

**ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA)**

**NATIONAL PROFILE OF THE INFORMATION SOCIETY  
IN LEBANON**

United Nations

Distr.  
GENERAL

August 2007  
ORIGINAL: ENGLISH

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## Introduction

The Lebanese Republic, which gained independence from France in 1943, is located in Southwest Asia, at the eastern edge of the Mediterranean Sea. With a relatively small area of 10,452 sq km (4,036 sq mi), the population has reached 4.0 million in 2005 and the GNI per capita was estimated at 6,320 in 2005<sup>1</sup>.

During the past 5 years, many ICT developments took place these developments included the formulation of an e-Government strategy in 2002 and the development of the “National e-Strategy”. The first profile of the IS, completed in 2003, was officially adopted by the Office of the Minister of State for Administrative Reform (OMSAR) in May 2004. During 2005, OMSAR presented plans for the implementation of the “National e-Strategy” to the Office of the Prime Minister (OPM).

Other activities included the active participation of the Lebanese Government and the private sector in the World Summit on the Information Society (WSIS) and the setting up of national working groups to follow up on WSIS recommendations. Three Government agencies were represented in these groups namely: the Ministry of Telecommunications (MOT); OMSAR; and the Ministry of Economy and Trade (MOET).

### I. THE ROLE OF GOVERNMENTS AND ALL STAKEHOLDERS

#### A. NATIONAL INFORMATION SOCIETY POLICIES AND E-STRATEGIES

In October 2003, the Lebanese Government, through the United Nations Development Programme (UNDP) and OMSAR, completed the development of the “National e-Strategy”. The vision was aimed at "moving the economy and society of Lebanon towards a Knowledge Based Society in the shortest possible time while at the same time addressing related challenges and opportunities that Lebanon is facing"<sup>2</sup>. Thirty-two policies, grouped under seven initiatives<sup>3</sup>, were proposed as vehicles for implementing the strategy. A portal ([www.e-gateway.gov.lb](http://www.e-gateway.gov.lb)) was designed and developed to incorporate all information and data pertaining to the various initiatives that are related to the project.

In May 2004, a 2-day conference held at UN-ESCWA (United Nations – Economic and Social Commission for Western Asia), analyzed the regional e-strategies. During the same conference, Lebanon officially launched its "National e-Strategy". In 2005, OMSAR and UNDP followed up with a series of stakeholder meetings that were aimed at launching the “National e-Strategy” and formulating a coherent plan for its implementation. Participants were chosen from the public and the private sectors, academia, NGOs and civil society. Issues and discussions centered on the educational, economic, social and infrastructure sectors. The consensus outcome of the working groups was presented during a national conference in November 2005. One of the main policy recommendations was the creation of a "National ICT Coordinating Office” (NeSCOOR) that would be based at the Office of the Prime Minister (OPM). NeSCOOR started its activities in February 2007 and since then, the committee has, in close cooperation with the “US Partnership for Lebanon” initiative, launched several national projects that included the establishment of a Lebanese broadband strategy and the proliferation of community access centers.

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

During the last two years, the number of ICT-centric community centers in Lebanon increased significantly. Various organizations and foundations, which included the Professional Computer Association (PCA), UN-ESCWA, UNDP, the Safadi Foundation and the Saradar Foundation, established ICT access

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<sup>1</sup> Source: World Bank

<sup>2</sup> Source: National e-Strategy for Lebanon, executive summary, page 1 ([www.e-gateway.gov.lb](http://www.e-gateway.gov.lb))

<sup>3</sup> [msib.omsar.gov.lb/Cultures/en-US/Publications/Strategies/National+eStrategy.htm](http://msib.omsar.gov.lb/Cultures/en-US/Publications/Strategies/National+eStrategy.htm). Refer to [www.escwa.org.lb/mtecp/](http://www.escwa.org.lb/mtecp/) for a listing of these projects in Lebanon.

centers in various parts of the country, mostly in remote and underprivileged areas. Their designations differ but they share goals and activities, their most common being the provision of affordable Internet access and ICT training to the underprivileged. The most widely spread initiative is called PiPOP (PCA Internet Point of Presence). Developed to address the "digital divide" in the Lebanese society, the PiPOP Website ([www.pipop.org](http://www.pipop.org)) included, when last checked during August 2007, information on 43 centers.

In September 2006, as a response to the devastation caused by the Lebanese-Israeli war that took place during July and August of the same year, leading US business leaders established a "US–Lebanon Partnership Fund" which aims at providing critically needed resources to assist in the reconstruction efforts<sup>4</sup> as well as helping build a better future for the Lebanese people. The partnership relies on donations and includes the following corporations: Microsoft, Intel, Cisco, Ghafari Inc. and the Occidental Petroleum Corporation. Its main objectives are:

- Crisis Relief and Response;
- ICT Infrastructure;
- Workforce Training;
- Job Creation;
- Connected Government.

It is worth noting that this partnership includes the CEOs of three leading ICT companies and that many of its initiatives emphasize the role of ICT as stated below:

"The Partnership is committed to connectivity by helping modernize Lebanon's ICT infrastructure, improve the speed and efficiency of Internet traffic flow, provide a foundation for improved communications and e-commerce, and potentially decrease costs for the Lebanese people. The effort includes assistance to the Telecommunications Regulatory Agency (TRA) to establish an enabling environment for ICT that can promote innovation, investment and infrastructure development as well as working to provide an International Internet Gateway and Internet Exchange Point for the country."<sup>5</sup>

### C. ROLE OF NON GOVERNMENTAL ORGANIZATIONS

Very few NGOs have been directly involved with ICT. Below are examples of initiatives that were implemented by the Collective for Research and Training for Development-Action (CRTD-A), an NGO based in Lebanon and by the Safadi Foundation.

#### *1. ICT Initiatives by the Research and Training for Development-Action (CRTD-A)*

CRTD-A created an initiative that covered a fair amount of ground in what was termed "K4D" or Knowledge for Development. During 2005, the NGO brought together a group of ICT experts who conducted a series of workshops, surveys and e-readiness studies that were specifically aimed at the social sector. The following information about three K4D projects was provided by the Director, Mr. Omar Traboulsi:

#### **1.1 The Lebanon Development Gateway**

The Lebanon Development Gateway Foundation (LDG) is a project of CRTD-A. LDG is a web based platform that focuses on social and economic development information, development policy, and gender equality. It mainly aims at creating an interactive knowledge portal in Arabic and English which acts as a gateway to links, resources, data, information and stimulates dialogue on social justice as well as gender and development through e-posting, e-newsletters and other forms of communication and dialogue. To satisfy its

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<sup>4</sup> Refer to the following site: [www.lebanonpartnership.org](http://www.lebanonpartnership.org).

<sup>5</sup> Ibid

objectives, LDG assesses the needs of e-readiness and e-knowledge needs, produces governance and marketing studies, holds stakeholder workshops, designs business plans and develops and launches different portals.

## **1.2 Community Training and Learning Centers**

### a) Objectives:

Training communities on e-knowledge creation, ICT training of trainer (TOT) courses, development of a pool of key trainers and creation of local websites for activist networks.

### b) Activities:

IT training, creation of knowledge and local websites and networking.

## **1.3 Women IT Pilot Tele-Centers.**

### a) Objectives:

Promoting the creation of spaces that would advance ICT learning, exchange and job creation within current local women associations and groups.

### b) Activities:

Connectivity, training and promotion of various subjects that include e-commerce, e-courses in gender and leadership and access to knowledge.

The sources of funding for this project are the Development Gateway Foundation, the Women Learning Partnership and the Microsoft UP Fund.

## *2. ICT Initiatives by the Safadi Foundation*

Since its creation in 2001, the Safadi Foundation<sup>6</sup> has carried out several ICT initiatives. The foundation views ICT as a means to develop the capacity of individuals and groups, especially in remote and rural areas that lack job opportunities and that do not have the ability to connect with the outside world. Its stated goals are:

- Informing the general public about the use of ICT, and the opportunity it provides;
- Strengthening the skills and technical expertise needed to empower communities, enabling them to obtain information and boost their level of knowledge;
- Encouraging communities to use ICT to open new horizons for learning and for work.

Various Safadi Foundation initiatives are described below.

### **2.1 Eradicating IT Illiteracy**

Since its inception, the foundation has conducted a 10-week training program on the use of computers and the Internet. Training is carried out in three types of training centers: a) fixed, currently numbering sixteen; b) summer training centers, currently numbering five; and c) mobile training centers, currently numbering one.

The computer-training program targets the community at large as well specific groups that include municipalities, unions, and NGOs.

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<sup>6</sup> [www.safadi-foundation.org](http://www.safadi-foundation.org).

## **2.2 Providing ICT Services to Underprivileged Communities**

The foundation has set up several computer and Internet access centers offering various services that include affordable computer use, document printing, Internet access and e-mail.

## **2.3 Helping to Bridge the Digital Divide in Public Schools**

This program aims at equipping public schools with computer laboratories. Starting in 2004, the foundation, in partnership with UNESCO, has provided more than 300 refurbished PCs to 43 public schools in Northern Lebanon.

## **2.4 Assisting in the Creation of ICT Centers**

The foundation assists in establishing ICT Centers in municipalities, universities, unions as well as vocational training institutes.

### **D. PROGRESS TOWARDS FULFILLMENT OF NATIONAL POLICIES AND STRATEGIES**

During 2005 and 2006, Lebanon's political instability led to the suspension of many national-level ICT projects. The creation of the Telecommunications Regulatory Authority (TRA) was a rare exception.

In July 2002, the Lebanese government adopted Telecommunications Law # 431. During the following years, the European Union provided funds and international advisors to help the Ministry of Telecommunications in its efforts to create the TRA. In 2007, The TRA was finally launched with its top management appointed by midyear. The TRA is currently in the process of recruiting the remainder of the staff.

The appointment of the TRA implies that all regulatory activities which had been previously handled by the Ministry of Telecommunications will be transferred to the authority. The mission of the TRA<sup>7</sup> is to regulate the telecommunications sector and to create a competitive environment that will encourage companies to deliver high-quality services at reasonable prices which will have a positive effect on the development of the Lebanese economy.

The TRA will have responsibilities in six main categories:

- Licensing of telecommunications operations and services and compliance with license conditions and other regulations;
- Management and monitoring of the radio frequency spectrum;
- Technical matters covering topics such as interconnection, numbering, standards, type approval and quality of service;
- Consumer affairs, public relations and protection of the consumers' interests;
- Economic and financial matters covering such aspects as: policy, market analysis and tariffs;
- Support and administrative services for the TRA including: Financial affairs, Internal auditing, Human resources, IT & information systems, and General internal services.

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<sup>7</sup> [www.tra.gov.lb](http://www.tra.gov.lb)

## II. ICT INFRASTRUCTURE

### A. INFRASTRUCTURE

Currently, there is no public entity in charge of ICT development and coordination in Lebanon. The telecommunications are a monopoly of the Lebanese Government (Ministry of Telecommunications MOT) that owns and/or licenses all fixed, mobile, and wireless networks. Besides MOT, there exist several players in the public sector namely: the ministerial ICT committee; the ministry of economy and trade; the ministry of administrative development; the investment development authority of Lebanon; the central bank; the parliamentary ICT committee; the ministry of finance; and the ministry of justice. OGERO (Organisme de Gestion et d'Exploitation de l'ex Radio Orient), established in 1972 and 100% owned by the government, is the only entity in Lebanon responsible for the operations, maintenance, sales, marketing, billing and management of the fixed telecom network in the country.

In 2002, a new law was issued for the privatization of the ICT sector especially that the privatization of the ICT sector has become imperative. In fact, privatization of telecom is imperative, also clearly indicated to the international community during the Paris III conference and must be completed within a period of time not exceeding 5 years. The Lebanese Ministry of Telecom has been asked in many occasions to speed up the privatization process, which seems to be more difficult than expected since 38% of the state budget comes from telecom revenues. However, the Ministry of Economy & Trade and Ministry of Finance, being the main players, are making all possible efforts to complete the privatization process of "Liban Telecom" and fixed lines by mid 2007.

Despite the destruction in Lebanon during the war in summer 2006, and the fact that the valuation of the telecom sector in Lebanon may have slightly been affected after the war, the government still expects to negotiate a good price, when it - as planned - privatizes the mobile telecom sector later this year. According to the Lebanese Higher Privatization Council, the war has delayed the privatization process, but not disrupted it. The Council's experts trust that privatization of the telecom sector will boost investments and create many jobs. The value of each of the existing two mobile networks, being the most important elements, of the sector is between USD1.5 - 3 billion, according to recent estimates by international investment banks. Two new GSM companies are expected to enter the market at a later stage.<sup>8</sup>

In what follows, the basic ICT infrastructure indicators namely: telephone penetration; Internet backbone; ISPs and ASPs would be overviewed.

#### *Telephone penetration*

During 2003-2004, the MOT has disseminated throughout the Lebanese territory public telephone booths. These function by means of prepaid telephone cards. Table 1 provides a listing of major indicators for fixed and mobile telephony for Lebanon as of 2003.

There are two mobile operators in Lebanon. In 2004, the government contracted Detecon International of Germany and MTC of Kuwait to manage the existing mobile licenses. The first was named Alpha and replaced Cellis. The second was named MTC Touch and replaced Libancell.

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<sup>8</sup> <http://www.ambbeirut.um.dk/da/menu/Markedsmuligheder/Sektoranalyser/ITTelekommunikationOgElektronik/>

**Table 1. Fixed and mobile telephony indicators for Lebanon (2005-2006)**

	2005	2006
Main telephone lines in operation	634,700	681,400
Main telephone lines in operation per 100	17.75	18.85
Cellular mobile subscribers (K)	993,600	1,103,400
Cellular mobile subscribers per 100	27.78	30.53

Source: International Telecommunication Union

#### Internet backbone

Lebanon still does not have Public Data Network (PDN). Table 2 provides a listing of major Internet backbone indicators for Lebanon for 2005- 2006.

	2005	2006
Subscribers (000s)	230	310
Subscribers per 100 inhabitants	6.43	8.58
Users (000s)	700	950
Users per 100 inhabitants	19.57	26.28
Total (000s)	130	170
Total per 100 inhabitants	3.63	4.7

Source: International Telecommunication Union

**Table 2. Internet backbone indicators for Lebanon (2006)**

Leased lines subscribers (K)	7.6
Initial cost [Leased Lines] (US \$)	667
Monthly charge [Leased Lines] (US \$)	200
ISDN subscribers (K)	0.92
Initial cost [ISDN] (US \$)	551
Monthly charge [ISDN] (US \$)	37(1)

Notes: (1) Value ranges between 37\$ and 42\$ Source: ICT Indicator database ESCWA, ICTD.

#### ISPs and ASPs

Overall, the quality of service of ISP in Lebanon is good. However, Internet fees are still relatively high in Lebanon as compared to other countries in the ESCWA region particularly if one considers the low bandwidth offered. Table 3 provides a listing of major ISP indicators for Lebanon for the years 2002 and 2003.

#### Access

According to decree 8804 dated 10/10/2002<sup>9</sup>, the following Web site provides the new fixed rates for Internet dial-up users which are applicable starting 1/2/2003: [www.informs.gov.lb/EN/Main/Internet\\_Rates.asp](http://www.informs.gov.lb/EN/Main/Internet_Rates.asp)? The initial pricing structure provided for the 4-digit numbers was updated in 2007, making it more beneficial as it now relies on hourly instead of hour-bracket rates.

<sup>9</sup> [www.informs.gov.lb/EN/Main/Internet\\_Rates.asp](http://www.informs.gov.lb/EN/Main/Internet_Rates.asp)?

Less than 1 hour	49 LL/minute (\$0.032)
1 hour to 15 hours	750 LL/hour (\$0.5)
16 hours to 300 hours	500 LL/hour (\$0.33) for additional hours in the range

(More details are available at OGERO's site<sup>10</sup>)

**Table 3. Internet Subscribers in Lebanon (2006)**

	2006
<b>Internet subscribers (K)</b>	310
<b>Internet subscribers per 100</b>	8.59
<b>Internet users per 100</b>	26.32
<b>Internet users (K)</b>	950
<b>Broadband subscribers per 100</b>	4.7

Source: International Telecommunication Union, 2006.

By late 2004, the MOT introduced a broadband service. This service was based on cable connection to satellites on the tops of buildings. Microwave connection was made through the registered microwave providers. The bandwidth came in packages of 128, 256 and 512 Kbits. The prices for monthly connections started at \$50 and increased in proportion to the bandwidth. To acquire the service, consumers had to go through 3 companies: the installer, who collected the charges, the microwave provider and the ISP. Installers did not charge the full cost of the satellite but an official 1/3 of that, as it would be shared by other consumers in the building. The table above indicates the number of broadband subscribers per 100 in 2006.

#### B. INVESTMENTS IN ICT INFRASTRUCTURE AND DEVELOPMENT OF NEW SERVICES

Lebanon is a country open to foreign direct investment by tradition. "The Investment Development Law" authorizes the "Investment Development Authority of Lebanon" (IDAL), to award licenses and permits for new investments as well as to grant special incentives, exemptions and facilities to larger enterprises. In an attempt to attract foreign investments, IDAL launched in 2003 the "Investors Matching Service" to facilitate the creation of strategic international-local partnerships through joint venture, equity participation, acquisition, and others. In the last few years, many factors have encouraged foreign companies to set up offices in Lebanon. According to statistics from the Lebanese Ministry of Economy and Trade 45 foreign companies launched offices, representative offices or branches in Lebanon in 2005.

New ICT development projects in Lebanon can enjoy the general business climate in the country, where trade is open, taxation is reasonable, and related commercial policies compare favorably to other countries in the Middle East. The "LOCO Monitor"(3) tracked 71 foreign direct investment projects (FDI) in Lebanon since 2002 to date, of which 12 was in the ICT sector. A survey conducted by "Connexus", a local consultancy firm, asserts that investors are still interested in the telecom sector in Lebanon despite the war and that the value of the telecom equipment such as satellites and antennas that were destroyed during the war is a small portion of the equation. Although Lebanon's telecom infrastructure suffered hits in the war, mobile-phone service was only interrupted in few areas.

Danish companies may benefit from the favorable business atmosphere and the relatively cheap human resources in Lebanon to set off software production facilities or outsource software development. The Lebanese market of software development and services is generally promising for foreign investors and exporters. Specialized Danish companies can also provide consulting for the IT new projects and to the

<sup>10</sup> [www.ogero.gov.lb/Published/EN/internetline1.html](http://www.ogero.gov.lb/Published/EN/internetline1.html).

expansion and renovation projects of the existing infrastructure. Local expertise is limited, when it comes to especially the design of infrastructure for broadband, security and physical connectivity and network management. Local development of telecom and computer consulting services may lead to additional purchases of computers, peripherals and communication equipment related to switching, routing, hubs and nodes. High tech computer and telecom trade fairs in Lebanon also offer many opportunities for Danish firms to expose their products to a wider audience in the region.<sup>11</sup>

### *iBurst Technology*

The Ministry of Telecommunications provided Cedarcom with a wireless data networking license in 1997. Cedarcom's license was activated in 2003 and the company started providing fixed wireless services in 2004. The technology and application neutral license enables Cedarcom to use frequencies 1.9 GHz, 2.6 GHz and 3.5 GHz for point to multi-point applications and 7 GHz for point-to-point links. The license terms include 20% revenue share, in addition to LBP 100 million (US\$ 66,335) in annual license fees. There are three other licensed data operators in Lebanon that have their respective frequencies. These are GDS, Pesco, and Cable One.

In December 2006, Cedarcom and Japan's Kyocera announced the deployment of a mobile wireless broadband network in Lebanon based on iBurst technology. The new service comes under the name "Mobi". Cedarcom has obtained exclusive rights to Kyocera iBurst in Lebanon, Kingdom of Bahrain, United Arab Emirates, Sierra Leone and Liberia.

During the time when ADSL was being prepared for, Lebanon's wireless operator Cedarcom deployed a mobile wireless broadband network based on iBurst technology. Lebanon currently has 4 wireless broadband providers<sup>12</sup>.

Cedarcom had a soft launch of Mobi service in November 2006. The service provides an always on connection. It has a maximum speed of 1 Mbps downlink and maximum of 354 kbp/sec uplink. There are plans to make 2 Mbps downlink speed available in 2007.

The service area covers almost 1.5 million inhabitants and is available to over 90% of businesses in Lebanon.

Other wireless services are also available from other sources in Lebanon such as WISE and WIGO (from CableOne).

### *Introduction of DSL*

Late in 2004, the MOT announced its plans to introduce DSL into Lebanon. Prices were announced starting at \$50 per month for 512 Kbits/sec. Automatically, this was learned, the installers of satellites stopped charging the official 1/3 of the dish costs and went into full charge. It became standard to acquire the old bandwidth of 128 Kbits/sec for a one time cost of \$270 or so. Soon after that, there mushroomed a variety of independent brokers who provided modems that could connect to microwave centers, at similar prices.

The long wait by the MOT was mostly due to political maneuvering by the those who stand to lose most with the introduction of DSL (generally accepted to be the ISPs and the Microwave operators).

The DSL service was finally made available in May 2007. The Ministry of Telecommunications took a major step and joined in the ISP services. It now offers a service called BLINK which was launched in spring 2007. This was seen as a direct competition with the private sector as the MOT offered its services at the same rates, yet it did not have the history and experience found in the private sector.

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<sup>11</sup> <http://www.ambbeirut.um.dk/da/menu/Markedsmuligheder/Sektoranalyser/ITTelekommunikationOgElektronik/>

<sup>12</sup> Arab Advisors Group *Strategic Research Service*, 4 January 2007, page 1.

**Table 4. DSL fees in Lebanon**

	128 Kbps/ 32KbDs	256 Kbps / 64 kbps	512 Kbps / 128 kbps	1024 kbps / 256 kbps	HDSL up to 2.3 Mbps
Maximum allowed usage (both directions)	Up to 2GB	Up to 3GB	4GB	5GB	8GB
Residential	\$ 23	\$ 33	\$ 46	\$ 76	\$ 199
Corporate	\$ 30	\$ 43	\$ 56	\$ 90	\$ 199
Educational Institutions	\$ 20	27	\$ 40	\$ 66	\$ 159
Setup fee	\$ 36	\$ 36	\$ 36	\$ 36	\$ 133

Source: the Ministry of Telecommunications<sup>13</sup>.

### C. ICT CONNECTIVITY

#### D. ICT EQUIPMENT AND SERVICES

The Lebanese ICT sector is characterized by relatively small scale but highly adaptive firms. It also enjoys many advantages, including skilled workforce, outstanding advertising firms, media content providers and web portals, competitive Internet service providers, and well developed GSM cellular networks. Software programmers and designers in the Lebanese ICT sector are considered among the best in the Middle East. The Lebanese government has recently joined the private sector to develop e-government services in the country, though it has not yet developed adequate legal infrastructure for the sector.

The average growth rate of the Lebanese ICT sector is around 13-15% annually. The annual turnover is estimated at USD 400 mio. in the private sector and the annual revenues coming from the sector to the state budget are USD 1.2 bn. In 2005, the sector included some five hundred companies that employed more than 5,000 qualified persons. Some 1200 new ICT university graduates join the sector every year. Furthermore, There are two collective institutions; Professional Computer Association of Lebanon (PCA) and The Association of the Lebanese Software Industry (ALSI), that help foster IT specialists in the country. In 2004, the Lebanese government initiated “Berytech”, Beirut Emerging Technology Zone (BETZ), which is a technology park area where local ICT entrepreneurs can either independently or in alliance with international organizations setup offices for the creation of new or value added ICT products or services.

Lebanon enjoys a modern network of fixed telecommunication lines, which has recently gone through major upgrades. The network offers the possibility of connecting some 1.3 million lines to a fibre optic backbone. Furthermore, there are five(1) licensed Integrated Services Digital Network (ISDN) companies in the country.

In accordance with a recent study conducted by the newspaper “The Daily Star” in July 2006, Lebanon played an important role in the 1990s in setting the regional pace for Internet penetration. Over the next 6 years (2000-2005) however, the IT sector grew by 2% only, compared with 50% in average in other Arab countries. This slow rate has mainly been due to the slow process of decontrolling the sector. According to the study, Lebanon ranks eighth out of 12 Arab countries in terms of Internet penetration. There are five(2) Internet service providers (ISP) in Lebanon and all purchase bandwidth from the state-owned telecom firm, which offers two dial-up Internet connection speeds, a 33-56 kilobyte minimum capacity and a128 kilobytes maximum capacity.

<sup>13</sup> [www.ogero.gov.lb/Published/EN/dslc.html](http://www.ogero.gov.lb/Published/EN/dslc.html)

Two operators acting under management contracts provide mobile phone services in Lebanon; Mobile Telecommunications Company MTC) and Fal Dete Telecommunications (FDT). Both are privately owned and share the market almost equally with a 50.2% for MTC and 49.8% for FDT. In 2005, the number of subscribers was 1.01 mio. with a growth rate of 18.3%. The penetration rate for Lebanon (defined as mobile subscribers divided by total country population) was 28.1% in 2005.

Software development has grown steadily in Lebanon in the past few years. Most firms develop expertise in specific areas, such as banking, insurance, hospital and healthcare packages and offer installation and customisation of software up to the clients' specific needs.

E-business is currently in practice in Lebanon, through online shopping, auctions, content publishing, services and preparation for m-commerce. E-payment is in constant development. A number of local banks offer this card service to around 1 million clients, which corresponds to 25% of the population.

Most major international IT hardware manufacturers are represented in the country by local agents and distributors. In addition, a number of Lebanese companies locally assemble IT products, mainly PCs.

The national ICT standards guidelines and operating procedures have been developed for the main ICT categories based on international best practice, such as hardware networks and cabling, telecommunications, database systems, operating systems, buildings, rooms and environment, quality management, software applications, selection and evaluation framework, information integrity and security, data definition and exchange, risk management, and configuration management.

The country's imports and exports of ICT equipment and software were in 2005 around USD 135 mio. (1.5% of total imports) and USD 9 mio. (0.5% of total exports) respectively.<sup>14</sup>

#### D. INTERNET GOVERNANCE

So far, governance through the internet is not available. There are very few eGovernment applications that are truly accessible to the citizen in direct and efficient mode. Odd applications like application tracking in the Municipality of Jounieh, or the [www.informs.org.lb](http://www.informs.org.lb) web site that provides a comprehensive list of governmental procedures the citizen can learn about are a few examples. The government has still not managed to develop a pragmatic approach to eGovernment.

One of the main reasons remains the lack of a suitable infrastructure. While neighboring countries speed into new technologies such as WiMax (Saudi Arabia: Mobily, the second largest GSM operator in the Kingdom of Saudi Arabia, has deployed its PacketWave broadband wireless systems in the four largest cities of that nation, Riyadh, Jeddah, Dammam and Khubar, as well as in Dahrán. Jordan: in addition to the license that was granted to Batelco for 3.5 GHz, the the Telecommunications Regulatory Commission (TRC) has awarded a license for Fixed Broadband Wireless Access (FBWA) to ATCO Clearwire in the 3.6 GHz frequency. Egypt is also eyeing WiMax and it is set for introduction in 2008 in the UAE. Lebanon stays behind in all of this.

Secondly, the official bandwidth that is available to Lebanon is still low compared to the required usage for such governance. In early 2007, this is still at 350 MBit/second.

#### F. TRADITIONAL MEDIA

The traditional media in Lebanon are very capable. The several TV channels are available locally and to the rest of the world through satellite. Most channels are supported by radio stations. Some by print media. However, and again due to lack of proper infrastructure, the powerful TV channels have not been able to set up efficient web site with streaming audio and video as have others in the region such as Al

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<sup>14</sup> <http://www.ambbeirut.um.dk/da/menu/Markedsmuligheder/Sektoranalyser/ITTelekommunikationOgElektronik/>

Jazeera. Those that do have such services are charging for them.

### III. ACCESS TO INFORMATION AND KNOWLEDGE

#### A. PUBLIC DOMAIN INFORMATION

**Table 5. Some available website of government organizations in Lebanon**

	<b>Organization</b>	<b>Website</b>
1	Ministry of Agriculture	<a href="http://www.agriculture.gov.lb">www.agriculture.gov.lb</a>
2	Ministry of Culture	<a href="http://www.culture.gov.lb">www.culture.gov.lb</a>
3	Ministry of Economy and Trade	<a href="http://www.economy.gov.lb">www.economy.gov.lb</a>
4	Ministry of Education and Higher Education	<a href="http://www.higher-edu.gov.lb">www.higher-edu.gov.lb</a>
5	Ministry of Energy and Water	<a href="http://www.energyandwater.gov.lb">www.energyandwater.gov.lb</a>
6	Ministry of Environment	<a href="http://www.moe.gov.lb">www.moe.gov.lb</a>
7	Ministry of Finance	<a href="http://www.finance.gov.lb">www.finance.gov.lb</a>
8	Ministry of Foreign Affairs and Emigrants	<a href="http://www.emigrants.gov.lb">www.emigrants.gov.lb</a>
9	Ministry of Industry	<a href="http://www.industry.gov.lb">www.industry.gov.lb</a>
10	Ministry of Information	<a href="http://www.ministryinfo.gov.lb">www.ministryinfo.gov.lb</a>
11	Ministry of Interior and Municipalities	<a href="http://www.moim.gov.lb">www.moim.gov.lb</a>
12	Ministry of Justice	<a href="http://www.justice.gov.lb">www.justice.gov.lb</a>
13	Ministry of Labor	<a href="http://www.mol.gov.lb">www.mol.gov.lb</a>
14	Ministry of Public Health	<a href="http://www.public-health.gov.lb">www.public-health.gov.lb</a>
15	Ministry of Social Affairs	<a href="http://www.socialaffairs.gov.lb">www.socialaffairs.gov.lb</a>
16	Ministry of Telecommunications	<a href="http://www.mpt.gov.lb">www.mpt.gov.lb</a>
17	Ministry of Tourism	<a href="http://www.lebanon-tourism.gov.lb">www.lebanon-tourism.gov.lb</a>
18	Ministry of Youth and Sports	<a href="http://www.shabab-ryada.org.lb">www.shabab-ryada.org.lb</a>
19	Government Forms and Citizen Services	<a href="http://www.informs.gov.lb">www.informs.gov.lb</a>
20	Office of the Minister of State for Administrative Reform (OMSAR)	<a href="http://www.omsar.gov.lb">www.omsar.gov.lb</a>
21	National Employment Office	<a href="http://www.neo.gov.lb">www.neo.gov.lb</a>
22	Presidential Palace	<a href="http://www.presidency.gov.lb">www.presidency.gov.lb</a>
23	PM office	<a href="http://www.pcm.gov.lb">www.pcm.gov.lb</a>
24	Lebanese Parliament	<a href="http://www.lp.gov.lb">www.lp.gov.lb</a>
25	Lebanese Army	<a href="http://www.lebarmy.gov.lb">www.lebarmy.gov.lb</a>
26	Internal Security Forces	<a href="http://www.isf.gov.lb">www.isf.gov.lb</a>
27	General Security	<a href="http://www.general-security.gov.lb">www.general-security.gov.lb</a>
28	Lebanese Customs	<a href="http://www.customs.gov.lb">www.customs.gov.lb</a>

**Table 6. Some available website of government organizations in Lebanon**

	<b>Telecommunication</b>	
29	TRA الهيئة الناظمة للاتصالات	www.tra.gov.lb
30	OGERO هيئة أوجيرو	www.ogero.gov.lb
31	Alfa	www.alfa.com.lb
32	MTC Touch	www.mtctouch.com.lb
	<b>Investment &amp; Banking</b>	
33	Banque du Liban	www.bdl.gov.lb
34	Beirut Stock Exchange (BSE)	www.bse.com.lb
35	Association of Banks in Lebanon	www.abl.org.lb
36	Investments Development Authority of Lebanon	www.idal.com.lb
	<b>Educational</b>	
37	The Higher Council for Childhood	www.site.atfalouna.gov.lb
38	Lebanese American University	www.lau.edu.lb
39	American University of Beirut	www.aub.edu.lb
40	Lebanese Arab University	www.bau.edu.lb
41	Lebanese University	www.ul.edu.lb
	<b>Research and Development</b>	
42	Center for Education Research and Development	www.crdp.org
43	Central Administration for Statistics	www.cas.gov.lb
44	Lebanese Agriculture Research Institute	www.lari.gov.lb
45	National Council for Scientific Research	www.cnrs.edu.lb
46	Industrial Research Institute	www.iri.org.lb
47	Lebanese Standards Institution	www.libnor.com
	<b>Port &amp; Post Services</b>	
48	Port of Beirut	www.portdebeyrouth.com
49	Beirut Rafic Hariri International Airport	www.beirutairport.gov.lb
50	Liban Post	www.libanpost.com.lb

B. ACCESS TO INFORMATION AND PUBLIC INFORMATION

C. MULTI-PURPOSE COMMUNITY PUBLIC ACCESS POINTS

D. USING DIFFERENT SOFTWARE MODELS

## IV. ICT CAPACITY BUILDING

### A. BASIC LITERACY

OMSAR has completed the first phase of an ICT training plan for the employees of Ministries and other Agencies. Around 2500 employees from almost all public administrations and agencies were trained as ICT end users and ICT advanced users based on a defined and agreed methodology. The second phase of this project was completed towards the end of 2005. Capacity building of civil servants is an on-going process, and OMSAR continues to launch similar projects. In addition, the Professional Computer Association (PCA), a Lebanese non-profit organization, has spearheaded an initiative that aimed at producing affordable personal computer (PC) with a view to increase access to information and PC penetration rate in Lebanon. The estimated price range of a PC (including the Microsoft Operating System and office licensing) ranges from 400 to 500 USD.

### B. ICT IN EDUCATION AND TRAINING

#### *Computers in schools*

The majority, if not all, of the private schools in Lebanon have computer laboratories for their students and use computers for administrative tasks. Based on a report released by Council for Development and Reconstruction (CDR) and dated July 2004, all public schools (1284 primary, intermediate and secondary) were rehabilitated<sup>15</sup>. Based on the needs assessment conducted by the Ministry of Education and Higher Education, the CDR executed a World Bank project that completed the supply and installation of 5000 computers and their peripherals to public schools and other bids for supplying the necessary equipment for the laboratories of 250 intermediate and secondary schools. Implementation of these projects started in August 2003<sup>16</sup>. During 2005, 2500 PCs were also supplied by the World Bank. These were meant for 320 general education schools and based on need. Eventually, they were allocated to computer labs and to administrative applications. Currently, the World Bank is finalizing a project for the supply of 1456 general education schools to run a School Information Systems. Two PCs per school will be supplied.

In addition to the above, the UNESCO Office in Beirut, through its "Bridging the Digital Divide" project, distributed more than 130 refurbished personal computers to 21 schools in the Northern Lebanon, in cooperation with a local NGO.

With all the above, the Lebanese education curriculum still needs to be amended to formally incorporate ICT in education and to necessitate the development of the teachers ICT capabilities.

#### *Vocational training*

There are three main types of institutions for delivering vocational education in Lebanon: technical schools, vocational high schools and technical institutes. Some vocational institutions provide ICT training.

#### *University education*

Lebanon has a total of 43 licensed private universities and one public university, namely the Lebanese University; an increasing number of these universities provide ICT related programmes. It is estimated that the total number of enrolled university students is around 130,000 out of which 14,000 graduates per year<sup>17</sup>. The estimated number of postgraduate students, which includes masters and doctoral studies, is around 3,500 and 4000<sup>18</sup>.

<sup>15</sup> Council for Development and Reconstruction, 2004 report, <http://www.cdr.gov.lb/indexe.html>.

<sup>16</sup> <http://csrd.lau.edu.lb/Publications/StudentReports/Education%20in%20Lebanon.htm>.

<sup>17</sup> Presentation "R&D Potential in ICT: Case Lebanon" by Hassan Diab, American University of Beirut, November 2003.

<sup>18</sup> Ibid.

## *Ministry of Education and Higher Education*

The Ministry has launched an Education Management Information System (EMIS). This encompasses a number of activities that will to: (i) EMIS at the Ministry, (ii) a School Information System (SIS), (iii) a National Education Network; (iv) Geographical Information System (GIS)/School Mapping; and (v) and the Information Management Unit (IMU) at the Ministry. Despite the difficult periods Lebanon is going through, good progress has been made on all fronts. Full implementation is expected by end of 2007.<sup>19</sup>

### **V. BUILDING CONFIDENCE AND SECURITY IN THE USE OF ICTS**

#### A. USE OF ELECTRONIC TRANSACTIONS AND DOCUMENTS

##### B. ONLINE TRANSACTION SECURITY

##### C. COUNTERING MISUSE OF ICTS

##### D. PRIVACY & DATA PROTECTION

#### E. INFORMATION SECURITY AND NETWORK SECURITY

### **VI. ENABLING ENVIRONMENT**

#### A. LEGAL AND REGULATORY ENVIRONMENT

As early as 2002, the Ministry of Economy and Trade recognized the importance of e-commerce as a tool that can help position Lebanese firms to take advantage of the global market. The growth of the e-business sector of the global economy has been impressive. The Ecomleb project was conceived and designed to address the main stoppers of e-commerce in Lebanon. Funding was secured through a € 1.7 Million grant from the European Commission.

The EU funded Ecomleb project (January 2004 – July 2005) had two main objectives:

- The development of the complete legal framework for e-commerce;
- Business development and awareness campaigns

The legal component of the Ecomleb project includes the drafting of a comprehensive regulatory framework including all aspects of Internet interaction and trading. Overall, 200 articles are being proposed under nine titles. Currently, the first objective is being followed up by a Parliamentary Committee that aims at approving the updated recommendations of the Ecomleb project<sup>20</sup>.

#### B. SECURE STORAGE AND ARCHIVAL

#### C. DOMAIN NAME MANAGEMENT

Domain name management in Lebanon has been assigned by ICANN (Internet Corporation for Assigned Names and Numbers) to the American University of Beirut.

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<sup>19</sup> Newsletter of the Education Development Project (May 2007) issued by the Ministry of Education and Higher Education. The EDP is part of the World Bank Loan #LE-7010.

<sup>20</sup> [www.ecomleb.org](http://www.ecomleb.org).

## D. STANDARDIZATION IN ICT

A project completed by OMSAR in 2003 developed Standards and Guidelines for 13 major segments. These were meant to provide public sector agencies with ICT standards and procedures to use in such areas as: hardware, telecoms, networking, data integrity, software applications, quality management, etc. The project developed the standards which were supposed to be updated and implemented. Currently, the documents are available on OMSAR's site and can be accessed by the general public<sup>21</sup>.

## E. ICT SECTOR

### F. SUPPORTING MEASURES

**IDAL Technology Park** – [www.idal.com.lb](http://www.idal.com.lb)

A national initiative to build a technology park in Lebanon, Beirut Emerging Technology Zone (BETZ)

**Berytech** - [www.berytech.org](http://www.berytech.org)

Technology pole

**PIPOP** – [www.pipop.org/](http://www.pipop.org/)

PiPOP is a program initiated by PCA in order to address the "digital divide" in the Lebanese society.

## VI. ICT APPLICATIONS

### A. E-GOVERNMENT

#### *Computerization of public administration*

The e-government readiness index in 2003 was 0.424 with a rank of 6922. It is on the rise and in 2005, it became 0.4560 with a rank 71. (However, in 2004, its rank was 74 so there was a drop in 2005). The index for 2005 is higher than that of the average for the Arab Countries which was 0.438423.

Most ministries and autonomous agencies have a Web site even though these sites are mostly informative in nature and provide little transactional or interactive services with citizens.

#### *Digitization of information*

On 21 January 2002, OMSAR launched a one-stop information shop consisting of two parts: a phone help line (1700) and an Internet website [www.informs.gov.lb](http://www.informs.gov.lb). Currently, a project is underway to develop a full fledged e-government portal.

#### *e-Procurement applications*

There is a current project for the implementation of online procurement in the government. It is in two tracks. Track 1 is ongoing and covers the legal changes needed to adopt the new procedures. This is being completed by the Office of the Minister of State for Administrative Reform (OMSAR), the Council for Development and Reconstruction and the Ministry of Economy and Trade. Track 2 covers the activities needed to implement a pilot application in 5 ministries. OMSAR has already acquired the grant from the Development Gateway of the Italian Government. Phase 1 of the project consists of assessments to be made prior to the design of the online procurement application. The bids are being evaluated (summer 2007). On

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<sup>21</sup> [www.omsar.gov.lb/ICTGPG/](http://www.omsar.gov.lb/ICTGPG/)

<sup>22</sup> World public sector report 2003: e-Government at the Crossroads, United Nations Department of Economic and Social Affairs, ST/ESA/PAD/SER.E/49, page 189.

<sup>23</sup> UN Global e-Government.

completion of Phase 1, a new tendering process will be launched for the development and implementation of the application in 5 selected Ministries.

#### *Computerization of customs processing*

Lebanon has finalized a complete roll out of the Automated System for Customs Data (ASYCUDA, also known as NAJM) in Lebanon. In addition, NAJM express, which allows the releasing of goods on manifest information only, is provided to beneficiaries of this service for an extra fee. An upgraded Web-enabled version of NAJM, referred to as NAJM Online Operation (NOOR), allows trader or customs broker to track declarations on the Internet. The implementation of NAJM/NAJM Express/NOOR, combined with the tariff reform, the streamlining of procedures and harmonization with international standards, enabled the Lebanese customs to reduce the number of stages involved in customs clearance from 13 to five steps<sup>18</sup>.

In spring 2007, the Customs, assisted by the European Union Project Administration Office in the Office of the Prime Minister, has started a project for the automation of Risk Management in the Customs through a system of which there is a working proto-type: MAJAL.

#### *Computerization of taxation and revenue management systems*

The Ministry of Finance (MoF) is the most automated among all Lebanese ministries. All procedures are streamlined and supported by proper applications. Currently, the MoF is developing a Web-based tax filling form application.

### B. E-BUSINESS

By 2007, very few banks have implemented online banking. This consists of banking statements, transactions within the bank and limited payments. (Refer to the Section on **Enabling environment** for a more detailed discussion of eCommerce support by the EU).

The extent and maturity of B2B and B2C is also limited but in a better state. However, these are limited by the insufficient infrastructural services needed for eCommerce.

### C. E-LEARNING

### D. E-HEALTH

### E. E-EMPLOYMENT

Several websites have already started offering online employment facilities. Those listed below are based in Lebanon:

- <http://lebanon.zeezo.com/jobs.htm>;
- <http://www.hirelebanese.com>;
- <http://www.jobinlebanon.com/english>;
- <http://www.lebweb.com/site/lebanon-hirelebanese-89905>;
- <http://www.1stlebanon.net/uk/recruit.html>;
- <http://www.lebanonrec.com/>;
- <http://gulfbusiness.tradeholding.com>.

Some external sites have special chapters for Lebanon:

- <http://my.monstergulf.com>;
- <http://www.careerslb.com/>

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

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

#### **B. LOCAL AND NATIONAL DIGITAL CONTENT DEVELOPMENT**

Lack of Arabic content and relevant applications limits expansion of the Internet in the region. In Lebanon, for example, none of the main ISP portals provide content in Arabic, which limits Internet access to those who speak English or French. It was also noted that most Arabs online use chat or email and there is a shortage of content, such as educational applications. Therefore, providing relevant content in the Arab language should be one of the region's top priorities. The ITU has announced its intention to expand its e-learning activities and initiatives within the Arab Region but support from within the region is needed to adapt the existing course materials to specific needs and to translate it into Arabic.<sup>24</sup>

#### **C. ARABIC DOMAIN NAME SYSTEM - ADNS**

#### **D. ICT TOOLS, AND R&D PROGRAMMES**

BERYTECH is a technology park devoted to excellence in various aspects of technology. Its main focus is on multimedia, technology and capacity building.

It is located in proximity to the Campus of Science and Technology within the Beirut Superior School of Engineering (ESIB), the Business Management Institute, and the Faculty of Sciences of the University Saint-Joseph. Berytech is committed to the creation of business opportunities, employment and capacity building for its entrepreneurs. It provides them with business skill training, practical advice, mentoring and networking. Berytech provides virtual incubation to an unspecified number of entities through networking, support and training. Berytech addresses issues in the areas of human resources development and capacity building, access to information and technology, as well as technology sharing, the availability of financing and market access on local and global levels.<sup>25</sup>

## **IX. MEDIA**

### **A. MEDIA INDEPENDENCE AND PLURALISM**

### **B. THE MEDIA AND ITS ROLE IN THE INFORMATION SOCIETY**

### **C. GENDER PORTRAYAL IN THE MEDIA**

## **X. INTERNATIONAL AND REGIONAL COOPERATION**

### **A. FINANCING OF ICT NETWORKS AND SERVICES**

### **B. INFRASTRUCTURE DEVELOPMENT PROJECTS**

### **C. REGIONAL PLAN OF ACTION (RPOA)**

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<sup>24</sup> <http://www.itu.int/arabinternet2001/conclusions.html>

<sup>25</sup> <http://berytech.org>

## **XI. MILLENNIUM DEVELOPMENT GOALS – MDG**

### **A. PROGRESS TOWARD ACHIEVING THE MDG**

### **B. USE OF ICT FOR ACHIEVING THE MDGS**

### **C. ICT FIELD PROJECTS AIMING AT ACHIEVING MDGS**

## **XII. WORLD SUMMIT ON THE INFORMATION SOCIETY - WSIS**

### **A. FOLLOW-UP AND EVALUATION**

Lebanon was represented at phase 1 of the World Summit on the Information Society (WSIS) held in Geneva from 10-12 December 2003. Lebanon has a National Working Group for the WSIS (NWGWSIS), which met on regular basis to discuss relevant issues pertaining to the WSIS objectives as well as to discuss and follow up the activities of the Council of Arab Telecommunications and Information Ministers. Two additional working groups were dedicated to look into financing schemes for building the information society and to discuss the issues related to Internet Governance. The NWGWSIS is the result of collaboration of three ministries in Lebanon, namely the Ministry of Telecommunications, OMSAR, and the Ministry of Economy and Trade. During 2005, a delegation from Lebanon representing OMSAR, the Ministry of Economy and Trade and the Ministry of Telecommunications attended to the Tunis WSIS conference in November headed by the President of the Republic to endorse ICT in Lebanon.

### **B. INITIATIVES AND PROJECTS**

### **C. SUCCESS STORIES**

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