TOTAL SYSTEMS EDUCATION, LTD.

TSE021 CREATING FUNCTIONAL SPECIFICATIONS WORKSHOP

(For Outsourced and In-house Systems)

Registered Education Provider Project Management Institute

IIBA™ Endorsed Education Provider

Course Overview

This workshop is intended for anyone involved in developing 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. The workshop also teaches how to best use these 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.***

The workshop follows, reinforces and is endorsed by the IIBA® for compliance with the BABOK® (Business Analysis Body of Knowledge). Our EEP number is E112. It is also certified by PMI® (Project Management Institute) for related Knowledge Areas. Upon completion of program, attendees involved with PMI's Project Management Professional – PMP program, are awarded 14 PDUs or "Contact hours". Our R.E.P. code is 1270.

Upon completion of this course, attendees will:

- Understand the purpose and contents of *Functional Specifications* Documents, where they fit in software development processes, and how they are used in off-shore and in-house development projects.
- Transition the project from Business Case and Business Requirements to the detailed Functional Specifications.
- Create different types of requirements, employing Use Cases for describing how users will interact with a system, and Supplementary Requirements covering security, performance, reliability and other needs of the business.
- Understand the basic concepts of Object-Oriented and Structured Analysis methods and how they are is used in developing Functional Specifications.
- Build and understand the need for Business Models including Class and Object models, and the Project Glossary.
- Understand the purpose and relevant components of UML, the industry standard Unified Modeling Language.
- Use and understand the role of data gathering and elicitation techniques in learning about the business and gaining agreement from stakeholders.
- Package the component models into a Functional Specifications Document.

During this two day workshop attendees develop, present and critique key Functional Specification components. Issues surrounding in-house and outsourced development methods are discussed in detail. Depending on the needs of in-house organizations, the course can be customized to place emphasis on in-house tools, standards and guidelines.

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Course Outline

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

A. The Purpose of Developing Functional Specifications
   1. Systems
   2. Specifications
   3. The Functional Specifications Document

B. The Software Development Process
   1. Software Development Activities
   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

D. From the Business Case to Functional Specifications
   1. Business Case
   2. Business Requirements
   3. Functional Specifications
      a. Who Uses Functional Specifications?
      b. Who Should Develop Functional Specifications?
      c. Functional Specifications: Contents
      d. Functional Specifications: Outline

E. Analysis Activities
   1. Data Gathering
   2. Developing and Using Models
   3. Prototyping

F. Industry Standards and Certifications
   1. PMI – PMBOK
   2. IIBA - BABOK

II. The Use Case Model

A. Use Cases
   1. Definition
   2. Example
   3. Benefits of Use Cases

B. Types of Use Case

C. UML

D. Context Diagrams

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Course Outline: Continued

II. The Use Case Model (Continued)

E. 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 Narratives
      b. How Much Detail to Include
   8. Special and Supplementary Requirements

F. Guidelines for Success

G. Limitations of Use Cases

III. The Business Model

A. Modeling the Business Domain
   1. The Need for a Business Model
   2. Components of a Business Model

B. The Project Glossary
   1. Why a Glossary is Needed
   2. Organizing and Formatting a Glossary

C. The Business Class Model
   1. Purpose
   2. Contents

D. Object-Oriented Analysis
   1. Definition
   2. Benefits
   3. Basic Concepts
      a. Objects
      b. Classes
      c. Responsibilities
      d. Attributes
      e. Associations
      f. Methods
      g. Messages
      h. Inheritance
   4. UML Class Diagrams

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Course Outline: Continued

III. The Business Model

E. Creating a Business Class Model
   1. Identifying Business Classes
      a. Using Workshops
      b. Working with Patterns
      c. The CRC Cards Technique
         (Running a CRC Cards Workshop)
      d. Identifying Classes

F. Analysis and Design

IV. 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

V. Appendix: Structured 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

VI. 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