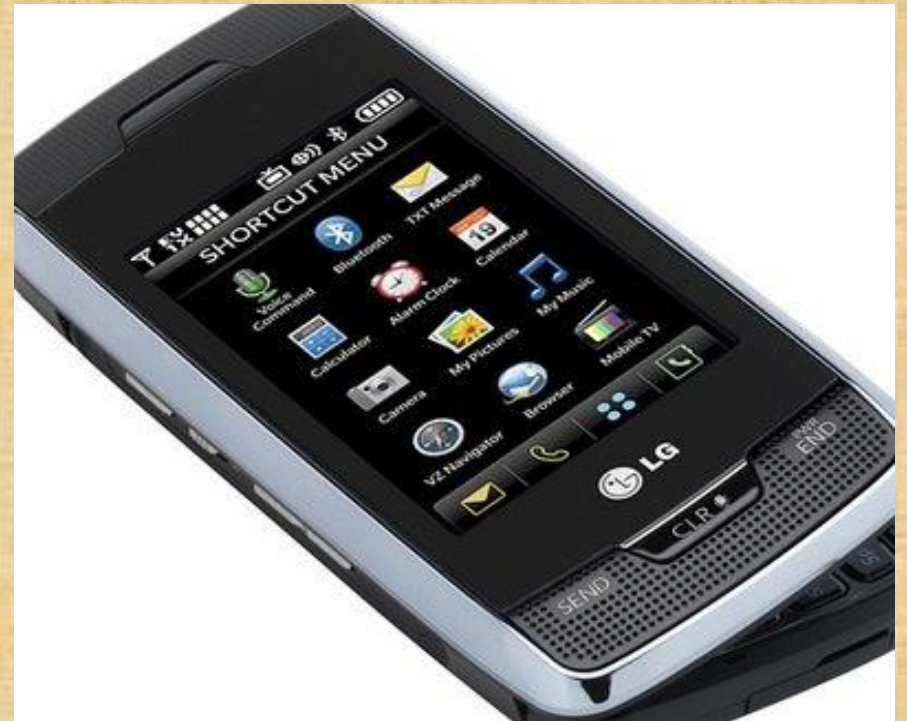


# Smart Phones and Mobile Phone Technology

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# What are we talking about??

- The world is flat!
- Bringing people together.....?
- Changing the way things work.





"Text messages are like little sugar rushes of contact, postcards from the people's cyberspace, the real reason God gave us thumbs and the capacity for language"



# History

- The first official mobile phone used in Sweden by the Swedish police in 1946; could make 6 phone calls before car's battery was drained
- Development of first cell phone (creation of towers/cells at Bell Labs in 1947
- 1983 Motorola DynaTAC 8000X made commercially available
- 1991 Motorola MicroTac Lite the lightest phone



# History cont.

- 2nd generation: from the early 1990's
- smaller, better batteries, huge increase in popularity
- 3rd generation: include 2 Megabits of maximum data rate indoors and 384 kbits for outdoor use
- include internet access and other modern innovations
- 1993 IBM developed first smartphone, Simon



# Introduction to Touch screen

- A touch screen is an electronic visual display that can detect the presence and location of a touch within the display area. Touch screens can sense Finger and other passive objects, such as a stylus. However, if the object sensed is active, as with a light pen.





# History & Development

- In 1971 Dr. Sam Hurst, founder of Elographics developed the first touch opaque sensor “Elograph”
- In 1974 He developed the first real touch screen.
- In 1977, Elographics developed the five-wire resistive technology then with the backing of Siemens Corporation, developed a curved glass sensor called the **touch screen**.
- The new transparent technology, AccuTouch, was later developed by the founders of Elographics, Dr. Hurst and Bill Colwell



# First Phone and Mobile



- Apple was the first with a touch screen phone in 1983. Jason Ford of Elo Touch Systems, the company whose founder invented touch screen technology, for providing the touch technology. In 1971, the first "touch sensor" was developed by Doctor Sam Hurst.
- The **Nokia 7710** is a first touch screen mobile phone model produced by Nokia. The 7710 is based on the Nokia 7700 which was never released. It is Nokia's first, and so far only smart phone to run the Series 90 GUI.



# Touch Screen Technology Comparison Chart

	Resistive	Infrared	SAW(Surface Acoustic Wave)	Capacitive
Touch Resolution	High	High	Average	High
Clarity	Average	Good	Good	Good
Operation	Finger or Stylus	Finger or Stylus	Finger or Soft-tipped Stylus	Finger only
Durability	Can be Damaged by Sharp Objects	Highly Durable	Susceptible to Dirt and Moisture	Highly durable

# Uses of smart phones

- Smart phones provide portable use of IT

- Entertainment Uses:

Games,

Music (mp3 player),

Books (e-book),

Digital television broadcast

- Social Uses:

Phone call,

Text message,

Wireless internet (access to e-mail, social networking websites)

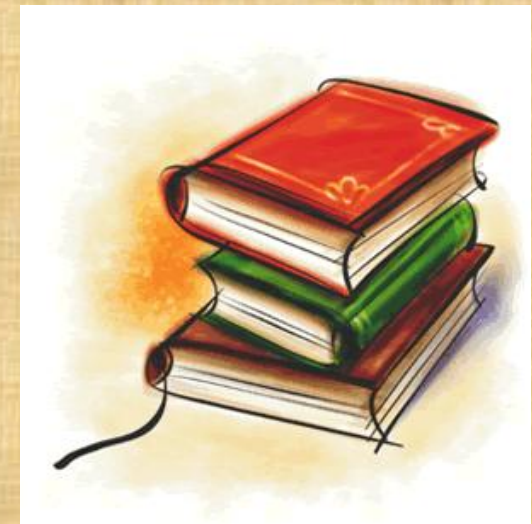
- Organization Uses:

Calendar,

Finance manager,

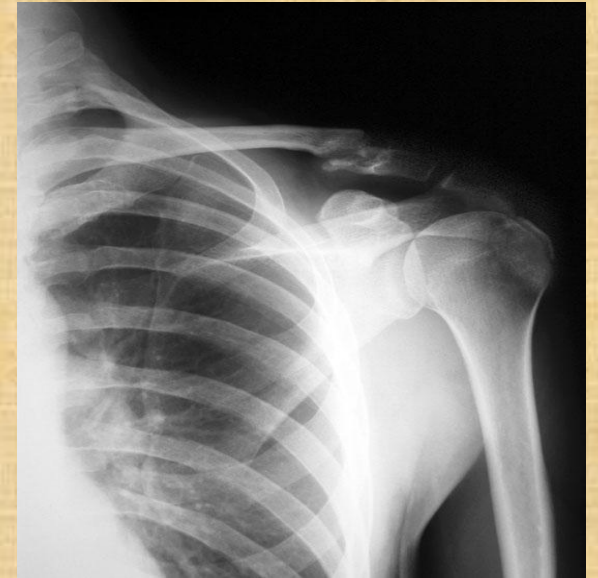
Address book,

Storage for data



# Uses cont.

- Hospital Uses: used to view image (x-ray, MRI, etc).  
means of communication between nurses and clinicians.
- Museum Uses: Audio guide is provided through cell phones.
- Mobile learning provides access to lectures and test preparations.





# Advantages

- Mobile technology is key to keeping in touch in the modern world.
- Text messaging
- Smart Phones aren't only used for communication, but for organizing schedules, jotting down notes, playing music, games, checking the weather, and other applications.
- Accessible anywhere, anytime
- Conveniently controlling and monitoring
- Instant notification
- Easy to exchange data and information



# Advantages Cont.



- Cell Phones "revolutionized long distance calling", making it much more inexpensive for long distance communication.
- Cell phone logs have also been helpful in court cases where they can be used as evidence. (You may also consider this a disadvantage)



# Disadvantages

- **Hinder Real Human Interaction**

Instead of interacting with the people around them, they ignore face-to-face conversation for virtual ones.

- **Lead to Some Pretty Serious Accidents**

major accidents, people have stepped into oncoming traffic while staring at the screen of their phone

- **Breaches of Privacy and Security**

- While having all your information in one handy device can be extremely convenient, it also has the potential to be very dangerous. All it takes is forgetting your phone in some bathroom or movie theater and suddenly, your whole life is exposed to the person who finds it. Your contacts, documents, social media accounts, and even banking information is theirs to do with as they please.



# Hazards of using smart phones

- Negative health affects (increases resting blood pressure, linked to cancer)
- Increased stress level (fatigue, headache, difficulty in concentration, disturbance in sleep)
- Effect on children
- Risk in driving
- Reduced privacy
- Effects on language
- Spinal disorder
- Vision Loss



## Measures to Reduce the Risk from Cell Phones

- **1. Children should only use cell phones next to their heads for emergencies.** Children's skulls are thinner than adults' and their brains are still developing. Hence, radiation from cell phones penetrates more deeply into their brains and is likely to cause more damage. **Texting (while holding the phone away from their body) is still fine for kids!**
- **2. While talking on your cell phone, try to keep the cell phone away from your body as much as possible.** The amplitude of the electromagnetic field (radiation) is one fourth the strength at a distance of two inches and fifty times lower at three feet. **Whenever possible, use the speaker-phone mode or a wired headset (not a Bluetooth).**
- **3. Avoid using your cell phone when the signal is weak** or when moving at high speed, such as in a car or train, as this automatically increases power to a maximum as the phone repeatedly attempts to connect to a new relay antenna.

# Continued...

- **4. Avoid carrying your cell phone on your body at all times.**  
Do not keep it near your body at night such as under the pillow or on a bedside table. You can also put it on “flight” or “off-line” mode, which stops electromagnetic emissions.
- **5. If you must carry your cell phone on you, make sure that the keypad is positioned toward your body** and the back is positioned toward the outside so that the transmitted electromagnetic fields move away from you rather than through you.
- **6. Only use your cell phone to establish contact or for conversations lasting a few minutes,** as the biological effects are directly related to the duration of exposure. For longer conversations, use a land line with a corded phone, not a cordless phone, which also uses electromagnetic emitting technology similar to that of cell phones.



# Continued....

- **7. Switch sides regularly** while communicating on your cell phone to spread out your exposure. Before putting your cell phone to the ear, wait until your correspondent has picked up. This limits the power of the electromagnetic field emitted near your ear and the duration of your exposure.
- **8. When possible, communicate via text messaging rather than making a call**, to limit the duration of exposure and the proximity to the body.
- **9. Avoid using your cell phone in places like a bus**, where you can passively expose others to your phone's electromagnetic fields.
- **10. Choose a device with the lowest SAR possible** (SAR = Specific Absorption Rate, which is a measure of the strength of the magnetic field absorbed by the body).
- SAR ratings of contemporary phones by different manufacturers are available by searching for “sar ratings cell phones” on the internet.

• **Thank you !!!**