THIS WEEK:
Wednesday:
• HTA and UED practice

NEXT WEEK:
Design

DUE SUNDAY: Assignment 3

Micro-survey top topics we’ll review today:
• Steps to moving to design:
  • Vision statement
  • Task analysis
  • UED
  • Scenarios and storyboards
  • Low fidelity prototypes

Process of moving to design
• Brainstorm using consolidated work models and affinity
  – Identify problems/opportunities for improvement
  – Narrow down to what we want to work on
• Create vision
• Identify a task and perform HTA on it
• Create UED based on the HTA
• Create scenarios and storyboards based on the UED
• Create low-fidelity prototypes based on the storyboards
Primary stakeholders: Assistant
Secondary: Management (mgmt.)

User role: Assistant
Responsibilities:
- manage calendar
- generate periodic reports
- “go to” person for manager
Vision

Assistants must generate reports for management that are “perfect”. Perfect means that reports are accurate and in the exact format expected since they are passed up the management chain for review. Reports must use the latest data.

Assistants encounter problems because the raw data comes from a legacy system and the report generators (there can be multiple ones for a company) each require completely different data formats. Assistants must obtain raw data every day and determine what reports need to be regenerated, then perform complex transforms on the raw data to generate the reports. They must then verify that the reports are accurate and in the proper format.

We will improve this process by creating a system that preserves the data sources and report generators, but reduces the number of systems the assistant has to interact with directly, and significantly reduces the time required to check transformations and reports.

HTA – Decide reports to create

0. Decide reports to create
1. Sort downloaded data by date
   1.1 Open downloaded data in Excel
   1.2 Select all data and all columns
   1.3 Choose Filter -> Custom Sort -> sort on date column newest to oldest
2. View previous reports
   2.1 Get out latest hard-copy version of each report
   2.2 Open latest version of each report on computer
3. Compare report data and downloaded data dates
   3.1 Look at each report section and check date listed for data against date in spreadsheet
   3.2 Note every report that has a section where newer data is available
4. Decide which reports used older data and need to be replaced
   4.1 Record the name of each report that has newer data to remember what reports need to be regenerated

Next, apply heuristics in TaskAnalysisGuide.pdf to refine/improve the description

Plan 0: do 1-4 in numerical order
Plan 1: do 1.1 - 1.3 in numerical order
Plan 2: do either 2.1 or 2.2
Plan 3: do 3.1 and then 3.2
Plan 4: do 4.1
Re-design the work

EXISTING WORK
0. Decide reports to create
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   4.1 Record the name of each report that has newer data to remember what reports need to be regenerated

RE-DESIGNED WORK
0. Decide reports to create
1. Choose to decide by data date
   1.1 Indicate location of latest raw data
   1.2 Indicate location of latest versions of reports
2. View comparisons
   2.1 View section summary of report alongside date of newest data; sections where newer data is available are called out somehow
3. Decide which reports used older data and need to be replaced
   3.1 Select reports that should be recreated
   3.2 Confirm proposed selection of reports that should be recreated
   3.3 Verify names of each report to be recreated

Repeat HTA and re-design for Create report activity from consolidated sequence model

Create UED
• We re-designed work for 2 tasks: decide reports to create and create reports
• User Environment Design (UED) is like a floor plan for what work will be performed where and on what

Name: 1. Main
Purpose: See what’s possible
Links:
> 1. Generate reports
> 17. Check reports against new data

Name: 1. Generate reports
Purpose: Pick reports to create
Links:
> 17. Update by newer data date
> 18. Locate existing report to be updated
> 19. Pick report type

Name: 17. Update based on new data
Purpose: Choose old reports to update
Functions:
• Creates “list” of report sections with old and new data dates
• Tags reports with sections based on older data as proposed to be updated
• Allows user to select reports or confirm proposed reports to be updated
• Creates “list” of reports to create
Links:
> Location of new data
> Location of existing reports
> 22. Validate data
Objects:
New downloaded data
Latest versions of existing reports

Name: 22. Validate data
Purpose: Validate transforms for data
Links:
> 30. Generate reports

Name: 30. Generate reports
Purpose: Create a report
Links:
> 35. Validate reports
Create Scenarios of the user interactions

Lothlund opens an icon on his screen, and is presented with a window allowing him to login with his user name and password.

He then is presented a window giving choices about creating reports. He clicks on “check reports against new data”, which will check the latest reports against new data from the Legacy System.

He is presented with the locations of previously updated reports which he can use, or alternatively, a browse button to specify the location of reports that may need to be updated...

Create Storyboards

• Working from the scenario, sketch storyboards for the user interaction.

Create Low-Fidelity Prototypes

• Working from the storyboards, create low-fidelity prototypes for the user interaction.
Work Redesign

Learning objectives:
1. Practice Hierarchical Task Analysis
2. Practice creating a User Environment Design from HTA

Materials originally created by Prof. Jamie Ruiz
From Visioning to Design

- Use Task Analysis to describe new workflow that you describe in the User Environment Design (UED)

Task Analysis

- Task analysis = a view of people interacting with technology to achieve change in an application domain

- Application domain = abstraction of real world
  - E.g. a database system, the cloud

- Definition of a task:
  - A goal together with some ordered set of actions
Goals

- A goal is a state of the application domain that a work system wishes to achieve. Goals are specified at particular levels of abstraction
- Work system = people plus technologies
  - E.g. a smartphone user and his or her phone

Actions

- A task is typically an abstraction of the actions that are required to complete a task
  - i.e. a task has a level of abstraction associated with it
  - Examples
    - Get a cup of tea
    - Schedule a meeting
- An action is a low-level task
  - No problem solving
  - No control structure
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Task(s)?

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Goal(s)?

Action(s)?

Using Tasks to Redesign Work

• Pick a specific task that you want to redesign
  – You don’t want to solve every problem a subject has
  – You may have some idea of the problem you want to solve already
• Find the correct level of task
  – Not adding name to a form
  – Not providing the SAP version of pharmacy management tools
  – Somewhere in between
Task Decomposition

• Aims:
  – describe the actions people do
  – structure them within task subtask hierarchy

• Hierarchical Task Analysis (HTA)
  – text and diagrams to show hierarchy
  – plans to describe order

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"sort downloaded data by date" is too high level, so we go back to individual sequence models and find out how each person does this; here we assume they all do it the same way
Breaking up System Design

- Every system has **places** where user can work
- Each place has a set of **functions** available
- Each place has **links** to other, related places
- User Environment Design (UED) is like a floor plan for **what** work will be performed **where** and **on what**

Create UED

- We re-designed work for 2 tasks: decide reports to create and create reports
- User Environment Design (UED) is like a floor plan for **what** work will be performed **where** and **on what**
In-class Activity (40 min)

Work in your project team.
1. Using your vision and the task you decided to work on today, create an HTA of the task – text or diagrammatic.
2. From the HTA, create a draft UED
3. By tomorrow afternoon, refine the UED enough to submit it and your vision to Canvas for feedback.

Self-evaluation
1. What exactly did you do to help your team perform the task analysis? Create the draft UED?
2. How did your contributions affect the answers to the questions?
3. What will you do differently next time to contribute more?

Micro-Survey
Add to self-eval or turn in anonymously, separately.
Today’s learning objectives were:
1. Practice Hierarchical Task Analysis
2. Practice creating a User Environment Design from HTA