The Telephone System Essay, Research Paper

The Telephone System

The telephone is one of the most creative and prized inventions in the

world. It has advanced from its humble beginnings to its wireless communication

technology today and for the future. The inhabitants of the earth have long

communicated over a distance, which has been done by shouting from one hilltop

or tower to another. The word “telephone” originated from a combination of two

Greek words: “tele”, meaning far off, and “phone”, meaning voice or sound, and

became the known term for “far- speaking.”

A basic telephone usually contains a transmitter, that transfers the

caller’s voice, and a receiver, that amplifies sound from an incoming call. In

the transmitter there are two common kinds of transmitters: the carbon

transmitter, and the electret transmitter. The carbon transmitter uses carbon

granules between metal plates called, electrodes, with one consisting of a thin

diaphragm that moves by pressure from sound waves and transmits them to the

carbon granules. These electrodes conduct electricity flowing through the

carbon. The sound waves hit the diaphragm causing the electrical resistance of

the carbon to vary. The electret transmitter is composed of a thin disk of

metal-coated plastic held above a thicker, hollow metal disk. This plastic disk

is electrically charged, and creates an electric field. The sound waves from

the caller’s voice cause the plastic disk to vibrate, changing the distance

between the disks, thus changing the intensity of the electric field. These

variations are translated into an electric current which travels across the

telephone lines. The receiver of a telephone is composed of a flat ring of

magnetic material. Underneath this magnetic ring is a coil of wire where the

electric current flows. Here, the current and magnetic field from the magnet

cause a diaphragm between the two to vibrate, and replicate the sounds that are

transformed into electricity.

The telephone is also composed of an alerter and a dial. The alerter,

usually known as the ringer, alerts a person of a telephone call, created by a

special frequency of electricity sent by the telephone number typed in. The

dial is the region on the phone where numbers are pushed or dialed. There are

two types of dialing systems; the rotary dial, and the Touch-Tone. The rotary

dial is a movable circular plate with the numbers one to nine, and zero. The

Touch-Tone system uses buttons that are pushed, instead of the rotary that send

pulses.

The telephone was said to be invented by many people. However, the

first to achieve this success, although by accident, was Alexander Graham Bell.

He and his associate were planning to conduct an experiment, when Mr. Bell spilt

acid on himself in another room, and his associate clearly heard the first

telephone message: “Mr. Watson, come here; I want you.” Although Alexander

Graham Bell had invented the telephone, his case had to be defended in court

more than 600 times for this to be proven.

After the invention of the telephone, many other great technological

advances were made, which boosted the telephone into a worldwide affair. The

first great advance was the invention of automatic switching. Next, long

distance telephone calls were established in small steps. For example, from

city to city, across a country, and across the ocean. Following this, undersea

cable and satellites, which made it possible to link points halfway around the

earth sounding as if from next door. Finally, by adding three digit area codes,

all phone calls, either to next door or around the world, could be done by the

caller.

The first telephone company to establish a telephone industry was the

Bell Telephone Company, in 1877, by Alexander Graham Bell. This did last for

sometime, however, independent telephone companies were started in many cities

and small towns. By 1908, many customers were being served by a new company

called AT&T, which eventually bought out the Bell Company. Since it was costly

to have the wires run to a household, many residential people often shared lines,

which is called a party line. Although these lines were cheaper for the

customers, it was a nuisance because only one person could use the phone at a

time, and other households could listen in on the calls. Finally, the price of

local calls was relatively low, however, long-distance calls were placed

relatively high when compared to the local telephone bill.

Today, approximately 95% of the households across North America have

telephones, which is creating a huge opportunity for companies that provide

local and long-distance service. Although prices for calls are slowly

decreasing, the competition between companies is increasing. This can be seen

from advertisements on television and in the newspaper. And not only is this

competing going to continue, it will increase as new technology is discovered.

What is in store for the future? No one will now. However, some of the

latest futuristic ideas that will soon be upon us are; television screens soon

accompany the telephone, so that the caller can see who he or she is having a

conversation with. Also, having all of the copper wire replaced with fiber

optics will greatly increase the telephones capabilities. This will give us the

advantage of sending very large pieces of information over the phone line. The

only thing that we do know about the telephone, is that it sure has come a long

way since its first discovery by the inventor Alexander Graham Bell. A man who

will always be remembered.