MILESTONE 3 – MODELING SYSTEM REQUIREMENTS

Synopsis

The requirements analysis phase answers the question, 'What does the user need and want from the new system?' The requirements analysis phase is critical to the success of any new information system! In this milestone we need to identify what information systems requirements need to be defined from the system users' perspectives.

Use-case modeling has gained popularity as a technique for expressing system requirements for two reasons: (1) it facilitates user-centered development, which often leads to building systems that better satisfy user needs, and (2) use cases diagrams and narratives are easy for users to understand.

In this milestone you will first uncover the actors, use cases, and relationships that define the requirements for the proposed system and document that information in a *Use-Case Glossary*. You will use that to build a *Use-Case Model Diagram* for the system and a *Use-Case Narrative* for one use case.

Objectives

After completing this milestone, you should be able to:

⇒ Understand and perform the techniques for requirements discovery.
⇒ Determine actors, use cases, and relationships.
⇒ Construct a Use-Case Glossary.
⇒ Construct a Use-Case Model Diagram.
⇒ Write a fully-documented Use-Case Narrative.

Prerequisites

Before starting this milestone the following topics should be covered:

1. Requirements discovery – Chapter 6
2. Use-case modeling – Chapter 7
3. Milestone 2 Solution

Assignment

Now that we have studied the current system and analyzed some of its problems and opportunities, plus gained approval to proceed, we can now start to identify the business requirements for the system and model them. In this assignment we will use our results of the previous milestones and transcripts of an interview with president Peter Charles, IT consultant Jeff Summers, and web server administrator Dane Wagner of Coastline Systems Consulting. The results of this activity will identify the system requirements for the proposed system.

Exhibit 3.1 is a copy of the transcript of the interview. Refer to the transcript, sample forms, and results from Milestones 1 and 2 for the information necessary to complete the activities.

Activities

1. Complete a *Use-Case Glossary*. Make assumptions where necessary.
2. Prepare a *Use-Case Model Diagram.*
3. Prepare a fully-documented *Use-Case Narrative* for the Search Employee Directory use case described in the interview.

Deliverable format and software to be used are according to your instructor's specifications. Deliverables should be neatly packaged in a binder, separated with a tab divider labeled "Milestone 3".

References:

Milestone 2 Solution

Provided by your instructor

Transcripts of Interview

Exhibit 3.1

Templates

See on-line learning center website for the textbook.

Deliverables:

Use-Case Glossary: **Due: __/__/__**
Time:_______

Use-Case Model Diagram: **Due: __/__/__**
Time:_______

Fully-documented Use Case Narrative: **Due: __/__/__**
Time:_______

ADVANCED OPTION

For the advanced option, prepare fully-documented Use-Case Narratives for additional use cases as directed by your instructor.

Fully-documented Use Case Narratives: **Due: __/__/__**
Time:_______

Milestone's Point Value: _______

The following is a copy of the transcript of an interview between Dotty Jones, Manager of Employee Relations, and Kira Webster, who is serving as systems analyst for the project. Dotty is the key user contact for this project. The goal of this interview was to determine requirements for the proposed system.

Exhibit 3.1

Scene:	*Kira Webster, computer information systems student, is meeting with Dotty Jones, Manager of Employee Relations, at Ms Jones' office.*
Kira:	Good morning, Ms. Jones.
Dotty:	Hi. How can I help you today?
Kira:	The next step is to prepare what are called use cases. These detail out the interaction between users and the system to accomplish user goals. They help us document the requirements for the system so that we build what you really need.
Dotty:	Well, I'm all for that. How do we proceed?
Kira:	What I want to get out of this meeting is an understanding on everything the Employee Self Service System needs to do and who will be using each part of that functionality. Why don't we talk about the employee directory part of the system first? As I understand it, any employee can view the phone numbers for any other employee. Would they just get the whole list, or would it be searchable somehow?
Dotty:	First, it would be more than just phone numbers. It would have the employee's office location, department, job title, and supervisor. I think it should be driven by some sort of search screen. In my experience, one might want to search by first or last name, department, location, job title, or supervisor. Or combinations of them. Can we do that?
Kira:	Sure. We can give the user a screen to enter any or all of that. When the user clicks OK, the system would first show the user a list of everyone who matches that criteria and links on each person to go view the complete information. Does that sound good?
Dotty:	Absolutely. But only after they do a successful logon. This is confidential information that can't be open to the public.
Kira:	Right. Now, we have to think about where that data comes from. You said in our last meeting that you wanted employees to be able to update their own information from the web.
Dotty:	Right. But the key word there is "update." When we hire a new employee, we initially collect that information with paper forms to comply with government regulations. Our staffing department would then enter the new employee profile.
Kira:	What all does that profile consist of?
Dotty:	All the data we have spoken of so far – name, job title, supervisor, etc. – plus emergency contact information and all the options for payroll deductions and United Way contributions.
Kira:	What kind of payroll deduction options are there?
Dotty:	United Way, parking, extra life insurance, and the pre-tax medical reimbursement plan.

Kira:	All of those are things are deducted from pay checks, right?
Dotty:	Right.
Kira:	Refresh my memory on the pre-tax medical reimbursement plan.
Dotty:	Employees can set aside money from their gross pay before taxes to go into a special fund for paying out-of-pocket medical expenses – things that the medical insurance doesn't pay.
Kira:	Does the system need to also track the medical payments that come out of that fund?
Dotty:	No, that's handled by the insurance company. It's like federal tax to us. We collect it and turn it over to the insurance company and don't have anything to do with it after that.
Kira:	How do the United Way contributions work?
Dotty:	Employees have several options. They can make a one-time contribution, a contribution of a fixed amount, or a contribution of a percentage of their gross pay. All the contributions come out of their paycheck.
Kira:	And employees can change their participation level at any time?
Dotty:	Right. That would be part of the update profile process that employees can do online. They can change their phone number, emergency contact info, and any optional payroll deduction. And don't forget that Mr. Mills wanted the system to provide some kind of report to allow managers to monitor the United Way participation of employees they directly supervise.
Kira:	What would that process look like?
Dotty:	After a user logs on, can the system automatically know if that user supervises anyone?
Kira:	Sure, we'll be keeping supervisor information.
Dotty:	Then the system can give supervisors that option. The report just needs to list all employees that the manager supervises and whether or not they participate. We don't care about the level of participation. We just want to get as many people as possible to participate at some level.
Kira:	OK. And if the user doesn't supervise anyone, we can even have the system hide or disable that option.
Dotty:	Great.
Kira:	I have a question. If an employee changes jobs or gets a promotion, is the employee responsible for updating the job title and supervisor information?
Dotty:	No. In fact, employees should not be able to change their own pay rates or job title or supervisor. That's what we call secure data. All promotions, job changes, and relocations have paperwork that go through HR. We already have someone in the staffing department enter those changes to the present system, so I think it would be best if that continued with the new system.
Kira:	What should that interaction look like?

Dotty:	In the present system, the user types in an employee ID or name. That looks up the employee profile. Then we just change any data that needs to be changed and submit it.
Kira:	We had talked about ad-hoc query and reporting functionality.
Dotty:	Right. Managers need to see more information than what will be in the employee directory. They need to see salary or wage information. They may need to see emergency contact information. They may need to see a list of all the employees located in a given building or all the rooms in a building that don't have employees in them.
Kira:	It sounds wide open. If the managers know the SQL database language, we could provide some read-only views and an SQL interface.
Dotty:	Well, I don't understand most of what you just said. I have heard of SQL, and I think that would be a good idea. I wouldn't know how to use it. But I think some of our managers could - or else have people on their staff they would trust to use it. But for us mortals, I'd like to also see a way to pull some general information with a lot of customization.
Kira:	Can you give me an example?
Dotty:	In a lot of cases, managers need to look something up on a single employee. They could see a list of employees, pick one, and then see the complete profile on that employee. The manager could then pick the kind of information they need to see – name/address, salary/wage, location, emergency contact, deduction options, etc. Let's call it an employee detail lookup. In other cases, managers need to see groups of employees that fit some criteria – job code, building, department, salary/wage range, home city or phone exchange, employment status, etc. It would be nice if the manager was given a place to enter any or all of that information and then the system would display a list of employees that match the criteria. Let's call that an employee group lookup. They could just print the list or maybe the system would also let them select any one employee on the list and it would drill down into the complete profile I was talking about for the employee lookup option.
Kira:	That would be great. It sounds like you've been thinking about this.
Dotty:	I have. I'm really excited about it.
Kira:	Would managers be able to lookup any employee or just those that they supervise?
Dotty:	All employees in HR need to access to all employee data. But we don't want managers to look up the salary of other managers. So for people other than HR, the system needs to limit access to employees that a manager directly or indirectly supervises.
Kira:	What do you mean by "indirectly?"
Dotty:	For instance, Mr. Mills is my direct supervisor, so he should be able to see my data. Mr. Mills reports to Mr. Turner, the president. So Mr. Turner indirectly supervises me and should also be able to see my data. In fact, Mr. Turner should be able to see anyone's data because he's at the top of the organization chart.

Kira:	I get it. But if HR people or high-level managers have access to all or many employees, I don't know if it would work for the employee detail lookup to view a list of employees and pick one. There would be too many employees in the list.
Dotty:	You're right. I suppose even the simple employee detail lookup should have a mandatory selection by department. Then they could view employees of any one department and drill down to view the employee profile on any one employee. The employee group lookup would display more selection options and then view a list of employees with the same option to drill down to view an employee profile.
Kira:	Would they then have an edit option.
Dotty:	I don't think so. I could get overruled on this, but I don't really want managers messing around with the data. We'll have employees update their own non-secure information and leave the rest of it to HR.
Kira:	OK. Well, I'll get back to work. I'm going to write up what we call use case narratives that describe the scenarios and interactions we've discussed. They aren't anything techie – just the steps of how users will interact with the system. You'll be getting them for review in a few days.
Dotty:	Great. I look forward to seeing them

