**BRIEF HISTORY OF TELEPHONE TECHNOLOGY**

**INTRODUCTION**

A telephone is the most used form of communication in the current generation. Valuable information can be conducted efficiently and very fast, memories can be captured through photos and videos, important data and documents can be sent discretely and through the internet one can explore the world and conduct research all through a mobile phone. Our society depends on telephones for a lot of things hence the importance to look down the memory lane of how this electronic gadget was invented. The focus will be on the precursors of telephone, its invention, earlier sound transmission discoveries and history timeline of telephone technology and the effects of phones to the current and future generations. How would the world be without telephones?

Robert Hooke made the first acoustic telephone in 1672 because he found out that sound can be transmitted over a string from the mouthpiece on one side to the earpiece on the other side that’s why a modern phone has both earpiece for hearing transmitted sound and a mouthpiece to relay sound. In 1838, Samuel B. Morse knew that messages can be relayed by pressing down or releasing a switch in sequence to transmit a pattern of sounds thus called morse code. Robert Hooke and Samuel Morse form the basis of sound transmission.

Alexander Graham Bell is often credited for the invention of the first telephone, which is not the case. The first telephone was invented by Antonio Meucci an Italian inventor in the year 1860 and it was called a “teletrophono”. He began his design in the year 1849 and filed a caveat in 1871 but due to financial constraints, he was never able to complete his project. He was later honored for introducing telephone in the year 2002 by the US house of representatives. Five years later, two developers: Elisha Gray and Alexander Graham Bell, went to submit their own designs for the telephone to the United States Patent and Trademark office. Gray submitted his caveat first but Bell was able to pay the application fee that day thus being granted the patent. That is why Alexander Graham Bell was officially granted the patent for the invention on March 7, 1879 and the first call was made three days later. He did not call his invention a telephone because in most of the documents it is referred to as,” improvement of telegraphy” (Stefoff, 2005, p.46). in the same year, subscribers began to be called by numbers and not names as in the previous years.

The telephone used a microphone to convert sound into electrical signals which was later converted into sound in the listener’s end. The device was funnel shaped and was very uncomfortable to use. In 1880 Bell decided to improve his invention thus setting up a lab. From converting sound electronically, he was able to send sound using a beam of light using a photophone thus making the first wireless call in history. Hammond V. Hayes developed a common battery system in such a way that all phones developed on one charge unit in 1888. Kansas City undertaker called Almon B. Strowger invented the first automatic dialing system in 1891 which allowed a central exchange of calls between subscribers using relays and sliders. The pulses would be created by rotating dial on the phone to the desired numbers in series. His aim was getting rid of operators who were sending away his potential customers. Almon’s system was effective and remained in use until digital switches began. By 1900, a telephone operating using coins was installed in Hartford, Connecticut. Later in 1904 the Bell company developed phones which had a transmitter and receiver and was termed ’French phone’. In 1915 he made the first call from coast to coast thus forming the first long distance call from a land line. The believed that this device will be used for communication between families and friends without having to strain (Stefoff, 2005). Unfortunately, the quality of sound was poor. Postmaster-General Heinrich von Stephan asked Werner Siemens to develop his own telephonic device depending on Bell apparatus and together with Haskew company they managed to do a lot. It was later own improved by the carbon microphone, which was invented solely by Emil Berliner, David Edward Hughes in Great Britain and Thomas Alva Edison in the US.

As years went by improvement were made on the telephone. The first phones were radio phones but they had interference and fading issues in 1927 and these services were from the United States to the United Kingdom and the calls costed a lot. One would pay for the phones after making the call. The mobile services were put in operation in 1946 and it could connect moving vehicles to a telephone network through radio waves. By 1947, long distance calls were made using microwave radio technology. In 1949 AT&T (American Telephone and Telegraph companies) introduced the model 500 telephone developed by Henry Dreyfuss which has a sleek design and were the first touch-tone dialing but were slow to replace rotary phones till the late 1990s. it was a common landline in most households in the US throughout the 20th century before introduction of mobile phones.

**From telephones to portable smartphones:** Motorola employee Martin Cooper, in 1973 used an early photocopy of the Motorola DynaTAC 8000x to make a phone call. He was able to contact his rival, Joel Engel from Bell labs. This was the onset of mobile phone use because in 1994, the Simon Personal Communicator became the first smartphone in the world. The first mobile phone was approved in 1983 by Federal Commission and it was called ‘The Brick’ because it was heavy and its battery life could only last for thirty minutes and in the same year 1G network was introduced by Ameritech in U.S. seven years later in Finland, Global System for Mobile Communication launched 2G network. Sony and engineer Asahi Kasei started selling very light rechargeable lithium-ion battery which lasted longer and is still in use to date.

Tremendous improvement followed when the first smartphone was announced and the first SMS sent. Engineer Frank Canova created what is considered the first true smartphone and it had the code name “sweetspot” and it was showcased at a computer industry tradeshow. The first message was sent by an engineer at Sema group from Neil Papworth. It only hit the market in the year 1994 and the users could not only make calls but also receive emails too. It’s the phone which had several apps like; phonebook, calculator and notepad. In 1997 the phones became more captivating since there were introduction of several games and the first one was the common ‘snake’ found in Nokia’s 6110 developed by Finnish developer Taneli Armanto. Later a lot of games were introduced.

Memories began to be captured in 1999 when Japan released the first camera phone with a GPS. The camera was front-facing and the photos captured could be sent by email in Kyocera Visual Phone VP-210 to Japan’s cellular network. Benefon introduced a phone named Benefon Esc which had GPS technology. This would make it easier to locate a phone or a person using it. In 2000, J-SH04 which was released by Sharp had an in-built back-facing camera and could immediately transmit photos through carrier network unlike the previous one. J-SH04 was considered the first mass-market camera phone. By 2001, there was widespread use of internet and that’s when 3G network was introduced and used. It was faster than 1G and 2G networks.

After a while, U.S. electronics company Qualcomm created and tested live-assisted GPS technology which improved location accuracy. The fancy iphone was introduced into the world in 2007 by Apple CEO Steve Jobs in Macworld convention. The first iPhone model had internet access, touchscreen, GPS, camera, and iPod. It has a very smart software and Jobs descried iPhone as “revolutionary and magical”. In 2008 the first android smartphone was sold commercially and the phone was called HTC Dream and it had lesser features; keyboard, touch screen, Qwerty and internet access. One had to physically move the screen to reveal the keyboard which had a BlackBerry-style for navigation. 4G network was introduced in 2009 by Telia Sonera company and was ten times faster than 3G. Verizon launched the first 5G network in the world but its not available worldwide, can only be found in fewer countries like Minneapolis and Chicago

**Effects of phones on current and future generations:** smartphones have a great impact in the current society and it’s taking up major parts of education, health, agriculture and businesses (Sarwar & Soomro2013). Most research, communications and entertainments are available in different apps like Facebook, twitter, WhatsApp and tiktok (Linsys, 2011). They have both benefits and disadvantages to the current and future generations. The advantages include; ease in communication, learning made possible, business advertisement, work from home and research resources are readily available. The vices are also there including insomnia, phone addiction, exposure to immoral behaviors and cyber bullying.

**Positive effects;** people access easier services without moving like; enhancing personal development and getting ideas to succeed in business not forgetting exposure to learning new things (Mojaheren, 2017). (Gothami & Kumar 2016) highlights that smartphones have maximum benefits concerning education, health entertainment and even social life. People are used to smartphones and always feel they are at a loss if they don’t have them since that is what they use to keep appointments, read journals, navigate while driving and is also helpful in business (Jung 2019). Many people can work and learn at the same time using mobile phones and people don’t have to move abroad to access better education since they can enroll in distance learning and even graduate without being physically in class. Visiting banks to withdraw money has been minimized because can be done using the phone. Others have turned their homes to offices and they are able to attend and organize meetings through google meet, zoom and many other applications. It has made global reach easier since people can communicate with each other worldwide through whatsapp, telegram and imo. Through smartphones, people are living securely since they can monitor their houses through CCTVs connected to them, incase of an attach they can always ask for emergency services and personal information are kept safe since most have passwords, fingerprints and also face recognition.

**Negative effects of smartphones:** even though smartphones are advantageous we can’t turn a blind eye to the fact that it has impacted the society negatively. Most accidents are attributed to being distracted by phones while driving or even walking along the road. Learning has become difficult to most learners because they check their phones hence being distracted leading to poor performance in school and even failing to complete assignments. Obesity has been a trend I the current century since most young people are glued to their phones and don’t have time to work out thus affecting their health in the long run. Smartphones emit blue light which usually affects eyesight and also lead to sleep disorders which increases the chances of getting insomnia(Boumsleh & Doris 2017). Most marriages and relationships have disconnected due to partners and relatives overusing phones that they don’t have time to meet up and have family time while having normal conversations. Some youth have ended their lives and some live in depression because they are succumbing to peer pressure of owning the latest phone of which most parents do not grant their requests. Cyber bullying is the most trending in this 21st century where people spread lies, send hurtful comments, impersonating others and even conning people of hard earned money. Cyber bullying tends to lead to emotional, physical and mental stress

**How to reduce the negative effects of technology:** one can’t avoid phones as a way of mitigating its negative effects but its good to moderate it. For young adults, parents have the ability to regulate their data routers from accessing negative contents, parents can also teach their kids on correct use of technology. People should ensure they do physical exercise to avoid lifestyle diseases. They must also ensure they don’t over dwell on their phones to avoid the harmful effects of blue light, this will enable them to have enough sleep and avoid eye-related problems. People should also be educated about cyber bullying in order for them to know how to handle it in case it happens. If they cant handle it they should consult a counsellor, improve privacy setting in social media, report harmful comments and one can also delete or hide content from haters.

**CONCLUSION**

Telephones have come a long way from when Robert Hooke could be transmitted using a string to Alexander Graham Bell who invented the phone and we cant forget the introduction of the new smartphone by Martin Cooper to the current phones we have today. The positive effects of smartphones have made life easier and has paved way to development on personal levels and even communities. The negative effect are also taking app a lot since a lot of people are addicted to their phones. Its recommended that people reduce phone use in order to live a healthier life. Otherwise life is better now that smartphones are more advanced.

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