

# Cell Phone Origination and Electronic and Telecommunication Engineering



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**Abstract:** Today, technology is growing at a rapid pace. In future there will be huge demand for competent engineers in electronic industry to confront this demand in technology. Desires of human is being fulfilled today due to lot of specializations have been developed., industrial designer emerged another feature for the division of labor and modern industry in twentieth century. Industrial design is known for regulating the qualities. The industrial designer is responsible for the products and their impact on society and nature. Engineers would be winding in creating and preserve technology to stay ahead in competition.

**Keywords:** Design, Product Design, Electronic, Telecommunication Engineering, Cell Phone, GSM.

## I. INTRODUCTION

Design occurs when the theoretical structures in existence of people and their opinions are tangible (Roozenburg and Eekels, 1995). This may be found from the dictionaries that the term "design" has various interpretations, varying from the construction of a program in one's imagination to a drawing or pattern. This research reflects on the design of material goods in the more specific term. During the fifteenth century, the word design started to be utilized in the language in order to show the launch of design. In the 18th century, the separation of labour and mechanization and standardization became the characteristics of the modern age after the Industrial Revolution. Such changes also fostered new expectations and increasing requirements, and also stimulated further innovations. Human beings have evolved technologies to meet their own desires, not the basic requirements underlying existence. The most general word for the technical construction of items designed for commercial manufacturing is industrial construction. This is not used properly, though, since often industrial designers may produce handicrafts and associated fields like exhibition or interior design.

## II. LITERATURE REVIEW

### Product Design

The design of the product is a valuable yet challenging word. Industrial design may be defined as follows: the product design includes the engineering and industrial design activities (Jones, 1992).

### Industrial Design

Industrial design covers fields that are usually concerned with by industrial designers or related professionals, such as esthetics, aesthetics, arguments, logos, goods and brand images, ergonomics and conceptualization of visual objects. The concept of proprietary property mainly relevant to commodity utility and presentation is suggested by the Swedish Technology Academy (Heskett, 1987). Dhillon (1985) describes industrial design as the creation of practical goods for mass production to conform to man and his climate.

## III. ENGINEERING DESIGN

Engineering design is most commonly what 'normally' designers do. The following are described in this study for engineering design: design that emphasizes the technological aspects of a product, both research and synthetics (Lones, 1992).

### Electronic Engineering

Electronic engineering is responsible for the study, architecture, installation and usage of circuits and computers for information transmission and processing. Knowledge is now produced, distributed, obtained and stored electronically on an unparalleled scale in history and the exponential growth rate in this area will continue unabated. Circuits developed by electronic engineers are for unique activities such as electronic signal amplification, binary numbers attachment and radio signals demodulation in order to retrieve the knowledge they provide.

### Telecommunications and Telecommunications Engineering

Telecommunications engineering is concerned with science, equipment and networks that relay long-distance electronic or optical signals. Telecommunications allows worldwide citizens to reach each other, provide immediate access to knowledge and interact from remote locations. Telecommunications typically involves information transmitted from one site to another, and one or more receivers attached to a network, for example a telecommunications system. Telecommunications enable individuals to send and receive personal messages in the region, within countries and outside. It also offers the main tool for providing knowledge, records, information and entertainment.

### Mobile Telephone History

Mobile telephone originated in 1946. In 1947, the definition of mobile phone was published. But mobiles have only since 1995 been low-cost, feature-rich and used globally.

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We first glance at the early and cumbersome origins of cell telephony. Then began the long path to the electronic cell phone. Finally, full digital activity, as shown by GSM and now CDMA, offers critical and universal facilities and characteristics for the mobile network. Public mobile telephones have been converted into two-way radio stations used by government or business, while obsolete telephones had operated before the world war II, although phone calls were manually put through a fixed telephone network.

A cell telephone is essentially a cellular system that links to the public switched network that is provided by a national provider or municipal company to the general population.

On 28 July 1945 the first print definition was given of a mobile phone or limited zone device. A dual-way radio in the 460 MHz band to Saturday's Evening Post was proposed by the president of the Federal Communications Commission, the FCC. AT&T workers have just told Commissioner J.K. Jett. They spoke with him regarding American wireless networking possibilities during the Second World War.

The first American commercial mobile telecommunications service began a year after the seminal post. The development of MTS or mobile phone services started in Southwestern Bell on 17 June 1946 in Saint Louis, Missouri, AT&T and one of its national telecommunications companies. The radios were designed by Motorola and distributed by the Bell Network. Following the traditional dispatch system, MTS was designed.

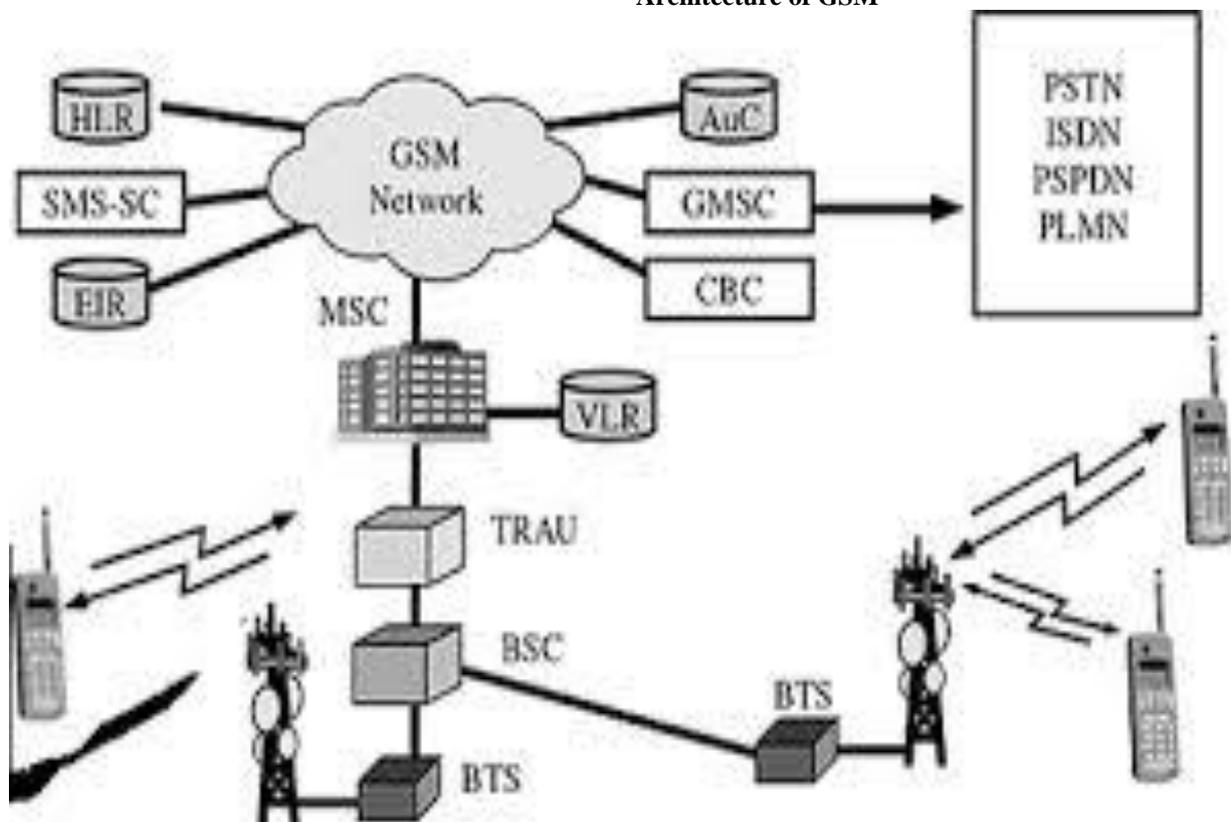
### Rise of GSM

GSM is a worldwide electronic messaging program, a wireless telephone network enabling the exchange of data and voice. Mobile is a module kept by hand which communicates with GSM as a communication device for voice and data.

### Why GSM?

It increased the performance of bandwidth, regional roaming, internet and base stations at low cost and voice of high quality. System incorporation convergence Virtual network (ISDN) and other telecommunications systems and digital technology assistance.

### Architecture of GSM



**Figure 1: Architecture of GSM**

### GSM Architecture consists of following:

This contains a single administration region, allocated to an MSC, and GSM networks are organized hierarchically. At least one Place Area (LA) for each administrative zone is included. The visited area is also known as LA. There are a variety of cell groups in the LA. A Base Station Controller (BSC) is allocated to each cell party. A BSC cell can belong to many Las. In specifying feature and configuration parameters, the GSM technological standards describe the different organizations that comprise the GSM network. The GSM network can be divided into four main parts:

- Mobile station

- Base station subsystem
- The network switching subsystem
- The operation support subsystem

### How does GSM work?

GSM requires base transceiver station and module for mobile contact, depending on reach and ability to adjust base transceiver station. GSM works in multiple frequency ranges assigned to the GSM communications at 900MHz and 1800MHz.

### Operation of GSM:

The notification of a call submission is submitted to the MSC / VLR. This is tracked by MSC /VLR. And MSC / VLR evaluated the amount and started a call with PSTN, MSC / VLR ordered a traffic channel from the respective

BSC. The BSC identifies the traffic channel and the group reacts by calling and communicating.

IV. CDMA ARCHITECTURE

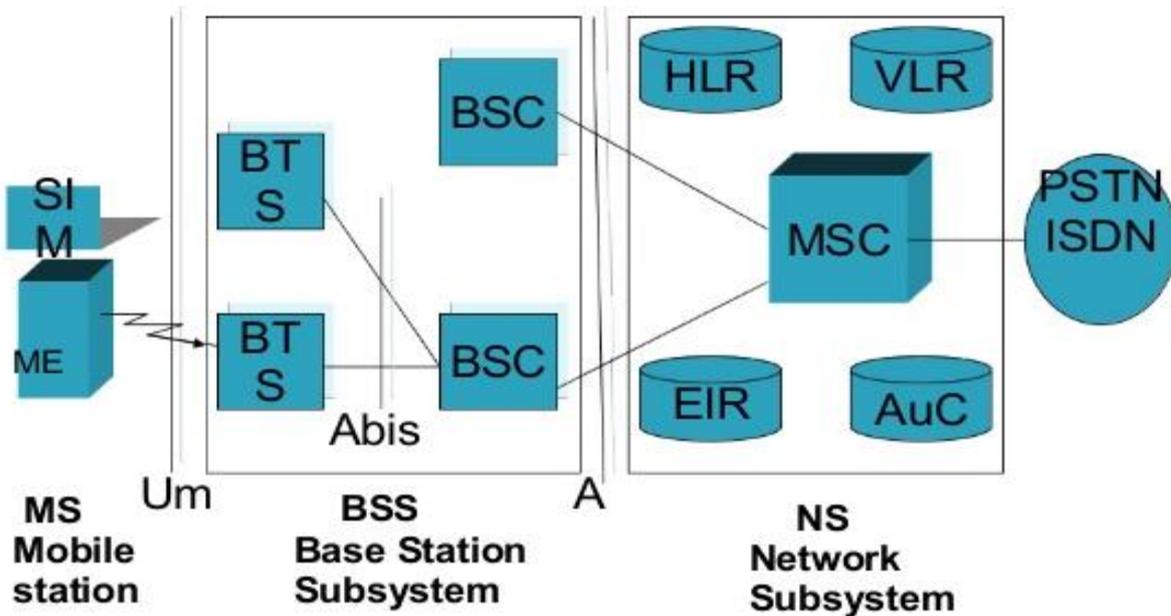


Figure 2: Architecture of CDMA

It is a form of channel control utilized by many radio stations. It's an example of remote access where remote senders will send through a single contact channel simultaneously. It encourages a multitude of users to share a set of frequencies to allow CDMA to relay all signals concurrently, without unnecessary interruption between users. CDMA implies separate node correspondence. Both channels would typically transmit concurrently at the same frequency and use the whole channel between them. Every transmitter has its own random number, the XOR transmitter with its random number.

Advantages of CDMA

The same frequency will be used for all terminals, no preparation needed. Nice room for coding opposed to room for duration. There is no coded intrusion. Advance, link and encryption can be implemented effectively. The CDMA has multiple inconveniences. For eg, if there is a signal every signal will have the same intensity at a receptor the higher receptacle specificity otherwise, cannot listen only to the medium- and short reception.

V. RESULTS OF CELL PHONE'S IMPACT

About every aspect of human life has been influenced by the Mobile Phone. The main place where mobile phone impacts are business. The cultural norms and behavior of individuals have changed drastically with cell phone technology. Both the good side and the negative side are impacted. In one place, cell phones are used to create own micro cultures, engage in socially dangerous activities and in the second part cell phones enable people to stay connected constantly (Islam et al., 2018). This study details the positive and

negative impact on business of Cell Phone. Cell Phone has created new dimensions for businesses. The mobile phone provider has not only enjoyed its business, but has also established a new domain for smartphone development companies, web-based providers and other life industries to benefit competitively (Derks et al., 2017). Broadband and internet services have been increasing rapidly in recent years. One of the factors for their rapid rise was the rising usage of cell phones and the development of smart apps and smartphone applications. In a fairly short period, a huge number of smartphones have been released, which have enabled businesses to invest in the development of mobile apps and to add new facets to the industry. Therefore, there are many cell phone programs from various vendors, including BlackBerry, Android, iPhone, and Microsoft, as it is easy to change settings and make customizations on the smartphone. Another industry area generated by Cell Phone's is Mobile Device Market. Various network operating system vendors have their own smartphone device infrastructure, and web apps have a different audience. The most popular are iPhone phones, BlackBerry phones, IOS markets, and Microsoft smartphone device industries. These online markets allow users to download mobile apps on demand. Mobile Phone has a huge influence on the PC market. Compete, a web analytics service, claims that a huge number of users use their mobile phones to read newsfeeds, publish status notifications, read & respond messages and share images almost 65 percent. This shows that people now leave their PCs and move to mobile phones (Figure 3).



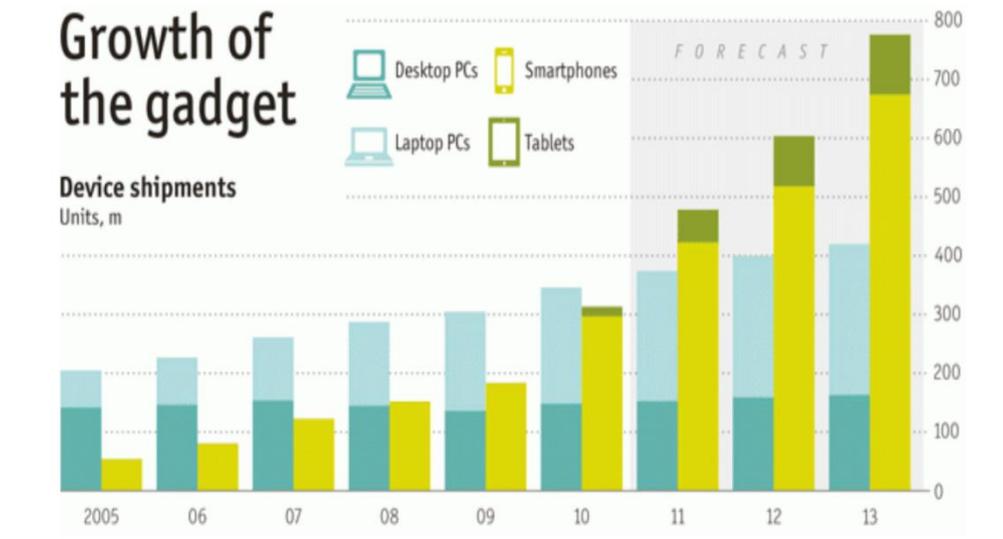


Figure 3: Growth of the Smartphone Uses

## VI. CONCLUSION

In this paper, intuitive concepts and methods used in industrial product design field have been searched for in order to try to contribute to the developing of industrial product design knowledge in design discipline. The advantages of interacting with potential users of the proposed design are revealed. Approaches of scientists, engineers and designers to the design problems, as another advantage of observing the artefacts in order to design, are given. Future research undertaken by this author will hopefully reveal new paths toward accomplishing it and possibilities of overpassing the problems encountered in the process.

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