

Lecture 14 Discovery

Interpretation Documentation

Heim, Chapters 4.3 - 4.4



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Interpretation

- Task Analysis
- Storyboarding
- Use Cases
- Primary Stakeholder Profiles

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Interpretation - *Task Analysis*

- Task analysis is a way of documenting how people perform tasks
- A task analysis includes all aspects of the work flow
- It is used to explore the requirements of the proposed system and structure the results of the data collection phase

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Interpretation - *Task Analysis*

- **Task decomposition**
 - A linear description of a process that captures the elements involved as well as the prevailing environmental factors.
- **Hierarchical task analysis (HTA)**
 - HTA provides a top-down, structured approach to documenting processes.

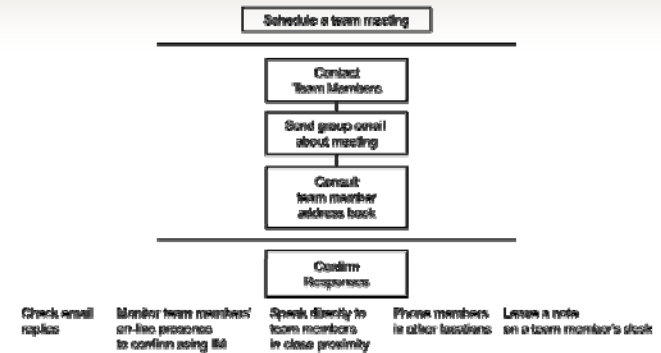
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Interpretation - Task Analysis - HTA

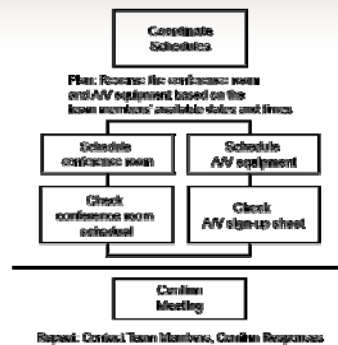
- Hierarchical task analysis (HTA)
 - Start with a specific goal and then add the tasks or subgoals required to achieve that goal.
 - An HTA is read as follows:
 - A box on top of another box describes what we want to do (subgoal).
 - The box below another box describes how it is done.
 - Plans control the flow between subgoals.

Interpretation - Task Analysis



First part of the HTA of the “schedule a team meeting” task.

Interpretation - Task Analysis

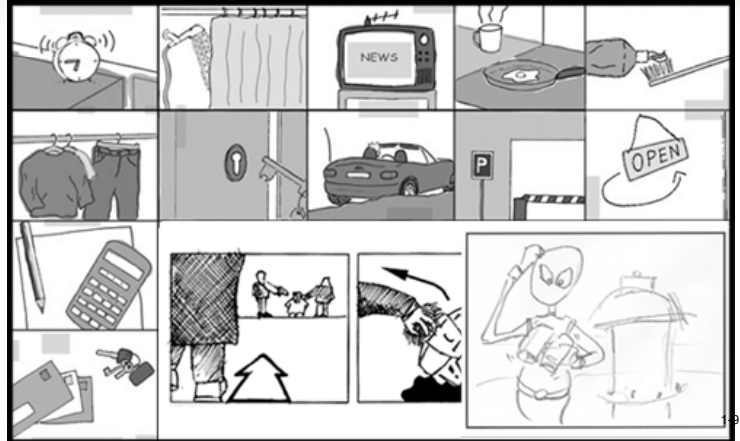


Second part of the HTA of the “schedule a team meeting” task.

Interpretation - Storyboarding

- Storyboarding involves using a series of pictures that describes a particular process or work flow
 - Can be used to study existing work flows or generate requirements.
 - Can facilitate the process of task decomposition
 - Used to brainstorm alternative ways of completing tasks.

Storyboard from web.mit.edu



Interpretation – Use Cases

- Use cases represent a formal, structured approach to interpreting work flows and processes
 - Designed to describe a particular goal and explore the interaction between users and the actual system components.
- Jacobson et al. (1992)
- Incorporated into the Unified Modeling Language (UML) standard.

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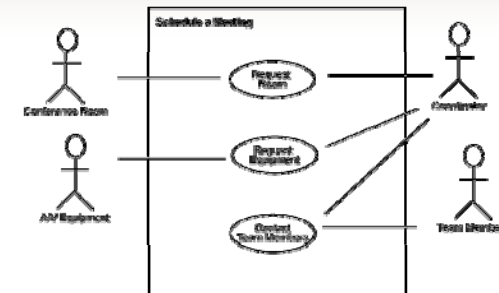
Interpretation – Use Cases

- The two main components of use cases are the actors and the use cases that represent their goals and tasks.
 - **Actors:** similar to stakeholders, but can also include other systems, networks, or software that interacts with the proposed system.
 - **Use Cases:** Each actor has a unique use case, which involves a task or goal the actor is engaged in.
 - Describe discrete goals that are accomplished in a short time period
 - Describe the various ways the system will be used and cover all of the potential functionality being built into the design

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Interpretation – Use Cases



Use case diagram of "schedule a meeting" process.

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Interpretation - Primary Stakeholder Profiles

- Primary Stakeholder Profiles are used to define the target user
- The constructs covered include:
 - Context of use
 - Cognitive ability
 - Physical ability
 - Individual profile

Interpretation - Primary Stakeholder Profiles

Context of Use

Motivation <input type="checkbox"/> Discretionary <input type="checkbox"/> Mandatory	Social Environment <input type="checkbox"/> Public <input type="checkbox"/> Personal	Technical Environment <input type="checkbox"/> Networked <input type="checkbox"/> Isolated
Frequency of Use <input type="checkbox"/> Non-User <input type="checkbox"/> Infrequent <input type="checkbox"/> Frequent	<input type="checkbox"/> Collaborative <input type="checkbox"/> Individual <input type="checkbox"/> Work <input type="checkbox"/> Entertainment	<input type="checkbox"/> Wired <input type="checkbox"/> Wireless <input type="checkbox"/> Intranet <input type="checkbox"/> Extranet <input type="checkbox"/> Internet
User Category <input type="checkbox"/> Beginner <input type="checkbox"/> Intermediate <input type="checkbox"/> Expert	<input type="checkbox"/> Synchronous <input type="checkbox"/> Asynchronous	<input type="checkbox"/> PAN <input type="checkbox"/> LAN <input type="checkbox"/> MAN <input type="checkbox"/> WAN
Task Nature <input type="checkbox"/> Mission Critical <input type="checkbox"/> Calm	Physical Environment <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor	<input type="checkbox"/> Fixed <input type="checkbox"/> Mobile <input type="checkbox"/> Peripherals <input type="checkbox"/> Contained
Interaction Mode <input type="checkbox"/> Direct <input type="checkbox"/> Indirect	Auditory (Noise Level) 1 = Low 5 = High 1 2 3 4 5	
<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Visual Quality 1 = Poor 5 = Good 1 2 3 4 5	
	Haptic <input type="checkbox"/> Constrained <input type="checkbox"/> Free	

Interpretation - Primary Stakeholder Profiles

- Context of Use for a common office desktop system

Context of Use

Motivation <input type="checkbox"/> Discretionary <input checked="" type="checkbox"/> Mandatory	Social Environment <input type="checkbox"/> Public <input checked="" type="checkbox"/> Personal	Technical Environment <input checked="" type="checkbox"/> Networked <input type="checkbox"/> Isolated
Frequency of Use <input type="checkbox"/> Non-User <input type="checkbox"/> Infrequent <input checked="" type="checkbox"/> Frequent	<input checked="" type="checkbox"/> Collaborative <input type="checkbox"/> Individual <input type="checkbox"/> Work <input type="checkbox"/> Entertainment	<input checked="" type="checkbox"/> Wired <input type="checkbox"/> Wireless <input checked="" type="checkbox"/> Intranet <input checked="" type="checkbox"/> Extranet <input checked="" type="checkbox"/> Internet
User Category <input type="checkbox"/> Beginner <input checked="" type="checkbox"/> Intermediate <input type="checkbox"/> Expert	<input checked="" type="checkbox"/> Synchronous <input type="checkbox"/> Asynchronous	<input type="checkbox"/> PAN <input checked="" type="checkbox"/> LAN <input type="checkbox"/> MAN <input type="checkbox"/> WAN
Task Nature <input type="checkbox"/> Mission Critical <input checked="" type="checkbox"/> Calm	Physical Environment <input checked="" type="checkbox"/> Indoor <input type="checkbox"/> Outdoor	<input checked="" type="checkbox"/> Fixed <input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Peripherals <input type="checkbox"/> Contained
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<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent	Visual Quality 1 = Poor 5 = Good 1 2 3 4 5	
	Haptic <input type="checkbox"/> Constrained <input checked="" type="checkbox"/> Free	

Documentation

- Mission Statement
 - Project goals:
 - What is the value proposition?
 - What needs will the new system address?
 - How will it address these needs?
 - Project scope
 - What does the proposed design include or exclude?
 - What are the external constraints such as time and finances?
 - How will you decide when it satisfies the design proposal?

Documentation

- Requirements Document
 - Requirements
 - Functional
 - Information
 - Physical
 - Inputs/outputs
 - Constraints

Documentation

- Project Management Document
 - Definition of the tasks involved in the project
 - Risk
 - Evaluation criteria and methods
 - Implementation
 - Training
 - Maintenance
 - Future needs

Summary

- Crucial to identify all stakeholders in a project
- Utilise a wide range of collection techniques to understand the needs of a project
- HTA, storyboarding and use case techniques allow for interpretation of collated data.