

LAUNCHING
JORDAN'S
SOFTWARE
& IT INDUSTRY



An Updated Strategy & Action Plan
for
His Majesty King Abdullah II

January 2001

REACH
2.0

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EXECUTIVE SUMMARY

This report documents Jordan's extraordinary progress in developing a vibrant, export-oriented Software Development and Information Technology Services Industry. By adopting and implementing a comprehensive strategy designed to maximize the IT industry's ability to compete in local, regional and global markets, Jordan is fast on its way to becoming an IT success story. This strategy, based on a clear plan of action carried out in tandem by the private sector, the government and other stakeholders, is designed to plug Jordan directly into the knowledge-based economy of the future.

Jordan's IT services Vision

Jordan shall become a regional IT leader and internationally recognized exporter of IT products and services, exploiting its core human capital advantages. The key to success is the central role of the private sector, which shall spearhead the sustained entry of the sector into international markets.

It shall also require strong and active support from all levels of Jordan's Government to create a positive regulatory and promotional environment for IT success now and into the future. This IT industry-Government of Jordan partnership is the key to sustained growth and creation of economic benefits for all Jordanians.

-REACH

This report, REACH 2.0, lays out precisely where Jordan stood when the country began this endeavor, recognizes the remarkable success Jordan has achieved over the last year, and accurately assesses what remains to be done to attain the goals first laid out in the original REACH report.

Based upon realistic assumptions of the stimulation and growth made possible by implementing the REACH strategy, Jordan has set the following targets for this 5-year plan:

- ❑ **30,000 IT-related jobs by 2004**
- ❑ **US \$550 million in annual exports by 2004**
- ❑ **US \$150 million in cumulative foreign direct investment by 2004**

Already, great strides have been made since the launch of REACH in developing the economic environment and technical expertise necessary to achieve these goals. IT-related employment has more than doubled, annual exports have grown to an estimated \$40 million (a growth rate of 349% since the launch of REACH), and more than one-third (1/3) of the FDI target has been attracted to Jordan.

The growing momentum inspired by last year's private-public cooperation, IT industry teamwork, and crucial regulatory reforms demonstrates that the REACH targets can be achieved in the 5 year time frame. However, much work remains to be done to ensure that momentum does not stall. New legislation, bureaucratic reform through implementation of E-government processes, industry-wide investment in quality certification, management and technical training, and the continual upgrade of the Kingdom's telecommunications infrastructure are key components to Jordan's evolving IT Action Plan.

INTRODUCTION

Over the next five years global spending for IT products and services will grow at a rapid 13% compound annual growth rate, rising from \$1.4 trillion this year to \$2.6 trillion by 2005. Data communications, information services and software development are the fastest growing market segments, with total spending on these sectors reaching \$16.7 billion by 2005. The MENA (Middle East and North Africa) region will be the second fastest growing market in the world. Jordan's goal is to develop a world-class software development and IT services industry to capitalize on these investment opportunities.

1.1 Background: REACH Launch

What began as a vision inspired by the success stories of other small countries like Singapore and Ireland, is quickly shaping into a reality. Those countries, similarly short on natural resources, and long on human talent, provided Jordan with a compelling example of what can be achieved when the public and private sectors work together to agree on a strategic vision and then implement it.

The vision for Jordan's future was first articulated on June 30th 1999, when His Majesty King Abdullah II asked Jordan's Information Technology leaders to develop a concrete proposal aimed at strengthening Jordan's IT sector. In response, IT leaders and key members of the Jordan Computer Society (JCS) devised the **REACH Initiative**, a comprehensive framework that embraces actions in the following areas:

- R**egulatory Framework
- E**nabling Environment and Infrastructure
- A**dvancement of National IT Programs
- C**apital and Finance
- H**uman Resource Development

Presented to H.M. in October 1999, the REACH report laid out a clear plan of action to bolster the country's nascent IT sector and maximize its ability to compete in local, regional, and global markets. It took a critical look at Jordan's strengths and weaknesses vis-à-vis other relevant competitors. Most importantly, it outlined a 5-year plan, specifying actions to be implemented—by the private sector, the Government, and by other stakeholders—to ensure a favorable place for Jordan in the Internet-based E-economy.

From the beginning, this plan was intended to be a dynamic document, one whose recommendations would be implemented and revised as the industry underwent rapid changes over the next five years. One year after REACH was first launched, it is now necessary to measure Jordan's success in achieving its goals.

REACH Goals and Targets

The goals and targets outlined in REACH are ambitious and attainable. By the end of 2004, the country will have generated 30,000 IT and IT-related jobs, will be earning \$550 million dollars per year in exports, and will have attracted \$150 million dollars in foreign direct investment. The benefits of accelerated growth in the IT sector will not be limited to economic gains. The social benefits will include an empowered population, improved public services, and better education

for all Jordanians. Strategic benefits include greater efficiency of government, creation of a knowledge-based economy, enhanced economic competitiveness, and less dependence on traditional markets.

Strategic Thrusts

Achieving these goals and economic targets requires the sustained implementation of a range of actions in a number of inter-related areas. The original REACH document organized these actions into six strategic thrusts:

1. IT Industry Development – The capabilities of existing IT services firms and the sector as a whole need to be upgraded to effectively compete in regional and global markets.
2. Policy and Regulatory Strengthening – Success will require the establishment of a supportive regulatory framework for the IT industry, and streamlining of procedures.
3. Human Resource Development – Long term competitiveness depends on the ability of Jordan's educational initiatives to produce the quality and quantity of IT professionals that meet the requirements of the marketplace.
4. Government Support - Total commitment and active government leadership is required to stimulate, facilitate and promote the software and IT services sector.
5. Capital and Financing – Innovative mechanisms are required to provide funding to the industry and facilitate Initial Public Offerings (IPOs) of successful companies.
6. Infrastructure Improvement – Development of telecommunications and purpose-built physical facilities to increase the competitiveness of the IT industry, and the productivity of Jordanian IT workers.

Integrated actions undertaken by the IT Industry itself, the Government of Jordan, and a wide range of stakeholders are vital to ensuring the success of the Initiative.

1.2 Market Trends for Jordan's IT Industry

Jordan's software and Information Technology (IT) services industry has been experiencing rapid growth, is becoming increasingly export-oriented, and quickly developing the necessary capabilities to compete on a global basis. At the time of REACH's launch, in October 1999, it was determined that Jordan's IT market was growing at an impressive rate: between 15 and 30% per year. At the same time, an increasing number of firms were expanding into the export market, and software and IT services exports were growing at a rate of more than 100% per annum.

In 1998, there were approximately 1,250 professionals employed in Jordan's budding IT sector. The total size of the IT market (both domestic and foreign sales) in Jordan at that time was estimated at \$60 million. Of that amount, some \$16.2 million came from local sales of imported and domestically produced software, indicating an annual growth rate of about 30%. Over 75% of software and IT services were sold to the commercial rather than the government market.

It was estimated that in Jordan, software sales and IT services generated some \$7 million to \$10 million in export revenue for 1999, but by 2004 with the right investment and government support, that number could realistically reach \$550 million.

CHAPTER 2

REACH MILESTONES

With full government support, Jordan's private sector has embarked on a plan to liberalize, modernize and expand the IT sector. Industry leaders spearheading these reforms outlined their objectives in the REACH Initiative one year ago. This chapter documents how far Jordan has progressed in achieving its goals.

2.1 IT Industry Development

IT Industry Association Formed

One of the first successes to result from the REACH Initiative was the creation of a dynamic new IT industry association, Int@j , in May 2000. The mission of Int@j (the Information Technology Association of Jordan), a voluntary non-profit, private organization, is to effectively represent, promote, and advance the Jordanian software and IT services industry in the global market. At the time of the writing of this report, 53 IT companies were members of the association, but that number is growing. Through the collective efforts of its members, much has been accomplished. Profiles of Int@j member companies can be accessed on the association's website at www.intaj.net.

REACH 2.0 is, in fact, the outcome of a phenomenal effort led by Int@j , working closely with the government, and other stakeholders, to assess Jordan's progress and map out a clear course of action. What is most remarkable is the dedication and desire on the part of Jordan's business and government leaders to work together to make the necessary changes to develop the IT industry. The REACH Initiative has inspired a new mind-set among Jordanians, and its momentum is growing.

This report, REACH 2.0, is the culmination of a ten week review of the national IT development strategy. 1,114 individuals from private and public sector organizations participated in 97 meetings held over a period of 71 days. Thirteen international consultants were invited to Jordan to consult on best practices in twelve areas of expertise, ranging from capital and finance, to human resources development. Twelve workshops and 5 stakeholder roundtables were held to ensure maximum participation. A total of 3,539 man-hours went into creating the recommendations that comprise REACH 2.0.

The outcome of this phenomenal effort was a detailed list of policy and legal recommendations that, when fully implemented, will transform Jordan into a technology research and development hub for the Middle East.

REACH Website Launched

One of the first accomplishments of Int@j was the creation of a comprehensive website dedicated to tracking the progress of the REACH Initiative at all stages of its development.

"International competitiveness is the preeminent issue facing governments and private companies around the world. The future of Jordan hinges on our ability to be productive and efficient within the global marketplace, particularly in future-oriented, knowledge-based products and services"

Vision 2020
January 2000

Located at www.reach.jo, the REACH website provides a public forum for posting of the most up-to-date information on this dynamic initiative.

IT Representation in World Economic Forum

On January 30, 2000, His Majesty King Abdullah II represented Jordan at the World Economic Forum in Davos, Switzerland. In setting out his plan to attract international investment, the King presented Jordan's economic agenda, designed to capture the benefits of globalization and the technological revolution.

Following his speech at Davos, His Majesty met with Microsoft Chairman, Bill Gates, who subsequently sent senior Microsoft officials to explore investment opportunities in Jordan. His Majesty also met with Carly Fiorina, CEO of Hewlett Packard, who agreed to assist Jordan in its efforts to implement its new E-government initiative. John Chambers, President and CEO of Cisco Systems was another industry leader who recognized Jordan's progress at Davos. As a result, Cisco Systems, the company that handles one-third of the world's e-commerce and with whose equipment more than 80 percent of the Internet was built, is now investing in the Jordan Hi-Tech Fund.

"It is time to widen the scope of our participation in the knowledge economy from being mere isolated islands on the periphery of progress, to becoming an oasis of technology that can offer the prospect of economies of scale for those who venture to invest in our young available talent."

H.M. King Abdullah II
World Economic Forum
Davos. 2000

First IT Forum Held at Dead Sea

On March 24, 2000 Jordan hosted its first international IT forum. More than 380 participants attended the forum. One hundred and fifty were foreign participants representing 120 high-profile international companies. During the forum, local IT firms met with representatives of Microsoft, Oracle, Sun Microsystems and Cisco Systems. Cisco representatives agreed to set up a business incubator for Jordanian IT start-ups and also offered to cooperate with Jordanian universities to upgrade their computer science curricula and introduce certification.

"Jordan has done its homework and we are serious about focusing on IT as one of our main economic sectors."

Dr. Mohammad Halaiqa
Minister of Industry and Trade

The IT forum was also a catalyst for improvements in Jordan's telecommunications infrastructure. Based on outspoken demand at the IT forum, the Jordan Telecommunications Corporation, which had recently sold 40% of its shares to a France Telecom/Arab Bank consortium, vowed to upgrade Jordan's infrastructure to international standards by the end of the year. A second, and much larger IT forum is scheduled for June 2001 to be held in Silicon Valley, California and hosted by Cisco Systems.

Quality Certifications a Priority

Software vendors in Jordan are increasingly qualifying developers in a variety of vendor-specific certifications. Jordan has the highest number of Microsoft Certified Professionals per capita in the world. Int@j has recognized the value of certification in enhancing the credibility of the IT industry as a whole and is leading efforts to attain certifications based on the Software Capabilities Maturity Model (CMM®) for its member companies.

Investment Opportunities Emerge

Jordanian IT firms are increasingly acquiring critical skills, proving their high potential for meeting the coding and testing needs of the global offshore outsourcing trend. Jordanian firms have also exhibited strong capabilities in the areas of implementation, maintenance, customization and Arabization, needs analysis/functional specifications, and design. Most Jordanian e-solution providers, generally regarded as visionaries only a couple of years ago, are now going global, opening offices in the US, Middle East, and European capitals.

Jordan's expanding list of leading IT companies includes product developers, outsourcing firms and E-businesses. Examples of success are Arabia Online with its 45 million page views (impressions) a month, OneWorld Software Solutions, Zeine Technological Applications (offering e-business solutions), and Integrant (specializing in Internet application development). Providing Jordanian IT firms with increased access to critical skills and leading operating tools can assist a foreign IT firm attain a foothold in the regional market.

Opportunities also exist for a foreign investor to act as a catalyst for mergers between local companies helping them overcome size constraints and achieve economies of scale. A recent example is that of Bahrain's Telecommunications Company's purchase of a 51% stake in two local ISPs, Nets and Firstnet. The two were merged and are now owned by a wholly owned Batelco subsidiary.

Marking an important milestone in Jordan's IT development was Microsoft's decision this year to open a local office in the capital city of Amman. While Microsoft has operated in the region for the past nine years, the establishment of a regional office in Jordan is an indicator of the firm's confidence in Jordan as a secure location to conduct business. Microsoft plans to assist the Jordan government in developing the country's digital economy and implement its E-government initiatives.

"Our commitment to Jordan is motivated by factors such as high literacy rates and keen entrepreneurial skills, all of which indicates an eagerness to grow and evolve."

Bahram Mohazzebi
Microsoft Official

2.2 Policy and Regulatory Strengthening

Legislative Reform to Support IT Industry

"It is absolutely essential that enabling legislation be put in place during the next parliamentary session to ensure that Jordan is 'Open for Business' in 2001."

H. E. Dr. Fawaz H. Zu'bi
Minister of Information and
Communications Technology

REACH 2.0 Closure
September 21, 2000

The most important achievement to come out of REACH 2.0 was an omnibus package of IT legislation that is scheduled to be adopted and implemented by Parliament in early 2001. This package of essential legislation lays the foundation for an investment – friendly IT environment in Jordan, on par with the highest international standards. Over the next few months, Parliament is expected to revise or amend 25 laws and 273 articles, in addition to adopting new laws such as E-commerce and E-signature legislation, that will provide the legal framework for phenomenal growth in the IT sector.

Liberalization of Jordan's Economic Environment

With a limited endowment of natural resources and a small domestic market, Jordan has recognized the advantages of opening its doors wide open to Foreign Direct Investment in all sectors of the economy. The Jordanian government has taken dramatic steps to adopt trade liberalization policies aimed at greater integration with the world economy. Jordan's Investment Promotion law, for example, allows 100% foreign ownership in most sectors, and guarantees equal treatment of domestic and foreign investors. A new public-private council, the Economic Consultative Council has been established to guide the reform process forward.

Privatization

Privatization is a key instrument in the government's strategy to transform the Jordanian economy. Progress has already been achieved in a number of strategic sectors such as telecommunications, tourism, water, electricity, and land, rail and air transport, including privatization of the national airline, Royal Jordanian.

"Today's communications capabilities are driving the creation and adoption of vibrant new businesses around the world, and Jordan is now set to capitalize on these new economy opportunities for investment and growth."

Michel Bon
President, France Telecom

France Telecom Takes a Stake in JTC

The sale of a 40% stake in the Jordan Telecommunications Company (JTC) became a reality on January 23, 2000, when the government signed an agreement with a consortium of France Telecom and the Amman-based Arab Bank. The head of France Telecom, Michel Bon, made it clear that his company is not interested in short-term measures, but is managing the JTC on a commercial basis, and will invest \$400 million to upgrade Jordan's telecommunications infrastructure over the next four years.

WTO Accession

Jordan scored a significant success when its bid to join the World Trade Organization was accepted at the close of 1999. What is most remarkable is the speed at which the country rallied together to make the reforms necessary to gain acceptance into the WTO. In a matter of a few short months, the Jordan government passed 14 pieces of new legislation through Parliament. This achievement is a testament to the government's commitment to free trade and an open economy.

U.S. – Jordan Free Trade Agreement

On October 24, 2000, His Majesty King Abdullah II and U.S. President Bill Clinton witnessed the signing of a historic agreement that will gradually remove all trade barriers between Jordan and the US. Over the next ten years, the agreement will eliminate tariffs on virtually all goods exchanged between the two countries, provide for the protection of intellectual property on both sides, and encourage cross-border E-commerce by guaranteeing no taxes are levied on web-based transactions.

"The Internet is already bringing the peoples of the world closer together, enabling them to freely exchange ideas as well as products...With [the signing of their Free Trade] agreement today, President Clinton and King Abdullah ensure that their countries will receive the full benefit of this technological revolution."

John Chambers
President, Cisco Systems

"Having accomplished major aspects of the restructuring and liberalization of its economic frameworks and completed a significant part of its privatization program, Jordan has now successfully created an attractive environment for private capital investments."

H.M. King Abdullah II
Free Trade Agreement Signing Ceremony
Washington, DC 2000



IPR Implementation

The legislative changes Jordan adopted last year to gain acceptance into the WTO included the signing of the TRIPS Agreement on Trade Related Aspects of Intellectual Property Rights. The signing and implementation of TRIPS has resulted in the removal of Jordan from the US watch list of those countries failing to ensure intellectual property protection, and has garnered recognition of Jordan as a leader in the region in the protection of Intellectual Property Rights. A major reason cited for Microsoft's entry into Jordan is its recent reforms in intellectual property and copyright laws.

The Business Software Alliance (BSA), an international organization committed to advancing free and open world trade for legitimate business software by advocating strong intellectual property protection for software, has also recognized the country's success, bestowing the esteemed BSA Award on Jordan in October of 2000.

By 2001, Parliament is also expected to ratify the World Intellectual Property Organization's Copyright Treaty of 1996, distinguishing Jordan as the first country in the region to sign such a treaty. Ratification of the WIPO Copyright Treaty and WIPO Performances and Phonograms Treaty within two years is a stipulation of the Free Trade Agreement signed between the governments of Jordan and the US. These two treaties, sometimes referred to as the 'Internet Treaties,' establish several critical elements for the protection of copyrighted works in a digital network environment, including a creators' exclusive right to make their creative works available online.

"By staying committed to protecting intellectual property rights, encouraging knowledge transfer and fostering a thriving IT industry that is second to none, the government foresees its role as an influential force in empowering its people with the skills, expertise and resources to excel in today's digital economy."

Dr. Mohammad Halaiqa
Minister of Industry and Trade

Electronic Commerce

For the first time in a free trade agreement, Jordan and the U.S. committed to promoting a liberalized trade environment for electronic commerce that encourages investment in new technologies and stimulates the innovative uses of networks to deliver products and services. Both countries agreed to avoid imposing customs duties on electronic transmissions, imposing unnecessary barriers to market access for digitized products, and impeding the ability to deliver services through electronic means.

Easing of Censorship Controls

Jordan continues to enjoy limited enforcement of censorship controls. In July of 1999, new regulations published by the Department of Press and Publications, and by the Customs

Department, halted the practice of forwarding IT-related software and media to the Ministry of Information for censorship review. Current laws authorizing this practice are currently being repealed, to remove the legal basis for censorship.

Additional Reforms Favorable to the IT Services Sector

A more favorable tax treatment of the IT services sector is emerging with special emphasis on depreciation allowances, deductions, and exemptions on export income from software transmitted electronically. Efforts are underway to reduce the indirect tax burden on all IT-related products and adopt more competitive taxation policies for the industry.

This year, Jordan's Investment Promotion Law was amended to include IT services in the list of investment types eligible for special tax incentives. As a result, IT services firms will no longer be required to have a 50% Jordanian partner. Foreigners may own 100% of such firms, with no restrictions on the movement of capital abroad. At the same time, customs duties on most imported IT hardware were lowered to just 5% in 2000. In addition, import/export procedures are being simplified and customs procedures have been significantly streamlined with the new computerized ASYCUDA (Automated System for Customs Data) in place in Jordan's Custom Department.

Labor law is another area where the government is rapidly responding to private sector demand. New legislation that protects employers' rights to ownership of inventions and intellectual property generated within their company is currently being adopted that meets the highest international standards. Most importantly, the objective of the REACH Initiative has not simply been to get favorable legislation passed, but to ensure the proper implementation and enforcement of these laws. Advocacy of these measures has continued to be an on-going priority for REACH stakeholders.

2.3 Human Resource Development

Jordan's greatest asset is its competent, educated work force and the REACH Initiative is designed to develop and capitalize on that resource. In July of 2000, the Jordan government launched www.it.jo, an ambitious online national database for Jordanian IT professionals to register their credentials, and help match their skills with the needs of IT firms in Jordan. By the end of year 2000, there were 4,800 registrants on-line.

"We see tremendous potential in Jordan both in terms of industry development and human resources."

Bahram Mohazzebi
Microsoft Official

To further develop its human resources, the Jordan government is making intensive investments in educating the 120,000 new high school students graduating each year. Educational reforms are underway to ensure students receive the proper training to meet the high demand for qualified IT experts in Jordan.

The Ministry of Education is now implementing its plan to install 20,000 computers in schools over the next two years, introduce computer learning throughout the country, and connect young students to the Internet. Lending at preferential terms will also be provided to teachers and professors in Jordan for the purchase of around 5,000 additional computers for their personal use. Computer skills and English language are a top priority and are now being taught in schools from grade 1. In addition, all graduating high school seniors and university students are now required to attend computer literacy training, and must pass a national exam that includes a

computer literacy component. Furthermore, all college students are now required to learn one computer language such as Visual Basic or C++.

A \$34 million loan from the World Bank plus \$30 million in matching funds from the Jordan government are being used to sponsor a build-out of Jordan university and community college computer LANs and WANs, and provide students pursuing higher education with skills in information technology. The Ministry of Labor has also embarked on its plan to make use of World Bank funds to reimburse local IT Companies for costs they incur training previously unemployed Jordanians in IT related work. The Training and Employment Support Project (TESP), which funds training up to \$1,400 per employee, aims to create 1,000 new IT jobs over the coming year, and expand that target over subsequent years.

University/Industry Alliances

Great strides have been made since the REACH Initiative first urged cooperation between Jordan's academic community and the international IT community. Below is a summary of strategic alliances that have already been formed. The list is by no means exhaustive and is continually being added to:

Microsoft -The Hijjawi Foundation has funded the creation of a computer lab in the Hijjawi College of Engineering Technology located in Jordan's Yarmouk University. The lab hosts the first Authorized Academic Training Partner (AATP) center offering an academic-level Microsoft certification program for engineers in Jordan. Microsoft has supplied the center with instructors, training and software. Negotiations are underway to extend this program to three other universities. Microsoft is also instituting a nationwide program offering Jordanian students and academic institutions discounts on software up to 90% of the market value.

Oracle- Balqa University has signed an agreement with Oracle to establish an Oracle training center and certification program. The Oracle Academic Initiative Program (OAI) is offered free to non-profit institutions and Balqa is the first public university to take advantage of the offer.

Cisco Systems – Cisco is currently negotiating with universities in Jordan to establish a Kingdom-wide training and certification program. The Jordan University of Science and Technology (JUST), which already has a Cisco program in place, is now planning a large IT Learning City complex with Cisco Project funding. Queen Alia Community College, a woman's college, is working with Cisco and UNIFEM to create a program certifying female Cisco network professionals.

Sun Microsystems - Princess Sumaya University College for Technology has formed an Industrial Advisory committee with Sun Microsystems for the evaluation and accreditation of its computer science and engineering programs.

2.4 Government Support

IT a Top Priority for Government

Since REACH was first launched one year ago, the development of Jordan's IT industry has been placed high on the national agenda. This is evidenced by the dynamic, high-profile government participation that took place in REACH 2.0. The recommendations made by the private sector in REACH 2.0 enjoyed active support from the King, the Prime Minister and the relevant government ministries.

REACH Advisory Council Formed

The REACH Advisory Council (RAC), a public/private-sector committee chaired by the Minister of Information and Communications Technology (MoICT), is now working to guide the implementation of REACH objectives through the government. The results and interest generated by the REACH Initiative have brought about a change in mindset within the public sector, an intangible benefit whose momentum will grow as Jordan's IT industry develops and prospers.

"We have to concentrate on the year 2000 so that in 2001 Jordan is the place to be. The government will give all the support it needs to put in the right legislation and the right infrastructure and support it needs to make this [IT] sector work."

H.M. King Abdullah II
Jordan IT Forum on March 24, 2000

E-Government Task Force Formed

A direct result of the cooperation that was engendered between the private and public sectors during the early stages of REACH, is Jordan's E-government Initiative. Its implementation is being directed by the E-government Task Force, an 8-member public/private committee headed by the Minister of Information and Communications Technology. Jordan's E-government strategy is designed to use new technologies to facilitate inter and intra-agency communication and cooperation, as well as provide information and services to its citizens more efficiently.

The Jordan government is currently in the process of privatizing its postal facilities and engineering a new Ministry of Information and Communications Technology out of the Ministry of Post and Communications. The re-engineered Ministry will be responsible for setting telecommunications policy and coordinating Jordan's new E-government initiative.

The MoICT will set the technical standards and articulate the policy for government agencies to bring their information, services and transactions on-line. For example, plans are now underway to make business registration possible through the Internet, providing transparency and dramatically decreasing the bureaucratic burden on investors in Jordan. Eight fast track E-government projects have been identified for speedy adoption in the first half of 2001. For capacity building, local IT firms will actively compete for and participate in contracts to carry out the E-government initiatives, so they may gain valuable experience.

"Our goal is an Information and Communications Technology Sector in Jordan in which the free market is given the widest possible scope to contribute to the economic development of the country. It is the policy of the government of Jordan to play its role by creating the legal, institutional and commercial environment in which this market is nurtured, grown and sustained."

Vision Statement of the Ministry of Information and Communications Technology

2.5 Capital and Financing

Efforts to attract investment to Jordan's nascent IT industry have met with phenomenal success in the year following the launch of the REACH Initiative. The following is a sample of new investments in IT services and software totaling US \$59.75 million dollars in Foreign Direct Investment alone.

"In our view, the Jordanian IT industry is ready for take-off and there are lots of opportunities here based on the availability of a qualified technical labor force."

Aladdin Saba
EFG-Hermes

New Investments

Foreign Direct Investment

- ❑ **Cisco Systems** - the world's leading producer of networking equipment for the Internet has invested \$1 million in the EFG-Hermes Venture Capital Fund developing new technology companies in Jordan. Cisco's Networking Academies program, which teaches people how to build and maintain Internet networking systems, has an expanding presence in Jordan.
- ❑ **Maktoob** - Maktoob is the first Arabic web-based email solution on the Internet. Launched by the Jordanian firm, Business Optimization Consultants (B.O.C.) in October 1998, Maktoob is rapidly becoming one of the major Arab virtual communities on the Internet. New and innovative services are continuously being introduced to spread the use of the Arabic language on the Internet and to make it easier for Arabic users to communicate. Maktoob has attracted \$2 million in investment from the EFG-Hermes Venture Capital Fund.
- ❑ **Syntax Digital** - received \$1 million in investment from EFG-Hermes.
- ❑ **NETS and Firstnet FTG** - Bahrain Telecomm (Batelco) has formed Batelco Jordan, purchasing 51% of the ISPs, NETS and Firstnet, and merging them into one. The value of this deal is estimated at \$13.9 million.
- ❑ **OneWorld Software Solutions** - OneWorld designs, develops and deploys E-business and Internet software products for its clients in the U.S., with 100% of its business outsourced from the U.S. to Jordan. Investments in OneWorld totaling \$12.2 million have been made by 4san, Citigroup, Advent International and New Horizons Venture Capital.
- ❑ **Al Bawaba** – a regional, general-purpose Internet portal, raised \$5.15 million in international funding.
- ❑ **Arabia.com** - Arabia.com has created 80 new jobs and accumulated \$9 million in Foreign Direct Investment. A leading Internet company in the Arab World, Arabia.com has been operating since 1995. Arabia.com's portal combines world-class search, content and other services and is regarded as the leading Arab world site on the Internet.
- ❑ **Menafn.com** – this financial portal for the Middle East region raised \$1.5 million in investment.
- ❑ **Info2Cell.com** - Info2Cell provides mobile phone information services through Wireless Application Protocol (WAP) and has attracted \$4 million in investment from Italy's Acotel.
- ❑ **UNEXT.com**- This Internet education company delivering graduate-level academic programming on-line visited Jordan in July 2000 and committed to investing \$10 million in Jordan over the next 10 years.

Venture Capital

- ❑ **EFG-Hermes** - Egypt's EFG-Hermes (owned 20% by Citigroup), is establishing a \$15 million Jordan IT Venture Capital Fund to encourage investment in promising small Information Technology companies. (\$1 million in funds come from Cisco Systems, \$1 million from Norway, \$4 million from the European Investment Bank, with the remainder coming from Arab investors).
- ❑ **Crescent Venture Partners with Export and Finance Bank** - This \$30 million fund based in Amman expects to invest in approximately 15 promising Internet and IT firms in the Middle East region. In addition to cash investment, Crescent will provide incubation services to these firms to assist them in their growth.
- ❑ **Foursan**- Foursan Technology Partners ("4san") is a Jordanian venture capital firm focused on non-publicly traded startups and emerging IT ventures in the Middle East and North Africa region. 4san is investing in OneWorld Software and a joint venture with Fujitsu Systems that will be headquartered in Jordan. The joint venture company, called 4Mena, will provide corporate clients in the MENA region with customized E-business applications and integrated solutions.
- ❑ **Jordan Technology Group** - The European Investment Bank and JordInvest both signed share subscription agreements to invest 2.9 million in this VC company targeting IT start-ups.

Local Investment

- ❑ **Global One** – At the end of 2000, Jordan Telecom (JTC) negotiated with Jordan's leading Internet Service Provider, Global One, to purchase the ISP for a reported \$12.8 million.
- ❑ **MobileCom** – In September 2000, JTC invested in the creation of Jordan's second mobile service operator.

Establishment of a Regional IT Stock Market

Negotiations are underway for the establishment of a regional IT stock market for listing and trading IT companies. The Regional IT Board will provide a means for IT companies in Jordan, Dubai and Bahrain to access capital for growth. It will also provide venture capital firms that invest in IT companies with an exit mechanism for realizing their investment.

2.6 Infrastructure Improvement

Privatization Introduces Competition into the Market

Over the past seven months Jordan's IT sector has benefited from privatization of its telecommunications company, and dramatic improvements in infrastructure. The result has been increased competition, with link access prices dropping by 40% in some cases, and the entrance of a second competing mobile service operator into the cellular market.

Jordan Telecom's license gives it exclusivity for basic domestic and international telecommunications services, including voice telephone, telex, telegraph and leased circuit services until 31 December 2004. Data transmission and value added services are open to competition; however, providers of these services have to use the backbone facilities of JTC. There are 19 data communication license holders (including Reuters, Dow Jones Telerate, Jordan Times and Info2Cell) but only 9 of these are currently offering ISP services. It is estimated that Jordan's current Internet subscribers, (about 30,000) are only a small percentage (maybe 10%) of the latent market in Jordan.

"Jordan today is on the verge of exciting new opportunities, and we believe that the provision of advanced telecommunications services that meet the requirements of today's international companies play a major role in both attracting overseas investment and in providing infrastructure that Jordanian companies can use to compete on a global basis."

Michel Bon
President, France Telecom

The privatized JTC has begun the process of restructuring rates to bring them into line with international norms. In January 2000, the JTC lowered international call rates and connection fees, and in December 2000, prices were lowered an additional 80%.

In December of 1999, the Jordan Telecommunications Regulatory Commission (TRC) signed an agreement with the JTC and Jordan's cellular operator, FastLink, authorizing lower license and interconnection fees, and the issuance of a second global system for mobiles (GSM) license to the JTC. The entry of the JTC mobile service provider, MobileCom, in September 2000, has driven connection prices down and enhanced customer service, with SMS (Short Message Service) and WAP (Wireless Application Protocol) services recently introduced. Growth in this sector has been remarkable, with the number of wireless users rising from 120,000 to nearly 300,000 in one year.

Policies Promote Infrastructure Development

Policies are being designed by the new Ministry of Information and Communications Technology (MoICT) to encourage the development of high speed, high bandwidth infrastructure for commercial use at competitive prices. Jordan Telecom already offers ISDN access and 64 KBPS to 2 MBPS leased capacity (without modem). State-of-the-art broadband technologies like DSL (Digital Subscriber Lines) and PRI (Primary Rate Interface) are now available, and Frame Relay, fiber and ATM (Asynchronous Transfer Mode) are all scheduled to be offered commercially by

early 2001. Two new high speed Internet connectivity ADSL lines will be available to users on February 1, 2001 – offering download speeds at 512Kbs and 1,024 Kbs. A newly completed dedicated data network, access to a national Internet node, and links to international fiber optic systems such as FLAG (Fiber Optic Link Around the Globe) have all dramatically improved Jordan's Internet and data transmission capabilities.

Private Sector Creating New IT Parks & Incubators

The private sector and academic communities have already begun cooperating to establish IT parks in Jordan. In October 2000, the Jordan government endorsed a \$100 million Qualifying Industrial Zone project to be launched by a joint-venture between the Jordan University for Science and Technology and Boscan Jordan Group, a Hong Kong-based manufacturing company.

The new Information Technology Park project, dubbed CyberCity, will benefit from the technology-specialized academic talent available at the University. CyberCity will serve as a research and development center for JUST faculty, as well as house facilities for technology incubators. Studies are also currently underway by private sector investors, such as the Jordan Venture Project, to develop additional IT parks and incubators in Jordan.

2.7 Growth in Jordan's Software and IT Services Market

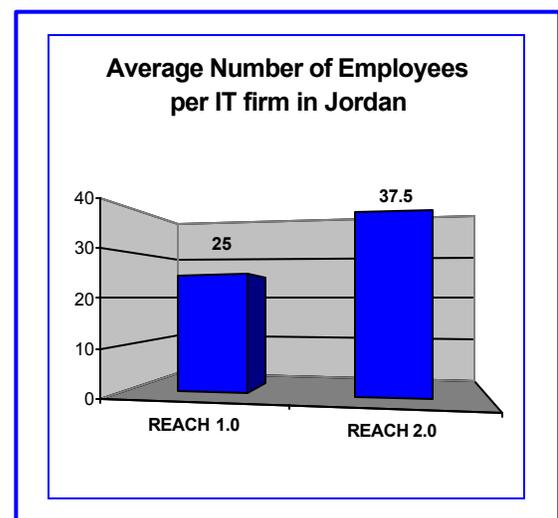
In November of 2000, the Jordan United States Business Partnership (JUSBP) carried out an industry survey of Jordan's software and IT firms in coordination with the AMIR program.¹ Another survey, conducted in December by the Capital Markets component of the AMIR program, with cooperation from Int@j, also collected valuable data on the industry. In total, 78 software and IT service companies were contacted, and 44 firms responded to the surveys. These 44 firms can be considered as a representative cross-section of Jordan's IT sector in 2000.

Company Characteristics: Strengths and Weaknesses

IT is a relatively new industry to Jordan, and most Jordanian IT companies were only recently formed. Seven companies (25%) were started within the previous five years, while 62 percent were 10 years old or less.

Almost all of Jordan's software development and IT services firms are small, ranging from 3 to 190 employees, with the average number of employees per firm being 37. Of the total number of employees reported, 70% work in software development.

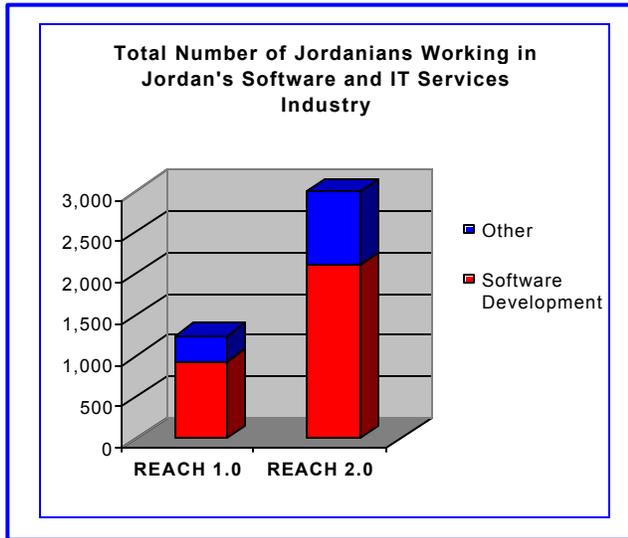
At least 3,000 Jordanians are now working in the private IT services and software sector. An additional 6,000 IT professionals are employed within the government. Employment turnover in IT is high. 19% leave their place of employment in the first year, with 76% of those leaving Jordan to work in the Gulf States or the U.S.²



¹¹¹ Both JUSBP and the AMIR Program are funded by USAID.

² Source: Ministry of Planning Competitiveness Team's study on Jordan's ICT sector

Registered capital is still low, and ranges from US \$7,000 to \$1.7 million, with only 12 firms in the survey exceeding \$85,000. 11 companies indicated they were seeking financing ranging between US \$200,000 and greater than \$5 million.



Revenue Levels

Firms reported annual revenue from domestic and foreign sales ranging between US \$56,800 and \$15 million. Six firms reported total annual revenue above \$9 million (approximately 30% of those revenues were earned from software sales).

Total revenue reported by all respondents amounted to \$106.586 million, with software sales accounting for approximately 55% of the total. The total size of the industry, based on these responses, is estimated to be \$176.959 million. On average, firms estimated their projected revenue for 2001 would increase by at least 41% over 2000's total.

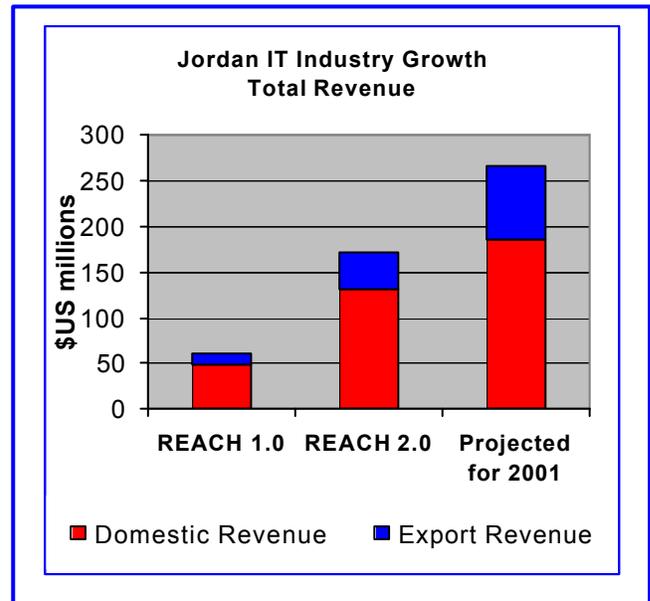
Substantial Numbers of Firms Export

Of the 44 survey respondents, 28 (63%) IT firms reported they were exporting.

Export Volumes on the Rise

In the REACH 1.0 survey, 13 companies reported exports of software and IT services totaling US \$887,324 in 1997 to \$2.1 million in 1998. Reported exports for 1999 exceeded US \$7.5 million.

For year 2000, 28 of the 44 companies responding reported exporting a total of \$32.45 million dollars in software and IT services. The total amount of exports for the industry, based on these responses is estimated to be \$40 million for 2000. Firms estimated their revenues earned specifically from exports would increase in 2001 by at least 105%.



Software Sales Growing

Sales of domestically produced and imported software were estimated at \$16.2 million for 1999. This year, 28 firms responded to this question, and estimated a total of \$28.87 million dollars in software sales in Jordan.

Telecommunications Costs

The average expenditure on telecommunications was approximately US \$35, 700, or about 1.9 % of average total revenues. This cost is relatively high, and does not reflect the recent significant rate cuts (in some cases 80%) introduced by the JTC in response to industry pressure.

Regional Market is the Most Important

Saudi Arabia, Israel, UAE, Yemen, Qatar and Oman were mentioned as target markets by respondents. A limited number of firms exported to South Africa the U.S. and Canada.

Outsourcing

In 2000, 21% of the sampled firms reported they were engaged in outsourcing activities, with contract values ranging from \$14,000 to \$213,000 per year.

Market Niches

Firms responding to the 2000 survey indicated they targeted several different marketing niches: Software development and application, hardware development, hardware automation, Internet/IT consulting, IT solutions provider, web application and development, Internet and media portal service technology, computer telephony solutions (voice mail, etc.), telecom application, systems integrators and WAN equipment supplier, software outsourcing, new media and visual production, banking systems, systems integration, total solutions and turnkey IT systems, bilingual document management systems, remote sensing/GIS, animation/multi-media applications, military administrative systems, computer training and consulting, and others.

Customers included: Application service providers'; dot.com startups; medium-to-large accounts in Jordan and Middle East; industrial, commercial and service sectors; government; business organizations; automotive companies; travel agencies and hotels; IT companies, food companies, embassies, hospitals, restaurants; banking and financial institutions; universities and educational institutions, public utilities; factories, small and medium enterprises, public and GSM network providers and operators, Telcos, ISPs, Armed Forces, Public Security, foreign software companies in Jordan, retail, broadcasting networks, Jordan and international markets (Europe and USA), and Motorola worldwide.

Most companies have not collaborated, either in penetration of new markets or in the delivery of services. Of the firms responding, 20.7% indicated involvement of foreign collaboration and/or foreign equity. Most firms still lack the scale necessary to accommodate large jobs and the loss of 10-15 programmers would be sufficient to cease operations in most firms. There is fierce competition in the industry.

Wages are Competitive

One of the industry's significant internal strengths is the availability in Jordan of highly skilled "raw talent" with knowledge of both Arabic and English and an intimate understanding of regional norms. As a result, Jordanian software houses have developed a high quality-to-price reputation in the region.

Data collected on wage rates in the IT software sector in Jordan indicates they are competitive. A programmer or systems analyst earns a starting salary of little more than US \$312 per month, and with 2 or more years of experience could expect to earn between \$550 and \$1,000 per month. An experienced project manager earns \$714-\$1,217 per month and a general manager of a software development firm commands a monthly salary between \$2,000 and \$2,536.

Expansion Plans

24% of the survey respondents indicated they had immediate plans for expansion.

Conclusion

This snapshot of Jordan's nascent IT industry vividly portrays the development potential of this sector. With the correct mix of private entrepreneurship, government support, creative financing, and investment in human resources, Jordan's IT industry is poised to achieve phenomenal growth in the coming years.

2.8 REACH Milestones Timetable

July 1999	REACH framework is presented to His Majesty King Abdullah II.
September 1999	REACH Initiative is completed and customs duties on IT Products are reviewed.
October 1999	REACH Initiative is officially presented to H. M. King Abdullah.
December 1999	Jordan joins World Trade Organization.
January 2000	His Majesty King Abdullah heads delegation to participate in the World Economic Forum in Davos Switzerland. Meetings are held with John Chambers of Cisco, Bill Gates of Microsoft, AOL, etc.
March 2000	Jordan IT Forum is hosted by His Majesty King Abdullah II held at the Dead Sea. Over 380 participants and 120 International companies were represented.
May 2000	IT Association, Int@j, and Task Force on E-Government are formed.
July 2000	Launch of REACH 2.0 is organized by Int@j.
July 2000	UNEXT.com visits Jordan and commits to investing \$10m over the next few years.
August 2000	Int@j hosts meeting with Microsoft's VP to present IT companies with Microsoft's future plans.
September 2000	Texas business delegation hosted by JABA and Int@j.
September 2000	Government of Jordan signs agreement with Microsoft.
September 2000	Twelve REACH 2.0 workshops are held, and five Stakeholder Roundtables are organized by Int@j.
September 2000	Chairman of Int@j addresses World Trade Center Association on IT Investment Opportunities in Jordan.
September 2000	Batelco Jordan merger is signed between Batelco and the Nets and Firstnet ISPs.
September 2000	Reach 2.0 Closure event is held, with presentations of recommendations to H. M. King Abdullah.
September 2000	Int@j coordinates with the Training & Employment Support Program of the Ministry of Labor to fund the training and employment of up to 1,000 unemployed individuals in the IT sector.
October 2000	Int@j and ACI sign agreement (funded by EU) to launch extensive e-commerce training and awareness campaigns. Regional e-commerce conference scheduled for 6/01.
October 2000	Int@j CEO speaks at the Annual Meeting for Telecommunication Development in the Arab World, Alexandria - Egypt about plans for a Center of Excellence in Jordan.
October 2000	Int@j hosts EFG-Hermes IT Venture Capital Fund signing ceremony with the European Investment Bank, and holds workshop to inform IT companies how this fund can be accessed.
October 2000	Int@j hosts update-seminar for IT companies on e-government effort.
November 2000	Int@j visits GITEX and Comdex Las Vegas to negotiate Jordanian Pavilions for 2001.
November 2000	Int@j official website launched, providing information to investors and IT information seekers worldwide.
December 2000	Int@j advocates successfully for the lifting of media restrictions on the mentioning the names of Jordanian companies in the news and begins advocating for the elimination of Internet Cafe regulations.
December 2000	Int@j begins hosting monthly IT companies networking meeting to strengthen industry ties.
December 2000	Int@j meets with French Embassy officials to organize a French IT Trade Mission to Jordan.
December 2000	REACH Advisory Council (RAC) convenes first meeting to support REACH policy in government.
December 2000	Int@j develops concept paper for six Centers of Excellence in Jordan with ANERA .
January 2001	JTC and Global One merger is signed.
January 2001	Int@j conducts an introductory workshop for members to obtain training funds from the TESP.

CHAPTER 3

REACHing Beyond 2.0

An important element of the REACH Initiative is its dynamic nature. Mechanisms are currently being put in place to monitor and guide the process of transformation. This chapter charts the progress of the REACH Action Plan, and identifies those actions that remain to be taken.

3.1 REACH Action Plan Status

Actions	Status
IT Industry Development <ol style="list-style-type: none"> 1. Establish new IT Industry Association 2. Promote joint collaborations among IT companies 3. Improve capabilities of Jordanian IT companies 4. Develop Employee Stock Ownership Plans for IT firms 5. Develop software quality certification programs 	Done Ongoing Partial Pending Partial
Regulatory Framework Strengthening <ol style="list-style-type: none"> 1. Reduce indirect tax burden on all IT related products 2. Streamline Customs procedures 3. Enforce intellectual property rights, especially Copyrights 4. Amend restrictive provisions of Labor law 5. Continue policy of no censorship of IT products 6. Adopt more competitive taxation policies 7. Enhance access to IPC incentives 8. Remove constraints to ESOPs 9. Sign the Information Technology Agreement and IT customs valuation accord of WTO 0. Develop Electronic Commerce legislation 	Pending Partial Done Revised Done Pending Done Pending Partial Pending
Human Resource Development <ol style="list-style-type: none"> 1. Initiate program by IT industry to benefit IT students 2. Work with universities to focus on critical skills 3. Strengthen IT industry-universities ties 4. Promote collaborations with overseas universities 5. Establish a Center of Excellence-styled training institute for software industry 	Partial Partial Pending Partial Partial
Government Support <ol style="list-style-type: none"> 1. Establish private-public Council for IT Services Industry 2. Initiate E-Government program and adopt national IT projects 3. Focus export and investment promotion efforts on industry 4. Develop and implement IT incubator program 	Done Partial Partial Pending
Capital and Financing <ol style="list-style-type: none"> 1. Develop/attract IT venture capital funds 2. Make funding available at preferential terms 3. Facilitate IT IPOs on the Amman Stock Exchange 	Partial Pending Pending
Infrastructure Development <ol style="list-style-type: none"> 1. Provide preferential access to high-speed lines and permit private up-links and downlinks 2. Provide competitive pricing on high-speed lines 3. Initiate private sector-led Information Technology Park 	Pending Partial Partial

3.2 Strategic Actions

IT Industry Development

Action 1: Establish New IT Industry Association

Done

Int@j , the Information Technology Association of Jordan was formed in March, 2000.

Action 2: Promote joint collaborations among IT companies

Ongoing

Int@j activities have contributed to enhanced cooperation among Jordan's IT firms. Marketing, training, and accreditation efforts must be pursued jointly. Pooling resources to bid on contracts such as Jordan's new E-government initiatives is the next step.

Action 3: Improve capabilities of Jordanian IT companies

Partial

Int@j is leading the effort to upgrade the capabilities and credibility of Jordan's IT sector as a whole. Technical assistance and funding are still needed to increase firm level capabilities in terms of operations, marketing, project management and software engineering.

Action 4: Develop Employee Stock Ownership Plans for IT firms

Pending

Effective Employee Stock Ownership Plans (ESOPs) generate capital, stem industry-wide brain-drain, and create incentives for employee retention, loyalty, and innovation. Being able to offer employees the opportunity to share in the growth of their company is now mandatory in the IT industry worldwide. To become competitive in the market for qualified IT professionals, Jordanian IT firms must be able to offer this form of incentive in their compensation packages.

- ❑ Int@j should take the lead in promoting the proper use of employee ownership programs for the Jordanian IT industry, through lobbying, education and administration efforts.
- ❑ Performance based ownership plans should be adopted by Jordanian IT companies to motivate and reward employee performance.
- ❑ Broad-based ownership plans should be implemented to encourage all employees to think and act like owners, and IT companies in Jordan should make periodic contributions to ESOPs on behalf of their employees.
- ❑ Employees must receive and understand periodic information on the company, the stock they own in it, and how their performance has affected the company. Employers and IT managers must be educated on how to use ESOPs to motivate employees. Regulatory requirements should be implemented mandating the specific information that must be provided to all ESOP members.
- ❑ Income Tax Law should be amended to create incentives for employees and employers to voluntarily create and contribute to ESOPs.
- ❑ Vesting is the amount of time an employee must work before acquiring a non-forfeitable entitlement to the equity benefit. Vesting schemes should be applied to ESOPs to encourage employees to stay with a company over a period of time, or to reach specific performance objectives. Employees must be able to receive the value of their shares when their employment is terminated.

Action 5: Develop software quality certification programs

Pending

The Jordanian IT industry as a whole must be able to demonstrate software process excellence if it is to compete effectively in the global market. Quality Certification Processes must be

augmented by effective instruction and mentoring in world-class software development techniques, methods and procedures.

- ❑ To increase the competitiveness of Jordanian industry, programs to support internationally-recognized certifications should be introduced. Int@j proposes to develop Jordan Quality Certification program methods, benchmarks, procedures, tools, techniques and incentives to upgrade the industry's capability to compete in the world market.
- ❑ This process begins with the adoption of the Software Capabilities Maturity Model (SEI SW-CMM®) Certification as a standard among Int@j members. Local expertise must be developed, including instructors, consultants and appraisers, to implement a successful SW-CMM® program.
- ❑ Project Management Methodology systems and other Quality Management standards like ISO 9001/TickIT, are also useful tools for upgrading industry capabilities and establishing credibility in the international IT market.
- ❑ To instill the value of quality standards early on, 'Quality Certification' should be added to the Universities' curriculum.
- ❑ To encourage and reward firms to adopt Quality Certification standards, Government of Jordan should only contract Jordanian IT firms that have achieved CMM® level 2 certification.
- ❑ Software Center of Excellence efforts should be combined with those for Quality Certification. This will leverage the knowledge transfer capabilities and infrastructure of both, and provide a more seamless integration of Project Management and Quality Certification skills targeted for use within Jordan's IT Industry.

Regulatory Framework Strengthening

Action 1: Reduce indirect tax burden on all IT related products

Pending

While tariffs on IT-related equipment, components, media and software have been reduced, these and other related fees should be eliminated entirely.

Action 2: Streamline Customs procedures

Partial

IT products have been targeted for simplified import and export procedures, and the computerized ASYCUDA system is now being used in the Customs Department. A comprehensive and standardized classification system and clearance procedure should be adopted by the Customs Department.

Action 3: Enforce intellectual property rights, especially copyrights

Partial

Signing and implementation of the TRIPS agreement has prompted the US to remove Jordan from its watch list of copyright abusers. Aggressive enforcement of new IPR laws should continue. The WIPO Copyright Treaty and WIPO Performances and Phonograms Treaty must be signed and implemented aggressively as well.

Action 4: Amend restrictive provisions of Labor law

Revised

Articles 19 and 20 of the Labor Law are being revised to ensure the protection of employer's rights to ownership of inventions and trade secrets.

Action 5: Formalize policy of no censorship of IT products

Partial

The current lack of enforcement by the Ministry of Information (MoI) to exercise its authority over IT-related materials should be continued. Institutionalized inspection of all such materials by the MoI has caused unnecessary and costly delays for local IT firms. The legislation authorizing censorship by the Ministry of such materials should be eliminated.

Action 6: Adopt more competitive taxation policies

Pending

The Council of Ministers has identified IT software and services as a priority sector. Corporate tax rates have been reduced to 15% and export income is tax exempt. Income tax regulations must be revised to provide higher depreciation allowances for IT software and hardware, as well as allowances for training and R&D.

Action 7: Enhance access to JIB incentives

Done

The JIB has amended its Investment Promotion law to have software development and IT services enjoy the same benefits as industrial projects in its incentives regime. 100% foreign ownership in this sector is now allowed.

Action 8: Remove constraints to ESOPs

Pending

Jordan's corporate laws do not provide local companies with the flexibility needed to institute ESOPs.

- ❑ Securities and Companies Law must be changed to facilitate ESOPs by giving Privately and Publicly Held companies flexibility in offering different classes of shares or options.
- ❑ Labor Law must be clarified to specify employee rights, and render the approval of ESOP funds by the Ministry of Labor automatic.

Action 9: Sign IT Agreement and IT customs valuation accord of WTO

Partial

Jordan should join the Ministerial Declaration on Trade in Information Technology Products, eliminating all customs duties and any other charges on computer, IT and telecommunications products. Jordan should also adopt the Customs Valuation of Carrier Medium Bearing Software and Interest Charges regulation to meet the international standard for customs valuation of IT products.

Action 10: Develop Electronic Commerce legislation

Pending

The future of the IT industry is Internet-based applications and transactions. U.S. firm Intel Corp.'s regional chief recently predicted the value of electronic commerce in the Middle East alone will grow from US \$100 million to more than \$1 billion by 2002.

- ❑ Development and implementation of a comprehensive e-commerce law for Jordan is an important national priority, essential for the long-term competitiveness of the industry.
- ❑ The pre-requisite for e-commerce is a safe, secure and efficient e-banking mechanism that allows payments and financial transactions between banks, consumers and merchants to be performed electronically.

E-Commerce and E-Banking require a comprehensive legal and regulatory framework to thrive. Legal issues that must be addressed include:

- ❑ Adopt and implement Consumer Protection laws.

- ❑ Create an Evidence law recognizing electronic equivalents to writing, original documents and signature, modeled on the United Nations Commission on International Trade Model Law (UNCITRAL).
- ❑ Develop detailed Electronic signatures legislation establishing and regulating holders of signature devices and certification authorities.
- ❑ Enable electronic payments.
- ❑ Draft and adopt ATM (Automatic Transaction Machines) and phone banking law.
- ❑ Determine responsibilities and liabilities of banks, electronic commerce providers and third party service providers (such as ISP's), using the EU Directive on electronic commerce as a model.
- ❑ Define and limit cyber-crime: From e-enabling the penal code, to establishing anti-hacking and anti-laundering laws.
- ❑ Determine standards for liability and responsibility for Web content.
- ❑ Resolve cyber-workplace issues.
- ❑ Set standards for data privacy, security, secrecy, accuracy and accountability.
- ❑ Determine and disclose how electronic information will be used, and to whom it will be distributed.
- ❑ Ensure access to data and electronic systems to enable work of credit bureaus.
- ❑ Ensure rights of the consumer to access his/her own data (credit record, bank records, health records) and correct inaccuracies.

Human Resource Development

Action 1: Initiate program by IT industry to benefit IT students Partial

- ❑ The IT industry must initiate programs designed to benefit IT students. This should include year-round, extended internship programs placing students in IT companies to gain practical experience.
- ❑ Industry leaders can also strike deals with local suppliers of software to allow registered students to purchase or acquire software legally at significant discounts. Used hardware and software can be donated by local industry to universities, as well.

Action 2: Work with universities to focus on critical skills Partial

- ❑ The IT industry has begun working closely with universities to develop curricula and set standards relevant to its human resources needs, particularly in 'critical skills' areas. This includes the introduction of more 'personal skills' developmental programs such as analysis, critical thinking, decision making, communication, and accountability. This cooperative effort must continue.

Action 3: Strengthen IT industry-universities ties Pending

Ties between local IT industry and the universities must be strengthened through industry-based collaborative projects. Such alliances allow university staff to develop professionally, while

improving the quality and relevance of research and teaching, and enabling companies to benefit from the expertise of the universities.

- ❑ Universities in Jordan must create standards and targets for quality in their curriculum that can be measured and demonstrated. Potential students, as well as IT employers, need to be able to accurately gauge the quality of education being offered.
- ❑ Universities must be allowed to legally form companies in partnership with the private sector and benefit from such alliances.
- ❑ Professors must be able to contract work in the private sector independently from their university, and receive compensation for their expertise.

Action 4: Promote collaborations with overseas universities

Partial

Collaborations with overseas universities and software/hardware training centers are a vital means of accessing IT knowledge. Programs are already underway with Cisco, Sun Microsystems, Microsoft and Oracle.

- ❑ Twinning between local universities and foreign universities must be pursued, more relationships with international organizations with reputed training programs (IBM, Microsoft, etc.) must be established, and a well-coordinated e-education and distance learning policy should be implemented.

Action 5: Establish a Center of Excellence for software industry

Partial

Globally, the rate of IT innovation is rapid, and Jordan's IT service companies are in dire need of cost-effective and relevant training to keep their employees up-to-speed.

- ❑ A Center of Excellence-style training institute for software development is necessary in Jordan to implement, establish standards, and set criteria for evaluating the best and latest training available.

Government Support

Action 1: Establish private-public Council for IT Services Industry

Done

The REACH Advisory Council convened in December 2000.

Action 2: Initiate E-Government program and adopt national IT projects

Partial

E-government refers to the use of electronic means to facilitate inter- and intra-agency communication and cooperation, as well as provide information and services to citizens more efficiently. Jordan's Ministry of Post and Telecommunications (MoPT) is currently implementing its strategic plan to privatize the postal service and re-focus its efforts on setting telecommunications policy and standards for the country. Under this plan, the MoPT will be transformed into the Ministry of Information and Communication Technology (MoICT), and will take responsibility for coordinating Jordan's E-Government initiative.

- ❑ The MoICT and relevant government entities must implement a comprehensive, well-planned e-government initiative that involves consultation with the local IT industry.
- ❑ To foster the local IT industry and build capacity, government should adopt preferential contracting policies that make use of local talent.

- ❑ Evidence, E-signatures and E-payments laws and regulations must be established as outlined in the E-commerce and E-Banking recommendations.

Action 3: Focus export and investment promotion efforts on industry

Partial

- ❑ To take advantage of export market opportunities, Government should ensure that relevant Investment Promotion (IP) laws and tax regulations prioritize the software development, IT manufacturing, and services sector.
- ❑ Government can also work with members of Jordan’s IT industry to establish foreign sales offices. For example, the Jordan Export Development Corporation (JEDCO) has office space in Washington, DC that can be used by IT salespeople marketing to the United States.
- ❑ Jordanian IT firms must cooperate in developing industry-wide comparative advantages based on product differentiation (quality standards such as CMM®) and focus (niche markets like Arabization or Call Centers) to market Jordan more effectively abroad.
- ❑ Jordan’s labor law must be amended, to protect employer’s rights in software development ownership issues.

Action 4: Develop and implement IT incubator program

Pending

The fundamental need of the IT sector is to foster the development of a growing number of entrepreneurial startups. IT incubators, which provide business and technical support services, are a dynamic way to nurture our IT startups and facilitate commercialization of their products and services. At the same time, there is an increasing demand for physical facilities that meet the expansion needs of the IT industry.

- ❑ We recommend the creation of non-profit Technology Business Incubators formed from public-partnerships between academic institutions and private business.
- ❑ Such incubators might be housed in ‘intelligent buildings’ with high-speed connectivity, suitable utility specifications, and flexibly configurable workspaces to allow for expansion.
- ❑ The law regarding legal status, exit mechanisms and tax liabilities of a non-profit incubator must be established.
- ❑ Legal implications of taking equity in incubated firms in lieu of fees for services must be addressed.

Capital and Financing

Action 1: Develop/attract IT venture capital funds

Partial

Venture capital plays an important role in the financing of entrepreneurs – and in the establishment and development of new technology-oriented companies. Many of the success stories we see today in Silicon Valley were initially financed by venture capitalists.

- ❑ Establishing the necessary legal framework is the first step to allowing a VC industry to thrive in Jordan. This framework must address shortcomings in the Companies and Securities law related to the establishment and management of VC companies and the companies in which they invest.

- ❑ Corporate Income Tax Law should be amended to include tax incentives for investing in VC funds.
- ❑ At the same time, education, training and communication must be used to create an environment conducive to attracting and generating venture capital. In Jordan, entrepreneurship should be taught and encouraged, venture capitalists should be trained, and those responsible for implementing VC legislation must be well-informed and supportive.
- ❑ Finally, innovative matchmaking efforts must be employed to bring Jordanian IT companies together with venture capitalists.

Action 2: Make funding available at preferential terms

Pending

- ❑ Corporate Income Tax Law should be amended to include tax credits to banks for lending to IT firms.
- ❑ Other funding sources should be tapped (e.g., Social Security investments, World Bank programs) to establish funds that offer lending at preferential rates.

Action 3: Facilitate IT IPOs on the Amman Stock Exchange

Pending

Initial Public Offerings have become an international method through which investors in companies can liquidate their investments. Laws enhancing the liquidity of IT securities are an essential element to increase local and attract foreign investment in the IT sector.

- ❑ The Amman Stock Exchange (ASE) must become more active in tapping public funds for the creation of new companies or the expansion of existing ones. Bahrain and Dubai have expressed interest in cooperating with the Amman Stock Exchange to create a regional board for listing IT company stocks.
- ❑ The brokerage industry should be encouraged by lifting the ceiling on broker's fees and removing the employment requirement to take the broker's exam.
- ❑ Disclosures that are currently required in Arabic should be offered in English as well, to cater to foreign investors.
- ❑ The Companies Act and Securities Law must be amended to allow for a Limited Liability Company to convert to a Public Shareholding Company.
- ❑ These laws should also be amended to allow IT companies to go public without requiring past records of profit, or other investment record criteria.

Infrastructure Development

Action 1: Provide preferential access to high-speed lines

Pending

The Jordan Telecommunications Company (JTC) has established a dedicated network for data transmission that will significantly improve connectivity for Jordan's IT industry.

- ❑ The JTC must continue to coordinate with government and industry to meet growing demand for high-speed, high bandwidth Internet connections.

Action 2: Provide competitive pricing on high-speed lines

Partial

A major factor affecting the competitiveness of Jordan's IT industry is access to high speed data communication services, at international price and quality levels. Demand for high speed, value-

added telecommunications will continue to grow exponentially as Jordan's software firms increasingly target global market opportunities.

- ❑ The Ministry of Information and Communication Technology (MoICT) must set telecommunications policy and standards for the country.
- ❑ The immediate objective is to develop a system of local and international link access that is modular and expandable based on the current system in place. The current system is now under review, and any costs for infrastructure upgrade will have to be offset by increased demand.
- ❑ To ensure that pricing is competitive, the Jordan Telecommunications Company (JTC) and the IT community will work together to conduct a thorough, accurate demand study to determine bandwidth requirements based on four pricing levels. A task force comprising the JTC, the Telecommunications Regulatory Commission (TRC), the National Information Center (NIC) and three Internet Service Provider (ISP) representatives will review international and local data rates and make recommendations.
- ❑ The TRC is the final arbiter in the issue over pricing. By law, the JTC has a monopoly on all telecommunications services until 2004. In the absence of competition, these review mechanisms are needed. Therefore it is imperative that the TRC be a completely independent body, reporting directly to the Prime Minister. Its Board will be comprised of industry experts, with representation from the private sector.
- ❑ Spectrum management is also under the TRC's control, taking into consideration the security requirements of the country.
- ❑ The most effective way to empower the TRC is to provide it with the technical and commercial management expertise it needs to fulfill its legal mandate as price regulator, spectrum manager and licensing authority. The TRC must have the resources and authority to contract industry experts and train its staff to carry out these functions.
- ❑ Regional 800 numbers must be offered in Jordan at competitive prices to encourage investments in call centers.

Action 3: Initiate private sector-led Information Technology Park

Partial

Two private sector initiatives are already being pursued to establish IT parks in Jordan: one by Boscan at the Jordan University of Science and Technology, and another by Hillwood at Hashemiyeh University. The government has been cooperative in these efforts, allowing the private sector to determine whether there is sufficient demand for IT parks in Jordan at this time.



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