

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: Campus Bikes (Part 2)

In Chapter 6, you learned that Campus Bikes is a popular bicycle shop located near a major university. The shop sells several brands of new bikes, including everything from high-end racing models to beach cruisers. In addition to sales of new bikes and accessories, Mark's service department is always busy. The staff includes Mark himself, a bookkeeper, two part-time sales reps, a full-time mechanic, and several part-time service helpers who assemble bikes.

Background

Until now, the owner, Mark Turner, kept the business records on his personal computer. He created a simple database to keep track of inventory, but it is not always up-to-date. He also developed spreadsheets to track expenses and payroll. The business has grown and Mark wants to install a new computer system to handle all business functions.

You are a lab assistant in the computer information department at the college. You earned a computer science degree at a two-year school, and you recently decided to work toward your four-year degree. Mark recently asked you to help him plan a system for Campus Bikes. You used an object-oriented approach to create a model of the business functions and actors involved.

Now Mark wants you to do a "make or buy" analysis. Specifically, you will look into the pros and cons of in-house development versus purchase of a software package. Your research indicates that the most popular bike shop package is offered by a vendor called BikeData.

In your last meeting, Mark said that tangible savings for a new system would be hard to measure, but improved customer care, better service department records, and increased productivity are expected. Mark estimates that these benefits will add up to about \$3,000 per year, whether the system is developed in-house, or purchased from BikeData.

You decide to compare relative costs to establish a total cost of ownership (TOC) over the useful life of the system. Based on your research, you put together the following summary:

Costs for Option A: Develop In-house

- The system will have a six-year useful life, be very flexible, and easiest to maintain.
- It will cost \$15,000 to develop, install, and configure the system, and \$1,000 to load existing data.
- Mark and the bookkeeper can handle day-to-day support with no added expense.

Costs for Option B: Purchase BikeData Software Package

- This is a vertical package with a four-year useful life.
- The software is less flexible than an in-house system and some customizing will be needed.
- It will cost \$8,000 to purchase, \$1,500 to install and configure, \$2,500 to load existing data, and \$1,000 additional hardware will be needed
- Support is free for the first year, then there is a \$2,000 annual fee

Benefits for Both Options: \$3,000 per year

Tasks

1. Prepare a detailed list of pros and cons of in-house versus software purchase.
2. Calculate ROI for both options.
3. Calculate NPV for both options. Use an 8% discount factor.

4. Create a PowerPoint presentation for Mark showing the results of your analysis, including recommendations and reasons.

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

During data and process modeling, Susan Park developed a logical model of the proposed system. She drew an entity-relationship diagram and constructed a set of leveled and balanced DFDs. Now Susan is ready to consider various development strategies for the new system. She will investigate traditional and Web-based approaches and weigh the pros and cons of in-house development versus other alternatives. Before you begin, you should review the background information and facts contained in Chapters 2, 4, and 5 of the case study.

Tasks

1. What options does Personal Trainer have for developing a new system? What are some specific issues and options that Susan should consider in making a decision?
2. Susan has been asked to prepare a system requirements document and deliver a presentation to the management team. What should be the main elements of the system requirements document?
3. Based on the suggestions in Part A of the Systems Analyst’s Toolkit, what visual aids should Susan use during her presentation?
4. Susan wants to prepare a presentation that will calculate the total cost of ownership for the system. What financial analysis tools are available to her, and what are the advantages (and possible

disadvantages) of each tool?

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

Based on your earlier recommendations, New Century decided to continue the systems development process for a new information system. Now, at the end of the systems analysis phase, you are ready to prepare a system requirements document and give a presentation to the New Century associates. Many of the proposed system's advantages were described during the fact-finding process. Those include smoother operation, better efficiency, and more user-friendly procedures for patients and New Century staff.

You also must examine tangible costs and benefits to determine the economic feasibility of several alternatives. If New Century decides to go ahead with the development process, the main options are to develop the system in-house or purchase a vertical package and configure it to meet New Century's needs. You have studied those choices and put together some preliminary figures.

You know that New Century's current workload requires six hours of office staff overtime per week at a base rate of \$15 per hour. In addition, based on current projections, New Century will need to add another full-time clerical position in about six months. Neither the overtime nor the additional job will be needed if New Century implements the new system. The current manual system also causes an average of three errors per day, and each error takes about 20 minutes to correct. The new system should eliminate those errors.

You estimate that by working full-time you could complete the project in about 12 weeks. Your consulting rate, which New Century agreed to, is \$35 per hour. If you design the new system as a database application, you can expect to spend about \$2,500 for a networked commercial package. After the system is operational

and the staff is trained, New Century should be able to handle routine maintenance tasks without your assistance.

As an alternative to in-house development, a vertical software package is available for about \$12,000. The vendor offers a lease-purchase package of \$4,000 down, followed by two annual installments of \$4,000 each. If New Century buys the package, it would take you about four weeks to install, configure, and test it, working full-time. The vendor provides free support during the first year of operation, but then New Century must sign a technical support agreement at an annual cost of \$600. Although the package contains many of the features that New Century wants, most of the reports are pre-designed and it would be difficult to modify their layouts.

No matter which approach is selected, New Century probably will need you to provide about 10 hours of initial training and support each week for the first three months of operation. After the new system is operational, it will need routine maintenance, file backups, and updating. These tasks will require about four hours per week and can be performed by a clinic staff member. In both cases, the necessary hardware and network installation will cost about \$12,500.

In your view, the useful life of the system will be about five years, including the year in which the system becomes operational.

You are scheduled to deliver a presentation to New Century next week, and you will submit a system requirements document at that time. To prepare yourself, you reviewed the skills described in Part A of the Systems Analyst's Toolkit, and you listed tips to remember, as follows:

Presentation Tips

- Use suitable visual aids.
- Use presentation software, if possible.
- Distribute handouts before, during, or after the presentation.
- Follow the guidelines in Part A of the Systems Analyst's Toolkit.

- Keep your presentation to 30 minutes, including 5 minutes for questions.

System Requirements Document Tips

- Follow the guidelines in Part A of the Systems Analyst's Toolkit.
- Include charts, graphs, or other helpful visual information in the document. Also include other material to help the audience understand the new system and decide on the next step.
- Spell check and carefully proofread the entire document.
- For readability, try to keep the Flesch Reading Ease score above 60, and aim for a Flesch-Kincaid Grade Level of 8.0 to 9.0.

Tasks

1. Provide an overview of the proposed system, including costs and benefits, with an explanation of the various cost-benefit types and categories.
2. Develop an economic feasibility analysis, using payback analysis, ROI, and present value (assume a discount rate of 10%).
3. Prepare a context diagram and diagram 0 for the new system.
4. Provide a brief explanation of the various alternatives that should be investigated if development continues, including in-house development and any other possible strategies.