

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: Town of Eden Bay

The town of Eden Bay owns and maintains a fleet of vehicles. You are a systems analyst reporting to Dawn, the town's IT manager.

Background

Eden Bay is a medium-sized municipality. The town has grown rapidly, and so has the demand for town services. Eden Bay currently owns 90 vehicles, which the town's equipment department maintains. The fleet includes police cars, sanitation trucks, fire trucks, and other vehicles assigned to town employees. The maintenance budget has risen sharply in recent years, and people are asking whether the town should continue to perform its own maintenance or outsource it to private firms.

This morning, Dawn called you into her office to discuss the situation. A summary of her comments follows:

Dawn (IT manager): When I came here two years ago, I was told that Eden Bay had a computerized information system for vehicle maintenance. What I found was a spreadsheet designed by a part-time employee as a quick answer to a complex problem. It's probably better than no system at all, but what we really need is a new information system to meet our current and future needs. I want to develop a proposal for a new system. For now, let's call it RAVE, which stands for Repair Analysis for Vehicular Equipment. I met with the town manager, the equipment department, and several maintenance employees to understand their needs and concerns. I want you to start by reading the interview summaries I prepared.

Before You Begin

Review the following interview summaries from Marie (town manager), Martin (equipment department manager), Phil (maintenance supervisor), Alice (maintenance clerk), and Joe (mechanic):

Marie (town manager): Maintenance costs have risen 14 to 16% annually. I'm not sure that we have any real control over these costs. Some members of the town council think we should get out of the maintenance business and contract it out to a private firm. That might mean laying off current employees, and I'm not sure whether outsourcing is the right way to go.

Both the equipment department manager and the IT manager tell me that our current record-keeping system is outdated, and I wonder if a new information system would give us a better handle on the problem. My own view is that if there's a way we can become more efficient, we should continue to perform our own maintenance.

Dawn, our IT manager, tells me that she has developed a proposal for a maintenance information system. I plan to bring it up at the next council meeting.

Martin (equipment department manager): I hear a lot of criticism about the maintenance budget, but I'm doing the best I can. We operate from one budget year to the next, without a long-term plan. I belong to a professional association of fleet maintenance managers, and I know that we should be developing a strategic plan instead of juggling annual budget figures.

I'd like to build this department into a first-class organization. Our people are great, but they could use more technical training. Our shop and equipment are generally adequate for what we do, but we haven't kept up with some of the newer diagnostic equipment. We have a real problem in record keeping. Instead of a short-term solution, Eden Bay should have developed a maintenance information system years ago. Prior to taking this position, I was assistant maintenance manager in a medium-sized city, and they had developed a system that handled scheduling and cost analysis, in addition to day-to-day maintenance operations.

Phil (maintenance supervisor): I'm in the middle — I get pressure from above to cut costs, and I get complaints from below that management doesn't know what it's doing. One thing for sure — short-term solutions are not the answer. I hope they don't ask me to cut back on preventive maintenance. The last time we did that, we extended routine oil changes and servicing, and we ended up with even more repairs than we had previously.

My mechanics are capable people, and they're doing the best they can. One problem I see is that it's hard to pull up a history for a particular vehicle. We keep the data on a computer, but different people used different codes and procedures over the years, and the system probably needs a good overhaul.

Alice (maintenance clerk): I'm in charge of maintenance record keeping. We use a spreadsheet system that was designed by a part-time employee who is no longer around. Because we work on a monthly budget, the spreadsheet has a separate page for each month. When the year is over, we start a new set of monthly pages. The spreadsheet is supposed to record labor and parts used, and assign the cost to a specific vehicle, but it doesn't always work out that way.

I also use a notebook to keep track of vehicle mileage and scheduled service intervals, so I can let the department heads know when a vehicle needs to come in for service. I write up work orders for scheduled service or necessary repairs, but often a mechanic finds other problems and has to write up an additional charges form.

Each time a vehicle comes into the shop, I start a new row on the spreadsheet. I enter the vehicle number, mileage, and date. Then I enter the rest of the data into the columns for parts, labor hours, job code, shop supplies, and miscellaneous charges. At the end of the month, I calculate total costs from the spreadsheet, and we compare these with actual payroll and parts vouchers for the month. If the totals are close, everyone is happy. If not, we try to figure out what work didn't get reported and entered into the spreadsheet.

The labor codes also are a problem. Specific codes are assigned for certain types of shop labor, but these were changed three years ago when the new director arrived. Also, about half the labor can be coded, but the rest has to be entered manually — and there are no standards. Two mechanics might do the same job, and one records four specific tasks, while the other calls it a tune-up.

I know the mechanics don't like paperwork, but what can I do? I asked the IT manager if she could do anything to help, but she says that it isn't worthwhile to update the current system. She says she has heard some talk about developing a new information system specifically designed for vehicle fleet maintenance. It can't be soon enough for me.

Joe (mechanic): I love my job, but I hate the paperwork. We get a work order from the clerk for all scheduled maintenance, but if we find other problems, we have to handwrite an additional work

ticket. Personally, I think some of these vehicles should be retired before they get too expensive to maintain.

I would hate to see the town contract out the maintenance. I've put in 17 years here, and I don't want to lose my job, but I know that some specialized repairs would be less expensive on the outside. Most of the mechanics realize this, but let management figure it out — they're the ones with the fancy computer system.

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? Prepare a brief mission statement for Dawn to review.
2. Based on the fact statements provided, summarize the maintenance department's most important strengths, weaknesses, opportunities, and threats.
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.
4. Compared to a profit-making company, is it more difficult or less difficult for a government entity to develop a strategic plan or mission statement? Explain your answer.

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

At their initial meeting, Susan and Gray discussed some initial steps in planning an information system for the new facility. The next morning, they worked together on a business profile, drew an organization chart, discussed feasibility issues, and talked about various types of information systems that would provide the best support for the supercenter's operations. Their main objective was to carry out a preliminary investigation of the new system and report their recommendations to Personal Trainer's top managers.

After the working session with Gray, Susan returned to her office and reviewed her notes. She knew that Personal Trainer's president, Cassia Umi, wanted the supercenter to become a model for the company's future growth, but she did not remember any mention of an overall strategic plan for the company. Susan also wondered whether the firm had done a SWOT analysis or analyzed the internal and external factors that might affect an information system for the supercenter.

Because the new operation would be so important to the company, Susan believed that Personal Trainer should consider an enterprise resource planning strategy that could provide a company-wide framework for information management. After she finished compiling her notes, Susan listed several topics that might need more study and called Gray to arrange another meeting the following day.

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.
2. Does the proposed system present a strong business case? Why or why not?
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.
4. For each type of feasibility, suggest two questions that will help Susan reach a determination.

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

New Century Wellness Group is interested in a new information system to support its business and health information management needs. The new system would replace a mix of paper-based and fragmented computer systems. Dr. Jones had previously asked you to work with him as a systems analyst and help the group develop an information system that will support current operations and future growth. You will explore the possibility of a business support system for the scheduling, billing, accounting, and payroll functions of the practice as well as a system to support the clinical applications of Electronic Medical Records (EMR), Computerized Provider Order Entry (CPOE), and a Clinical Decision Support System (CDSS).

At your next meeting, Dr. Jones explains what the practice partners have in mind in more detail. They are looking for a medical practice software solution that allows each office worker to conduct their job more efficiently. He explains to you what systems they are looking for from the perspective of a patient who comes into the office.

Lisa Sung schedules a patient's appointment and the patient comes into the office for the first time. On this appointment, an EMR is started for the patient that includes the patient's demographic information, medical history, and insurance information. A patient may be coming in to see any one of the healthcare providers, including a physician, nurse practitioner, physical therapists, or the nutritionist. These providers would enter any orders or prescriptions into the EMR with the CPOE system. The Providers who use the EMR and CPOE system are supported by the CDSS. Patients often schedule a follow-up appointment before leaving the practice office.

After a patient's visit, Susan Gifford, who maintains the patient medical records, reviews the records to ensure they are complete. Carla Herrera orders any supplies needed to replace items used by the patient.

Tammy Alipio begins billing the patient's insurance provider for services that were rendered to the patient. Tom Capaletti follows up on the billing to ensure the practice is getting paid for all claims. Dr. Jones also

tells you that the system should also include modules to support Fred Brown and Corinne Summers in HR and payroll.

You explain to Dr. Jones that you would like to conduct a preliminary investigation that will give you the information you need to make recommendations about what system they should pursue. Dr. Jones agrees to your investigation and you set a follow-up appointment in one month.

Tasks

1. Health information management is a rapidly-growing sector that directly affects healthcare 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 nontechnical language that is easy to understand.
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.
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.
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.