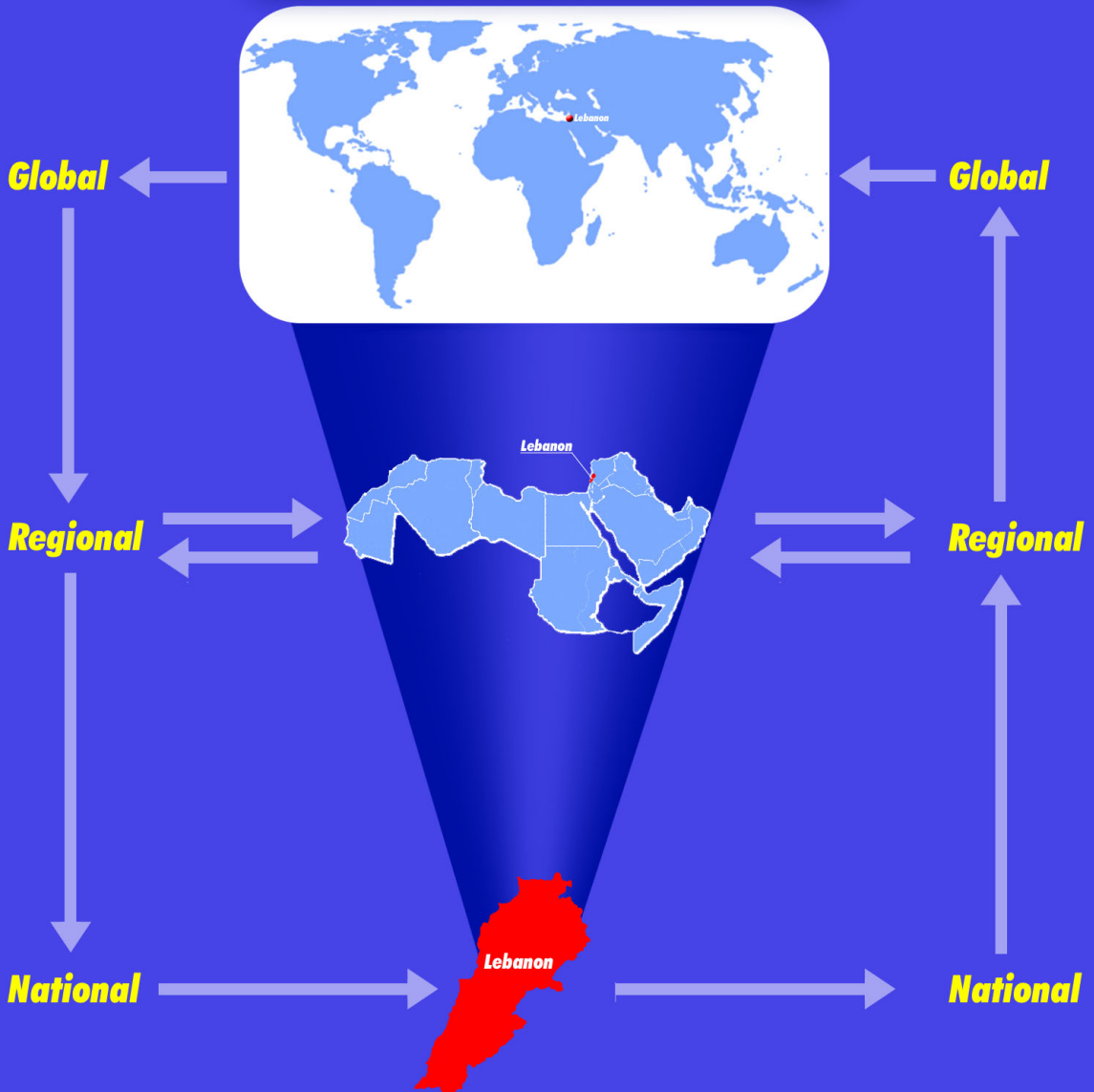




Lebanon Information Society Paper

Towards a Global Information Society



**world summit
on the information society**
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A Introduction

Lebanon has historically been active within the international community. It now faces a potential crossroad. The choice is twofold:

- To adopt the digital economy in a timely manner with the investments and planning it requires. This is to reap the economical and social benefits that emanate from such integration thereby joining the technological advancement in the field of ICT in the Middle-East and in the world.
- To continue business as usual and relegate Lebanon to the status of underdeveloped country for generations to come.

Lebanon has chosen to embrace the digital economy in principle. Now Lebanon is defining the means and ways to transform its choice into reality. Through the WSIS conference, Lebanon will join the process launched by the international community of bridging the digital divide between the developing and developed countries, through a firm political decision, an efficient national strategy and plan of action, as well as through bilateral and multilateral cooperation at the regional and international levels, in association and partnership with all the concerned stakeholders.

This paper presents Lebanon's achievements and vision regarding ICT integration and development. In this respect Lebanon is compliant with the WSIS framework.

B Current state of affairs and relevant planned steps

I Proposed issues:

1) Information and communication infrastructure: financing and investment, affordability, development and sustainability

1. Bridging the digital divide:

- Lebanon is committed to bridging the digital divide. Building upon the national ICT policy and strategy work performed in 1998, Lebanon initiated the development of a national e-strategy. This effort has produced in summer 2003 an e-readiness assessment report, a national e-strategy document, and an implementation action plan which includes the methodology, operation and phasing, in addition to identifying the involvement required from the different stakeholders including the government, the private sector and the civil society-

- Assessment of Lebanon's current situation:
 - Basic telecommunication infrastructure is available (fixed line and mobile)
 - Data transmission infrastructure covers all of Lebanon
 - Value added services in fixed line services and new mobile generations
 - Traditional and modern multimedia services
 - Internet penetration rate is 12%, the third in the Arab region
 - Human capacity is highly developed for both the general population and the ICT skilled labor
 - Economic climate is favorable for ICT because of business entrepreneurial spirit, and the attraction of the sector for technological innovations.
 - Banking sector is developed and ready for electronic transactions with some banks offering e-banking services.
 - Facilities available to ICT companies from commercial banks to take loans up to 10M \$ subsidized by the Central bank.
 - Lebanese government is the major client for ICT products and services. Ministries, agencies and the Central bank are involved and supportive of ICT related projects and initiatives.
 - ICT related grants and funds are available from donor countries and programs
 - Locally relevant content available and flourishing. By local content we mean production of electronic content in Lebanon and/or in Arabic.

Strategic Actions:

- ❖ Lebanon has identified the following major actions needed to bridge the digital divide:
 - Increase the national priority of ICT by allocating more funds and raising the national ICT planning and coordination effort to the ministerial or independent agency level
 - Make broadband access more available and affordable
 - Increase international bandwidth/ satellite access
 - Provide the same available services at affordable cost (bandwidth, Wi-Fi ISP charges, and dial-up charges)
 - Enable the new telecommunication law to achieve the proper regulation, liberalization and privatization of the sector
 - Capacity building the ICT basic skills learning to the older than 35 year old, poor, and rural citizens the trend is towards eradicating digital illiteracy starting at the primary level of education, ending up with the gender, youth, disabled and elderly.
 - Provide free access points nationwide to be expanded in phases to universal access.

2. Universal access:

- Through a national public-private sector partnership involving international organizations such as the UNDP and CISCO, youth groups in the peripheral regions of the country are being

provided with access to the Internet by the provision of multipurpose tele-centers as was done in the Southern city of Bint Jbeil

- The Professional Computer Association (PCA) launched its PiPOP initiative (PCA Internet Point of Presence Initiative) in early 2003 and established Internet centers in 10 villages across Lebanon. Thirty villages are planned for the next phase.
- SchoolNet and Schools OnLine projects provide the availability of low-cost and appropriate connectivity options for schools, support the technical infrastructure nationally and coordinate connectivity initiatives for schools.
- The Ministry of Culture (MOC) has established thirty public libraries throughout Lebanon in the last few years. These libraries constitute a viable venue for public access to the Internet.
- The Central Bank issued in 2001 a circular forcing banks to be connected before March 2002. All banks complied.

Strategic Actions:

- ❖ Lebanon is deploying two virtual networks on its existing infrastructure. One will be connecting all banks to the Central Bank of Lebanon. The other will be using the concept of Metropolitan Area Networks (MANs) for connecting all Government departments throughout the country.
- ❖ The Ministry of Culture is planning to equip 15 public libraries of the already established thirty with multimedia centers including free Internet access.
- ❖ The government intends to democratize access to free multimedia centers including free Internet access.

3. Broadband:

- In Lebanon broadband access is available up to 8 Mbps in a multi-protocol format (IP, ATM, Frame Relay or clear channel) in greater Beirut and shortly in other cities in Lebanon.

Strategic Actions:

- ❖ Lebanon needs to provide broadband access throughout its territory
- ❖ Lebanon needs to make broadband more affordable
- ❖ Lebanon has plans to provide state-of-the-art high-bandwidth data services (ATM, DSL and ADSL) at affordable prices. The timetable to realize these plans has been set for the end of 2003.

4. Low cost equipment:

- The decrease of hardware prices and the simplification of software use have facilitated the spread of ICT and made it accessible to smaller firms. Prices in Lebanon for these items are as low as in the most developed nations.
- Lebanon has increased the PC penetration rate by reducing taxes on ICT equipment and related products – zero customs duties on all ICT products.
- Such affordable ICT costs have been effected in the presence of an encompassing Intellectual Property Rights (IPR) law.

5. Low cost connectivity:

- In February 2003, the MPT reduced Internet dial-up rates by 42% on average. The new dial-up rates are based on a usage cost matrix. New international data rates were also put in effect reducing global Internet network access costs for ISPs by 75%.
- The Multipurpose Community Telecenter and the PIPOP projects are modules of promoting free if not affordable Internet access.
- The objective of Lebanon is to provide universal broadband access at affordable cost.

Strategic Actions:

- ❖ Lebanon is moving ahead with plans to establish an internet node or hub that will offer ISPs bandwidth at affordable cost; consequently providing the end users better and cheaper service. This internet node is planned to have a total bandwidth capacity of 90 Mbps catering to all the ISPs in Lebanon and interconnect them locally

6. Convergence:

Strategic Actions:

- ❖ The new telecommunications law number 431 that was issued on 23 July 2002 will privatize the sector. This will permit competition leading to possible converged communication services. As a result of this law, the consumer will be able to acquire all services from an individual source.
- ❖ The Intelligent Network project under development by the Ministry of Telecommunications will further facilitate converged communication services.

7. Interconnection:

- Lebanon has completed a state of the art fixed line telecommunication network in 2001.
- The fixed lines telecommunications network is made up of a fiber optic backbone to facilitate the interconnections at the national level.
- ISDN (Integrated Services Digital Network) was offered by OGERO in 2001. Access to ISDN should be available and at affordable cost to be democratized.

Strategic Actions:

- ❖ Lebanon is moving ahead with plans to establish an Internet node or hub that will offer a national traffic hub that could be expanded for regional purposes.

8. Interconnection fees:

- Lebanon is offering end-to-end data services with the customer having to pay only for the service activation and the recurring fees.
- Reductions have been on Internet dial-up fees for the consumer through a 4-digit special number per ISP and international internet gateway connections for the ISPs

Strategic Actions:

- ❖ The objective is to reach universal broadband access at affordable and competitive cost.

9. Regional infrastructure:

- Unfortunately connecting a user in Lebanon to a web site hosted in another Arab country causes the communication to be routed through New York or some other distant point. The Gulf Cooperation Council (GCC) has established the only regional infrastructure in the Middle East by linking the gateways of Kuwait, Qatar, Bahrain and the UAE to one global backbone through the Fiber Optic Gulf cable.
- In Lebanon, ISPs took the initiative to establish a common traffic hub (or traffic exchange gateway) in order to control the national IP traffic and keep it in the country. The MPT project of establishing an Internet hub in Lebanon would provide the regional infrastructure required for inter-country exchanges and the ability to plug in other regional initiatives and optimize regional IP traffic.

Strategic Actions:

- ❖ Internet Backbone

10. Environmental protection:

- The government of Lebanon has put in place environmentally safe projects for waste treatment that includes recycling of products.

Strategic Actions:

- ❖ To work on environmentally safe disposal of discarded hardware and related products.
- ❖ To encourage joint points of transmission (for the competing companies) for mobile telephony in order to increase efficiency and provide a less polluted environment at a lower cost.
- ❖ Collect and refurbish old computers to reuse them in rural areas for ICT basic skills training.

2) Access to information and knowledge**11. Access to public domain information:**

- In 2002, and for the first time in an Arab country, all Government of Lebanon application forms and relevant information were digitized in—to one central portal called INFORMS – from Information and FORMS (<http://www.informs.gov.lb>). This portal today contains 4555 forms and relevant information for citizens and establishments to access, download and filling in accordingly. All forms and relevant explanatory/instructional information have been compiled from all government ministries, agencies and municipalities and converted into digital format before being uploaded to the portal. In addition, a hotline call center facility accessible by dialing 1700 has been setup to address phone inquiries by citizens that do not have Internet access and when required the needed forms and relevant information can be faxed back to the inquiring party.
- In addition to INFORMS, over 2100 web sites with the .lb ccTLD and some 1700 with US ccTLD are available in the country providing updated public domain information.

- A number of national NGOs are working on using ICT solutions for all access by the disabled to available public information.

Strategic Actions:

- ❖ The government is working on gradually converting the INFORMS information portal to a true online services portal adding more web intelligence taking as priority those forms that are required most by the citizens in their dealings with the government.
- ❖ The government intends to complete the deployment of the ministerial informative websites.
- ❖ The government will add more services to the portal aiming to improve transparency and accountability of citizen's services.

12. Open standards and open-source software:

- The government has developed, with the involvement of professional associations and syndicates, an "ICT Good Practice Guide" and a "Standards and Guidelines for ICT Product and Practices" document that promote open, flexible and interoperable standards.
- There is no restriction enabled by the government or favoritism in favor of any software. Open source software is free to flourish in a legally protected competitive environment
- The UNESCO is piloting a program to channel and recycle ICT products. The PCs are fitted with CBT program (CDS/ISIS) that teaches basic ICT skills.

Strategic Actions:

- ❖ Lebanon will put forth the best measures to monitor the application of the ICT good practices and standards to effectively interconnect or network different ICT solutions in the future.
- ❖ Work will also be done to put forward domain specific (education, health, social, economic, etc.) information standards to facilitate efficient inter-sector ICT interoperability and data validation.

13. Information flows:

- In Lebanon the Internet and related information flows have been so far self-regulated by the industry itself (ISPs, media, content providers, etc.).
- Internal Internet usage policies have been prepared for a number of public and private sector entities.
- The Internet service provision industry is working on service level agreements that will guarantee the volume and quality of information flows to subscribers.

Strategic Actions:

- ❖ Lebanon is of the view that the Internet industry should put in place rules, policies and procedures to self regulate itself for the delivery of quality service for the different categories of users.
- ❖ Lebanon intends to issue the required laws for the sector and protect the civil liberties
- ❖ Lebanon intends to establish a National Commission to monitor and control the flow of information, the protection of personal liberties and the respect of law.
- ❖ Fair competition guidelines under implementation at the Ministry of Economy and Trade will surely improve the services and quality of the ICT industry in Lebanon.

3) The role of governments, the business sector and civil society in the promotion of ICTs for development

14. In 1998, a study that resulted in a National ICT policy and strategy document took place. Since its publication, the national ICT policy and strategy document has been distributed and discussed with the different stakeholders in the public and private sectors, as well as in the academia.

15. Cooperation among Stakeholders:

The government, private sector, academia and civil society have all conducted or participated in national or local ICT awareness campaigns and capacity building initiatives. Whether for concerned employee training or continuous education or for society awareness these stakeholders have invested time and money to broaden ICT know-how at different levels (beginners, intermediate and advanced).

- From the private sector side, Berytech is the first Lebanese technological pole. Berytech operates as of October 2001 a regional and national technology centre, a start-up incubator, a network facilitator for firms, and an open space for high-tech enterprises. It also aims at supporting graduates entering the business world and improving links between the graduate training and the firm needs. Berytech also functions as a resource centre with a set of databases dealing with local, regional, and international issues.
- Mobile Internet units have been deployed since 2001 by national NGOs. These include the SmartBus (a retrofitted school bus launched in 2001) and the Saradar Foundation IT Caravan (a custom built caravan launched in 2002) which are designed to reach rural communities and give ICT training and Internet access.
- Cisco systems established in partnership with USJ the first Regional Academy under the Cisco Networking Academy in the Arab world. Microsoft offers training courses throughout Lebanon through certified training education centers.
- The private sector and especially the ICT professional associations have been active in playing their part of creating awareness in our society.
- Regional and international organizations (such as the UN ESCWA, UNDP-SURF, World Bank, European Commission, USAID, CIDA and others) have been contributing to the integration of ICT solutions in the national development process by providing guidance and required resources.
- The media in Lebanon which is renowned regionally and internationally, particularly with its rich multi-lingual multi-cultural content and out reach, has been covering ICT developments globally and initiating national ICT awareness campaigns through programs and interviews.

Strategic Actions:

- ❖ The national e-Strategy will propose a number of key national ICT projects and initiatives that require effective cooperation among stakeholders with the aim of providing universal broadband access at affordable cost.

16. Resource mobilization:

- Extensive investments have been made in the telecommunications infrastructure (which is relatively new) with fixed lines and wireless coverage for the whole country. This infrastructure has the capacity for expansion of subscribers and services.
- Lebanon has been able to mobilize resources for the development of the information society covering the following specific areas:
 - Building ICT human capacity, training public, private and academia sectors.

- Formulation of e-strategy, e-commerce and e-government initiatives built on required policy frameworks.
- ICT implementations in the public and private sectors as well in academia and mass media.
- Content production in Lebanon has always been a trademark. Placing this content online is taking place gradually.
- The resources mobilized for this purpose has come from the government budget as well as international organizations covering donors and UN agencies.

Strategic Actions:

- ❖ Lebanon will consolidate resource mobilization requirements for all national e-initiatives so as to have a comprehensive inventory of these requirements to share with the concerned national, regional and international organizations for possible financial or in-kind funding.
- ❖ Lebanon should create a fund to encourage local content production, whether it is production in Lebanon or production in Arabic.

17. ICT manufacturing capabilities:

- A good number of local companies produce locally assembled ICT products, mainly PCs.
- The Berytech technopole plays a role in encouraging entrepreneurs to work through its incubator on innovative ICT products for possible commercial marketing.
- The Investment Development Authority of Lebanon (IDAL) launched in 2000 a feasibility study for the Beirut Emerging Technology Zone (BETZ), funded by the US Trade and Development Agency. The study considers how necessary facilities and incentives could best be provided for local and direct foreign investment in the ICT sector through start-ups; private enterprises can best synergize with university researchers; and, local content and media may be efficiently produced and provided for online Internet dissemination.
- As part of the new investment law number 360, the government entrusts IDAL with “participating in the capital of joint-stock companies for the establishment and management of incubators to support innovators in the fields of technology, information technology, communication and other sectors”. Furthermore, the law classifies ICT investment projects as Zone C (the highest incentives package) beneficiaries, which means that they get fully exempt from income taxes and taxes on project dividends for a period of ten years.
- KAFALAT SAL is a joint-stock company with the Lebanese Agency for Guarantee of Deposits that operates under the Central Bank and some fifty banks operating in Lebanon as partners. It offers fast and easy to acquire investment loans up to USD 200,000 reimbursable within seven years.

Strategic Actions:

- ❖ Lebanon will work towards establishing a national technology zone with the proper facilities for ICT manufacturing within a couple of years.
- ❖ Have Lebanon’s solid banking industry work on establishing venture funds or providing seed funding for ICT start-ups.
- ❖ Foster entrepreneurship thinking and planning for the development of new technology-based firms.
- ❖ Provide the legal framework to ensure the regulation and security of the sector to encourage FDIs.

4) Capacity building: human resources development, education, and training

18. ICTs in education:

- A new educational curriculum that includes ICT skills in the program of public and private primary, elementary and secondary schools was introduced towards the end of 1998. The new curriculum allowed for practical hands-on IT lab sessions in school.
- SchoolNet is an initiative developed by the Ministry of National and Higher Education (MONE) in partnership with the private sector to provide an online collaboration and research environment for Lebanon schools. The project aims to enhance cooperation among sectors of the education system as well as among schools, teachers and students. Another similar NGO funded project, Schools Online, has placed 12 computer labs in secondary schools throughout the country.
- Over 7000 PCs for public schools have been procured by the MONE over the last 5 years.
- As for private schools, they have computer labs and provide for the use of computers in various scholastic projects. Private schools have access to the Internet with some having their own web site and regularly publishing information of use to the students.
- There are currently around 40 registered Universities, many of them registered in the past 5 - 8 years. Most of them offer majors in computer sciences, business computers, and management information systems. Some have launched ICT Masters Degrees and are starting to offer cooperative and Internship programs to insure proper transfer and application of educational know-how in the practical world.
- It is estimated that universities produce about 400 computer science graduates every year. The established universities provide reasonably advanced Computer Science degrees and other ICT related majors such as Computer Engineering, Telecommunications Engineering and Management of Information Systems.
- The Arab Open University in Beirut has recently opened its doors and is offering courses around the clock using computer lab facilities and self-paced CD Education.
- In parallel to the academic educational path, Lebanon's educational system provides a vocational path that starts after the completion of five years of the primary level. It takes the student two to four years after the technical baccalaureate level. Secretariat courses using office tools, Electronics, and Information Technology are offered within the curriculum
- Another initiative to be promoted on a national scale is a UNESCO program to channel and recycle ICT products from one user group in the private and/or public sector to another (Such as schools) to extend their life cycle while benefiting the new generation.
- Other projects stress the development of the information resources for the Education sector through the collection of educational data in databases. Such projects include the implementation of Educational Management Information Systems (EMIS) at the MONE by both the UNESCO and the World Bank. The systems aim at being able to use the educational data for decision support.

Strategic Actions:

- ❖ Lebanon will periodically assess the use of ICT in education at different levels and enhance related plans and implementations so as to stay current with global development in this domain.
- ❖ A national assessment of the higher education system, the skills of teachers and educators and the number of licensed universities and institutes using quantitative and qualitative indicators will be made periodically so as to ensure the proper delivery and usage of ICT skills through a benchmarking exercise.
- ❖ Set benchmarks and deadlines for the 100% objective of digital literacy in relation to literacy as such.
- ❖ Increase and enrich the ICT lab sessions at schools and further integrate ICT into the curriculum subject matters.

19. Capacity building for ICT use:

- On the capacity side, SmartBus™ a mobile Internet unit was deployed in 2001. It is equipped with a literacy training module, project evaluation pack, a server with LAN, LCD projector, pull down screen, audio visual teaching aids, laser printer, fax machine and scanner. Smartbus is a public private partnership designed to reach rural communities and give ICT training. It is an international certified training center expected to train up to 4800 people per year. It operates on a per request basis. NGO Mercy Corp owns and operates the SmartBus with funds in part from USAID and other associations who are sponsoring the bus in various regions.
- Fondation Saradar is a non-profit who sponsors ICT related educational initiatives. On July 10, 2002, Fondation Saradar launched a pilot project entitled “Saradar IT Programme®”. The program is an ICT capacity-building project which proposes to meet people in their regions. Training will be ensured to displaced persons in a mobile school, a caravan, tailored and built as a classroom and furnished with the necessary equipment to accommodate students of all ages, particularly children and women.
- Through a national public-private sector partnership involving international organizations such as the UNDP and CISCO, youth groups in the peripheral regions of the country are being provided with access to the Internet by the provision of multipurpose tele-centers as was done in the Southern city of Bint Jbeil
- The Professional Computer Association (PCA) launched its PiPOP initiative (PCA Internet Point of Presence Initiative) in early 2003 and established Internet centers in 10 villages across Lebanon. Thirty villages are planned for the next phase. In each village, local content and community media form the basis of local web sites through this initiative.
- A good number of national certified training institutes are available in the country adding to the education curriculum that also covers ICT education at the difference school/university levels.

Strategic Actions:

- ❖ Lebanon will work on channeling ICT skills and building community ICT capacity by deploying additional solutions such as multi-purpose community telecenters, PIPOP setups. Mobile Internet units and eventually municipal Internet kiosks.
- ❖ A national tally of the number of trainees from these programs will be carried out constantly to provide a more reflective picture on the status of national ICT capacity building.

20. Training ICT specialists:

- The government has been actively training civil servants to become ICT specialists in the public sector since 1998.

- Private sector as a producer of ICT solutions has successfully trained its employees on advanced ICT principles and products enabling the Lebanese ICT industry to tackle large scale national and regional projects.
- The rich academic sector has added to the training of ICT by introducing it as a core subject matter in its curriculum. This sector has also successfully launched in partnership with the ICT private sector specialized ICT institutes and academies that follow international best practices for training ICT specialists on the latest ICT products and tools.

Strategic Actions:

- ❖ Government will finalize work on an ICT cadre and salary scale for civil servants to prevent brain drain from the public sector to the private sector.
- ❖ Government will provide more incentives for the ICT private sector for it to be able to retain national ICT professionals and prevent them from leaving the country.
- ❖ ENA should play a lead role in the continuing training of the civil servants and training of trainers.

5) Security

21. Secure and reliable infrastructure:

- Ministry of Telecommunication (MOT) has put in place an intelligent network on the existing fixed line telecommunications network with the required security features
- The Central Bank of Lebanon has launched the Security Electronic Banking and Information for Lebanon (SeBIL) project for securely interconnecting national banks and financial institutions to the Central Bank.
- ICT standards and guidelines prepared by the OMSAR tackle the issue of network and system security and highlight its importance.

Strategic Actions:

- ❖ Lebanon will work on a national information infrastructure security policy that will be shared with all stakeholders in the country.
- ❖ Regionally, Lebanon will work with Arab countries on incorporating security measures for inter-regional electronic exchanges.
- ❖ Lebanon will establish the required Infrastructure for secure exchange over the web.

22. Information Security:

- ICT standards and guidelines prepared by OMSAR tackle the issue of information integrity and security in addition to data definition and exchange. The standard highlights the strategic importance of information and segregates it into private and public information
- Required legislation for protecting and securing electronic information and transactions is currently being implemented through an e-Commerce initiative launched by the MOET.

Strategic Actions:

- ❖ Lebanon will work on expanding the developed standards and guidelines relevant to information security to come up with a national information security policy.
- ❖ Lebanon will regulate the electronic exchange and adopt a specific policy against global threat of crimes committed using information technology.

23. Creating a global culture of cyber-security:

- Security awareness campaigns have been launched by the private sector professional associations towards their member companies and more will follow.
- Intragovernment discussions on security measures have also been held to exchange different views and create consensus.
- The Ministry of Economy and Trade as part of its responsibilities in forming the ICT framework added a comprehensive awareness campaign for the legal professional body and the respective ICT associations.

Strategic Actions:

- ❖ Lebanon will work with regional and international stakeholders to come up with a balanced global culture of cyber-security.

24. Fighting cyber crime:

- Around ten cases of cyber-crime have been tried and convicted so far in Lebanon. The cases were tried based on the current penal laws.
- In this respect, Lebanon is aware that existing laws especially the penal code must be reviewed to include cyber issues. The revision of the penal code related to the electronic signature has been drafted and awaiting the parliament's consideration.
- Comprehensive rules and penal codes related to business electronic transactions to be amended and introduced through the Ministry of Economy and Trade's e-commerce infrastructure initiative.

Strategic Actions:

- ❖ Lebanon will work with regional and international stakeholders to address the cyber-crime issue in a manner that does not impede proliferation of information networks.
- ❖ Lebanon will create a cyber-police unit in cooperation with the Interpol High Tech Crime Unit.
- ❖ Lebanon will join the Interpol Rapid Information Exchange System.
- ❖ Lebanon will accede to the Council of Europe's Convention on Cyber crime.

6) Enabling environment

25. Good governance:

- The government has supported ICT development and formed a Ministerial ICT Committee since 1997 to review and facilitate national ICT initiatives to help the local ICT industry prosper as a production sector, to support socio-economic development and in general to put in place the needed building blocks for an information society.
- Work on modern legal frameworks for consumer protection, privacy, security, and Intellectual property rights law was passed in 1999..

Strategic Actions:

- ❖ Lebanon will establish or designate a government entity (either a Ministry or an autonomous agency) to be responsible from the government side for national ICT development and initiatives.
- ❖ The national Internet addresses and domain names registrar and its functions will be reviewed and enhanced to reflect global developments in this regards.
- ❖ All stakeholders are to be involved in the development and completion of the proper legal frameworks for consumer protection, privacy, security, intellectual property rights and other enabling factors.

26. Market environment:

- Liberalization or deregulation of the telecommunication sector took place through the new Telecom Law (law number 43 issued on 23 July 2002). A current project sponsored by both the MOT and OMSAR was launched in January 2003 to establish the Telecommunications Regulatory Authority provided by the new law in preparation for privatizing this sector
- Customs duties on ICT products were totally eliminated since January 2001. The only remaining taxation is that of the Value-Added-Tax (VAT) of 10%.
- Internet Service Providers (ISPs) and other ICT companies enjoy free and healthy competition through a national open market environment with the government constantly seeking ways to alleviate economic burdens on these companies

Strategic Actions:

- ❖ Lebanon will work on providing a more competitive market for the ICT industry to flourish that will in turn reduce Internet access and connectivity prices to affordable levels consistent with Lebanon's GDP.

27. Standardization:

- Lebanon initiated through OMSAR the development of national ICT standards through the development of standards and guidelines for ICT products and practices. The project was completed in July 2003. The project includes the development of standards, guidelines and operating procedures for the following ICT categories based on international best practices:

Standards and Guidelines for ICT Products	Standards and Guidelines for ICT Practices
<ul style="list-style-type: none"> • Hardware • Networks and Cabling • Telecommunications • Database Systems • Operating Systems • Buildings, Rooms and Environment 	<ul style="list-style-type: none"> • Quality Management • Software Applications • Selection and Evaluation Framework • Information Integrity and Security • Data Definition and Exchange • Risk Management • Configuration Management

Strategic Actions:

- ❖ Lebanon will work on the proper national adoption of these standards and guidelines by all stakeholders and insure constant updates are made periodically.
- ❖ Lebanon will promote the creation of regional and international networks or communities of practice to exchange knowledge and best practices on technical standards.
- ❖ Lebanon encourages the establishment of a multilateral intergovernmental authority for the establishment and monitoring of universal standards.

28. Spectrum management:

- Different radio frequencies are in use in Lebanon with the MOT soon to approve the use of 2.4GHz frequency for the development of wireless Internet services.
- A national law that governs spectrum distribution for all media requirements is in place.

Strategic Actions:

- ❖ National radio frequency spectrum will be reassessed, new national laws will be enacted and overall management will be done in accordance.
- ❖ Lebanon will promote regional discussions on border spectrum management in pursuit of a comprehensive inter-country spectrum usage accord.

29. Consumer protection:

- Lebanon has a consumer protection law (law number 8664) issued in 1967. This law is currently being revised by the MOET in preparation for Lebanon's accession to the World Trade Organization (WTO) and to cover electronic information and transactional protection.

30. Internet governance:

- Lebanon enjoys transparent and democratic governance of the Internet. This is because neither restrictions nor regulations have been put on the Internet and its use by the government.
- The American University of Beirut is insuring the management of the root server, country code top level domain names (.lb) and the IP address assignment.
- Lebanon requires companies requesting a .lb domain name to secure a trade mark by registration at the Intellectual property registration department at the Ministry of Economy and Trade.

Strategic Actions:

- ❖ Lebanon will reassess the Internet addresses and domain names issuance process and formulate a more open and flexible means for registering them.
- ❖ Lebanon will also assess the viability and best means of marketing and selling its .lb ccTLD to the weight watching or dietary industry on the global level (ex. <http://www.weightwatchers.lb>) as was done in the small country of Tuvalu with the .tv ccTLD.
- ❖ Lebanon will establish a national authority to govern the national addresses and domain names.

31. Intellectual property rights:

- An Intellectual Property Rights (IPR) (law number 75) was issued on 3 April 1999.
- The efforts of the Government with the support of the World Intellectual Property Organization (WIPO) have effectively reduced software piracy from 88% in 1999 to 74% in 2002. However, more is being done to reduce this figure and to reduce piracy of music and films.
- The passage of the IPR law encouraged multinational corporations such as Microsoft, Computer Associates and CISCO Systems to establish regional or Levant headquarters in Lebanon.

Strategic Actions:

- ❖ Lebanon will continue to work with WIPO for more effective enforcement of the IPR law and any future amendments to it as deemed appropriate.

7) Promotion of development-oriented ICT applications for all**32. E-Government:**

- Since the mid 1990s, a wide array of ICT projects has been implemented in the public administration. Nearly all ministries and agencies have been supplied with state-of-the-art digital data and telephony network infrastructures. Most have deployed local or premises networks (LANs) and some have wider intra-premises networks (WANs). Currently, a pilot project to test a national digital secure network or intranet for the whole government (GovNet) is in the works.
- Numerous information system applications have been developed in the public administration. These applications include customs systems (NAJM, NOOR and NAR), budget and payroll systems and taxation systems at the Ministry of Finance (MOF), a medical and social compensation systems for the government employee COOPerative, a commercial register system at the Ministry of Justice (MOJ), a legal decision support system at the Ministry of Foreign Affairs (MOFA), national ID and passport processing systems at the Ministry of Interior (MOI), billing systems at several utilities agencies, several document management and archiving systems at key ministries and agencies as well as a number of workflow systems.
- In support of day-to-day operations of the public administration, a large number of ministries and agencies have received productivity tools such as word processing, spreadsheet, presentation and project management software.
- Relevant training has been completed to all users and administrators for the various customized and general system applications.
- On the information delivery side, the following sample projects are in operation:

- **INFORMS:** A project launched in 2002. INFORMS provides a comprehensive list of procedures that the Citizen needs to follow when interacting with the public sector. Each procedure is defined in detail and forms can be downloaded for manual use. The portal also contains all relevant advice and instructions for completing the forms. (The site is found at <http://www.informs.gov.lb>). This site will constitute the basis for a government-wide future online transactional services portal.
- **Document Tracking in Jounieh Municipality:** Each citizen who submits an application, a request, etc, to the Municipality will be given an ID and password. Through the web, the citizen can then track the progress of his or her application.
- All ministries and many agencies have informational websites

Strategic Actions:

- ❖ Lebanon will pursue the implementation of an e-government strategy that was approved by the Ministerial ICT Committee in December 2002, (<http://www.omsar.gov.lb>). It is now awaiting final endorsement by the Council of Ministers. The e-Government strategy encompasses 4 logical frameworks:
 - Legal framework
 - Technical framework
 - Services framework
 - Operations/Management/Promotion framework

It has an implementation plan duration of 7 years and encompasses practical yet vital projects.

33. E-Business:

- The MOET has launched an e-Commerce initiative as part of a two-year project that is expected to be awarded in September 2003. It will study and recommend regulations for e-Commerce, electronic contracts and e-Signature. It will also launch an e-Commerce pilot project.
- The e-Commerce initiative of MOET will also produce all required e-Legislation for any e-initiative.
- The government views the e-procurement project within the e-government strategy as a key enabler for national e-commerce.

Strategic Actions:

- ❖ The government will launch an e-procurement project to complement the e-Commerce work requiring in turn all government suppliers to be e-Commerce ready in due time.

34. E-learning:

- SchoolNet and Schools OnLine are two pilot projects providing ICT solutions and Internet access in schools.
- E-learning projects are under development at a number of national universities
- ICT is part of the educational program in schools and universities.
- Lebanon is known for its multi-lingual culture and educational system with at least two languages being taught: Arabic and French or English.
- Projects providing ICT solutions and Internet access are being done in schools.

Strategic Actions:

- ❖ Program accreditation of e-Learning programs and graduating students should be made legal and hence all relevant educational legal text should be adjusted.
- ❖ Benchmarks and deadlines will be set for the universal access of students to ICTs at different phases of education.

35. E-health:

- The government has utilized ICT solutions to facilitate medical and social compensations for both the public and private sectors benefactors.
- An ICT project benefiting disabled people at social service centers throughout the country has been implemented.
- A global ICT master plan for the National Social Security Fund has been developed with its first phase near implementation.
- The national health insurance industry has invested heavily in ICT solutions to provide cost effective and efficient services to the insured.
- A key initiative in this respect is the portal toubibonline.com which brings together professionals from the healthcare industry to offer customized healthcare solutions to individuals at home. It offers services in French, English and Arabic and about 40,000 visitors access it per week, 60% of which have Lebanese IP addresses.
- There is a national strategic plan to establish a national healthcare database

Strategic Actions:

- ❖ National health care information standards will be developed for compliant exchanges between the system applications of all stakeholders in this sector.
- ❖ Electronic exchange of information for patients and doctors should be provided through personalized Identification cards or an e-gov smart card..
- ❖ Telemedicine will be promoted mainly in remote areas.

36. E-employment:

- Lebanon has several job matching ICT based systems in the private sector and most recently has developed an internet enabled system in the National Employment Office (NEO) that uses ILO job descriptions and classifications.
- Several portals for Lebanese (local and expatriate) professionals have been developed (such as <http://www.lebanesebrains.net>) with more being planned.

Strategic Actions:

- ❖ Lebanon will promote the profession of tele-workers (e-workers and e-employers) so as to reduce population congestion in main cities and allow people from rural areas have the freedom to work from the confines of their home village – a step towards de-centralization and de-concentration.

37. E-environment

- ICT based systems are being developed at the Ministry of Environment (MOE) for monitoring and evaluating environmental conditions.

Strategic Actions:

- ❖ To regulate the mobile telephony infrastructure in a way to encourage joint repeater stations for different service providers, in a way to reduce “pollution” and cost

8) Cultural identity and linguistic diversity, local content and media development

38. Cultural and linguistic diversity.

- Internet penetration rate in Lebanon is among the highest in the Arab world. The cultural reasons are:
 - Lebanese population is open and accustomed to other cultures.
 - Lebanese population is multi-lingual (Arabic, French, and English). It is affected to a lesser degree than other Arab nations by the lack of Arabic language content on the web.
- However, on a global level, much still is to be done to bring the level closer to a network society.
- Most national web sites are multi-lingual in content (Arabic, French or English) with some having all three languages.

Strategic Actions:

- ❖ Lebanon will promote R&D and regional collaboration the special challenges caused by using Arabic as a language for the web (as identified in the National e-Strategy):
 - Arabic character standards enhancements
 - OCR (Optical Character Recognition)
 - Web site automatic translation
 - Search engines
 - Lack of accepted translation of key terms in business, management, finance, technology, etc.

39. Content:

- Local Internet content is available
- 2,110 domain names under the .lb country code top level domain (ccTLD)
 - **Businesses (.com.lb)..... 1,700**
 - **Government (.gov.lb) 90**
 - **Education (.edu.lb) 110**
 - **Network (.net.lb)..... 22**
 - **Organizations (.org.lb) 188**
- Some additional 1,700 domain names for Lebanese businesses are under the .com generic top level domain.
- National Archives are stored in electronic format. Other public agencies are following suite such as the MOJ, the Port of Beirut and the MOFA.
- The government INFORMs portal was a major step forward in converting lots of public sector information to digital format.
- ICT sector is still not a major economical sector, but growing. Lebanon prides itself with its technical expertise in assembling hardware, developing software, and providing software services.

- Government sites are mainly in Arabic while others are in Arabic, English or French

Strategic Actions:

- ❖ Lebanon will promote digital Arabic content creation at the community level through partnerships with the private sector and civil society.
- ❖ Lebanon, according to UNESCO's Universal Declaration and Action Plan on Cultural Diversity, will design cultural policies and implement regulatory frameworks or incentives to promote the production of quality cultural, educational and scientific content and the development of cultural industries suited to the linguistic and cultural context of the users, whilst giving special attention to an international instrument of cultural diversity (the EU contribution to the Draft Action Plan of the WSIS).
- ❖ The national libraries project by the Ministry of Culture will constitute the proper venue for national content generation by providing Internet access to local and international content.

40. Media:

- Lebanon was historically a heaven for books, newspapers and magazines publishers.
 - Some 620 publishing houses were operating in 1998, with a total of 52,000 published works.
 - About 700 printing houses exist, employing approximately 10,000 people (2001 data).
 - According to UNESCO statistics, more than 100 magazines are published in Lebanon, representing a quarter of all magazines published in the Arab world.
 - General press titles published in Lebanon exceed 1,490.
 - All major newspapers are on-line.
 - The main television stations have multimedia websites.
 - Radio stations have websites with one broadcasting online.

Strategic Actions:

- ❖ Lebanon has no alternative but to realize broadband network infrastructure to facilitate effective online media dissemination and broadcast.

9) Identifying and overcoming barriers to the achievement of the Information Society with a human perspective

- The digital divide within the society runs across the following lines:
 - Rich / poor
 - Under 35 / Over 35
 - Educated / uneducated
 - Capital city / other areas
 - School enrollment levels are among the highest in the Arab world

Strategic Actions:

- ❖ National e-Strategy plan dictates that ICT skills training must be available to the old, poor and uneducated and those that live outside the capital city Beirut.
- ❖ ICT is to be used as one of the tools to bridge the poverty gap. With ICT skills, the poor may have better chances to exit from poverty and also contribute to the digital economy.

II Objectives**a) Benchmarks:**

- E-Government strategy has the objective of connecting all national stakeholders (private sector, villages/communities, hospitals, and schools) by 2009.
- Lebanon should reach the 25 – 30% Internet penetration rate by 2009.
- To make available by 2007 an internet-based system to all schools which provides online education facilities, low cost access to reference material, guides to national and international educational sources and enables pupils and teachers to communicate nationally and globally.

b) E-Strategies:

- In 1998, the government of Lebanon released the National ICT policy and strategy document. In 2003, this document is being revised and enhanced to result in the National e-Strategy document.
- In addition to the national e-Strategy, an e-Government strategy was developed in 2002 and an e-Commerce strategy is being worked on this year

c) Global Digital Compact:

- The government of Lebanon is already engaged with NGOs that focus on providing parallel and complementary ICT services.
- The government of Lebanon is promoting private-public partnerships to develop and implement strategies in
 - Research and Development
 - Formulation of a complete regulatory environment
 - Standardizing and establishing a common database for the health sector
 - Providing fiscal initiatives and incentives for technology innovators and providers

d) Digital development index:

- This is being worked on currently with the ESCWA and UNDP-SURF

e) Handbook on good practices and success stories:

- The government commissioned and published “The Guide to Good ICT Practices” in 2003. This was followed by the “ICT Standards and Guidelines”, also in 2003.
- Annual reports by key government offices involved in ICT projects in the public sector reflect relevant success stories.

f) Training content workers:

- The government has been actively training civil servants to utilize and produce content from ICT.
- Through the multipurpose community telecenters, PIPOP and mobile Internet Units (SmartBus and the Saradar IT Caravan) initiatives, training program on basic ICT skills are being developed

targeting the general population, and content workers such as teachers, journalists, librarians, etc.

g) Curriculum revision:

- Lebanon revised its public schools curriculum towards the end of 1998. This new curriculum includes ICT skills in the program of public and private primary, elementary and secondary schools.
- The curriculum should be updated every three years to maintain currency with the global information society. Lebanon should schedule the date for the next curriculum revision as soon as possible.

h) World languages on the Internet:

- English is the language of the largest number of web sites in the world. However, this does not seem to be a major impediment to Internet use in Lebanon. Lebanese speak many languages in and outside Lebanon, due to the large expansion of the Lebanese Diaspora in the world.
- Development of quality Arabic software and Arabization of available software packages could be one of the main opportunities for Lebanon in this field while information and knowledge need to be delivered in the mother tongue to help the economy flourish and also to contribute to bridging the digital divide.
- Arabic domain names and digital Arabic content
- Right to information and knowledge should be provided for all respecting cultural and linguistic diversity as well as the religious differences.

III Strategies programmes, methods for implementation

41. Governments

- The government of Lebanon has worked on a National e-Strategy involving all national stakeholders and regional and international organizations. This strategy, published in August 2003, (<http://omsar.gov.lb>) encompasses:
 - Establishing and publishing a forward-looking strategic plan.
 - Establishing all required legislative and regulatory frameworks.
 - Providing ICT basic skills training (formal through the educational system and informal through seminars and continuing education courses)
 - Raising the national priority level of ICT and make its planning and coordination a national issue
 - Promoting the national ICT industry as a production sector with the proper incentives.
 - Formulating a number of strategic ICT for socio-economic development projects.

Strategic Actions:

- ❖ To implement e-government strategy.

42. Private sector

- The Lebanese ICT private sector is well skilled and has actively participated in various information society related projects from providing schools with PCs, to offering training to the under privileged, to working out with the MOT a reduction in the local Internet dial-up and international Internet gateway rates, to pushing for the enforcement of the IPR law, and to the setup of technology and free zones.

- The ICT private sector in Lebanon has been involved in various government strategy formulations and related projects implementations.
- This sector hosts annually a sizeable number of ICT conferences, workshops and exhibitions, thereby playing a vital role in the transfer of technology and knowledge to the national stakeholders.
- The national ICT sector has established a sound regional reputation successfully undertaking projects in the Middle East and Africa in addition to some projects in Europe.
- Private sector ICT associations have developed with the involvement of national stakeholders from the public sector, academia and other private sector specializations national assessments and strategies pertaining to ICT. Examples here include the national ICT market assessment prepared by the Professional Computer Association (PCA) and the national software industry strategy prepared by the Association of Lebanese Software Industry (ALSI).

Strategic Actions:

- ❖ To improve situation of private sector

43. Civil society

- Lebanon has an active civil society involved in many socio-economic development programs. Most recently this civil society has started to use ICT for such development objectives.

Strategic Actions:

- ❖ A survey will be launched to tally civil society effectiveness and socio-economic development and the extent to which ICT is effectively being utilized in the development practices.

44. Mass media

- Lebanon has a wealth of mass media establishments in various forms from newspapers to magazines to radio to television in multiple languages: Arabic, French and English. This diversity makes Lebanon unique in terms of plurality of information and freedom of expression.
- On a regional and global level, national broadcast networks have exploited the global digital satellite coverage to reach out and deliver multi lingual and plural content to the global society.

45. Multilateral organizations

- Lebanon hosts a large number of representative offices for multilateral organizations covering all UN agencies, the World Bank, the European Commission and others. These offices have been instrumental in facilitating peer dialogue, exchange of experiences, best practices and providing technical assistance when needed in support of or complimentary to government ICT projects or e-initiatives.

46. E-strategies and performance monitoring:

- The national e-Strategy under preparation addresses a good number of national indicators (quantitative and qualitative) that are to be updated frequently to monitor development on the national level and to benchmark against other countries on a regional and global level.

Strategic Actions:

- ❖ The National e-Strategy indicators will be further analyzed to come up with digital development indices based on international best practices.

47. Specific initiatives:

- The new investment law in Lebanon, law no 360, enacted in August 2001, provides key incentives for investment in the ICT sector on the national level amounting to ten years exemption from taxes on income and profit.
- Work on creation of technology zones in Lebanon is intended in part to foster additional investment in R&D by both public and private sectors.
- The establishment of ICT company associations such as the PCA, ALSI and ITIA provides a platform for showcasing national ICT skills for national and regional markets. These associations also foster a network of ICT specialists.

Strategic Actions:

- ❖ An international Lebanese Diaspora Digital Network (LDDN) for all Lebanese expatriates specializing in the ICT domain will be established. This network will facilitate timely transfer of knowledge to the country.

IV International cooperation and financing**48. International cooperation:**

- Lebanon has and will continue to benefit from the opportunities offered by regional and international organizations in support of all aspects of the information society.
- Through cooperation with the Massachusetts Institute of Technology (MIT), the entrepreneurship network of Lebanon (ENL) was established at the American University of Beirut (AUB) in 2000. This network has since launched an annual innovative business plan competition whereby prize money is awarded to the top three ranked submitted plans.
- With funding from the UNDP ICT for Development (ICT4D) Thematic Trust Fund (TTF), Lebanon is developing a national e-gateway portal to serve as an online forum for the exchange of information and views on national e-initiatives. Additional resources for this project will be solicited from the World Bank Development Gateway global program.

Strategic Actions:

- ❖ National e-Strategy will come out with a sizeable number of project ideas for Lebanon to edge closer to an information society. These project ideas will be presented to regional and international organizations for complementary implementation.
- ❖ Regional and international cooperation during the implementation of national e-initiatives such as e-Government, e-Commerce, e-Learning and others will be solicited.

49. Financing:

- Since the end of the civil war in the late 80s, Lebanon has depended on financing from regional and international donors for most development programs.

- Through effective public-private sector partnerships (PPP), the private sector has come through in providing ICT goods and services at preferential conditions to rural areas in the country.

Strategic Actions:

- ❖ Lebanon will work with national, regional and international finance institutions to establish a National Digital or e- Fund through which niche ICT for Development initiatives can be implemented.
- ❖ A relief on the national debt level would truly facilitate a large development portfolio to be realized through the annual government budget.

50. Technology transfer:

- Through the enterprise agreement modality, the government of Lebanon has several preferential terms for the transfer of knowledge and technology to the public and academic sectors from ICT conglomerates like Microsoft and Oracle. State of the art ICT academies and institutes have resulted from this process as well.
- The wealth of Lebanese expatriates in high level management positions in global ICT companies has helped in accessing and transferring knowledge and technology to the homeland.

Strategic Actions:

- ❖ Enterprise agreement modality will be expanded to cover the various ICT disciplines (hardware and software) for a more across the board and balanced transfer of technology.

V Follow up

Lebanon is readily available to participate in all WSIS follow up activities as well as other activities related to the WSIS process with other countries and international organizations. These activities should include formation of indicators, comparative benchmarking, peer reviews, best practice exchanges, periodic reporting and other implementation support tasks.

C Conclusion

Lebanon is aware of the challenges facing it to be fully integrated in the new digital economy. Lebanon is also aware that these challenges present opportunities that could be exploited. They would result in economical gains and improve the quality of life for the Lebanese citizen. For a country that was traditionally based on commerce and services, the move to the information age is a normal and a necessary progression.

Lebanon is still facing in 2003, political and socio-economical problems it inherited from twenty years of civil war. The main challenge for Lebanon is to elevate the national priority of ICT related issues. At the same time an awareness campaign aimed at the citizen would help elevate the priority issues given to ICT.

The strategic plan of Lebanon regarding ICT is developed around the following axes:

- E-Government providing G2C and G2B services supported by G2G and G2E services
- National ICT legislative and regulatory framework
- National e-Commerce initiative
- Bridging the digital divide
- ICT as a national priority
- ICT as a production sector

- ICT for socio-economical development
- Provide an enabling environment to encourage all the stakeholders (public sector, private sector and the civil society) to join the process.