

9. Interaction Design

Synopsis

This module provides an introduction to interactive media and interaction design.

Lectures

- 9.1 Interactive Media
- 9.2 Principles of Interaction Design
- 9.3 Some New Directions

9.1 Interactive Media



Fig.9.1.01a



Fig.9.1.01b

Library cataloguing systems changed from alphabetically indexed cards to computer searches. As the amount of information multiplied, a new form of accessing relevant data required interfaces that needed to be intelligently devised.



Fig.9.1.02

Touch sensitive screens came to resemble mythical genies that responded to human touch. You almost, just needed to point to what you wanted and the interface transferred your request to the databank and in the wink of an eye, fetched you what you wanted.



Fig.9.1.03

After having mapped the earth, the conquest of space became the next frontier. It was just a matter of time, before electronic eyes could look upon planet earth, receive what we wanted to know and transmit the required data. GPS information that could tell you exactly where you were (lost! – in case you were); street view maps that could give you directions; better weather forecasting capabilities; the movements of men and mice – there was little that escaped the unblinking eyes above. Even Orwell could not have guessed the all new connotation of 'Big Brother Watches Over You.'

The positioning of satellites high above planet earth and the ability to transmit and receive the vision of the satellite eye, changed the way in which planes flew around the world. Earlier navigation systems relied on star charts to plot the position of the plane and direct its path. Technologies such as the wide area augmentation systems could guide a plane to fly in an autopilot mode follow a narrow river valley between towering Himalayan peaks, make complex manoeuvres and descend towards an invisible runway. Such systems can ensure that planes fly within an invisible corridor determined by feedback from GPS stations.



Fig.9.1.04

Physical charts and maps became relics. Intelligent sensors from satellites and earth stations conversed amongst each other to make sure that the autopilot inputs guided your aircraft accurately. Pilots could now find to catch up with their reading, even when they were on the job!



Fig.9.1.05

Flying, like many other activities was not just a necessity. It became an experience enabled by interactive flight entertainment systems, often with online access for news, market indices and communication.



Fig.9.1.06

As you touched down on terra firma, you could use your cell phone to instruct the chauffeur, inform your family and order a meal to be delivered by the time you got home.

The first technological conquest was mechanical in nature. Machines were conceived and built to relieve tedium and make things more efficient. The washing machine machine took over the mundane task of doing the dirty linen and the automobile drastically cut down the time it took to get to some new place or away from it. The coffee-maker, the cuckoo-clock, the can-opener were all physical devices

that simplified life. In a couple of hundred years the world was full of products and the quality of life in an air-conditioned chamber with radio, television and a refrigerator was decidedly desirable to a leaking cave with drawing and singing as possible entertainment on a rainy day. The first technological conquest was one step away from nature and natural forces. If one wished to, one could always scuba-dive and watch fish glide past colourful coral reefs or paraglide along a icy mountain wall and surprise an eagle or two.



Fig.9.1.07

Expert systems made sure that you would not get lost even in unfamiliar territory.



Fig.9.1.08

Interaction had a whole new meaning other than pushing buttons on kettles and microwaves.



Fig.9.1.09

You could carry an entire library of books or collection of favourite films and music.



Fig.9.1.10

Money became a plastic card that could understand a foreign tongue and draw out the right currency when you punched in your secret code.

The realization that grays could actually be blacks and whites in close proximity; that analog could be simulated by digital means, was the second great technological leap. Waves could become particles and diffraction microscopes and doppler shifts could help make corrections to digital data. From physicality, the emphasis shifted to the virtual. Simulators, 3D movies, augmented reality platforms, intelligent wearable devices enabled by the impeccable digital logic that made microchips purr, replaced the sweat and grime associated with motor oil and grease. From products the emphasis shifted to enabling experiences.

Traditional approaches to industrial design sought to understand issues of the form and function of products. With a sufficiently large database of sleek and sophisticated gizmos, the emphasis had to shift to something more enabling. Making coffee efficiently and making it taste well was over and done with. It became important again to make coffee drinking an even more enjoyable and immersive experience. The realization, that the enjoyment was not so much in the machine, led to the design of coffee-drinking experience instead of a more elegant looking coffee-machine.

The realization that the enjoyment was not just in the aesthetics and function of the cell-phone, led to a search for what people truly wanted. Interaction designers concluded that what people wanted was the experience of a thing, and not just the thing itself.

Interaction design seeks to build links across products, cultures, contexts and people and foretell how new devices may enable uses that people are only vaguely aware of. It is concerned not just with products but seeks to include services. In a world with more people where super-efficient-systems would be needed to provide services that satisfy, various devices such as online networks, phones and personal engagement trackers will access information and entertainment the ease of interaction with devices becomes an important consideration.

In order to understand and sense the latent needs of society and individuals, interaction designers undertake user-studies. They imagine possible scenarios and map potential opportunities. Possibilities are prototyped in order to evaluate usability. They develop cognitive frameworks to understand the nature of interactions. Then they proceed to design and enable the experience and test the outcome.



Fig.9.1.11
Sketchbooks turned into tablets and pens no longer spilt ink.



Fig.9.1.12

Lessons were animated and subjects became interlinked. Knowledge became a cloud that could be ordered to rain.

Interaction designers are constantly seeking to innovate. Unlike traditional innovation that is often restricted to new or improved products, interaction designers seek to innovate by focusing on people and their needs. Very often the enabling of choices is mediated through an appropriate technological innovation. The immense popularity of social networking sites may be regarded as an innovation by creators who are essentially interaction designers who sensed that in a virtual environment the physical meeting spaces could be simulated through community based networks.

Given below is a glimpse of ideas developed by interaction designers:

A Mobile Phone that can be worn while running

The project explores how the mobile phone would need to adapt themselves to different contexts, - say for examples those who enjoy running as a recreational pastime. The phone is visualized as a small disc worn on the wrist, arm or hip. It is controlled by voice commands and includes an audio headset.

Techno-jewellery

This envisages interactive jewellery that can be used to transmit and sense emotional communication between young people.

All-purpose mountaineering device

A device that integrates different devices used by mountaineers for navigation, communication, emergency messages into a single device.