

# Lecture 3 Notes

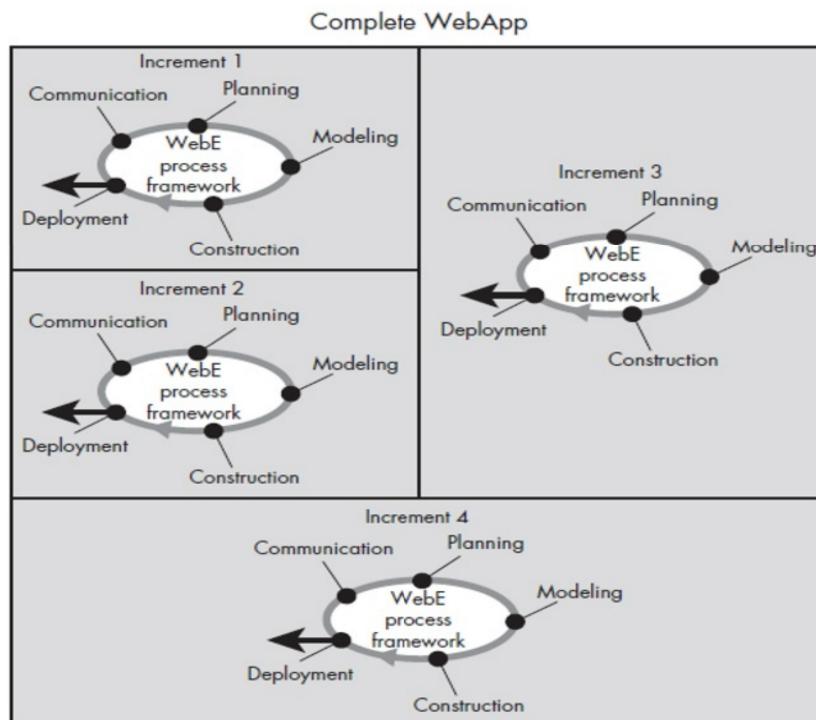
## Web Engineering Process

### The WebE Process

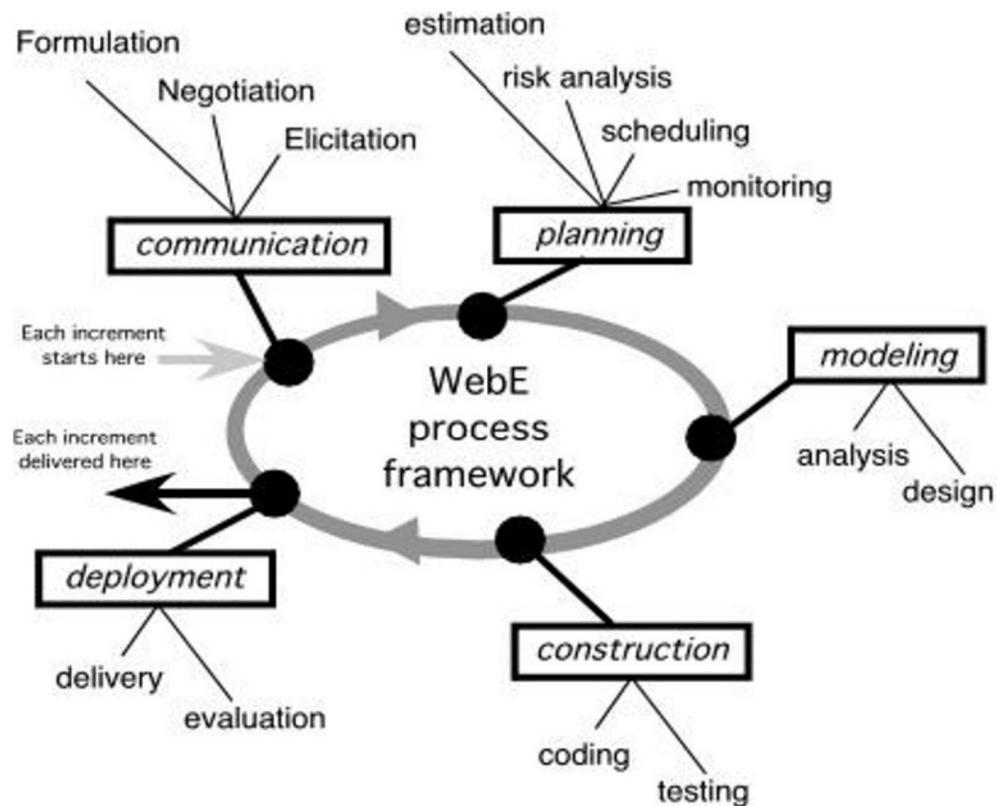
- The process must be agile and *adaptable*, but it must also be *incremental*
- Why **adaptable**? The generic WebE process framework must be adapted to the specific characteristics of the problem, the project, and the people who will specify the need and do the work.
- Why **incremental**?
  - Requirements evolve over time
  - Changes will occur frequently (and always at inconvenient times)
  - Timelines are short
  - Incremental delivery allows you to manage this change!

### Incremental Delivery

The following figure for a WebApp delivered in four increments. **Repeat** the development cycle for each increment!



## WebE Process Activities & Actions



### ■ Communication is characterized by three WebE actions:

- **Formulation** defines the business and organizational context for WebApp (stakeholders, predicting potential changes, integration between WebApp and other business applications, databases, and functions)
- **Elicitation** includes requirements-gathering, WebApp problem description, Identifying areas of uncertainty and potential changes.
- **Negotiation** reconciles differences between various stakeholders for the project.

### ■ Planning identifies overall number of WebApp increments and a brief project plan for the next WebApp increment.

- Increment resources are estimated
- Risks are considered.
- Tasks are selected and scheduled (usually measured in weeks)
- Project tracking and monitoring commence.

- **Modeling:** develop agile analysis and design models that define requirements and represent a WebApp.
- **Construction:** WebE tools and technology are applied to construct the modeled WebApp. Then, rapid tests are conducted.
- **Deployment:** The WebApp is configured for its operational environment, then delivered to end users. Evaluation feedback is presented to the WebE team, and the increment is modified as required.

## Conducting Framework Activities by Example

### ■ 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

### ■ 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.

Company mission statement (file exists)

A word to visitors (someone will write this tomorrow)

  - Basic navigation bar will look like ...

About the Ncompany

Our offerings

Home security products (hierarchical 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.
- You spend a few minutes developing a plan
  - **Day 1:** Create a prototype layout (a model) of the WebApp.
    - Collect and review all existing Ncompany 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.
    - Layout content areas.
    - Integrate graphics, links, etc.
    - Test all links for validity.
    - Review all content for completeness and correctness.
  - **Day 3:** FTP all files to (an existing) domain.
    - Perform navigation tests.
    - Deployment: Inform selected stakeholders that the increment is available.
  - **Day 4:** Poll stakeholders for feedback.
    - Make modifications based on stakeholder feedback.

### ■ **The next (Third) iteration**

- It is after you’ve deployed the informational WebApp
- The communication activity during this 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.
- Recognize that a WebE team must refine and adapt these generic tasks to the problem at hand and continue to refine them throughout the project

## **Umbrella Activities**

- Background activities which occur in parallel with the main development activities
- Equally important to the success of a project
  - And so should be considered explicitly.
- Many umbrella activities can be defined but only four are crucial for a successful Web engineering project:
  - **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 exhibit quality.
  - **Risk management:** Considers project and technical risks as an increment is engineered.
  - **Project management:** Tracks and monitors progress as an increment is engineered.