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State of Kuwait
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Availability and Usage of Information and Communication Technologies Statistics and their Impacts: The case of Kuwait

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Introduction

The technological developments achieved by the means of communication had deep implications, both quantitatively and qualitatively on the various segments of society. With the elapse of time, the number of this technology users increased to cover a wide range of the social sectors, ultimately leading to fundamental change in the nature of jobs and roles played by those means, especially communication media.

As a result of the massive and overwhelming developments in telecommunication, the world was transformed into a small village, with the rapid and quick flow of information.

To pressure these developments, Kuwait was one of few countries which invest in information and telecommunication technology sector. Hence, the paper sheds light on the digital revolution witnessed in mobile telecommunication technology, whereby intercommunication and interconnection with the outside world became more direct, easy and reachable.

Moreover, with the rapid developments in technology and the persistent increase in competition among the telecommunication companies, it became indispensable to provide new services that reinforce these technologies. Accordingly, the Smartphone was introduced, thus opening new horizons and concepts in telecommunication.

Based on the above mentioned, the paper tackles the following three aspects:

1. The development and growth of the information and communication technology infrastructure in Kuwait during the period 2003-2010.
2. Information and communication technology usage by the individuals in Kuwait.
3. Household accessibility and linkage with information and communication technology.

1 Information and Telecommunication Technology Infrastructure

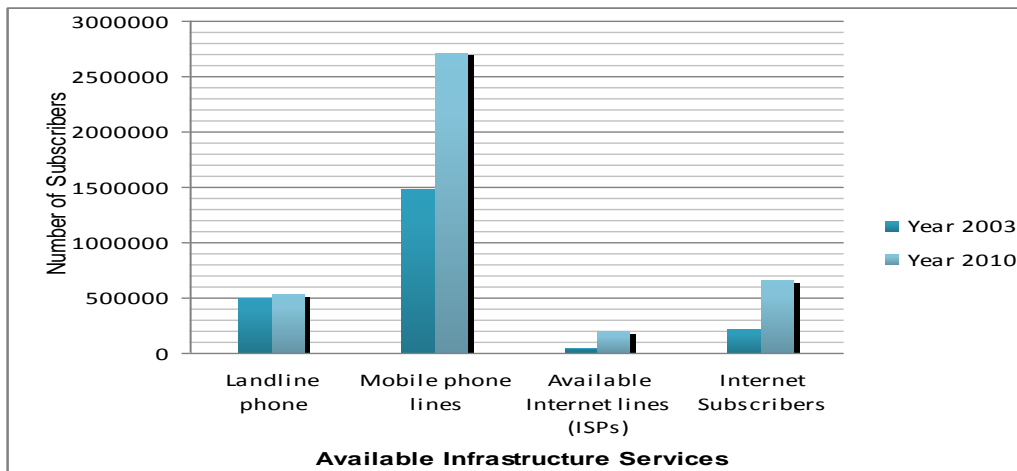
Kuwait managed during the last decade to bridge the digital gap, which disintegrated it from the most advanced economies of the industrialized countries.

In 2010, the density of landline and mobile phones was approximately 19, 149 phones per each 100,000. The number of available Internet connection and the number of Internet subscriber's reached 189.5 thousand and 649.843 thousand respectively in 2010 compared with 38.8 thousand connection and 212.881 thousand subscribers in 2003, see Table 1- Figure 1

Table 1 Available Infrastructure services and Numbers of Subscribers

Type of Service	2003	2010
Landline phone	486,904	519,418
Mobile phone lines	1,479,022	3,979,145
Available Internet lines (ISPs)	38,800	189,500
Internet Subscribers	212,881	649,843

Figure 1 Available Infrastructure services and Numbers of Subscribers



2 Individuals usage of information and communication technology

Updating infrastructure helped in facilitating the communication process between the components of Kuwaiti society locally and with the outside world by the rapid increase in mobile phone usage. International calls through the mobile phone comprised 95% of the total calls, and 93.4% of the total minutes of these calls in 2011. Total annual cost of this service is estimated at Kuwait Dinars 56.0 million (approx. US \$196 million).

As for the size of the landline use as a means of communication with the outside world it did not exceed 7.526 million calls and the number of minutes 28.055 million minutes by about 5% and 6.5% of the total calls and minutes consumed, respectively. According to available data, the commercial purpose was most prevalent among users of landline by 65.9% and 63% of the total calls and minutes used, while the percentage of minutes consumed by the households is 32.3%. See Table -2 - and figures 2, 3 and 4. As well as Table 3 - more details about the Landline phones.

Table 2 Total of minutes, calls and amounts due by phone type (mobile & landline)

	Number of Minutes	Percentage	Number of Calls	Percentage
Mobile Phones	400850.4	93.5%	143830.5	95.0%
Landline phones	28055.4	6.5%	7525.9	5.0%
Total	428905.8	100.0%	151356.4	100.0%

Figure 2 Percentage distributions of consumed minutes by phone type (mobile, landline) 2010-2011

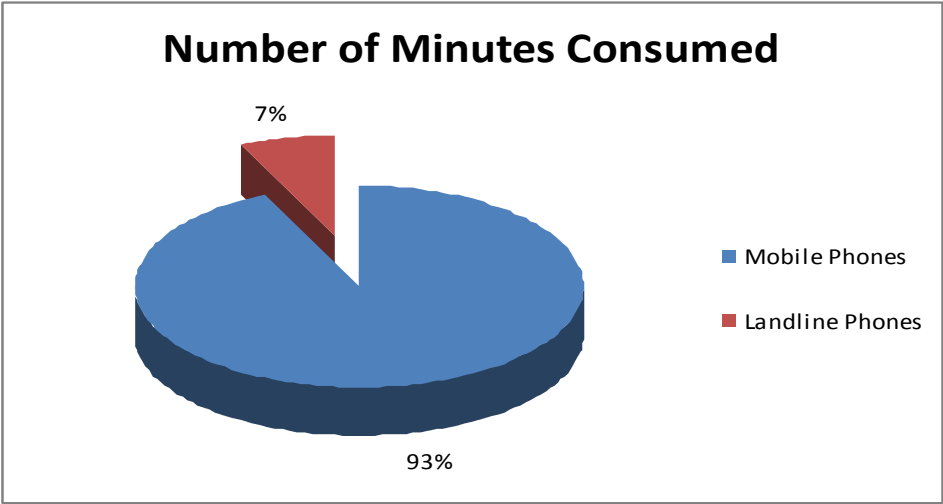


Figure 3 Percentage distributions of calls by phone type (mobile, landline) in 2010-2011

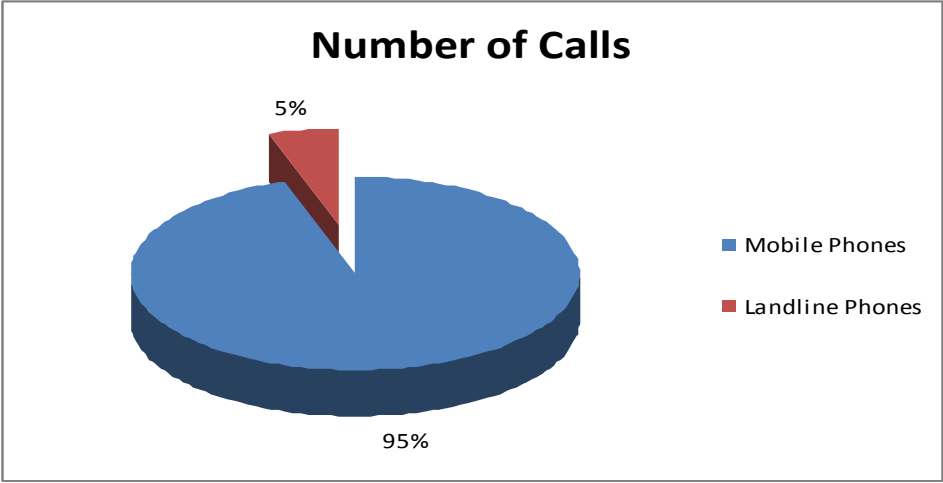


Figure 4 Amounts due for calls by phone type (mobile, landline) in 2010-2011

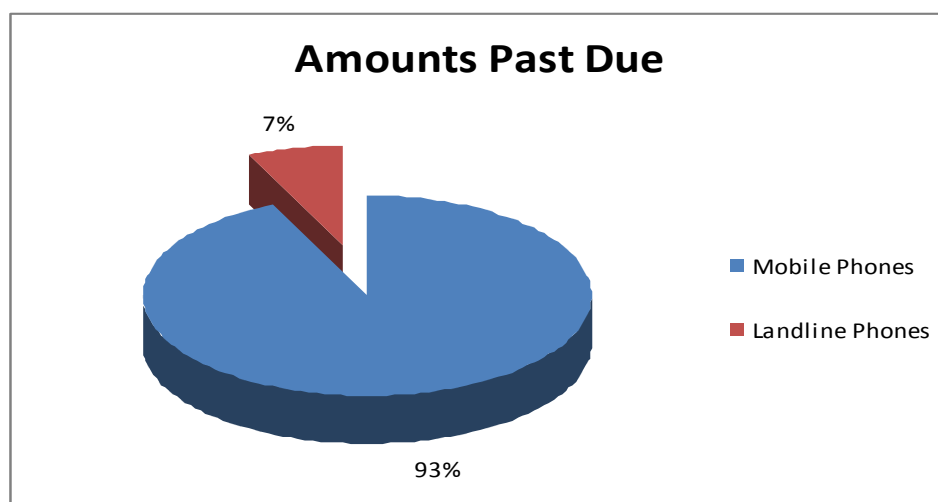


Table 3 Number of minutes and calls by type of usage (commercial, households, governmental, other) in 2010-2011

Sector	Number of Minutes	Percentage	Number of Calls	Percentage
Commercial	17668.8	63.0%	4963.2	65.9%
Households	9051.8	32.3%	2037.1	27.1%
Governmental	1005.5	3.6%	421.1	5.6%
Other	329.4	1.2%	104.6	1.4%
Total	28055.4	100%	7525.9	100%

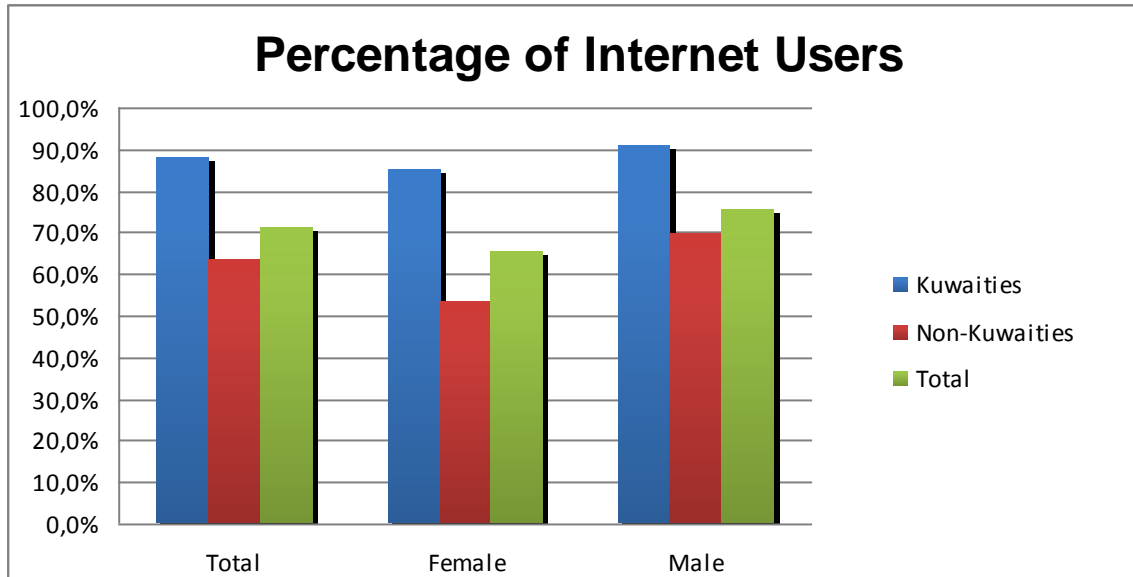
3 Telecommunications infrastructure

The development of telecommunications infrastructure enabled the Kuwaiti society to benefit from the information revolution that has characterized this century. The census of 2011 showed that 71.2% of the total population (10 years+) and 87.9% of Kuwaitis utilize the global network of information. The 2011 census data also indicated that the rate of access to the global information network is higher among males where users reached 75.5%, compared with 65.3% among employed females. This disparity is mainly due to the decline in the proportion of non-Kuwaiti employed females to 53.3%, while the proportion of Kuwaitis employed females reached (85.1%) compared to male Kuwaiti users of the global network of information, which reached 90.8%, see Table -4 - Figure -5 -.

Table 4 Percentage distribution of the population (10 years +) by Nationality (Kuwaiti/ non-Kuwaiti) and the type and usage of the global information network (Internet) according to the results of the 2011 Population & Housing Census

Users	Males	Females	Total
Kuwaiti	90.8%	85.1%	87.9%
Non-Kuwaiti	69.8%	53.3%	63.5%
Total Population	75.5%	65.3%	71.2%

Figure 5 Percentage distribution of the population (10 years +) by Nationality (Kuwaiti/ non-Kuwaiti) and the type and usage of the global information network (Internet) according to the results of the 2011 Population and Households Census

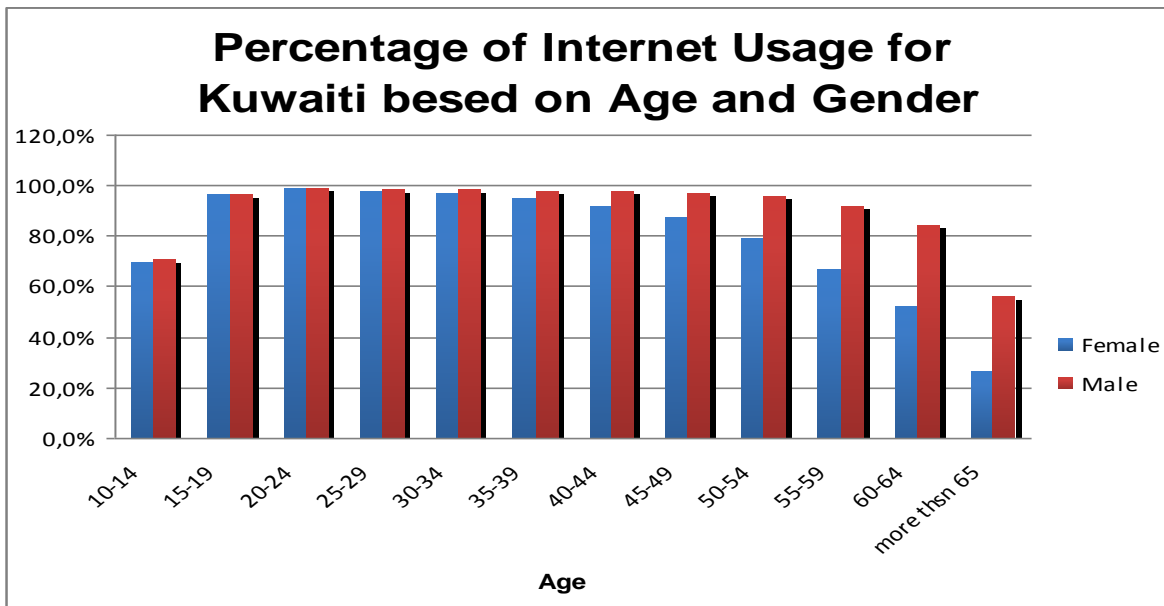


The 2011 Census data highlighted the widespread usage of the global network of information among Kuwaiti males and females belonging to the age group (15-39) years, where the percentage of male usage of the network was 97.7% and the percentage of female users is 96.9%. The widening disparity in the usage of the network among the Kuwaiti males and females parallel with aging is also noted as ratio of male users aged 40 years and over stood in a high level (90.3%), while the rate of female users of the same age group declined to about 71.8 %.

Table 5 Percentage distribution of Kuwaiti population (10 years +) by age groups, gender and usage of Internet according to according to the results of the 2011 Population and Households Census

Age Group	Males	Females
10-14	70.5%	69.0%
15-19	96.1%	96.1%
20-24	98.6%	98.5%
25-29	98.4%	88.8%
30-34	98.1%	96.6%
35-39	97.8%	95.1%
40-44	97.4%	92.1%
45-49	96.7%	87.3%
50-54	95.4%	78.8%
55-59	91.6%	67.0%
60-64	84.0%	51.8%
65 +	55.9%	26.1%

Figure 6 Percentage distribution of Kuwaiti population (10 years +) by age groups, gender and usage of Internet according to according to the results of Census of Population and Housing 2011



The final results of the 2011 Population and Households Census show that the computer is the most widely used medium to access to the global information network, with an average percentage of individuals who use computers 71.7% of the total population of the State of Kuwait, by 75.9% among males and 65.9% among females . These data also indicate the increase of these percentages among the Kuwaiti population to the extent of 88.8% by 91.7% males and 86% females. While the rate of computer usage among non-Kuwaiti population declined to 70.1% among male users and 53.7% among female users. See Table 6 - and Table 7

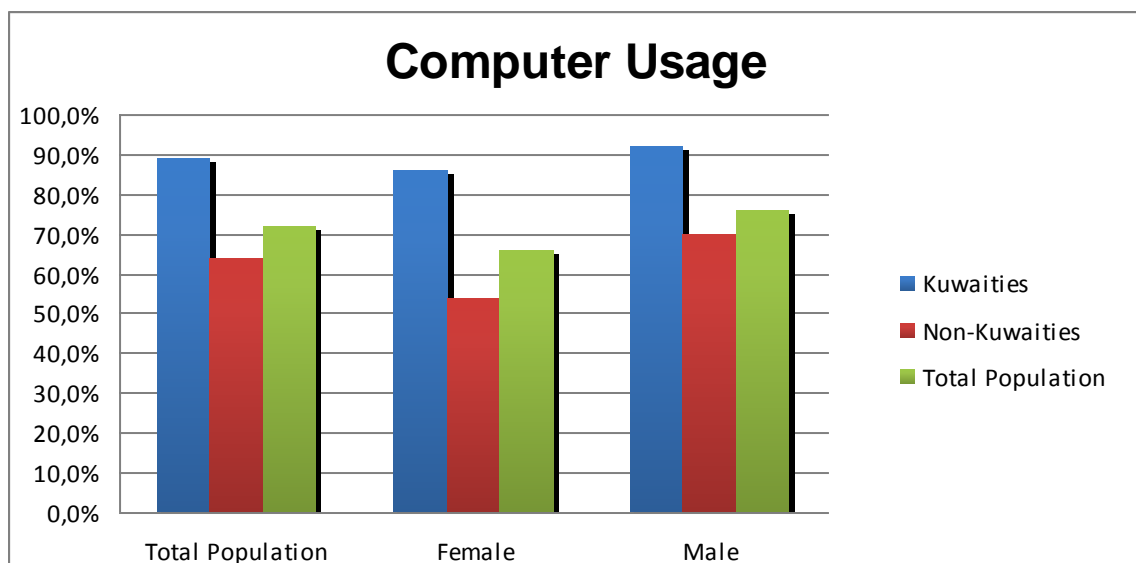
Table 6 Distribution of Kuwaiti population (10 years +) computer users by nationality and gender according to the results of the 2011 Population and Households Census (1)

Nationality	Males	Females	Total
Kuwaitis	365,322	354,161	719,483
Non-Kuwaitis	760,572	363,655	1,124,227
Total Population	1,125,894	717,816	1,843,710

Table 7 % distribution of the Kuwaiti population (10 years +) computer users by nationality and gender according to the results of the 2011 Population and Households Census

Users	Males	Females	Total
Kuwaitis	91.7%	86.0%	88.8%
Non-Kuwaitis	70.1%	53.7%	63.8%
Total Population	75.9%	65.9%	71.7%

Figure 6 Percentage distribution of the Kuwaiti population (10 years +) computer users by nationality and gender according to the results of the 2011 Population and Housing Census



4 Households Accessibility to Information and Telecommunication

From the actual data of the final results of the 2011 Population and Housing Census regarding households possession of the means of access to information telecommunication, it has been observed that:

- The percentage of households possessing computers is 69% of total households by 86.9% of Kuwaitis households and 59.3% of non-Kuwaiti households.
- The percentage of households having internet service at home is 63% of total households by 80% of Kuwaiti households and 53.7% of non-Kuwaiti households.
- The percentage of households possessing mobile phones is 93.4% and 91.9% respectively, as a result of Kuwaiti and non-Kuwaiti households' interest in possessing communication devices. While the percentage of having Landline phone reached 81% among Kuwaiti households and did not exceed 38.6% among non-Kuwaiti households.

Table 8 Number and percentage distribution of Kuwaiti and non-Kuwaiti households by possession of the means of access to information technology and communication according to the final results of the 2011 Population and Housing Census

Households' Access to Info. Tech. and Communications	Private Kuwaiti Households		Private Non-Kuwaiti households		Total Private Households	
Houses Accessing to Internet	133929	80.0%	164244	53.7%	298173	63.0%
Computers	156882	86.9%	199163	59.3%	356042	69.0%
Mobile Phones	168600	93.4%	308738	91.9%	477338	92.5%
Landline phones	146125	81.0%	129692	38.6%	275817	53.4%

5 The Importance of Information and Telecommunication Technology Development and Communication and Its Economic and Social Impacts

The development of information and communication technology contributed in the welfare of the individuals in the world including the Kuwaiti society, providing communication services of various kinds, education services, and necessary information for people and organizations it made communication between members of human societies easier and more streamlined reflecting the reality that the world became a small village. In this village, people can communicate with each other freely and easily sharing information with each other without restrictions and barriers as were imposed on them before. This communication is not confined to a related community, but among individuals who have never met and who found themselves involved in similar purposes and objectives that have made them invisible but effective at all levels. So that the information technology and communications got special importance due to the

characteristics of quick widespread, endurance capacity both for the number of people involved or connected, or in relation to the size of information transmitted, as they are characterized by fast performance and ease of usage and variety of services. Communication technology has affected the communities in large and varying degrees leading to radical changes in the social and economic fabrics which should be noted and try to focus on, analyze and discuss in order to achieve maximum benefit for mankind. We will review the most important areas affected by the information technology and communication, both in all societies in general or in the Kuwaiti society in particular. The areas are as follows:

First – Economic Effects: Information technology and telecommunication contributes to the economic development. The digital revolution creates entirely new forms of social and economic interactions and causes the rise of new societies. Unlike the Industrial Revolution in the last century, information technology and communication revolution is featured with rapid spread and influence on everyone's vitality. That revolution revolves around the power of information technology and communication that allows people to access the information and the knowledge available anywhere in the world at the same time. Increasing people's ability to communicate and share information and knowledge increases the chance to make the world safer and more prosper for all its inhabitants. Information technology and communication are able to help in improving the main economic tools through the access to information and transparency. Hence it is clear that information technology and communication have a substantial role in enhancing human, economic, social and intellectual development, and that is because of what the latter has features more significant and efficient than the traditional communication means.

Information technology and communication are widely spread that they overreach countries' geographical boundaries to reach to any point in the world that the old communication means have failed to reach; they are also available at any time and in any place, and with low costs.

They are considered as a major source of information, whether to individuals, different types of organizations or governments. They have a substantial role in developing the human element through the programs they are displayed by, like training programs and learning programs and others. Information technology and communication play a substantial role considering

economics; they help in achieving efficient monitoring to the operational processes, especially to the industrial institutions that use high technology in production. Information technology will also facilitate detecting manufacturing errors, and providing concerned administration with any information required in the time needed. This in itself is a competitive advantage can be used by the institutions to face the environment's fluctuation using less time and less human effort. This affects primarily the organizational structure and all its levels, and the quantity and quality of human labour sources. Although it is considered a huge advancement in the positive effects on the information structure and decisions making, there are many negative economic phenomena resulting of these developments.

One of these cons is the increase dispense of the human cadres and its effect on labour market and unemployment. There is also monopolizing technical information which affects negatively on knowledge transmitting. Also there is the extent to which the developing countries are coping with the technological era, which leads to the expand of the gap between the rich industrial countries and the poor consuming countries. Amongst the cons there are also the considerable violations to the copy rights, and the thefts in information technology field that have a huge economic impact on its manufacturers.

All the above with its effects in the economic dimensions cannot be ignored, it is not acceptable neither to restrict the use of information technology field in solid numbers only without studying its overlapped effects that reflect, in a way or another, on human and daily lives of individuals, societies and countries. Hence, we call for those studies of the special workshops to analyse these phenomena, and link it in arrays and logical connections, for the resulting statistics will not be useful without identifying the standards and values, nor it will be possible to decide if those numbers, whether in high or low case, are positive or negative.

Second – Social Effects: Information and communication revolution and the spread of internet in houses, institutions and other places are considered a phenomenon worthy of concern and study to know its social and psychological effects. It has also left its impact on various other aspects. The modern means of communication brought geographically distant people closer, and made the world look actually like a small village regarding the easy communication and the connecting of news and expertise. Although the communication revolution had brought distant people closer and took close people away, for one communicates enjoyably and smoothly with others from the farthest places on earth, and gives considerable amount of time for that, yet, at the same time, he\she reduces the communication with the individuals of the family and social environment, like communication between the father and the mother and their children, passing by parents to check on them, or leaving the seat to hang out with visible friends. Thus, one of this revolution's results is creating a social gap with serious consequences on the family environment that is the main nurturer of human upbringing and raising, and replacing this environment with another one that has different values and principle swarming within it, and these different values and principles cause serious contradictions to the societies and families that reflect on the social structure. In other words, the communication bridge became likable and easy in the virtual world with the electronic people, yet it also became the barrier of separation and alienation in the actual world for the socially and geographically close ones.

The use of the internet by many individuals, especially teenagers and youth, became one of the notable phenomena that affected in terms of thought, movement, profession and value. That affecting caused many positive phenomena and, at the same time, negative phenomena with the same scale and measure, if not more. The use of internet became a substitute to the healthy social interaction between companions and relatives. Individuals concern became on spending long hours in finding various internet websites, this means a change in individuals' social values system. This excessive usage enhances the individual values rather than social values and joint collective work values that are a major component in societies' culture.

Individual use of computers may enhance the teenagers and youth's desire and tendency towards solitude and alienation, which reduces the chances of healthy social and emotional interaction and growth, and this, is not less important than cognitive growth or the passion for knowing and discovering. Preliminary studies point out that the use of internet exposes children and teenagers to imaginary and unrealistic materials and information, which obstructs their thinking and adaptation, and raise some irrational thoughts, especially about personal relations and life patterns, and costumes and traditions of other societies.

Moreover, internet interference to the wide areas of life became a factor helping with expanding the gap between generations regarding computational culture and connection to the external world. In fact, many of those who do not enjoy the internet are condemned of being backwards, this helps in developing a model of the social and intellectual conflict between the generations, sections of the society, children and adults or children and parents. There is a moral direct relational connection between the period that children use to login to the internet, and the effect of this use on the relation between parents and children.

Therefore, this paper repeats its call for the specialists of the fields of sociology and economics, as well as their counterparts in the field of information technology, to hold long sessions and workshops to deal with these phenomena and to set needed conceptions that can be used as healthy evidences in favour of stable development for all human societies within a balanced value system accepted by all in a critical time and a new age that we, the nations, stand on its tortuous edges.

5 Proposals and Recommendations

First – Taking action to lay a system for information technology and communication statistics that contributes to help decision makers in setting the futuristic policies and plans and the methodologies based on evidences to develop information technology and communication sector, and that is achieved by creating a team work to do the following:

- Collecting and evaluating statistical data available in the field of information technology and communication.
- Lay a methodology to standardize terminology and concepts in order to build an overall base for data and indicators compatible with international standards and recommendations.
- Revising commodities, services and economic activities classifications, to facilitate the assessment of the information technology and communication sector contribution to the growth of GDP, foreign trade and the operating.

Second – Implementing regular surveys relating to information technology and information that aim to observe the rate of individuals and families' ownership and use of means with access to information technology and communication, as well as the purposes of its use.

Third – providing the fund needed to lay the system of information technology and communication statistics, and the needs of the assigned work team.

Fourth - training and qualifying national cadres in the field of information technology and communication statistics, and extracting key indicators of information technology and communication.

Fifth – It is necessary to make individuals in general, and youth in specific, totally aware about what is possible to do through the net, and guide them to best use of the internet and modern means of communication which will yield with avail to them and to their societies.

Sixth – The necessity of emphasizing the role of parents in taking care and protecting children from the risks of internet through guidance, supervision and organizing is obvious.

Seventh – Holding further studies in the field of the influence of internet and modern means of communication on family and society.

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