

# HISTORY OF COMMUNICATION AND ZENTALK

## **Who is the founder of the phone?**

Do you remember a time when cell phones were rare? Today, it's hard to imagine a world without them. Even if you don't own one yourself, you probably see dozens of people talking on a cell phone every day. The rate at which we adopted the devices is astounding. But who invented them? To get the answer to that question, we need to look back more than a century. Alexander Graham Bell invented the telephone in 1876. And then in 1900, on December 23 on the outskirts of Washington, D.C., an inventor named Reginald Fessenden accomplished a remarkable feat: He made the first wireless telephone call. He was the first to transmit the human voice via radio waves, sending a signal from one radio tower to another.

## **The history of communication of mobile where it has started**

Wireless communication was a magic to our ancestors but Marconi could initiate it with his wireless telegraph in 1895. Wireless Communication can be classified into three eras.

1. Pioneer Era (Till 1920)
2. Pre Cellular Era(1920-1979)
3. Cellular Era (beyond 1979)

The first commercial mobile telephone system was launched by BELL in St. Louis, USA, in 1946. Few lucky customers got the services. Early mobile systems used single high power transmitters with analog Frequency Modulation techniques to give coverage up to about 50 miles and hence only limited customers could get the service due to this severe constraint of bandwidth

### Cellular Era

To overcome the constraints of bandwidth scarcity and to give coverage to larger sections, BELL lab introduced the principle of Cellular concept. By frequency reuse technique this method delivered better coverage, the better utility of available frequency spectrum and reduced transmitter power. But the established calls are to be handed over between base stations while the phones are on move. Even though the US-based BELL lab introduced the cellular principle, the Nordic countries were the first to introduce cellular services for commercial use with the introduction of the Nordic Mobile Telephone (NMT) in 1981.

First Generation Systems All these systems were analog systems, using FDMA technology. They are also known as First Generation (1G) systems. Different systems came into use based on the cellular principle. They are listed below.

Year	Mobile System
1981	Nordic Mobile Telephone(NMT)450
1982	American Mobile Phone System(AMPS)
1985	Total Access Communication System(TACS)
1986	Nordic Mobile Telephony(NMT)900

#### **Disadvantages of 1G systems**

- 1. They were analog and hence are were not robust to interference.**
- 2. Different countries followed their own standards, which were incompatible.**

To overcome the difficulties of 1G, digital technology was chosen by most of the countries and a new era, called 2G, started.

#### **Advantages of 2G**

1. Improved Spectral Utilization achieved by using advanced modulation techniques.
2. Lower bit rate voice coding enabled more users getting the services simultaneously.
3. Reduction of overhead in signaling paved the way for capacity enhancement.
4. Good source and channel coding techniques make the signal more robust to Interference.
5. New services like SMS were included. Improved efficiency of access and hand-off control was achieved.

<b>Name of the Systems</b>	<b>Country</b>
DAMPS-Digital Advanced Mobile Phone System	North America
GSM-Global System for Mobile communication	European Countries and International applications
JDC - Japanese Digital Cellular	Japan
CT-2 Cordless Telephone-2	UK
DECT-Digital European Cordless Telephone	European countries

## **History of GSM**

The GSM standard is a European standard, which has addressed many problems related to compatibility, especially with the development of digital radio technology.

## **Milestones of The GSM**

1. 1982 - Confederation of European Post and Telegraph (CEPT) establishes Group Special Mobile. 1985 - Adoption of lists of recommendation was decided to be generated by the group.
2. 1986 - Different field tests were done for radio technique for the common air interface.
3. 1987 - TDMA was chosen as the Access Standard. MoU was signed between 12 operators.
4. 1988 - Validation of systems was done.
5. 1989 - Responsibility was taken up by European Telecommunication Standards Institute (ETSI).
6. 1990 - First GSM specification was released.
7. 1991 - First commercial GSM system was launched.

## **How do Cell-Phones Work?**

With worldwide mobile subscriptions estimated to be around 7 billion in 2014, cell phones have become a universal and indispensable tool for modern life. With a cell phone, you can talk to anybody on the planet from almost anywhere. But do you really know how your cell phone works? In the most basic form, a cell phone is essentially a two-way radio, consisting of a radio transmitter and a radio

receiver. When you chat with your friend on your cell phone, your phone converts your voice into an electrical signal, which is then transmitted via radio waves to the nearest cell tower. The network of cell towers then relays the radio wave to your friend's cell phone, which converts it to an electrical signal and then back to sound again. In the basic form, a cell phone works just like a walkie-talkie. In addition to the basic function of voice calls, most modern cell phones come with additional functions such as web surfing, taking pictures, playing games, sending text messages and playing music. More sophisticated smartphones can perform similar functions of a portable computer.

## **Radio Waves**

Cell phones use radio waves to communicate. Radio waves transport digitized voice or data in the form of oscillating electric and magnetic fields called the electromagnetic field (EMF). The rate of oscillation is called frequency. Radio waves carry the information and travel in air at the speed of light. Cell phones transmit radio waves in all directions. The waves can be absorbed and reflected by surrounding objects before they reach the nearest cell tower. For example, when the phone is placed next to your head during a call, a significant portion (over half in many cases) of the emitted energy is absorbed into your head and body. In this event, much of the cell phone's EMF energy is wasted and no longer available for communication.

## **Antenna**

Cell phones contain at least one radio antenna in order to transmit or receive radio signals. An antenna converts an electric signal to the radio wave (transmitter) and vice versa (receiver). Some cell phones use one antenna as the transmitter and receiver while others, such as the iPhone 5, have multiple transmitting or receiving antennas. An antenna is a metallic element (such as copper) engineered to be a specific size and shape for transmitting and receiving specific frequencies of radio waves. While older generation cell phones have external or extractable antennas, modern cell phones contain more compact antennas inside the device thanks to advanced antenna technologies. It's important to understand that any metallic components in the device (such as the circuit board and the metal frame for the iPhone) can interact with the transmission antenna(s) and contribute to the pattern of the transmitted signal. Many modern smartphones also contain more than one type of antenna. In addition to the cellular antenna, they may also have Wi-Fi, Bluetooth and/or GPS antennas.

## **Connectivity**

As mentioned earlier, a cell phone is a two-way wireless communication device and needs both the inbound signal (reception) and the outbound signal (transmission) to work. The magnitude of the received signal from the cell tower is called the "signal strength", which is commonly indicated by the "bars" on your phone. The connectivity between a cell phone and its cellular network depends on both signals and is affected by many factors, such as the distance between the phone and the nearest cell tower, the number of impediments between them and the wireless technology (e.g. GSM vs. CDMA). A poor reception (fewer bars) normally indicates a long distance and/or much signal interruption between the cell phone and the cell tower. In order to conserve battery life, a cell phone will vary the strength of its transmitted signal and use only the minimum necessary to communicate with the nearest cell tower. When your cell phone has poor connectivity, it transmits a stronger signal in order to connect to the tower, and as a result of your battery drains faster. That's why good connectivity not only reduces dropped calls but also saves battery life.

## And what is Communication?

Communication means that two people can easily talk and communicate with each other. Communication on the technological platform was first achieved by telephones. And phones have gone down in history as a major technological advancement, but the speed of technology has increased day by day and today there are countless sources of communication. In the early days, telephones were able to maintain privacy and freedom, but the development of technology has shortened the time it takes. Because the main purpose of communication and privacy between the two people no longer started to listen to the phones by others. Therefore, the privacy of people no longer began to disappear. However, as new technologies are emerging day by day, people's freedom and confidentiality are being tried to be re-protected, but this has not been fully achieved. Because today all conversations and correspondence are being followed in some way. And unfortunately, this is not the case when we are talking on the phone or with any communication device, even though we think that our conversations are only hidden between us and the other person.

**\*Important\***Whatsapp is currently seen as the most widely used communication app. However, your conversations with Whatsapp are never deleted and saved in a database. Naturally, nothing is hidden and you cannot be free. This is where we, Zentacahin, appear. Because we know that freedom is the greatest need for a man (like bread, water). And we have found a solution to this problem. **It's called ZENTALK.**

## What is The Zentalk?

Zentalk is a secured, decentralized peer-to-peer messenger App. Next to great usability, under the hood, you'll find state-of-the-art encryption, security and since it's decentralized, without having a server-point Zentachain guarantees full anonymity and offline communication between sender and receiver.

And with zentalk, guarantee that we will protect all your information and ensure your freedom. Even if any institution or government wants your correspondence, we certainly don't give it to anyone. That is, Zentalk protects your communication history from a big company which they have your Message history and selling your Message history. So we offer you complete independence and freedom. You can be sure that we will provide all kinds of security. In this article, we wanted to write simple and understandable by not entering technical issues. However, detailed information is available on our website and on Whitepaper. Anyone can get there. We are also active in our telegram group and social-media accounts. You can ask all kinds of questions on every subject. We are here for your natural freedom and security.

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