

# Input/output Devices and their current Trends

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## **1. Introduction**

A Computer System is defined as “a system of one or more computers and associated software with common storage” (OpenCubicles 2017). Although before any computer will be able to process your data, you need a method to input the data into the machine. Similarly, after the computer has processed your data, you need output to produce the results. For these tasks, we use input and output devices which spread the capabilities of every computer device. It is fair to say that, Input and output devices are an essential part of every computer, whether it is a personal or public, all come equipped with these devices or ports. These parts are very important as they enable us to control the computer and information in a variety of ways, they are all connected to the Central Processing Unit that enables the user to perform tasks like: listening to music, playing games, writing assignments in MS word, or browsing the internet.

With the changing times, technological innovations are arising which helps our computing experiences better. Innovations that makes our lives easier and transforms our technological usage. Companies and inventors are coming up with new devices all the time. They come up with new ways of outputting or inputting the information from and to a computer. Although they are not always a better solution or replacement to the older devices. There are so called “Trends” that people create and make a specific device popular, which calculates to large investments towards these inventions and devices.

## **2. Input devices**

The definition of an Input device in a computer is “a hardware or peripheral device used to send data to a computer.” (Techopedia 2017). Although an input device can send data to another device, it cannot receive data back from another device (Computer Hope 2017). Input devices can be categories into four categories: Typing devices, Pointing devices, Optical devices, and Audio devices. These categories represent all the possible ways of communicating with the computer. It is the first path to the input-process-output phase.

### **2.1. Input device trends**

Without a doubt the biggest current trend of input devices are devices that use input from the hands like touchscreens and touchpads. The figures indicate that in Ireland, smartphones are now responsible for a third of our web access (Independent 2017). Therefore, the current market has a wide variety of devices that use input from the hands. As now most mobile devices are equipped with a touchscreen, people are getting the most familiar and comfortable with input from the hands. Although it is important to note that in case of a mobile phone touchscreen panel, it is not only an input device but also the output. In other devices like, touchpads, touch panels and drawing pads, the device only acts as an input. Companies are now coming out with all different types of touch related input devices on variety of different devices. For example, many new dishwasher, fridges, laptops etc., contain a touchscreen panel.

Voice input devices are also very popular. It is a device that uses speech as the input data or it commands directly into a system. Such equipment involves the use of speech recognition processes. The most popular versions of such processes are Siri, Google now Cortana that are used in mobile phones (Trusted Reviews 2016). They are all software that use mobile phone microphones to detect voice and recognise voice.

### **3. Output devices**

The definition of an output device is “any device used to send data from a computer to another device or user.” (Techopedia 2017). Output devices are also known as the way to communicate with users, although they give out results from the processing data that comes from its input. All computers absolutely need an output device. There are three types of output device which deliver the output data in different ways to the user. The three types of output devices are: Display output, Physical output, and Audio output.

#### **3.1. Output device trends**

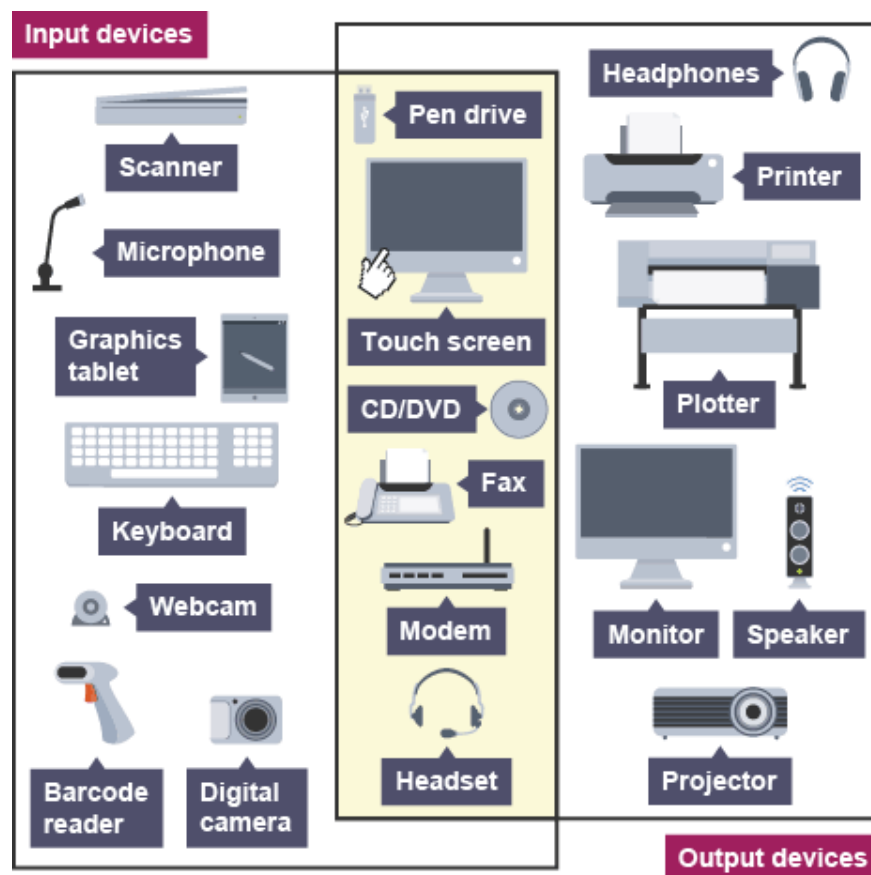
Similarly, as with Input devices, the trend for output devices are touchscreens display. Although without the touchscreen they are commonly called monitors, screen or light based devices called Visual Display Unit (VDU) (Tech Terms 2017). Displays play an important role in computer world nowadays. People are demanding bigger, better and more energy efficient displays as the computers are now able to output better graphics than ever before.

Another trend is for printing, more precisely 3D printing which is a recent invention. Printing has been around for many years now in all different forms from, mechanical machines to laser printing. Although 3D printing is now a revolutionary invention. It is used in many ways. Recently there was a case where a 3D printer was used to print a replica of a heart to save a life of a nine-month-old baby (S.J. Grunewald 2016). Even though 3D printing is great in many ways, it is still very slow, expensive, and difficult to do.

Projectors are also evolving and are being used more widely. Digital Projectors are widely used for many applications such as, conference room presentations, classroom trainings, home theatre and concerts. Projectors are widely used in many schools and other educational settings. They are used to project the video output from the computer onto the wall or a projector screen.

#### 4. Difference between Input and Output devices

There is a major difference in the tasks of both Input and Output devices in a computer. An input device sends information for processing, and an output device displays or reproduces the result of the processing. There are also devices that are both input and output, this would be a Rewritable CD/DVD and many USB devices. They can be referred as input/output device or I/O device (Computer Hope 2017).



(BBC News 2017)

## **5. Discussion**

No doubt that the current devices that are in trend will evolve with time. Trends in products bring a huge amount of interest and money. Therefore, IT companies put a lot of effort to improve these devices. There is a demand for a large amount of functionality and multifunction abilities by devices. Devices are improved by making them smaller, faster, and capable of doing many things. I believe that in the future all devices will be both Output and input devices, just like touchscreens in smartphones. That makes them more efficient, compact, and ergonomic. It brings a lot of benefits, but not always. Sometimes a device can only be output or input for it to be functional. Although if a device can both be good at doing input and output, that could be the best and most efficient way of building modern devices. A simple example of this is previously mentioned example of modern touchscreens, they can both output and input processes.

## **6. Conclusion**

To conclude, input and output devices are just as important as the computer itself. Without them a computer would be just a useless machine that can't use its potential. The future of input and output devices is bright and without a doubt there will be many new inventions, that will bring better and more capable devices into the computer world. Trends for devices will change but I believe it only improves them and develops them even more. I also think that the future is in I/O devices which is a combination of both input and output devices.

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