Survey
towards a sustainable Information and Communication Technologies (ICT) in Iraq

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Abstract. The past four decades have witnessed a rapid and tremendous development in information and communication technologies (ICT), which has led to development in various theoretical and practical fields. In addition, technological diffusion has become a prominent feature in developed countries, which made most developing countries seek to own it because it is the backbone and the main pillar of its development and prosperity. Although Iraq is a country with diverse and enormous resources and a dominant geographical position that makes it at the forefront of the regional and global economy, it still suffers from crises and stagnation due to regional and global conflicts as a battlefield, as well as successive mismanagement and lack of technological awareness in simulating the rapid development of ICT with modern and high technology. In this paper, we will come to learn in brief about the Information and Communication Technology (ICT) and its role in community development will be briefly identified. We also look at the general technological diffusion index by analysing its main and sub- indicators to the Arab countries group, and then we focus on the main obstacles and challenges facing it in Iraq. Last but not least, we will try to lay the scientific foundations according to modern ICT indicators to overcome and defuse those challenges, and finally we have made suggestions and recommendations that contribute to the achievement of the goal that we aspire for throughout this research.

Keywords: - ICT, Technological spread Index, Iraqi Technological Spread Obstructions.

1. Introduction
The Iraq's technological proliferation has faced stagnation and apparent collapse over the past four decades due to political mismanagement of decision-makers as well as a regional and global conflict zone and its isolation from the rapid and recent development of ICTs. Therefore, Iraq still suffers from sudden fluctuations, stagnation and wrong strategies, despite having the hugest initial resources that provide it with a fertile base for good progress and resurgence during a record period.

Today, technological diffusion in Iraq is going through a critical situation due to many constraints and obstacles that Iraq must overcome by drawing a solid scientific road map to lead to support and development of all areas of life such as health, education, agriculture, industry, trade and service.

On the basis of the above, we will try to specify the problem through the sequence of research by following the research themes: starting of the knowledge of the Information and Communication Technologies (ICT) via analyzing the general technological diffusion index with its main and sub- indicators to the Arab countries group, and then enumerate the
challenges (it is problem core) which it is facing the development Iraqi technological diffusion currently. After that, we will summarize scientific solutions based on the application of modern information and communication technology to overcome these challenges, and finally, we will present the conclusions and suggestions that serve the purpose of research.

2. Information and communication technology
The world witnessed in the late 20th century and the beginning of the present century a rapid technological conversion in two aspects: the first is information technology due to the wide spread and rapid development of computers, software, internet and the variety of their applications, while the second is the huge and rapid mutations in communications devices and means of wireless or wired networks, thus making the world as a small electronic village. [1] [2]

Therefore, the concept of ICT can be translated as a set of related equipment and devices based on software and protocols via wired or wireless networks to provide the exchange, processing, storage and retrieval of information from/to anywhere in the world and at any time. [3]

Information and communication technology has become the cornerstone in all domains of life such as education, industry, trade, health, and most the institutions and companies, thus made it an eminent feature of this age. It should be noted that the application of ICT in any field will have an output economic for the individual, the institution, the government or society as a whole and thus all countries and companies try to change their traditional systems in various fields to systems based on information and communication technology. [4] [5]

Also, the importance of ICTs lies in the various economic, social and environmental development fields, and the provision of infrastructure and qualified staff. In addition, the promotion of local investment and attracting foreign investments will have an important impact on achieving sustainable development of the developing countries. Moreover, commercial exchange in ICT products will lead to an increase in total exports and provide local and regional cooperation which will result in the emergence and growth of the private sector and open the prospects for common investment among developing countries in research, development, invention, and knowledge fields in order to reduce the size of the digital gap between them and the developed countries, and on this basis, it can be said that information and communication technology is the tool that enables communities and countries to be self-sufficient in meeting their basic needs and help them to make the best use of their potential. [6] [7]
The Global Technology Development Report, published annually by the World Bank, shows that more than 40% of the world's population has access to the Internet, and this percentage is increasing daily. Moreover, the knowledge of the spread of information technology in the world through the Digital Decision-Making Index or Digital Adoption Index, which gives us a clear vision of the benefit of each country and the extent of its application in the human, economic and government, through the average of three main indicators: business index, people index, and government index, which, in turn are based on sub-indicators, Therefore, these indicators will be analyzed for the Arab countries group, including Iraq as a sample in this research. [8]

2.1. Business Index

This indicator is calculated through the rate of its four sub-indicators that represent the wireless coverage for 3G, the network speed of the Internet in download (measured in Kbps), the percentage of availability of websites companies to view their services, and finally, the number of secure services per million people that represents the extent to which the network and information enjoy privacy and protection, as shown in Table (2.1):-

| N  | Country | Coverage (3G)% | Network speed Kbps | Corporate Websites% | Security services per million people | Average |
|----|---------|----------------|-------------------|---------------------|--------------------------------------|---------|
| 1  | UAE     | 99             | 17,226            | 79                  | 294.4                                | 52.46   |
| 2  | Qatar   | 100            | 11,612            | 89                  | 231.58                               | 53.41   |
| 3  | Kuwait  | 99             | 8,540             | 75                  | 198.77                               | 49.46   |
| 4  | Bahrain | 100            | 10,070            | 70                  | 176.05                               | 48.19   |
| 5  | Oman    | 86             | 7,952             | 65                  | 70.92                                | 41.97   |
| 6  | Lebanon | 61             | 2,597             | null                | 54.54                                | 32.87   |
| 7  | KSA     | 99             | 10,384            | 70                  | 45.88                                | 37.34   |
| 8  | Jordan  | 98             | 3,862             | null                | 30.42                                | 37.34   |
| 9  | Tunisia | 90             | 3375              | 47                  | 17.91                                | 35.34   |
| 10 | Djibouti| 33             | null              | null                | 10.27                                | 15.34   |
| 11 | Palestine| null          | 3,608             | null                | 5.12                                 | null    |
| 12 | Morocco | 75             | 4,775             | 47                  | 4.92                                 | 31.34   |
| 13 | Egypt   | 99             | 2,553             | 37                  | 4.79                                 | 34.34   |
| 14 | Libya   | 78             | 5,373             | 50                  | 3.94                                 | 33.34   |
| 15 | Mauritania| 42           | 5,714             | 51                  | 2.52                                 | 18.34   |
| 16 | Algeria | 22             | 2,104             | 50                  | 1.89                                 | 16.34   |
| 17 | Yemen   | 76             | null              | 30                  | 0.73                                 | 24.34   |
| 18 | Iraq    | 88             | 4,542             | 44                  | 0.72                                 | 34.34   |
| 19 | Syria   | 42             | 1,883             | null                | 0.5                                  | null    |
| 20 | Somalia | 33             | null              | null                | 0.1                                  | null    |
| 21 | Sudan   | 45             | 2,514             | 3                   | 0.03                                 | 20.34   |

To know the behavior of this indicator according to statistical analysis of its four sub-indicators as follow in figure (2.1):-

![Figure (2.1) Business Index with its sub-indicators for the Arab World [We used M.S Word 2010]](image-url)
area, while the Internet speed index (Kbps) is low, which is about (1/4) compare with the network speed in the UAE, which leads the group of Arab countries, also the index of corporate security services (Which represents the amount of protection and privacy of information within the network per million people) is nearly zero in Iraq compared to the first six Arab countries (Which the UAE topping them). Moreover, the index of companies' websites, which represents the percentage of websites available to the number of companies presenting their applications and services, Iraq has an average (44%) compared to Qatar (89%), which leads the Arab countries in this index. Thus, the average business index is calculated through the rate of its sub-indices above, where it is clear that Iraq has a value (34), which is a good value compared to the State of Qatar, which leads the Arab group with a value of (54).

2.2. Persons Index
This indicator calculates the extent to which people use information technology through two sub-indicators: First, it is which calculates availability of Internet access for each person inside or outside the home (via mobile phone), and the second is the percentage of people owning a mobile phone as shown in Table (2.2) below:

| N  | Country | Net availability at home% | Ownership of people for mobile% | Average |
|----|---------|---------------------------|---------------------------------|---------|
| 1  | UAE     | 87                        | 99                              | 94      |
| 2  | Bahrain | 83                        | 100                             | 93      |
| 3  | Qatar   | null                      | null                            | 92      |
| 4  | Kuwait  | 75                        | 99                              | 88      |
| 5  | KSA     | 69                        | 100                             | 86      |
| 6  | Oman    | 64                        | 99                              | 82      |
| 7  | Lebanon | 57                        | 94                              | 76      |
| 8  | Iraq    | 43                        | 99                              | 73      |
| 9  | Algeria | 39                        | 97                              | 69      |
| 10 | Jordan  | 35                        | 98                              | 68      |
| 11 | Libya   | null                      | null                            | 67      |
| 12 | Palestine| 42                      | 92                              | 67      |
| 13 | Tunisia | 37                        | 94                              | 66      |
| 14 | Morocco | null                      | null                            | 65      |
| 15 | Egypt   | 23                        | 94                              | 59      |
| 16 | Mauritania| 24                      | null                            | 52      |
| 17 | Sudan   | 23                        | 82                              | 50      |
| 18 | Djibouti| 20                        | 49                              | 49      |
| 19 | Yemen   | 5                         | 82                              | 41      |
| 20 | Syria   | null                      | null                            | 41      |
| 21 | Somalia | 7                         | 73                              | 35      |

Therefore, we can know the behavior of this indicator via the statistical analysis of its two sub-indicators as shown in figure (2.2):-
Figure (2.2) Persons Index with its two sub-indicators for the Arab World [We used M.S Word 2010]

As shown in Figure (2.2) the indicator of the availability rate of the Internet at home, which is based on the mobile phone network that Iraq has 43%, that means, about half of the houses in Iraq have the ability to connect to the Internet, while the ownership rate of the people for the mobile phone, which shows us that 99% of Iraq is own a mobile phone. Therefore, the average person's index in which the top of the UAE and Iraq represents 73% which is a good rate.

2.3. Governments Index
In this indicator, the average use of ICT by the government is measured through three sub-indices: 1) Proportion of automated government systems (Automation is a modern term for everything that works without human intervention) of its total systems, 2) Proportion of the availability of e-government services to its citizens, 3) The use of digital signature (electronic) in official transactions, as shown in Table (2.3):

| N  | Country        | Automated Government Systems% | Digital Signature | E-Government Services% | Average |
|----|----------------|-------------------------------|-------------------|------------------------|---------|
| 1  | UAE            | 73                            | 1                 | 88                     | 87      |
| 2  | Bahrain        | 53                            | 1                 | 94                     | 82      |
| 3  | Egypt          | 73                            | 0.83              | 59                     | 72      |
| 4  | Oman           | 60                            | 0.75              | 73                     | 69      |
| 5  | KSA            | 60                            | 0.58              | 77                     | 65      |
| 6  | Morocco        | 73                            | 0.42              | 69                     | 61      |
| 7  | Jordan         | 70                            | 0.58              | 52                     | 60      |
| 8  | Qatar          | 57                            | 0.58              | 65                     | 60      |
| 9  | Tunisia        | 73                            | 0.40              | 64                     | 59      |
| 10 | Kuwait         | 43                            | 0.46              | 57                     | 49      |
| 11 | Yemen          | 53                            | 0.52              | 31                     | 45      |
| 12 | Lebanon        | 57                            | 0.39              | 31                     | 44      |
| 13 | Mauritania     | 53                            | 0.58              | 5                      | 39      |
| 14 | Algeria        | 60                            | 0.42              | 8                      | 37      |
| 15 | Sudan          | 30                            | 0.52              | 29                     | 37      |
| 16 | Iraq           | 20                            | 0.58              | 6                      | 33      |
| 17 | Djibouti       | 50                            | 0.42              | 6                      | 33      |
| 18 | Palestine      | 60                            | 0.03              | Null                   | Null    |
| 19 | Somalia        | 33                            | 0.29              | 2                      | 21      |
| 20 | Syria          | 27                            | 0.03              | 16                     | 15      |
| 21 | Libya          | 27                            | 0.03              | 2                      | 1       |

Thus, we can analyze the rate of the Government Index through its three sub-indicators as shown in Figure (2.3) below:
It is clear to us from figure (2-3) that the ratio of the automated government systems index to the total systems in Iraq has a low rate about 20%, it means that about 80% of government systems in Iraq is not based on this indicator, also the ratio of e-government services provided by the state to its citizens, which is very low, is about 6% in Iraq compared with Bahrain which leads the Arab group with 94%, while the digital signature indicator, which represents the use of signature in official transactions in State institutions and the highest value of it is (1) in the UAE and Bahrain, and (0.58) in Iraq, this means that more than 40% of the institutions of the Iraqi government does not deal with electronic signature in their official transactions.

2.4. General technological spread index
The general technological spread index is the result of the average for three main indicators (Business index, Persons index and governments' index), as shown in table (2.4) below:-

| N  | Country   | Business index | Persons index | Governments index | General Technological spread Index |
|----|-----------|----------------|---------------|-------------------|------------------------------------|
| 1  | UAE       | 52             | 94            | 87                | 0.77                               |
| 2  | Bahrain   | 48             | 93            | 82                | 0.74                               |
| 3  | Qatar     | 54             | 92            | 60                | 0.69                               |
| 4  | KSA       | 47             | 86            | 65                | 0.66                               |
| 5  | Oman      | 41             | 82            | 69                | 0.64                               |
| 6  | Kuwait    | 49             | 88            | 49                | 0.62                               |
| 7  | Egypt     | 34             | 59            | 72                | 0.55                               |
| 8  | Jordan    | 37             | 68            | 60                | 0.55                               |
| 9  | Morocco   | 31             | 65            | 61                | 0.53                               |
| 10 | Tunisia   | 35             | 66            | 59                | 0.53                               |
| 11 | Lebanon   | 32             | 76            | 44                | 0.50                               |
| 12 | Iraq      | 34             | 73            | 33                | 0.46                               |
| 13 | Algeria   | 16             | 69            | 37                | 0.41                               |
| 14 | Yemen     | 24             | 41            | 45                | 0.37                               |
| 15 | Libya     | 33             | 67            | 1                 | 0.37                               |
| 16 | Mauritania| 18             | 52            | 39                | 0.36                               |
| 17 | Sudan     | 20             | 50            | 37                | 0.35                               |
| 18 | Djibouti  | 15             | 49            | 33                | 0.32                               |
| 19 | Palestine | Null           | 67            | Null              | Null                               |
| 20 | Syria     | Null           | 41            | 15                | Null                               |
| 21 | Somalia   | Null           | 35            | 21                | Null                               |

From the table above, we can show the behavior of the general technological spread index of the Arab countries as shown in figure (2.4) below:-
Figure (2.4) General Technological spread Index in the Arab World [We used M.S Word 2010].

Figure (2.4) shows that UAE leads the Arab countries with a technological spread rate of (77%), while Iraq reaches (46%), which means that more than half of it is not covered by this important indicator.

On the basis of the above statistical analysis of all the main and sub-indicators, including the general technological diffusion index for the Arab world, we can schedule the indicators of Iraq as shown in table (2.5):

| N  | Sub-indicators                                      | Business index | Persons index | Governments index | General Technological spread Index |
|----|-----------------------------------------------------|----------------|---------------|-------------------|------------------------------------|
| 1  | Coverage (3G)%                                     | 88             | 65            | 34                | 46                                 |
| 2  | Network speed 100 Kbps                             | 45.42          |               | 44                |                                    |
| 3  | Corporate Websites%                                 | 44             |               |                   |                                    |
| 4  | Corporate security services per million people      | 0.72           |               |                   |                                    |
| 5  | Business Index                                      | 34             |               |                   |                                    |
| 6  | Net availability at home%                          | 43             |               |                   |                                    |
| 7  | Mobile ownership%                                   | 99             |               |                   |                                    |
| 8  | Persons Index                                       | 73             |               |                   |                                    |
| 9  | Percentage of automated government systems%         | 20             |               |                   |                                    |
| 10 | Digital Signature                                   | 0.58           |               |                   |                                    |
| 11 | E-Government Services%                              | 6              |               |                   |                                    |
| 12 | Governments Index                                   | 33             |               |                   |                                    |
| 13 | Iraqi Technology spread Index                       |                |               |                   | 46                                 |

Thus, we can clarify the behavior of the average Iraqi technological spread with its main and sub-indicators as shown in Figure (2.5) below:-
As shown in Figure (2.5), the Iraqi technological diffusion reaches more than (40%) due to the rise in main persons index, where it reaches more than (70%), despite the decline of business and governments indicators (34%) and (33%) respectively, as a result of their low sub-indices. Therefore, the application of ICT has become the main factor in the development of developed countries and has had a positive impact on the structure of their societies according to modern digital system and knowledge technologies to give them the sustainable new knowledge system. [9]

3. Obstacles of Iraqi Technology spread

Today, Iraqi Technology spread Index on the whole faces challenges, although there are two main features in it: Firstly, the natural resources available in all its kinds and also the huge stock of oil wealth. Secondly, it's a unique geographical position, where it is the shortest and easiest mainland and air way that it is connecting the east with west, these two features made it face a permanent challenge throughout the ages between East and West to control these features. [10] Therefore, its technology spread index compared to the developed countries and neighboring countries, have been suffering and still shaky in front of many challenges which can be summarized as follows:-

3.1. Ignorance and illiteracy

Ignorance and illiteracy in all aspects are the hallmark of our society due to its isolation for the period of world development in the field of ICT and the new world economy, and on the other hand, due to mismanagement and misguided policies adopted by decision makers, in addition to fears from the application and ownership of the infrastructure of this new system depended on ICTs [11], this appears from decreasing business and government indicators (34%) and (33%) respectively due to decline in their sub-indices as shown in table (3.1) below:-

| Table (3.1) Decline technology sub indicators affected on the Ignorance and Illiteracy |
| Index | Value |
|-------|-------|
| Net availability at home% | 43 |
| E-Government Services% | 6 |
| Percentage of automated government systems% | 20 |
| Corporate Websites% | 44 |

Therefore, this made Iraq be out of world calcification in the education quality, training, digital economy and knowledge indicator, etc.

3.2. Security and law
Together, Security and law represent the wall that preserves the resources, rights and duties in all spheres of life and their absence or injustice in their application or fragmentation according to individual or group benefits, this will lead to weakness and general paralysis in the integrated life system, also wasting, depletion of resources and disruption of security laws for individuals, Institutions, companies, goods, money, investment, information and communications will lead to the absence of all kinds of investments [12] that appear clearly in the country via Corporate security services sub index per million people 0.72% (it represents null compared with EAU 294.4).

3.3. conflict
This challenge has three aspects: 1) International conflict, it is a permanent and long-standing conflict between the East and the West for the hegemony and acquisition of Iraq's various resources and control over this important geographical location, and this conflict has not changed over time. Therefore, the Iraqi development overall has not enjoyed the stability due to this conflict; 2) Regional conflict this conflict between Persians and Arabs in perspective but has always been associated with a hidden relationship with the international conflict, which directly effects on the Iraqi life by making it in turmoil and boiling until the present day; 3) Internal conflict, it is a temporary conflict between the internal forces competing for the sources of decision to provide the personal interest over the general interest, it is a produce of the regional and international conflicts and has a negative impact, where three conflict; appear via decreasing in the business, government index, and its sub-indicators. [13]

3.4. Management and Decision
The mismanagement of all resources, such as human, financial, and other resources that are involved in industry, trade, agriculture, education, health and services, as well as a move away from modern technological applications that occur due to the wrong decisions taken in war and peace, which led to a general weakness in aspects of life such as unemployment. Lack of investment and the emergence of financial and administrative corruption in many state institutions in general [14], and this is clearly reflected in the low government's index (33%) due to the low sub-indices of the automated government systems index (20%), 80% of government systems are not based on regulations. Iraq is ranked tenth scientifically (166) out of 176 countries and ranked sixth Arab (16) out of 21 Arab countries according to Transparency International's Global Corruption Index 2016.

3.5. Infrastructure
The depletion, waste and misuse of the main pillars that represent the infrastructure of all fields, including modern equipment, electronic devices, advanced application programs, information and communication networks, people and researchers with specializations as well as funds and varied resources in this country is one of the main challenges facing its growth and development[14]. Although it has good ICT indicators such as mobile phone ownership (99%), 3G coverage (88%), and individuals (73%), but other indicators are still very low, as shown in Table (3.2) below:-

| N  | Index                                | Value |
|----|--------------------------------------|-------|
| 1  | General Technological spread Index   | 46    |
| 2  | Governments index                    | 33    |
| 3  | Business index                       | 34    |
| 4  | Digital Signature                    | 58    |
| 5  | Net availability at home%            | 43    |
| 6  | E-Government Services%               | 6     |
| 7  | Network speed (Kbps)                 | 4.5   |
| 8  | Percentage of automated government systems% | 20   |
| 9  | Corporate Websites%                  | 44    |
4. Obstacles of Iraqi Technology spread

Based on the above, we can put the solutions to overcome these obstacles, and the ease of its application on the Iraqi reality via the optimal investment of modern information and communication technology available, which has become a key pillar for the development and boom in all areas of life, and tools to remove those challenges as shown in Table (4.1) below:-

| Table (4.1) Overcoming and obstacles to Iraqi technological diffusion. |
|---------------------------------------------------------------|
| **The problem** | **Solution** |
|-----------------|----------------|
| Ignorance and illiteracy | 1- The use of electronic media through social media such as Facebook, YouTube, Twitter and other media of video and audio communication, which reach every Iraqi home without trouble.  
2 - Making e-learning available free to all strata of society via publishing free methodology lectures in various fields by specialized staff.  
3- Opening rehabilitation and development centers and training in all ministries of the state and with self-catering and in institutions and companies to create qualified cadres for the management, application and maintenance of information and communication technology. |
| Security and law | 1- Application of electronic government and electronic security in all regions and institutions, public and private companies and banks and the application of intensive surveillance on the areas border and cities, using modern media of surveillance, such as digital cameras of various kinds and linking them to central electronic monitoring, which linked to the main control center via modern communication networks.  
2- Activate and apply the law fairly and establish competitive centers according to scientific standards and controls between local and international companies according to scientific basis.  
3- Activating the role of citizens to monitor and control negative behaviors in the application of security laws and regulations to preserve public resources and property. |
| Administration and Resolution | 1. Establishment of unified and central electronic management of all the main and subsidiary state institutions from the top of the pyramid, which represents the leadership and decision makers to the smallest administrative unit in the Iraqi community. In addition to banks and public and private companies.  
2. Establish a specialized opinion organization that supports the decision-makers and to prevent haste and take the wrong decisions, which are not studied according to modern scientific foundations. |
| Conflict | 1- The three types of conflict will be resolved by the decision-makers who lead the country and offer its interest on all regional and global names and considerations and non-biased partisan and personal interests, a measure of the country's stability, growth and development.  
2 - Seeking to invest technological diffusion to make Iraq a global trade center and regional.  
3 - Raise all the main and sub-indicators, especially the index of governments with its sub-indicators to transform Iraq into an electronic knowledge society that can select a good leadership leading to safety and avoiding these conflicts such as the use of modern electronic voter card technology applied in developed countries. |
| Infrastructure | 1 - Although Iraq has information and communication technology and coverage of up to (88%) and the availability of electronic devices and a variety of computers, but did not lead the purpose to make it on the path of digital transformation due to the lack of investment and employment of these technologies in this direction.  
2. Applying, training and sustaining work within this field by relying on foreign and local expertise and developing local cadres to take their role in the future and become a pillar of a knowledge society. |
5. Conclusions and Recommendations

The defining characteristic of our time is the information and communication technology and the resurgence of tremendous and rapid development in various fields and sciences to result in the development and improvement of all life facilities. The following are conclusions and recommendations:

1. The world has been experiencing accelerated technological transformations for nearly three decades, which directly affected all lifestyles such as economic and social, which posed for many countries of the world (including Iraq) a critical challenge in how to deal with the symbols of these technologies.

2. Despite the technological spread in Iraq of up to 46% with its sub-indices, this has not been reflected in business and government indicators. Which gave this proliferation of consumer attributes, not productivity; it is still Iraq outside the global classification of indicators of knowledge, education and knowledge economy.

3. The need to develop a systematic and thoughtful scientific plan to raise awareness and educate the Iraqi society and the state of modern technological illiteracy that prevails from the individual and officials of departments and institutions at various levels and ending with those who manage the helm and put internal and external policies and take strategic decisions.

4. Education and educational institutions, especially universities and institutes in the country, adopt the project of electronic education and technological literacy (we propose to call it our free electronic Iraq project) through modern electronic media using various media, communication and e-education and with the support of decision makers, which will represent a measure of their belonging to this country.

5. Keeping the country away from all conflicts and spreading a culture of peace, not wars, is our goal.

6. Activate the electronic security system and make it effective on the ground to support the law and the application of the electronic voter card in addition to electronic administration and e-government and e-commerce and make it pure implementation.

7. Finally, the State should draw up a plan to acquire the infrastructure of information technology, communication networks and equipment, create specialized cadres and open intensive training courses. This is not difficult because the country possesses the resources and scientific capabilities that qualify it to rise and take the stage of the developed countries in technological diffusion such as the UAE.

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References

[1] Sagarmay D 2014 Information Technology, It's Impact on Society and Its Future, Central Queensland University, Advances in Computing, Scientific & Academic Publishing, p-ISSN: 2163-2944, e-ISSN: 2163-2979, 4(1):pp.25-29, Available from: article.sapub.org/10.5923.j.ac.20140401.07.html.

[2] Konsbruck R 2014 Impacts of Information Technology on Society in the new century, Available from: https://www.zurich.ibm.com › pdf › news › Konsbruc.

[3] Yekini N 2014 Information Communication Technology (ICT): Concepts and Application, Book, Available from: https://www.researchgate.net › publication › 297403818.

[4] Soumitra D and, Irene M 2010 The Global Information Technology Report 2009–2010- ICT for Sustainability, Book, INSEAD, World Economic
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