Apply Your Knowledge

This section contains four mini-cases. Each case describes a situation, explains your role, and requires you to apply what you learned in the chapter.

1 Green Design

After several years as a successful architectural firm in Southern California, Green Design decided to expand by adding two new business ventures: a civil engineering projects group, and a group for commercial building projects. As a senior systems analyst, you have been asked to study the situation and make recommendations.

Tasks

1. Should Green Design adopt ERP? Why or why not? Provide specific reasons.
2. Is the experience of other companies relevant? Use the Internet to locate a software platform that may be useful to Green Design. Give a summary of ERP solutions you find for architectural and engineering firms.
3. Should Green Design use separate portals for employees, customers, and suppliers?
4. Before selecting software and hardware for the new system, how should Green Design evaluate initial cost and total cost of ownership? What would be the main components?

2 Passing Lane

Passing Lane is a small trucking company headquartered in Portland, Oregon. Passing Lane's information system consists of a file server and three workstations where freight clerks enter data, track shipments, and prepare freight bills. To perform their work, the clerks obtain data from the server and use database and spreadsheet programs stored on stand-alone PCs to process the data. At your meeting yesterday, Passing lane's president approved your recommendation to create a relational database to handle operations and provide links for the company's shippers and customers.

Tasks

1. Review the concept of supply chain management. Although Passing Lane offers services rather than products, could the SCM concept apply to the design of the new system? Why or why not?
2. What would be the advantages of selecting an Web-based architecture for Passing Lane's system?
3. Since the firm is growing rapidly, what design features should be included in the new system to ensure it can grow with the company.
4. Given that Passing Lane currently uses computers for managing their operations, what design considerations should be given to legacy systems? Explain your answer.

3 Nothing But Net

Nothing But Net is an IT consulting firm that specializes in network architectural design. As a newly hired systems analyst, you have been asked to explain the advantages and disadvantages of a variety of networking concepts. Your answers will be incorporated into a FAQ section of the new marketing brochure.

Tasks

1. Should an organization choose a new system based on client/server architecture? Why or why not?
2. Explain the pros and cons of thick or thin client characteristics.
3. What is the difference between physical and logical topology? Provide examples.
4. Will mobile devices replace desktop system units and traditional laptop computers? How would networks have to change if that were to happen?

4 Alice's Restaurant Supply

Alice's Restaurant Supply offers a line of specialty food products to institutional customers and restaurant chains. The firm prides itself on using only the finest ingredients and preparation methods. The owner, Alice Burns, hired you as an IT consultant to help her plan the system architecture for a new WLAN that will connect employee computers to the wired network. She asked you to start with the following questions:

Tasks

1. What wireless standards could be implemented in the new system? What are the pros and cons of each standard?
2. Choose a wireless standard to implement in Alice's Restaurant Supply, and explain your choice.
3. Suppose that microwave ovens and cordless telephones are used extensively in some parts of the facility. Would that affect your IEEE 802.11 amendment choice? What standards would *not* be a good choice in this type of environment?
4. Suppose that the new WLAN will also provide roaming services for employees who must use portable computers and tablets in many warehouse locations. Which wireless topology would be the best choice? Explain your answer.

Case Studies

Each chapter includes a Chapter Case, a Continuing Case, a Capstone Case, and an Online Case Simulation. You can learn more about the Online Case Simulation in the MIS CourseMate Features section.

Chapter Case: Precision Consulting

Background

Precision Consulting has helped many clients plan, design, and implement e-commerce solutions. As a newly hired systems analyst, you will be expected to work with other team members on e-commerce projects. You realize that have a lot to learn, and you decide to learn as much as you can about the e-commerce issues and solutions.

Tasks

1. Perform research to learn how much consumers are projected to spend on Internet purchases during the next three years, and describe the results. Does the estimate seem reasonable? Why or why not?
2. Many of Precision's clients are start-up firms that must fight hard to attract investment capital, and some traditional lenders are skeptical of new Web-based firms. Perform research to determine the mortality rate of new retail firms that use the Web as their primary marketing channel, and describe the results of your research.
3. Some IT professionals predict that traditional brick and mortar companies will greatly expand their Internet marketing efforts, making it even harder for new online firms to compete. Perform research to find out more about the topic and describe the results.
4. Suppose you were asked to draft an e-commerce sales brochure for Precision Consulting. List all the services in which potential customers might be interested.

Continuing Case: Personal Trainer, Inc.

Personal Trainer, Inc. owns and operates fitness centers in a dozen Midwestern cities. The centers have done well, and the company is planning an international expansion by opening a new "supercenter" in the Toronto area. Personal Trainer's president, Cassia Umi, hired an IT consultant, Susan Park, to help develop an information system for the new facility. During the project, Susan will work closely with Gray Lewis, who will manage the new operation.

Background

Susan and Gray finished their work on user interface, input, and output design. They developed a user-centered design that would be flexible and easy to learn. Now Susan turned her attention to the architecture for the new system.

Susan wanted to consider their own organization and culture, enterprise resource planning, total cost of ownership, scalability, Web integration, legacy systems, processing methods, security issues, and corporate portal. She also needed to select a network plan, or topology, that would dictate the physical cabling and network connections, or consider a wireless network. When all these tasks were completed, she would submit a system design specification for approval.

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Continuing Case: Personal Trainer, Inc.

Tasks

1. What would be the advantages of selecting an Internet-based architecture for the Personal Trainer's system?
2. If Personal Trainer wants to increase its Internet marketing efforts, what advice could you offer? Perform research to find out more about the topic of Web-based marketing before you answer Gray.
3. What software and hardware infrastructure will be necessary to ensure Personal Trainer can process point of sale transactions?
4. Prepare an outline for a system design specification and describe the contents of each section.

Capstone Case: New Century Wellness Group

New Century Wellness Group offers a holistic approach to healthcare with an emphasis on preventive medicine as well as traditional medical care. In your role as an IT consultant, you will help New Century develop a new information system.

Background

The New Century partners accepted your interface, output, input, and data designs and your recommendation to install a server and desktop computer clients on a local area network. At this point, you review your notes and plan the architecture for the New Century system.

New Century Wellness Group has four primary care physicians, one nurse practitioner (NP), four physical therapists, one registered nutritionist, eight nurses, and eight support staff. Each of the physicians, NP, therapists, nutritionist and support staff has their own workstations. The nurses work from one of three nurse stations that should have at least three computers at each station. Each nurse station will have a high-volume network laser printer and a scanner attached to one workstation. The checkin/checkout area will have an impact printer for multipart forms and a network laser printer. The network will include an online backup service, Internet access via a cable connection with a local cable company.

The partners want you to ensure the physical network is scalable, and able to handle the electronic medical record phase after the business support system is implemented. The electronic medical record phase will require a computer or thin client to be installed in each exam room and procedure room. They will also use portable computers and tablets to access patient information as the providers move from room to room around the clinic.

The hardware requirements are only part of the final installation plan which you must develop. You should start by reviewing the DFDs and object-oriented diagrams that you prepared in the systems analysis phase, and the ERDs and table designs that you created in the systems design phase. Then, review the system architecture checklist at the beginning of this chapter. With this information, you should be able to prepare a system design specification.

Tasks

1. Draw a simple floor plan for New Century Wellness group and include the placement of all network nodes including the placement of a server, and network equipment. How many ports will your switch need to accommodate?
2. Given this information, what physical and logical topologies would you recommend for New Century? Explain your answer.
3. What would be the benefits of using a wireless network? Are there any drawbacks?
4. Using the information you just prepared, as well as other information you developed for in previous chapters, prepare a system design specification that includes sections on the management summary, system components, system environment, implementation requirements, and time and cost estimates.

CASE Tool Workshop

Systems analysts use CASE tools to help them plan, build, and maintain information systems. To learn more about CASE tools, turn to Part B of the Toolkit that follows Chapter 12. You can complete these tasks with the Visible Analyst® CASE tool, which is available with this textbook, or a similar tool.

Background

Suppose you work as a computer lab assistant at your school. The lab supervisor wants to install a CASE tool on the network, but realizes there might be licensing issues.

Tasks

1. Visit the Web site for Visible Analyst® or another CASE tool, and investigate licensing options. Are network installations limited by the number of workstations, the number of users at any one time, or other constraints? Write a brief report with your findings.
2. The lab supervisor also told you that several computer science instructors want to assign team projects, where students would collaborate using a Web-based CASE tools that can run on mobile devices as well as lab workstations. She wants you to do research and determine whether such tools exist. Go online, see what you can find, and report back to her.