



**United Nations**  
**Economic and Social Commission for Western Asia (ESCWA)**

**NATIONAL PROFILE FOR  
THE INFORMATION SOCIETY IN JORDAN**

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## NATIONAL PROFILE FOR THE INFORMATION SOCIETY IN JORDAN

The Hashemite Kingdom of Jordan has a population of 5.3 million and, ICT investment wise, offers one of the safest and most stable environments in the ESCWA region. Like most countries in the region, Jordan suffers from high unemployment and has one of the highest foreign debts per capita in the world.

During the last decade Jordan made a big effort to harness ICT for development and build a strong ICT sector. Successive governments managed to create the global vision of Jordan as a very modern and high potential country. As a result, Jordan ranked 35<sup>th</sup> among 104 countries surveyed in the World Economic Forum's Global Competitiveness Report for 2004-2005<sup>1</sup> and was ranked 51 out of 82 on the network Readiness Index rank in the Global Information Technology report<sup>2</sup>.

### 1. Policies and strategies

#### *REACH Initiative – Private Sector*

In 1999, a strategy was initiated to transform Jordan into a knowledge society. The REACH initiative was published by Intaj, the IT Association of Jordan in mid-2000 followed by the REACH 2.0, 3.0 and finally the REACH 4.0 report in 2004; thus presenting a national strategy for Jordan to develop an export-oriented information technology services sector, capitalizing on its core human capital advantage.

The strategy lays out the main efforts to promote the ICT sector namely. It outlines a clear plan specifying actions to be implemented by the private sector, Government and other stakeholders, in the following thrust areas:

- (a) Regulatory framework strengthening;
- (b) Enabling environment (infrastructure);
- (c) Advancement of programs;
- (d) Capital and finance;
- (e) Human resource development;

Based on the assumptions of stimulation and growth made possible by implementing the REACH Initiative strategy, the following economic impacts were projected for 2004:

- (a) 30,000 ICT related jobs (20,000 direct and 10,000 indirect); 40% has been realized;
- (b) US\$550 million in annual exports; 15% realized;
- (c) US\$150 million in cumulative foreign direct investments; 55% realized.

In 2004, Jordan's ICT sector had grown from \$60 million to \$296 million, exports had increased by more than 450 percent, and employment had increased from 1,250 to 12,000 professionals.

#### *National Policies and Strategies of the Ministry of ICT (MoICT)*

MoICT has issued a Policy Statement outlining the Government of Jordan Policy on Telecommunication and its policy on Information Technology emphasizing the responsibility of the Ministry for ICT issues and the regulatory role of the Telecom Regulatory Commission (TRC). This will ensure the provision of high quality ICT services to the public.

- Telecom Policy: encourages access to high quality ICT services at affordable prices, end mobile sub-sector duopoly after January 2004, achieve 50% access by the public to mobile services

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<sup>1</sup> The growth competitiveness index, which assesses the public and private sector global competitiveness, is composed of three components: The technology index, the public institutions index and the macroeconomic environment index.

<sup>2</sup> The Global Information Technology Report 2004-2005

within 10 years, end Jordan Telecom Company monopoly by end of 2004 and observe universal services;

- Information Technology Policy: aims at enhancing the IT industry, increase internet penetration and accessibility, streamlining government procedures and transaction through the implementation of e-government solutions, address the digital divide specially in remote areas, introduce technology parks, and establish the National Information Technology Centre (NITC) previously the National Information Centre as the execution arm of government in ICT initiatives.

#### *National Information Policy*

The National Information Policy prepared by the National Information Centre in 1996 and updated 2001, addressed aspects of Information from the public, private and citizen point of view. It highlights several dimensions that are important for sustainable development of information age technologies, regulating the use of information, creating new employment opportunities and enhancing competitiveness.

#### *Towards Fulfilling National Policies and Strategies*

Some of the more important processes that are underway towards fulfilling those national policies and strategies can be summarized as follows:

- Human Resource Development through the educational reform program, e-learning action plan, and higher education ICT strategy;
- Bridging the Digital Divide through the establishment of information technology community centers, Knowledge Stations;
- Connecting Jordanians as a fiber based communication infrastructure across Jordan;
- Allocating funds through the 3 year socio-economic plan (2004-2006).

#### *Involvement of World Summit on the Information Society objectives:*

The Government of Jordan is committed to ensuring that the maximum advantage is taken of the opportunities presented by the Information Society through the various initiatives that have been launched.

## *2. Legal and regulatory framework*

#### *National Intellectual property rights, privacy status and status of freedom of expression*

In 2004, Jordan joined the World Intellectual Property Organization (WIPO). Accession to the WIPO Copyright Treaty entered into force on April 27, 2004. Through WIPO, Jordan aims to:

- Harmonize national intellectual property legislation and procedures;
- Provide services for international applications for industrial property rights;
- Provide legal and technical assistance;
- Facilitate the resolution of private intellectual property disputes; and
- Regulate storing, accessing, and using valuable intellectual property information in information technology.

#### *Telecom regulatory framework in the country*

The Ministry of ICT was established in the year 1995. Its responsibility is to set policies relating to telecom services, and the Telecom Regulatory Commission (TRC) is to implement these policies.

### *Regulating the Internet*

Internet service provisioning has to be licensed by the Regulator. The number of licensed ISPs is 25, out of which 10 are currently operational. IP telephony is being regulated in Jordan by TRC.

### *Other ICT-related laws and regulations for applications*

Other laws on ICT and its use by the private sector have been implemented, which shows the commitment of the government to the promotion of the ICT sector and the socio-economic development of the country:

- Deployment of I.T in Government Entities- the National Information Technology Centre Law- Law No. (81) for the year 2003;
- Trade Names Law No. (22) for the year 2003;
- Electronic Transaction Law No. (85) for the year 2001, covering e-transactions, e-records, e-signature, and e-documents;
- Copyright Law No. (22) for the year 1992, amended by law No. (29) for the year 1999;
- Trade Marks Law No. (13) for the year 1952;
- Patents Law No. (32) for the year 1999.

### *3. Telecommunications Infrastructure*

#### *Telephone Penetration*

In 2004, Jordan had almost 638,000 main telephone lines (11.9% penetration), 1.62 million cellular mobile telephone subscribers (30% penetration).

Jordan has a very competitive telecommunications infrastructure with a wide array of services. Jordan Telecom Group, mainly thorough its GSM and data subsidiaries (MobileCom and Wanadoo) grew 21% during 2004, though operating expenses grew only 4%.

Jordan Telecom is mostly owned by the Government (41.5%), while 40%<sup>3</sup> is owned by the Joint Investment Telecommunications Company., and 13% is owned by the Social Security Corporation, whereas various private sector stakeholders own 5.5%.

At the end of 2003, the TRC opened a tender process to grant a third mobile operating license to compete with Fastlink and MobileCom. A third mobile operator license was granted to Umniah in August 2004, while Xpress was granted a Radio Trunking license in April 2003. The new company utilizes iDEN technology.

Belalco was just awarded a new fixed operator license.

#### *Internet backbone*

The available international bandwidth has been upgraded to 3\* 155 Mbps on submarine cable one of which (155Mbps) is redundant. Domestically, the backbone network accommodates STM4 fiber optical ring.

#### *ISPs and ASPs*

Currently, 21 ISP's are licensed to operate in Jordan ([www.trc.gov.jo](http://www.trc.gov.jo)). The provision of the data communication service is fully liberalized. The data communication service has developed substantially in

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<sup>3</sup> of which 88% is owned by France Telecom and 12% by the Arab Bank Plc.

Jordan over the last few years. The service is licensed through a class license of ten-year duration. Prices are completely liberalized while quality and standards of service are underscored in the license.

#### *Access*

In 2004, there were around 457,000 Internet users.<sup>4</sup> Internet Cafés also provide Internet access to many users in Jordan. At the end of 2004 there were 350 Internet cafes. Internet café ownership is regulated and they are required to be registered and to keep user logs for each visitor.

In order to provide good service to everyone, Jordan Telecom was able to introduce significant reductions in international call charges by implementing Voice over Internet Protocol (VoIP) called “Double Play” and is widely available in the country. For the private sector, the new services are offered to outsource the management of business network infrastructures, to host applications and to give access to e-payment and e-commerce. The, Wide Area Network Solutions (WANS) service covers access methods such as Leased Lines, ADSL, ISDN, GPRS and WiFi. ADSL penetration has now passed the 10% mark, equivalent to more than 500,000 lines in the country.

Wanadoo offers data services and has the record growth in 2004. In terms of the latest technology, WiFi, there is a plan to install public WiFi hotspots, which will allow business wireless Internet connectivity in business centers and technopoles. The TRC relaxed regulations on WiFi in October 2003 by removing fees for internal corporate use. However, operators offering service to the public needs to register with the TRC and pay an annual fee of US\$22 per access point.

In terms of sustainability of the knowledge society, Jordan has, according to ITU, 4116 Internet Host Computers, i.e., hosts with a domain name that has an IP address record.

#### *PC dissemination*

In 2004, there were 350,000 personal computers in Jordan.<sup>5</sup>

Jordan Telecom has re-announced the launching of the PC@everyhome initiative. It offers packages consisting of a personal computer, software, modem and dial-up or ADSL access. The service includes delivery, warranty and an Internet helpdesk for service support. Payments start at 20 JD/month spread over three years. This price is estimated to be at least 40% lower than market prices and allows low-income people to move to the other side of the digital divide. This project also benefits the local ICT sector, which assembles and integrates the machines. The Ministry of ICT, Intel, Microsoft, int@j and the Arab Banking Corporation have launched the initiative.

#### *4. Capacity Building*

Jordan understands that building capacity is the basis for a sustainable ICT sector in the near future. Accordingly, the government is promoting ICT in General and Higher Education, Research and Development Initiatives and ICT training for everyone.

#### *Awareness and dissemination*

An ICT literacy programme for 20,000 government employees has commenced in 2004. So far, 5300 employees have been trained to ICDL level.

#### *Computers at school*

In 2001 the Minister for ICT established a priority to connect every school, college and university in the country by 2005 via a broadband fiber-optic communications network. Intel helped train 5,000 teachers on the application of technology to the classroom.

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<sup>4</sup> According to ITU data for 2003 ITU, Global Telecom Indicators-2004

<sup>5</sup> According to ITU data for 2003 ITU, Global Telecom Indicators-2004.

### *Vocational training*

NetCorp, aims to train young people. Also, 100 “Knowledge Stations” (KS’s) have been established by NITC as IT Community Centres to offer ICT training. By the end of 2004, 57,000 people, mostly in rural areas, have been trained at those Knowledge Stations.

### *University Education*

Princess Sumaya University for Technology, University of Philadelphia and the University of Yarmouk are taking the lead in implementing ICT development skills. The Ministry of ICT and the Ministry of Higher Education and Scientific Research are fostering a strong cooperation between the business sector and academia in order to enhance the skills of Jordan’s IT graduates and bridge the existing gap between academic curricula and corporate ICT standards. The Universities need to play an essential role in enhancing the technical know-how of IT students, as well as developing their soft skills and non-technical qualifications.

### *Research and development and Innovation in ICTs*

R&D activities are being conducted at various universities, however, private sector initiatives are ongoing at technology parks especially iPark, in areas such as computer games, arabization and educational packages.

## *5. Building the ICT sector*

### *ICT firms*

Jordan’s REACH initiative aims at developing an internationally competitive ICT industry, focusing on software and ICT services and led by the private sector in partnership with the government. According to REACH 4.0 report, Jordan’s software and ICT services industry has been experiencing rapid growth, is becoming increasingly export-oriented and is quickly developing the necessary capabilities to compete on a global basis.

Jordan has understood the importance of launching ICT business incubators to build a healthy ICT sector. One of the main ones iPARK is a Jordanian organization, established by the Higher Council for Science and Technology in May 2003, with the objective of supporting Jordanian entrepreneurs and start-ups in the ICT sector, increase their odds of success and establish and nurture their businesses in a supportive and innovative environment<sup>6</sup>.

### *Investment in ICTs*

Revised target numbers for 2006 and what was actually achieved by the end of 2004 are as follows:

	2006 targets	Achieved by 2004
Jobs in sector	30,000	12,900
Annual exports	\$100M	\$70M
Domestic revenues	\$550M	\$225M
FDI	\$170M	\$80M

A sectoral analysis of these data can easily drive to the conclusion that Jordan will achieve such targets by 2006, but not without a number of important factors, namely: ICT Industry growth, Regulatory Framework, Human Resources development, Government support, Capital and Financing, and Infrastructure development. Jordan is ranked 50 in ICT sector development according to the World Economic Forum Competitiveness Report.

### *Government facilitation*

The Government is facilitating the required changes through the initiatives that have been launched including e-government, e-learning, infrastructure development, legislative development, support of private sector initiatives; not-to-mention bridging the digital divide through the knowledge stations Initiative.

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<sup>6</sup> According to the Global Forum on Business Incubation –[www.incubatorsnetwork.com](http://www.incubatorsnetwork.com).

### *Export of ICT equipment/software*

According to official 2003 figures published by Intaj in August 2004:

- Export revenues grew up to \$69,728,000;
- Domestic revenues grew up to \$ 226,183,000;
- Total revenues grew up to \$295,910,054;
- Employment in the ICT sector grew up to 12,900 employees; and
- Accumulative foreign direct investment grew up to \$79,656,250.

## *6. Applications In Government Establishments*

### *Computerization of public administration*

The e-government initiative was launched at the end of 2000 aimed at enhancing government efficiency and effectiveness in delivering its services. It is a holistic approach to enhance government-to-government (G2G), government to citizen (G2C), government to employee (G2E), and government to business (G2B) services.

The Ministry of ICT has been designated to be responsible for developing e-government in the country.

Laws have been redefined to embrace the e-services in the new electronic environment including IPR and e-business legislation. Some 70 Government departments have computerizing their back-office systems in preparation for providing e-services.

### *e- government*

Several e-government initiatives and plans are under way:

- Nine fast track e-services programs have been initiated as proof of concept applications. These include vehicle licensing, social security applications, land and survey enquiries, taxation processing, telecom licensing, company registration, Amman municipality services, e-procurement;
- ICT literacy program: some 5300 government employees have been trained, with a target of 20,000 employees by end of 2006;
- Establish a Secured Government Network (SGN): which has been implemented connecting 18 government entities for e-mail services;
- E-government Operation Centre established at NITC;
- Assessment Studies for security and data centre design are underway;
- E-government Portal is in the final stages of development.

### *e-Procurement applications*

Development of e-procurement applications is underway for government tenders and supplies departments. E-payment applications are being developed in several other departments.

### *Computerization of customs processing*

The Customs department has implemented a computerized customs system (JARASH) through the use of the ASYCUDA System in cooperation with UNCTAD and UNDP. The system provides for transparent customs procedures and practices, efficient clearance operations, and accurate statistics. The system has been in service for 5 years.

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

Income Tax and Sales Tax Department has launched its on-line e-services in January 2005. These services include tax forms, e-payment, and customer call centre services.

### *e-Chamber*

Amman Chamber of Commerce launched the e-chamber system in 2004, which provides its members with on-line services through the Internet, including membership renewal, certificate of origin, sponsorships, statistics, etc. The chamber of Industry will be implementing similar systems soon.

### *National Information System (NIS)*

This decentralized national initiative involves (160) public organizations and encompasses 17 sectorial networks, aims at developing information centres and connecting them via a national network for the purpose of providing access to up-to-date information to decision makers and other users. The National Information Technology Centre (NITC) is responsible for establishing and managing (NIS). NIS went on-line in 1996 and so far has 2000 visitors per day.

## *7. Applications in Education*

### *E-Learning*

As part of the larger Education Reform for the Knowledge Economy Initiative (ERFKE) launched in 2002, the e-learning initiative is being implemented and supervised by the Ministry of Education and the Ministry of Higher Education and Scientific Research. The initiative includes two tracks: e-education in schools and e-education at the university level. At schools, the program aims at introducing information technology courses within the curricula and facilitates the required infrastructure. So far, 2,500 schools out of 3200 public schools have been provided with computer labs, 1200 schools have been connected through the schools network since the initiative was launched in 2002, and it is expected that all schools will be equipped and connected by the end of 2006. About 35,000 teachers have been trained on new information technologies and 25,000 have achieved International Computer Driver License (ICDL) certificate.

A comprehensive K-12 e-learning platform, EDUWAVE, developed by a leading Jordanian IT company, Integrated Technology Group (ITG) has been deployed in pilot schools in 2004. This provides access to the e-portal for students, teachers and later on parents. The platform has comprehensive authoring tools as well as administrative tools to manage the educational process.

At the university level, new IT faculties have been established in 5 public universities, 7 out of the 8 universities have completed their fiber-based campus network, and a national broadband academic network has been established connecting all public universities. Distance learning activities have been initiated among some universities in 2005.

### *Jordan Education Initiative (JEI)*

This education initiative formally launched in June 2003 at the Extraordinary Meeting of the World Economic Forum at the Dead Sea, aims to overcome the shortcomings of the educational process specially in preparing students as entrepreneurs and job creators. The initiative is a model in public-private partnership involving 45 global corporations, Jordanian entities, and governmental and non-governmental organizations, in partnership with the Government of Jordan.

The initiative involves 100 Discovery Schools that are being connected with broadband connectivity, and five e-curricula, one of which is already deployed in a number of Discovery Schools with an on-going teachers training Program.

### *Jordan Broadband Learning Network*

This initiative aims to connect all public schools (3200), universities (8) and Knowledge Stations (100), in a broadband learning network. The first phase of which involves connecting 240 schools over-and-above the eight universities. The eight phases of the project are to be implemented by end of 2006.

## 8. Applications in Commerce and Business

### *Extent and maturity of e-commerce and e-business applications*

Very few initiatives in the area of e-commerce have been developed in the country. Tejari,<sup>7</sup> is one of these initiatives designed and developed in the United Arab Emirates and expanded into Jordan as a business-to-business (B2B) e-Marketplace where member companies and organizations can buy and sell goods and services online in real time. Through Tejari, buyers can find, compare, and procure products and services. Buyers can conduct reverse auctions in which sellers bid to supply products and services at the most competitive prices. On the other hand, suppliers can list their products and services, to sell them through online catalogs or auctions.

Several Jordanian companies have deployed e-commerce applications including on-line sales such as Jormall.com, transport and delivery such as Royal Jordanian, and Aramex.

E-commerce applications are expected to grow given the high amount of use of Visa and other credit cards in the country. Jordan Telecom, through its subsidiary e-dimension and the Jordanian banks launched the e-payment gateway in 2003, which was intended for telecommunications billing but should be extended to utilities and commercial purposes.

### *Availability and quality of e-banking*

E- Banking has been provided for the last several year by the main commercial banks in Jordan. The e-services include: internet banking, shopping, WAP banking, transfers, e-cards, ATM, e-transactions, bank to bank transfers.

### *Maturity of regional ATM and banking networks*

There are about 540 ATMs in Jordan. Visa Jordan has issued more than 1.4 million Cards (End 2004) with more than 13000 commercial facilities with transactions over 300 Million Jordanian Dinars. JONET (the ATM system run by Visa Jordan) facilitates cash withdrawals from any ATM in Jordan. Recently, Visa Jordan is issuing the Smart Card and e-service commercial portal for commercial transaction, which will make Jordan one of the leading countries in the region.

### *Maturity of Bank to Bank financial transfer system*

RTGS-JO is an electronic, central, real time, gross settlement system. It is designed to handle Credit Transfers (Giro system). Settlement is final and transfer orders are irrevocable. It also provides a central settlement point for all netting systems in the Kingdom. Membership is mandatory for all operating Commercial banks in Jordan.

## 9. Applications in Healthcare

### *Databases for national healthcare*

In 2004, King Abdullah University Hospital (KAUH) has implemented MEDICOM's integrated workflow capabilities to replace the existing manual processes within the hospital, addressing critical areas such as ordering, prescribing and charting. MEDICOM is a high-end Healthcare Information System Product company. It supports an enterprise wide deployment of Healthcare Information Systems. This project aims at automating the healthcare environment in order to create an environment that supports patient safety and enhances operating efficiency. MEDICOM improves operational efficiency, helps registration process and speeds up the patient flow from scheduling to treatment to check out. The advanced queue management capabilities reduce patients' waiting time. The clinical and operational staff can also track patients, order status, and generate essential management reports in a more efficient manner.

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<sup>7</sup> Tejari Jordan, part of Tejari ([www.Tejari.com](http://www.Tejari.com)), the Middle East's premier B2B marketplace.

A Joint Purchasing Department has also been setup to conduct medical procurement for the major public hospitals in Jordan. A national medical inventory database is being established for this purpose.

Furthermore a healthcare portal as part of the National Information System ([www.nis.jo](http://www.nis.jo)) is available to provide general information to the public regarding healthcare services and institutions.

*Telemedicine and Teleconferencing:*

Telemedicine applications have been conducted in Jordan for more than 10 years. The Royal Medical Services had established a telemedicine teleconferencing link with Mayo Clinic in the USA in the early nineties. However, the private sector through Medlabs Company established a telemedicine link with Huston Hospital in the USA at the same time. Jordan is also part of some telemedicine database network such as the TeleMedicine Egypt Network.

*Maturity and implementation of Health Care Information Technology Systems*

Health web portal will meet the need of Jordanians for relevant and appropriate health information in Arabic as well as provide continuous education in English for health and communication professionals. The implementation of the project started in 2004 and is expected to complete by 2008. The website of the Ministry of Health has an Interactive Health Map that can produce various reports and distributions of health service centres, spread of diseases and other relevant information.

10. *Digital Arabic Content*

The lack of digital Arabic content is a problem that is inhibiting the growth of the Internet in Jordan. However, this situation is changing due to local initiatives.

Four Jordanian companies tried to tackle the issue of Arabic content from an educational point of view: Menhaj.com, ITG, ROBICON, and SchoolArabia.com. The company Menhaj claims to cover curricula for Arabic, Science and Mathematics, with content accessible only for paying subscribers. Taking a totally different approach, SchoolArabia.com offers free content, especially in the fields of science, provided by teachers from Jordan and other Arab countries. ITG has developed an e-learning multilingual platform, while Robicon is developing e-curricula in Mathematics, English and Sciences. At the same time, Arab media and other sectoral contents are being translated into Arabic or created in Arabic on a daily basis. Among the most popular websites is [www.PlanetArabia.com](http://www.PlanetArabia.com), [AmelInfo.com](http://AmelInfo.com), [Arabia.com](http://Arabia.com), [Maktoob.com](http://Maktoob.com),

*Local creation of software products in Arabic*

A Jordanian Company has developed a comprehensive Arabic Content Search Engine and Maktoob.com has developed the Arabic e-mail. Some start-ups are working to develop arabized computer games.