Communication

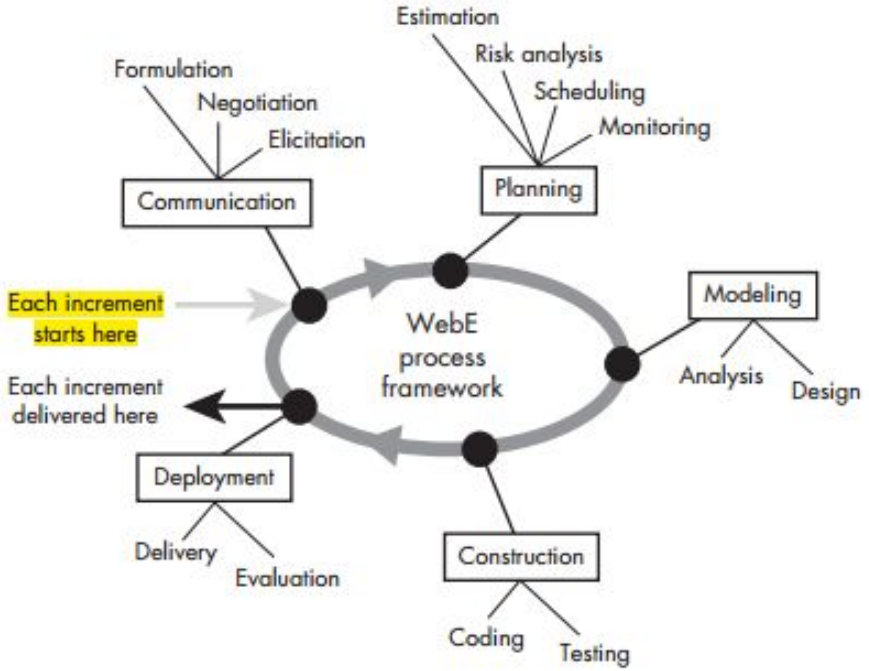
Chapter 4

Communication

- provides the WebE team with an organized way of eliciting requirements from stakeholders.
- serves as the entry point for the process flow

Tasks:

1. ask and answer a set of fundamental questions about the WebApp and its business context (**formulation**)
2. **elicit** requirements that will serve as the basis for all activities that follow, and
3. **negotiate** needs against the realities of time, resources, and technology.



What Techniques Can You Use for Communication?

- Traditional focus group
- Electronic focus group
- Iterative surveys
- Exploratory survey
- Scenario building

Viewpoints differences of stakeholders

- business managers
  - feature set that will result in sales growth and improved revenue for the company
- marketing group
  - features that will excite the potential market, leading to new customers and increased sales
- product manager
  - a WebApp that can be built within budget and that will be ready to meet defined market windows
- End users
  - Features that are already familiar to them and that are easy to learn and use
- Web engineers
  - functions that are invisible to nontechnical stakeholders but that enable the infrastructure that supports more marketable features
- Support engineers
  - the maintainability and extensibility of the WebApp

What Questions Should We Ask?

- 1. What is the main motivation (business need) for the WebApp?
- 2. What are the objectives that the WebApp must fulfill?
- 3. Who will use the WebApp?

- See -> page 50 for example

Elicitation

- is a requirements-gathering activity involving all stakeholders.
- The intent is to describe the problem that the WebApp is to solve (along with basic requirements for the WebApp)
- In addition, an attempt is made to identify areas of uncertainty and where potential changes will occur.

basic guidelines for collaborative requirements gathering

- A meeting 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, wall stickers, an electronic bulletin board, chat room, or virtual forum) is used

What Happens Before an Elicitation Session?

- write a one-page **WebApp description** that will serve as the basis for requirements gathering.
- A meeting place, time, and date are selected, and a meeting facilitator is chosen.
- All stakeholders are invited to attend.
- The WebApp description is distributed to all stakeholders at least 24 hours before the meeting time.

SafeHomeAssured.com will allow CPI Corporation to market and sell security products and monitoring services directly to consumers, thereby eliminating middleman costs and improving our profit margins. To accomplish this goal, the WebApp will incorporate both content and functions that implement the following product-related features:

- End users can examine the *SafeHome* product line and request product specs.
- Users can configure a security system by representing the layout of a "space" (i.e., house, office/retail space) and then initiating functions within **SafeHomeAssured.com** to make customized recommendations about security and monitoring products that can be used within the space.
- Users can request an instant quote for product and/or system pricing.
- Users can place an order for sensors, controllers, audio, and video hardware and related infrastructure.

The WebApp will incorporate both content and functions that implement the following monitoring-related features:

- Users can sign up for monitoring services, order installation of a *SafeHome* system, and coordinate all other setup activities that will lead to a purchase of security products, their installation, and the execution of a monitoring contract with CPI.
- Contract customers can control security and monitoring equipment (e.g., cameras, microphones) within their space and use the **SafeHomeAssured.com** WebApp to acquire the output of security devices and display them for their own customers.
- Customers can query the CPI monitoring database about their account activity.

The **SafeHomeAssured.com** WebApp must be implemented so that usage is intuitive. It must have very strong security features and be available 24/7/365.

The **SafeHomeAssured.com** WebApp will also have specialized features for in-house CPI staff. These features will provide enhanced customer support and security system technical support and maintenance.

How Do Stakeholders Prepare?

- Ask Each stakeholder to review the WebApp description before the requirements gathering meeting and make a list of **“content objects”**that are:

    1. part of the environment that surrounds the system,
    2. produced by the system, and
    3. used by the system to perform its functions

- lists are not expected to be exhaustive but are expected to reflect each person’s perception of the system

- Company profile
- Product overview
- Product specifications
- Installation instructions
- Product database (includes pricing, items in inventory, shipping costs, etc.)
- Quotation templates
- Order forms
- Order entry database
- Layout image of user space
- User database (includes user identification, specialized security system configuration, other user-related info)
- Monitoring request form
- Monitoring “dashboard” for a contract user (includes account information, video window for monitoring, audio port for monitoring)
- Monitoring database
- Customer service dashboard (to be defined later)
- Tech support dashboard (to be defined later)

The list of functions for the **SafeHomeAssured.com** WebApp might include:

- **Provide product quotation**
- **Process security system order**
- **Process user data**
- **Create user profile**
- **Draw user space layout**
- **Recommend security system for layout**
- **Process monitoring order**
- **Get and display account info**
- **Get and display monitoring info**
- **Customer service functions (to be defined later)**
- **Tech support functions (to be defined later)**

What Tasks Are Performed During an Elicitation Session?

- **first topic of discussion :**
  - justification for the new product—everyone should agree that the product is justified
- **Afterward:** the facilitator indicates that the group must accomplish four tasks:
  1. **Define user categories**, and develop descriptions for each category.
  2. Refine content and functionality using the lists each person prepared.
  3. Consider specific constraints and performance issues.
  4. Write user scenarios for each user class.

Not all of these tasks are conducted within the time span of a single requirements gathering meeting, but all should be accomplished before the WebE process can proceed.

What Are the User Categories for the WebApp?

A set of fundamental questions must be addressed to define a user category

- 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?

How Are Content and Functional Requirements Identified?

- Review the list of **content object** and **webApp function** prepared by the stakeholders
- Combine into a single list with all redundancy removed and present it in the meeting for discussion (see How Do Stakeholders Prepare?)
- Allow No critique or Debate
- Discuss
- shorten, lengthen, or edit the list to properly reflect the WebApp to be developed
- Set aside the lists are for later action.

How Are Constraints and Performance Issues Isolated?

- Internal constraints
  - technical environment (in which the WebApp will reside)
    - specialized database protocols
    - the vagaries of different Web browsers
    - operating system characteristics, and
    - client-server issues
  - project environment (in which the WebApp will be built)
    - WebE tools,
    - development hardware,
    - software standards, and
    - Staff skill levels with various WebE technologies

How Are Constraints and Performance Issues Isolated?

- External constraints
  - business and usage environment for the WebApp
    - Business rules,
    - end-user idiosyncrasies,
    - security demands,
    - privacy issues,
    - run-time performance,
    - interoperability requirements,
    - legal restrictions,
    - government regulations etc.

Use Cases

- Use cases are a widely used approach for the creation of user scenarios. Use cases describe how a specific user category (called an *actor*) will interact with the WebApp to accomplish a specific action

- benefits:
  - Use cases provide the detail necessary for effective planning and modeling activities.
  - Use cases help the developer to understand how users perceive their interaction with the WebApp.
  - Use cases help to compartmentalize Web engineering work because they can be organized into WebApp increments.
  - Use cases provide important guidance for those who must test the WebApp

Use-Case Template for Surveillance Function

Use case: *Access camera surveillance via the Internet*

Primary actor: HomeOwner

Goal in context: To view output of camera placed throughout the house from any remote location via the Internet

Preconditions: System must be fully configured; appropriate user ID and passwords must be obtained.

Trigger: The homeowner decides to take a look inside the house while away.

Scenario:

1. The homeowner logs onto the **SafeHomeAssured.com** website.
2. The homeowner enters his or her user ID.
3. The homeowner enters two passwords (each at least eight characters in length).
4. The system displays all major function buttons.
5. The homeowner selects "Surveillance" from the major function buttons.
6. The homeowner selects "Pick a camera."
7. The system displays the floor plan of the house.
8. The homeowner selects a camera icon from the floor plan.
9. The homeowner selects the "View" button.
10. The system displays a viewing window that is identified by the camera ID.
11. The system displays video output within the viewing window at one frame per second

Extensions:

1. ID or passwords are incorrect or not recognized. See use case *Validate ID and passwords*
2. Surveillance function not configured for this system—system displays appropriate error message. See use case *Configure surveillance function*.
3. Homeowner selects "View thumbnail snapshots for all cameras." See use case *View thumbnail snapshots for all cameras*.
4. A floor plan is not available or has not been configured—display appropriate error message. See use case *Configure floor plan*.
5. An alarm condition is encountered. See use case *Alarm condition encountered*.

Priority: Moderate priority, to be implemented after basic WebApp functions

When available: Sixth increment

Frequency of use: Moderate

Channel to actor: Via PC-based or mobile device browser and Internet connection

Secondary actors: System administrator, cameras

Channels to secondary actors:

1. System administrator: PC-based system
2. Cameras: Wireless connectivity

Open issues:

1. What mechanisms protect unauthorized use of this capability by employees of CPI Corporation?
2. Is security sufficient? Hacking into this feature would represent a major invasion of privacy.
3. Will the system response via the Internet be acceptable given the bandwidth required for camera views?
4. Will we develop a capability to provide video at a higher frames-per-second rate when high-bandwidth connections are available?