Chapter 3: The WebE Process

The process must be agile and adaptable, but it must also be incremental.

Why incremental?
- Requirements evolve over time
- Changes will occur frequently (and always at inconvenient times)
- Time lines are short

Incremental delivery allows you to manage this change!

Incremental Delivery

Repeat the development cycle for each increment!

WebE Process Activities & Actions

Conducting Framework Activities-I

- The first iteration
  - define business context
  - establish overall requirements
  - create a set of usage scenarios
  - negotiate conflicting needs among stakeholders, and
  - from this information derive the set of WebApp increments that is to be delivered.

  Develop a broad outline of all components, recognizing that it will change.

Conducting Framework Activities-II

- The second iteration
  - You've learned that the first increment is an informational WebApp and it must be delivered in one week!
  - You meet with stakeholders and later review your notes:
    - Logo and graphics need aesthetic design
    - One- or two-paragraph introduction
    - CPI mission statement (file exists)
    - A word to visitors (someone will write this tomorrow)
    - Basic navigation bar and sub links
    - About the company
    - Our offerings
      - Home security products (hierarchically at next level)
      - Monitoring services (a list)
    - Our Technology (the new sensor)
    - Contact us
    - Other issues:
      - Informational content will change over time.
      - This "home page" will be the navigation starting point for content and functions required for subsequent increments.
Conducting Framework Activities-III

The second iteration

- You spend a few minutes developing a plan:
  - Day 1: Create a prototype (also called a mockup) of the WebApp.
  - Collect and review all existing CPI content and graphics.
  - Get stakeholder feedback on prototype, if possible.
  - Day 2: Using the prototype as a guide, begin construction of the increment.
  - Build navigation bar.
  - Lay out content areas.
  - Enhance graphics, links, etc.
  - Test all links for validity.
  - Review all content for completeness and correctness.
  - Day 3: FTP all files to the existing domain.
  - Perform navigational tests.
  - Deployment: Inform selected stakeholders that the increment is available.

- Day 4: Poll stakeholders for feedback.
- Make modifications based on stakeholder feedback.

Conducting Framework Activities-IV

The next iteration

- You've deployed the informational WebApp.
- The communication activity during this second iteration will identify the requirements (including content and functionality).
  - Assume that the second increment delivers the capability to select and download product specifications and related information.
  - The process flow is restarted at the beginning, performing the communication activity for this increment.
- The tasks you select to populate each framework activity for the increment may differ from the tasks performed for the preceding increment, but the overall process flow remains the same.

Revisiting the Framework Activities

WebE team must refine and adapt these generic tasks to the problem at hand.

Continue to refine them throughout the project.

Communication Activities

- Identify business stakeholders.
- Identify user categories.
- Formulate the business context.
- Define key business goals and objectives.
- Identify the problem.
- Define informational and task goals.
- Gather requirements.
- Develop usage scenarios.

Planning Activities (for the Increment)

- Refine the description and estimation of the increment.
- Examine the adequacy of the description.
- Estimate time and effort required.
- Assess risks.
- Define the development schedule.
- Establish the work product to be produced.
- Define change management steps.
- Define quality assurance steps.

Modeling Activities (for Analysis)

- Decide whether a requirements model is needed.
- Create a representation of WebApp content.
- Identify content relationships.
- Refine and extend user scenarios.
- Review usage scenarios.
- Create an interaction model for complex scenarios.
- Refine interface requirements.
- Identify functions the system will perform.
- Define constraints and performance requirements.
- Identify database requirements.
**Design Models**

- Interface
  - Screen layout, interaction modes
- Aesthetic design
  - Look and feel
- Content
  - Layout, structure, and relationships of CONTENT
- Navigation
  - Navigation paths through the content
- Architecture
  - Hypermedia structure
- Component

**Modeling Activities (for Design)**

- Design the interface
- Design the aesthetics
- Design the navigation scheme
- Design the application architecture
- Design the content and related support structures
- Design functional components
- Select appropriate design patterns
- Design privacy and security mechanisms
- Review design

**Construction Activities**

- Obtain content and integrate into the architecture
- Identify development tools
- Implement page layout, function, form and navigation
- Implement processing functions
  - form processing, scripts, etc
- Address configuration issues
  - What configurations will be supported?
  - What plug-ins are necessary?

**Testing Activities**

- Test components in context of user tasks
- Test navigation
- Test usability
- Test security and performance
- Test on different configurations

**Deployment Activities**

- Push increment to the server
- Establish feedback mechanism for users
- Evaluate user interaction
- Assess user feedback
- Modify increment as required

**Umbrella Activities**

- Background activities which occur in parallel with the main development activities
- Equally important to the success of a project
  - And should be considered explicitly.
- Many umbrella activities can be defined
  - But only four are crucial for a successful Web engineering project.
Umbrella Activities

- **Change management.** Manages the effects of change as each increment is engineered, integrating tools that assist in the management of all WebApp content.
- **Quality assurance.** Defines and conducts those tasks that help ensure that each work product and the deployed increment exhibits quality.
- **Risk management.** Considers project and technical risks as an increment is engineered.
- **Project management.** Tracks and monitors progress as an increment is engineered.