User Experience Design I

History
"Great design is as much about prospecting in the past as it is about inventing the future."

Bill Buxton

source: [6]
History

• Course Overview (Timetable) + Organisational Stuff
• What is UX/Interaction Design?

• The Story of the Mouse

• PARC
• The Desktop Metaphor
• The GUI
The **Beginnings**...(let’s jump back to 1943)
P 38 Lightning Cockpit (1943)

http://www.world-war-2-planes.com/lockheed-p-38.html
EDSAC computer (1949)

http://www.xgn.nl/images/upload/20080908172430.jpg
"I think there is a world market for maybe five computers."

Thomas Watson, chairman of IBM, 1943
Mid sized ICs
Punch Card

http://datenraeger-museum.de/Media/Shop/lochkarte_01.jpg
Douglas Engelbart

“When you were interacting considerably with the screen, you needed some sort of device to select objects on the screen, to tell the computer that you wanted to do something with them.”

Douglas C. Engelbart, 2003, referring to 1964
Looking back... (Discussion)
Telefunken RKS-100

https://de.wikipedia.org/wiki/Datei:Telefunken_Rollkugel_RKS_100-86.jpg
Looking back... (Discussion)

-reflection of the process (concept generation)
Looking back... (Discussion)

- reflection of the process (concept generation)
- construction of different prototypes (alternative design)
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- construction of different prototypes (alternative design)
- iterative development of prototypes (prototyping and testing)
Looking back... (Discussion)

- reflection of the process (concept generation)
- construction of different prototypes (alternative design)
- iterative development of prototypes (prototyping and testing)
- tests with users to validate the approach and make decisions (usability testing)
The Mother of all Demos

Computer Society’s Fall Joint Computer Conference in San Francisco, which was presented by Douglas Engelbart on December 9, 1968
Douglas C. Engelbart: *Augmenting human intellect: A Conceptual Framework*
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3. **Methodology**—the methods, procedures, and strategies with which an individual organises his goal-centered (problem-solving) activity.
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3. **Methodology**—the methods, procedures, and strategies with which an individual organises his goal-centred (problem-solving) activity.

4. **Training**—the conditioning needed by the individual to bring his skills in using augmentation means 1, 2, and 3 to the point where they are operationally effective.
The system we wish to improve can thus be visualised as comprising a trained human being, together with his artefacts, language, and methodology.
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History

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founded 1970 by Xerox
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Marc Weiser

The Computer for the 21st Century

Specialized elements of hardware and software, connected by wires, radio waves and infrared, will be so ubiquitous that no one will notice their presence

by Mark Weiser

The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.

Consider writing, perhaps the first information technology. The ability to represent spoken language symbolically for long-term storage freed information from the limits of individual memory. Today, this technology is ubiquitous in industrialized countries. Not only do books, magazines, and newspapers convey written information, but so do street signs, billboards, road signs, and even graffiti. Candy wrappers are covered in writing. The constraint background presence of these products of "literacy technology" does not require our attention, but the information to be transmitted is readily available.

Silicon-based information technology, in contrast, is far from having become part of the environment. More than 50 million personal computers have been sold, and the computer nonetheless remains largely a world of its own. It is approachable only through complex jargon that has nothing to do with the tasks for which people use computers. The state of the art is perhaps analogous to the period when writers had to know how much ink or black clay they did about writing.

The obvious case that surrounds personal computers is not just a "user interface" problem. My colleagues and I at the Xerox Palo Alto Research Center think that the idea of a "personal" computer itself is misplaced and that the vision of laptop machines, databases, and "knowledge machines" is only a transitional stage toward achieving the real potential of information technology. Such machines cannot truly make computing an integral, invisible part of people's lives. We are therefore trying to create a new way of thinking about computers, one that takes into account the human world and allows the computer itself to vanish into the background.

Such a disappearance is a fundamental consequence of technology but of human psychology. Whenever people learn something sufficiently well, they come to be aware of it. When you look at a street sign, for example, you absorb its information without consciously performing the act of reading. Computer scientists, economists, and Nobel laureate Herbert A. Simon calls this phenomenon "compliment," psychologist Michael Posner calls it "spatial visualization." Philosophers Hans Georg Gadamer and Martin Heidegger call it the "incarnation" and the "ready-to-hand." John Seely Brown of Xerox calls it the "parapage." All say, in essence, that only when things disappear in this way are we forced to use them without thinking and so to focus beyond them on new goals.

The idea of integrating computers seamlessly into the fabric of everyday life is a number of present-day trends. "Ubiquitous computing" in this context does not mean just computers that can be carried to the beach, garage, or airport. Even the most powerful notebook computers, with access to a worldwide information network, still require attention on a single box. By analogy with writing, carrying a laptop is like owning just one very important book. Customizing this book, even writing millions of other books, does not begin to capture the real power of literacy.

Furthermore, although ubiquitous computers may be used to add value in addition to text and graphics, that does not make them "multimedia computers." Today's multimedia makes the computer screen into a backdrop for the attention rather than allowing it to fade into the background. Perhaps most dramatically opposed to our vision is the notion of virtual reality, which attempts to make a world inside the computer. Users use special gadgets that project an artificial scene onto their eyes; they wear gloves or even body-worn units that sense their motions and gestures so that they can move about and manipulate virtual objects. Although it may serve its purpose in allowing people to explore realms otherwise inaccessible—the inside of cells, the surface of distant planets, the information web of data networks—virtual reality is only a map of a territory; it includes desks, offices, other people, not wearing gadgets and body-worn units, weather, trees, rocks, choice economists and, in general, the infinite richness of the universe. Virtual reality follows an enormous apparatus on simulating the world rather than on sensibly enhancing the world that already exists.

Indeed, the opposition between the


Stu Card

joined Xerox Palo Alto Research Center (PARC) in 1974

aimed at perfecting scientific methods to integrate with creative design

developed a process to predict the behaviour of a proposed design, using task analysis, approximation, and calculation

proposed a partnership between designers and scientists, by providing a science that supports design.

http://www.designinginteractions.com/interviews/StuCard
Looking back...

-exploration of the design space through the integration of industrial design
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-designers and engineers had to work together (interdisciplinary approach)
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-exploration of the design space through the integration of industrial design
-designers and engineers had to work together (interdisciplinary approach)
-science served to constrain the design space
User-experience design

Industrial design

Human factors

Usability engineering

Human-computer interaction

User Interface engineering

Communication design

Information architecture

Interaction design
MINIMUM Viable Product

Crappy products

MINIMUM

Viable

BEST PRODUCTS TO STARTUPS

Better-financed products

Microprocessor early 1970s

img src: wikimedia creative commons
Tim Mott

collaborated remotely with Xerox Palo Alto Research Center (PARC) and Larry Tesler
worked on a new publishing system that included a “desktop metaphor”
invented a “user centred design process” with Larry Tesler
later co founded Electronic Arts (EA)

http://www.designinginteractions.com/interviews/TimMott
The injured were taken to MeritCare Hospital, where they were treated. According to Sheriff Larry Costello, none were seriously hurt. The driver of the southbound vehicle the spokesperson MeritCare said about seventeen workers attended 7 sessions the delegate from N.D. came to Moorhead, Minn. majored in English literature at Msum Bachelor's Degree in Mass Communications extra effort will be required according to sources close to the president will be completed in early January the very exciting climax of the film winning
Looking back...

-spending time to understand users (design research)
Looking back...

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- designing by involving the users of the system (participatory design techniques)
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Looking back...

- spending time to understand users (design research)
- designing by involving the users of the system (participatory design techniques)
- prototyping parts of the system with non functional elements (wizard-of-oz prototyping)
- asking users to “walk” them through the system (think aloud method)
- designing the system using mental models user could refer to (metaphors+scenarios)
Office Schematic / Desktop Metaphor
Xerox Alto 1973

http://dl.maxumpc.com/galleries/oldpcs/xerox_alto_front_full.jpg
"There is no reason anyone would want a computer in their home."

Ken Olson, president, chairman and founder of DEC, 1977
Now you can create documents with words and pictures

1981 Xerox Star Workstation
1981 Xerox Star Workstation Interface
Larry Tesler

-involved users also in the software design process
-joined PARC in 1973
-moved to Apple in 1980
-was the core designer of Apples “Lisa” computer
-invented the “copy and paste” function

http://www.designinginteractions.com/interviews/LarryTesler
So it became a kind of contest. An unofficial and completely unacknowledged competition to see which of us was the toughest, the coolest, the hardest to get. (He was, but there were times when he didn’t know that.) “Who is smarter, you or me?” he asked me again and again: once as he left the apartment in the morning, me wrapped in a towel; once over our whiskies at the King Cole Bar in the St. Regis. And that became the most important question.
Looking back...

- brainstorming and iterative trying and testing (iterative design process)
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- constant, quick and efficient tests with users to improve the system (experience prototyping)
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- brainstorming and iterative trying and testing (iterative design process)
- constant, quick and efficient tests with users to improve the system (experience prototyping)
- developing products for the users’ core needs (user centred design process)
Apple Lisa 1983

http://media.arstechnica.com/images/gui/11-Mac1.gif
Macintosh System 1.0. January 1984
**WIMP**

- stands for "window, icon, menu, pointing device"
- coined by Merzouga Wilberts in 1980
- is often incorrectly used as an approximate synonym of "GUI".
WYSIWYG
-user interface that allows the user to view something very similar to the end result
-implies the ability to directly manipulate the layout of a document/presentation/3D model without having to type or remember names of layout commands.
Mac OS X
35 years in between....
INTERACTION DESIGN

KNOW?

FEEL?

...DO?
“There is an objectivity in the process of letting the user decide, the value of which is a recurring theme in this story of designing the desktop and the mouse. **Come up with an idea, build a prototype, and try it on the intended users.** That has proved, time and time again, to be the best way to create innovative solutions.”

Bill Moggridge - Designing Interactions
References (Books):


References (Papers):


Articles:

what_apple_lear.html