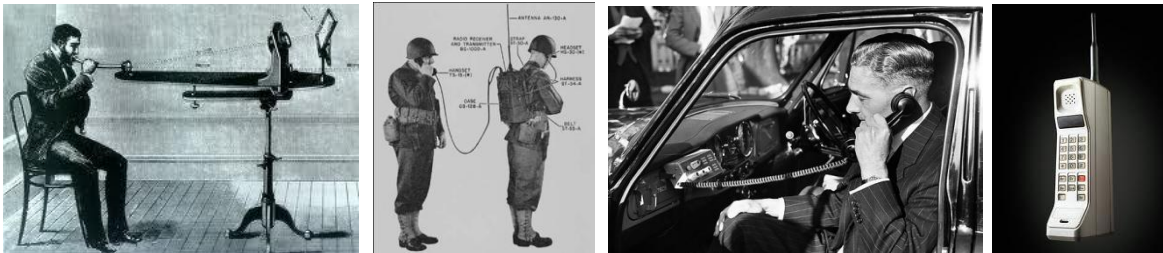


HANDPHONES

Early History

- Wireless technology was available as early as 1880, also invented by Alexander Graham Bell (inventor of the telephone) with the photophone – able to send sound without wire
- Radio's were used – sends decoded rounds via radio waves which can be sent and encoded into sound (one way communication)
- World War II (1939-1945) – Walkie-talkies were used in a wide scale – showing the importance of remote/wireless communication devices. Walkie Talkies use AM frequencies which were the same technology as radios. Walkie-talkes were also know as two-way radios.
- Portable Phone – connected to cars - 1946
- First Real Handphone – Designed by Motorola – 1973
- First commercial available mobile phone available in 1983
 - o Took a long time before of cost – it was very high tech then – so it was too expensive to sell before 1983



Photophone - Walkie Talkies – Portable Car phones – First Commercial handphone

Things Needed for A Handphone to Work

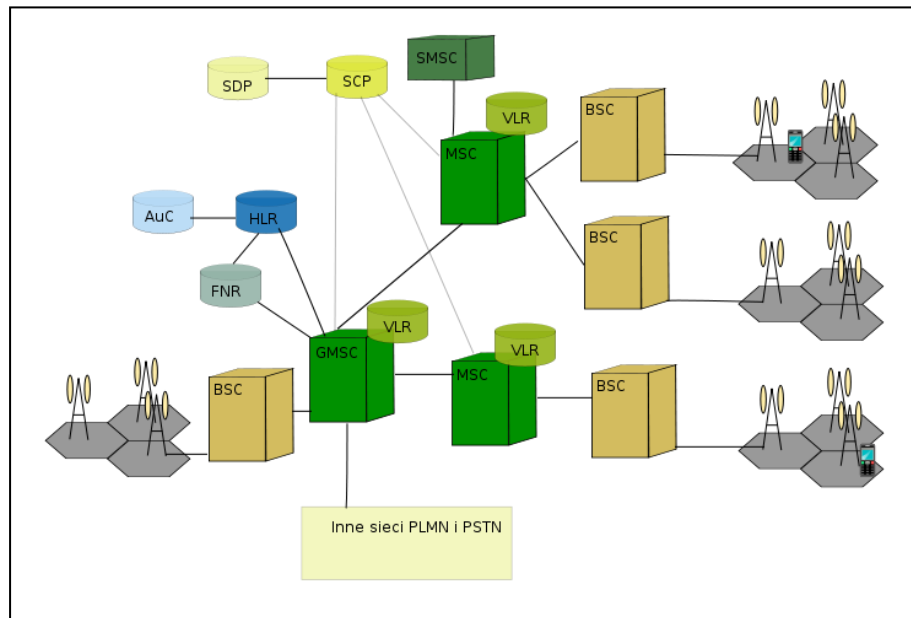
Three Elements are Needed for a Handphone to Function

- i) Mobile Network (antennas, lines,
- ii) Handset
- iii) Simcard



Mobile Network

Phone (makes or receive calls) → **Mobile Site** (base station) / transmitting tower → **Radio Wave** (transfer signals) → **telephone exchange** (or switches) → connect to **public telephone network**



- First commercially automated mobile phone (1G) in **Analog** format– NTT in Japan – 1979
- First 2nd generation (2G) network was launched by Radiolinja in Finland in 1991 on standard Global System for Mobile Communication (GSM) is a **Digital** system
- First 3rd generation (3G) made available in Japan by NTT DoCoMo on WCDMA standard
- High-Speed Downlink Packet Access (HSDPA) introduced – enhanced 3G service (also known as 3.5G) – able to download up to 1.9 to 14.0Mbit/s. HSPA+ allowed up to 42 to 84 MBit/s

Connectivity

- All phone have special codes which allow the identification of the phone, the phone's owner and the service provide (or the Network) on System Identification Code (SID) assigned to the mobile network provider. If it doesn't find a match in code, it goes into roaming.

Other Facts

- Mobile Phone, Cell Phone, Hand phone, handset – is all the same thing. Different countries call it differently.

Main Parts of a Hand Phone

- Antenna
- Circuit Board
- Speaker
- Microphone
- Battery
- Keypad