

The Role of Digital Investment in Economic Growth in Iraq



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ABSTRACT: The economic developments on the global economic stage have contributed to a qualitative shift in economic fields. Many advanced economies now rely on modern technology, with digital economy taking the lead in these countries. This necessitates those developing countries in general, including Iraq, follow the lead of advanced economies in developing their capacities in the knowledge economy. This is crucial for sustaining their economic resources as they transition from rentier economies, which depend on a single sector and have revenues linked to the external world, making their economies vulnerable to fluctuations and instability. The research is based on the hypothesis that the emergence of the new digital investment is a result of the evolution of information and communication technology. It affects both those who possess information technology and those who lack it, consequently influencing the Gross Domestic Product (GDP). The aim is to shed light on the characteristics of this new digital investment, and to present and analyze the key outcomes of investing in the digital economy. The focus is on indicators of digital access, as well as measuring the relationship between indicators of investment in the digital economy and economic growth.

KEYWORDS: Digital Economy, Digital Investment, Information and Communication Technology, Economic Growth.

INTRODUCTION

The Information and Communication Technology (ICT) and the rapid developments witnessed in the global economy play a pivotal role in various economic sectors. Accordingly, they represent one of the most significant transformation processes in the 21st century. The technology sector has become the universal language spoken by the peoples of the world, serving as the primary foundation for their interactions. Furthermore, it elevates, advances, and evolves, keeping pace with the ongoing timeline that has reduced temporal gaps and facilitated information retrieval. Through engagement, exchange, and collaboration across various fields, particularly economic, social, political, operational, and cultural, this digital revolution has led to a substantial technological gap between advanced and developing economies, known as the "digital divide."

Originally a developmental gap, it transformed into a technological or digital gap as its foundation took on a digital form. This transformation has impacted all areas, with a significant influence on investment, giving rise to what is now termed "digital investment." To enhance the role of digital investment in the economy and narrow the digital gap, the Iraqi economy must intensify its efforts. This involves not only generating technology but also innovating, producing, and exporting it instead of relying on external purchases and consumption. Moreover, there is a need to accelerate economic and social development, comprehensively enhancing all components of the economy to achieve the best outcomes for society as a whole. Consequently, this would lead to an increase in Gross Domestic Product (GDP), higher individual income, improved living standards, and the resolution of various issues, including unemployment.

Importance of Research: The significance of research lies in the crucial role played by informatics in all economic sectors, particularly in shifting investment from its traditional nature to innovative investments that safeguard modernity and are fundamentally based on knowledge and human capital (individuals with high and medium skills).

Research Problem: The research problem can be formulated in the following question: What is the impact of investment in the digital economy on the Gross Domestic Product (GDP) in the Iraqi economy? Additionally, what is the relationship between independent variables (the percentage of education expenditure from GDP, the number of internet users, the number of mobile phone users, research and development expenditure as a percentage of GDP) and dependent variables (Gross Domestic Product at current prices)? Is it a causal or inverse relationship?

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Research Hypothesis: The research is based on the hypothesis that the emergence of new digital investments is a result of the evolution of information and communication technology, impacting both those with access to information technology and those lacking it, thereby influencing the Gross Domestic Product (GDP).

Research Objectives: The research aims to achieve a set of objectives, including:

1. Conceptual and theoretical framing of digital economy investment and its various dimensions.
2. Analysis of indicators related to digital investment in the Iraqi economic environment.

Research Methodology: The research adopted an inductive approach by analyzing the overall aspects to reach specific particles. This was achieved through employing a descriptive method, presenting concepts and dimensions related to investment in the digital economy and gross domestic product.

THE FIRST STUDY

Investment in the Digital Economy: A Framework of Concepts and Economic Dimensions

First: The Concept of Digital Economy:

Digital economy is the term used to refer to the economy built on the internet and the web. It is an economy that deals with digital or digital information, especially digital customers and digital companies, digital technology, and digital products. It is based on ideas and innovation rather than things⁽¹⁾.

The digital economy is defined as "an economy that employs digital technologies in the development of economic and social activities by increasing the efficiency of goods production, achieving service delivery, improving quality, and providing opportunities to create new value chains, thereby enhancing individual well-being." The United Nations Conference on Trade and Development (UNCTAD) defines the digital economy through its components, allowing for the classification of the concept into a narrow and broad understanding. The narrow concept refers to the **Digital Sector**, which includes "the infrastructure of information and communication technologies, the producing sectors of information and communication technologies, as well as the sector of digital goods and services and services built on digital platforms." **The broad concept, on the other hand**, signifies "the use of digital technology to perform various economic activities" and is more closely associated with what is known as the **Digital Economy**⁽²⁾.

The digital economy is defined as "the economy associated with the concept of the information society, which represents a futuristic vision of a world where information is the fundamental cornerstone of the economy and human relationships as a whole, embodied in a high-level digital infrastructure capable of achieving this in various areas of life"⁽³⁾.

Second: The Importance of Investing in the Digital Economy:

Investing in the digital economy is one of the significant investments that has proven its effectiveness in many different economies. It is linked to various sectors such as services, health, education, industry, and even administration, both on private and public levels. Therefore, it is a fundamental requirement for different economies to carry out their activities effectively and efficiently, given the information and knowledge it provides. Consequently, there is a need to establish strategies and requirements to adopt such investments.

The importance of investment and its management methods has increased in the third millennium due to the widespread application and expansion of globalization aspects, information technology, and internet usage. Information and communication technology have facilitated cost reduction by streamlining financial and business transactions, as well as providing and storing the necessary data and information in both quantity and quality. This shift has transformed the traditional economy towards the knowledge economy, where the human element plays a fundamental role in influencing economic project decisions⁽¹⁾.

1. Investing in the digital economy by both the government and the private sector plays a crucial role in the knowledge economy. Information has become an economic commodity, generating a greater positive return in economic activity and bridging the digital gap with larger, industrialized nations⁽²⁾.
2. Contributing to the ongoing existence and growth of a company, thereby improving its performance and achieving its set goals, requires substantial investment in the digital economy. Therefore, it is essential to invest prudently, considering costs and drawing from the experiences of other economies to understand the impact of investment on the enterprise⁽³⁾.

Bin Soula Nour El-Din, Digital Economy and E-Commerce, Tatweer Magazine, Volume (5), Issue (2), December 2018, p. 336.

The United Nations Conference on Trade and Development (UNCTAD).

) Bouchoul Faiza et al., The Reality of the New Economy in the Arab World and Algeria, Setif University, p. 121.

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3. Investment in the digital economy has economic repercussions and a strategic role in the rate of economic growth across various economic, social, and financial domains.
4. Government investments in the digital economy, particularly in areas like electronic government services, contribute to providing better services for citizens and improving living standards ⁽⁴⁾.
5. It is a fundamental requirement for institutions to carry out their operations efficiently and effectively due to the information and knowledge they provide. This contribution facilitates the growth and sustainability of the institution, enhances its performance, and achieves the desired goals ⁽⁵⁾.

THE SECOND STUDY

The Relationship between Digital Economy and Economic Growth from an Economic Perspective

First: The Role of Digital Investment in Shaping the Gross Domestic Product:

The global economic processes are increasingly influenced by the creation, dissemination, accumulation, and application of information and knowledge. Understanding development and growth is no longer possible without taking into consideration the wide-ranging effects of information technology and its applications.

It is worth noting that information and communication technology has a significant impact on economic productivity and the success of organizations, especially when coupled with investments in skills, organizational change, innovation, and the establishment of new companies. While it is possible to observe and measure this impact at the level of individual companies, detecting and measuring its influence on national economic productivity is much more challenging.

The widespread use of the Internet, mobile phones, and broadband networks highlights the increasing prevalence of information and communication technology. The following effects of information and communication technology on productivity and economic growth can be observed ⁽¹⁾:

1. In its capacity as a capitalist commodity, investment in information and communication technology contributes to the deepening of overall capital, thereby aiding in the enhancement of labor productivity.
2. It accelerates the growth of productivity in the information and communication technology production sector due to the rapid technological advancements in producing goods and services related to information and communication technology and its services.
3. The increased use of information and communication technology contributes to enhancing the efficiency of companies in general, thereby raising the level of productivity. Moreover, the increased utilization of information and communication technology can impact networks, such as reducing transaction costs and accelerating innovation, thereby improving the efficiency of the economy as a whole.

Investing in the digital economy (the application of digital technology in the production and trade of goods and services online) has become more crucial than ever in the global economy. The transition to the digital economy can provide a boost to competitiveness across all sectors, create new opportunities for business activity and entrepreneurship, and offer new avenues for accessing international markets. It also provides new tools for addressing ongoing development and social issues.

However, it comes with a set of challenges—from the global digital divide to potential negative social and developmental impacts, and the complex regulatory issues associated with the internet—that policymakers need to address. The opportunities and challenges associated with the digital economy are of particular significance for developing countries ⁽¹⁾.

Doraid Kamel Al-Shabib, *Investment and Its Impact on Economic Development*, First Edition, Dar Al-Raya for Publishing and Distribution, Jordan, 2013, p. 19.

Hind Alawi, *The Information Society in Algeria*, Dar Al-Academy for Printing, Publishing, and Distribution, First Edition, Algeria, 2009, p. 30.

Ibrahim bin Muhammad bin Saleh Al-Hadithi, *The Economic Effects of Increased Investments in Information and Communication Technology in the Kingdom of Saudi Arabia*, *International Journal of Islamic Economics*, Issue (49), 2016, p. 88.

Communications and Information Technology Report, *Investments in Communications and Information Technology in the Kingdom of Saudi Arabia*, 2015, p. 90.

Nafisa Hajjaj and Ahlam Bouabdli, *The Impact of Information and Communication Technology Investment on the Profitability of Enterprises: A Case Study of a Sample of Algerian Petroleum Companies during the Period 2010-2014*, *Al-Bahith Journal*, Issue (16), University of Ouargla, 2016, p. 197.

Al-Eskwa: *Towards an Integrated Knowledge-Based Society in Arab States: Strategies and Implementation Methods*, United Nations, New York, 2005, p. 72.

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Klaus Schwab asserts that technological innovation will lead to future developments on the supply side, accompanied by long-term gains in efficiency and productivity. This will result in reduced costs of transportation and communication, making global supply chains more effective. As a consequence, trade costs will decrease, facilitating the growth of existing markets, opening up new markets, and thereby stimulating economic growth ⁽²⁾.

Second: Explanatory Theories of the Relationship between Information and Communication Technology and Economic Growth:

1. New Knowledge Theory:

The relationship between the Information and Communication Technology (ICT) sector and economic growth can be elucidated through the examination of both its direct and indirect impacts:

A- The Direct Impact of Information and Communication Technology on Economic Growth ⁽³⁾:

Communications technology affects economic growth directly through the supply side through the following channels:

- The production of goods and services in the information and communication technology directly contributes to the overall value added generated in the local economy.
- Increasing productivity in the Information and Communication Technology sector contributes to the overall productivity growth of production factors in the local economy.
- Utilizing Information and Communication Technology capital as inputs in the production of other goods and services.
- Contributing to the Gross Domestic Product (GDP) and creating employment opportunities.

B- The Indirect Impact of Information and Communication Technology on Economic Growth ⁽⁴⁾:

The indirect impact of information and communication technology on economic growth occurs through the utilization of ICT in other sectors (agricultural, industrial, and service) of the local economy. This impact can be explained through the theory of new knowledge as an intermediary factor between the use of ICT and economic growth. The use of ICT leads to an increase in the volume of new knowledge. For example, the use of the internet plays a significant role in disseminating knowledge throughout the economy. The increase in the volume of new knowledge, in turn, results in the improvement of the quality of existing products, the production of new products, and an increase in the overall productivity of production factors in the economy. Ultimately, this leads to economic growth, as illustrated in Figure (7).

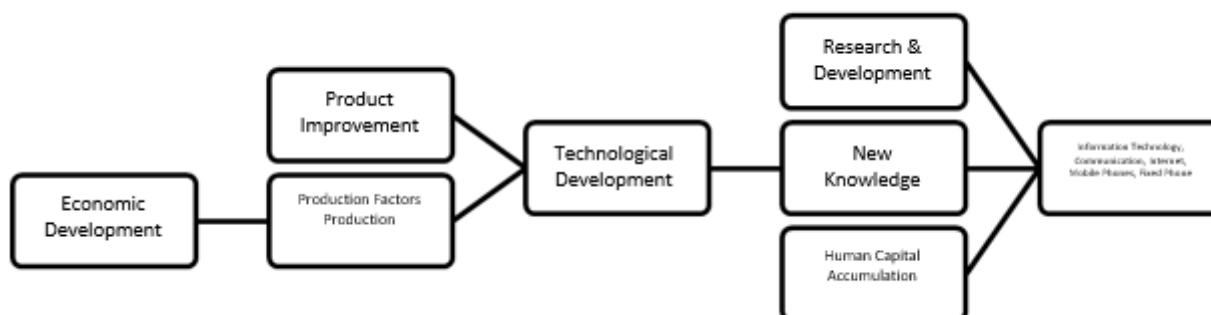


Figure (7) The Impact of Knowledge Dissemination on Economic Growth

Source: Choi, C. and Yi, M. H., "The Effects of the Internet on Economic Growth: Evidence from Cross Country Panel Data, Economic Letters, 2009.

2. Theory of the Spread of Communication Networks ⁽¹⁾:

The economic impact of communication networks manifests itself through various forms of influence:

First Impact: This arises from the processes involved in constructing these networks. Similar to any infrastructure project, the proliferation of these networks creates employment opportunities, thereby contributing to the stimulation of the economy.

ITU, World Telecommunication/ICT Indicators database, released January 2017, P156.

Adib Qasim Shendi, Nagham Hameed Al-Yasiri, and Hasan Jamal Hasan, Knowledge and Growth Economics: Information and Communication Technology, Economic Applications, Dar Al-Manahij, Oman, 2023, p. 156.

Samimi, A. H. and Ledary, R. B., "ICT and Economic Growth: New Evidence from Some Developing Countries," Australian Journal of Basic and Applied Sciences, 2010.

Choi, C. and Yi, M. H., "The Effects of the Internet on Economic Growth: Evidence from Cross Country Panel Data, Economic Letters, 2009.

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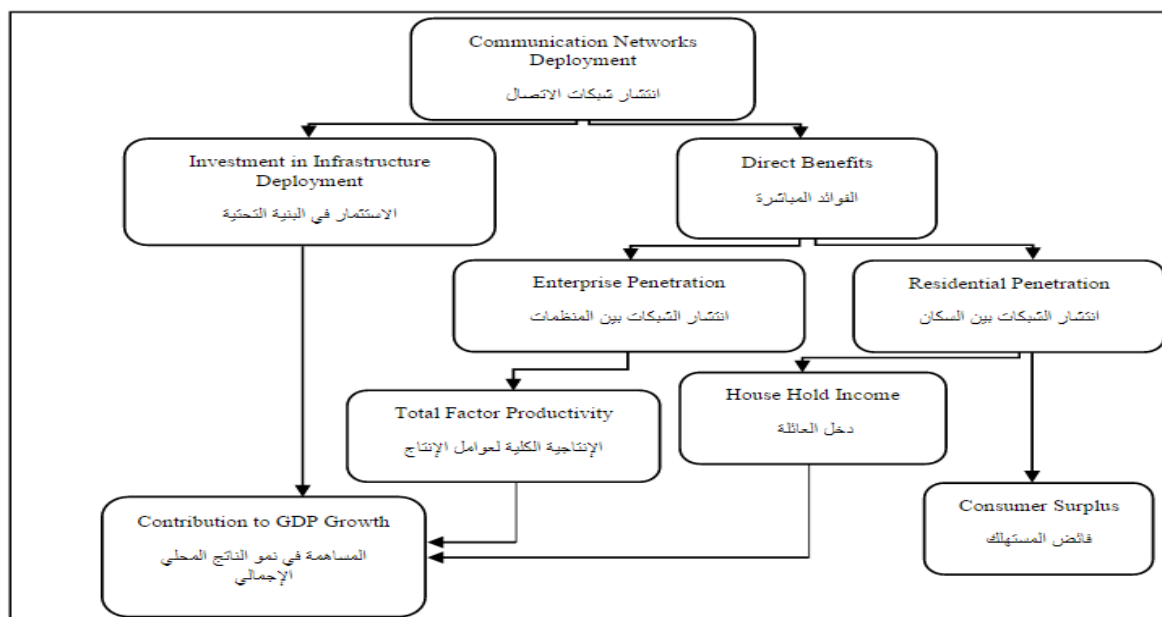


Figure (8) The Impact of the Spread of Communication Networks on Economic Growth

Source: ITU: 2012.

Second Impact: This arises from external efficiencies that affect both projects and consumers. The adoption of these networks in business institutions leads to multiple gains in productivity, contributing to the growth of the gross domestic product. On the other hand, the population's adoption of these networks results in an increase in real income as a consequence of multiplier effects. Beyond these direct gains, which contribute to the growth of the gross domestic product, the population using these networks gains within the framework of what is known as consumer surplus. This is defined as the difference between the prices they are willing to pay for using these networks and the prevailing prices.

While this indicator, despite its inability to explicitly demonstrate its impact on the gross domestic product, may be influential to an extent where these gains facilitate access to information, government services, as depicted in Figure 8, illustrating the economic effects of the proliferation of communication networks on economic growth.

3. Critical Mass Threshold ⁽¹⁾:

This concept examines the impact of communication networks on the economy, indicating that the impact of communication networks on economic growth becomes significant only when the level of access to these networks is high. Nevertheless, Gillett et al. emphasized that the relationship between access and economic growth should not be linear. Early adopters of communication networks will receive the majority of the benefits, while new adopters will gain only a small share of the benefits. The following figure illustrates the theory of the critical mass threshold.

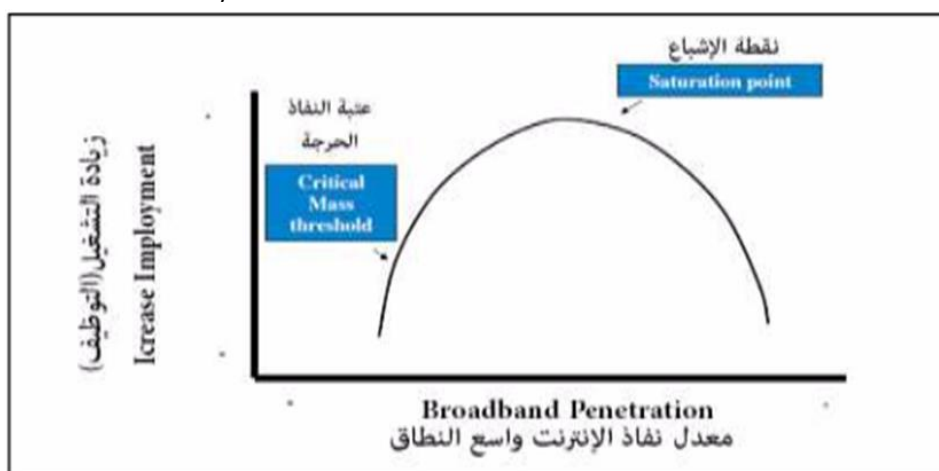


Figure (9) The Impact of the Spread of Broadband Internet on Economic Growth

Source: Gillett, S., Lehr, W., and Osorio, C., & Sirbu, M. A. Measuring Broadband's Economic Impact, 2006.

1) ITU: 2012.

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Taking into consideration, my perspective indicates that the strength of the relationship will only be close-knit and robust when the level of technological penetration reaches a specific critical point, provided it does not reach the saturation stage. The significant outcome that can be achieved is that, in order to attain substantial economic effects, communication networks need to reach a high level of penetration, as illustrated in Figure 10.

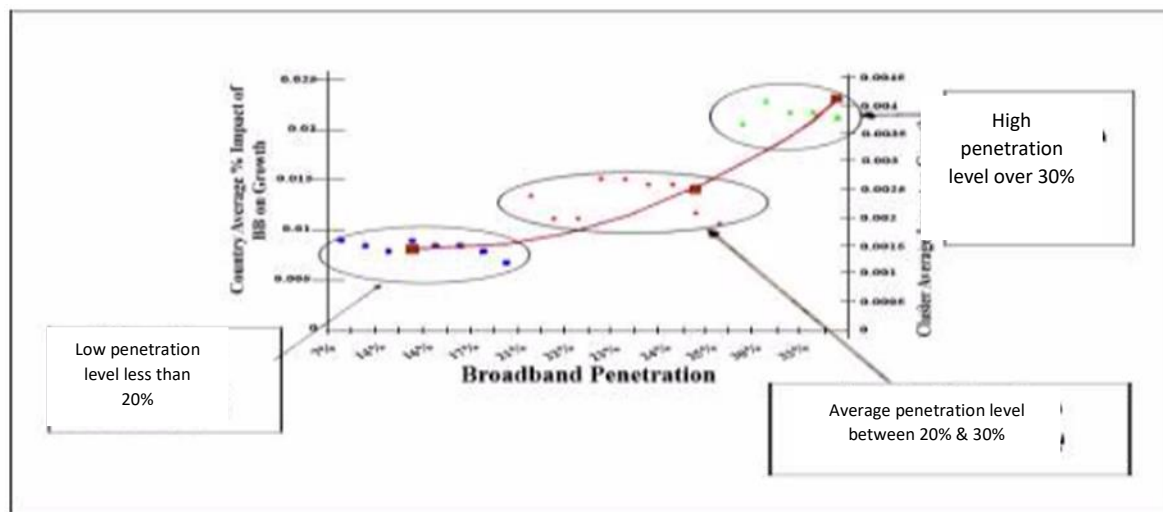


Figure (10) Percentage of the Widespread Impact of the Internet on Output

Source: OECD, 2012.

As shown in Figure (10), countries with low internet penetration rates (less than 20%) demonstrate that an increase in access by 1% contributes to a growth of Gross Domestic Product (GDP) by 0.008%. In countries where access levels are moderate (between 20% and 30%), the impact is observed to be 0.014%. In nations with higher access rates (above 30%), the impact is even more significant at 0.023%. Consequently, the impact is evident in advanced countries, while developing nations, if they do not work towards increasing access rates, will experience limited effects.

THE THIRD STUDY

The Reality of the Use of Information and Communications Technology Indicators in Iraq Analysis

First: Expenditures on Information and Communication Technology in Iraq:

The Information and Communications Technology Sector holds strategic significance as a driving force for economic growth due to its increasing contribution to the Gross Domestic Product in knowledge-based economies. Despite the Iraqi economy's substantial resources, which could serve as a fertile ground for technological advancement, it struggles to keep pace with the rapid evolution of information and communications technology. This is largely attributed to low levels of Information and Communications Technology penetration associated with inadequate spending on this sector, which makes it an unstimulating environment for economic growth. Table 17 indicates Information and Communications Technology expenditure.

The data presented in the table illustrates the fluctuation in spending levels on the Information and Communications Technology Sector in Iraq during the period of 2003 to 2019. This is reflected in the annual growth rate of spending, which ranged from its highest point in 2007 at 131.32%, to its lowest recorded growth rate in 2016, which reached -84.07%. The percentage of the Information and Communications Technology spending as a share of the Gross Domestic Product exhibited variations during the same period, as depicted in Figure 10. It was approximately 0.08% in 2003, decreasing to 0.06% in 2004, a relatively low figure when compared to the average spending in advanced nations and the global average, which surpasses 6%.⁽¹⁾ However, this percentage gradually increased to its highest point of around 0.67% in 2006. Despite this improvement in spending, a substantial gap remains in comparison to the global spending percentage, which stood at 8%, and the Middle East region, where it reached an even higher level at 10%. It is worth noting that this regional growth is primarily attributed to relatively high growth rates in four countries in the region: Morocco, Egypt, Saudi Arabia, and the United Arab Emirates, which ranked among the top 20 countries globally, registering the fastest compound annual growth over the past decade⁽²⁾.

Gillett, S., Lehr, W., and Osorio, C., & Sirbu, M. A. Measuring Broadband's Economic Impact, 2006.

United Nations, Regional Profile of the Information Society, 2005, Op, Cit, P.34.

United Nations, Competitiveness of the ICT Sector in the Arab Region: Innovation and Investment Imperatives the economic and Social Commission for Western Asia ESCWA, E/ESCWA/ICTD/2013/4, P.6.

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The expenditure ratio on this sector in Iraq has steadily declined after 2010, reaching its lowest level of 0.01% for the years 2016 and 2017 consecutively. This stark decrease in spending on information technology and communications signifies a lack of investment in the sector, meaning that these ratios reflect only operational performance. Therefore, the Iraqi economy suffers from the limited impact of a sector that could potentially be one of the pillars of economic growth compared to other countries.

Table (17) The Volume of Expenditure on the Information and Communications Technology Sector in the Iraqi Economy (Billion Dinars)

Year	Total Expenditure on Information and Communications Technology	Growth Rate	Gross Domestic Product	Percentage of Expenditure on ICT as a Percentage of GDP %
2003	55.210	***	66398.2	0.08
2004	62.345	12.92	101845.3	0.06
2005	60.332	-3.23	103551.4	0.06
2006	74.071	22.77	10989.9	0.67
2007	171.339	131.32	111455.8	0.15
2008	106.478	-37.86	120626.5	0.09
2009	149.743	40.63	124702.1	0.12
2010	211.006	40.91	132687.0	0.16
2011	179.119	-15.11	142700.2	0.13
2012	210.054	17.27	162587.5	0.13
2013	218.495	4.02	174990.2	0.12
2014	234.433	7.29	178951.4	0.13
2015	175.633	-25.08	183616.3	0.10
2016	27.981	-84.07	208932.1	0.01
2017	21.299	-23.88	201059.4	0.01
2018	21.103	-0.92	202776.3	0.01
2019	20.251	-4.04	211789.8	0.01

Source: Prepared by the researcher based on:

- Central Bank data, Information Technology Department, a personal interview with Mr. Director of the Information Technology Office.
- The Central Bank of Iraq, General Directorate for Statistics and Research, the annual statistical bulletin, miscellaneous figures.

Third: Economic Returns of the Information and Communications Technology Sector in Iraq:

The measurement of the contribution of the Information and Communications Technology Sector to economic growth depends on two key indicators that assess the effectiveness and capability of the Information and Communications Technology Sector: telecommunications revenue and investments in it. Information and Communications Technology Sector revenues contributed approximately 3.33% of the regional Gross Domestic Product on average, indicating significant potential for growth in Arab countries including Iraq ⁽¹⁾. In 2008, the contribution of the Information and Communications Technology Sector to Iraq's Gross Domestic Product was approximately 1.8%, or about 1.7 billion dollars, which is lower than the regional average. Bahrain, Palestine, Qatar, and Lebanon had similar contributions. In contrast, Saudi Arabia had the highest contribution to the sector at 8%, roughly 37 billion dollars ⁽²⁾. Table 18 illustrates that other countries achieved a higher contribution percentage to the Gross Domestic Product, surpassing the regional average, except for Iraq, Palestine, and Lebanon, which all faced political instability, conflicts, and wars, hindering the development and growth of the Information and Communications Technology Sector.

Table (18) Information and Communication Technology Revenues in Selected Arab Countries (2008)

Country	Gross Domestic Product Billion Dollar	Information and Communication Technology Revenues (as a Percentage of Gross Domestic Product)	Information and Communication Technology Revenues (in Millions of Dollars)
Saudi Arabia	467.6	8	37408
Egypt	162.82	3.5	5698.7
Kuwait	112.11	4.5	5044.95
Qatar	52.72	2	1054.4

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Syria	55.2	5	2760
Iraq	92.3	1.8	1661.4
Bahrain	15.83	3	474.9
Lebanon	28.66	1.4	401.24
Palestine	11.95	0.8	95.6

Source: The United Nations, Report on the Regional Aspects of the Information Society in the Arab Region, Economic and Social

Commission for Western Asia, ESCWA, E/ESCWA/ICTD/2009/12, Beirut, 2009, page 187.

Revenues in the telecommunications sector witnessed growth in most Arab countries when their average contribution to the Gross Domestic Product increased from 3.5% in 2008 to reach 4.4% in 2010. This improvement was attributed to the region's higher average percentage compared to the global average estimated at around 2.7% in 2010.

It's worth noting that the primary reason behind this increase in revenues lies in the widespread adoption of telecommunications services, including fixed lines and mobile phones, in the Arab region.

Iraq has witnessed significant improvements in the revenues of the telecommunications sector due to the increase in the number of mobile phone service users. This positive impact has led to the establishment of information and communication technology infrastructure. However, there is a negative aspect related to the market dominance held by companies operating in the Iraqi telecommunications market, which has reached a level of monopoly and control over pricing decisions. Furthermore, a significant portion of the profits generated by these companies goes to foreign countries, leaving no positive impact on the Iraqi economy. As a result, the contribution of the information and communications technology sector to Iraq's Gross Domestic Product has not improved but, rather, has experienced a decline. ⁽¹⁾

Fourth: market share of telecommunications companies in Iraq:

The telecommunications sector holds paramount importance, no less than the other side of information and communication technology. The development of this sector has been particularly notable, especially after 2003. In the mobile phone sector, three companies (Zain Iraq, AsiaCell, and Korek) dominated the Iraqi market after winning the licenses announced by the Temporary Coalition Authority in 2003 ⁽²⁾. The increased dominance of these mobile phone companies in the Iraqi communication market is due to the growth in the number of mobile phone service subscribers on one hand and the increase in their revenues on the other. In light of the data in Figure 14, the Iraqi mobile phone market can be described as highly concentrated, with AsiaCell and Zain Iraq holding the majority of users, accounting for around 80% of the total subscriptions. This concentration was further reinforced by the merger between Orascom Telecom and MTC (Zain Iraq), leading to a model of oligopoly and a reduction in market competition.

From Figure 14, it is observed that Asiacecell maintained its market share of telephone line subscriptions in Iraq, ranging between 31.34% - 38% during the period of 2006-2018, achieving a compound annual growth rate of 1.27%. In contrast, Zain Iraq witnessed a decline in market share, dropping from 66.80%

In 2006 to 44% in 2018, with its lowest point being recorded in 2015 at 33.41% and registering a very low compound annual growth rate of 3.73%. Conversely, Korek achieved the highest annual growth rate among them, amounting to 6.82% due to the increase in its market share from 9.94% in 2008 to 18% in 2018, with its highest market share being in 2014 at 34.61%.

The reason for the decrease in the market share of my telecommunications companies, Asiacecell and Zain Iraq, except for Korek, is that the data for the active mobile phone lines for the year 2015 only, whereas the data for previous years included all active and inactive lines. Another reason is the result of military operations that took place in areas that were subjected to occupation by terrorist groups, causing damage to numerous towers and the inability of subscribers in those areas to establish connections. ⁽¹⁾

1) The United Nations, Regional Profile of the Information Society in the Arab Region, Economic and Social Commission for Western Asia (ESCWA), Beirut, 2013, page 147.

2) The United Nations, Regional Report on the Information Society in the Arab Region, Economic and Social Commission for Western Asia (ESCWA), E/ESCWA/ICTD/2009/12, a previous source, page 187.

3) The United Nations, Same Source, page 188.

1) Nagham Hameed Abdulkhadir Alyasiri, Information Technology and Communications Sector and Economic Growth Potential - An Analytical Study in a Selected Sample of Arab Countries with Special Reference to Iraq, Doctoral Dissertation, College of Management and Economics, Wasit University, 2020, pages 153-154.

2) The Media and Communications Authority, the State of Telecommunications in Iraq for the year 2006, Baghdad 2006, pages 5-6.

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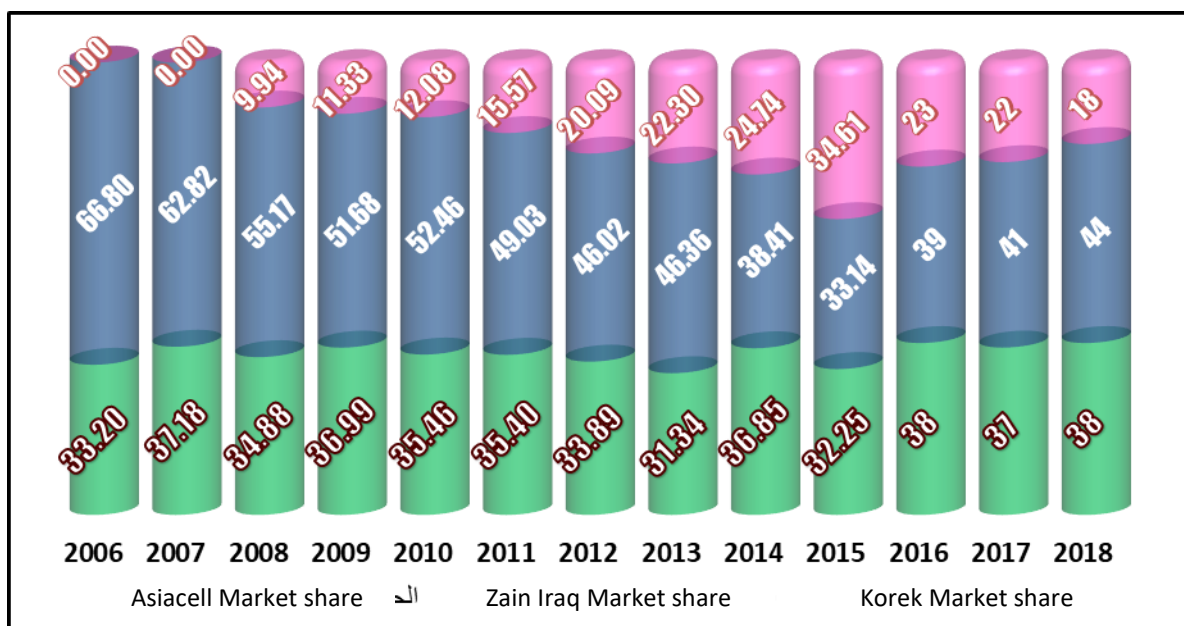


Figure (14) The Market Share of Mobile Phone Subscriptions for Companies Operating in Iraq during the Period from 2006 to 2018 (%)

Source: Prepared by the researcher based on data extracted from:

- Media and Communications Authority, The State of Telecommunications in Iraq for the year 2006, Baghdad, 2006, page 38.
- Ministry of Planning, Central Statistical Organization, Telecommunications and Postal Statistics for the years 2014 and 2015.
- Zain Iraq Company, Annual Report, for the years 2016-2018, available on the website: <https://zain.com/ar/investor-relations/financial-reports/>

FIRST: CONCLUSIONS

1. Digital economy extends beyond mere computer use to perform traditionally manual tasks, with a significant impact on creating opportunities and fulfilling the urgent needs of both organizations and individuals. This drives them to utilize digital technology for the purpose of executing these tasks more efficiently and with higher quality.
2. The digital economy has the full capability to maximize the returns from the scientific and information technology revolution, enabling the execution of all tasks and ensuring participation in events and activities that were not accessible under the traditional economy.
3. Political instability and deteriorating security conditions in Iraq have hindered the government's support for the technology and information sector in a manner that would enable its development.
4. Iraq's inadequate information technology and communication infrastructure have caused it to lag behind in the field of digitization.

SECOND: RECOMMENDATIONS

1. Working on liberating the information and communications sector in Iraq from the monopoly of the few and transitioning to a competitive market by increasing investment opportunities to enhance the quality and expansion of services for information technology and communications applications and reducing the cost of using these services.
2. Developing the information technology and communications sector in Iraq, which serves as a pivotal administration for the spread and development of e-commerce, enabling Iraq to shift towards an information-based economy, through the implementation of the necessary investment and legislative frameworks.
3. Opening up national investment opportunities in the information technology and communications sector and supporting it, as well as attracting foreign capital for investment in infrastructure projects necessary for e-commerce implementation.
4. Increasing government spending on the information technology and communications sector and raising its percentage of the Gross Domestic Product to encourage investment aspects of the sector.

Ministry of Planning, the Central Statistical Organization, Telecommunications and Postal Statistics for the year 2015, 2016, page 11.

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5. Promoting cooperation between Iraq and advanced countries for the exchange of experiences in the field of information technology and e-commerce to benefit from successful experiences.
6. Developing the necessary skills for working on e-commerce applications by conducting training courses to prepare qualified human resources and enhancing their scientific competence, as well as encouraging an interest in English language courses and computer proficiency courses.

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