PalArch's Journal of Archaeology of Egypt / Egyptology

# The Role of Telecommunication Industry in Funding the Public Budget

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**Farhan Mohammed Abuthebahak , Mustafa Ahmed Abdulhadi , The Role of Telecommunication Industry in Funding the Public Budget , Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(6). ISSN 1567-214x.**

**Keywords: Communications, mobile communications, Internet, budget.**

**Abstract:**

The research aims to show the possibility of increasing the telecommunications sector's contribution to the funding of Iraq's general budget by studying and analyzing the sector's activities in numbers and tables over the period from 2014 to 2018. The paper also aims to learn about the activities of both Jordan and Egypt in the telecommunications sector and the revenue ratio of these countries to the general budget, for the same period and for the same period. There are two main axes of research—the first deals with telecommunications, their origins, their concept, their significance and their dimensions. The second axis covers the general budget, concepts and types. The results show that, in contrast to the contribution made by this sector, both Jordan and Egypt clearly do not contribute to the financing and support of the general budget, despite the high number of subscribers and users in this sector, on the one hand, and the appropriate prices for the service, on the other. The research shows that the promotion of telecommunications investments in Iraq is through the provision of shares in proportion between each state and private sector enterprise, local or international, and between public enterprises. In addition, it will enhance competition with international companies licensed to provide the best services to subscribers and users. It will increase the contribution of this sector to the financing and will add revenue to the general budget.

## 1. Introduction:

Empirical research in economic literature has drawn great interest to the contribution of telecommunications networks to economic development and the causation between it. Telecommunications infrastructure has always been a policy tool for decision-makers that is reflected in government programs and then implemented through public policies to reduce inequality and inequality and boost economic growth(Staníčková, 2017). Infrastructure is economically expensive, requires large-scale capital, which accounts for a large proportion of

public expenditure and puts pressure on public authorities, but as part of public capital, particularly telecommunications infrastructure, it is the most powerful tool for stimulating world economies. In addition, telecommunications infrastructure is classified as a productive public expenditure (Amagtome&Alnajjar, 2020) because the economy is able to benefit from communications facilities by speeding up access to services and opening up the export market by increasing the market and mobility of workers, by reducing wealth gaps and by improving social care, by saving time and reducing the cost of business (A. H. Almagtome, Al-Yasiri, Ali, Kadhim, &Bekheet, 2020]. Crafts (2009) concluded that those countries that have established policies and invested more in infrastructure usually create higher output filled with more private investment and more job growth. The ongoing and rapid developments in communications technology around the world had a major impact on the general budgets of countries and therefore on the economic policies adopted because this sector helped to complement financial budgets and to reduce the fiscal deficit's gaps. Research becomes important because of the importance of the variables (the telecommunications sector and the general budget) and because interest and response to these topics help to identify the research variables represented by the telecommunications and the general budget of the Government. The telecommunications sector in Iraq was one of the most productive in the period preceding 2003, contributing more than 30 percent of its revenues to financing the State budget. In addition, the general budget is a means for directing public expenditure to the desired objectives in line with the Government's promises. The scarcity and unlimited nature of societal needs also make the budget a must in order to ensure that society can sustain economic growth over time. Additional sources must be identified to finance this budget and increase the contribution of the telecommunications sector to budget financing.

## 2. Literature Review

The literature refers to explaining the theoretical side of the research by explaining the variables that have been addressed, which have been divided into the first variable, which represents communications, its origin, concept, importance, and its dimensions represented by mobile communications and the Internet(AkeelAlmagtome, Khaghaany, &Önce, 2020). Whereas the second variable represents the balance and everything related to it from origin, concept and species.

### 2.1. Telecommunication Infrastructure

Communication is one of the most basic human demands. For thousands of years, people have been passing on information using numbers, symbols, drums and fireworks. Then the process evolved into languages spoken and written on bamboo and paper. There is no doubt that the temporal effects of the information are extremely important. In ancient times, the fastest way to communicate messages that people could think of was the use of homing pigeons, the power of the posterior horse and man. Then the appearance of the electrical signal radically changed human society. In other words, the electrical signal as a means of transmitting information has replaced the previously required physical movements(Liu et al., 2019).Smoke signals and beacons are two examples of ancient communication technologies. The famous phrase "one, if by land, and two, if by sea" is attributed to the American poet, Henry W. Longfellow in his poem, Paul Revere's Journey, and it refers to the secret reference chosen by Revere during his historical journey from Boston to Concord at the start of the war. American Revolution(Raman, 2015). The first form of telecommunications was the form of the telegraph, which two scientists, Wheatstone and Morse, invented completely independently in 1837. The use of the telegraph greatly enhanced railroad operations,

spreading news and personal messages between cities. The utility of telecommunications, on the one hand and the limited need for trained operators, on the other hand, led to the aspiration of a simple two-way audio communication medium that anyone could use. Alexander Graham Bell fulfilled this need when he invented the telephone in 1876. Soon after, the world's first telephone exchange opened in 1878 in New Haven, Connecticut, USA. Since then, telephony has become a ubiquitous means of communication for humankind, and telephone networks using Alexander Graham Bell principles have been implemented around the world (Valdar, 2006).

The International Telecommunication Union (ITU) officially recognized the term (wired and wireless) in 1932 and defined it as: "Any telegraphic or telephone communication of signals, writings, images, and sound of any kind, by wire, radio or any other system. The electrical signal operations or visual (semaphore)." The International Telecommunication Union (ITU) currently defines communication as "any transmission or reception of signals, writings, images, sounds, or intelligence of any kind by wire, radio, video, or other electromagnetic systems. ITU is a technique that eliminates the distance between continents, countries, and people. For contacting another person by phone, the distance between the actual person's location and the next phone should only be covered, and this distance can be mere centimetres in the industrialized world and kilometres in the developing world (Huurdeman, 2003). Simply, a communication system is a system in which information is transferred from one physical location - say A to a second physical site, let it be B. One simple example of a communication system is for a person to speak to another person. Any communication system consists of three Shred AA, as shown in Figure 1. The first is the transmitter, which is part of the communication system in point (A) that includes two components: the source of information and the technology that sends the information over the channel. The Second Part is the channel, which represents the medium (the substance) through which the information travels from point (A) to point (B). An example of a conduit is a copper wire or an atmosphere. Finally, figure 1 shows thatthe third part is the receiver and part of the communication system that sits at point (b) and gets all the information that the transmitter sends through the channel (Nassar,2013).

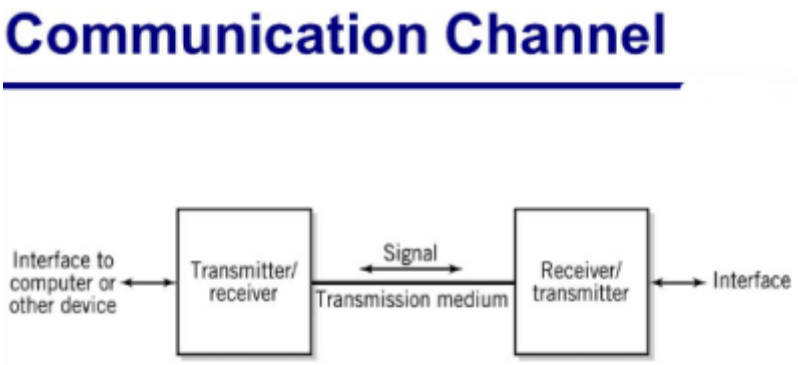


**Figure 1. Communication Channel.**

The author argues that communication is the process by which information, news, data, things and ideas, whether audio, visual, linear, quantitative or volumetric, are communicated

and exchanged between a sender and a recipient, whether they are individuals or groups, and that delivery and exchange takes place by air (the frequency spectrum (electromagnetic waves)) or by air (the frequency spectrum (electromagnetic waves)) (marine cables). Since the 1980s, communication, whether wired or wireless or both, has achieved substantial growth in progress worldwide. In order to maintain a steady flow of communication, developed countries around the world have since begun to make improvements in telecommunications technology. On the other hand, developing countries took the lead when the importance of telecommunications in economic development became clear on precautionary grounds. The privatization of the telecommunications sector, as part of the initiatives, was one of the best efforts made by almost all developed countries and subsequently by developing countries. Because more than ever before, communication technology is reliant on (Hossine Sharif, 2016). Not only does effective communication help to correctly convey information, but also in decision-making. Communication's main purpose is to help individuals feel good about themselves, their friends, groups, and organizations. There must be a transfer of thoughts and feelings from one mind to another in order for communication to be successful (Khaghaany, Kbelah, & Almagtome, 2019). From an economic point of view, there was a growing awareness after the year 2000 of the importance of the telecommunications sector to economic growth, particularly in developing countries. In different ways, countries have struggled to upgrade their communications infrastructure. The direct impact of communications is very strong, leading to the attraction of foreign direct investment and the influx of foreign capital into countries, creating a variety of opportunities at the sectoral level, creating paid employment opportunities, and the development of the telecommunications sector has made it possible for any sector to develop, so this sector has actively contributed. It has thus become an easy and reliable source for foreign direct investment to be attracted to any country (Zahra, Azim, & Mahmood, 2008). Telecommunications services have a fundamental effect on society's development. We can estimate the level of its technical and economic development if we consider the density of the telephone in a country. The fixed-line density, that is, the telephone density, is less than ten telephones per 1000 inhabitants in the least developed countries; there are about 500 to 600 fixed telephones per 1000 inhabitants in developed countries, such as North America and Europe, as well as private organizations, governmental organizations that provide public services rely on telecommunications services. Here are some examples of communications-dependent services(Anttalainen, 2003):

- Banks, automated teller machines, telephone banking services.
- Flight, ticketing.
- Sales, wholesale and order processing.
- Credit card payments at petrol stations.
- Hotel room reservations by travel agencies.
- Purchasing materials by industry.
- Government operations, such as taxes.

Communications have a great role in achieving a sustainable economy for countries, whether developed or developing, because this sector has become a contributor to all aspects of life. With communications and its technology, education has become available to all, at all times and anywhere, and what is e-learning in light of the Corona pandemic (Covid) 19) A clear evidence of the contribution of this sector in the continuation of the delivery of knowledge and knowledge to all, as well as the contribution of this sector in the fields of health, communication and other areas of life. Directly through taxes imposed on private sector companies. When the port is supported, the economy grows and is sustainable. The telecommunications sector is considered one of the service sectors, if not the most important of them, as it contributes to the development of the rest of the service sectors such as health,

education and water. It is not completed except in the telecommunications sector, and therefore this sector is divided into two technological and service dimensions, namely:
1- Mobile (wireless) communication.
2- The Internet.

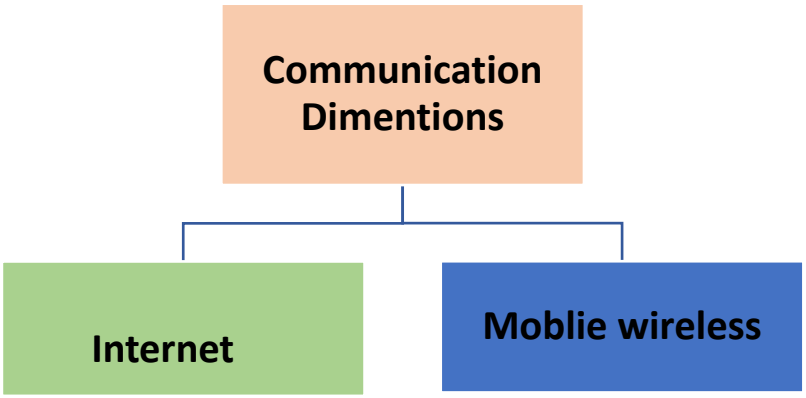


**Figure 2. Telecommunication Dimensions**

### 2.1.1. Wireless Communication

The origins of wireless communication can be traced back to the German scientist Heinrich Rudolf Hertz, who in 1888 showed that an electrical spark of sufficient intensity at the end of the emission could be picked up by a suitably designed receiver. This transmission via "aether" challenged classical notions of physics. Whereas the Italian scientist Guglielmo Marconi was the one who created the "radio" that transmits waves at increasing distances in 1895 and sent signals at a distance of 2.5 km in 1899 via the English Channel. In 1901, Marconi established the first transatlantic radio transmission, stretching more than 3,500 kilometres from Cornwall to Newfoundland. Marine applications have become the dominant market for wireless communications(Gruber, 2005).

The history of mobile phones goes back to the experiments conducted in the United States in the 1920s using the wireless phone, as AT&T launched 1947 the expressway service between Boston and New York after the success of the first mobile phone network in St. Louis and Motorola introduced it already in the year 1973 to obtain cellular patents and the US Federal Communications Commission (FCC) began to conduct auctions for mobile phone licenses on a city-by-city basis, and these auctions sparked so many requests that the FCC in 1982 decided to grant the best thirty cities directly and allocate other cities By lottery. In Europe, the mobile phone was developed in a slightly different way, as Sweden was the first to introduce an early automatic system engine into service in 1956. The national telecommunications authorities in Scandinavia took two important decisions in the period from 1969-1971. The first decision was to start standardization work on the standard (NMT Nordic Mobile Telephone), and the second decision was immediate, to build manual mobile communications networks with wide national coverage to meet customer demand (Dunnewijk&Hultén, 2007).Wireless (mobile) telecommunications is, by all accounts, the fastest-growing segment of the telecommunications industry. This growth continues unabated all over the world, with more than one billion mobile phone users worldwide expected in the near future, becoming an important business tool and part of everyday life in most developed countries (Kbelah, Almusawi, &Almagtome, 2019). In a mobile communication system, the service area is divided into cells. The transmitter is designed to service a single cell. The

system seeks to efficiently use the available channels through the use of low-power transmitters to allow frequency reuse over much smaller distances, and the number of times each channel can be reused in a given geographical area is the key to designing an effective cellular system(Sharma, 2013).Wireless communication is one of the most active areas in technology development of our time, and this development is primarily driven by the transformation of what was largely a means of supporting voice telephony into a medium to support other services, such as the transmission of video, images, text, data and so on, similar to developments in capacity Wire lines in the 1990s (Pandya, 2015).The following is a description of the evolution of the generations of mobile communications.

**1G -1st Generation**

1G refers to the first generation of mobile communication system, whose research and attempts began in 1974 and was completed in 1984. It was developed at an early stage to communicate with mobile phones through a network of transmitters and receivers. The analogue system was the first portable wireless communication system used in the first-generation technology, which was based on advanced mobile phone service technology (AMPS Advanced Mobile Phone Service) (Kaur, 2012).The first generation of mobile communication system was introduced at the beginning of the 1980s and by using analogue transmission for speech services. In 1979, the world's first cellular system was commissioned by Nippon Telephone and Telegraph NTT in Tokyo, Japan. Two years later, the mobile era arrived in Europe. The two most common analogue systems were the NMT Nordic Mobile Telephones and Total Access Communication Systems TACS (Al-Wattar, Almagtome, & AL-Shafeay, 2019). Since the introduction of the first-generation mobile technology, communications have undergone great changes and witnessed a tremendous growth rate of about 35-50%, reaching nearly 20 million subscribers. However, the various applications of 1G were paging system, cordless phone, cordless phone, radio and mobile special.

**2G -2$^{nd}$Generation**

The second-generation (2G) mobile phone technology was primarily used for audio transmission and was based on digital signal processing technologies. The competitive rush to design and implement digital systems has given rise to a number of incompatible standards for the second-generation network such as GSM (Global Mobile Phone System), CDMA (Code Division Multiple Access), TDMA (Time Division Multiple Access) and PDC (Personal Digital Cell Phone). 2G was a big improvement over 1G in terms of quality. This technology allows increased bandwidth and improved security(Bose, 2006).It shows that the second generation cannot usually transfer data, such as e-mail or programs, other than the digital voice call itself and other basic ancillary data such as time and date. However, SMS text messaging is available as a form of data transmission for some standards. The second-generation 2G cellular communication networks were launched commercially according to the GSM standard in Finland in 1991 (Ali, Hameedi, & Almagtome, 2019).

**3G- Third Generation**

The use of 3G technology is able to efficiently transmit packet-switched data in better and larger bandwidth. The third-generation technologies provide more advanced services for users of mobile devices that can help many multimedia services in work. Also, the spectral efficiency of third-generation technology is better than second-generation technologies(A. Almagtome, Shaker, Al-Fatlawi, &Bekheet, 2019). 3G technology is not only developed within ETSI. There were even other research organizations and programs with a similar purpose. The European Commission has funded research programs such as Research in Advanced Communication Technologies in Europe (RACE I and II) and Advanced

Communication Technologies and Services (ACTS). In addition to Europe, there were also many 3G programs in the United States, Japan, and Korea(Ali, Almagtome, & Hameedi, 2019).

**4G- Fourth Generation**

The fourth generation is the concept of interoperability between different types of networks, which revolves around the transfer of data at high speed such as 0-100 Mbps either to the server or a group of data receivers that move at a speed of 60 km per hour (Meraj& Kumar, 2015). 4G network with faster spread and clearer video images can provide more stable signal support for live forums, video calls, etc. It can also provide communication locations, timing, information gathering and remote control without a fixed location of the wireless internet service(Fan & Yang, 2014). The fourth-generation (4G) is the successor to the standards of the 2G and 3G families. Mobile web access, VoIP, game services, mobile HDTV, video conferencing, and 3D TV are the applications used using 4G cellular networks. The highly heterogeneous and time-varying QoS of the underlying protocol layers are required for applications of 3G and 4G wireless systems to emerge. Therefore, adaptability will be essential (Bhandari, Devra, & Singh, 2017).

**5G- Fifth Generation**

The 5G network can be basically defined as the continuous evolution of mobile broadband service for mobile devices based on the cellular network that requires 100 times more throughput. The technical challenge of this proposed technology is high spectrum efficiency. The fifth-generation network is a cellular internet with an extensive coverage(Ahmad & Khan, 2017). The fifth-generation is already developed in countries such as South Korea, Estonia, China, Sweden and Japan, which are countries that use 5G at the present time. These generations are bringing mobile communications at a higher rate compared to the fourth generation (Nagakannan&Inbaraj, 2018).Mahmud (2019) explains that the main focus of the 5G network is the World Wide Web (WWWW world-Wireless World Wide Web), as it is a completely wireless connection without restrictions, and the fifth-generation technology is characterized by the following main features:

1. 5G technology provides connection speed up to 25Mbps, also provides high accuracy for cell phone user and large bidirectional bandwidth sharing.
2. It provides a large data stream in gigabit, which supports nearly 65000 connections.
3. The upload and download speed of 5G technology is peaking
4. It Supports the VPN.
5. The 5G stations will contain software-defined radios and modulation systems as well as new error-control systems that can be downloaded from the Internet.
6. Evolution towards user stations is seen as the focus of mobile networks, for example, advanced billing interfaces for 5G technology, making them more attractive and efficient.
7. Provides improved and available connectivity around the world
   The terminals will be able to access different wireless technologies at the same time, and the terminal must be able to combine different streams of different technologies.

**6G-Sixth Generation**

The first sixth-generation wireless cellular communications symposium was held in March 2019 and can be framed in a single vision statement, "Wireless Intelligence Everywhere". The 6G system is expected to witness an unparalleled revolution that will distinguish it significantly from current generations and will fundamentally reshape the wireless evolution from 'connected things' to 'connected intelligence'. Specifically, 6G technology will go beyond mobile Internet and will be required to support AI services everywhere from network

core devices to peripheral devices(Alsharif et al., 2020). In this technology, the satellite is used to transmit voice, data, Internet and video, satellite networks are dedicated to photographing the earth. It also used to collect environmental and weather information, and the navigation satellite network is dedicated to the Global Positioning System (GPS). It will be considered cheap and fast internet technology to provide high-speed internet access over the air as the nanoantennas specially designed for this technology will be implemented in various locations along roadsides, villages, malls, airports, hospitals, etc., to transmit such high-speed electromagnetic signals. Among the advantages of this technique(Rababah, Alam, &Eskicioglu, 2020):

- It provides high-speed Internet access.
- Data rates will reach 10-11 Gbps.
- Home automation and other related applications.
- This technology will provide smart homes, cities and villages
- Can be used to produce energy from the space world.

With the help of sixth-generation technology, the globe will be decorated with sensors. These devices will provide information for monitoring stations. Moreover, these stations will check any activity in a special area such as terrorist and intruder activity, etc., and point-to-point wireless communication networks that transmit high-speed broadband signals through the air will be supported by high fibre-optic lines—the speed. Aerial fibre combination would be the best way to transmit a lot of secured information from transmitters to stations. The fibre radio system is already in operation, and with the advent of this 6G technology, humanity on earth will be much closer to any extraterrestrial civilization in our world(Tripathi&Khaparde, 2016).

### 2.1.2. The Internet

The history of the Internet began in the United States in the early 1960s. This was the period of the Cold War when the world was bipolar, and the United States and the Soviet Union were competing to expand their influence in the world, and they looked at each other with great caution and suspicion. On October 4, 1957, the Soviet Union launched its first space satellite, Sputnik. Sputnik's success necessitated an American response. This response was by the US Department of Defense creating the ARPA Advanced Research Projects Agency, designed to advance research that would ensure that the United States would compete with and outpace the Soviet Union in any technical race. ARPA's mission was to generate innovative research ideas and to work on these ideas by developing prototyping systems. In 1962, Licklider became the Office of Information Processing Technologies' first director. His role was to link the main computers of the Department of Defense over a dispersed global network. The first research paper on the Internet concept entitled "On-Line Man Computer Communication". And here, the seeds of what would later become the Internet were planted(Cohen-Almagor, 2011).Licklider was the first head of the computer research program at the DARPA: Defense Advanced Research Projects Agency, the Defense Advanced Research Projects Agency, starting in October 1962. While at the agency, he persuaded his successors, Evan Sutherland, Bob Taylor, and MIT researcher Lawrence. Roberts, on the importance of this network concept. Leonard Kleinrock of the Massachusetts Institute of Technology published the first paper on packet-switching theory in July 1961 and the first book on the topic in 1964. Kleinrock convinced Roberts of the theoretical feasibility of communications using beams rather than circuits, which was a major step all the way to computer networks. The other major step was to get the computers to talk together. To explore this, in 1965, working with Thomas Merrill, Roberts connected a computer in

California to a "low-speed dial-up" phone line, which led to the creation of the first large-scale (albeit small) computer network. The result of this experiment was the realization that Timesheets can work well together(Oyenuga, Bhamidimarri, & Researcher, 2017).Although ARPANET remained in the custody of the United States government, its use quickly spread to a larger community of users, especially in academia. The network eventually switched to the Internet and was launched to the public in 1983. In 1984, a council of various task forces was formed to oversee Internet activities. In 1986, the Board of Directors established the IETF (Internet Engineering Task Force), whose responsibility was to develop technical standards for the Internet. The Internet is a merger of different networks that are linked together to form a single global network. Technically, the Internet is "a worldwide distributed system of hundreds of thousands of independently operating and interconnected computer communication networks.

The Internet is a merger of different networks that are linked together to form a single global network. Technically, the Internet is "a worldwide distributed system of hundreds of thousands of independently operating and interconnected computer communication networks.The Internet is a network that works to bring everything that is far away and to make everything close to the user and to everyone who searches for information, news, person or something, by bringing it from separate networks in multiple places and placing it in the user's network.the Internet is of great importance in various aspects of life. As Taylor and Jackson (2018) show that despite the difficulty of obtaining accurate numbers, it is estimated that at least 30 million personal computers are in more than 100 connected countries. Internet. The growth rate of personal computers connected to the Internet is close to one million per month, and its growth rate is greater in third world countries than in the West. The number of Internet users is increasing because of the great importance it enjoys due to: -

- Ease of use. Technology improvements, replacing obscure operating system commands that can only be understood by computer experts with easy-to-use "point and click" icons, allowing non-technical individuals to become highly sophisticated users.
- Universal access. The proliferation of commercial Internet access providers offering communications over the Internet from virtually anywhere over telephone lines.
- Lower price or cheaper. Significant reductions in the cost of access, making it more accessible to a large segment of the population.
- Increase benefits. Significant increases in the amount of information available online that is useful or entertaining.
- Comforts. The ability of any individual to exchange e-mail easily and inexpensively with anyone else.
- Cost-effectiveness. Use of the Internet to achieve low-cost improvements in business processes.
- Momentum. Increases in audience size at the network level are attracting more information providers and companies searching for markets, with a ripple effect.

Qi et al. (2017) explain that the use of the Internet has gained a prominent position not only in terms of economics but also beyond other aspects of life. It creates and disseminates information, regulates people's behaviour, increases productivity, and accelerates the separation of ideas and things around the world. The number of Internet users around the world in 2018 reached about 4.021 billion, with an annual growth rate of about 7 percent. The number of internet users in the GCC countries according to world internet statistics as of June 2019 indicates that the Kingdom of Saudi Arabia has 31.85 million internet users; UAE 9.53; Kuwait 4.23; Oman 4.01; Diameter 2.73; Bahrain has 1.61 million internet users. In all, the

number of internet users increased from 1,245 million users in 2000 to more than 53.96 million users in June 2019.

## 2.2. Public Budget

The word "balancing" arose from the French word baguette, which means small bag. In Britain, the word was used to describe the leather bag in which a money exchange advisor used to carry to Parliament a statement of the Government's needs and sources as he described them, after which the document budget contained in the bags representing the Government's plans became expressed in money and submitted to lawmakers for approval (Malgwi&Unegbu, 2012). In Britain, the Magna Carta (1217) was a clear example of budgeting, giving power to Parliament to enforce control of the Crown. In this regard, strict parliamentary controls have been imposed on expenditures provided that public funds are spent in accordance with the rules of regularity, and the public budget aims to legislative accountability for tax and spending purposes (Bağdigen, 2001). Balancing is a continuous process that consists of a number of distinct stages. Each stage consists of a series of activities, and each activity, in turn, takes place in a specific period of time. Often the phases of the process from one fiscal year overlap with the phases of other years. Most fiscal years are twelve months in length, which is a reasonable time to implement the budget. When a budget for implementation is prepared for over two years, instead of twelve months, it is called a biennial budget (Khan, 2019). The general budget was also defined as a government plan that displays the Government's proposed revenue and expenditure for the fiscal year that is passed by the Legislative Council. It is the national budget in a market economy system compatible with public finances. Budgeting is an important means for the Government to manage social and economic affairs and achieve total control. For the People's Assembly and its permanent committee to study, approve, and supervise the people's government budget at the corresponding level is an important constitutional authority and a function for the People's Assembly and its permanent committee, and it is also a tangible channel through which people exercise power in managing state affairs(Zhang, 2015). The (national) budget is, in essence, a document that, once approved by the Legislative Council, allows the Government to increase revenues, incur debt and expend expenditures in order to achieve certain goals. Since the budget determines the source and application of public financial resources, it plays a central role in the process of Government and performs economic, political, social, legal and administrative functions(Norton & Elson, 2002). According to CIMA (Chartered Institute of Management Accountants) in the United Kingdom, the budget is defined as a "monetary quantified plan prepared and approved in advance of a specified period of time, usually showing the planned income to be created and the expenditures to be incurred." During the period and the capital to be employed to achieve a specific goal.From the above, the general budget is a plan that draws the state's financial policy for a future period of time and constitutes a description and a brief explanation of expenditures and ways to reduce them and a brief explanation of revenues and ways to maximize them in a way that ensures a fair distribution of national wealth on the one hand and establishing a stable and resilient economy on the other hand. The general budget has five main types: item budget (traditional budget), program and performance budget, planning and programming budget, and zero-based budget.

### 1. Line-ItemsBudget

The item budget approach is basically the spending 0 control approach. Since this approach began as a response to corruption and a lack of concern for government efficiency, this approach was viewed as an instrument of administrative control where the spending subject or categories are listed, forming the backbone of the system, such as supplies, personnel,

maintenance, etc. And they were approving expenditures according to the department, office, or sub-divisions of the department - such as the Ministry of Defense or the Ministry of Health - to which the funds are allocated(Mustapha, 2017). This budget is the process of creating spending tables against revenue tables, and in an estimate, depending on the numbers of those tables for a year or more ago, and often focuses on numbers (expenditures and revenues) more than their focus on the implementation of business and projects included in the budget.

### 2. Program and Performance

The performance budget is easy to explain but difficult to implement. The basic idea is that governments should budget for actual or expected results (usually known as outputs and outcomes) rather than inputs (people, supplies, and other items). The performance-based budgeting aims to improve the efficiency and effectiveness of public spending by linking the financing of public sector institutions to the results they achieve. The performance-based budgeting should not be viewed as an isolated initiative that should be viewed, but rather, it should be seen as part of a broader set of reforms - often referred to as managing for results - designed to focus public administration more on results achieved and less on internal processes.

### 3. Planning and Programming Budget

The need for budget planning and programming arose mainly in countries where public sectors have limited resources in exchange for an increase in public demand. In order to provide more well-being to individuals and improve their demand in the face of scarce public resources, a planning and programming budget model or type was proposed as an alternative system for the public budget in the 1960s (Bagdigen, Muhlis, 2001). This budget is a process of strategic planning for projects expected to be implemented during a future period of time by programming the steps for implementing these projects according to specific mechanisms and timing.

### 4. Zero-based Budget

A Zero Budget entails creating a budget without any indication of what happened before, based on a fundamental reassessment of objectives, methods, and resources. The defining and essential feature of a zero-based budget is its focus on the total budget request. The researcher indicates that the zero-sum budget is a budget for future strategic planning based on the expenditures and revenues of the previous year as a starting point for implementing what was planned in the following year.

## 3. Materials and Methods

The research methodology includes the link between the telecommunications sector and budget financing, and based on the official websites of the ministries and companies of Iraq, Jordan and Egypt> The search, in tables and figures, indicates the number of revenues for countries' budgets, the revenues of the telecommunications sector, and the percentage of this sector's contribution to financing and supporting parades.

## 4. Results

Considering that telecommunications infrastructure is one of the most critical elements for the development of society, there are systemic and fundamental interdependencies between the variables relevant to communication infrastructure. First, in three Arab nations, Iraq, Egypt, and Jordan, we are developing a model for evaluating the effect of connectivity networks on public budget financing.

### 4.1. Indicators of The Telecommunication Sector In Iraq

The tables below refer to the telecommunications sector activity in Iraq:

**Table 1. Communications Indicators in Iraq**

| Year | Subscription (Fixed Phone) | No.Subscription No. (Zain, Asia Cell, Cork) | Subscription No. (Itisaluna, Kalimat, Omnnea, Fanoos, Watanya) |
|---|---|---|---|
| 2011 | 2.004.300 | 25.363.595 | 1.068.187 |
| 2012 | 2.070.400 | 29.763.880 | 511.559 |
| 2013 | 2.059.000 | 34.256.788 | 1.201.778 |
| 2014 | 2.172.400 | 35.846.824 | 1.226.718 |
| 2015 | 2.179.400 | 33.470.916 | 1.140.409 |
| 2016 | 1.984.400 | 34.957.526 | 389.812 |
| 2017 | 2.062.400 | 40.001.723 | 634.426 |
| 2018 | 2.021.400 | 39.150.741 | 934.050 |

The above Table shows a clear increase in the number of subscribers and beneficiaries of the mobile phone in Iraq, as the number of subscribers increased during the period from 2011 to 2018 by (54%), that is, an annual increase of (7.7%), to exceed the number of subscribers (39 million subscribers). As for the number of subscribers and beneficiaries of the fixed telephone service, it remained conservative at more than two million subscribers, and the decrease in this number is due to the damage to the fixed telephone infrastructure after the events of 2003 and the lack of the state's seriousness in rebuilding these structures during the previous years. As for wireless phone services, the number of subscribers recorded a decrease from 2011 until 2018 due to the presence of the mobile phone on the one hand and the lack of coverage of wireless phone networks for all regions and governorates on the other hand. It led to the reluctance of the citizen (the subscriber) and the move towards mobile phone services.

**Table 2. Financial returns from Iraq (2011-2018)**

| Year | Total Revenue (Million USD) | Total Revenue (Billion IRD) |
|---|---|---|
| 2011 | 103.989 | 87.385 |
| 2012 | 119.817 | 100.686 |
| 2013 | 113.840 | 95.663 |
| 2014 | 105.554 | 88.700 |
| 2015 | 66.470 | 55.857 |
| 2016 | 54.409 | 45.721 |
| 2017 | 77.422 | 65.060 |
| 2018 | 106.569 | 89.553 |

The cumulative revenues of the general budget in Iraq from 2011 to 2018, as seen in Table (2), as revenues declined from 2012 to 2016. They would then grow due to the high price of a barrel of crude oil in 2017 and more than in 2018.

**Table 3. Financial returns for the telecommunications sector in Iraq (2014-2018)**

| Year | Total Revenue of Communication Industry (Million IRD) | Total Revenue of Internet (Million IRD) | Total Revenue (Million IRD) | State Treasury |
|---|---|---|---|---|
| 2014 | 86.506 | 1.536 | 88.043 | 0 |
| 2015 | 96.890 | 778 | 97.668 | 0 |
| 2016 | 228.337 | 633 | 228.970 | 0 |
| 2017 | 233.597 | 505 | 234.102 | 0 |
| 2018 | 144.386 | 18.842 | 163.229 | 0 |

**Table 4. Zain Telecom financial indicators (2009-2018)**

| Year | Subscriptions No. (Million) | Earnings (Million USD) | Earnings Pre-Tax (Million USD) | Net Earnings (Million USD) |
|---|---|---|---|---|
| 2011 | 10.269 | 1342 | 670.4 | 288.3 |
| 2012 | 12.074 | 1500 | 715,4 | 320.1 |
| 2013 | 12.453 | 1618 | 745 | 348.1 |
| 2014 | 13.707 | 1724 | 766 | 369.1 |
| 2015 | 15.882 | 1744 | 714.2 | 360.9 |
| 2016 | 13.768 | 1601 | 578.3 | 256.2 |
| 2017 | 11.093 | 1219 | 480 | 122 |
| 2018 | 12.672 | 1083 | 394 | 5 |

The above Table shows the rise in the number of subscribers and beneficiaries of the services of Zain Telecom from 2009 to 2018, and the general revenue of the company increased dramatically from 2009 to 2013, then decreased in 2014, 2015 and 2016 due to the exposure of the infrastructure to sabotage during the control of the ISIS terrorist group. In the years 2017 and 2018, sales will start to grow.

**Table 5. Asiacell financial indicators (2009-2018)**

| Year | Subscriptions No. (Million) | Earnings (Million USD) | Earnings Pre-Tax (Million USD) | Net Earnings (Million USD) |
|---|---|---|---|---|
| 2011 | 7.351 | 1098 | 594 | 7.351 |
| 2012 | 8.130 | 1522 | 720 | 8.130 |
| 2013 | 8.979 | 1630 | 888 | 8.979 |
| 2014 | 10.30 | 1889 | 1013 | 10.30 |
| 2015 | 10.734 | 1970 | 990 | 10.734 |
| 2016 | 12.302 | 1730 | 807 | 12.302 |
| 2017 | 10.794 | 1341 | 586 | 10.794 |
| 2018 | 11.987 | 1158 | 528 | 11.987 |

It is evident that, with the exception of 2015, the number of subscribers and beneficiaries of the Asia Cell Communications Company's services in the Table above is continuously growing. This decreases with respect to the previous year and then increases in 2016. In terms of revenues, they declined in 2014, 2015 and 2016 due to the domination of terrorist

groups and liberation operations by these organizations, and then these revenues increased again in 2017 and 2018.

### 4.2. Indicators of The Telecommunication Sector In Jordan

According to the Ministry of Economy and Entrepreneurship website, the following tables refer to telecommunications activity in Jordan, as shown:

**Table 6. Communications Indicators in Jordan**

| Year | Subscriptions (Fixed Phone) | No.Subscriptions No. (Mobile Phone) | Subscriptions No. (Internet) |
|---|---|---|---|
| 2014 | 375.483 | 11.120.281 | 5.359.442 |
| 2015 | 368.938 | 13.797.968 | 7.893.750 |
| 2016 | 359.280 | 9.818.446 | 10.064.329 |
| 2017 | 328.028 | 9.703.287 | 10.055.554 |
| 2018 | 319.040 | 8.731.760 | 9.135.455 |

The indicators in Table (6) show a decrease in the number of subscribers to mobile phones from (11 million) in 2014 to (8,7 million) in 2018, which corresponds to a rise in the number of Internet users from (5,3 million) to (9 million) in the same period. This shows that subscribers and consumers are hesitant to connect via the Internet rather than via mobile telephone networks. That is also the case for subscribers and fixed telephone users, and their numbers are declining relative to the number of Internet users for the same reason.

**Table 7. Communications Indicators in Jordan**

| Year | Revenues of Fixed Phone (JRD) | Revenues of Mobile Phone (JRD) | Total Revenues (JRD) | Total Revenues (USD) |
|---|---|---|---|---|
| 2014 | 205.018.371 | 638.903.941 | 1.042.409.421 | 1.459.373.189 |
| 2015 | 193.651.867 | 609.942.944 | 981.759.862 | 1.374.463.806 |
| 2016 | 194.846.137 | 619.610.165 | 969.992.188 | 1.357.989.063 |
| 2017 | 179.050.420 | 642.193.274 | 992.848.247 | 1.389.987.545 |
| 2018 | 161.224.764 | 672.552.002 | 1.008.030.152 | 1.411.242.212 |

From 2014 to 2018, the above Table shows an increase in revenue from mobile phones. This is accompanied by a reduction in fixed-line revenues and internet revenues that are somewhat stable.Collectively, this constitutes stability in the overall revenues of the telecommunications industry.

**Table 8. Total revenues in Jordan (2014-2018)**

| Year | Total Revenues (JRD) | Total Revenues (USD) |
|---|---|---|
| 2014 | 7.302.700.000 | 10.300.000.000 |
| 2015 | 6.806.400.000 | 9.600.000.000 |
| 2016 | 7.090.000.000 | 10.000.000.000 |
| 2017 | 7.444.500.000 | 10.500.000.000 |
| 2018 | 7.869.900.000 | 11.100.000.000 |

**Table 9. Contribution of telecom revenues to total revenues in Jordan (2014-2018)**

| Year | Total telecom sector revenues (USD) | Total Revenues (USD) | Percentage |
|---|---|---|---|
| 2014 | 1.459.373.189 | 10.300.000.000 | 14 % |
| 2015 | 1.374.463.806 | 9.600.000.000 | 14 % |
| 2016 | 1.357.989.063 | 10.000.000.000 | 13.5 % |
| 2017 | 1.389.987.545 | 10.500.000.000 | 13 % |
| 2018 | 1.411.242.212 | 11.100.000.000 | 12.7 % |

Tables (8) and (9) show indicators of total revenues generated from the telecommunications sector in proportion to the total public revenues of the budget. It is evident that there is an actual and good contribution to which the telecommunications sector contributes to supporting the financing of the general budget. The percentage of participants ranged between (12.7%) and (14%), in the sense that the telecommunications sector is stable in supplying and supporting the budget in these percentages, regardless of the different revenues of the general budget.

### 4.3. Indicators of The Telecommunication Sector In Egypt

According to Telecom Egypt website, the following tables refer to telecom activity in Egypt as follows:

**Table 10. Communications Indicators in Egypt**

| Year | Subscriptions No. (Fixed Phone) | Subscriptions No. (Mobile Phone) | Subscriptions No. (Internet) |
|---|---|---|---|
| 2014 | 6.320.000 | 95.320.000 | 22.040.000 |
| 2015 | 6.340.000 | 93.130.000 | 25.910.000 |
| 2016 | 6.120.000 | 97.790.000 | 29.840.000 |
| 2017 | 6.600.000 | 101.270.000 | 33.700.000 |
| 2018 | 7.870.000 | 93.780.000 | 37.000.000 |

The Table above shows that the increase in the number of users and subscribers on the Internet is higher than the increase in the number of users and subscribers on fixed and mobile phones. The number of fixed-line subscribers for the period from 2014 to 2018 is somewhat stable and has increased slightly. However, the number of subscribers declined. In 2018, mobile phones increased more than in 2017. The reason for this is that, instead of calling on a fixed and mobile network, subscribers and users use communication applications on the Internet.

**Table 11. Contribution of telecom revenues to total revenues in Egypt (2014-2018)**

| Year | Total telecom sector revenues (EGB) | Total Revenues (EGB) | Percentage |
|---|---|---|---|
| 2014 | 456.787.545.746 | 12.890.000.000 | 2.8 % |
| 2015 | 465.241.121.140 | 12.150.000.000 | 2.6 % |
| 2016 | 491.487.975.969 | 40.300.000.000 | 8.2 % |
| 2017 | 659.183.966.343 | 18.400.000.000 | 2.7 % |
| 2018 | 821.134.519.391 | 22.500.000.000 | 2.7 % |

The percentage of the contribution of the telecommunications sector to supplementing and supporting the general budget is shown in Table (10), where the contribution rate is fixed at (2.7 percent). With the exception of the 2016 shareholding rate, which rose to (8.2 percent) due to the award of a license to provide fourth-generation services to Telecom Egypt (4G). In general, these percentages of the contribution are considered to be a small percentage compared to the number of telecommunications subscribers and users in Egypt, which only reached (93 million) mobile telephony subscribers.

## 5. Conclusions and Discussion:

Communication technology is an essential component of economic development, maintaining human mobility, productivity and efficacy of resource allocation. On the other side, stronger economic development has a favourable sales effect, and higher demand subsists for decent facilities, which encourages the greater enhancement of the conditions of contact. While most studies have studied the long-term unidirectional causality relationship between growth and communication infrastructure, in so far as public decisions are mostly made without much reliance on the economic rationale, policy adjustments, structural structures, and political stake-driven incentives may have a negative effect on the creation of communication infrastructure status and the way to its development. Furthermore, it sometimes discusses veiled tactics behind certain inappropriate policy actions that have a detrimental effect on both the community and sustainable growth.

In spite of a large number of subscribers and users, the telecommunications sector in Iraq does not contribute to supporting and financing its general budget. Therefore, the share of the state treasury in the activities of the telecommunications sector is zero. The revenues generated from the telecommunications sector activity in Iraq at the general level constitute a small percentage of the general revenues of the total budget, and accordingly, the revenues of the telecommunications sector, both public and private, seem to be spent to finance its obligations only. For subscribers and users, the telecommunications sector in Egypt is one of the most diverse sectors. In spite of this, the telecommunications sector's contribution to the financing and support of the general budget is not significant. The results show that the highest contribution rate was 8.2 percent in 2016, while the percentage was stable, with limits ranging from 8.2 percent over the remaining years (2.6 - 2.8 percent). The telecommunications sector indicators in Jordan indicate that, despite the fact that the number of subscribers and users in the telecommunications sector is not high, it is the sector that contributes most to the financing and support of the general budget. However, a large percentage, ranging from (12-14) percent, is the percentage of participation in the budget support and funding. Liberalizing the telecommunications sector and raising the financial efficiency of the public sector companies affiliated with the Iraqi Ministry of Communications by converting them into public joint-stock companies and offering a percentage of shares that do not exceed half of the total shares through a subscription for the benefit of international telecommunications companies. For the benefit of the Ministry's staff and its affiliated companies, another percentage of the shares should be provided, with a percentage ranging from (1 - 3) percent for the benefit of the public and for the support of the retirement fund. It is promoting and promoting the participation of local and international private sector companies in a way that ensures the creation of a sound infrastructure and optimal user services. In order to achieve the highest levels of fair competition between joint-stock companies of the Ministry of Communications and international private sector companies, licenses to work in the telecommunications sector should be awarded to sound international companies. When entering into contracts for participation or investment or contracts for the grant of work licenses, the rights of the state and of the subscriber (citizen) must be included in order to ensure, on the one hand, that the contracting companies provide

the best services and, on the other hand, pay tax sums for the benefit of the state treasury. Finally, in order to ensure an increase in the number of users and subscribers without affecting their economic situation, a price policy should be defined based on extensive and comprehensive strategic studies which take into account all segments of society and all regions.

**References:**


1. Ahmad, M., & Khan, M. (2017). A review of forensic analysis techniques for Android phones. Journal of Independent Studies and Research-Computing, 15(1), 23-30.
2. Al-Wattar, Y. M. A., Almagtome, A. H., & AL-Shafeay, K. M. (2019). The role of integrating hotel sustainability reporting practices into an Accounting Information System to enhance Hotel Financial Performance: Evidence from Iraq. African Journal of Hospitality, Tourism and Leisure, 8(5), 1-16.
3. Ali, M., Almagtome, A., & Hameedi, K. (2019). Impact of accounting earnings quality on the going-concern in the Iraqi tourism firms. African Journal of Hospitality, Tourism and Leisure, 8(5), 1-12.
4. Ali, M., Hameedi, K., & Almagtome, A. (2019). Does Sustainability Reporting Via Accounting Information System Influence the Investment Decisions in Iraq? International Journal of Innovation, Creativity and Change, 9(9), 294-312.
5. Almagtome, A., Khaghaany, M., & Önce, S. (2020). Corporate Governance Quality, Stakeholders' Pressure, and Sustainable Development: An Integrated Approach. International Journal of Mathematical, Engineering and Management Sciences, 5(6), 1077-1090.
6. Almagtome, A., Shaker, A., Al-Fatlawi, Q., & Bekheet, H. (2019). The Integration between Financial Sustainability and Accountability in Higher Education Institutions: An Exploratory Case Study. International Journal of Innovation, Creativity and Change, 8(2), 202-221.
7. Almagtome, A. H., Al-Yasiri, A. J., Ali, R. S., Kadhim, H. L., & Bekheet, H. N. (2020). Circular Economy Initiatives through Energy Accounting and Sustainable Energy Performance under Integrated Reporting Framework. International Journal of Mathematical, Engineering and Management Sciences, 5(6), 1032-1045.
8. Almusawi, E., Almagtome, A., & Shaker, A. S. (2019). Impact of Lean Accounting Information on the Financial performance of the Healthcare Institutions: A Case Study. Journal of Engineering and Applied Sciences, 14(2), 589-599.
9. Alsharif, M. H., Kelechi, A. H., Albreem, M. A., Chaudhry, S. A., Zia, M. S., & Kim, S. (2020). Sixth generation (6G) wireless networks: Vision, research activities, challenges and potential solutions. Symmetry, 12(4), 676.
10. Amagtome, A. H., & Alnajjar, F. A. (2020). Integration of Financial Reporting System and Financial Sustainability of Nonprofit Organizations: Evidence from Iraq. International Journal of Business & Management Science, 10(1), 27-47.
11. Anttalainen, T. (2003). Introduction to telecommunications network engineering: Artech House.
12. Bhandari, N., Devra, S., & Singh, K. (2017). Evolution of cellular network: from 1G to 5G. International Journal of Engineering and Techniques, 3(5), 98-105.

13. Bose, I. (2006). Fourth generation wireless systems: Requirements and challenges for the next frontier. Communications of the Association for Information Systems, 17(1), 31.

14. Cohen-Almagor, R. (2011). International Journal of Technoethics, Vol. 2, No. 2 (April-June 2011): 45-64.

15. Crafts, N. (2009). Transport infrastructure investment: implications for growth and productivity. Oxford review of economic policy, 25(3), 327-343.

16. Dunnewijk, T., & Hultén, S. (2007). A brief history of mobile communication in Europe. Telematics and Informatics, 24(3), 164-179.

17. Fan, S. H., & Yang, S. H. (2014). The Application Prospect of 4G Communication Technology in Smart Grids. Paper presented at the Applied Mechanics and Materials.

18. Goldsmith, A. (2005). Wireless communications: Cambridge university press.

19. Gruber, H. (2005). The economics of mobile telecommunications: Cambridge University Press.

20. Hole, Y., & Snehal, P. & Bhaskar, M. (2019). Porter's five forces model: gives you a competitive advantage. Journal of Advanced Research in Dynamical and Control System, 11 (4), 1436-1448.

21. Hole, Y., & Snehal, P. & Bhaskar, M. (2018). Service marketing and quality strategies. Periodicals of engineering and natural sciences,6 (1), 182-196.

22. Hossine Sharif, S. (2016). The Role of Telecommunication over the Economic Development of Bangladesh.

23. Huurdeman, A. A. (2003). The worldwide history of telecommunications: Wiley Online Library.

24. Kaur, T. (2012). Features and Limitations of Mobile Generations. International Journal of Engineering and Management Research (IJEMR), 2(1), 57-61.

25. Kbelah, S., Almusawi, E., & Almagtome, A. (2019). Using Resource Consumption Accounting for Improving the Competitive Advantage in Textile Industry. Journal of Engineering and Applied Sciences, 14(2), 275-382.

26. Khaghaany, M., Kbelah, S., & Almagtome, A. (2019). Value relevance of sustainability reporting under an accounting information system: Evidence from the tourism industry. African Journal of Hospitality, Tourism and Leisure, 8(Special Edition CUT), 1-12.

27. Licklider, J. C. (1960). Man-computer symbiosis. IRE transactions on human factors in electronics(1), 4-11.

28. Liu, L., Leng, L., Liu, C., Lu, C., Yuan, Y., Wu, L., . . . Wang, M. (2019). An integrated chromatin accessibility and transcriptome landscape of human pre-implantation embryos. Nature communications, 10(1), 1-11.

29. Mahmud, H. (2019). Cellular mobile technologies (1G to 5G) and massive MIMO. Int. J. Sci. Res, 8(7), 929-937.

30. Meraj, M., & Kumar, S. (2015). Evolution of mobile wireless technology from 0G to 5G. International Journal of Computer Science and Information Technologies, 6(3), 2545-2551.

31. Mustapha, I. (2017). THE PREDICTORS OF ZERO-BASED BUDGET ADOPTION IN BORNO STATE. USMANU DANFODIYO UNIVERSITY, SOKOTO,

32. Nagakannan, M., & Inbaraj, J. (2018). A RECENT REVIEW ON GROWTH OF MOBILE GENERATIONS-CASE STUDY.

33. Nassar, C. R. (2013). Telecommunications demystified: Elsevier.

34. Oyenuga, A. A., Bhamidimarri, R., & Researcher, P. (2017). Upcycling ideas for sustainable construction and demolition waste management: Challenges, opportunities and boundaries. International Journal of Innovative Research in Science, Engineering and Technology, 6(3).

35. Pandya, K. (2015). Comparative Study on Wireless Mobile Technology: 1G, 2G, 3G, 4G, and 5G. IJRTER, 1(1), 24-27.

36. Qi, J., Yang, P., Min, G., Amft, O., Dong, F., & Xu, L. (2017). Advanced Internet of things for personalized healthcare systems: A survey. Pervasive and Mobile Computing, 41, 132-149.

37. Rababah, B., Alam, T., & Eskicioglu, R. (2020). The Next Generation Internet of Things Architecture Towards Distributed Intelligence: Reviews, Applications, and Research Challenges. Journal of Telecommunication, Electronic and Computer Engineering (JTEC), 12(2).

38. Raman, K. (2015). Basic concepts in telecommunications systems. Journal of Telecommunications System & Management, 4(1), 2167-0919.1000.

39. Sharma, P. (2013). Evolution of mobile wireless communication networks-1G to 5G as well as future prospective of next generation communication network. International Journal of Computer Science and Mobile Computing, 2(8), 47-53.

40. Staníčková, M. (2017). Can the implementation of the Europe 2020 Strategy goals be efficient? The challenge for achieving social equality in the European Union. Equilibrium. Quarterly Journal of Economics and Economic Policy, 12(3), 383-398.

41. Taylor, K., & Jackson, S. (2018). 'I want that power back': Discourses of masculinity within an online pornography abstinence forum. Sexualities, 21(4), 621-639.

42. Tripathi, S. R., & Khaparde, S. (2016). Analysis and survey on past, present and future generation in mobile communication. IOSR Journal of Computer Engineering (IOSR-JCE), 30-36.

43. Valdar, A. (2006). Understanding telecommunications networks (Vol. 52): IET.

44. Yogesh Hole et al 2019 J. Phys.: Conf. Ser. 1362 012121

45. Zahra, K., Azim, P., & Mahmood, A. (2008). Telecommunication infrastructure development and economic growth: A panel data approach. The Pakistan Development Review, 711-726.