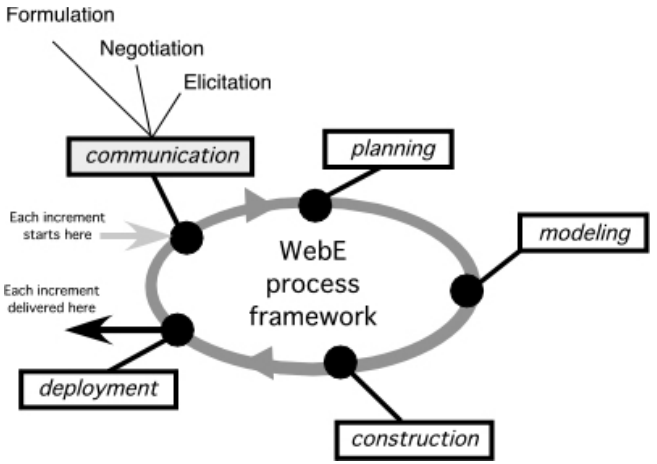
Chapter 4: *Communication*

- *Understand the problem before you begin to solve it, and be sure that the solution you conceive is one that people really want*
- To do this, you'll need to:
  - *Formulate*
  - *Elicitate*
  - *Negotiate*



Formulation

- Focuses on defining the project needs and scope
  - begins with the identification of a business need
  - moves into a description of WebApp objectives
  - defines major WebApp features, and
  - establishes a basis for the elicitation action that follows.
  - allows stakeholders and the WebE team to establish a common set of goals and objectives for the creation of each WebApp increment
  - identifies the scope of the development effort and provides a means for determining a successful outcome

What Questions Do We Ask?

- What is the *main motivation* (business need) for the WebApp?
- What are the *objectives* that the WebApp must fulfill?
- *Who will use* the WebApp?
- **Note:**
  - Every stakeholder has a *different view* of the WebApp, achieves different benefits when the WebApp is successfully deployed, and is open to *different risks* if the development effort should fail.
  - As information from multiple viewpoints is collected, *emerging requirements may be inconsistent or may conflict with one another*.
  - Your job during formulation and elicitation is to *categorize all stakeholder information* (including inconsistent and conflicting requirements) in a way that will set the stage for the last WebE action, *negotiation*.

Elicitation

- The intent is to *gather detailed requirement collaboratively* with all stakeholders
- To do this:
  - A meeting (either physical or virtual) is conducted and attended by all stakeholders.
  - Rules for preparation and participation are established.
  - An agenda is suggested that is formal enough to cover all important points but informal enough to encourage the free flow of ideas.
  - A facilitator (can be a customer, a Web engineer, or an outsider) controls the meeting.
  - A definition mechanism (can be work sheets, flip charts, or wall stickers or an electronic bulletin board, chat room, or virtual forum) is used.

Elicitation Tasks

- Define user categories, and develop descriptions for each category.
- Define content and functionality using the lists each person prepared.
- Consider specific constraints and performance issues.
- Write user scenarios for each user class.

User Descriptions

- What is the user's overall objective when using the WebApp?
- What is the user's background and sophistication level relative to the content and functionality of the WebApp?
- How will the user arrive at the WebApp?
- What generic WebApp characteristics does the user like and dislike?

Content and Functionality

- Each stakeholder has begun this work by preparing lists *of content objects and WebApp functions.*
- Once the meeting begins these lists can be:
  - displayed on large sheets of paper pinned to the walls of the room
  - displayed on adhesive-backed sheets stuck to the walls, or
  - written on a whiteboard.
  - posted on an electronic bulletin board, at an internal website, or posted in a chat room environment for review prior to the meeting.
- *Ideally*, each listed entry should be capable of being manipulated separately so that lists can be combined, entries can be deleted, and additions can be made. At this stage*, critique and debate are strictly prohibited.*

Constraints and Performance

- *Internal constraints* are best understood by thinking about the technical environment in which the WebApp will reside and the project environment in which the WebApp will be built.
  - *technical environment*—specialized database protocols, the vagaries of different Web browsers, operating system characteristics, and client-server issues
  - *project environment*—available WebE tools, development hardware, software standards, and staff skill levels with various WebE technologies.
- *External constraints* can be enumerated by considering the business and usage environment for the WebApp.
  - Business rules, end-user idiosyncrasies, security demands, privacy issues, run-time performance, interoperability requirements, legal restrictions, and government regulations are but a few of possible external constraints

Capturing Interaction: Use Cases

- Use cases describe how a specific user category (called an *actor*) will interact with the WebApp to accomplish a specific action.
- Use cases are developed iteratively. *Only those use cases necessary for the increment to be built are developed during the communication activity for the increment.*
- Use cases enable you to:
    - provide the detail necessary for effective planning and modeling activities.
    - help you to understand how users perceive their interaction with the WebApp.
    - help to compartmentalize Web engineering work because they can be organized into WebApp increments.
    - provide important guidance for those who must test the WebApp.

From Use Cases to Increments

- A stack of "cards" that contains one usage scenario or use case per card may be employed:
  - Each card contains the name of the use case, a brief description, and an *effort indicator*—usually a number between 1 and 4
- The cards are:
  - shuffled into random order
  - distributed to selected stakeholders who are asked to arrange the cards into groupings that reflect how they would like content and functionality (implied by the usage scenarios) to be delivered
- The manner in which cards are grouped is constrained by an *effort maximum M*.
  - No grouping of cards can have a cumulative effort indicator value that is greater than *M*, where *M* is defined by the WebE team and is a function of available resources and the desired delivery time for each increment.

Negotiation

- Ideally, requirements are defined in sufficient detail to proceed
- BUT, in reality, requirements are often contradictory or infeasible (within the context of real-world constraints, such as cost or time).
- Negotiation involves working with the stakeholders to balance functionality, performance, and other product or system characteristics against cost and delivery time.
- The best negotiators strive for a win-win result.
  - it's a good idea to determine each of the stakeholders' "win conditions".

Negotiation

- *Recognize that it's not a competition.* To be successful, both parties have to feel they've won or achieved something. Both will have to compromise.
- *Map out a strategy.* Decide what you'd like to achieve, what the other party wants to achieve, and how you'll go about making both happen.
- *Listen actively.* Don't work on formulating your response while the other party is talking. Listen. It's likely you'll gain knowledge that will help you to better negotiate your position.
- *Focus on the other party's interests.* Don't take hard positions if you want to avoid conflict.
- *Don't let it get personal.* Focus on the problem that needs to be solved.
- *Be creative.* Don't be afraid to think outside of the box if you're at an impasse.
- *Be ready to commit.* Once an agreement has been reached, don't waffle; commit to it and move on.