The Evolution of HCI

Human Computer Interaction (HCI) is a field of study which focuses on the design of technology, in particular the interaction between computers and users. (John M. Carroll 2020) HCI has now integrated itself into our everyday life. Whether it’s browsing a website for information or using an app on your phone, HCI is everywhere and it makes the world a more accessible place. It has evolved immensely throughout the past 40 years, adapting to all users with different backgrounds and abilities in order to make it more user friendly and accessible. Although at first, it was a predominantly a practise in the computer science sector, it progressed into several other disciplines such as psychology, systems engineering and cognitive science. This allowed there to be a more humanistic approach into the design of interfaces in order for people to use them with ease and efficiency.

The first known use of HCI was in the late 1970’s, however it was first solidified as a term in the early 1980’s. For the majority of the 1970’s only ‘information technology professionals and dedicated hobbyists’ (John M. Carrol, 2020) would have been interacting with computers. Therefore, it wasn’t seen as a necessity to concentrate on ‘usability’ due to the lack of users at the time. Though the first ‘personal computer’ was created in the early 1970’s, they only became more common among the general public several years later. However, people who were unfamiliar with how to use computer found reading commands and system dialogues difficult. This was a clear issue which needed to be rectified in order for individuals to use computers comfortably.

Fortunately, towards the end of the 1970’s cognitive science had formed. This was extremely convenient as it involved ‘cognitive engineering’. This benefited developers significantly when designing and developing systems in order to ‘support the cognitive processes of users’ (Kyle M. Wilson, 2013) i.e. make systems more ‘user friendly’. Making documentation less technical and more understandable was a key change in helping users quickly learn how to operate their personal computers. In addition to this, developers soon realised that there was more to take into consideration apart from functionality requirements. The realisation of the importance of usability became more and more evident by the 1980’s. In order for the computing world to develop fairly rapidly, users needed to feel comfortable and confident with operating computers to execute their desired tasks.

As HCI was a new concept during the 70’s and 80’s, the primary demographic was based on ‘generic user behaviour’ (John M. Carroll, 2020). Whereas nowadays all abilities are taken into consideration. However, this was still a step in the right direction because it enabled more people who weren’t in the computing industry to become more at ease when interacting with computers. Apple launching the Macintosh in 1984 played a large part in making this happen. They promoted the “messy desk metaphor”, this involved an icon-based interface which were distributed on the screen. (John M. Carroll, 2020). The icons consisted files and folders which users could click on and be directed to that particular folder or file. This was a much more user-friendly way for people to interact with their PC’s as prior to this, they had to type in commands in order to perform a task. This broadened the horizons for society as there were discussions on how this could be used in the office as well as for personal use.

By the 1990’s Microsoft came out with the Windows OS which also had an icon-based user interface. These became increasingly popular and took over from the old more complicated interface designs. Following the launches of both Macintosh and Windows, the world wide web was created. This helped users browse the internet to find desired content alongside enabling users to communicate with one another online by interacting with computers. HCI encouraged collaboration as well as performing tasks. Email, instant messaging and social networking are just some examples of what we now can use to communicate with individuals or groups. During this period is when social computing began to evolve and there became alternatives to peripherals such as keyboards, joysticks and the mouse. Touchpads are an example of this, where you people could use a pen or their finger to navigate and perform tasks on a computer. Already over these 20 years, so much had changed in the way humans worked with computers and it would only be developing rapidly from now on.

In the early 2000’s Apple launched the wheel on the iPod, this was a unique new interface which allowed users to perform actions such as play, rewind and pause from the click of a button. The shape of the mouse and keyboard were always being updated and re designed in order to make it easy and efficient for users to interact with their computers.

By 2007 the iPhone made its first appearance, the touch screen interface proved popular among users and they began to enforce this on not only handheld personal devices but also computers, laptops and tablets. (David DeWitt, 2019) Touchscreen devices were initially very costly due to the ‘single touch, professional grade displays’ (David DeWitt, 2019) Nevertheless, as more technology companies came out with their own multi-touch displays the price point became much more reasonable, allowing more people to purchase them. Nowadays we are surrounded by screens, from billboards to interactive screens in museums, they’re all over the place. We as a society have become dependent on technology and it has integrated itself deeply into our everyday lives. From a young age, children are exposed to screens whether it’s the interactive white board at school or and iPad for playing games at home. Recent HCI methods have been more inclusive in terms of making things accessible for all abilities such as which include people with disabilities, old adults and young children. For example, haptic feedback will be particularly beneficial for individuals with a visual impairment, so they know for sure that a button they have pressed has definitely been pressed.

The meaning of the word ‘usability’ has changed dramatically over the last 40 years. From computers being overcomplicated, large and slow to now being fast, efficient and small. We have come a long way in order to make technology accessible and convenient for people. The criteria in making a device ‘useable’ has also changed massively, at first, devices weren’t tailored for non-developers. But then slowly as the years progressed, they became more available to the generic population and that people with special needs, young children and the elderly were taken into consideration. Concepts such as colour theory, accessibility and human perception are now key factors taken into account to ensure that users are able to use their devices with ease and efficiently. As the years go on and the world of computing continues to advance at a rapid pace, the concepts and objectives we currently use in HCI will also develop which is both exciting and intriguing.