![Sophia logo]

Types of Computers

by Sophia

WHAT'S COVERED

A personal computer is designed to be a general-purpose device. That is, it can be used to solve many different types of problems. As the technologies of the personal computer have become more commonplace, many of the components have been integrated into other devices that previously were purely mechanical. We have also seen an evolution in what defines a computer. Ever since the invention of the personal computer, users have clamored for a way to carry them around. Here we will examine several types of devices that represent the latest trends in personal computing.

Our discussion breaks down as follows:

1. Portable Computers

As computing technology evolved, so did the needs of businesses making use of computers. One of the major concerns for businesses in the late 1970s and early 1980s had to do with how portable a computer system could be. Information is critical to decision-making in business; therefore, companies need computers to be readily accessible to their employees at all times, during the workday, and in a wide array of locations (home, remote offices, while in transit). In 1983, Compaq Computer Corporation developed the first commercially-successful portable personal computer. By today's standards, the Compaq PC was not very portable: weighing in at 28 pounds, the computer was designed like a suitcase, to be lugged around and then laid on its side to be used. Besides portability, Compaq was successful because it was fully compatible with the software being run by the IBM PC, which was the standard for business.

In the years that followed, portable computing continued to improve, giving us laptop and notebook computers. The "luggable" computer has given way to a much lighter clamshell computer that weighs from four to six pounds and runs on batteries. In fact, the most recent advances in technology give us a new class of laptop that is quickly becoming the standard: these laptops are extremely light and portable and use less power than their larger counterparts. The MacBook Air is a good example of this: it weighs less than three pounds and is only 0.68 inches thick!

A modern laptop

Finally, as more and more organizations and individuals are moving much of their computing to the Internet, laptops are being developed that use cloud computing ("the cloud") for all of their data and application storage. These laptops are also extremely light because they have no need of a hard disk at all! A good example of this type of laptop (sometimes called a netbook) is Samsung's Chromebook.

TERM TO KNOW

Cloud Computing

Storing and processing data over the Internet rather than on personal computer hardware.

2. Smartphones

The first modern-day mobile phone was invented in 1973. Resembling a brick and weighing in at two pounds, it was priced out of reach for most consumers at nearly four thousand dollars. Since then, mobile phones have become smaller and less expensive. Today, mobile phones are a modern convenience available to all levels of society. As mobile phones evolved, they became more like small computers. These smartphones have many of the same characteristics as a personal computer, such as an operating system and memory. The first smartphone was the IBM Simon, introduced in 1994.

In January 2007, Apple introduced the iPhone. Its ease of use and intuitive interface made it an immediate success and solidified the future of smartphones. Running on an operating system called iOS, the iPhone was really a small computer with a touchscreen interface. In 2008, the first Android phone was released, with similar functionality.

📄 **TERM TO KNOW**

Smartphone
    A mobile phone that incorporates the same functionality as a computer.

3. Tablet Computers

A tablet computer is one that uses a touchscreen as its primary input and is small enough and light enough to be carried around easily. Tablet computers generally have no keyboard and are self-contained inside a rectangular case. The first tablet computers appeared in the early 2000s and used an attached pen as a writing device for input. These tablets ranged in size from small personal digital assistants (PDAs), which were handheld, to full-sized, 14-inch devices. The primary advantage of a tablet computer lies in its ease of use. The touchscreen provides a simple yet efficient way for users to interact with and manipulate a tablet computer. In most instances, there is no need for training or advanced computer knowledge to use a tablet PC. Most early tablets used a version of an existing computer operating system, such as Windows or Linux.

These early tablet devices were, for the most part, commercial failures. Then, in January 2010, Apple introduced the iPad, which ushered in a new era of tablet computing. Instead of a pen, the iPad used the finger as the primary input device. Instead of using the operating system of their desktop and laptop computers, Apple chose to use iOS, the operating system of the iPhone. Because the iPad had a user interface that was the same as the iPhone, consumers felt comfortable and sales took off. The iPad has set the standard for tablet computing. After the success of the iPad, computer manufacturers began to develop new tablets that utilize operating systems that were designed for mobile devices, such as Android.

❓ **DID YOU KNOW**

Mobile computing is having a huge impact on the business world today. The use of smartphones and tablet computers is rising at double-digit rates each year. The Gartner Group, in a report issued in April 2013, estimated that over 1.7 million mobile phones will ship in the US in 2013, compared to just over 340,000 personal computers. Over half of these mobile phones are smartphones. Almost 200,000 tablet computers were predicted to ship in 2013. According to the report, PC shipments will continue to decline as phone and tablet shipments continue to increase.

📄 **TERM TO KNOW**

Tablet Computer
    A computer that uses a touchscreen as its primary input.

4. Integrated Computing

Along with advances in computers themselves, computing technology is being integrated into many everyday products. From automobiles to refrigerators to airplanes, computing technology is enhancing what these devices can do and is adding capabilities that would have been considered science fiction just a few years ago. Here are three of the latest ways that computing technologies are being integrated into everyday products:

- The Smart House: "Smart houses" connect home appliances and other devices to mobile phones or tablets, allowing homeowners to control these devices even when they are not home. A home security system is a common application of smart house technology. If you leave on vacation in a hurry and forget to activate your home's alarm system, you can turn it on from your smartphone while on the way to the airport. Other applications include turning on and off kitchen appliances, viewing in-home surveillance footage, or even opening and closing windows and shades.
- The Self-Driving Car: A growing trend in the auto industry is the idea of the self-driving car, or a car that can automatically perform functions that could previously only be done manually by the driver. A self-driving car is typically installed with cameras or sensors around the car that allow it to "see" objects that might be dangerous, such as an oncoming vehicle. This allows the car to automatically maneuver to avoid collisions. Companies are also working on auto-pilot functions that allow the car to automatically adjust its speed based on traffic conditions, and to park itself without any input from the driver.
- The Smart Watch: Smartwatches merge the design and functionality of a wristwatch with that of a mobile device. Simple smartwatches are able to display the weather or run calendar applications. More sophisticated smart watches integrate text and email applications, driving directions, health and fitness applications, and much more.

📋 **SUMMARY**

We have reviewed some variations on the personal computer, such as the tablet computer and the smartphone. These technologies have improved quickly over the years, making today's computing devices much more powerful than devices from just a few years ago. Many devices today use cloud computing for data and

application storage via the Internet. Finally, we discussed some examples of how computing technology integrates with other products, such as home applications and even cars.

Source: Derived from Chapter 2 of "Information Systems for Business and Beyond" by David T. Bourgeois. Some sections removed for brevity.
https://www.saylor.org/site/textbooks/Information%20Systems%20for%20Business%20and%20Beyond/Textbook.html

📄 **TERMS TO KNOW**

Cloud Computing
Storing and processing data over the Internet rather than on personal computer hardware.

Smartphone
A mobile phone that incorporates the same functionality as a computer.

Tablet Computer
A computer that uses a touch screen as its primary input.