



The Implications of Financial Services for Sustainable Development

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Abstract: This research aims to clarify the importance of the digital economy and its potential contribution to achieving sustainable development. This is achieved by defining the concepts of the digital economy and sustainable development, and demonstrating the importance of the digital economy in achieving sustainable development. This means demonstrating the impact of the use of information and communications technology at all levels and its role in stimulating productive sectors and providing public services, thereby enhancing the capabilities of all stakeholders, including public authorities, governments, businesses, and others. The global digital economy revolution is no less important, and may even exceed, the impact of the previous industrial revolution through virtual roles and their potential impact on practical reality. This research will enhance awareness of the digital economy and provide a preliminary vision of its economic potential and the potential impacts of its implementation in light of the development agenda.





Keywords: Digital Economy, Sustainable Development, Knowledge economy, human capital.

1. Introduction

The explosion in information and communication technology and the growing use of the internet have led to a massive digital revolution that has brought about fundamental changes in all areas, particularly the structure of the economy. This revolution has influenced the establishment of a new system, the digital economy. All developing countries are seeking to integrate into this system in order to bridge the digital gap between the developed and underdeveloped worlds, and even among individuals within the same country, with the goal of achieving continuous and sustainable growth in all sectors.

The shift towards a digital economy requires a knowledge-based environment through which knowledge is efficiently produced, acquired, disseminated, and utilized in all economic activities. Information and communication technology occupies a central position within this environment, in addition to focusing on qualitative rather than quantitative learning, supporting research and development, and encouraging creativity and innovation, which together constitute the basic components of integration into the digital economy.

The digital economy is one in which knowledge represents the primary element of production and the driving force for wealth creation. The center of gravity shifts from focusing on raw materials and capital equipment to focusing on knowledge, information, scientific research and development centers, and the development of creative and innovative processes. Compared to the industrial economy, the digital economy is characterized by being an economy of abundance, free from the constraints of time and space, rather than one of scarcity. Most economic resources are depleted and acquired through consumption, while knowledge increases through practice and use and is disseminated through sharing. The digital economy relies in its production structure on the intangible dimension of capital, primarily represented by knowledge, which has become a significant component of value-added creation and wealth generation in the economy. Their accumulation is also the primary driver and engine of economic growth. The digital economy also offers significant opportunities to help improve and revitalize all economic, social, and environmental sectors. However, it is not without challenges, particularly those related to cybercrime, which poses a significant threat to





intellectual property rights and scientific research and development, both of which are the fundamental characteristics of this economy. From another perspective, development, in its most profound form, involves bringing about societal change toward progress and advancement. This involves purposeful processes limited in time and space. From this perspective, sustainable development is fundamentally based on achieving a better standard of living for individuals while preserving the planet for a prosperous future. Due to global crises that impact the domestic policies of countries, the process of sustainable development requires the establishment of supportive social, economic, and political structures that contribute to addressing modern developments and sudden crises, such as declining oil prices, world wars, the spread of epidemics, and other crises. This requires mobilizing human and material resources to drive the development of major economies in society, regardless of the circumstances.

Naturally, for countries to become a key player in sustainable development, they must rely on other actors, such as international organizations, while adopting successful programs, policies, models, and digital plans.

1.1. Importance of the Research: The importance of the research lies in the role and implications of the digital economy for sustainable development in the Iraqi economy.

1.2. Research Problem: The research problem can be formulated with the following question: The impact of digital economy indicators on sustainable development in the Iraqi economy. Given that the Iraqi economy is a rentier economy, it relies primarily on oil resources, which exceed 90%, compared to other resources.

1.3. Research Hypothesis: The research is based on the hypothesis that there is a relationship between the digital economy and sustainable development.

1.4. Research Objective: The research aims to:

- The impact of digital economy indicators on sustainable development in Iraq.
- Analyze the relationship between the digital economy and sustainable development in Iraq.

2. The Digital Economy





2.1. The Concept of the Digital Economy

Migrating to new IT systems, implementing digital services, or shifting workloads to cloud computing infrastructure is no easy process. Digital transformations often involve retraining, reorganization, and the creation of new jobs within government institutions.

The digital economy is often used as an umbrella term to describe multiple upgrades within organizations and agencies, but it can impact a number of different aspects of business. For example, the way it operates may require the addition of new technologies. The Global Center for Digital Business Transformation asserts that "organizational change is the foundation of digital business transformation." This is because changing the nature of an organization means changing the way its teams work, the work processes, and the strategies they rely on. While these challenges represent some of the most difficult, they also enable improved workflow, enabling the organization to become more efficient and complete work faster than before, while simultaneously benefiting from the creation of more job opportunities (Omar, 2021, p. 158).

The concept of the digital economy can also be defined as "a process aimed at improving entities and institutions by initiating significant changes in their characteristics using a combination of information, computing, and communications technologies." In light of these efforts, there are internal and external users of digital services who must be included in digital economy efforts through four aspects: dynamic capabilities as a prerequisite for digital transformation; user participation in the design of digital services; co-production and co-creation to increase the legitimacy of digital services; and finally, co-creation with open registries to improve the delivery of digital services. (Sarkali, 2024, p. 61).

It can also be defined as the process of providing and disseminating knowledge rapidly through electronic networks that eliminate time and space, within an enabling administrative system subject to evaluation, accountability, and community participation. (Sarkali, 2024, p. 61).

It is defined as the use of information and communications technology in all economic endeavors, which expands opportunities, stimulates economic growth, and improves the provision of public services. Under this type of economic activity, some economic variables become of a different dimension in terms of pattern and impact. For example, markets become more dynamic than the traditional type of economic activity, and the limits of competition extend beyond the local aspect to the global. The organization of production is



more flexible and responsive than the traditional type. The digital economy derives its competitive advantages primarily from innovation, quality, and the ability to adapt to market requirements, and is not based on the cost of this type.

Economic activity requirements and infrastructure are: (Al-Rubaie et al., 2024, p. 204)

- Technological infrastructure
- Hardware, software, and networks
- Digital mechanisms through which commercial and other activities are conducted

2.2. Objectives of the Digital economy

The digital economy seeks to achieve many goals, but the ultimate goal of implementing the digital economy is to increase productivity through the use of modern technological methods and enhance economic competitiveness. These objectives include the following: (Hassan, 2019, pp. 19-20).

- 1- The true cost lies in research and innovation, not in hardware and equipment. The expertise generated by scientific research is formed in the form of knowledge accumulation that drives industrial development to increase the strength and effectiveness of modern technical programs and applications.
- 2- The rapid increase in opportunities for cooperation between institutions in various forms of partnerships has led to the emergence of network institutions, in addition to the changing nature of work and the emergence of new business models, which has led to a significant increase in the wages of workers in this sector.
- 3- The digital economy leads to the dissemination of knowledge, or what is known as the knowledge economy, as it relies primarily on human minds as intellectual and knowledge capital, thus creating new jobs and providing numerous employment opportunities.
- 4- Improving competitive positions, as information technology and its various tools (the Internet) transform and change economic performance patterns in finance, business, trade, and investment from traditional to real-time.
- 5- It increases the integration, of the country's economy into the global economy, increasing international trade opportunities and facilitating





access to global markets and market sectors that were previously difficult to access.

- 6- It facilitates the decision-making process, as the digital economy facilitates easy access to information, which helps develop information management skills, optimize its utilization, and employ it to serve economic decisions, in various countries..

2.3. The Causes of the Digital Economy

There are many causes that have driven and continue to drive the digital economy toward further development and progress. These are difficult to separate, and it is difficult to consider one as a cause and the other as a result. We will review them as follows:

1. Globalization: It is noted that globalization has created a borderless economy, as the market in its various forms is no longer confined to a specific country. European countries, through the European Union, have become a formidable economic power, having transcended their political and geographical borders and become an active partner in global trade. Countries like China are also competing to access new markets and gain market share worldwide. Changes are not limited to space alone, but also to time, as work has become continuous around the clock (24 hours / 365 days). This has created a global work curve for companies and institutions to enable them to compete and survive. Economic, social, and cultural globalization has played the most prominent role in the emergence of the digital economy with its products and its expanded markets. Perhaps the future will reveal more profound transformations and changes than those we are witnessing now (Hassan, (2019, p. 20).
2. Multinational corporations: Multinational corporations monopolize the world's top levels of technology, primarily information and communications technology. Consequently, they are the most important drivers of the digital economy. These companies' sole export product is explicit knowledge, manifested in digital products, which are the receptacle in which capital is massively concentrated. These companies control and dominate the global economy by innovating new methods of work and management. This is achieved through their control of the technological capabilities used in economic activities. These companies possess the ability to initially acquire technological knowledge, produce it, and then transfer and distribute it. This gives





them the ability to control and dominate all activities that result from technological capabilities, resulting in technological output (Ali, 2024, p. 241).

3. The contemporary scientific and technological revolution: The connection between the concept of the digital economy and technology is natural. Therefore, technology constitutes one of the most important drivers of the digital economy. Technology is one of the manifestations of knowledge and is a fuel that stimulates continuous development and gives the digital economy its modern and future dimensions. Technological development was the primary accompanying feature. As a driving force behind the movement of history and the driving force behind its many economic and social issues, modern technology has contributed to the rapid development of science and its technological applications, giving technology its current power and authority. (Naghmoushi, 2023, p. 79).
4. Information and Communications Technology: Building technological infrastructure within the framework of the digital economy is primarily achieved through investment in information and communications technology, such as the software industry and the information technology equipment industry. This industry is considered an innovative, creative industry based on the preparation, design, implementation, and selection of computer operating software, which includes a set of commands and instructions for the computer to perform a comprehensive set of tasks with the goal of achieving a specific result. This industry relies primarily on the human mind, and its production is not limited by time or place. It is subject to an integrated marketing system, does not pollute the environment, and has high returns.
5. Research and Development: Research and development laboratories are widespread in the digital economy, and governments and the private sector pay great attention to them, considering them the beating heart of technological progress. Entering the digital economy requires increasing the percentage of spending on research and development projects as a percentage of gross domestic spending. This percentage is considered an indicator within the group of digital economy indicators, and we find it high in developed countries. (Hassan, 2019, p. 22)

2.4. Features of the digital economy





The digital economy is characterized by: numerous features that play an important role for countries, individuals, and economic sectors. The most prominent of these features can be explained as follows: (Ali, 2024, p. 236/

1. Government management. The digital economy works to reduce costs and increase operational efficiency by streamlining procedures and reducing errors in service provision. It also facilitates coordination between government departments and implements governance and transparency standards.
2. Individual beneficiaries: These benefits include access to the most appropriate and efficient services that respond to individual needs and desires, as well as reducing the cost of commuting between government departments to access information and complete transactions.
3. The business sector: The digital economy exerts its power by strengthening the partnership between the public and private sectors to develop services, improve the business environment, and increase transaction productivity, particularly in the area of e-commerce and the overall investment climate.
4. Increasing economic growth rates: The digital economy plays a key role in increasing these rates and improving the standard of living by projecting a positive image of government performance in achieving justice and combating corruption.

2.5. Factors Influencing the Digital Economy

The formation and development of the digital economy are influenced by specific factors that cover all aspects of this type of economy.

In today's world, the digital economy also includes aspects of cybersecurity, e-commerce, cryptocurrency markets, and blockchain technology. Ensuring cybersecurity in the digital environment is becoming critical to protecting personal and commercial information. E-commerce and the development of cryptocurrency markets provide new opportunities for purchasing, investments, and financial transactions in virtual space, while blockchain technology ensures the security and transparency of these processes.

In general, digital transformation impacts all parts of the economy, from employees, small businesses, and industries to international cooperation. Leveraging international expertise to transform the economy under the influence of digitalization can be beneficial. This is extremely beneficial for





developing countries, as it allows them to avoid repeating mistakes and leverage successful practices already tested in other regions of the world. In particular, studying innovative strategies adopted in developed countries can serve as a valuable source of information for governments and companies in developing their own digital transformation programs. Furthermore, the exchange of experiences within the international community helps foster the formation of international standards and regulations in the digital economy, contributing to a unified approach and interoperability among different countries. This step has become crucial for ensuring international cooperation, supporting international projects, and developing global technological infrastructures, contributing to a more efficient integration of countries into the global economic system.

3. Sustainable Development

3.1. The Concept of Sustainable Development

Today, the world faces the threat of environmental degradation, which must be overcome without compromising the requirements of sustainable development, as well as social justice and equality. Sustainable development therefore refers to the process of developing cities, lands, businesses, and communities while ensuring that present needs are met without compromising the ability of future generations to meet their needs.

The Food and Agriculture Organization of the United Nations defines sustainable development as: "The management and protection of the natural resource base and institutional change to achieve, sustain, and satisfy human needs for present and future generations in a manner that is environmentally appropriate, economically viable, and socially acceptable." (Omar, 2021, p. 168).

The World Commission on Sustainable Development defines it as follows: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs." (Sarkali, 2024, p. 64).

Among the definitions is the idea that human societies must live while meeting their own needs without sacrificing or compromising the ability of future generations to meet their own needs. This official definition of sustainable development first emerged in the 1987 Brundtland Report, which was the conclusion presented by the First International Commission on Environmental Protection and Development of the United Nations. Therefore, sustainable development is an international term issued by the United Nations,





aiming to develop the planet's natural and human resources and improve economic and social engagement with them, provided that they meet the needs of the present without compromising the ability of future generations to meet their own needs. (Sarkali, 2024, p. 64).

Therefore, it can be said that sustainable development is true development with the ability to continue and continue, from the perspective of its use of natural resources, which can be achieved through a strategy that takes environmental balance as its governing principle (Nagham Hussein Neama, 2022, p. 12).

On the economic level, sustainable development means: the need for developed countries to rationalize their consumption of resources and energy, while for developing countries, it is represented by the exploitation of resources to reduce poverty and raise the standard of living. On the human and social level, it strives to improve the level of health and educational services and stabilize population growth, especially in rural areas. On the environmental level, it means the optimal use of agricultural land and the protection of natural resources. On the technological level, it means moving society into an era of clean and non-polluting industries that use environmentally friendly technologies and produce minimal emissions of polluting gases, heat-trapping gases, and gases that are harmful to the ozone layer. (Omar, 2021, p. 168).

3.2. Sustainable Development Goals

The Sustainable Development Goals are: (Omar, 2021, pp. 168-169/

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security, improve nutrition, and promote agricultural sustainability.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure access to quality education for all and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower women to participate in social life.
6. Ensure the availability and sustainability of water and sanitation.
7. Access to reliable, affordable, sustainable, and modern energy for all.
8. Inclusive and sustainable economic growth, full and productive employment, and decent work for all should be promoted.
9. Infrastructure should be resilient, promote inclusive and sustainable industrialization, and foster innovation.
10. Reducing inequalities and inequalities within and among societies.





11. The nature of cities and human settlements should be inclusive, safe, and resilient.
12. Safe consumption patterns and sustainable production.
13. Climate change and its impacts should be addressed through urgent action.
14. Conserve and sustainably use marine resources, oceans, and seas for sustainable development.
15. It is necessary to protect, combat desertification, halt and reverse land degradation, halt and reverse the loss of biodiversity, restore terrestrial ecosystems, and promote their sustainable use and management of forests.
16. For sustainable development, it is necessary to promote peaceful and inclusive societies, build effective, accountable, and inclusive institutions at all levels, and provide access to justice for all.
17. Revitalize the global partnership and strengthen the means of implementation for sustainable development.

3.3. Benefits of Sustainable Development

The benefits of sustainable development can be summarized as follows: (Al-Hassan, 2011, p. 7).

1. Improving the living conditions of all the world's population, in a manner that conserves natural resources and prevents them from being subject to unjustified waste and depletion.
2. Creating interconnectedness between global economic systems and laws, ensuring responsible, long-term economic growth for all countries and communities worldwide, without exception or discrimination, which contributes to achieving economic growth and justice.
3. Requires the continuous search for solutions to limit unjustified and irrational consumption of economic resources, as well as to reduce environmental pollutants, which leads to the preservation of environmental and natural resources for future generations.
4. Achieving social development worldwide by creating job opportunities and providing food, education, and healthcare for all, including water and energy. Global efforts continued between 1972 and 2002 to emphasize the need to establish the foundations for sustainable development worldwide through the holding of three important international Earth Summits.





4. The Nature of the Relationship Between the Digital Economy and Sustainable Development

The number of internet users exceeded 6.4 billion, representing more than 6.59% of the world's population in 2020. This significant expansion in internet use has been accompanied by the widespread use of digital technologies and their applications, which rely on the collection, storage, analysis, and exchange of data and information in all areas of life. This includes the economy, which is gradually transforming into a digital economy, adopting different business models to create value and wealth. These models include transforming digital data and information into new economic and social values, developing new products and services, different business models, jobs, processes, and institutions, alternative management styles, new forms of consumption and trade, and digital value and supply chains. The World Economic Forum (WEF) estimates that digital transformation is a key feature of our world today, and that approximately 70% of the new value generated in the global economy over the next decade will come from digital platforms. These platforms have also contributed to enhancing the ability to predict epidemic health risks and their potential repercussions, helping to discover disease patterns, implement smart health technologies, automate medical records, and support healthcare systems. Digital technology and its applications, especially artificial intelligence, have also played a significant role in promoting sustainable development worldwide. This role was embodied in the United Nations Global Summits on the Use of Artificial Intelligence for Public Good, with the participation of more than 25 UN agencies. The three summits were held between 2017 and 2019. The United Nations emphasized the role of these conferences in harnessing information and communications technology (ICT), artificial intelligence (AI), and digital technologies to support the achievement of the Sustainable Development Goals (SDGs), human development, including supporting poverty mapping, improving productive mobility, smart cities and settlements, health development, quality education, financial inclusion, clean energy solutions, climate change, and the eradication of hunger, among others (Hussein, Sarhan, 2022, p. 455).

The role of the digital economy in achieving the Sustainable Development Goals can be illustrated through the following:





Goal 1: Eradicating Poverty. Access to digital financial services helps lift people out of poverty.

Goal 2: Zero Hunger. Providing technological solutions to farmers contributes to increasing crop productivity and reducing energy and water consumption.

Goal 3: Good Health and Well-being. ICT services improve direct interaction between doctors and patients, providing health information and telemedicine.

Goal 4: Quality Education. Providing young men and women with digital skills can provide opportunities that qualify them for the labor market.

Goal 5: Gender Equality. Access to ICT and building digital skills encourages more women and girls to pursue careers in technology.

Goal 6: Clean Water and Sanitation. Digital technologies facilitate smart management of water and sanitation, ensuring the availability and sustainability of these services for all.

Goal 7: Affordable and Clean Energy.

Advanced technologies will play a crucial role in reducing global carbon emissions, electrifying transportation, and increasing energy efficiency.

Goal 8: Decent Work and Economic Growth: Accelerating digital transformation and stimulating innovative entrepreneurship leads to new job opportunities and social and economic development.

Goal 9: Industry, Innovation, and Improved Infrastructure: Information and communications technologies (ICTs) contribute to promoting sustainable and inclusive industrialization, fostering innovation, and building and maintaining resilient infrastructure.

Goal 10: Reduced Inequalities: Digital technologies help reduce inequality within countries if disadvantaged groups are empowered with access to technology and knowledge.

Goal 11: Cities and Communities: Information and communications technologies (ICTs) drive more efficient and sustainable management of water, transport, and energy systems in cities and communities.

Goal 12: Responsible Consumption and Production: Technology can promote sustainable consumption and production through the adoption of digital technologies in sectors such as agriculture, transport, energy, supply chain management, and smart buildings.

Goal 13: Climate Action: Smart applications help address and mitigate climate change by building forecasting and early warning systems and supporting climate resilience. Goal 14: Life Below Water



ICTs are widely used to monitor the changing marine environment and protect endangered animals.

Goal 15: Life on Land. ICTs help identify and monitor wildlife populations and protect endangered wildlife.

Goal 16: Peace, Justice, and Strong Institutions. E-government services contribute to improving the relationship between citizens and the state and increasing the efficiency of government service delivery.

Goal 17: Partnerships for the Goals. Partnerships help establish the physical infrastructure needed to deliver internet services to remote areas and facilitate investment, innovation, and inclusion.

5. Conclusions and Recommendations

5.1. Conclusions

1. Sustainable development can play a significant role by alleviating poverty and unemployment and improving education and health conditions, given the scarcity of financial resources, which represents one of the most significant challenges facing sustainable development.
2. The importance of digital transformation stems from several reasons, most notably the need to respond and adapt to the demands of the surrounding environment and avoid falling behind in the information age.
3. The digital economy requires retraining, reorganization, and the creation of new jobs within institutions.
4. The digital economy offers numerous advantages, such as reducing costs and effort, keeping pace with technological progress, and combating corruption.

5.2. Recommendations

1. Develop the new information sector created by the digital revolution, emphasizing the importance of intellectual capital by investing in the infrastructure of information and communications technology, including networks, hardware, software, applications, and trained human expertise qualified for development, not merely for optimal operation and industry.
2. Developing human resources, which are the cornerstone of building an information society, by focusing on training grants and human resource



development, both for professionals who will lead technical work and for those who deal with and use these technologies.

3. Developing countries, including Iraq, must be open to scientific and technological progress, develop strategic plans and action programs for internet development, provide infrastructure for the digital economy, disseminate computer culture, and enhance the role of the financial sector in attracting and directing foreign investment toward technical and information and communications technology sectors. They must also spread digital awareness in society, keeping pace with the progress achieved by developed countries and enhancing the contribution of the digital economy to creating added value, increasing the gross domestic product, and achieving sustainable growth.
4. For the digital economy to play a significant role in Iraq, oil revenues must be directed toward introducing technology, harnessing available resources, providing job opportunities for personnel trained in communications and computer technologies, and making the internet accessible to all. This will help raise per capita income, limit the growth of greenhouse gas emissions, and raise the social index.

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