

Requirements Engineering: From Use Cases to Test Cases

Duration: 3 days

Overview

Requirements engineering is the emerging art of expressing business needs in terms that enable technology developers to deliver supporting information system solutions. As the complexity of technology rises, identifying valid needs of the business users becomes ever more challenging. To meet this challenge, you need a clearly defined and understood set of techniques that will lead the business and technology experts through the demanding process of developing technical solutions that support the business.

Approach

This interactive workshop presents ways of interviewing subject matter experts, recognizing business problems, extrapolating business needs, and documenting the business requirements for a technological solution in terms that both the subject matter experts and the information system professionals can understand. You will learn how to create use case diagrams, data flow diagrams, data models, and object models to present, discuss, and analyze various dimensions of the business environment.

Each technique is explained in non-technical language and demonstrated on a simple example. Working with others, you will try it out on a clearly defined case study. Your results are then evaluated, discussed and compared to the desired results. In extended workshops, you will apply the technique to situations from your real-life environment with instructor guidance.

Audience

The target audience includes project leaders, business analysts, systems analysts, managers and end-users who may not be information system experts but are interested in using information technology to create a competitive advantage.

Presenters

Our instructors have extensive experience in applying these techniques on projects with business experts from a wide variety of fields. Their ability to recognize communication gaps between business experts and information system experts uniquely qualifies them for presenting this material.

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Outline

IA Introduction to Business Analysis *Duration ~ 3 hours*

The process of figuring out how the business community can take advantage of information technology is evolving. For years, developers, system analysts and business analysts have struggled to find better and faster ways to gather, evaluate, and comprehend business requirements. Use cases, object models and a new language called the UML (Unified Modeling Language) promise to improve the way we do business analysis.

1. What is requirements engineering?
2. What are the dimensions of an information system?
3. How can you identify business needs and technical requirements?
4. How do you conduct an effective needs-assessment interview?

BA Identifying Business Problems and Needs *Duration ~ 3 hours*

Whether a project for new development or for maintenance, the start is an exciting and frustrating phase. At this point, you probably don't even know what you don't know about the project, and you have to get a handle on things quickly. Business analysis is all about finding the right questions to ask, asking the right people, and recognizing valid answers. If you could draw a picture of all of this, you would be well on your way to finding the right solutions.

1. Can you separate symptoms and solutions from "real" problems?
2. Who is impacted by the problem and who can affect it?
3. Where do you start?
4. What are objects and classes and why should you care?

BU Modeling the Business Perspective *Duration ~ 3 hours*

A use case diagram creates a business view of an information system. Process models help people understand how things work. Together, use case diagrams and process models show workflow and the impact of proposed changes. These diagrams can be modified and evaluated without affecting the real world. Used effectively, they reduce the probability of omitting critical aspects of your solution. To be effective, all involved parties have to understand what the models represent — and what they ignore.

1. Why do you need to model the business area?
2. What benefits do process and workflow models provide?
3. How do you create data flow diagrams?
4. What is the difference between use cases and use case diagrams?

AD Analyzing Business Data *Duration ~ 3 hours*

As a business analyst, you have to understand what role information plays in the end-users' universe. Information systems represent the real world. It can be challenging to recognize what impact changes in reality have on the technology. Creating an object or class model will help you recognize and track how the various kinds of relationships that exist in the business system are or will be represented in the information system.

1. When do you need to model what?
2. What diagrams are contained in the Unified Modeling Language (UML)?
3. How do you create class and object models that normal mortals can use?

4. What role do these static models play in requirements engineering?

Outline *(continued)*

RE Engineering Business System Requirements *Duration ~ 4 hours*

The purpose of a requirement is to communicate a business need to a technical expert. It has to enable the technical expert to recognize the technological impact. Missing or misunderstood requirements cost considerably more than programming or testing errors. Fortunately, the ability to define usable requirements is a learnable skill.

1. What does a business requirement really say?
2. What does a state diagram show you and when do you need one?
3. How do you create activity, state, and sequence diagrams?
4. How can you translate the business requirement into technical specifications?

RT Testing Based on Business Risks *Duration ~ 2 hours*

Testing is your primary weapon in the war against errors. It does not require knowledge of the technology. You need to enter data and recognize the difference between a good response and a bad one. The testing phase has to start during the requirements gathering phase of the project. If you don't know how you will test a requirement when the system is delivered, you need to know more about the requirement.

1. What are test cases, test scripts and test plans?
2. How do you create a Use Case Diagram?
3. Where do test cases come from?
4. What is test data engineering?
5. How will you know when you have tested enough?

OE The Rest of the Story *Duration ~ .5 hours*

Ultimately, the success of training lies not in the seminar itself but in the effect it has on your life. Given the time pressures of business life in the 21st century, you need to find new and creative ways of incorporating the presented techniques into your day-to-day work. To understand the importance of doing that, it might help to see the whole picture and review what was presented.

1. What are other standard diagrams of the UML?
2. Where do we go from here?

Appendix

- A. Case Study
- B. Index
- C. Bibliography
- D. Name Tent & Evaluation
- E. Other seminars offered by Hathaway & Associates, Inc.

Objectives

Attend this section:

To be able to:

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| IA Introduction to Business Analysis | <ul style="list-style-type: none">➤ Define the evolving role of today's business analyst➤ Recognize 7 major dimensions of information systems➤ Organize questions, issues and assumptions efficiently➤ Differentiate between structured and object-oriented analysis |
| BA Identifying Business Problems and Needs | <ul style="list-style-type: none">➤ Write clear, easy-to-understand problem statements➤ Model the business system components➤ Use 10 critical system questions to identify business problems➤ Use business problems to determine the scope of a project |
| BU Modeling the Business Perspective | <ul style="list-style-type: none">➤ Create process models for current or proposed technology➤ Present business processes in workflow diagrams➤ Analyze work flow from process and impact perspectives➤ Document and diagram business use cases |
| AD Analyzing Business Data | <ul style="list-style-type: none">➤ Recognize how a data model impacts business decisions➤ Create entity/relationship, class, and object diagrams➤ Understand the role of data in workflow problems➤ Capture implicit and explicit services that objects provide |
| RE Engineering Business System Requirements | <ul style="list-style-type: none">➤ Analyze UML diagrams to identify business needs➤ Model clear, understandable, verifiable business requirements➤ Prioritize requirements based on business needs➤ Translate business requirements into technical specifications |
| RT Testing Based on Business Risks | <ul style="list-style-type: none">➤ Expose business risk associated with change➤ Define test cases from business requirements and use cases➤ Identify perfect world, alternate and exception paths➤ Engineer test data using equivalence groups |
| OE The Rest of the Story | <ul style="list-style-type: none">➤ Discuss additional diagrams of the UML➤ Evaluate the topics presented and create a personal action list |