User Experience Design

Chapter 1. Introduction

Welcome to UX design

- “Usability Engineering” and much more
- Now it’s about “UX”

Usability

- Usability is a measure of how well a specific user in a specific context can use a product/design to achieve a defined goal effectively, efficiently and satisfactorily.
- Designers usually measure a design's usability throughout the development process—from wireframes to the final deliverable—to ensure maximum usability.

Usability

- Usability is a **component of user experience (UX) design**.
- According to the Nielsen Norman Group—a leader in the UX field—usability is the **second level in user experience**. It comes after **utility** and before **desirability** and **brand experience**.
- So, after you've determined that your item *can* solve users' problems, you must address its usability. A design's **usability depends on how well its features accommodate users' needs and contexts**. Therefore, *you* are responsible for your design's usability.

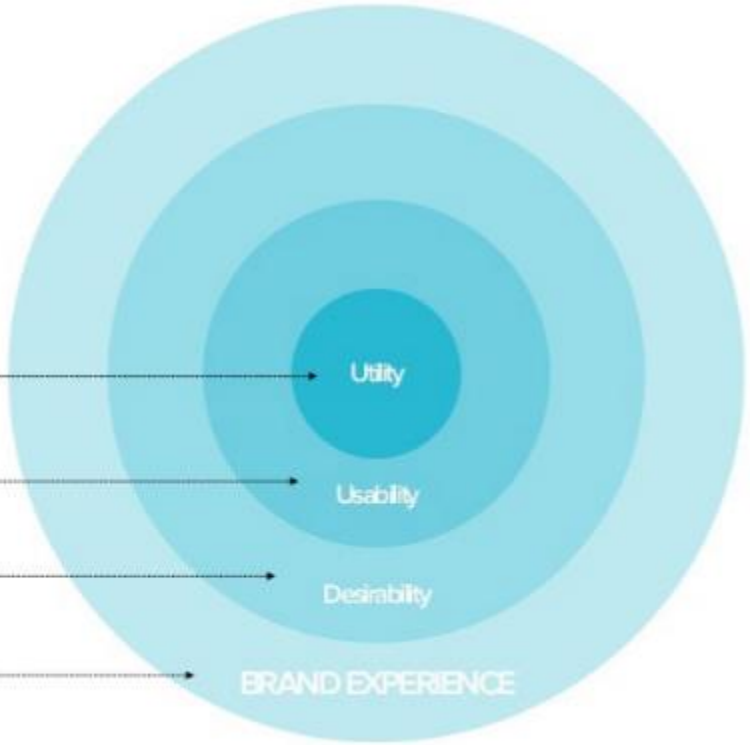
USER EXPERIENCE

Product is useful

Easy to use

It looks beautiful

Love the brand



Utility + Usability = Usefulness

Technology acceptance model

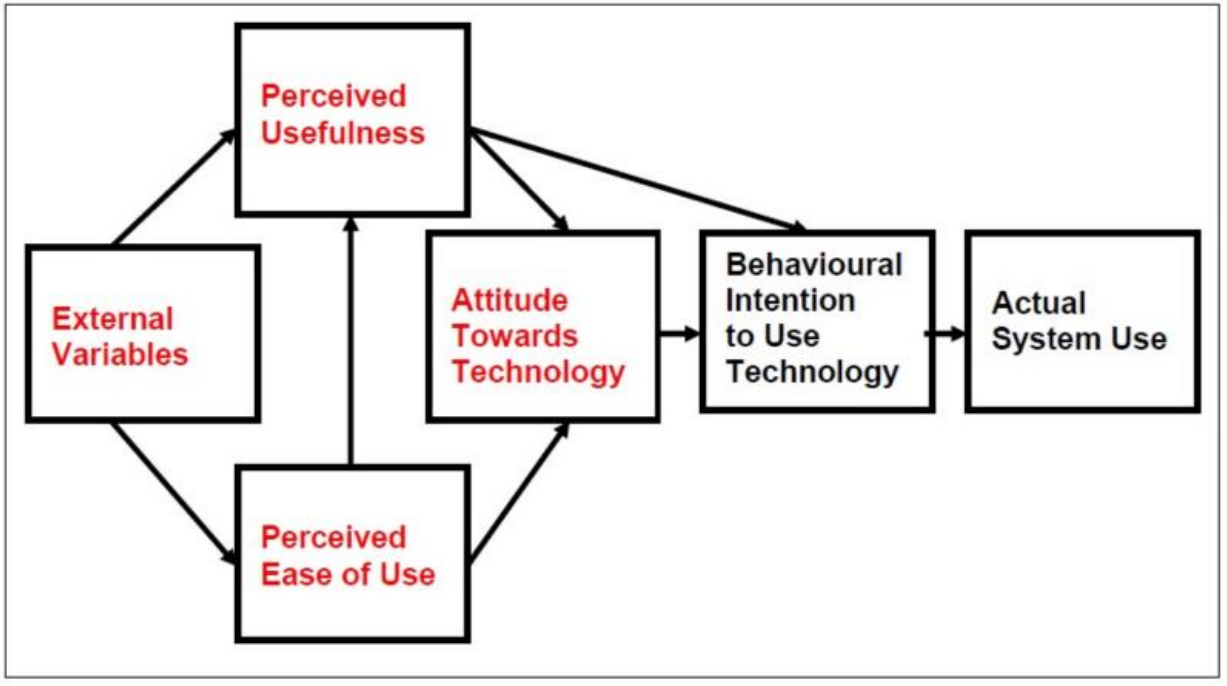
- **The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology.**

Technology acceptance model

- The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably:
  - *Perceived usefulness* (PU) – "the degree to which a person believes that using a particular system would enhance his or her job performance". It means whether or not someone perceives that technology to be useful for what they want to do.
  - *Perceived ease-of-use* (PEOU) – "the degree to which a person believes that using a particular system would be free from effort". If the technology is easy to use, then the barriers conquered. If it's not easy to use and the interface is complicated, no one has a positive attitude towards it.

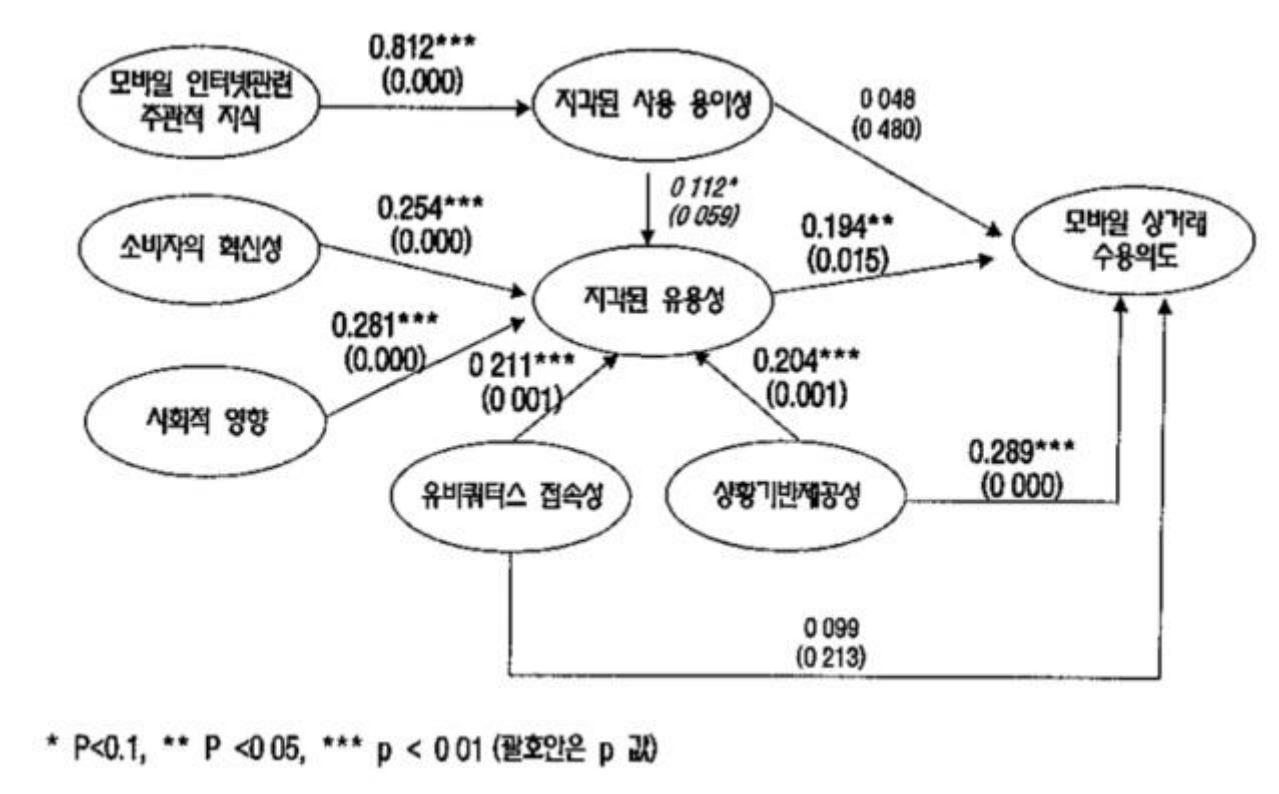
Technology acceptance model

- External variables such as social influence is an important factor to determine the attitude. When these things (TAM) are in place, people will have the attitude and intention to use the technology. However, the perception may change depending on age and gender because everyone is different.



Technology acceptance model

- TAM model 예시



Use of the term “UX”

- **Almost ubiquitous term**
- **Refers to most things that have to do with designing for a high-quality user experience**
- **Broad usage: the UX field, UX work, UX practitioner, UX team, UX role, UX design, or UX design process.**

Why worry about UX?

- **Ubiquitous interaction**
- **Usage by very young to really old**
- **Rise of demand for usability**
- **Changing concept of usability**

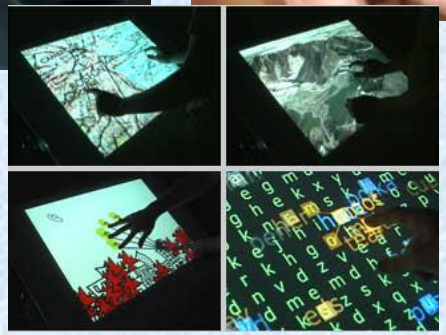
Changing concept of computing

Changing concept of interaction

“The world is not a desktop” — Tscheligi, 2005
(paraphrasing Mark Weiser)







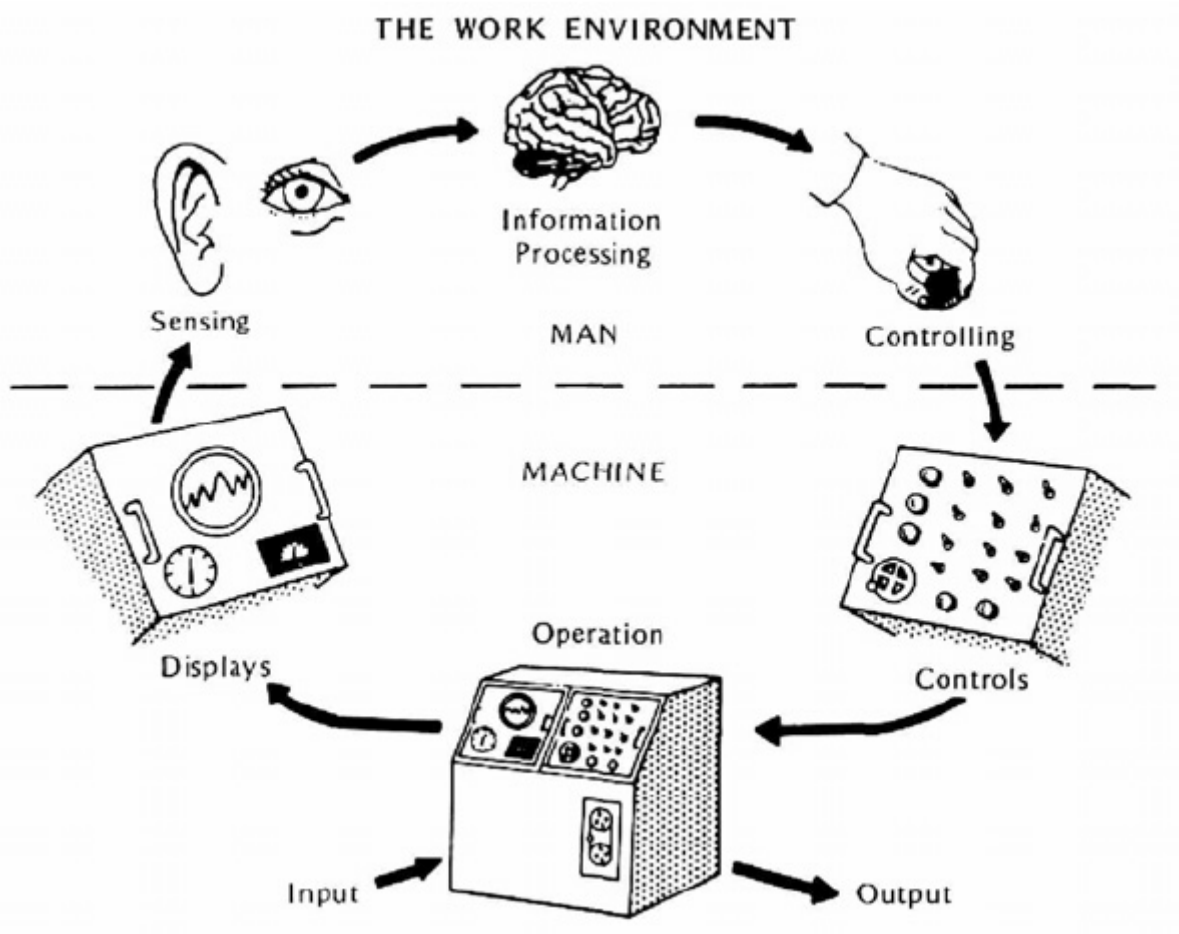

Interaction

- **Adapted from Dictionary.com: mutual or reciprocal action, effect, or influence**
  - **Interaction involves an exchange**
  - **Definitely not limited to computer systems**

Term “interaction” is broad

- **Embraces**
  - **Seeing, touching, and thinking about system or product**
  - **Admiration and anticipation before any physical interaction**
  - **Entire experience during interaction**
  - **Savoring memory after interaction**

Human machine interaction loop



UI and UX

- **UI: user interface**
  - **User interface (UI) is anything a user may interact with to use a digital product or service.**
  - **This includes everything from screens and touchscreens, keyboards, sounds, and even lights.**
- **UX: user experience**

UI and UX

- **User interface design** and **user interaction design** are two closely related disciplines. One focuses on the design of the visual interface, the other more on the design of the global interaction behavior of the system.

Interaction design determines what's on the screen **and** how people use those elements. **Interface design** determines what those elements look like.

Very young to really old

- Age of youngest effective computer user?
- Age of oldest computer user?

가고 싶어도 못 가는 식당

- https://www.youtube.com/watch?v=1BzqctRGgaU

From usability to UX

- Progression of a maturing discipline
- From narrow focus on task performance to overarching characteristics of entire user experience
  - Emotion, social and cultural implications
  - Fun, style, art
  - Branding, reputation
  - Political, social, personal connection

From usability to UX

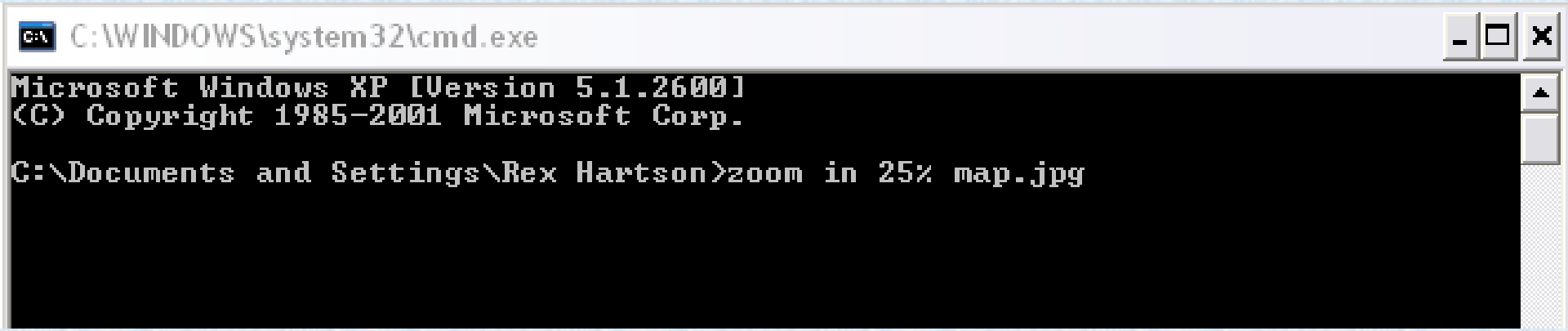
- **Usability has always been about**
  - **Helping novices perform like experts**
  - **Helping experts achieve their potential**
- **Usability is an issue for expert users, too**
  - **Natural**
  - **Transparent**
  - **Powerful**

From usability to UX

- **Usability has always been about**
  - **Making usage easy for everyone**
  - **Making everyone productive in usage**
- **Next logical step, include components for**
  - **Usefulness**
  - **Pleasure and emotional satisfaction**
- **And you get the full user experience**

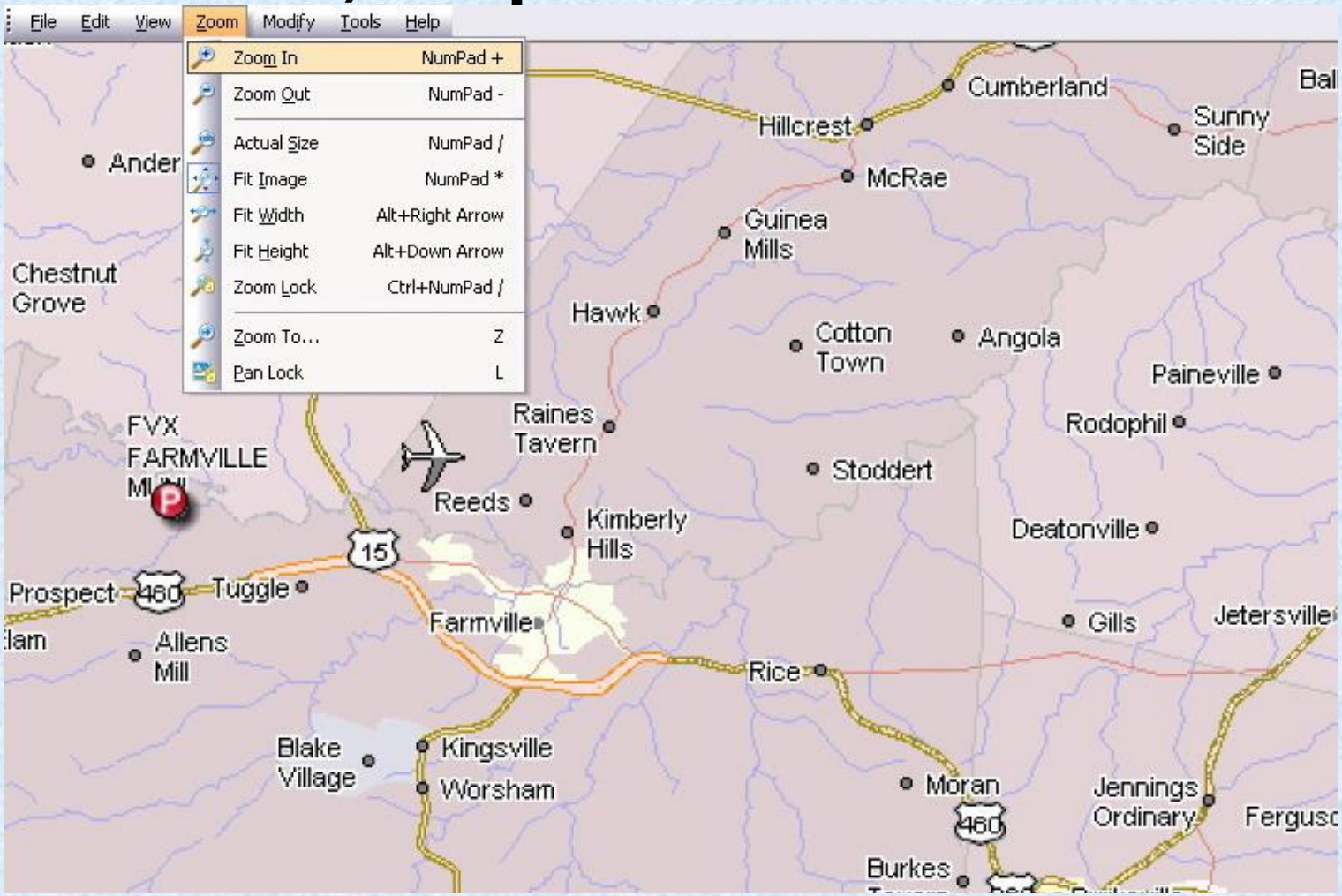
From usability to user experience

- The progression of thinking about usability
- An example: User to zoom in on map image
  - Old days, command language input



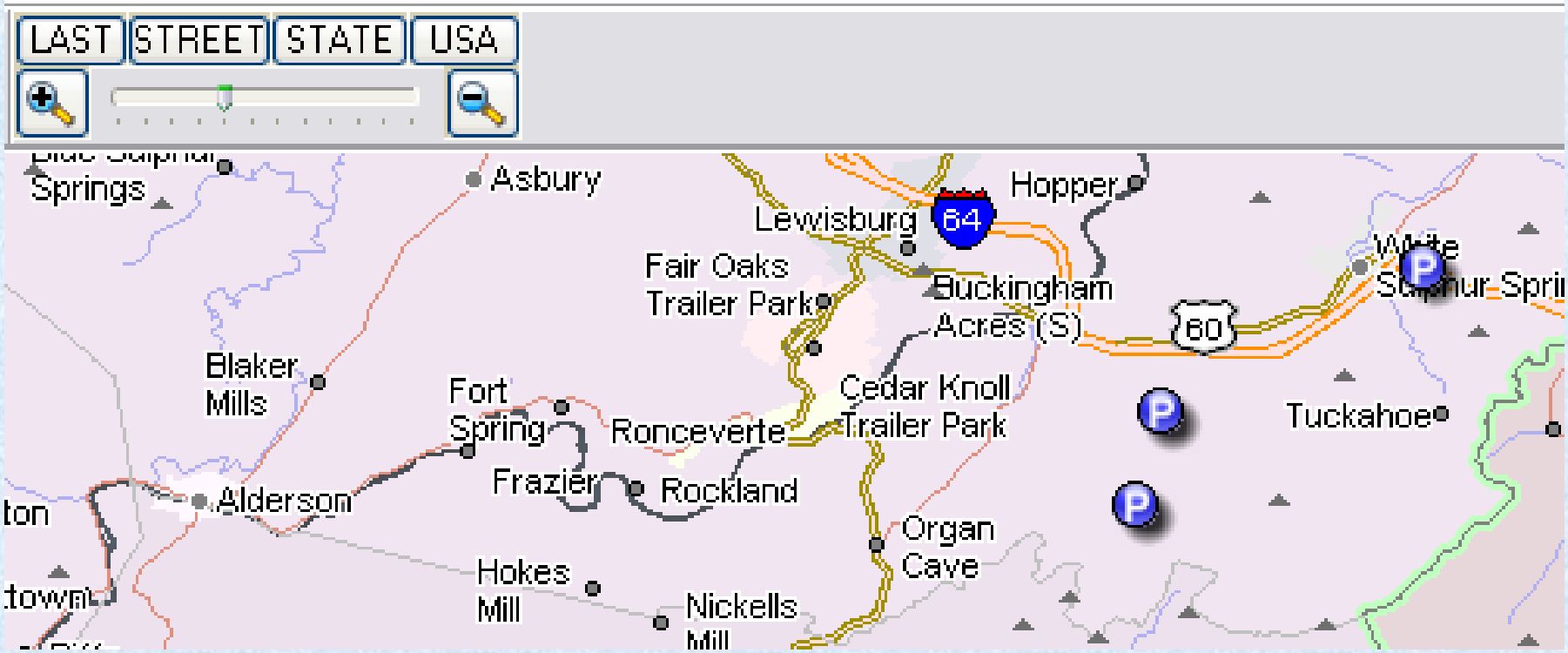
From usability to user experience

- **Command, via pull-down menu**



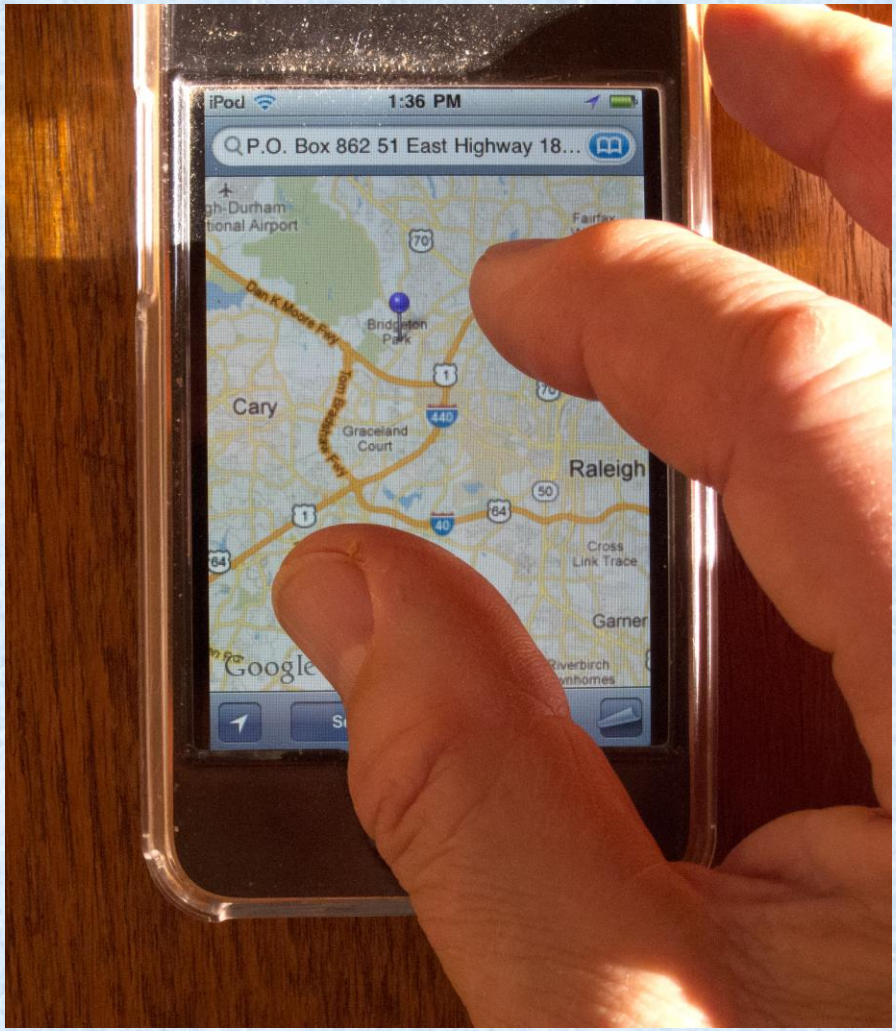
From usability to user experience

- **Direct manipulation, click on “+” or “-” icon**



From usability to UX

- **Embodied, finger gesture (multi-touch)**
- **Makes you realize that direct manipulation with a mouse is not so direct**



From usability to user experience

- **Extrapolate to arms and hands in sweeping movements on a giga-pixel display**
  - **To move data and images around**
  - **To apply various kinds of analyses**
  - **A la’ TV shows like *Bones*, *CSI***

Rising importance of UX

- From having to cost-justify usability to having UX drive the industry
- Explosion of UX case studies
- Increasing intolerance for bad design
- Upsurge of interest in design
- Awareness and demand from marketing
- Industry adoption: Apple, Google, Microsoft

Branding is part of UX

- **Icons, logos, brands can mean much more than just the product they represent**

How is user experience more than usability?

- **User experience – totality of effects felt by user as result of interaction with**
  - **System, device, or product**
  - **Within usage context**

Components of user experience

- **Usability**
- **Usefulness (utility + usability)**
- **Emotional impact**

User experience vs. usability

- **User experience does not replace usability**
  - **Usability still essential**
  - **Now usability is part of user experience**
  - **Usability is pragmatic component**

Usability includes

- **Learnability**
- **Effectiveness**
- **Efficiency**
- **Productivity**
- **Ease of use**
- **Retainability**
- **User performance aspects of user satisfaction**

Usefulness (utility)

- **Component of user experience about system functionality**
  - **Gives ability to use system or product to accomplish goals of work (or play)**

Emotional impact

- **Affective component of user experience**
- **About user feelings**

Emotional impact includes

- Pleasure, fun, joy of use, aesthetics, desirability
- Engagement, novelty, originality, “coolness” factor
- Appeal, self-expression, self-identity, pride of ownership
- Elegance, trustworthiness, a feeling of contribution to world

User satisfaction

- **Has been a part of usability**
- **Really more closely related to emotional impact, but still part of user experience**

User experience (mostly) felt internally by user

- **Equals totality of effect or effects felt (experienced) internally by a user as result of interaction**
- **User experience cannot be designed**
  - **Do not say you are designing the user experience**
  - **But you can design for a good user experience**

Phenomenological aspects of interaction

- Deriving from phenomenology
  - Philosophical examination of foundations of experience and action
- Cumulative effects of emotional impact considered over long term

Phenomenology

- **Phenomenology is the philosophical study of the structures of experience and consciousness.**
- **The study of lived experience**
- **As a philosophical movement it was founded in the early years of the 20th century by Edmund Husserl and was later expanded upon by a circle of his followers at the universities of Göttingen and Munich in Germany.**

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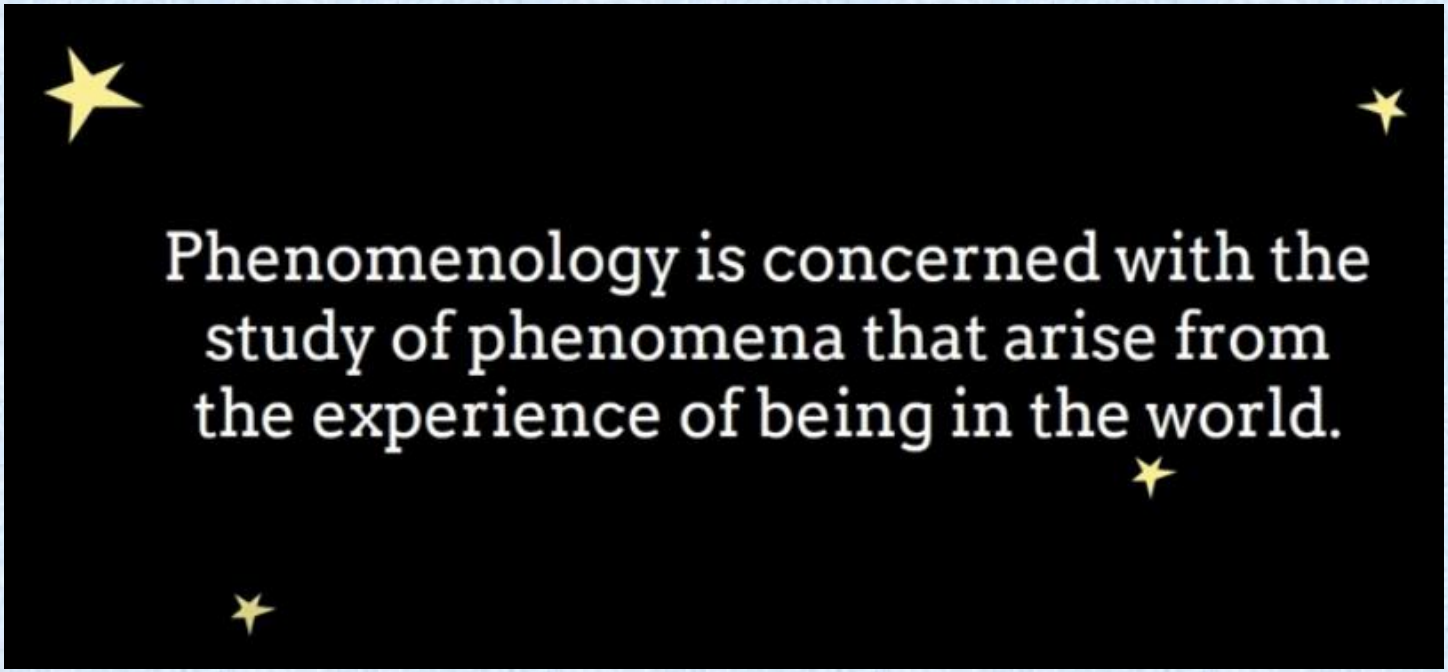

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Phenomenology

- **The Cartesian approach (Descartes)**
  - **“The world is a meaningful place and we interpret the world”**
  - **“The world is a logical place”**
  - **“Emotions and imperfections in our senses are distractions from the true meaning of the world”**
  - **“The world outside of our minds has a definite (correct) meaning and we interpret that meaning imperfectly”**

Phenomenology

- **Phenomenological approach**
  - **“Meaning only really comes into existence in relationship with our own senses and our own emotions and our own consciousness”**
  - **“The world and the human consciousness are combined”**
  - **“Our interpretation of the world around us is part of what the world around us actually means.”**

Human information processing model

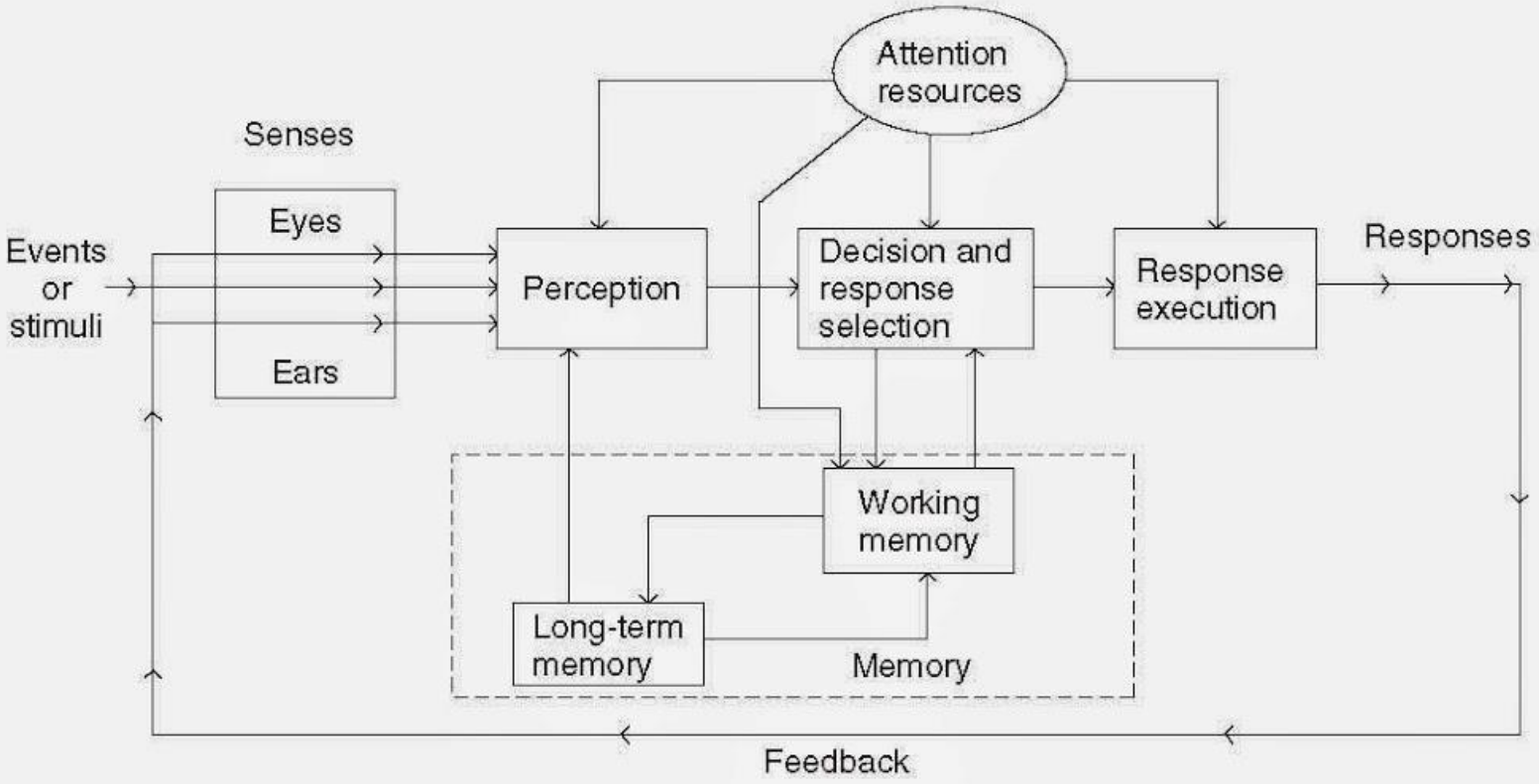


Figure 2 Model of human information processing. (Adapted from Wickens, 1992.)

Phenomenology

- Heidegger's "dasein"
  - German word for "Being there" or "existence"
  - A particular, situated moment of consciousness
  - Situation/context affects our experience
    - Time in terms of hours, minutes and seconds
    - Experience of time: time flying vs time dragging
    - Our experience of time only gains meaning only once we know what we are set against

“Presence” of a product

- ***Presence*** **of a product is relationship with users in which product becomes a personally meaningful part of their lives**
  - **An essential part of phenomenological aspects of interaction**
  - **Usage of technology takes on a presence in our lifestyles**
  - **Technology is used to make meaning in our lives**

JAPAN EMBRACES ROBOT DOG FUNERALS.

By: Funeralwise | Date: Fri, February 27th, 2015

Kofuku-ji temple chief priest Bungen Oi (R) offers a prayer during the funeral for 19 Sony pet robot AIBOs in Isumi, Japan's Chiba prefecture © Toshifumi Kitamura (AFP) via DailyMail.com

Measuring user experience

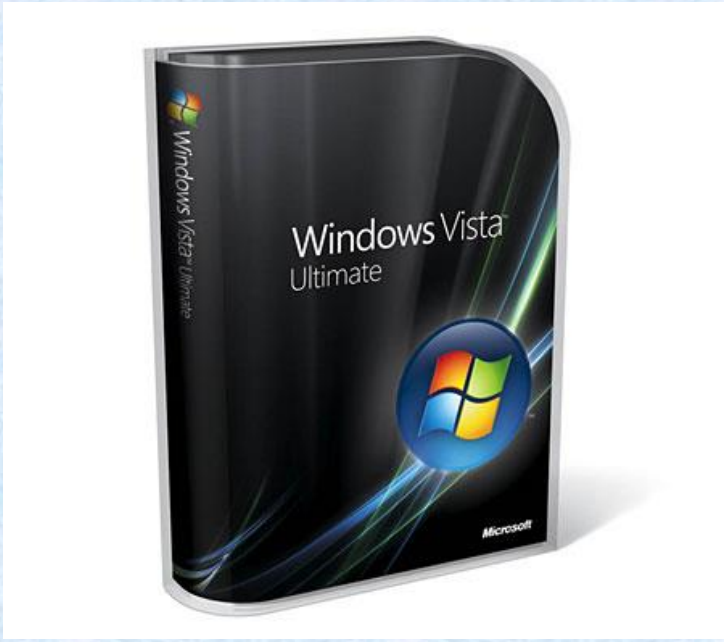
- **Neither user experience nor any of its components can be measured directly**
- **We estimate user experience and its components by measuring indicators**

Misconceptions about usability

- Not “dummy proofing”
- Not “user-friendliness”
  - Users are not looking for amiability
  - They need efficient and effective tools
- It is not (necessarily) high-tech or “cool”

Dummy -proof

Dummy proof - Meaning: easy for everyone. Idiot proof.

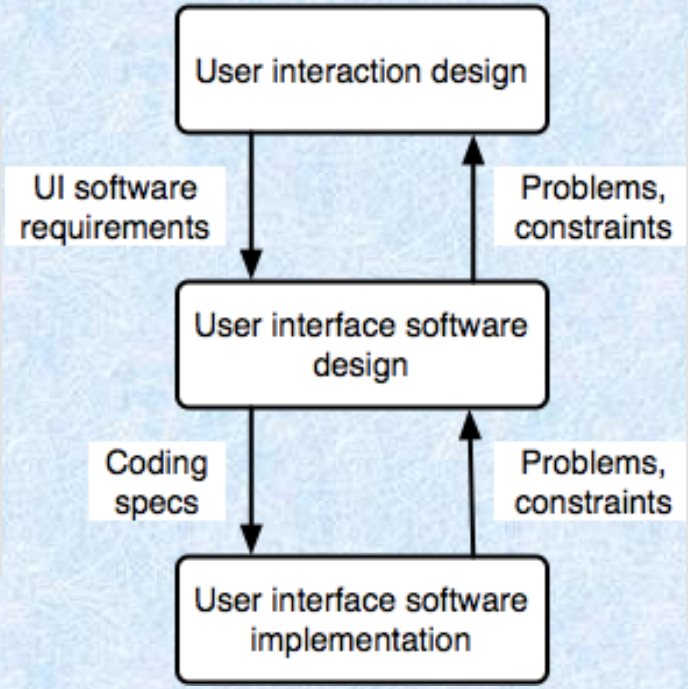


Misconceptions about usability

- "Doing usability" sometimes thought of as equivalent to usability testing
  - Diagnostic view
- Or sometimes usability is seen to be about dressing it up
  - "After the software is built, I want the usability people to make it look pretty"

Interaction design is not about software

Interaction component: How a UI works, it's "look and feel" and behavior



UI software component: Code that implements the interaction component

Two distinct roles

- Interaction designer and UI software designer
- Premise: Describing interaction from user's view should result in more usable design than describing it from software or programmer view
- Inherent conflict of interest: What's best for the user is seldom easiest for the software developer!

Objectives of this course

- Applying a usability engineering life cycle
  - Contextual inquiry and analysis
  - Requirements extraction and design-informing models
  - Conceptual and detailed design
  - Iterative prototyping and evaluation
- Understanding and applying interaction design guidelines