Usability Engineering

Session 1: Last part of Session 1

Agenda

- Overview of the course
- Reasons and importance for the course
- Logistics
  - Multiple Lecturers
  - Readings
  - 2 Projects
  - In class discussions and exercises
  - Students introduce themselves and their reason for taking the course
- Objectives of Session 1
  - Introduction of basic concepts:
    - Human Factors
    - Usability
    - Human/User Centered Design and Evaluation
    - History of Human Factors/Usability

Projects

▶ Divide into Groups

▶ Project 1

   ▶ Device to be Evaluated and Redesigned: Remote Control

      ▶ Bring to the next class a printout of a picture of a remote control

▶ Project 2

   ▶ You will pick a device idea that you would like to apply Human Factors and Usability fundamentals.

Basic Definitions

➢ Human Factors

   ➢ Human = Person, People

   ➢ Factors = Cognitive (information processing), AND

                Behavioral (action/reaction), AND

                   Physical (Height, weight, strength, etc.)

➢ Usability

   ➢ The evaluation of devices and systems by the intended users, in the intended environment, for the intended purpose to determine safety and effectiveness.
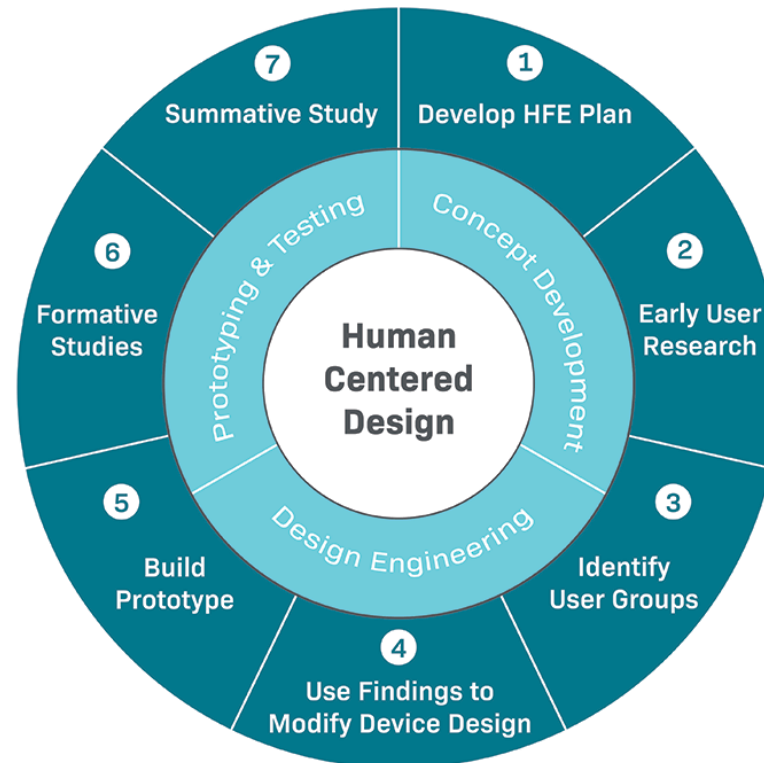
User/Human/Customer

- User:
  - The specific person who will use the device to perform a task.
- Human:
  - The characteristics of persons: cognition, perception, behavior, "emotion", physiology that go into the design of a device.
- Customer:
  - The person who will purchase the device.
- User = Human

Customer is a term that can and cannot equal User, but customers are human.

An Example/Exercise

Does Human and User mean the same thing?

➤ Where is the process "human"?

➤ Where is the process "user"?

➤ Where is the Customer?

History of Human Factors/Usability

➤ United States:

    ➤ In the initial 20 years after World War II, most human factors research was done by **Alphonse Chapanis, Paul Fitts, and Arnold Small**. The beginning of the Cold War led to a major expansion of Department of Defense supported research laboratories, and many of the labs established during the war started expanding.

➤ United Kingdom

    ➤ The term Human Factors has its origins in aviation, and while the term was used informally in literature in British Royal Air Force accident investigation reports in the 1940s, (ATSB Human Factors training material) it was not until **1957** that it was first formally used to describe the modern practice (Edwards, 1988)

History of Human Factors

1900-1945:
- Industrial efforts to increase worker productivity

1945 – 1960:
- Formal beginning of the profession – military

1960 – 1980:
- rapid growth and expansion – space program, product design, workplace design

1980 – 1990:
- Human computer interaction, safety/human error

1990 – Present expansion
- e.g., healthcare, aging, aviation safety, standardization

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