

A WEB ENGINEERING PROCESS

Chapter 3

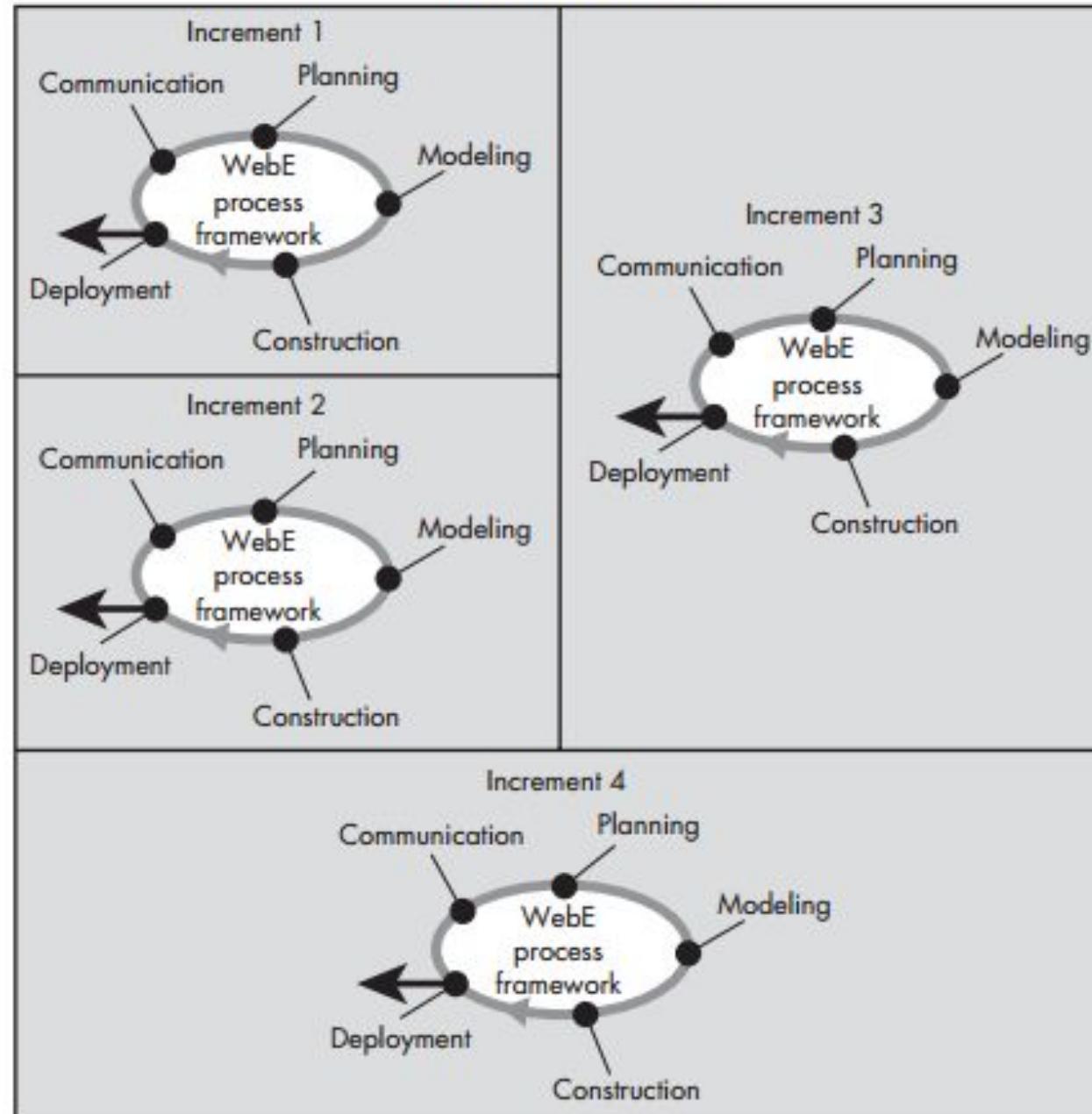
Realities encountered in most WebApp projects

- Requirements evolve over time
- Changes will occur frequently
- Time lines are short

Because of these realities, WebApps are often delivered incrementally

Complete WebApp

Example: A
WebApp
delivered in
four increments



News Site Delivered in 4 increments

Increment 1:

- **Basic news articles:** A feature that displays a list of recent news articles from a variety of sources, organized by category (e.g. national, international, business, sports, etc.).
- **Search functionality:** A feature that allows users to search for specific news articles or topics.
- **Social media integration:** A feature that allows users to share news articles on social media platforms.

Increment 2:

- **User accounts:** A feature that allows users to create an account and save their preferred news sources and topics.
- **Article commenting:** A feature that allows users to leave comments on news articles and engage in discussions with other users.
- **News alerts:** A feature that sends notifications to users about important breaking news stories as they happen.

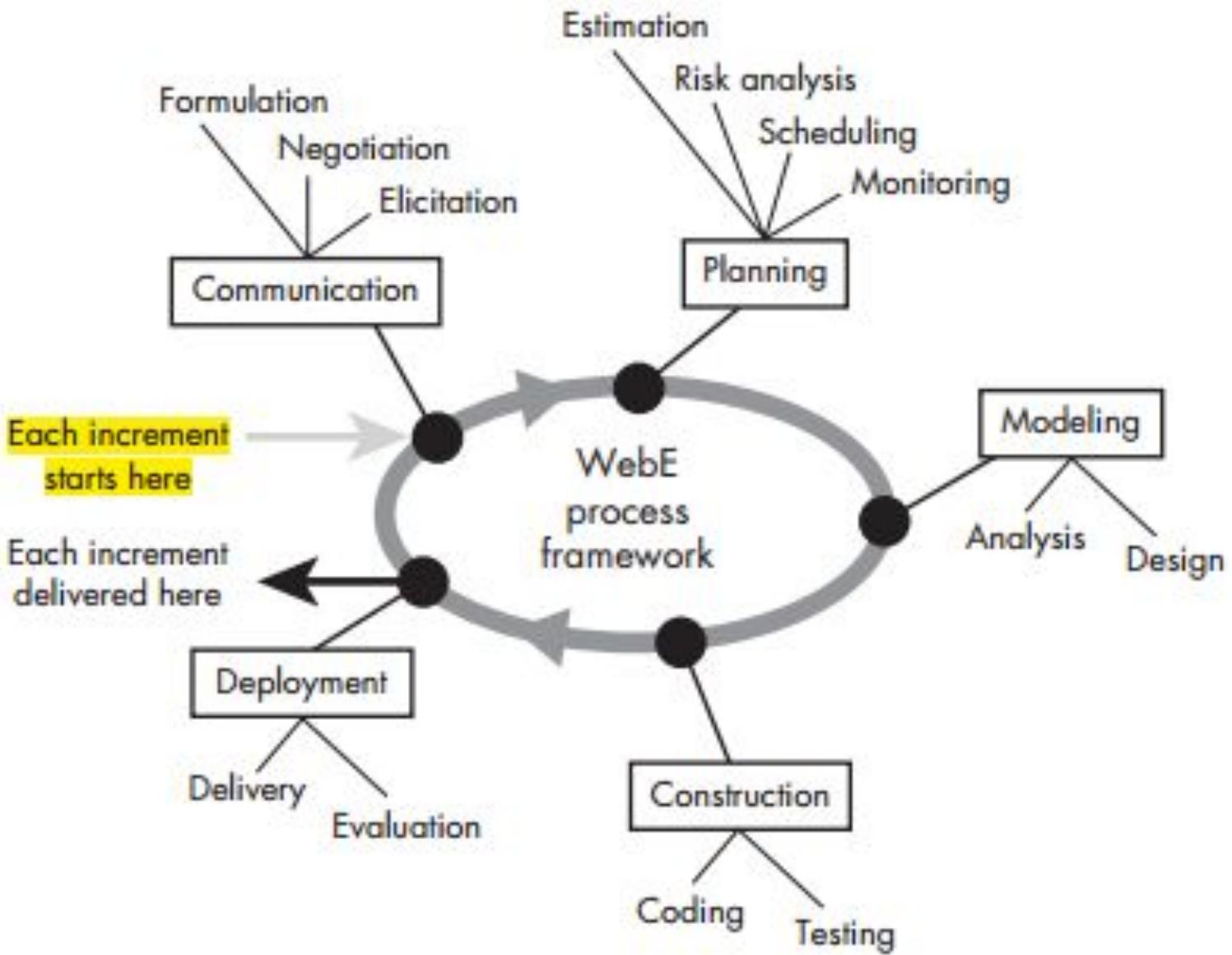
□ Increment 3:

- **Multilingual support:** A feature that enables users to read news in multiple languages.
- **Audio news:** A feature that allows users to listen to news articles rather than reading them, making it more convenient for users who are on-the-go or have visual impairments.
- **User-generated content:** A feature that allows users to submit their own news articles or photos for consideration for publication on the site.

□ Increment 4:

- **Personalized news feed:** A feature that allows users to customize their news feed by selecting their preferred topics and sources.
- **News archive:** A feature that allows users to access historical news articles from the past.
- **Video news:** A feature that allows users to watch videos of news events and interviews with experts.

Process Flow with WebE Actions



Incremental Process Flow

- Page -27

How Is the Framework Refined?

- In some cases, a framework activity is conducted informally.
- In others, a distinct set of actions will be defined and conducted by team members.
- Complex action may be further refined into a set of Web engineering tasks
- Example: design
 - aesthetic design
 - content design
 - architecture design
 - navigation design and
 - component design

How Should the Communication Activity Be Refined?

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



User Case Scenario: Reading a Specific News Article on a News Website

1. The user opens a web browser on their computer or mobile device and navigates to the news website.
2. The user is presented with a homepage displaying the latest news articles in various categories, such as national, international, business, and entertainment.
3. The user can use the navigation menu or the search bar to find specific sections or topics of interest.
4. The user selects a specific news article from the list of results or from the homepage.
5. The user is taken to the article page, where they can read the full article, including text, images, and videos.
6. The user can also interact with the article by leaving comments, sharing on social media, or saving for later reading.
7. The user can also view related articles or read articles on similar topics.
8. Once the user has finished reading the article, they can return to the homepage or continue browsing the website.
9. The user can also log out of their account or close the web browser once they are finished.

Planning : Tasks Required to Develop an Increment planning

- communication activity provides you with a destination
- Planning activity defines the route that you will take you toward the destination
- Often defines the way points that will ensure that you're heading in the right direction and making step-by-step progress
- Also defines the resources that will be required to achieve each way point and estimates the time that will be required to get there

Planning: tasks and related questions

- Refinement of the description of the WebApp increment to be delivered
- Selection of the WebApp increment to be delivered now
- Estimation of the effort and time required to deploy the increment.
- Assessment of risks associated with the delivery of the increment
- Define the development schedule for the increment
- Establish of **work products** to be produced as a consequence of each framework activity
- Define your approach to change control
- Establish your quality assurance approach

Modeling

- **What Is Modeling?**
 - Modeling is an activity that creates one or more **conceptual representations** of some aspect of the WebApp to be built.
 - **conceptual representations**
 - written documents,
 - sketches,
 - schematic diagrams,
 - graphical models,
 - written scenarios,
 - paper prototypes,
 - executable code
-
- The diagram consists of three main components: 1) A central orange rounded rectangle containing the text "Modeling Actions". 2) A large light pink arrow pointing to the right, containing the text "Analysis" and "Design". 3) A small black arrow pointing from the bottom of the central box towards the pink arrow.

What Analysis Modelling Tasks

- Decide whether a requirements model is needed.
- Represent 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.
- Define constraints and performance requirements.
- Identify database requirements.

What Are the Elements of a Design Model

- Interface design
- Aesthetic design
- Content design
- Navigation design
- Architecture design
- Component design