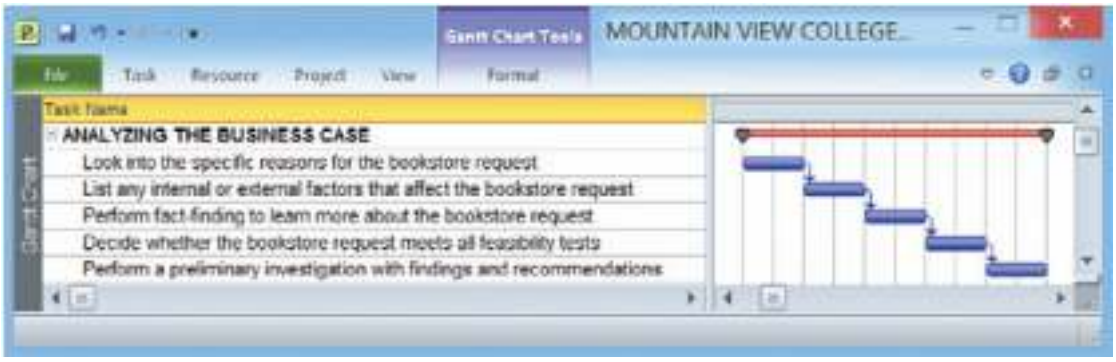
Threats

- *As a multinational operation, US and/or Canadian government regulations might be a major factor.*
- *Customers might cut back in an uncertain economy.*

- *Fuel costs might have an impact on customers, and increase operating costs at the centers.*

2. Does the proposed system present a strong business case? Why or why not?

A strong business case means that a proposal will add substantial value to the organization and support the company's strategic plan. Most students will conclude that the proposal for the new system is essential, and certainly does present a strong case. The real issue is the "why or why not" part of the question. Rather than jumping to a conclusion, the answer should be based on the same tasks that Tina and David performed in the Preview Case:



3. What fact-finding techniques should Susan and Gray consider during the preliminary investigation? Also develop a list of questions they should include in an employee survey.

During the preliminary investigation, Susan and Gray's fact-finding techniques should include studying organization charts, performing interviews, reviewing current documentation, observing operations, and surveying users. If the systems request is approved, more intensive fact-finding will continue during the systems analysis phase.

If they conduct a survey, Susan and Gray should focus on user needs, and how the system might support them. The goal should to design a form that can easily be tabulated, and will involve a broad cross-section of people. As long as students understand the relative strengths and weaknesses, of the survey method, the specific questions are not that important. You also can remind students that surveys will be discussed, in much more detail, in Chapter 4, Requirements Analysis.

4. For each type of feasibility, suggest two questions that will help Susan reach a determination.

Pages 62 – 64 provide an extensive list of questions for each of the four types of feasibility. Students should have no difficulty coming up with suitable examples from that resource.

Capstone Case: New Century Health Clinic

Tasks

1. Health information management is a rapidly-growing sector that directly affects health care costs. Every specialized area has its own vocabulary, and health information management

is no exception. Conduct an Internet search to learn about Electronic Medical Records (EMR), Computerized Provider Order Entry (CPOE), and a Clinical Decision Support System (CDSS). Describe your findings, using non-technical language that is easy to understand.

Answers will vary, but some possible explanations are:

- *An electronic medical record (EMR) or electronic health record (EHR) is a computerized medical record created in an organization that delivers health care, such as a hospital or physician's office. Electronic medical records are intended to be a part of a health information system that allows storage, retrieval and modification of records.*
- *The Computerized Physician Order Entry, also known as Computerized Provider Order Entry (CPOE) is an application that enables providers to enter medical orders into a computer system that is located within an inpatient or ambulatory setting.*
- *CPOE replaces more traditional methods of placing medication orders, including written (paper prescriptions), verbal (in person or via telephone), and fax. Most CPOE systems allow providers to electronically specify medication orders as well as laboratory, admission, radiology, referral, and procedure orders.*
- *A clinical decision support system (CDSS) is a decision support system application that analyzes data to help healthcare providers make clinical decisions. CDSS are typically designed to integrate patient data with a medical knowledge base, and an inference engine to generate case specific advice for healthcare providers.*

2. You are planning a preliminary investigation of Dr. Jones's request. For each step, describe the steps you will take, the methods you will use, and the information you will seek. Also explain how you plan to define the project's scope, and why this task is so important.

Preliminary investigation steps

- *The first step is to understand the problem or opportunity. The analyst should develop a business profile of New Century's operations to determine which departments, users, and business processes are involved.*
- *The second step is to define the project scope and constraints. At this point, you want to define the specific boundaries, or extent, of the project. Along with defining the scope of the project, you need to identify and classify any constraints, which might involve hardware, software, time, policy, law, or cost. A clear definition of project scope and constraints will avoid possible misunderstandings between you and New Century.*
- *The third step is to perform fact-finding. To do this, you have to examine organization charts, conduct interviews, review current documentation, observe operations, and carry out a user survey. When conducting interviews during the preliminary investigation, you should interview people who have a broad knowledge of the system and can give you an overview of the business processes involved. Depending on the situation, you might talk to new Century staff members to obtain more detail about day-to-day functions.*
- *The fourth step is to determine feasibility. At this point you will have analyzed the situation, defined the project scope and constraints, performed fact-finding, and estimated the costs and benefits of the new system. Now you can review the results and make an initial determination about operational, technical, and economic feasibility.*

- *The fifth step is to prepare an estimate of how much time and money it will take to complete the next systems development phase, systems analysis. Also, you should prepare a rough estimate for the overall project, so New Century can understand the full cost impact and timetable.*
- *The sixth step is to present your results and recommendations to Dr. Jones and the other partners. You will want to prepare a written report and deliver a brief presentation.*

Project scope
It is important to define the project scope to establish the extent of the project or specific boundaries. Without a defined project scope, New Century's information system could get too broad. In this case, Dr. Jones is seeking a large encompassing information system that could easily get out of hand. You need to know exactly what requirements the system must meet to prevent project creep as the systems design and development moves forward. The next step is to determine all deadlines budget limitations, any other constraints, and obtain a clear understanding of the new system's features and capability. For example, you may begin by meeting with Dr. Jones to gain an understanding of the organization and activities of the clinic and to learn more about what he and his associates have in mind for this project. Then they would meet with Anita Davenport, possibly more than once. They might suggest that Dr. Jones sit in on at least the beginning of the first meeting with Anita to help define the scope of the investigation and to discuss New Century's office systems in general. Your main objective is to obtain a clear definition of the system requirements, and by establishing the project scope, you will determine the boundaries of the preliminary investigation itself.

3. Based on what you know about New Century, conduct a feasibility study that includes operational, technical, economic, and schedule feasibility. Describe the results in detail, and explain how you reached your conclusions.

Answers will vary. Students should be able to suggest an answer based on the questions provided in the text that would focus on the four types of feasibility. In addition, the student should be able to envision an overall approach to gathering the necessary data. The following questions should be addressed to demonstrate consideration for each type of feasibility:

- *Is the new information system project desirable in an operational sense?*
- *Is it a practical approach that will solve the problems of New Century or take advantage of an opportunity to achieve the practice's goals?*
- *Is the proposal technically feasible? Are the necessary technical resources and people available for the project?*
- *Is the proposal economically desirable?*
- *What are the projected savings and costs?*
- *Is the problem worth solving, and will the request result in a sound business investment?*
- *Can the proposal be accomplished within an acceptable time frame?*

4. Prepare a brief preliminary investigation report for Dr. Jones. Before you begin this task, you should review the sample report in this chapter, and visit Part A of the Systems Analyst's Toolkit, which provides suggestions for oral and written presentations.

Answers should follow the six-step approach described in the textbook. A sample answer follows:

- *Introduction. The first section is an overview of the report. The introduction has a brief description of the system, the name of the person or group who performed the investigation, and the name of the person or group who initiated the investigation.*
- *Systems Request Summary. The summary describes the basis of the systems request.*
- *Findings. The findings section contains the results of your preliminary investigation, including a description of the project's scope, constraints, and feasibility.*
- *Recommendations. Recommendations for further action, with specific reasons and justification, are explained in this section. Management will make the final decision, but the IT department's input is an important factor.*
- *Time and Cost Estimates. This section describes the cost of acquiring and installing the system and the total cost of ownership during the system's useful life.*
- *Expected Benefits. Anticipated tangible and intangible benefits and a timetable that shows when they are to occur are included in this section.*
- *Appendix. An appendix is included in the report if you need to attach supporting information.*

CASE Tool Workshop

Background

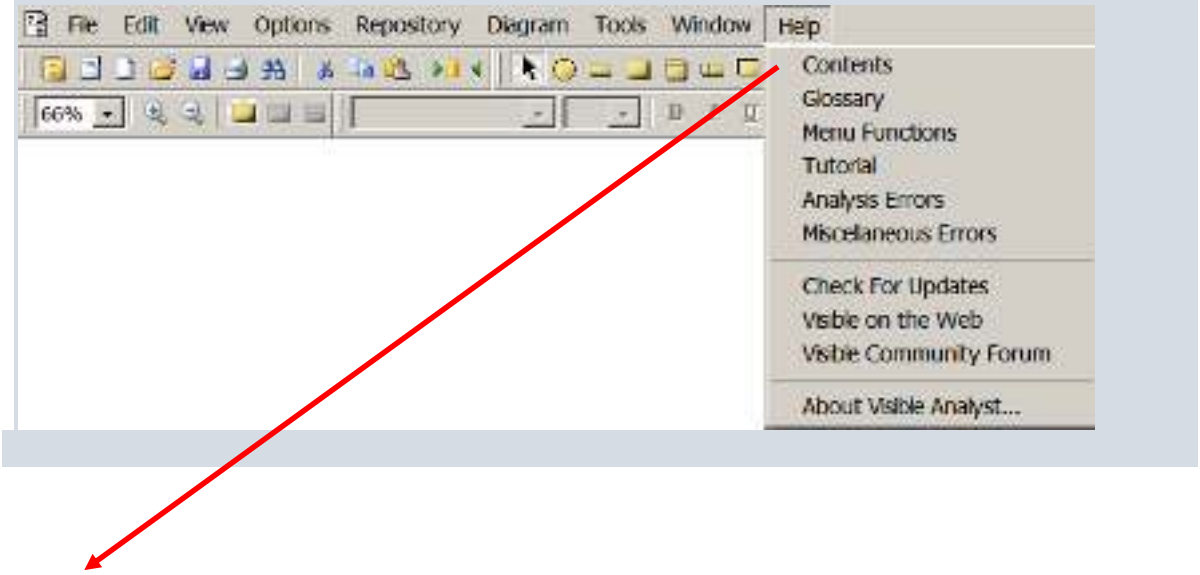
Suppose you are a part-time student assistant in the computer lab at your school. Janet Jacobs, the IT department chair, recently announced that a CASE tool will be installed on the lab network. Her decision was welcomed by many IT faculty members, who think it is important for students to learn about CASE tools and how use them to complete assignments in MIS courses.

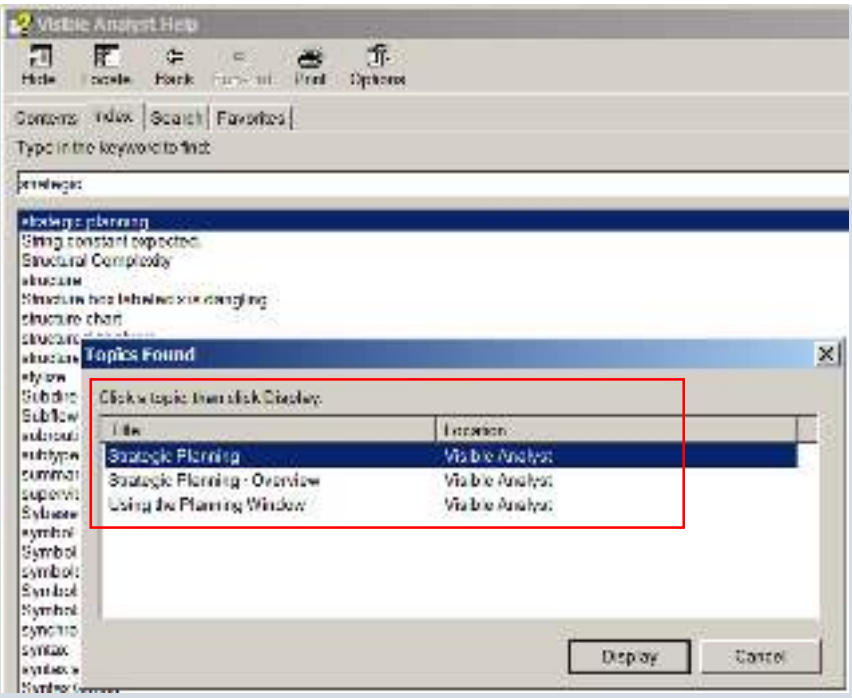
You have been asked to evaluate various CASE tools, and submit the results. Your initial tasks will be to provide an overview of the Visible Analyst® CASE tool, or a similar tool.

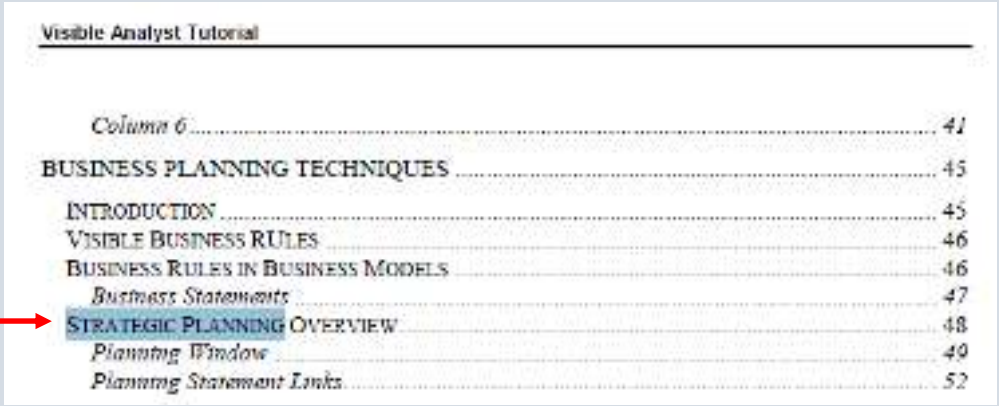
Tasks:

1. Study the program's documentation, tutorials, glossary, and help menu to learn more about how the tool handles strategic planning. Prepare a summary of your findings, and be sure to include specific examples and screen shots.

Using Visible Analyst, a student should be able to answer these questions. The following screens show examples of readily available material:





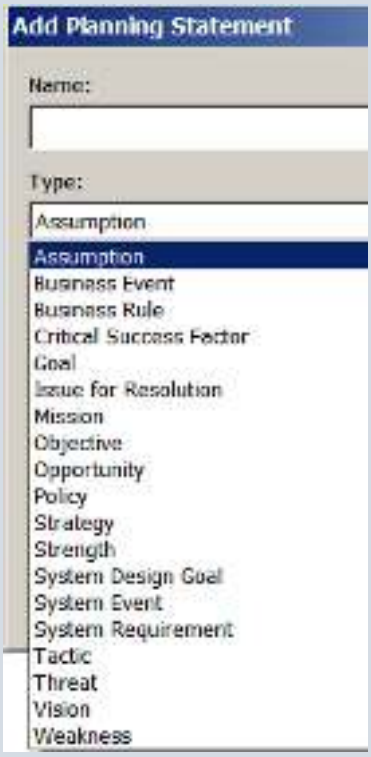


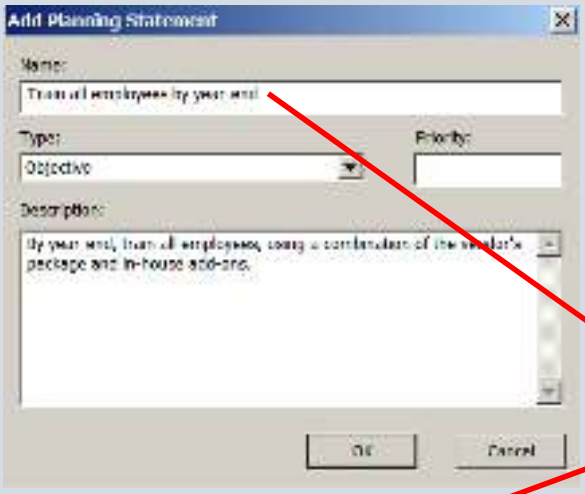
2. Review the planning example and examine Figure 2-6 on page 53. In that scenario, a systems analyst for a large hotel chain wanted to determine whether the Visible Analyst CASE tool would be helpful in planning a new marketing system. Now, using the same example, create a sample project named HOTEL. Add at least seven sample planning statements, including an assumption, an objective, a critical success factor, strength, a weakness, an opportunity, and a threat. You should try to suggest realistic examples, and you can use your imagination freely.

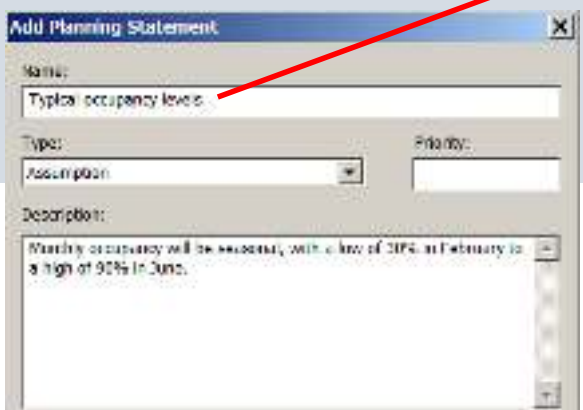
We suggest that you share these examples with students, either live in a seated class, or with a series of slides or other Web-based techniques if you are teaching an online class.

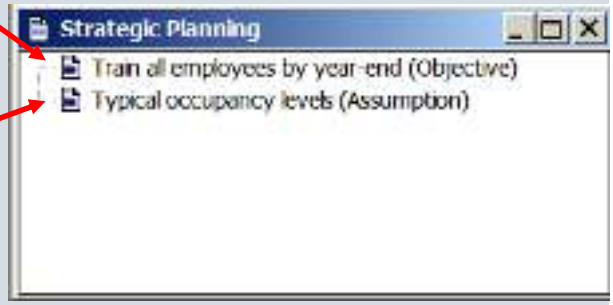
The first screen shows the types of planning statements that can be added.

The next screens show examples of two statements: an assumption and an objective. Using Visible Analyst, students should be able to build on these examples and create an appropriate, real-world set of planning statements applicable to the hotel scenario.


Add Planning Statement
Name:
Type:
Assumption
Assumption
Business Event
Business Rule
Critical Success Factor
Goal
Issue for Resolution
Mission
Objective
Opportunity
Policy
Strategy
Strength
System Design Goal
System Event
System Requirement
Tactic
Threat
Vision
Weakness


Add Planning Statement
Name:
Type:
Objective
Priority:
Description:
OK
Cancel


Add Planning Statement
Name:
Type:
Assumption
Priority:
Description:


Strategic Planning
Train all employees by year-end (Objective)
Typical occupancy levels (Assumption)

Session 2: Analyzing the Business Case

Preview

During your orientation, you found your way around the office and had a chance to explore SCR's Web site and intranet. Now, after a week on the job, your supervisor, Jesse Baker, explained the new TIMS system and asked you to help her lead the systems development team. Jesse said that she has confidence in you and is looking forward to working with you.

Tasks

1. Jesse wants to see a new corporate goal that refers to our proposed training activity. She also wants to know whether the change will require a change in SCR's mission statement.

The textbook points out that a firm develops a set of goals to carry out its mission. SCR's training capability represents a major step for the company. Answers will vary, but goals might be worded as follows:

- *SCR training will achieve excellence in three key areas: content, delivery, and results. To support our training function, we will focus on three main goals: Training content will provide world-class technical skills and knowledge required by IT industry leaders.*
- *Delivery will be highly professional, with attention to individual needs and interaction with students.*
- *Results will be measurable, and SCR will certify student achievement levels and competence.*

SCR's Web site includes the following mission statement:

> SCR will strive to be an outstanding provider of IT consulting services. To achieve this goal, SCR will build strong and mutually beneficial relationships with clients, business partners, and employees.

Important as the new TIMS system is, it would not appear to require a change in the mission statement, which defines a high-level, long term vision. However, TIMS is an important resource that will support the mission.

2. Jesse wants my opinion on whether or not SCR needs a system review committee. She wants a list of pros and cons, and my own recommendation – with reasons.

As far as we know, SCR does not have a systems review committee. The SCR executive committee announced the new TIMS system by giving employees advance notice of a news release. Students know that top management directives are one source of systems projects. Should SCR consider a committee? You could argue that in a firm like SCR, the top managers make all major decisions, and a committee would add an unnecessary layer of decision-making. Also, the company is small enough to allow constant, direct communication among all members of the SCR team — so what would be the advantage of a committee?

On the other hand, not all decisions involve major IT projects. Most of the time, IT departments deal with day-to-day maintenance requests. Without a systems review committee, the IT director must allocate corporate resources. Would a systems review committee provide more interdepartmental input and allow more user involvement? The

chapter presents various pro and con arguments, and you should encourage students to apply these concepts to the SCR situation.

3. I have to draft a project scope statement for the TIMS system and describe the constraints. She said to identify each one by its type, timing, and urgency.

Based on the information in the SCR documents for this chapter, the project will have a specific timetable and must include various features and capabilities. A sample statement might read as follows:

Project Scope and Constraints

The new training information system must support SCR's training operations, and meet the requirements of users and SCR management. Specific constraints include the following:

- *The system must be operational by February 1.*
- *The system must track courses, instructors, students, and grades.*
- *The system must interface with SCR's accounting system.*
- *The system must be able to support online courses registration in the future.*
- *The system must track industry certification requirements.*

4. I need to identify the people I want to interview to learn more about the new training activity, and prepare a list of the questions I will ask. I will include open-ended, closed-ended, and range-of-response questions during each interview.

At this point, you would want to obtain more background and a better understanding of the project. The most important people would be the SCR employees who have experience with corporate training and will be involved in the new training function. Additional investigation and detailed fact-finding will be performed during the systems analysis phase, starting in Chapter 4.

A sample interviewee, job title, and list of interview topics follows. The topics are listed generally, but you can ask students to frame specific questions based on the topics they suggest.

Person	***Title***	***Interview Topics***
Jill Martin	*Manager, Training Group*	▪ *Overall vision of how the new system can support the SCR training operation* ▪ *Prior experience with training information management systems; provide samples of documents if possible* ▪ *Estimate of future volume of courses and students* ▪ *Comments on key features or capabilities that should be included in the project scope statement*

This sample only, Download all chapters at: alibabadownload.com