

TOTAL SYSTEMS EDUCATION, LTD.

TSE021

CREATING FUNCTIONAL SPECIFICATIONS WORKSHOP

(For Outsourced and In-house Systems)



Course Overview

This workshop is intended for anyone involved in developing detailed Functional Specifications for business solutions, including Business Analysts, Users, Liaisons, Software Developers and Managers (technical and non technical). It is also for all business personnel who will interact with technical development personnel. ***It bridges the very real communications gap between the business and technology.***

The course provides an introduction to analysis methods used in making the necessary transition from *Business Requirements* to *Functional Specifications*, including Use Cases, Object-Oriented and Structured Analysis concepts, and how best to use methods to facilitate communication among Customers, Programmers, Analysts, Data Base, Liaisons, and Project Managers. By speaking the same language, all become true assets of the Development Team. ***A mix of technical and non-technical personnel in class is encouraged.***

Upon completion of the program, participants involved with PMI[®], The Project Management Institute's Project Management Professional – PMP program, are awarded 14 PDUs or 14 "Contact hours". Our Global R.E.P. number is 1270.

Upon completion of this course, attendees will understand:

- ◆ The purpose and contents of *Functional Specifications* Documents and how they are used in off-shore and in-house development projects.
- ◆ How to transition from the Business Case and Business Requirements to the detailed Functional Specifications.
- ◆ The current software development processes, and how they use Functional Specifications.
- ◆ The different types of requirements, including: Use Cases for describing how users will interact with a system and Supplementary Requirements covering security, performance, reliability and other needs of the business.
- ◆ The basic concepts of Object-Oriented and Structured Analysis Methodologies and the advantages and disadvantages of each
- ◆ The need for Business Domain Models and what they should include, i.e. Class and Object models, and the Project Glossary.
- ◆ The purpose and relevant components of UML, the industry standard Unified Modeling Language.
- ◆ How to package the component models into a complete Functional Specifications Document.

The course takes two days, and is a true workshop: attendees develop, present and critique key Functional Specification components. Issues surrounding in-house and outsourced development methods are discussed in detail. Both Object-Oriented and Structured Analysis methods are employed in the class. Depending on the needs of the organization, the course can be customized to place particular emphasis on either method. It can also be updated to include in-house standards and guidelines.



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Course Outline

I. Introduction: What are Functional Specifications and How are they Used?

- A. Systems
 - 1. Requirements / Specifications
 - 2. Functional Specifications Document
- B. The Software Development Process
 - 1. Software Development Activities
 - a. Planning and Organizing
 - b. Business Problem Definition
 - c. Business Problem Definition
 - d. Analysis
 - e. Design
 - f. Construction
 - g. Testing and Verification
 - h. Implementation
 - i. Project Management
 - 2. Planning and Organizing Development Activities
 - a. Sequential Project Plan (Waterfall)
 - b. Iterative Project Plan (Spiral)
 - c. Maintenance
- C. The Impact of Out-sourced, aka Off-shore Development

II. Functional Analysis

- A. Prerequisites
 - 1. Business Case
 - 2. Business Requirements
- B. Deliverables
 - 1. Project Plan
 - 2. Functional Specifications
- C. Stakeholders
 - 1. Identifying Stakeholders
 - 2. Stakeholder Responsibilities
- D. Functional Specifications
 - 1. Who Uses Functional Specifications?
 - 2. Functional Specifications In The Development Activities
 - 3. Who Should Develop Functional Specifications?
 - 4. Functional Specifications: Contents
 - 5. Functional Specifications: Outline



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Course Outline: Continued

III. Functional Analysis (Continued)

- E. Analysis Activities
 - 1. Data Gathering Methods
 - a. Interviews
 - b. Workshops
 - c. Other Data Gathering Methods
 - 2. Model Building and Refinement

IV. The Use Case Model

- A. Use Cases
 - 1. Types of Use Case
 - 2. System Use Case
 - 3. UML
 - 4. Business Use Cases
 - 5. Benefits of Use Cases
- B. Use Case Model
- C. Components of a Use Case
 - 1. Name and Short Description
 - 2. Actors
 - 3. Identifying Actors
 - 4. Kinds of Actor
 - 5. Pre-conditions
 - 6. Post-conditions
 - 7. Narrative
 - a. Formatting Sequences
 - b. Formats for Alternatives
 - c. Embedding Alternatives
 - d. Embedding Repeating Sequences
 - e. Alternative Paths
 - f. Flows
 - g. The Basic Flow
 - h. Alternate Flows
 - i. Identifying Alternate Flows
 - 8. Interface Details
 - 9. Storyboard
 - 10. Special Requirements
 - 11. Handling Scheduled Actions
 - 12. Guidelines for Success



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- C. Components of a Use Case (Continued)
 - 13. Relations Between Use Cases
 - a. Include Relationships
 - b. Extensions
- D. Supplementary Requirements
 - 1. Performance
 - 2. Reliability
 - 3. Security
 - 4. Constraints

V. Analysis Methods

- A. Object-Oriented vs. Structured Analysis
- B. Structured Analysis
 - 1. Data Flow Diagrams
 - a. Context Diagram
 - b. DFD Symbols
 - c. Level 1 DFD
 - d. Lower Level DFD's
 - 2. Data Models
 - a. Data Dictionary
 - b. Entity-Relationship Diagrams
 - i. Entities
 - ii. Relations
 - iii. Cardinality
 - 3. Structured Design
 - a. Structure Charts
 - b. Physical Data Models
- C. Object-Oriented Analysis
 - 1. Definition
 - 2. Benefits
 - 3. Basic Concepts
 - a. Objects
 - b. Classes
 - c. Encapsulation
 - d. Attributes
 - e. Methods
 - f. Messages
 - 4. UML Class Diagrams



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Course Outline: Continued

VI. Analyzing the Business Domain

- A. The Business Domain: Overview
- B. The Project Glossary
- C. Glossary Example
- D. The Domain Class Model
 - 1. Purpose of the Domain Model
 - 2. The Business Domain Class Model
 - a. Identifying Domain Classes
 - b. Identifying Classes
 - 3. Reports and documents:
 - 4. How to create a Domain Model

VII. Packaging the Functional Specifications Document

- A. Key Sections
- B. Level of Detail
- C. Tools Options
- D. The Audience
 - 1. In-house IT
 - 2. Outsourced Developers

VIII. Review and Conclusion

- A. Review Major Topics
- B. Roles in Outsourced and In-house Development Projects
- C. Planning your future on the Project Team
- D. Participants Critique the Class

