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NATIONAL PROFILE OF THE INFORMATION SOCIETY IN IRAQ

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CONTENTS

Page

CONTENTS (*Continued*)

CONTENTS (*Continued*)

INTRODUCTION

In the past two years there has been a significant effort to reinforce reconstruction and development work as emphasised by processes surrounding the International Compact for Iraq (ICI). But sectarian tensions, violence and continued displacements of persons within Iraq and its neighbouring countries have prevented Iraqis from enjoying a sense of progress or even hope that the situation will change for the better. Political milestones achieved to date have not yielded the anticipated impact on the quality of life for the general population, let alone its transformation to the Information Society. There remain daunting challenges in the provision of basic services, respect and application of the rule of law, systematic human rights, transparency and accountability within governmental institutions and policies, and real transition to democracy and economic prosperity.[1]

Before 2003, Iraq suffered immense hardship due to continuous external conflicts, which rendered the country lagging in almost all economic and social domains; not excluding ICT. The government's involvement in mobilizing oil revenues for security and military support on the one hand, and for the Oil-for-Food programme, on the other, prevented Iraqi's from acquiring the quality of life prevalent in other major oil-producing countries.

Although security remains at immense low levels, Iraq has succeeded in developing and advancing its ICT sector particularly with respect to telecommunications. However, its IT achievements, though noteworthy, but remain incomparable to telecom advancement.

The present profile is an overview of various aspects of ICT development in Iraq with highlights on strategies, policies, infrastructure and connectivity.

I. THE ROLE OF GOVERNMENTS AND STAKEHOLDERS

Amidst the prevalent turmoil of the country since 2003, the successive Governments, through liberalization of rules to control the telecommunication sector and the involvement of the private sector, succeeded to uplift Iraq's Information Society in a number of ways as evidenced; for example, by the boom in the GSM mobile sector. This section is a descriptive account of such efforts in terms of policies, strategies and partnerships.

A. NATIONAL INFORMATION SOCIETY POLICIES AND E-STRATEGIES

During the pre 2003 years, ICT policies were either nonexistent or extremely oppressive, as access to ICT by the public was considered a privilege to the trusted and a threat to the security of the governing regime. The heavy handedness of the National Computer Centre (NCC) of the Ministry of Planning, in close coordination with the Iraqi Intelligence Agency, retained exclusive responsibility for the government's IT policies by means of exacerbating security fears and threats among politicians and decision makers [1]. In 1999, the NCC was detached from the Ministry of Planning and attached to the Ministry of Higher Education and Scientific Research. This move, together with the fast development in the technology, provided a long needed, but late, relaxation to ministries and government agencies to independently plan their own ICT activities and applications. In 2000, the name of the NCC was changed to the Iraqi Commission for Computers and Informatics (ICCI). Soon after events of 2003, ICCI was dissolved, but then resurrected in 2005.

The war on Iraq in March 2003 marked a milestone in the liberalization of the ICT sector; particularly for telecommunications. In June 2003, the Ministry of Transport and Telecommunications was

[1] UN Assistance Strategy for Iraq (2008-2010) by UNAMI.

split into the Ministry of Communications (MoC) and the Ministry of Transportation [3]. Unlike many countries in the region, Iraq did not add "information technology" to the name of the new ministry.

In October 2003, three companies were awarded GSM licenses to operate the mobile phone services in north, mid and south Iraq: Asiacell, Iraqna, and MTC Atheer; respectively. Since the beginning of 2006, the three operators became national, thus extending their services throughout Iraq [2]. Korek Telecom and SanaTel operators remained regional each covering a discrete area within the Kurdistan region in north Iraq.

The Ministry of Communications announced its plans in February 2005 to bid for two nationwide Wireless Local Loop (WLL) networks in partnership with Iraq Telephone and Postal Company (ITPC). The licenses were awarded in 2006 [1]. Additionally, and as part of the Ministry's plans to develop its fixed network infrastructure, seven fibre-optic loops (DWDM) are to be established covering all Iraq and connecting its cities[3].

In the information technology domain, the Ministry of Planning and International Development (MOPID) changed the name of the Central Statistical Organization (CSO) to the Central Organization for Statistics and Information Technology (COSIT) with the intention of creating an entity in MOPID responsible for a national ICT policy. However, COSIT continued as a national statistical agency with little or no change in its work plan to embrace ICT. [21].

Iraq Communications and Media Commission (ICMC and later named CMC) was established in 2004 as a regulator for the telecom and media sector with the objective "to encourage investment and discourage state interference" [3].

B. Public/Private Partnership (PPP) or Multi-Sector Partnership (MSP)

The Iraq ICT Alliance was launched by USAID on 8 May 2006 which is a "public-private partnership working to promote information and communications technology development in Iraq" [10]. Partners forming this alliance include international donor agencies, multinational companies and government agencies. The Alliance mainly targets building ICT capacity, as well as developing and delivering training programmes[2]. A number of public/private partnerships were also noted in universities allowing private sector companies providing computer and Internet access in campuses.

Other formal public/private and multi-stakeholder partnerships in Iraq are almost nonexistent, primarily due to the prevalent security situation. The highly bureaucratic administrative processes at ministries and government authorities also hinder the formation of partnerships with the private sector. However, GSM contracts and WLL licenses awarded by the Iraqi government to private companies reveal the existence of mechanisms for the promotion of such partnerships.

Iraq is well known for its cultural diversity. Online information on indigenous groups of Iraq is mostly available through Internet fora. Most interventions are either of an informative nature or battling for proper representation in parliament and the constitution. Assyrians, Yazidis, Chaldians, Mandaeans are notably mentioned in a number of these fora containing historical and current information on their status. "The Iraq of Tomorrow" website, for example, is utilized as a platform to reveal opinions of minorities and indigenous groups.

[2] It is noteworthy that the Iraq ICT Alliance was active shortly after its formation. Recent data in 2007 on its achievements and projects is unavailable.

C. Role of Non Governmental Organization

Most NGOs in Iraq are geared towards basic social development and humanitarian aid. The beneficiaries of most NGOs are impoverished communities in need of poverty reduction and employment opportunities. International NGOs, such as USAID, have contributed to activities in the ICT sector for these communities, see section 2-A.

D. Progress towards fulfilment of national policies and strategies

Many of the government plans to the use of ICT in government have been hampered by lack of security and corruption. Many of the promised pans in e-government applications at both national and local government levels have suffered delays. Insufficient government funding has also contributed to lack of progress in many ICT related areas.

II. ICT INFRASTRUCTURE

A. Infrastructure

The war on Iraq resulted in considerable damage to the infrastructure of the Public Switched Telephone Network (PSTN) as 12 of the 14 exchanges in Baghdad incurred damages and halted their services to 50% of total telephone lines. At the time, the PSTN provided service to 1.1 million lines [3] utilizing outdated exchanges and reported a penetration rate at around 3% [7]. Major completed projects to rebuild and enhance the PSTN are listed in the table below.

Table 1. PSTN Reconstruction Projects

Name of Agency/Company	Activity
USAID and the CPA	Repaired 1,200 km of the fiber optic backbone network thus reconnecting 20 cities and 70% of the population. Installed switches at 12 sites with 240,000 lines in Baghdad. Installed 13 new switches in Baghdad. Reactivated over 215,000 subscriber lines in cooperation with MoC. Installed a satellite gateway system and provided relevant training to telecom engineers and technicians.
Bechtel	Installed switches using Lucent technologies
Globecomm	Installed an international gateway for long-distance voice, fax, and data services via satellite and restored part of the fibre-optic network spanning from north to south Iraq.
Jordan Telecom and ITPC	Installed a fibre optic line between Iraq and Jordan

Sources: *Compiled from* Arab Advisors Group, Strategic Research Service – Communications. February 2007. "Iraq Communications Projections Report", Paul Budde Communications Pty Ltd. May 2005. Telecoms, Mobile, and Broadband in the Middle East. 4th ed, and USAID Iraq Biweekly Update. May 2006.

As of the beginning of 2006, the licences awarded to the three major regional GSM operators; Asiacell, Iraqna, and MTC Atheer were converted to national [3] allowing for a wider coverage for each operator and a more competitive marketplace. A recent auction on long-term licenses resulted in awarding Asiacell and Atheer two licenses and excluding Iraqna as it has dropped out of the auction process [12]. It turned out however, that Iraqna formed a joint venture with Korek Telecom thus taking over 40% of the market.

In September of the same year, four licenses were awarded by the CMC for WLL networks as per the MoC plans earlier in 2005. This step to liberalize the PSTN service from its previous monopoly state is quite frontward particularly that this service is still a monopoly in many Arab countries. It is expected that licensed operators' services will be launched before the end of 2007 [3].

B. INVESTMENTS IN ICT INFRASTRUCTURE AND DEVELOPMENT OF NEW SERVICES

Investments in communication networks have been quite high. As an example, four national licenses have been awarded by the CMC to provide WLL in Iraq to the following entities: Trade Links Logistics, General Trading and Construction, Munir Sukhtian Group (MSG) and Iraq Telephone and Postal Company (ITPC) [3]. A number of regional licenses have also been authorized. Anticipated competition following this market liberalization will lead to better and more affordable services. A similar concept lies behind regional licenses, thus allowing for lower customer prices and improved service quality.

Regarding the Internet backbone, a national fibre optic network is being implemented with 50% completed as of end 2005 by Nortel. Two LAN gateways currently exist and more are to be set-up. Connections to international World Wide Web cables are also en route [7].

C. ICT CONNECTIVITY

According to "The Iraqi Mobile Bang" survey [5], the penetration of mobile users is not hindered by demographic, economic or social barriers. Mobile owners and users thus exist in all levels of society whether in urban centres or rural areas, male or female. In fact, the introduction of the mobile service provided connectively to otherwise rural areas suffering from limited fixed network service.

The same survey reveals that the mobile phone has primarily served as a tool to adjust to the security situation. Over 90% indicated the use the mobile phone primarily to check on the safety of family members and friends.

D. ICT EQUIPMENT AND SERVICES

The number of mobile users has witnessed an immense growth from 1.3 million in 2003 to around 10 million by the end of 2006 [22]. As set out in the National Development Strategy for 2007-2010, fixed telephone infrastructure will be improved to reach 3.3 million subscribers in 2007 [9]. The table below indicates the estimate of government funds needed to develop the telecommunication sector.

Table 2. Estimated Telecommunication Funds

Year	2007	2008	2009	2010	Total
Billion US$	0.3	0.3	0.2	0.2	1.0

Source: [9]

Available mobile services are predominantly voice and SMS with some providers offering services such as GPRS, MMS and roaming [3]. As set out in the "The Iraqi Mobile Bang" survey [5], users most frequently resort to making voice calls than using the SMS, which is regarded as less formal and less expensive. The pre-paid mobile cards are widely available in Iraq and reported to be used by 96% of those interviewed in the survey.

Although PCs are on their way to reach small business and homes, users still resort to Internet cafés for using computer services and accessing the Internet. Business owners are reportedly becoming more reliant on email to conduct their business with parties outside Iraq, as services, such as the facsimile and express mail are highly unreliable [5]. Proliferation of Internet services to the homes is also gradually increasing by means of wireless connections.

E. INTERNET GOVERNANCE

The Ministry of Communications plans to install new 280,000 dial-up lines and 500,000 ADSL lines before the end of 2007. Fibre to the Home (FTTH) service is currently being planned for implementation

through Japanese funding, which will be used to supply 860,000 homes with FTTH [7]. The GoI is also pursuing wireless broadband (WBB) options, 20% of which will be Evolution Data Only (EV-DO) which can reach download speeds of 2.4 Mbps.

On the national level, the WiMAX spectrum will be developed using new technologies [7]. WiMAX is already available in the Ministry of Interior with a wide spectrum used primarily for security purposes. It is also planned to be introduced at the Ministry of Health for use in demonstrating operations to medical students. There are also long-term plans to attract investments for the establishment of an Internet City in Baghdad.

F. TRADITIONAL MEDIA

The recently announced International Compact with Iraq states that there is a need to "Carry out public outreach and communication with media, political parties and civil society including the maintenance of ICI website, periodic publication of reports and policy papers, publication of ICI newsletter; development of media materials, including press releases, briefings, speaking notes and placement of op-ed contributions" [13].

Prior to the 2003 war on Iraq, broadcasting was monopolized by the government [14]. Shortly following the war, numerous TV and radio stations were launched. The fall of the previous regime was viewed as a doorway to freedom of the press and media. This sector is currently regulated by the Iraqi Communications and Media Commission. Numerous private TV and radio stations exist in addition to the current public broadcaster; the Iraqi Media Network [14].

Profusion of satellite TV access is highly noticeable in a majority of Iraqi homes in contrast to times of the previous regime when viewing satellite channels was against the law and was punished by imprisonment and disproportional fines. As the cost of satellite hardware is relatively inexpensive, an increasing number of homes are obtaining satellite dishes to watch and interact with international TV channels.

III. ACCESS TO INFORMATION AND KNOWLEDGE

A. PUBLIC DOMAIN INFORMATION

The backbone for a wireless network connecting 10 government agencies is already available as part of the ongoing efforts towards e-government [11]. A number of ministries in Iraq and other agencies have websites displaying a range of information, mostly in Arabic, to the public.

There are needs and plans for specialized virtual networks to enable universities and technical institutions to share content. Activities related to the use of ICT in local governments are yet unapparent.

B. ACCESS TO INFORMATION AND PUBLIC INFORMATION

Internet cafés are currently regarded as the most popular means to using computers and the Internet. These cafés are expanding in rural and marginalized communities throughout Iraq. An example is the ESCWA initiated MTCC project. Another example is an NGO sponsored donation to the ICCI of 150 second-hand PCs to be utilized for establishing four e-centres in Baghdad. The NGOs will latter be tasked with provision of space and basic services[3].

[3] Information obtained through an interview with ICCI representative. 5 September 2007.

Internet providers are delivering Internet service to an increasing number of Iraqi homes via satellite or DSL. For example, the State Company for Internet Services (SCIS)[4] offers Internet connectivity via dial-up, wireless or DSL.

C. MULTI-PURPOSE COMMUNITY PUBLIC ACCESS POINTS

National projects or plans for promoting the establishment of community access points are yet unavailable. Few NGOs have ICT-based community centres available to the public. The two Multipurpose Technology Community Centres established by ESCWA is an example of community public access points (See Box 1).

Box 1. The Multipurpose Technology Community Centres

The establishment of pilot Multipurpose Technology Community Centres (MTCC) as part of ESCWA Smart Community Project (SCP) for Iraq was funded the UN DG Iraq Trust Fund. The MTCC aims to provide communities in rural and impoverished areas with access to ICT-based services including training, Internet access and other office facilities. In fact, two MTCC were established in each of the following villages: (1) Altun Kopri in Kirkuk governorate in north Iraq and (2) Sayid Dikhil in Thi Qar governorate in the south. The MTCCs have been in operation since June 2006 providing the following services:

- Training on basic computer skills to all members of the communities on the basis of the International Computer Driving License (ICDL) syllabus;
- Language training software on Arabic, English, Turkish and Persian;
- Internet access.

The MTCCs are proactive in engaging local community members in the training programmes. School teachers and students, government employees, and civil society members are particularly encouraged to attend at minimal or waived rates. To this end, a number of contracts were signed between the MTCC on the one hand and government authorities, schools, and NGOs on the other.

Special emphasis is also given to the participation and involvement of women by arranging women-only classes. It is also noteworthy that trainers at the MTCCs have devised innovative ways draw participants to training programmes such as announcing and organizing contests and social events.

D. USING DIFFERENT SOFTWARE MODELS

The Ministry of Science and Technology (MOST) is developing a structure for open source software within the UNDP's Open Source Network. This activity will cover subjects of training and computer literacy [7].

E. FREE AND OPEN ACCESS TO SCIENTIFIC KNOWLEDGE

The pre 2003 regime was haunted by security issues. Providing information to the public had to go through a long procedure for approval, which invariably ends in a rejection for the request. PC's that can access the Internet had to be isolated from local networks, and was closely monitored by the security officer in charge. Freedom to access the Internet after 2003 provided Iraqis with the wealth of information available internationally and regionally[5]. However, the local infrastructure for scientific and technical information has not yet matured and thus is not easily available to the public.

[4] http://www.uruklink.net/

[5] Information on formalized projects or initiatives to make scientific knowledge was not found available.

IV. ICT CAPACITY BUILDING

A. BASIC LITERACY

Illiteracy eradication efforts have so far followed traditional means of education and are implemented by Directorates of Education in the Governorates. NGOs have also started to play an essential role in delivering illiteracy eradication programmes to selected areas in Iraq. ICT-based literacy programmes are unavailable to the public. However, a number of private sector training companies offer computer awareness and introductory courses for novices.

B. ICT IN EDUCATION AND TRAINING

The Iraqi Commission for Computers and Informatics (ICCI) has formulated a number of projects to improve the status of ICT in all universities across Iraq as the ICCI is commissioned by the Ministry of Higher Education. The ICCI has succeeded in establishing a total of 110 computer centres and 37 Internet centres in universities. Universities have also been beneficiaries of IT equipment through ESCWA's Iraqi Networking Academies (INA) project. See the frame below for more information.

Box 2. Iraqi Networking Academies Project

The INA is being implemented by ESCWA as part of the UN DG Iraq Trust Fund. The project aims to deliver ICT education, mainly the Cisco networking technology, to Iraqi youth, university and college students. The Networking Academy program empowers Iraqis through a comprehensive E-learning environment that enables them to learn anytime, anywhere, at their own pace, and with more targeted assessments and accountability than traditional class settings.

The project is implemented in partnership with a consortium of national, regional and international partners; namely, the Iraqi Ministry of Higher Education and Scientific Research and five main Iraqi universities, CISCO, UNESCO, the Lebanese American University (LAU). The project, which received the Cisco "Against All Odds" award in 2005 succeeded, so far, in establishing 5 regional networking academies; two in Baghdad and one in each of Basra, Mosul and Erbil in addition to 21 local networking academies. As a result of the project, more than 30 instructor classes have been conducted, for over 250 instructors and more than 75 student classes have been conducted, for over 750 students.

C. TRAINING PROGRAMMES FOR CAPACITY BUILDING IN THE USE OF ICT

Four ICDL training and testing centres have been accredited by ICDL GCC in each of Sulaimaniya, Karbalaa, Baghdad, and Basra where the latter was established as part of the Iraq Reconstruction and Development Programme. The training courses offered by the MTCCs are also based on the ICDL curriculum. There are also several training companies in the private sector that are offering unaccredited courses derived from internationally recognized courses such as those of Microsoft, Oracle and Cisco.

D. RESEARCH AND DEVELOPMENT

Prior to the war on Iraq, R and D activities were carried out mainly by universities, though organizations such as the Ministry of Industry and Minerals and the Military Manufacturing Commission did have their own applied research programmes. During and after the war on Iraq, most of R and D facilities at universities were destroyed or looted. Although some of these facilities have been recovered through donations from USAID and other donors, the status of R and D in ICT has not developed. Lack of qualified academics and researchers to conduct research is also a serious issue [17].

V. BUILDING CONFIDENCE AND SECURITY IN THE USE OF ICTS

A. USE OF ELECTRONIC TRANSACTIONS AND DOCUMENTS

The use of electronic documents and transactions is presently unavailable in Iraq.

B. ONLINE TRANSACTION SECURITY

Security applications are limited to individual endeavours of network administrators. The use of antivirus or anti-spam software is viewed at the level of PC use only. Software licensing, even at institutional level, is still an uncommon practise in Iraq.

C. COUNTERING MISUSE OF ICTS

National projects for fighting cyber-crime have not yet been developed.

D. PRIVACY & DATA PROTECTION

Guidelines on privacy and data protection are limited to ad-hoc application at individual websites level, but not on the national level.

E. INFORMATION SECURITY AND NETWORK SECURITY

Good practices in the use of networks and network security are observed only at the level of individual network administrators or agencies. National regulations have not yet been formulated. For example, the regional and local academies established by ESCWA impose rules which prevent the use of transportable media within the academy to ensure network security and privacy.

VI. ENABLING ENVIRONMENT

Policies set by the GoI to regulate the ICT sector, as described in section 1 are gradually setting the ground for an enabling environment. Refer to section 1 for further details.

A. LEGAL AND REGULATORY ENVIRONMENT

Although the GoI welcomes Foreign Direct Investment in the ICT sector, a well-developed legislative system, including dispute settlement, e-commerce, and protection laws has not been formulated.

B. SECURE STORAGE AND ARCHIVAL

A framework for the secure storage and archival of electronic documents is not available at a national or regional level.

C. DOMAIN NAME MANAGEMENT

TLDN, iq was not available to Iraq until 2006 when the GOI recovered the name through legal proceedings with ICANN. But iq is hardly used until now by the majority of Iraqi websites, including government websites. Most emails received from officials and individuals from Iraq are hosted at yahoo.com. It is not clear if the code top-level domain name (ccTLD) for Iraq is at all regulated or managed on a national level.

D. STANDARDIZATION IN ICT

Development and adoption of ICT standards is not yet in place.

E. ICT SECTOR

The previous sections described project and activities towards developing the communications sector. Efforts undertaken by the GoI has led to booming in the mobile telephone sector. However, Iraq does not export ICT equipment or services.

F. SUPPORTING MEASURES

ICT measures that aim to foster the Information Society in terms of innovation, incubation, venture capital investment are not yet developed.

VII. ICT APPLICATIONS

A. E-GOVERNMENT

E- Government in selected Ministries is being fostered by the Ministry of Science and Technology (MOST) and ICCI which has already linked up 10 governmental agencies with a WBBN wireless network which stands as the backbone to an integrated e- government. This facility is currently used for the dissemination of information only. Full-fledged use of e-government will require sufficient funding to secure management reform and workflow re-engineering, training and properly licensed software.

Table 3. List of Government Institutions' and Agencies' Websites

Website Address	**Name**
www.iraqipresidency.net	Iraqi Presidency
www.ieciraq.org	The Independent Electoral Commission of Iraq
www.na-iraqi.com	Iraqi Nation Assembly
www.iptraffic.org	Iraqi Traffic Police
www.nazaha.net	Commission of Public Integrity in Iraq
www.moediraq.com	Ministry of Education
www.uruklink.net/iqlaw/	Iraqi Official Gazette
www.iraqtax.org	General Commission for Taxes
www.iraqcustoms.org	the General Commission of Customs
www.iraqi-justice.org	Ministry of Justice
www.mopdc-iraq.org	Ministry of Planning & Development Cooperation
www.iraqelectric.org	Ministry of Electricity
www.iraqi-mwr.org/payv/	Ministry of Water Resources
www.moiiraq.com	Ministry of Interior
www.cultureiraq.org	Ministry of Culture
www.iraqmofa.net/	Ministry of Foreign Affairs
www.uruklink.net/moch/english/eindex	Ministry of Construction and Housing
www.uruklink.net/oil/	Ministry of Oil
www.motiraq.org	Ministry of Trade
www.healthiraq.org	Ministry of Health
www.iraqimoc.net	Ministry of Communications
ncmc-iraq.org	Iraqi National Communications and Media Commission
www.cbiraq.org/cb1.htm	Central Bank of Iraq
www.nociraq.org	The National Olympic Committee of Iraq
www.uruklink.net/scrb/english/aboutus.htm	the state Corporation for Roads & Bridges
www.uruklink.net/scb/	State Commission for Buildings
www.ipcciraq.org/01_about.htm	The Commission for Resolution of Real Property Disputes

www.inisiraq.com/	INIS
www.aldaurarefinery.com/103.htm	Daura Refinery
www.br-iraq.com	Iraqi Registrar of Companies
www.citizenaffairs.com	COMSEC
www.iraq-ist.org	Iraqi Special Tribunal

Source: http://www.iraqigovernment.org/Content/Biography/English/link%20english.htm

When fully implemented, an e-government will ensure [20]:

- Better governance, transparency and accountability;
- Build Citizen trust that has been missing in Iraq for long time;
- More cost-effective use of Government budget;
- Enhance the business sector;
- Better communication across all levels of Government and Society;
- Better access to Government services;
- Better customer-focused services (business + citizen + visitors + Government);
- Enhance partnerships and facilitate knowledge/learning at all levels.

B. E-BUSINESS

The banking system in Iraq is outdated. Previously, transactions were curtailed between local banks on the one side and foreign banks on the other, particularly those in the USA and Europe. Dealing in hard currencies was prevented. Till today, dollar transfers are quite difficult to many local banks with some exceptions, as some private banks have obtained licenses to open dollar accounts. The emergence of e-business is dependent on the availability of an advanced banking system coupled with modern ICT; both still in need of considerable development.

The main theme of currently available e-procurement facilities relevant to some projects is the rebuilding and rehabilitation of Iraq. These e-procurement initiatives are launched and maintained by International, Regional, and private organizations with the aim of achieving better efficiency, effectiveness, as well as transparency. One of the more prominent e-procurement initiatives is that maintained by the International Reconstruction Fund Facility for Iraq (IRFFI)[6]. Both the World Bank Iraq Trust Fund and the United Nations Development Group Iraq Trust Fund provide online procurement facilities within IRFFI to a variety of projects; starting with an invitation to bid and ending with awarding the contract in question to a selected bidder. These projects cover numerous sectors such as education, health care, ICT, and construction. Another e-procurement initiative is that launched by Tejari Iraq towards the beginning of 2004. Tejari Iraq provides common ground to bring together buyers and suppliers over a wide range of products and services[7] and has the better advantage of being fully Arabized[8]. Some government sites are posting requests for purchasing; the procurement process however is continued using traditional means.

C. E-LEARNING

The Ministry of Education (MoE) has expressed interest in promoting the use of ICT in education including e-learning applications. The Ministry currently possesses an e-gate used primarily for compiling job-opportunities and submissions. However, plans are under progress to establish e-enrolment services before the end of 2007 [6].

During 2007, ESCWA embarked on an ICT for Education in Iraq project in cooperation with

[6] http://www.irffi.org/

[7] *Source*: http://www.kallman.com/Outreach/images/e-Procurement.pdf

[8] For more information, visit: http://www.tejari.com/

UNESCO. The project is designed to build sustainable capacity in Iraqi MoE for the continuing quality improvement of teaching and learning, focusing on the use of Information and Communication Technologies (ICT). In order to improve the ICT literacy and skills of the MoE staff, teachers, and students, the institutional capacity of the MoE will be enhanced to design, develop, and distribute a variety of e-Learning resources, and accompanying program of teacher professional development to implement such resources.

As part of their services, the MTCCs established by ESCWA in north and south Iraq provide ICT training based on the ICDL curriculum. Trainers employed were trained by ESCWA in cooperation with UNRWA on delivery of such material. Additionally, ESCWA has developed software packages for computer-based vocational training on a number of subjects; namely, agro-food processing and quality control as well as basic accountancy. These packages aim to build the skills of rural community members with view to increasing employment opportunities.

D. E-HEALTH

E-health applications are nonexistent in Iraq, as is the case in many developing countries. In fact, the health system itself is in dire need for development following years of neglect. A number of health programmes and projects are being developed and implemented by the Ministry of Health in cooperation with WHO, UNICEF, USAID and other agencies.

E. E-EMPLOYMENT

The ESCWA Professionals for Iraq Reconstruction online database is an example of e-employment efforts undertaken for Iraq[9]. The database provides a platform for compiling information on experts from Iraqi communities in Iraq and abroad who are potentially useful to the reconstruction efforts. Other online facilities and websites allow for submission of resumes of individuals interested in working in Iraq for the UN and other international and regional organizations by announcing vacancies and employment opportunities.

The Iraqis Rebuilding Iraq (IRI)[10] is another example of an online procurement facility that provides a platform for interested employers and those seeking employment to post their offers and resumes; respectively. IRI is implemented by the Ministry of Planning and Development Cooperation, UNDP and the International Organization for Migration (IOM).

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

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

Being home to one of the world's oldest civilizations, Iraq remains a country with highly diversified cultures. Iraq's ethnic groups are the Arabs, Kurds, Assyrian and Turkmen along with other minorities [15]. In fact, Iraqi Kurdistan has been a largely stable and autonomous region since the end of the 1990-91 Gulf war [8]. The Kurdistan Regional Government (KRG) has been based in Erbil since [16].

Digital content reflecting cultural and linguistic diversity is available online whether in the Arabic or Kurdish languages. Many agencies and organizations located in the Iraqi Kurdistan region work on developing online website with view to preserving, and promoting the Kurdish language and culture.

[9] www.escwa.org.lb

10 http://www.iraq-iri.org/index.aspx

B. LOCAL AND NATIONAL DIGITAL CONTENT DEVELOPMENT

National efforts or projects to digitize local content are yet unavailable.

C. ARABIC DOMAIN NAME SYSTEM - ADNS

Contribution by Iraq to the ADNS initiatives and activities has been quite weak.

D. ICT TOOLS, AND R&D PROGRAMMES FOR

No information is available on ICT tools for machine level R and D programmes.

IX. MEDIA

A. MEDIA INDEPENDENCE AND PLURALISM

During the pre 2003 regime, the Iraqi media was controlled and closely monitored by the Government. The press was closely monitored and directed. No more than four, government controlled daily newspapers were published. In post 2003, numerous TV and radio stations, and more than 100 newspapers were launched with no official monitoring or censorship applied by the Government [18]. However, a number of religious groups are imposing their own monitoring on the media with disastrous consequences to those that sway from the acceptable lines.

Currently, ownership of the media may be split into three categories, although all are subject to religious influences and heavy handedness:

- Government owned;
- Political parties owned;
- Independent [18]

B. THE MEDIA AND ITS ROLE IN THE INFORMATION SOCIETY

Traditional media means play a role in dissemination and exchanging information between the different regions of Iraq. It is noteworthy that the situation for journalism in Iraq remains quite difficult. Journalists, whether Iraqi or foreign are still the subject of threats and attacks [18]. Additionally, in some instances, journalist have been attacked and in some cases arrested.

C. GENDER PORTRAYAL IN THE MEDIA

The ICT sector in Iraq was dominated by female professionals in the 80's and 90's. This situation has changed in recent years. More and more communities in Iraq are being subjected to harassments imposed by influential religious groups. Although women have been able to achieve political representation and participate in numerous economic and social domains, but the country have had serious setbacks due to misinterpretation of religious rules. There is a lot to do to restore the status of women in the society back to the days of two decades ago. Official statistics or reports on balanced gender portrayal are unavailable.

X. INTERNATIONAL AND REGIONAL COOPERATION

A. FINANCING OF ICT NETWORKS AND SERVICES

Post 2003 Governments relaxed its control on the mobile and fixed telephone networks, as well as the Internet which witnessed unprecedented growth in recent years. Most of the infrastructure projects were implemented by international companies, NGOs, or through UN projects, whether in the form of donations

or investments. Examples of current partnerships include IRFFI managing UN and World Bank funds. Many projects implemented by the Iraq Trust Fund have fostered partnerships among implementing agencies, central and local authorities as well as the private sector. All GSM operators in Iraq are results of regional and/or international partnerships.

A new cooperation between the Ministry of Higher Education and Scientific Research (MOHESR) and Ministry of Communications was launched during the Iraq ICT and Education Summit that was held at Sharjah, UAE in February 2007. The cooperation will aim to fully utilize the 35 data centres that were established by MOHESR [7].

B. INFRASTRUCTURE DEVELOPMENT PROJECTS

The GoI is exerting great efforts towards developing ICT infrastructure in Iraq. Previous sections include detailed information on relevant projects.

C. REGIONAL PLAN OF ACTION (RPOA)

The RPoA stipulates that conflict-stricken countries should be given special attention in terms of investment and partnership schemes. National Iraqi endeavours towards building the Information Society currently stem from local ministerial or enterprise strategies without obvious reference to the RPoA.

XI. MILLENNIUM DEVELOPMENT GOALS – MDG

A. PROGRESS TOWARD ACHIEVING THE MDGS

MDGs are being observed in development projects funded by the International Reconstruction Fund Facility for Iraq (IRFFI); which is managed by the United Nations Development Group (UNDG) and the World Bank. A Cluster system was formalized to respond to basic reconstruction and development needs as listed below:

- Cluster A: Agriculture, Food Security, Environment and Natural Resource Management;
- Cluster B: Education and Culture;
- Cluster C: Governance and Human Development
- Cluster D: Health and Nutrition;
- Cluster E: Infrastructure Rehabilitation;
- Cluster F: Refugees, IDPs and Durable Solutions.

As ICT is a cross cutting element in the programmes and activities of all the clusters, many projects that are proposed or being implemented as part of the clusters' strategic frameworks have visible ICT components.

The tables below show Iraq's basic human development indicators. The Human Development Report of 2006 could not calculate the Human Development Index for Iraq, amongst other countries such as Somalia and Andorra for lack of current data.

Table 4. Iraq GDP

	2002	**2003**	**2004**	**2005**	**2006**
GDP (US$ bn)	19.0	12.7	25.5	34.7	40.3
Real GDP growth (%)	-14.2	-35.3	46.5	3.7	1.9

Source: The Economist Intelligence Unit. June 2007.

Table 5. Basic Indicators

Life expectancy at birth (years) 2000 - 2005	**Adult literacy rate** (% ages 15 and older) 2004	**Combined gross enrolment ratio for primary, secondary and tertiary schools** (%) 2004	**Total population** (thousands) 2004
58.8	74.1	59.7	28,057

Source: UNDP. Human Development Report, 2006

Table 6. MDG Indicators

Under-five mortality rate (per 1,000 live births) 2004	**Net primary enrolment ratio** (%) 2004	**Population undernourished** (% of total population) 2001/2003	**Population with sustainable access to an improved water source** (%) 2004	**Seats in parliament held by women Lower or single house** (% of total)	
				1999	**2006**
125	88	na	81	11	25.5

Na= not available
Source: UNDP. Human Development Report. 2006

B. USE OF ICT FOR ACHIEVING THE MDGS

ICT facilitate the achievement of MDGs by [19]:

- Providing simple communication means at low costs;
- Providing media to exchange and disseminate knowledge;
- Access rural and marginalized communities;
- Improving access to information in the education and health sectors;
- Leading to higher productivity and better standards.

The Ministries of Education, Science and Technology as well as of Communication participated in international conferences on ICT, particularly those organized by the Iraq Development Programme revealing the GoI move towards integrating ICT as a crosscutting sector in all other domains.

C. ICT FIELD PROJECTS AIMING AT ACHIEVING MDGS

ESCWA's Iraqi Networking Academies and ICT in Education projects are well within the confinements of the MDGs. Refer to section 4 for further information.

XII. WORLD SUMMIT ON THE INFORMATION SOCIETY - WSIS

Iraq has not been active in the region's effort of the WSIS process and it was poorly represented, or absent, in many of the events that took place in ESCWA and LAS [17]. Iraq is currently operating within its National Development Strategy and the International Compact with Iraq.

A. FOLLOW-UP AND EVALUATION

Follow-up and evaluation activities on the WSIS are yet unrealised in Iraq.

B. Initiatives and Projects

The ICCI has compiled statistical information on the status of ICT in Iraqi universities.

C. Success stories

Websites on best practices for projects in Iraq are developed by International agencies such as the UNDP. For example, the Iraq Development Programme website, or the Iraqis Rebuilding Iraq website are regularly updates to reflect recent activities, share information and best practices in implementing projects in Iraq.

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