



Conceptual Model Design

Chapter 08

Usability Engineering Life Cycle by Deborah J. Mayhew

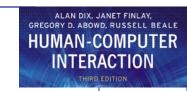




Metaphors

A figure of speech in which an expression is used to refer to something that it does not literally denote in order to suggest a similarity

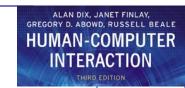




Metaphor Example: Desktop

- Recycle bin
- Clipboard
- File cabinet
- Calendar
- Clock
- Messages
- All these are on computer desktop on every system





Metaphor

- Users don't like the unexpected, metaphor help them what the system is going to do.
- Used to control complexity of system
- Interface actions or tasks mapped to already understood concepts
- Uses prior knowledge and experience to help with the novel or unfamiliar
- Establish user expectations
- Allow predictions of system behavior

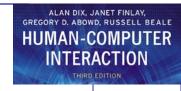




Types of Metaphor

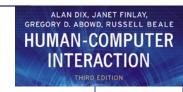
- Verbal Metaphor
 - Comparing previous to new technology
 - Easily having real world example
 - Word processor vs type-writer
- Virtual Metaphor
 - Hardly having real world analogy
 - E.g. Desktop adds mouse clicks = Selection, Drag/Drop= Move
- Composite Metaphor
 - Add new features to metaphor
 - Add menus to desktop metaphor





 Suppose you are designing a software product, electronic appliance, or Web service. You've gathered functional requirements from Marketing and from prospective customers and users. You've done a task analysis and created user profiles. What's your next step?





Conceptual Model Design

 A conceptual model is the mental model that people carry of how something should be done.





Cognitive Friction

 The conflict between our expectation and the way the interface works is called cognitive friction

Imagine a mouse-operated graphical user interface (GUI) where selecting a folder icon requires two left clicks and opening it requires a right click. This isn't necessarily a bad way to control the GUI—however, it's completely *counter-intuitive*, as our experience with GUIs for decades leads us to expect that a single left click selects an icon and a double left click opens it.

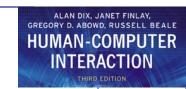




A step by Step procedure to Conceptual Model Design

Sequence is not important





1. Define the Conceptual Model as either product or process oriented

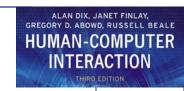
- A product oriented model will best fit an application in which there are clear, identifiable work products that users individually create, name and save.
- E.g MS word, Excel, Powerpoint
- Standard Conceptual Model is available on each GUI platform MS Windows, Apple, Linux





- A process-oriented model will best fit an application in which there are no clearly identifiable primary work products.
- In these applications, the main point is to support some work process.
- Information may be stored and retrieved
- Usually all users have access to same information, not creating any individual work product such as documents
- Application that support customer service, inventory tracking etc. are process oriented models

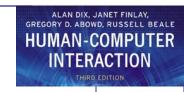




2. Clearly identify products or process

- What the primary product(s) of the application will be and what tools users will need to build those primary products.
- For example in Word application the primary product is a document
- Tools would be the styles and formats
- Any other example?
 - Spreadsheet Application

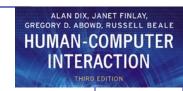




3. Design Presentation rules for products

 Deciding how primary products and tools will be represented on the screen

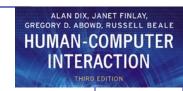




4. Design rules for windows

- There should be rules for the use and behavior of windows for different kinds of displays.
- e.g. Primary windows which can be minimized/maximized
- Primary windows generally have a special icon in the title bar for closing or minimizing
- Resizable, movable and scrollable
- Similar rules for dialog boxes...

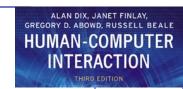




5. Identify Major Displays

- Decide generally how functionality and information will be divided across individual displays.
- E.g. Menus, Dialog boxes, secondary windows

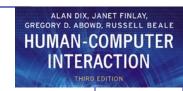




6. Define and design major navigational pathways

 Here you define all the different pathways by which the user can move between displays.





Design Models vs User Model

- Users get models from experience and usage
- If the model match ease of use
- If not user makes slips/mistakes reject UI





References

• Chapter 08, Usability Engineering Life Cycle by Deborah J. Mayhew