

Design Research

(in HCI/IxD)

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Research areas:

- *HCI, Interaction Design*
- *Health informatics*
- *Usability testing methodology*
- *User-centred design methods*
- *Sensor-based systems*
- *Mobile computing (apps)*
- *Prototyping techniques*
- *Theoretical foundations of HCI*



What is product quality?

- What makes one product better than another?

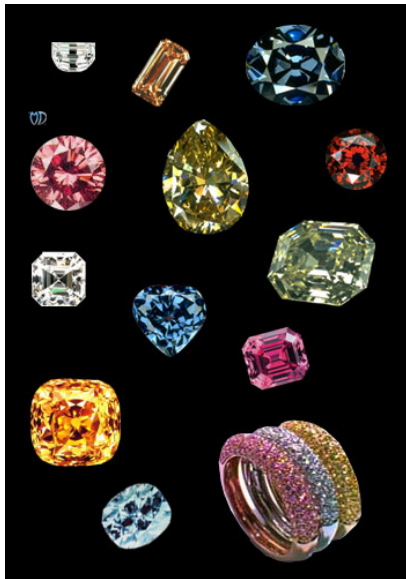


Apple



How do we measure quality?

- Evaluation criteria!



Diamonds: 4Cs

Cut

Carat

Color

Clarity

Ski jump

- Criteria:

Length + style

Style (max. 3x20):

- Jump
- In the air
- Landing



Mobiles: iPhone



iPhone imponerer stort, og irriterer litt. (Foto: KLAUS BØRRINGBO)

Brukervennlig til fingerspissene

Det var ikke mange minuttene vi måtte ha Apples iPhone i hånden, før vi fikk et klart inntrykk av at dette virkelig er noe for seg selv. Men helt perfekt er den dog ikke.

Criteria:

- Price
- Usability/design
- Functions
- Communication

Testet produkt: **iPhone**

Produsent: **Apple**

URL: **Apples sider om iPhone**

Pris og Garanti

- Garanti: 1 år (i USA)



Pris



Brukervennlighet og design



Funksjoner



Kommunikasjon



“Good usability”

Canon EOS 50D + 17-85mm IS USM

Hører til test av digitalkamera

Publisert: 04.03.09

Canon EOS 50D + 17-85 mm IS USM er et digitalt speilreflekskamera til en høy pris.

Det tar gode bilder, og er et veldig raskt og brukervennlig kamera. Testens beste søker/skjerm totalt, med live view. Lang batterilevetid. Har ikke filmfunksjon.

Produktgruppe	high-end
Cirka- pris, kroner	12500



Canon EOS 50D + 17-85 mm IS USM. (Foto: ICRT)

Interaction Design

- Interaction Design defined (ixda.org):
 - “Interaction Design is the professional discipline that defines the behavior of interactive products and how products communicate their functionality to the people who use them”
 - “Good interaction design makes products ranging from computer software to clock radios to cars more ***useful, usable, and desirable***”

Interactive products: Quality criteria

Interaction Design: “useful, usable, and desirable”

Roman architect Vitruvius (50 BC):
“commodity, firmness, and delight”.

- **Commodity:**
 - Utility and usability.
- **Firmness:**
 - Technically well made.
- **Delight:**
 - Eye pleasing, culturally/socially desirable, interesting.



Apple

Usability defined

ISO 9241-11 (1998) defines usability:

“The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

Context of use is defined as: “users, tasks, equipment (hardware, software and materials), and the physical and social environment in which a product is used”.



Evaluation example: Eating utensil

- Problem: Assess the usability of these three product



Three products in three contexts of use



A usability matrix

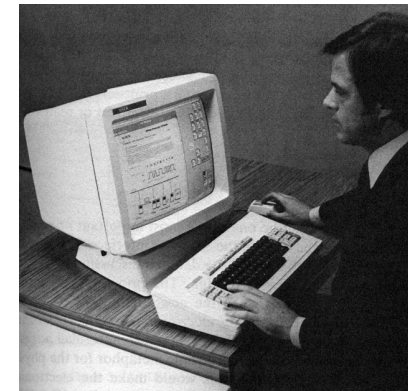
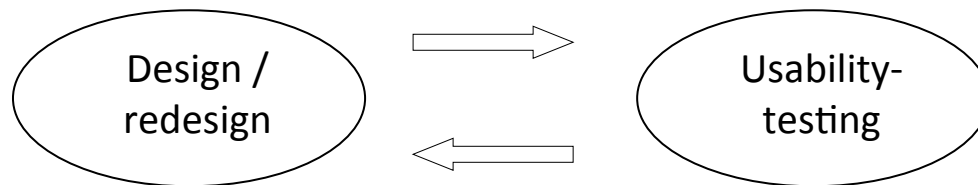
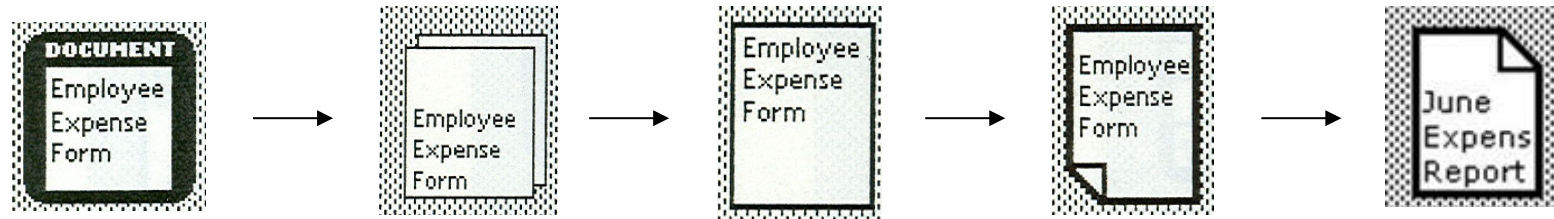


OK	+/-	X
+/-	OK	X
X	+/-	OK

Usability vs. other properties

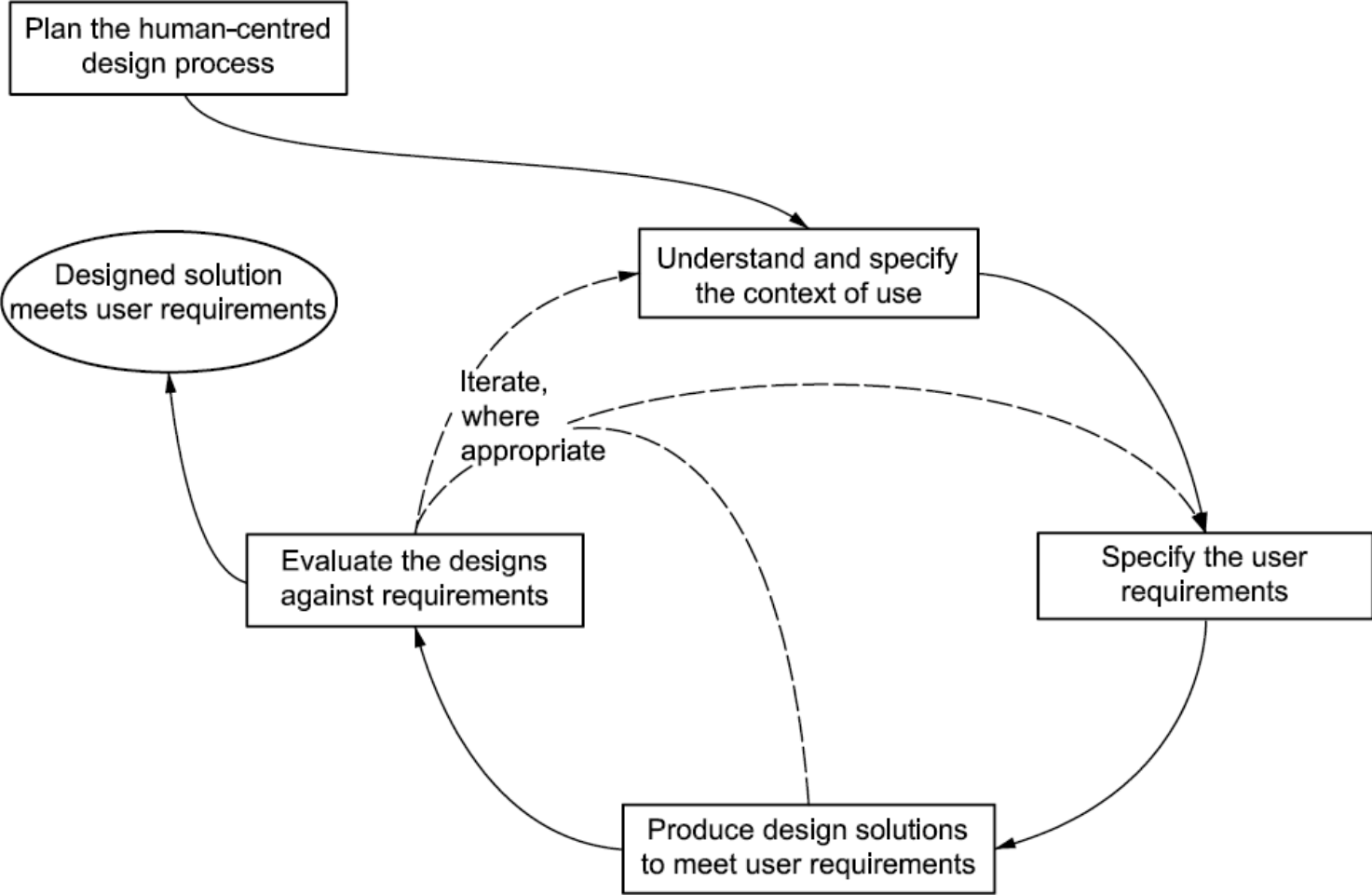
- Usability is not an objectively measurable property of a system or object.
 - Only meaningful if we know the answers to the three questions:
 - Who are the users?
 - What do they intend to use the product for?
 - Where and in what social context do they intend to use it?
- Usability is context dependant.

Xerox Star (1980): Iterative design

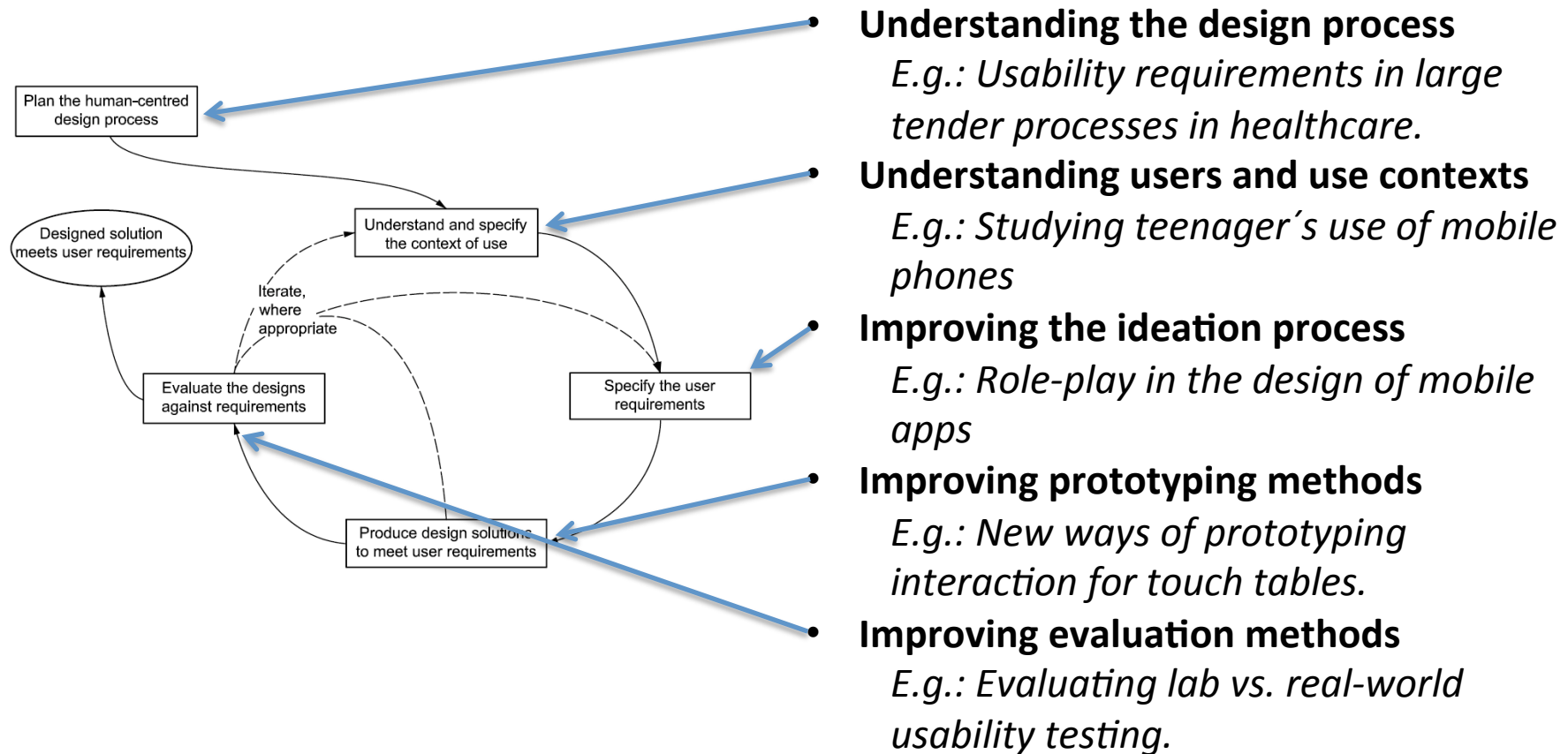


Stepwise refinement of the Xerox Star desktop document icon.

User-centered design: ISO 9241-210



Some research topics in HCI/IxD



Research approach: Mixed methods

