

**For better or worse: Cell phones have forever changed the lives of
people in the United States**

Eric Cameron

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Brother Keller

B499b

March 1, 2012

March 7, 2012

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Dear Mr. Rodney Keller:

I would like to submit this research report entitled "For better or worse: Cell phones have forever changed the lives of people in the United States" requested on March 7th, 2012.

In this report you will find the answers to the following questions: How has the invention of the modern day cell phone improved our lives? How is this more than just a communication device? What good has it done to our society? Are there any side effects? This paper thoughtfully examines the positives as well as the negatives of this rapidly advancing device.

Some problems that I have encountered in the research were the inability to access some of the books that I needed. On in particular was the book called *Txtng : the Gr8 Db8*. This would have given me more insight into the controversy of how some believe texting is ruining the English language.

This research was full of data that was extremely helpful. From books to research articles, there is plenty of information and data to back my theories up without the need of speculation.

I hope you find this report resourceful and accurate.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric B. Cameron". The signature is fluid and cursive, with a long horizontal stroke at the end.

Eric B. Cameron

Abstract

What has the modern day cell phone or “smart phone” done to our quality of life? What changes have we seen? From the invention of the first long distance communication device to the electronic instrument that gives us constant information on demand, these devices have changed the way we act, think, and communicate as a species. What good has come out of the cell phone? How have we used it to our advantage and to improve our everyday life? Are there any side effects? Has the cell phone degraded us as a society? The purpose of this article is to demonstrate the positives and the negatives of this modern day invention. We can answer these questions by taking a close looking at what the cell phone has done for us.

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Introduction

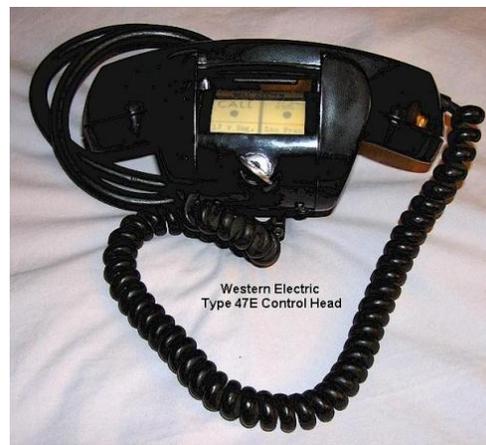
The invention of the telephone has enabled us to communicate to great distances in our country. It has brought about a new way of life that has never been seen in the past. Before the telephone, we had to rely on written letters and telegraphs. Information was slow and by the time it reached its recipient, this knowledge was already outdated. The telephone enabled us to speed up the lag of information.

However, it still had its inconveniences of needing to be attached to a cable in order for it to work.

History

Before cellular networks, two men by the name of Nikola Tesla and Guglielmo Marconi invented the first known wireless message in the early twentieth century. They created equipment that could send and receive electrical signals in patterns called frequency. A transmitter was needed to send the signal, and a receiver to receive it. We now know this technology to be the radio (Kling pg.17)

A great need during World War II brought the idea to Motorola to take a transmitter and receiver and put them into one package that could be carried around. The radio and the



(MTS pg. 2)

telephone come together to make the radio phone. The downside to this portable phone was its bulk and weight. However, this technology was very successful and enabled American troops to communicate over large distances in real time.

Just after the war, the Mobile Telephone Service (MTS) was introduced by Bell Services. It had the capability of linking a radio phone to the standard public telephone network. Western Electric created a car phone that worked on this service. The equipment

weighed in at 80 pounds and contained only 3 channels for all of the MTS users in a given district to use (Mobile). This was great for those on the go, but the downside was that it took manual operation by a mobile operator to set up the call. To talk, one would have to hold down a button much like a CB radio.

The need for full mobile ability for a phone was still very strong despite the downsides to the MTS system. In 1964 Improved Mobile Telephone Service (IMTS) was only a light step in the right direction. It offered additional channels and the handling of calls to the public network was more automatic. IMTS was still not able to keep up with demand. These phones were mobile only in the sense that it had to be in a vehicle. They drew so much power that the car's engine had to be running in order for it to work. It was too large and impractical to carry around. The phone had to stay within coverage of a base station much like a radio station (History).

The first portable mobile phone to be produced came from Motorola in 1973; a prototype invented by a man named John F. Mitchell. Weighing in at close to 2 pounds, it was large for today's standards, yet the phone was portable. It was commercially available in 1983 by the name of DynaTAC 8000x at a hefty price tag of \$3,995 (Motorola). This invention enabled people to not have to be strapped to a car in order to communicate via their phone. Mitchell once said, "As I walked down the street while talking on the phone, sophisticated New Yorkers gaped at the sight of someone actually moving around while making a phone call." (Martin) However, one could not travel far from a base station or the phone would not work.



(Motorola)

In order to expand the coverage of the mobile phone, an infrastructure needed to be built.

The first network in the world was built in Chicago in 1978 by using multiple cellular sites. This enabled an analog signal to be transferred from one tower to the next. There were over 1300 customers using this service in Chicago. Japan, on the other hand, built a system that covered their whole country using 88 cell towers (History).

It wasn't until technological improvements were to be made that the cell phone would take off. The development of the silicon chip, microprocessors, and integrated circuits along with improved battery design created the largest strides in the cell phone industry. From then on, an explosion of growth happened throughout the United States. In 1985 there were less than 204,000 mobile phone users. Three years later there were 1.6 million users along with networks in the ninety largest markets (Kling pg.27). The analog system was beginning to become overcrowded. In the 1990s a second generation (2G) cell tower was invented which used a digital frequency. Digital



took up less space which relieved the congestion while providing greater security.

Although it was an expensive service to use, cell phones greatly changed our way of life. As more people used it, prices went down. There were less populated areas that never had the use of phones because of the expense of running cable. Now cell phones can reach these places at a much lower cost. Most of the major roadways in the United States now have mobile coverage including our nation's national parks.

(Kling pg.36)

Developing countries throughout the world are also taking advantage of this lower cost of communication. A technology consultant, Nick Foggin, said: "no other technology has had such a rapid and universal impact—not even the Internet. Today there are (sic) more GSM

mobile phones on this planet than there are computers, and mobile phone users outnumber active Internet users two to one.” (Foggin pg. 251)

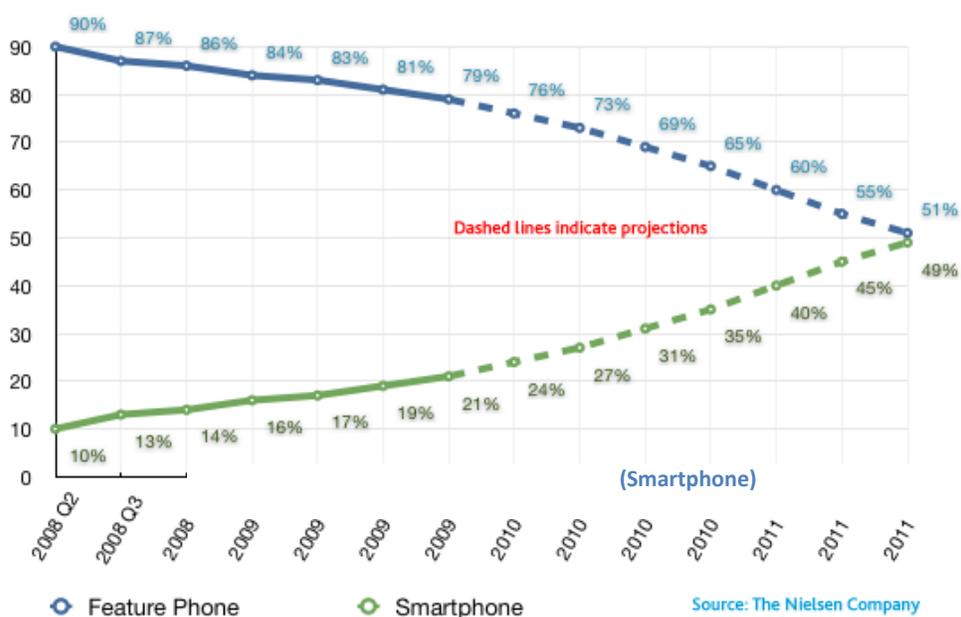
The mobile cell phone has now become more than just a device used as a telephone. Phones started coming out with keyboards and the ability to send and receive faxes and emails. There was the ability to store data on them like contact lists and address books (Cling pg.36). They could identify a caller before picking up the line. Ringtones were invented and gave us the ability to customize our mobile phone experience.

Now, instead of talking, we have the ability to write out a message called texting and send it over to another person’s phone.

Not only was the cell phone portable, but it became a more versatile phone than we had with the land line phone.

The widespread use of the internet and the ability of phones to handle more data brought around the third generation (3G) cellular network. This network enabled phones to handle internet related activity. These phones became very intelligent and were called smartphones for this very reason. Technology enabled us to have a hand held computer that can do virtually anything a desktop computer could do all in a device the size of a deck of

U.S. Smartphone Penetration & Projections



cards. It can be handled using a small keyboard or a touchable screen. This device can be used to call, email, listen to music, text, take pictures and video, surf the internet, and even play games. This low cost technology not only links people wherever they are, but now they have the ability of a large wealth of information at their disposal.

We are finding that smartphones are quickly becoming more common than the standard feature phone. It is expected to happen by the end of 2011 (Smartphones). ComScore, a company that measures the digital world, has been keeping track of the trends in the U.S. market. According to ComScore, as of July 2011 234 million Americans ages 13 and older used mobile devices. 70 percent of mobile subscribers used the text messaging feature on their phone. 41 percent uses the internet while 40.6 percent downloaded applications to their phones. 27.8 percent play games while 20.3 percent listen to music on their phones. All of these stats were on the rise from the previous quarter (Press).

Today, we are seeing this technology affect our lives at an alarming pace for better and for worse. We have the ability to carry around a device that enables us to do a lot of things. This has helped and disrupted us socially, both young and old. It effects our education, family life, business structure, and even the way we travel.

SOCIAL

The internet has created a way for us to interact through the use of digital social networks. It is used to help us keep in touch digitally with the world. We can keep track of social media through the use of smartphones. It is always there at our fingertips. The upside to this is it enables us to keep in touch with a multitude of people at the same time. The downside is that it takes up a lot of our time and it can become addicting thus coining the phrase "Phone Junkie." In 2010, 62-88% of young adults regularly text and 72% use social networking sites (Burke).

One of the more common forms of communication with a cell phone has nothing to do with talking. It is through the use of texting where a message can be typed out and sent quietly without too much disturbance to others in the vicinity. This private form of communication can be a great advantage. In the Philippines in 2001, texting was used to overthrow President Joseph Estrada. In Moldavia, protests were efficiently organized using texting when a voting process was thought to be fraudulent (Tilley).

There are quite a few hazards associated with texting. It can be easier to text somebody than to call them and talk to them in person. This habit puts up barriers in social skills because of the lack of having to verbally communicate to somebody.

While texting it is common to use abbreviations and a shorthand version of writing. This creates what some think as a new language. Some argue that this is affecting and degrading the English language. They feel that texting leads to

low literacy and bad spelling practices among children. David Crystal, a linguist, disagrees. He wrote a book called *Txtng : the Gr8 Db8* detailing his research and experimentation on this topic. In this book he shows that abbreviating has been around for decades and that less than ten percent of the words used in texting are abbreviated (Crystal).

Other social issues have a lot to do with the internet and with it come negative side effects or “virtual addictions” like online gambling and pornography. Cell phones have only made the internet more accessible. An already addicting social media site like Facebook can now be accessed by phone and checked constantly.

Cyber stalking is the use of electronic means to stalk or harass an individual and is another growing problem. In college studies have found that 30% of females in their study experienced unwanted pursuit. They also found that couples in a relationship often monitored their partner’s cell phone histories: another form of cyber

stalking. Women tend to do this more than men (Burke).

Sexting is a new term that was brought about because of the mobile phone. This word is a portmanteau of sex and texting. Sexting is when a cell phone user sends sexually explicit text, photograph, or video to another person. A survey was done by Cosmogirl.com in 2008.

They surveyed 1280 teenagers and found that 20% of teens and 33% of young adults had sent explicit photographs of themselves electronically. The social danger with this is the material can be very easily and widely propagated without the control of the originator. Because it often involves a minor, sexting is now being considered a sex crime throughout parts of the United States (Sexting).

Is the use of a cell phone addictive? Michelle Hachman, a high school senior did a study on cell phone addiction which won her a \$75,000 scholarship. She split 150 high school students into two rooms. One room was able to have their cell phones while the other did not. All

students wore devices that measured anxiety. She found that the students with cell phones were more anxious than those without. Those without were so bored that they fell asleep leaving Michelle to believe that not having a cell phone doesn't result in anxiety, but results in lack of stimulation which shows the addictive side effect of this device (Price).

TRAVEL

While traveling, wherever you go a smartphone is your best friend. Most phones today have Global Positioning System (GPS) capabilities. This enables the phone to track your location. More importantly, it can be used to help navigate to any destination giving step-by-step directions. It can show how high you are, how fast you are going, it can even show where you left your car. Coupled with the Internet, a smartphone can let someone know what restaurants are within 10 miles of your location, show you a menu of their items, you can call ahead to make reservations, and then show you how to get there.

One of the greatest risks today for using a cell phone has to do with driving. Since the invention of the car phone, we have found cell phones and cars to be a dangerous mix because of how distracting it can be. The University of Utah did a study on the effects of talking while driving. They found that motorists who talk using handheld or hands free phones while driving are just as impaired as a drunk driver (Drivers). With more and more people owning cell phones, this is a growing problem. There are laws in many states in our country banning the use of talking on cell phone while driving in hopes to reduce accidents.

Talking on cell phones isn't the only distraction for a motorist. The use of laws prohibiting cell phone usage has increased the number of those who text while driving. This has been shown to be even more dangerous because texting often requires visually looking at the phone and the use of both hands. This problem has become so serious that the National Transportation Safety Board is recommending a ban of cell phone use

to novice drivers, school bus drivers, and commercial truckers (Ahlers).

Using cell phones is not only risky to drivers, but new laws have been introduced for phone usage with pedestrians as well. People walking the street also suffer from cell phone distraction especially while using crosswalks. Cities like Philadelphia are starting to crack down on this issue. However, according to Governors Highway Safety Administration (GHSA), there is no accurate data available yet for this theory.

EDUCATION

Today's modern school has incorporated technology to increase learning. Computers and the Internet are now common tools. Cell phones, however, have not been so welcome in the classroom. Most phones nowadays have the ability to take pictures. They have been used to take pictures of tests and then delivered to friends. Texting can be used to send answers to test or for asking someone else for answers. It can store information like

equations and formulas when these are not allowed to be used in tests. Furthermore, answers could be looked up online (Hanson). It is easy to hide a small cell phone. The worst infraction of having a cell phone in school is the constant need socially text with someone else. It has become an addiction to some to have constant relaying of texts. This causes a great distraction not only for the one texting, but from other students around them.

Education is slowly starting to incorporate the use of cell phones in learning. The Audience Response System (ARS) is a tool that can poll students on any topic. A teacher can use this to provide instant feedback from all students at the same time. The students being polled would simply text their answers into a database that the teacher could use. Phones could be used as a research tool. A student could look something up online using their phone instead of a laptop. This would be more economical than the use of a computer laptop. Teachers have also used this technology for evidence collection by having students take pictures of

data and sharing what they learned with other students (Engel). An article by George Engel in *TechTrends* told about the success of using cell phones in the classroom. He said: "There was an observable rise in class participation when cell phones were used in the class. Students felt they were able to make a contribution to the class using their phones either to comment on the lesson, to answer questions, or to do research to help the lesson continue." (Engel pg.44) The downside to this type of learning is that although most do, there are still some that do not own cell phones.

There are some more controversial arguments for allowing the use of phones in the classroom. Some students have the ability to record video via their cell phone. This has been helpful in situations when fights break out in school and is caught on tape. This video could be used as evidence in court. It can also be used to record any other misbehavior going on in school including that of other teachers (Hanson). This has created a movement to ban the use of recording videos in the classroom because

these videos are often taken out of context and a teacher's job could be in jeopardy because of it.

BUSINESS

Our business structure has changed dramatically over the years thanks to modern inventions like the internet, email, and the fax machine. Cell phones have played a role as well. For example, in the past if a business person was out of the office, there was little hope of contacting them in case of emergency or to get some vital information. Personal schedules had to be kept on file to know how to keep track of individuals. Nowadays, anybody could be reached almost anywhere.

Emergencies can be handled quickly through a network of calls.

Other benefits in the workplace include the ability to check one's schedule. What used to be a Franklin Planner is now a cell phone. A phone can remind us when an appointment is due. It could be used to set tasks for ourselves or for others or to take notes in a meeting. When one

is away from their office, they can still view and edit office documents right from their phone as they walk to their next meeting. The use of cell phones in the workplace has improved efficiency and can lower cost so much that it is very common to find companies providing and paying for cell phones to all their employees.

The downside having cell phones in the work environment is that we take our office with us even after business hours. This causes some people to be constantly "at work." Just like phones in schools, inappropriate use of phones can be a distraction causing less production out of employees. There are common manners one must use. Louise Lee, an editor at *Businessweek* gave some good advice in this area. In a meeting you should turn off your phone and never check it. Failure to do this sends the wrong message to others in the meeting. The only exception to this is if you are expecting an important call about medical matters (Lee).

FAMILIES

Like businesses, family life can benefit from this technology as well. It could provide a feeling of security. Many families give cell phones to their children to use in case of emergencies or to keep closer tabs on them. Because cell phones have GPS they can transmit their location. Parents can use this technology to learn where their child is located or to track how fast their teenager is driving. This can even be done without the use of GPS by use of cell phone towers and triangulation.

Giving a cell phone to a child can have its negative effects as well. As mentioned earlier, texting and social media can become addicting to some. In the past, teenagers used the land line so much that many households would have to install more than one line in their house in order to not tie up the phone. Nowadays, a family member with a cell phone could use it as a distraction from everyday life through the use of music, texting, or constantly keeping up with social websites. This can cause isolation in the family life. Adults are not immune to this

either. Social websites and texting have been known to cause infidelity in marriages.

CONCLUSION

The cell phone or better yet, the smart phone has greatly changed our lives for better or for worse. It is like the invention of the automobile. We received many great benefits like faster mobility and freedom with a lot of side effects like smog and higher death rates. The cell phone has been useful in creating efficiency both in our everyday lives and in commerce. We now have a useful tool and knowledge as a constant companion. It has brought our nation together and it can be viewed as tearing it apart as well. Cell phones can be viewed as a tool that is degrading our society by its negative social behaviors. Like the automobile, it takes responsibility and stewardship. As the use of the cell phone grows we are starting to see its affect on our lives grow as well. It all depends on how we are going to use it.

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