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NATIONAL PROFILE OF THE INFORMATION SOCIETY IN KUWAIT - 2013

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

NATIONAL PROFILE OF THE INFORMATION SOCIETY
IN KUWAIT

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I. THE ROLE OF THE GOVERNMENT AND ALL STAKEHOLDERS

A. NATIONAL INFORMATION SOCIETY POLICIES AND E-STRATEGIES

The medium range development plan (2010/2011-2013/2014) was approved under law No. 9 for 2010, this plan included policies concerning information technology and national electronic policies which should be implemented during the years of the development plan. The strategy aims to accelerate development through the use of ICT products, networks, and services. When developing this strategy, attention was given to balance ambitions and the available resources. The information technology policies mentioned in the development plan are as follows:

- Restructuring the ICT sector on both the legal and institutional level through the development of relevant legislations such as a new telecommunications law, an e-commerce and e-transactions law, a law on the protection of privacy and secrecy, a unified code law, and the development of an intellectual property law;

- Institutional development of the ICT sector through the formation of the Telecommunications and Postal Services Regulatory Authority;

- Developing and upgrading ICT infrastructure through the completion of the coverage of all the regions with phone services and fibre optics;

- Completing the freeing of the ICT market by privatizing some of its services;

- Increasing interest in information security, disaster management, and information crisis through an integrated project by the Central Agency of Information Technology;

- Completing the principles of the development of an information society through the preparation of annual and regular reports about the requirements and indices of the Kuwaiti information society through the Central Agency of Information Technology;

- Strengthening the staff working in the ICT sector through programs planned by the Central Agency of Information.

- Diffusing information culture and its applications in society through common programs.

Within the framework of the above mentioned development plan, 30 projects and initiatives were included, suggested, and conceived. 21 of these projects were delegated to the Central Agency of Information Technology and 9 others were given to other bodies, including the prime ministry, the ministry of finance, and the ministry of transport. These projects and initiatives are distributed among various service sectors such as education, healthcare, commerce, and e-government.

Several of these projects have been executed, these include:

- E-government applications (the Kuwait Government Online Portal, the project of the automation of the Ministry of Social Affairs and Labor and the Ministry of Commerce and Industry);

- Information and communications infrastructure: Kuwait Information Network (KIN);

- The enabling environment for e-government applications; the government e-payment portal (Tasdeed) and the smart civil ID card for the citizens;

- Building information awareness, trust, and security; the National Project for IT Awareness;

- E-health (the electronic health file for the citizens).

ICT strategy exists:	Yes
Year of adoption	Feb. 2010
Government Agency in charge (in English and Arabic)	The Central Agency for Information Technology
Pace of implementation (Excellent/ Good/ Average/ Limited)	Good

B. PUBLIC/PRIVATE PARTNERSHIP (PPP) OR MULTI-SECTOR PARTNERSHIP (MSP)

Kuwait's keenness on ensuring an active role for the private sector in the information society is evident in the presence of two representatives from the sector on the board of the Central Agency for Information Technology. This has facilitated the contribution of the private sector to the policies of the information society. Private sector representatives also serve on the board of the Supreme Planning and Development Council, which is the agency responsible for the state's five year development plan.

Another example of PPP in Kuwait is the construction of the government services e-payment portal (Tasdeed). This was accomplished under the supervision of the Central Agency for Information Technology and in the collaboration of the Ministry of Finance and Knet which is a company that includes all the Kuwaiti banks and similar institutions as member with the purpose of connecting ATMs and collection services within a unified network. The company invested in the construction of the e-payment infrastructure and then adopted it as the mechanism for e-collection for government electronic services. The payments collected through the above mentioned Tasdeed system were 7,721,957 Kuwaiti Dinars in the first half of 2013 in comparison to 4,986,661 Kuwaiti Dinars for the same period in 2012. Additionally, the total number of transactions performed on the government e-payment system (Tasdeed) was 133,791 between 1 January 2013 and 31 June 2013 compared to 86,924 transactions in 2012 which is an increase of 53.91 per cent.

C. ROLE OF NON GOVERNMENTAL ORGANIZATION

The Central Agency of Information Technology issued a paper on the role of the civil society in the realization of digital integration within the framework of the e-government project. The purpose of the paper was to build partnerships with the civil society in order to reduce the digital divide, increase computer literacy and build the capabilities of the individual of all social classes while making use of the experience of civil society institutions in reaching people in various demographics.

The agency cooperated with a number of civil society institutions by organizing a number of awareness lectures, within the activities of the national IT awareness program, directed at the organizations' areas of interest with the cooperation of the National Society for the Protection of Children, the Kuwait Economist Association, and the Kuwait Journalist Association. The agency also cooperates with the Kuwait Information Technology Society in the field of society awareness in addition to the study of the job descriptions of the national cadre working in the IT field.

II. ICT INFRASTRUCTURE

A. MARKET STRUCTURE AND REGULATORY LANDSCAPE

The Ministry of Communications is the regulatory authority in the telecommunications sector, it is also the sole provider of fixed line phone services, and is the party responsible for the adoption and approval of telecommunication policies in Kuwait. The ministry has already developed a project, currently under consideration for approval, for the regulation of the Kuwaiti telecommunications. All mobile phone operators and internet providers are in the private sector. The mobile phone market has three operators at the moment (Zain, Wataniyah, and VIVA), and there are four internet providers (Qualitynet, Q8zajil, Fasttelco, and Gulfnet) all subject to the regulations of the Ministry of Communications.

	Please specify whether service is competitive, duopoly, or monopoly
Mobile Telephone Services	Competitive
Fixed Telephone Services	Monopoly (Ministry of Communications)
Internet Services	Competitive

B. PENETRATION OF ICT SERVICES

Fixed and mobile phone networks cover the entire geographical area of Kuwait through both wired and wireless networks. According to the ITU statistics, the number of fixed lines in 2012 had reached 510,000, a total of 17.64 per cent of the total population.

All mobile phone operators in Kuwait rely on the infrastructure of the Ministry of Communications which leases electronic circuits and some of the ministry's sites.

As for the mobile phone lines, according to the ITU statistics those have reached 5,526,000, a total of 191.11 per cent of the population. According to the 2013 World Economic Forum report entitled: "The Global Information Technology Report 2013", Kuwait is seventh among 144 nations in terms of mobile phone penetration in the population.

As for internet providers, they all made major investments in their networks to accommodate the increasing access demands for larger capacities and less expensive operation cost. The internet market in Kuwait is increasingly moving to broadband as Wi-Fi and DSL technologies are becoming increasingly common.

In the broadband wireless internet services domain, Mada Communications offers WiMax reaching speeds of 10 Mbps, WiMD also offers broadband wireless services at speeds of 15 Mbps. According to the ITU statistics, Kuwait has a total of 2,289,000 internet users which is 79.18 per cent of the total population.

The penetration of internet-connected computers reached a rate of 65.15 per cent of the population in 2012 compared to 57.7 per cent in 2011 and 49.9 per cent in 2010 according to the ITU statistics.

Broadband subscriptions through fixed line reached 47,000 in 2012 which is 1.63 per cent of the population according to ITU statistics. Fasttelco offered a system which provides Internet TV service as part of the company's new IP network and which offers video-on-demand services. This network uses the Apple's HTTP Live Streaming (HLS) technology for streaming videos for OTT Interactive TV services.

The use of computers in general has reached 75 per cent of the population in 2012 compared with 69 per cent in 2011 and 59.5per cent in 2010 according to ITU statistics. According to 2013 World Economic Forum report Kuwait occupies the twenty-sixth position among 144 countries in the world in terms of individuals using the internet, the thirty-eighth position among 143 countries in terms of individuals using

PCs, and the forty-forth position among 140 countries in terms of individuals who own internet connectivity at home.

According to the statistics of Kuwait General Administration of Customs, ICT related imports, including PCs, have reached 381,543 Kuwaiti Dinars compared to 115,446 Kuwaiti Dinars in 2011 which is an increase of 230 per cent.

C. ICT CONNECTIVITY

Kuwait has accomplished major developments in the realization of digital inclusion. Competition in the ICT sector contributed to this as telecommunications and internet companies enhanced their capabilities and services and decreased the cost for consumers. Internet providers are now capable of offering their services equally to all residence and commercial areas at the same cost and with capabilities suitable to the families' income level.

On the educational level, every school subsidiary to the Ministry of Education has computers for educational purposes. According to the 2012 statistics of the Ministry of Education there are 41,201 computers used by 312,530 students. The number of schools with internet access has reached 559 from a total of 593 schools subordinate to the Ministry at a rate of 94 per cent of the total of schools. Universities and polytechnics all have internet access freely offering these services to students and staff members.

Health institutes are all currently connected to the Ministry of Health's network using central systems such as the admission system or the system for dispensing medicines. Connectivity includes hospitals and medical centres.

As for public utilities such as malls, hotels, and restaurants, attracting clients through offering internet –either freely or for a token fee- is increasingly a trend they are following.

As for the government, the Central Agency of Information Technology began the implementation of the Kuwait Information Network (KIN) project which is a national project for building and developing the infrastructure necessary for ICT networks and systems to connect all ministries and government agencies through one information network for data transfer and exchange in a secure and high-quality environment. It is considered a secure portal for all agencies, citizens, residents and visitors to benefit from those electronic services. KIN consists of the following elements:

a- Network devices distributed to all centres of the Ministry of Communications in all the regions of Kuwait, those are connected to each other via high-speed fibre optic cables. Government agencies in turn are connected to this network through fibre optic cables and various other connection devices;

b- Security and privacy devices to protect data and information transmission in all of its forms (text, audio, and visual) and which are distributed all over KIN's junction points with government agencies and the internet network outlet, knowing that those security devices are automatically fed with anti-virus programs and other programs which counter hacking and penetration software;

c- The Centre of Network Control and Administration: This is an advanced state of the art centre which performs instantaneous, round the clock monitoring tasks over the network so that malfunctions would be discovered at the moment of their occurrence if not before.

KIN is subject to a continuous process of development to raise its network's capacity through raising the main connection stations and offering the possibility of connecting the unconnected branches of the government agencies to the main information sources.

D. INTERNET INFRASTRUCTURE

As already mentioned, the ministry of communications provides the internet backbone, connection and it is responsible for its administration and operation while internet service providers use this infrastructure to connect their clients to the internet network.

Based on the Ministry of Communications May 2013 statistics, Kuwait has 37 main operators including 13 RSU units in addition to one operator using internet protocols and NCN networks with a capacity of 120,000 lines. The total lines capacity reached 897,653 lines from which 492,999 lines are in use according to Ministry of Communications' statistics so that 54.92 per cent of the lines are in use. The Ministry of Communications is currently working with an international consultant for the second phase of the FTTH network with a budget of KD 33 million. This second phase of the fibre optics network will extend to 29 residential areas.

Wi-Fi points are common in public utilities, access points have notably increased over the past two years, and it is now the most popular accessibility method in Kuwait. This indirectly led to the recession of the phenomena of internet cafes. Fasttelco provides an initiative for the markets and malls in which it offers free internet access through Wi-Fi points. Wi-Fi technologies with broadband packages are increasingly becoming used by families due to the attractive and low-priced offers made by the internet providers. Wi-Fi has become the most common trend in internet access in Kuwait

Mada Telecom offers Wi-Max telecommunications and internet access services but it does not seem that internet providers or mobile phone operators have much interest in adopting the Wi-Max technology as they are more interested in experimenting with the LTE technology which offers faster and larger capacities than Wi-Max.

Mobile phone companies have been keen on providing mobile internet services to their clients, there is a noticeable increase in the number of subscribers to 3G and 4G LTE internet services through smart devices or portable routers.

Most governmental agencies in Kuwait do not use IPv6 protocols in their local networks despite the advantages presented by this technology. The reason for this is that the fourth version of the protocol–which is the one used by those agencies- still comprehends the current number of users.

It is worth mentioning, however, that the Kuwait Information Network (KIN) has adapted IPv6, all the network devices connected to government agencies were upgraded so as to make use of this technology and to prepare those agencies for a future transfer to it.

As for the private agencies making use of these protocols, internet providers use this protocol in their networks.

Kuwait is connected to two regional exchange points: one with the UAE and the other with Saudi Arabia, it has a local exchange point which is KuwaitNic

Kuwait is also connected to two regional servers, those are: QTEL in Qatar and Emix in the UAE. Those in their turn are local points for the main server; K Root which is operated by the regional internet registry RIPE NCC.

According to the ITU statistics' latest available data in 2010, Kuwait's international internet bandwidth is 10,000 Mbits/s.

III. ACCESSIBILITY TO INFORMATION AND KNOWLEDGE

A. PUBLIC DOMAIN INFORMATION

The interest in the internet as means of communication of information has increased with the increase of internet accessibility; government agencies have shifted the use of their websites to becoming means of providing public services after being mere outlets for the delivery of information and an introduction to the agency. Some agencies developed content administration tools to enhance interaction with the citizens and to offer their services electronically. With the increase of the use of smart devices and tablets the use of mobile applications increased in both iOS and Android platforms.

Social networking has become a new means for the development and promotion of information especially after they became available for smart phones. Government agencies have become increasingly aware of the importance of social networking in the issues of communication with the public and e-participation, for this purpose government agencies have formed their own accounts to interact with the public through Facebook, Twitter, Instagram and YouTube. This also applies to private sector and civil society establishments.

Expenditure on digital advertising via the internet is expected to increase to 13 per cent of the total advertisement expenditure according to the Arab Media Outlook 2011-2015 report issued by the Dubai Press Club with the collaboration of Deloitte.

The use of RSS feeds over news and advertisement related websites has increased as did the use of smart devices to spread and transmit national and local content.

The Central Agency of Information Technology through the e-government portal is keen on using second generation web applications and especially social networking applications as to measure reactions and public opinions using Social Media Analytic tools. The agency also uses those networks as key performance indicators (KPIs). Also many of the private sector establishments make use of these social networks, the press and media also publish their headlines through social networks to attract as many readers as possible.

It is noticeable that the use of social networking such as Twitter, Facebook and Instagram, instant messaging systems such as iMessage and Whatsapp which are used through smart devices has become the means used the most to publicize and exchange information, largely replacing blogs and SMS messages which played this role earlier.

According to Social Bakers statistics in April 2013 there are 795,380 Facebook subscribers in Kuwait at a rate of 28.52 per cent of the total population. As for Twitter, according to Madar Research and Development with the cooperation of King Abd Al-Aziz City for science and technology Kuwait has 370,987 Twitter users according to the June 2012 statistics; Kuwait occupied the first position among the Arab countries in terms of Twitter penetration. The number of Twitter users has reached 9.88 per cent of the total population and 18.79 per cent of the total internet users in Kuwait.

B. ACCESS TO INFORMATION AND PUBLIC INFORMATION

The Central Agency of Information Technology administers the Kuwait official e-portal and (e.gov.kw) offers a unified entrance to citizens, residents, and visitors of Kuwait to access government information and services in both Arabic and English in addition to the possibility of using it through multiple access channels.

Most scientific publications in Kuwait are treated as free and open access publications. Kuwait Institute for Scientific Research (KISR) issues an electronic magazine on its website (The Science and Technology Magazine). University of Kuwait's Academic Publications Council publishes 10 magazines: the Journal of the Law, The Arab Journal for Administrative Sciences, The Arab Journal of Humanities, The Annals of Arts and Social Sciences, The Journal of the Gulf and the Arabian Peninsula Studies, The Educational Journal, Journal of Social Sciences, Authorship Translation and Publication Committee, Journal of Sharia and Islamic Studies. Kuwait Foundation for the Advancement of Sciences issues two magazines on its website, one is The Scientific Advancement Magazine and the other is "Majallat Aitl-Oloom" which is the Arabic Language Edition of Scientific American, the latter magazine is available for smart phones and tablets. The foundation also implemented the Scientific Progress Portal through which it electronically publishes Arabic science books in addition to offering electronic services for researchers.

As for the newspapers and magazines, they offer free access to their content on the internet including their daily issues, previous issues and electronic copies of their paper issue in addition to the search service within the website and news broadcasting services through RSS Feeds.

In its report entitled "The Global Information Technology Report 2013", the World Economic Forum, said that Kuwait occupies the fifty-fourth position among 144 countries in the world in terms of accessibility of digital content.

C. MULTI-PURPOSE COMMUNITY PUBLIC ACCESS POINTS

The state is keen on providing multi-purpose information access points with the partnership of the private sector and non-governmental organizations. NGOs developed general access centres connected to the internet; those centres exist in the headquarters of these organizations or in the suburban centres spread over the country.

IV. ICT CAPACITY BUILDING

A. ICT IN EDUCATION AND TRAINING

All concerned parties in Kuwait are interested in the effacement of computer illiteracy. Several government agencies hold their own computer and internet skills training courses. Government agencies have established the importance of having at least a minimum base of computer skills for job seekers as they considered such international certificates as the ICDL a prerequisite for applying for employment with them. Individual interest in acquiring computer and internet skills has increased through the increase in demand for ICDL in commercial institutes.

B. TRAINING PROGRAMS FOR CAPACITY BUILDING IN THE USE OF ICT

There are currently 21 private institutes which are approved by the Central Agency of Information Technology to offer private and specialized IT courses. The University of Kuwait also offers computer literacy training programs through Al-Khwarizmi Centre for Computer Training.

Amiri Decree No. 266 for 2006 entrusted the Central Agency of Information Technology with developing the e-government program and coordinating the executive plans between government agencies and civil society organizations, it also entrusted the agency with the task of training human cadres in the various technological domains of the country.

In this framework, the Central Agency of Information Technology implements contractual courses in the information technology domain to the public sector staff with the cooperation of the certified institutes. Since 2009, 2,558 trainees participated in those courses. The Central Agency of Information Technology executes an annual training program for specialised IT cadres. 1,098 employees have been trained so far.

Within the framework of the e-learning program executed by the Ministry of Education, the 2012 statistics reports of the Ministry state that the 2,567 teachers received training within the IT domain.

V. BUILDING CONFIDENCE AND SECURITY IN THE USE OF ICTS

A. USE OF ELECTRONIC TRANSACTIONS AND DOCUMENTS

The use of e-documents and e-signatures is still greatly limited is government agencies due to the absence of the laws and regulations necessary for them. At the moment there is a draft bill transferred from the government to the National Assembly for approval. The e-transactions law was approved by the National Assembly in the initial vote on 12 June 2013, it still awaits a final vote before becoming fully enacted.

Another intermediate development planned project is the project for electronic communication which aims at the realization of G2G electronic exchange of documents, and the formation of an electronic document archive providing a high speed search and retrieval ability for documents exchanged between the various agencies in addition to offering a possibility to classify government documents according to the list of saving correspondence documents achieving the level of privacy and security necessity in dealing with important documents in addition to following governmental work through the statistical data provided by the system to the high level decision makers within the country.

The Public Authority for Civil Information launched the smart card project which includes electronic IDs, this is the first step towards developing an infrastructure for e-authentication including e-signatures and organizing the national activities in this respect applying mechanisms such as Single Sign-on on the government's official e-portal.

B. ONLINE AND NETWORK SECURITY

The action plan followed by the Central Agency of Information Technology for the protection of critical national data is built on agencies such as the Computer Emergency Response Team (CERT) which has the objective of responding to computer emergencies and which includes a highly qualified and experience elite team. Another is the disaster recovery plan and the business continuity plan and the national project for information technology awareness.

Monitoring computer emergencies done by CERT focuses on limiting cyber dangers, CERT objectives also include developing a strategic plan to face information security issues making security threats easier to detect and prevent. The centre offers its services to all government, civil, and private sector agencies playing an important role in spreading awareness particular on information security which is known as preventive security by making both the private and public sectors aware of the hazards of internet crimes and how to remain perfectly prepared to face any dangers occurring to the security systems and protecting data outlets.

CERT's functions extend to being a national reference in discovering and dealing with security hazards which take place with machines and data in Kuwait with the close collaboration of the national, regional, and international agencies relevant to these issues.

The working mechanism of the Central Agency's awareness project is based on publicity campaigns through newspapers, audio-visual media, in addition to partaking in TV and radio programs. It includes forums, lectures, presentations, workshops, field visits for schools, and publications. The project also used e-marketing through the internet and through advertising on websites and search engines and social networking websites cooperating in this respect with civil society organizations.

Cybernetic security procedures which aim at limiting security risks including IT security auditing are all performed with the cooperation of Central Agency of Information Technology.

Data protection and information security both have become a routine procedure in all the agencies which have a primary data infrastructure whether in the government sector or in the private sector. All these

agencies perform backup tasks and regular updates for the security of their data and relevant infrastructure and ensure the soundness of their security through penetration testing. The tendency to use intrusion detection and intrusion prevention systems have both increased preventing breaches such as those known as zero-day vulnerability attacks. It is noticeable that the private sector uses more strict measures and procedures to use and preserve their computer resources particularly the ones which work in financial and investment sectors. Some agencies use central data protection solutions while others use non-central data protection solutions.

C. PRIVACY AND DATA PROTECTION

The e-transactions law, which has not been enacted yet, includes 46 clauses relating to the various issues in this domain. A law to handle computer abuse is still being formulated by the legislations committee within the development plan.

As already mentioned, the general framework for national information security had been developed and it constitutes the first step towards the application of a data security strategy.

The Central Agency for Information Technology holds a number of awareness lectures in civil society organizations, public schools, and universities which handle best uses for information technology and personal information security within the national project for information technology awareness.

Within the framework of the partnership with all the parties involved, an annual security and privacy forum is held under the patronage of the Central Agency for Information Technology and a number of private sector organizations.

D. COUNTERING MISUSE OF ICTs

In 2008 the Ministry of Interior formed a special commission for countering electronic crimes to detect and counter cyber crimes, electronic theft, cyber espionage, cyber counterfeiting, detecting explicit content or content which threatens the families and their structures. Despite the absence of relevant laws, the commission was able to electronically detect and arrest a number of suspects of such crimes, placing them on trial through proving that they have broken other laws of the land.

Banks spend great efforts to prevent and detect technology abuse. Kuwait's banks all follow the policy of immediately contacting their clients when there are suspicious money withdrawals or purchases in addition to other efforts to counter fraud and identity theft.

The Computer Emergency Response Team (CERT) has already been referred to. It is an essential component of cyber security.

VI. ENABLING ENVIRONMENT

A. LEGAL AND REGULATORY ENVIRONMENT

The Foreign Investment Law was approved in Kuwait to attract investments into the country. ICT is one of the domains which can benefit from this law. However, Kuwait does need more laws to serve ICT and the information society. The medium range development plan mentions the need for e-transactions laws covering issues such as e-documents, e-signatures, privacy, cyber crime, consumer protection, in addition to amendments in the intellectual property protection law to include electronic uses.

Kuwait has had an intellectual property protection law since 1999, the second clause in this law includes clauses on the protection of computer software and databases. Kuwait has joined the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Kuwait is also a member of the World Intellectual Property Organization (WIPO) having signed all the relevant agreements in this respect.

Based on the 2013 World Economic Forum's report, Kuwait occupies the forty-sixth position among 144 nations in terms of intellectual property protection.

The Ministry of Communications is the agency responsible for the organization of the communications and internet sectors in addition to being the sole operator of fixed-line and international communications. There is a direction to organize telecommunications and internet sectors on the governmental level as the Ministry of Communications prepared a law for the regulation of these sectors, this law contains clauses on the formation of a telecommunications commission which will play the role of the organizer and regulator of this domain including the internet. The draft of this law was transferred to the National Assembly and it still awaits its approval.

Since the implementation of the intellectual property law in 1999 the rate of software piracy declined in Kuwait, after reaching 95 per cent at the date of its approval according to the Business Alliance it dropped to 59 per cent in 2011. This drop is the result of the government's efforts to limit this phenomenon in addition to the awareness programs in which non-governmental agencies partake. The Ministry of Commerce and Industry is the agency charged with the implementation of the law for the protection of intellectual property. The Ministry formed a commission for the protection of intellectual property who had the decrease of software piracy as part of its tasks.

Based on the 2013 World Economic Forum report, Kuwait occupies the fifty-second position among 107 countries in terms of software piracy with respect to the sum of software units install.

e-transactions law available (yes/no)	No
e-signature law available (yes/no)	No
Management of PKI available (yes/no)	Yes

B. DOMAIN NAME MANAGEMENT

The ministry of communications is the party responsible for domain name administration over the internet and particularly the Kuwaiti top-level domain name (.kw). The ministry of communications delegated this task to the Kuwait Institute for Scientific Research (KISR). Domain name registration under Kuwait's top-level domain name takes place through internet providers.

C. STANDARDIZATION IN ICT

Within the framework of offering e-government services, quality assurance standards, performance measurement, technical auditing, integration, interoperability and the publication of the relevant technical guides in this respect are applied. Specialized agencies are used to perform regular tests based on

international standards to test performance, usability, and security in e-government websites. The official e-government portal in Kuwait, for instance, was designed according to the highest quality in all of those standards taking into consideration various age levels and people with special needs. The portal offers information and services to its visitors in a user friendly information architecture allowing access within three or less steps.

The medium range development plan includes a project for the development of standards and patterns for the state's IT sector, it aims at the development of policies, standards, and methodologies for the administration and implementation of information tasks and systems in the IT sector in the state.

The application of international interoperability standards is mainly focused in the banking sector in relation to money transfer and credit card issuance and automatic withdrawal. It is also applied in the airline booking standards especially e-ticketing which adheres to the IATA standards.

D. ICT INVESTMENTS AND GOVERNMENT-SUPPORTED FACILITATION MEASURES

An official patent registration office has been formed in Kuwait, it was made a subsidiary of the Ministry of Commerce and Industry, its purpose is to register patents in accordance with international standards, the office's field of work covers that of information technology. Specialized clubs such as the Kuwait Scientific Club encourage scientific inventiveness in more than one technical domain one of which is the IT domain.

At the moment there are two government incubators, one of which is the Small Project Company which finances projects within the range of KD 500,000 beginning as a partner of the entrepreneur for five years before leaving the project after having their money back, the projects it finances of course include IT projects. The second incubator is the National Technology Enterprises Company. This is one of the companies owned by the Kuwait Investment Authority. Its goal is to attract foreign capital and to introduce and consolidate modern technology in Kuwait, offering work opportunities and enabling national cadres for future technology projects. It also endorses the ideas of the initiator turning them into an actual project. In May 2013, the company signed a cooperation agreement with Cytotech, a Hungarian company specializing in life sciences, the goal of the agreement was to transfer advanced capabilities and technologies which distinguish this company in the domain of life sciences to Kuwait. On the other hand, the Industrial Bank of Kuwait has a portfolio for small and medium size companies through which it finances professional projects within the range of KD 500,000.

The Public Authority for Industry supports entrepreneurs through dedicating industrial vouchers which they can use and employ to execute their inventions.

Kuwait enacted a number of laws and regulations to encourage investment and valuable local initiatives, one of these is that the state pays for the cost of feasibility studies performed on strategic projects which have high returns in addition to offering flexibility in contracting using BOT and PPP schemes. The Kuwait Foreign Investment Bureau which was formed under the umbrella of the Ministry of Commerce and Industry regulates direct investments of foreign capitals in Kuwait, including information technology.

In accordance with the directives of the Ministry of Commerce and Industry, the Public Authority for Industry offers software industry licenses under standards and regulations which allow their manufacturer to export them abroad. Although the software industry is not a large one in Kuwait, a new trend appeared, which is software development for smart phones and selling them through software dedicated for this purpose such as the AppStore and Google Play which is synonymous for exporting software. The domains of these programs vary from religious to entertainment programs. Many private sector companies developed their own software for smart phones.

There is no particular pattern in venture capital investment, but the project for the development of a digital oasis which is included in the medium range development plan, the goals of this project are to enrich Kuwait's technology sector through providing an axis for medium-sized and small projects to attract investments and increase productivity, spreading the culture of venture capital in IT, and encouraging work through outsourcing and partnership between the public and private sectors.

VII. ICT APPLICATIONS

A. E-GOVERNMENT

In relationship to G2G solutions, there is currently a government project for automatic collection of government due payments which has the goal of connecting government systems to each other to exchange information about financial due payments, this project uses Service Oriented Architecture and has the goal of reducing the accumulating government due payments from individuals and establishments.

As for G2C solutions, the Central Agency for Information Technology has launched the official e-government portal for Kuwait in 19/10/2008. This portal offers 155 services including 12 e-payment services in addition to 587 informational services including description of procedures and requirement, and electronic downloadable forms.

This official portal is subject to a continuous process of development the most recent of which is the second phase whose goals include offering a secure, efficient, and compatible interoperability in government transactions. In this stage the identity management system will be implemented by being merged with authentication services offered by the Public Agency for Civil Information (PACI PKI E-Authentication) which will enable the portal to do the following:

- The application of the portal's personalization system;

- The development of the government's enterprise service bus as a unified system to exchange and integrate electronic services between all government agencies;

- The development of Orchestrated Multi-Step Cross Agency services, offering through the portal using an interoperability framework.

According to the portal's web analytics systems, 2,147,257 visitors entered the portal in the period between 1 January and 31 June 2013 in comparison with 1,483,791 visitors in the same period in 2012 which is an increase of 44.71 per cent. The number of pages visited in that same period was 4,851,726 pages in comparison with 3,671,888 pages in the same period in 2012 which is an increase of 32.13 per cent. There were 886,117 visitors in the period between 1 January and 31 June 2013 in comparison with 613,108 new visitors in the same period in 2012 which is an increase of 44.52 per cent.

Within the framework of increasing the channels of the portal's use, the Central Agency of Information Technology launched the portal's application for smart mobile devices which allows its users to benefit from the portal's information and services in addition to benefiting from the governmental e-payment system (Tasdeed). This application is available on Google Play for Android users and AppStore for iOS users. According to Apple's AppSore statistics, the portal's application is one of the top 25 free applications among Kuwaiti users in addition to being selected a featured app by Apple which gave Kuwait the first position in business applications. The portal application includes 132 electronic services including 10 e-payment services and 67 informational services.

In May 2013 the Central Agency for Information Technology finished modifying the portal's design and content according to international standards followed by the design of e-government portals most important of which are the United Nations standards.

On the other hand, a text reader property was introduced into it to aid in reading the portal's text without having to activate any other programs to facilitate listening to the portal's content instead of reading it. This property would make it possible for the visually impaired to use and listen to the portal's content. All this was done according to the usability and accessibility standards adapted by the United Nations, such as WC3 Web Content Accessibility Guidelines.

As for Government to Business solutions (G2B), the government e-payment system was launched. The Ministry of Finance signed a primary contract to offer e-payment services between the ministry of finance and the Shared Electronic Banking Services Company (Knet) in 2008. The ministry of finance issued circular No. 3 for the year 2008 about the rules and regulations for the application of e-payment services in government agencies.

As for e-procurement, this takes place through the Central Tenders Committees website (ctc.gov.kw) and through its smart phone application offering announcements and information about tenders and the conditions for them. The website and application both offer the private sector with an opportunity to electronically follow all information relating to tenders, increasing a higher level of transparency between the government and business sector.

The oil sector is an example of the application of e-procurement as Kuwait National Petroleum Company uses its e-procurement system for procurements and tenders. This system has the full functionality of any tender system under the laws of Kuwait.

URL of e-government portal: *(http://e.gov.kw)*		
Information	General	*Yes*
	Laws	*Yes*
	Directories	*Yes*
Services	Static Info	*Yes*
	Downloadable Forms	*Yes*
	Interactive	*Yes*
e-payment		*Yes*
Online account		*No*
Bilingual		*Arabic. English*
Citizen Participation	Blogs	*Yes*
	Polls	*Yes*
Social Media	Facebook	*Yes*
	Twitter	*Yes*
	LinkedIn	*No*
	YouTube	*Yes*
	Other	-
Additional Services	RSS	*Yes*
	Web Statistics	*Yes*
	Search	*Yes*
Mobile version	Support for smartphone/tablet	*No*
	Dedicated App (iOS or Android based)	*Yes*
Other features		*Text to Speech Synthesis*

Name of Authority in Charge of ICT in Public Administrations	الجهاز المركزي لتكنولوجيا المعلومات *The Central Agency for Information Technology* *http://cait.gov.kw*
Name of e-Government authority	الجهاز المركزي لتكنولوجيا المعلومات *The Central Agency for Information Technology* *http://cait.gov.k*
Number of implemented government e-services	*742*
Number of planned government e-services	*258*

B. E-BUSINESS

E-business is concentrated in limited economic activities such as online banking and e-trading, communications services, and tourism such as online booking with airlines and hotels. A number of local electronic stores, which offer its clients the ability to buy goods though the internet do exist, among these are talabat.com and sheeel.com.

As mentioned before, the law regulating e-transactions on the national level awaits final approval by the national assembly.

Availability of e-banking services	*No*	Law number:	
Availability of e-commerce law	*No*	Law number:	
Availability of e-transactions law	*No*	Law number:	
Name other laws on e-services		Law number:	

C. E-LEARNING

The Ministry of Education is currently implementing an e-learning project which consists of the following basic phases: the infrastructure, smart schools and classes, the education portal and the learning systems, the electronic content (the interactive curriculum), the supporting educational systems, and the supporting electronic services, the building of human resources, awareness.

The ministry of education implemented the "electronic square" initiative which was made by several private sector companies, this system offers a unified electronic portal connected to public schools, the sides of the educational process (the school, the teacher, the parent, and the student) are able to enter to the private information of each student and exchange scientific content in addition to following the students' performance.

The University of Kuwait is currently implementing e-learning projects within a complete package to this end including e-learning tools, the development of distance learning programs, the extension of using smart classes, and the development of the electronic infrastructure, the application of wireless networks, catering for people with special needs, the electronic management of human resources, upgrading the University of Kuwait's electronic portal, also the University is currently preparing to design an application for smart phones.

The Public Authority for Applied Education and Training offers various services to the educational and administrative faculty and student services through an integrated information network. Both the University of Kuwait and the Public Authority for Applied Education and Training offer electronic registration services for students, the University of Kuwait also offers students the privilege of assessing the teachers through the student information system, a process which used to take place manually. The Ministry of Higher Education is currently investigating a project for the central automatic registration for higher education establishments.

It is worth mentioning that e-learning is used in Kuwait as an auxiliary tool to traditional learning and not as an alternative for it. Distance learning and e-learning obtained from external universities are not recognized officially in Kuwait, there are no virtual universities in Kuwait.

Student to computer ratio	-
Percentage of schools with Internet access	100%

D. E-HEALTH

Within the framework of the application of the medium range development plan, the electronic health file system for citizens had been implemented; it includes the automation of files and medical histories of individuals and the electronic offering of medical services related to those files. The Civil Service Commission has implemented the medical reviews system for government employees with the collaboration of the Ministry of Health. This system aims at the organization and automation of the approval of sick leaves for employees so that those would be in agreement with the rules and regulations of civil service to limit foul play in application for them and also allowing the employees to get rid of the paper work associated with this procedure. Also the implementation of the Health Services Guide is complete, this is an interactive tool provided by the official e-government portal. This guide guides its users to the medical centres and hospitals available in Kuwait, clarifying the services, specialization, and working hours of each of them in addition to explaining how to reach them through interactive maps which use GIS systems.

E. E-EMPLOYMENT

Information technology and internet are widely used to announce jobs and receive job applications. The Civil Service Commission, which is the largest employment agency in the government, receives job applications to the government sector electronically. The project enables Kuwait's citizens to register as job seekers through the internet or the phone and to follow up the application electronically. The process of arranging the applications takes place through a system which automatically links the commission's systems with the relevant government agencies. This system aids the commission to respond to the needs of the government agencies in various domains of specialization through the citizens registered in it. The Civil Service Commission's Central Employment System won the 2013 WSIS Project Prize in the field ICT Applications: E-Employment. This is the first time a Kuwaiti project wins such a reward.

VIII. CULTURAL DIVERSITY AND IDENTITY, LINGUISTIC DIVERSITY AND LOCAL CONTENT

A. USE OF ICT IN SUPPORT OF CULTURAL AND LINGUISTIC DIVERSITY

There are several ICT initiatives in Kuwait to this end, one of which is Kuwait's Electronic Reward for Enriching the Digital Content (www.kuwaiteAward.org.kw) supervised by the Kuwait Foundation for the Advancement of Sciences.

The Waqf Sciences Library website which is a subordinate of the Kuwait Awqaf Public Foundation offers a means for documenting the resources to cater for the needs of those who are interested from within the foundation or outside it. The library contains more than 11,000 titles in addition to audio-visual resources and images of endowments papers.

B. LOCAL AND NATIONAL DIGITAL CONTENT DEVELOPMENT

Kuwait has embraced many cultural projects such as Al-Arabi magazine, the translation of Scientific American done by the Kuwait Foundation for the Advancement of Sciences, The Centre for Research and Studies on Kuwait (CRSK) researches into Kuwait's history, Dar Al-Athar Al-Islamiyyah which is interested in Islamic history and heritage, the National Council for Culture, Arts, and Literature which is interested in the literary and cultural movement on the levels of both Kuwait and the Arab world whose most famous publication is Alam Al-Ma'rifah (The world of knowledge) series, and Dar Suad As-Sabah which is interested in literary publications, and Abd Al-Aziz Al-Babtain Central Library for Arabic Poetry which published the guide for Kuwait's cultural aspects on CDs in both Arabic and English, and which is also present on its website. Many of the publications of those establishments are present on bilingual websites using advanced technology enabling the user to view them.

On the governmental level, the content of government agencies' websites was confined to general information about each agency, it has now become a link between each agency and the individuals and establishments benefitting from its services as they began to publish their decisions, detailed information about their services and the centres of those services and the requirement of those services, in addition to studies, reports, and statistics.

As for the private sector, private companies in Kuwait tend to build electronic portals for clients relation management (CRM). These portals became a tool to offer their services or to follow them or to provide customer support. Those portals also include investors' relations management offering reports and data on company performance in addition to announcing employment and outsourcing offers.

C. ICT SOFTWARE, TOOLS, AND R&D PROGRAMS IN ARABIC LANGUAGE PROCESSING

On the R&D level, the efforts of Sakhr Software in developing various software tools contributed to the development and enrichment of the Arab content. The company developed an Arabic search engine, technologies relating to Arab Language Processing such as Morphological Processing, Syntactic Processing, Machine Translation, and Arabic Optical Character Recognition.

Kuwait Chamber of Commerce and Industry designed its system "Al-Boom" (which means ship in the local accent) concerned with knowledge management and e-search to locate and categorize Kuwaiti websites using data warehousing technology.

Reference to ReDSOFT (Regional Centre for Development of Educational Software) which was established in Kuwait based on an agreement with Arab Fund for Economic and Social Development (AFESD), the centre concentrates on e-learning content.

IX. MEDIA

A. MEDIA DIVERSITY, INDEPENDENCE AND PLURALISM

Kuwaiti media enjoys good independence. Reporters without Borders classified Kuwait as the seventy-eighth country in terms of the freedom of press and media.

B. THE MEDIA AND ITS ROLE IN THE INFORMATION SOCIETY

There are a number of Kuwaiti TV and radio shows which cover topics relating to the information society. There is a weekly hour on Kuwait's TV covering IT topics presented by Dr. Salah An-Najem who is a professor in the University of Kuwait and a consultant of the Central Agency of Information Technology. This hour is a part of the National Project for Information Technology Awareness. The official Kuwait TV channel also broadcasts an IT specialized show which is the CompuNet program.

In addition to those TV shows there is Dalil Al-Internet (The internet Guide) magazine which also specializes in the IT domain.

C. CONVERGENCE BETWEEN ICT AND THE MEDIA

Kuwait has the infrastructure to accommodate audio-visual and internet transmission. Both the government through the Ministry of Communications and the private sector through internet service providers invested in it. Mobile phone operators began offering visual transmission through mobile phones especially with the introduction of 4G LTE which allows a greater ability for audio-visual transmission over the internet.

As the infrastructure is available, Kuwaiti establishments owning audio-visual media channels are keen on digitally transmitting their channels over the internet which adds to the richness of the national and local digital content. All of these establishments digitized their productions and transmission material keeping a digital archive of all their work.

The local content has noticeably increased over YouTube which allows access of the video files through PCs, smart phones, and internet connected TCs such as the Apple TV which became widely used at homes.

X. INTERNATIONAL AND REGIONAL COOPERATION

A. FINANCING OF ICT NETWORKS AND SERVICES

Law No. 7 of 2008 provides the enabling environment to attract foreign investments including those relating to the ICT sector, the Ministry of Commerce and Industry is the party responsible for the implementation of that law.

B. INFRASTRUCTURE DEVELOPMENT PROJECTS

The Public Authority for Civil Information launched the smart card for citizens. The authority also has a plan to issue a smart card for residents. This is part of the Cooperation Council for the Arab States of the Gulf system according to which member states have agreed to unify smart electronic cards. The technology used for this card is Public Key Infrastructure which contains all personal, banking, health, and security information relating to the card holder. The project includes the establishment of unified training centres for workers in the passport sector and the exchange of information through an automatic linkage system.

C. WSIS FOLLOW-UP

Within the framework of cooperation with the United Nations represented by the ITU, the Central Agency of Information Technology celebrates the World Telecommunication and Information Society Day, this celebration takes place through awareness lectures to public with the civil society's organization and the government agencies, each year the celebration carries a different title of emphasis.

The Central Agency for Information Technology participates with the ICANN just as the Kuwait Information Technology Society participates in the At-Large Community.

XI. BUILDING THE ICT SECTOR

A. ICT FIRMS

The mobile operators have already been discussed. There are six communications companies enlisted in Kuwait's Stock Exchange. There are also five companies working in the information technology sector which are enlisted in Kuwait's Stock Exchange. The number of those companies registered with the Central Agency for Information Technology was 353 in 2013 after being 327 in 2012.

Those companies became more organized and specialized in marketing their products. After one company performed a wide range of IT activities companies became more specialized in certain domains just as those companies became increasingly interested in attaining certification for its staff, the companies themselves also became interested in attaining ISO certification. Many companies work in a particular economic or governmental sector offering their services to the oil and gas sector and others in financial and the investment sector and others in the human resources sector. Other companies offer offshore and outsourcing services just as others offer cloud services.

B. GOVERNMENT FACILITATION

The facilitations offered by the government to small and medium size businesses have already been discussed in addition to the facilitations offered to professionals and industrial projects.

C. CONTRIBUTION OF ICT SECTOR IN THE NATIONAL ECONOMY

The Kuwait Financial Centre published a study in 2013 about the ICT in Kuwait mentioning that Kuwait is occupies the third position among the Cooperation Council for the Arab States of the Gulf countries in terms of spending on that sector. Expenditure on this sector witnessed an average annual growth of 12.6 per cent in the period between 2003 and 2011 and the report expects the total expenditure to reach US$ 28 billion in the period between 2011 and 2015, 80 per cent of which goes to communications followed by computers.

D. R&D AND INVESTMENTS IN THE ICT SECTOR

R & D activities in the IT sector concentrated on the development of the content and Arabization, this report already mentioned the efforts of Sakhr Software and ReDSOFT and Kuwait Chamber of Commerce & Industry in this domain. Academic establishments such as the University of Kuwait, the Public Authority for Applied Education and Training, and Kuwait Institute for Scientific Research perform applied research in the ICT sector.

E. INVESTMENTS IN THE ICT SECTOR

There are five companies which work in the IT sector registered in the Kuwait Stock Exchange, those are: Automatic Systems Company, Kuwait Cable Vision Co., HumanSoft, Advance Technology Company, and SafTec

There are six companies registered in Kuwait's Stock Exchange which work in the communications sector and those are: Zain, Wataniya, Hits Telecom, Future Communications Company, Hayat Communications, and Automatic Systems Company.

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