Introduction to HCI
Good and Poor Design

History of HCI

The term human–computer interaction has only been in widespread use since the early 1980s, but has its roots in more established disciplines. HCI involves the design, implementation and evaluation of interactive systems in the context of the user's task and work HCI draws on many disciplines, as we shall see, but it is in computer science and systems design that it must be accepted as a central concern

The field of HCI

HCI is undoubtedly a multi-disciplinary subject. The ideal designer of an interactive system would have expertise in a range of topics: psychology and cognitive science to give her knowledge of the user's perceptual, cognitive and problem-solving skills; ergonomics for the user's physical capabilities; sociology to help her understand the wider context of the interaction; computer science and engineering to be able to build the necessary technology; business to be able to market it; graphic design to produce an effective interface presentation; technical writing to produce the manuals, and so it goes on. There is obviously too much expertise here to be held by one person (or indeed four!), perhaps even too much for the average design team.

Define Usability

A central concern of interaction design is to develop interactive products that are usable. By this we mean products that are generally

- easy to learn,
- effective to use, and
- provide an enjoyable experience for the intended people.

Through identifying the specific weaknesses and strengths of different interactive products, we can begin to understand what it means for something to be usable or not.

An example of a bad design

Screen shot reprinted by permission from Apple Computer, Inc.

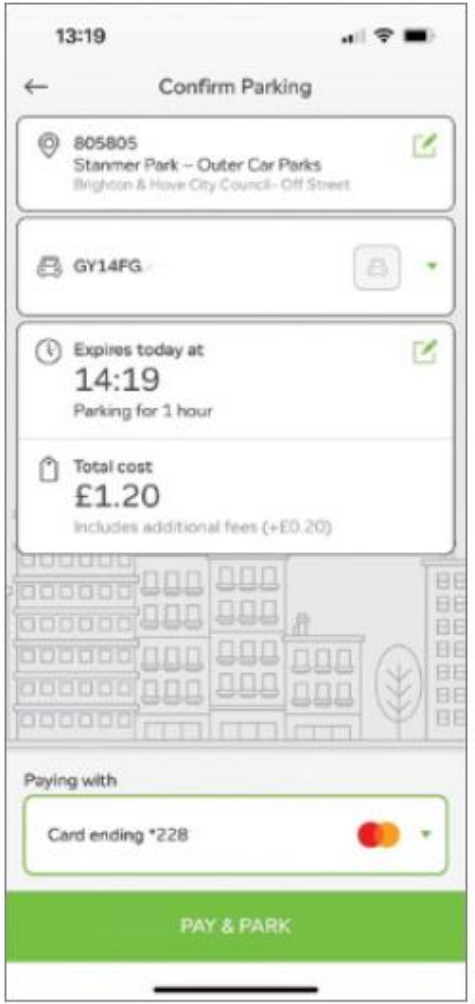
An example of a good design

The TiVo remote control

Invest the time and effort to follow a people-centered design process

Digitalization - Example

The form used for a parking app in the United Kingdom. It takes five seconds to complete and can be done while sitting in the car.



The computer

A computer system is made up of various elements. Each of these elements affects the interaction

–input devices – text entry and pointing

–output devices – screen (small&large), digital paper

–virtual reality – special interaction and display devices

–physical interaction – e.g. sound, haptic, bio-sensing

–paper – as output (print) and input (scan)

–memory – RAM & permanent media, capacity & access

–processing – speed of processing, networks

Paradigms

Examples of effective strategies for building interactive systems provide paradigms for designing usable

interactive systems.

- The evolution of these usability paradigms also provides a good perspective on the history of interactive computing.
- These paradigms range from the introduction of timesharing computers, through the WIMP and web, to **ubiquitous and context-aware computing**

"It's the latest innovation in office safety. When your computer crashes, an air bag is activated so you won't bang your head in frustration."

Conclusion

Computers and related devices have to be designed with an understanding that people with specific tasks in mind will want to use them in a way that is seamless with respect to their everyday work.

Interaction design is concerned with designing interactive products to support the way people communicate and interact in their everyday and working lives