Electronics & Today's Society

Introduction

Electronics has had a major impact in the lives of billions of people worldwide, in many different areas. Here are a few examples of machines that we simply could not go without today:

Heart-beat monitors, without a heart monitor doctors would not be able to tell when a person goes into arrest or if their heart is having problems. This is potentially fatal.

Another example of a system that has had an effect on society is a seismograph. These detect earthquakes, although they cannot give us much warning, they help us to understand how earthquakes work and hopefully give us an insight in how to detect them earlier and consequently give earlier warnings and save more lives.

The above two systems are what I would call "vital" systems. This is because they both are designed to save lives. I think that above all, the purpose of electronics is ultimately to save lives. Of course there are many other uses of electronics in society, but I think they are all second-place to the advantage of saving peoples lives.

There are millions of other uses of electronics, for example electronic tagging has become commonplace in shops. These are little tags, which set off an alarm if someone tries to walk out of a shop without buying the item and the tag being disabled. This is extremely helpful to shop owners because it cuts down shoplifting greatly. People can no longer just walk out of a shop with an unpaid for product hidden somewhere. The alarm will detect them and alert security of the violation.

Electronics also plays a very high part in entertainment and leisure. A prime example would be games consoles. Most children and teenagers now have a games console of some description, and I think it is fair to say that they spend a lot of their spare time playing on these consoles. Today's youth wouldn't be the same without the invent of games consoles.

All these systems have positive and negative effects on society. Some people would say that electronics has begun to take over people's lives up to a point where it's becoming a bad thing. People are becoming constantly more and more lazy, doing less physical work because electronics has started to do the work for us. Electronics has also taken a lot of jobs away from people, because electrical systems are faster, more efficient and don't need paying! Of course many people see this as a vast improvement because of all the advantages electronics give, such as the fact they don't need paying and the fact they're a lot more efficient than a person is.

Electronics was invented to help us, and help us it has. Electronics now does a lot of jobs that people don't want to do. It has also lowered the price of a lot of products. This is because electronics has allowed companies to make products a lot cheaper due to not having to employ so many workers. There are also many environmental effects to be considered. For example electronics has allowed many new products to be created. Unfortunately, a lot of these products are not environmentally friendly and are beginning to clutter up the environment. Overall, however, I do believe electronics has had a good effect on society and the world would not be the same without it.

Communication

Communication comes in many forms and has many positive and negative effects. Here are but a few:
Mobile telephones are becoming common place in modern day society and they are a great invention in many ways. If you are out and about, you don't have to find a phone box to be able to communicate with someone, you just pick up yo u mobile phone and away you go. This is a great benefit because people in emergencies are able to communicate with whoever they need quickly and easily. Recent developments of mobile phones have begun to make some people believe that there are certain heal th risks involved with the use of mobile phones. This is a big disadvantage because although nothing has yet been proven, mobile phones could be seriously damaging the health of frequent users. On the other hand though, mobile phones allow people to communicate much easier than they could before. For example, a teenager is now able to get someone's mobile phone number and they can send messages to that person, without having to actually talk to them, so it is ideal for the shy. Currently mobile phones are starting to become very much more advanced than before. They are starting to have colour screens, and the ability to access the Internet, even to take pictures. On the right is an example of a modern phone, the Nokia 7250. It is a typical modern mobile, capable of taking pictures and possesses a colour screen.
The picture below is a new 'phone' currently in development by Nokia. It is the Nokia N-Gage. For a more detailed look at this phone, go to www.n-gage.com.
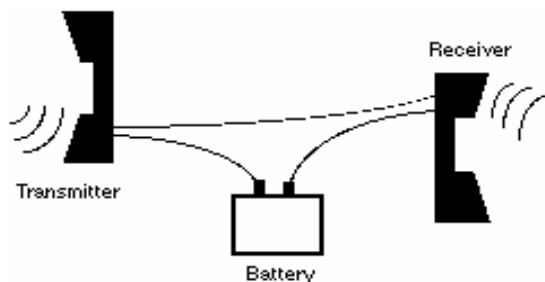
The Internet is another modern day communication. The Internet is a huge resource for information on pretty much anything you can think of, whatever you want; you can find it on the 'net'. This fairly new invention is sweeping quickly throughout the world. This is because the Internet is now quite cheap to possess and you can access so much information so quickly. It is like a library right in you own home! Of course the Internet has some bad effects, for example you can now buy a lot of products on the Int ernet, not only can you do it from the luxury of your own home, but most goods are cheaper than high - street stores. This is having a bad effect on our high -street stores because people are turning to the Internet for products and so not as many products ar e being brought in shops. The Internet also allows people to communicate instantly and cheaply with anyone anywhere in the world. This is brilliant for us, the public, but because of this, letters are becoming a thing of the past, and email much more common place. So Royal Mail are losing more and more business because people are turning to the Internet to communicate, rather than sending a letter via Royal Mail. Currently, the Internet is still growing, with more and more Internet businesses such as amazon.co.uk being created. It is hard to say what the future of the Internet is, but it looks as if eventually every household will be connected to the Internet. Apart from this continuing spread, I do not see how the Internet will change in the future, it will just continue to grow and become more and more competitive.

The radio is another system which is widely used. A lot of people get up in the morning and prepare to do their daily work, while listening to the radio. Radio not only has uses in leisure and en tertainment, but during wars and emergencies, radios can be used to keep in touch with each other, and to give orders to troops etc. The radio is the basic technology behind things like mobile phones, microwaves and even remote control cars. Today, the rad io is mainly used for entertainment and leisure, because it is such a widely spread system that people are almost constantly within earshot of one. This allows news from around the world to be spread very quickly, giving the everyday person more idea of wh at

is going on in the world. Although this is true, the radio is still used in places such as the armed forces, or the police because of its ease. I think that in the future, radio will still be around because it is a cheap and very popular way to communicate. Not only because of the ease of which news is spread, but because a lot of people listen to the radio for music. This is something I think which will stay around for a long time to come.

Radio was really the first widespread communication device, however, it wasn't long before the radio was bettered. The television (TV) was invented in the 1920's. To start with in 1929 there was only one channel, the BBC, and it was only broadcast for 30 minutes a day using the 30-line mechanical system of John Baird. Now there are four main, terrestrial channels, BBC1, BBC2, ITV and Channel 4. In some parts of the UK you can get Channel 5 as well. In addition to Terrestrial TV you can purchase Digital TV, which gives you the option of hundreds of extra TV channels. Digital TV is also clearer. There are obviously many major advantages with television, for example, nearly every household has a TV which enables them to receive the four standard channels. Whenever something happens in the world, TV companies make it their business to find out as fast as possible. It is then broadcast Nation-wide, if not world-wide, to a high percentage of the population. This fast spread of news allows the general public to be in-touch with the rest of the world's happenings as and when they occur.
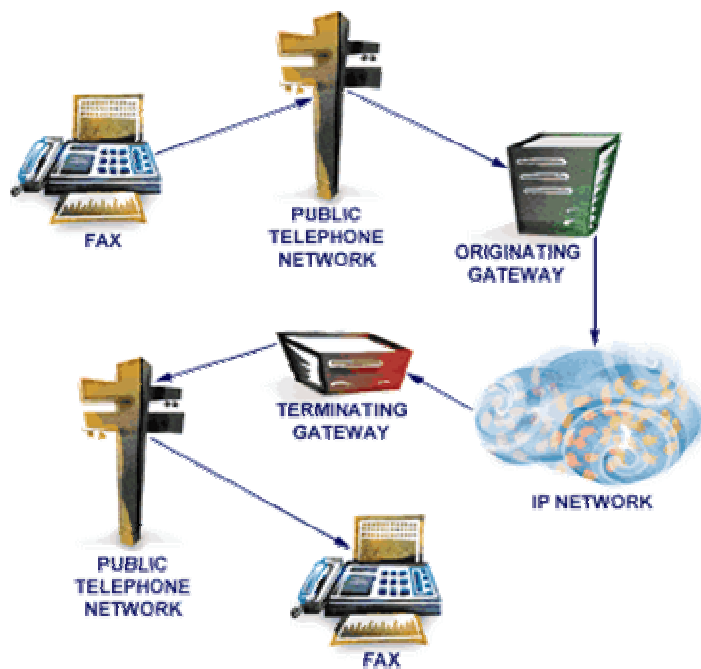
The telephone, in my opinion, is one of the greatest ever inventions. The invent of the telephone allowed people to reach one another from anywhere in the country. This of course spread and now the telephone network expands throughout the world. The inventor was Alexander Graham Bell, and on the 10th of March 1986 he first displayed his device. One of the two men was heard to say "Ooh, it talks" when the telephone was first tested. Today telephones use microphones for transmitters and piezoelectric transducers for receivers. With so many people with home phones it is easy to reach others. The obvious and huge advantage of a telephone is that you can reach a good number of people at any time. Calls today are very cheap considering the size of the network. Below is a very simple diagram of how the basic idea of how a telephone works:

The telephone is an electrical instrument

Speaking into the transmitter makes its diaphragm vibrate. This varies the electric current, causing the receiver's diaphragm to vibrate. This duplicates the original sound.

With modern day communications, such as email, the fax machine doesn't seem so brilliant. However, it is still a well used communications device. The fax was invented by Alexander Bain, who patented the first fax design in 1843. If you look back at the early designs, you can get a very good idea of how they work today. Most of the early designs involved a rotating drum. To send a fax, you would attach the piece of paper to the drum, with the print facing outward. The rest of the machine worked something like this: There was a small photo sensor with a lens and a light. The photo sensor was attached to an arm and faced the sheet of paper. The arm could move downward over the sheet of paper from one end to the other as the sheet rotated on the drum. It worked in a way similar to a lathe. A modern fax machine does not have the rotating drums and is obviously a lot faster, but it uses the same basics to do the job. Ther e is a sensor to read the paper. Usually, a modern fax machine also has a paper -feed mechanism so that it is easy to send multi-page faxes. The machine encodes the white and black spots on the paper so that they can travel through a phone line. At the receiving end, there is a mechanism that marks the paper with black dots. This produces a readable pattern known as a fax. See diagram below for a pictorial map of the route taken by a fax.

There are many good and bad effects on society, th e environment and the economy. For example, with the continuing spread and development of electrical communications, communication is becoming faster and cheaper. This means it is much easier to arrange for people to meet up. This is a positive social effect. The fact that communication is getting cheaper means it has a continuing effect on the economy. The environment is an issue as well, because

with the demand for communications increasing, companies need to build more masts and aerials to satisfy this need. These masks and aerials pollute the environment visually, and some people believe they may affect our future health too. I do not believe there are any positive effects on the environment from the development of communications devices. However, as you can see above there are lots of positive effects on society and the economy. Unfortunately, there are also many detrimental effects. For example, this new age and state of development means that our society and younger generations way of communicating is changing. People may begin to meet less often, because they can talk on the phone or over the Internet. The economy may also be damaged due to people sending faxes or emails instead of writing letters, this means postmen and women could lose their jobs.

Overall, I think electronic communications has had a positive effect on our lives. There are many detrimental effects, but due to the ease of which we can communicate due to electronics, we can organise our lives with much more ease. This huge factor sways my opinion into the positive side.

There is however a limit. The continued development of electronic communications could seriously affect our culture. For example, business men and women will stop meeting altogether! They will conduct business via electrical means. I see this as a positive effect because it will save people travelling around so much, meaning pollution will lower. It does take the spirit out of the business, which for some people takes out a big part of being in a business in the first place. For most though, I think this would be a positive effect. There could also be a detrimental side to this, for example today our school system runs with people all gathering at one place. This allows education to take place easily. However, people forget to see the side of school where friends are made. If electronic development continues to such a degree that schools are no longer needed and people can learn from home, then schools may cease to exist. This would have a big impact on children's lives beca use they would therefore make no friends. They would only know other children who lived say in their road.

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