Jordan ICT Sector Strategy

AMIR II Achievement of Market-Friendly Initiatives and Results

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JORDAN AMIR II

Achievement of Market-Friendly Initiatives and Results

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Jordan ICT Sector Strategy-
An Action Plan for growth.
Final
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Introduction

Information and Communication Technology (ICT) is unique as a sector and is central to the development of the modern economy. It is one of the main forces transforming the economic environment and the principle driver of the knowledge economy. Its impact on economic development is a determining factor in driving productivity, competitiveness and market connectivity in the context of globalization.

An effective National ICT Strategy must integrate and link three separate but closely coupled strategies:-

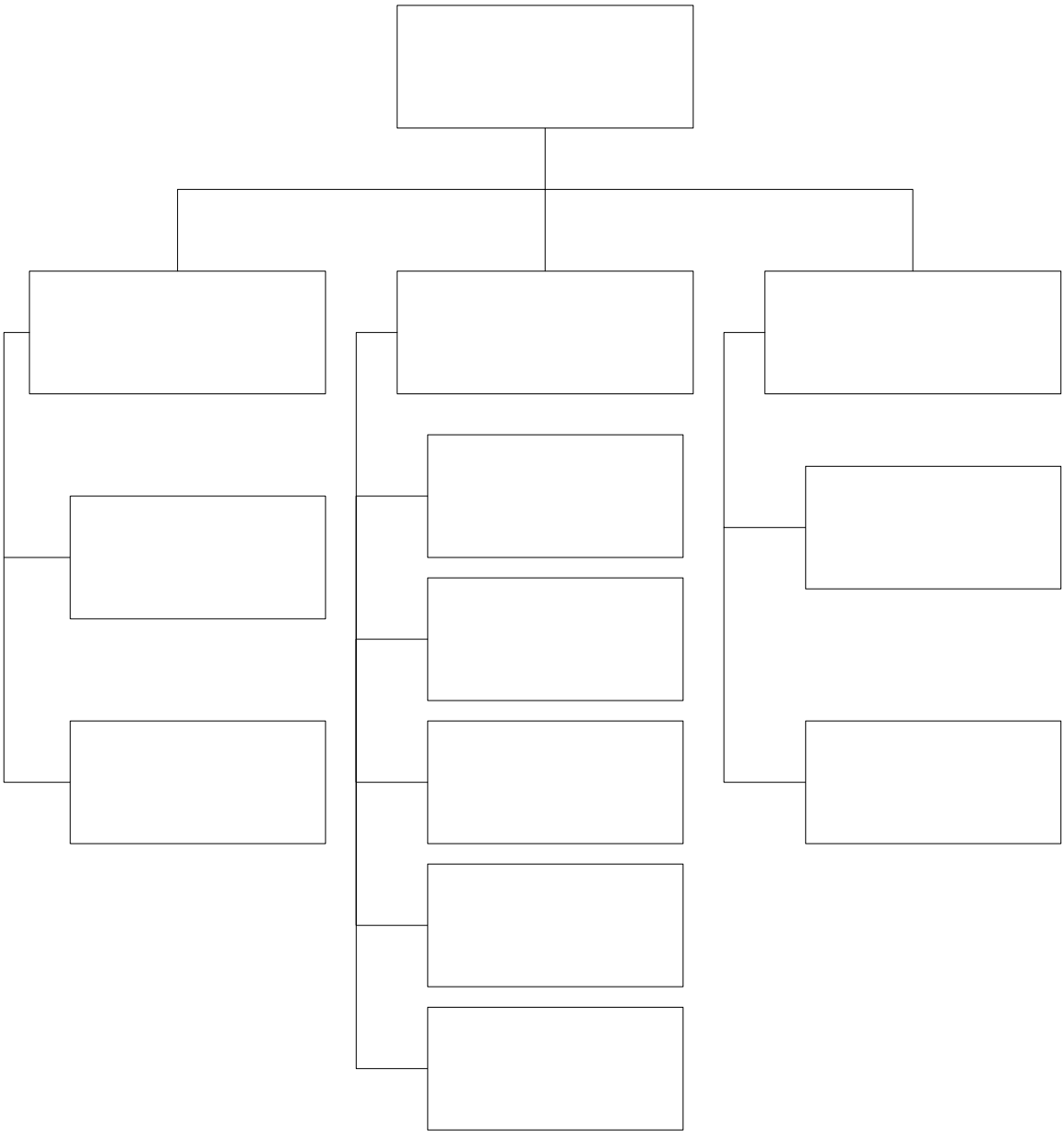
- ICT Sector Strategy – ICT is an important sector of the productive economy and produces an array of products and services.
- Government Strategy – which is the main determinant of the pace and effectiveness of development of the ICT sector. Government has multiple roles that are necessary to empower and support ICT development as well as its own capabilities in implementing e-government. Proper infrastructures (hard and soft) which are planned and implemented by government are critical in empowering the new generation of Jordanian knowledge workers to participate in the global opportunities while living in Jordan and contributing to its development.
- ICT deployment strategy – ICT is an enabler of virtually every other sector of the economy. Its deployment in the industrial, manufacturing and service sectors is now a major determinant of their productivity and competitiveness as well as access and connectivity to global markets. In addition ICT is the most significant new driver of social change and social development.

Given this importance and complexity it is easy to comprehend why strategic integration is so necessary as ICT occupies such a special place in modern economic development and particularly in relation to:-

- The growth of the knowledge economy
- The connectivity of suppliers of goods and services with the global economy
- The development of location independent services in Jordan

- The development of the “information society”
- The development of e-government
- The creation of digital capability and competitive advantage
- Communication capabilities at all levels

To be effective the approach that Jordan takes must eventually involve these three components within an overall National Strategy for ICT.



The ICT Sector in Jordan and the Context for its Strategic Development

The ICT sector in Jordan is relatively small and is not growing as rapidly as it needs to be to contribute fully to Jordan's economic development. Capital employed in the sector is not measured foreign direct investment between 2001 -2004 is $83m resulting in $440m revenue in 2004 with employment for 8500 in the private sector and an estimated 10000 in the public sector. The sector is currently generating $80m in exports.

Internet use in Jordan is low by international standards estimated at around 8% of the population. The priority is to drive this penetration to at least 20% which will provide internet access to some 60% of the population which is estimated to be a tipping point where demand for services and information on the web starts to expand rapidly.

Jordan is weak in natural resources and manufacturing therefore the ICT sector has the greatest capability of enabling Jordan to play to its strengths (90% current literacy) in the future knowledge economy. The global knowledge economy is now well embedded and growing and must be targeted as a potential sector for high growth that will form a significant part of Jordan's economy. ICT therefore provides an essential bridge to the future economy for Jordan.

This report focuses on the actionable barriers that prevent the ICT sector and other linked sectors from developing in an optimum way. The report details the knock-on impact of these barriers and proposes investment and organization initiatives that will ameliorate the issues.

Four primary elements impact all aspects of ICT in Jordan and addressing these will act as a catalyst to releasing the potential of the private sector for more rapid growth and contributing to the growth of all linked sectors:-

- Education – to create the capacity needed by the sector for growth
- Investment in infrastructures – to ensure that the sector can function competitively
- Regulation – to create a context for investment, enterprise and growth
- Communications – to enable business in Jordan to engage with global markets and also to enable Government to modernise and contribute to societal development through e-government and technology development.

Any plans, which do not first address these issues, have a high potential of failing to realize the proper return on the investment objectives of both government and the private sector.

Education

Education is a core enabler for growth of the ICT sector and for ICT deployment and capability throughout the general economy. It is critically essential that the graduates emerging from the universities have the skills and competencies to add value to the sector as rapidly as possible. Competitiveness and employment flexibility is increased where the graduates hit the ground running as they leave third level education.

The evidence in Jordan is of limited instead of maximum collaboration between the Universities and Industry and this is a significant inhibitor to ICT sector development. It is important that a new context for collaboration is developed and encouraged. If necessary investment priority on a preferential basis should go to institutions that tailor elements of their curriculum to sector needs linked to the economy. The impact of limited Government funding of colleges is a reported variability in the standard of graduates emerging from colleges. This could be addressed by a standards review of graduates against international colleges and initiating a league table of colleges – thus private colleges who do not measure up against the standard will be unable to attract business.

Ireland Experience with Sector/Education Links and Graduate Retention

Education/ ICT Sector Links

In Ireland in the late 1980's many of the graduates from engineering schools had limited practical competencies and employment was limited to state and large multinational organizations which could afford to complete their training in practical engineering and business matters.

Some colleges specifically Dublin City University actively promoted industrial sponsorship of its courses and developed a close internship program with high tech industry. The internship involved an industry placement for 6 months starting mid way through the third year – in practice it took only two months from the college curriculum as it was scheduled so that most of it fell in the summer holiday period when the college courses would have finished.

The impact of this placement policy was to provide graduates with an intimate understanding of business needs when they graduated the following year. In practice a high percentage of these graduates were hired by the same businesses in which they completed their internship.

An example of this was Wescan, which developed airline terminal products and employed mostly qualified engineers. Productivity at the company doubled when the recruitment policy was restricted to engineers that had completed internship in the company.

Graduate Retention

In Jordan another factor, which is similar to Ireland of the 1980's, applies. Following public investment in their education many graduates leave for higher paid jobs in other economies. This leads to capital stock dilution and diminishes the motivation of employers to train the graduates who can be easily attracted away.

The key factor to consider is that if the graduates arrive in a company already familiar with its processes and working then the employer will more effectively integrate them into their core business providing the technical challenge they require and offering many of the economic benefits they seek abroad. The retention factor of challenging work, being based in the country of birth and quality of life are known to be attractive enough to retain domestic graduates and attract others from abroad despite a lower wage environment.

The government has a number of economic levers at its disposal, which are used in the UK and most of Europe where education is not free. One of these is the repayable student loan, which obliges the student to pay back all or part of the cost of education within a period after graduation. These loans are typically very low interest or in some cases capital only repayment. If this were to be implemented in Jordan the government has a number of options to motivate graduates to stay in Jordan – such as a moratorium on interest or repayments if the graduate takes up employment in Jordan, up to cancellation of the loan after three years in employment in Jordan.

.These factors should be considered and examined in depth, as ICT sector growth cannot be achieved without trained, competent and motivated human resources.

int@j

The current role of int@j which has been actively supported by AMIR in the past needs to evolve from a lobbying / promotion voluntary association into a value added entrepreneurial service which enables its members to leverage from global best practices in order to increase their business operational effectiveness.

The noted reluctance to partner with international companies (for instance in localization) and with each other inhibits competitiveness and value add which int@j members can provide to their customers – who are often also int@j members.

Strengths can be developed and weaknesses ameliorated in an environment where global best practices and domestic success stories are presented in vendor / customer forums. The education role will drive efficiencies and profitability into their member organizations and the current levels of subscriptions and other charges be perceived as an excellent investment rather than an irritating tariff.

Investment in infrastructure

Jordan Telecom advise that fixed line access is available to almost every household in Jordan. The percentage of households and businesses which could avail of ADSL connection is a subset of this.

Access availability does not lead to take up of service if the perceived value of access is lower than the cost to the business or household customer.

The cost of internet access (broadband and dialup) is up to ten times higher than other developed economies on a relative basis when national income is taken into account.

The entry level broadband offerings which provide 128k download cannot be considered as broadband by international standards. For the purposes of this report broadband is considered to be a minimum of 1M download and 128k upload.

It may be that the costing and price structures which are in place today are based on the revenue generation objectives implemented under the current Government Regulatory framework. This is a central barrier to ICT sector growth – the establishment of a strong Independent Regulator should facilitate the dismantling of the current framework if it is established to be a barrier to cost reductions but only if TRC take an active role in allocating scarce resources (spectrum) rather than a passive brokerage role as at present which enables users of spectrum (mostly the army) to impose uneconomic pricing and timelines to vacate occupied spectrum..

A strong Independent Regulator typically assesses service delivery costs in establishing a fair market price and will identify monopoly providers as having a significant market presence (SMP) and typically adopt an aggressive position if these costs are due to uncompetitive practices or inefficiency.

The costs of providing wireline connectivity to end users who require new last mile connections to be delivered by the operator will usually be prohibitive and even a regulator will be unable to drive rapid deployment to businesses and individuals on a fair cost basis.

The approach being used in Latin America and Eastern Europe to enable the economies to leapfrog over the barrier of inadequate wireline infrastructure in wireless broadband.

What is wireless broadband?

Simply put, wireless broadband is an access technology that offers high-speed data access over the air. A wireless broadband network, typically operating at frequency bands less than 6 GHz, provides broadband speeds ranging from 256 kbps to tens of Mbps. Each base station generally serves an area of up to several square kilometres.

Wireless broadband networks can deliver network connectivity to fixed locations using standards like IEEE 802.16d, and in the near future, to mobile users using standards like IEEE 802.16e and IEEE 802.20.

How does Wireless Broadband Work?

Wireless broadband devices use radio waves to transmit and receive data over the air without relying on any physical connection. In a typical wireless broadband network, base stations connect to a network backbone and use an outdoor antenna to send and receive high-speed data to the subscriber's terminal equipment. This reduces the need for wireline infrastructure.

Benefits of Wireless Broadband

Various parties stand to gain from the deployment of wireless broadband products and services.

For operators, wireless broadband networks help them roll-out data communication services like Internet broadband more quickly and at lower costs as they need not set up wireline infrastructure. These benefits may spur more players into entering the broadband industry, thereby creating a healthy competitive environment for the development of innovative products and services.

More wireless broadband players in the market translate to a greater range of innovative choices to cater to the mobile broadband needs of consumers and enterprise users. This in turn may lead to more competitive prices for wireless broadband products and services.

With the emergence of wireless broadband standards such as IEEE 802.16 and IEEE 802.20, equipment vendors can create products and solutions that can interoperate. With interoperability comes economies of scale that may mean more competitively-priced products and solutions for end users.

Next Steps

The Government has a central role in driving appropriate investment in appropriate technologies to provide low cost broadband services to every citizen in Jordan.

Supporting the licensing and deployment of wireless broadband is a simple, low cost and timely solution to achieving this objective.

Regulatory control can be achieved with minimal regulatory input as natural competitive forces will drive prices and adoption of services by consumers – this leads to a supportive rather than policing regulatory framework which minimises litigation risk and promotes rapid solution deployment by international and domestic investors.

Regulation

Using the power of the regulatory environment to promote competitiveness and economic growth is central to Government policy. It is imperative that a number of issues are provided for in this:-

- The establishment of an independent regulator for the sector based on best practice legal enactments in line with WTO requirements.
- Low cost Internet access for all citizens and businesses is a top priority
- Regulation must consider issues like the attraction of investment and empowering of enterprise.

Often economies of scale make it difficult for the Regulator to direct that price reductions be implemented – for example low cost ADSL or dial-up to internet. Encouraging competition in the sector is often the most effective way to drive the service providers to reduce their costs and pass on those reductions to the customer.

Currently the relative costs of Internet access (price relative to national income) in Jordan are ten times that of Europe or USA. Until this is reduced customers will not use the Internet as it is elsewhere – always on always connected.

The Regulator should initiate a spectrum auction of 2.5GHz or 3.5GHz for wireless broadband as a matter of urgency. The conditions of auction should be that of a beauty contest rather than a revenue source as if a token fee is charged for the licence the coverage, reliability and price offered for end user service could deliver low cost access to a broad base of Jordanian citizens and businesses very rapidly.

Competing service providers (Jordan Telecom) will be encouraged via competitive pressure to retain their existing customers with access price reductions.

Hence the cost of delivering a national infrastructure for Internet access is borne by private investors the price paid by the customer being controlled by the Government in conjunction with market forces.

Communications

The opportunities presented by increasing Internet penetration into business and the private sector can be best looked at from a simple economic perspective.

- Current ICT service providers in Jordan support an installed base of less than 500k users (7%)
- If the penetration increased to European levels (45%) then the supporting sales and support services would increase proportionally – six times their present level
- A realistic strategic objective in the short term (2 years) would be to increase penetration to 21% which would treble supporting services employment

The barriers to Internet penetration centre on infrastructural deficits and uncompetitive costs.

- Land line penetration is 11% of the population
- Relative cost of Internet access is currently up to ten times that of developed countries when average income is taken into account – for both dial up and adsl connections.

A successful growth strategy must embrace both cost reduction and use penetration. Where costs are reduced to relative international levels the immediate impact will be to increase time on line of existing users and increase Internet use by an estimated 2% to 9%. This would have significant benefits as Internet use drives education and economic activity – but would be a short-term gain without a penetration strategy to provide connectivity for a high % of the population. The evidence from developed markets was that spending on ISP access alone, which introduced low cost tariffs typically, remained static while usage increased.

The constraint to Internet usage growth is seen to be infrastructural. The availability and distribution of landlines and broadband access are the limiting factors to penetration.

Solutions and Benefits

Infrastructural deficits exist many developing markets in Eastern Europe as well as in growth economies like China, India and Latin America. The solution being deployed is mainly Wireless Broadband (WiMax).

WiMax technology enables the infrastructural barriers to be eliminated more speedily and at lower cost.

- Cost of infrastructure lower than landlines.
- Time of deployment short (3 to 6 months)

- Promotes the necessary level of competition to drive broadband pricing to international levels
- Licensing opportunities enable an independent telecoms Regulator to set service and price conditions
- Technology and infrastructure is similar to cellular and in many cases the base stations can be co-located on cellular masts, which accelerates deployment.
- Penetration objectives of up to 20% could be achieved within 2 years in Jordan

Next Steps

In line with other markets the regulator should offer 2.5/3.5GHz spectrum for wireless broadband use. The bid process should be designed competitively with the objective of deploying low cost broadband to all the major centres of population at an affordable cost rather than as a generator of bid (auction) revenues as these can be counterproductive and can constrain Internet penetration and assess.

Detailed technology descriptions of Wireless Broadband technology and suppliers are beyond the scope if this report – the technology and infrastructure is now standardised and access to information is straightforward.

Government ICT Strategy

Government policies and actions across many linked areas of the economy impacts growth in the ICT sector and ICT deployment across all sectors. Policy choices which impact growth and employment in a sector can be dramatically impacted by relatively small inputs in the form of service delivery or regulatory policies.

E-Government

An effective e-Government strategy directly supports ICT Sector and ICT deployment growth across the economy. It is important to understand why the levers that can be used impact business.

E-Government is often seen as an automation project – for instance enabling tax returns to be made online. However the impact on the economy requires very simple solutions to increase efficiency by reducing the cost of doing business with the Government.

If all forms and documents which industry is required to complete and submit (tax, economic statistics, and the myriad of permit applications) are available for download from the Government departments website any customer has a choice of saving time and money by using an online service rather than visiting the respective department or phoning for the forms to be posted. This can be regarded as a micro saving – every document costs business slightly less to complete and process hence business costs and efficiency overall are reduced.

Automation of the submission process by eliminating the paper forms completely needs to be considered carefully, although it drives activity in the ICT development area if there are relatively few users online as a percentage of all forms in use the return on investment will not be achieved.

This again points to the critical aspect of Internet access – until the level of connectivity reaches 30% or 40% the effectiveness of e-Government initiatives in constrained.

Infrastructure

As detailed above infrastructure to provide low cost internet access to all is imperative. The impact of expanded use of the internet in non-ICT Sectors is detailed in the ICT Deployment section of this report. Without an infrastructure which can be accessed quickly, reliably and at low cost, growth in the non ICT sectors will be constrained.

The benefits of wireless broadband reach beyond internet access. Deployment of VoIP solutions is facilitated thus providing competition in Mobile and Fixed Line telephony sectors which reduces the cost of doing business for all sectors of the economy thereby accelerating economic activity.

Education

There is evidence that many of the Universities receive limited direction from the Government regarding the suitability of their curriculum for delivering appropriately trained graduates for industry. As demand for ICT staff accelerates with access infrastructure deployment this will result in a shortage of suitably trained graduates. This must be addressed by consultative forums facilitated by the appropriate Minister while using the funding levers at their disposal to achieve agreement on improved quality and quantity of graduates which meet industry needs.

As indicated in the Education Section an ideal instrument is student internships which also solve the graduate leakage problem to high paying jobs abroad.

R&D

There has been debate on using 1% tax to be allocated to R&D. This may not be the most effective instrument to drive R&D as expenditure must be controlled to ensure what is being researched and what is being developed will provide economic benefits to the company and economy. The risk is in generating activity but adding no value.

In Ireland fully integrated multinational companies who moved their R&D activities were given favourable tax treatment on income – specifically on intellectual property developed in their research programs. The royalties from same are tax free which creates a great incentive to innovate and patent developments.

The Universities have a role to play – specifically in facilitating Incubator services for campus companies by providing management and guidance on business operations. The Invent Centre in Dublin City University is an excellent example of this approach. This is not an altruistic service provided by the university - they own 5% of the companies they are supporting and are envisaged to make a profit over time. Typically start up services are provided for the first 3 years of operation of a new business.

There have been a number of remarkable entrepreneurial successes in Jordan (notable examples (ITG, Allied Soft, CCS) which indicates that the standards and potential for

innovation in Jordan are identical to other developed countries. Some barriers to local business growth are also notable in that Government tenders often focus on hardware cost rather than required value add gained from productive software applications. This results in some companies achieving export success while failing to penetrate the domestic market. The procurement process should be changed to a value based model rather than the current cost based model in order to address this issue.

ICT Deployment Strategy

The impact on ICT in non ICT sectors such as Health, Real Estate, Brokerage, Tourism, Pharmaceuticals, Insurance companies, Banks and other businesses indicates the close loop linkage between Government, ICT Sector and the Industrial and Service Sectors.

In simple terms ICT can be regarded as a means of reducing the cost of doing business or as a business enabler.

This equation is best seen in the effect or e-Government on all sectors. If all communications with the Government Ministries can be achieved electronically which is faster and cheaper for all citizens and companies then this acts as a catalyst for investment in ICT Services (Internet Access, ERP, Email etc. etc.) the level of automation is any sector being governed by a straightforward return on investment model.

Hence this brings us full circle to low cost Internet access for all – without this ICT investment is constrained. The current high cost of ADSL at 52JD per month is ten times higher than the US and provides an ongoing barrier to e-commerce and business competitiveness. New entrants in the market confirm a target price to the customer of 8 to 10JD per month – this will have a dramatic effect on take-up of service.

A realistic target for the ICT sector would be to increase internet penetration by a factor of 3 to 20% in 3 years. This will involve creative supply mechanisms for acquisition of PC by customers and coordinated effort with Government to accelerate licensing of required spectrum.

Removing these barriers is an effective short term strategy for driving organic growth in the ICT Sector and the ICT service requirements in Industry and Services.

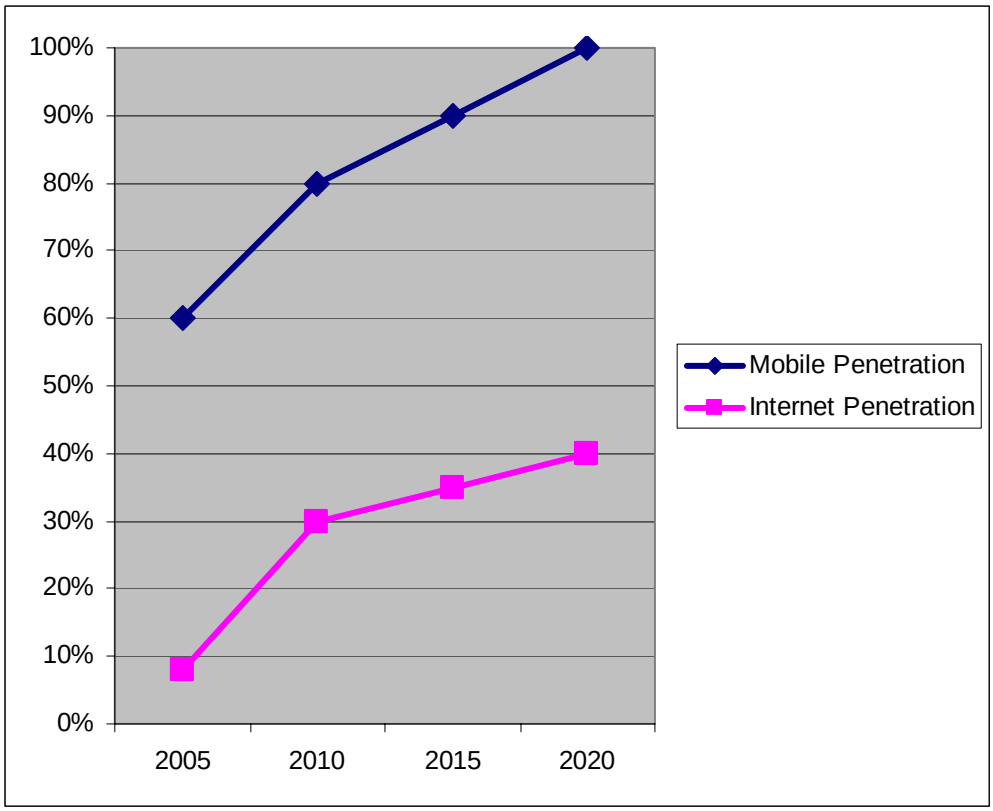
The level of growth is difficult to project but logically if Jordan has similar infrastructure services and pricing as more developed markets the projections for growth should be equivalent barring other barriers to growth.

This would lead to a three to five times growth in the ICT associated sectors in three to five years and provide an effective incubator environment for export driven growth.

The ICT sector alone is projected to grow as follows

ICT Sector	End 2004	2010	2015	2020
Gross output	$ 440m	$900m	$1.3Bn	$1.75Bn
Employment	8523	16000	20000	25000
Investments cumulative from 2001 (FDI)	$83	$140	$200	$300
Exports	$80	$140	$200	$300

The growth potential is greater than the Telecom sector on which much focus has been placed as the low penetration of ICT in the economy compared to the 60% penetration of mobile communications indicated immense opportunities to drive consumption. The following chart shows projected mobile penetration to grow 66% up to 2020 where internet growth is 500%.



Issues, Actions and Results

The following section provides a snapshot of interventions and their impact on the ICT and associated industrial sectors. It is intended as a guide for strategy implementation and prioritization.

The two key interventions detailed previously in this report – Communications and Education – are included for completeness.

Sector Definition

ISSUE	ACTION REQUIRED	RESULTS
o In ICT what niche sectors is Jordan currently in and how competitive are these. o ICT seen as isolated from other business sectors rather than a subset of all sectors o ICT customers need to develop ICT competencies to drive demand o Hybrid ICT sectors (Fastlink) have higher ICT growth potential than pure play ICT due to investment ratios	o Establish which ICT sectors have growth potential o Drive demand by developing IT governance models (e.g. PWC General Computer Controls, COSA, COBit frameworks etc) and tie compliance to grant aid or investment grading o Telecoms typically have low ICT investment at launch but grows rapidly as business matures (IP & Value added services) identify import substitution opportunities o Identify opportunities and ROI potential for Product and /or services focus – issue of employment priorities and sustainable jobs based on unique IP o Examine if banks can drive ICT investment by offering savings on products when applicants have effective ERP and systems controls in place	o Demand growth o Revenue growth o Business profitability o Employment growth o Stock market investment quality improvement

Growth Strategy

ISSUE	ACTION REQUIRED	RESULTS
o Investment is focused on jobs rather than value generation o Business sees ICT as cost rather than efficiency driver o E Government has	o Select target industry sectors with high potential for efficiency gains through ICT investment ▪ Health ▪ Real Estate ▪ Brokerage ▪ Tourism	o Creates demand driven market o Encourages appropriate use of technology o Expands small

facilitated business efficiency (e-tax returns) but barriers exist o Inter-sector collaboration with ICT appears minimal	▪ Pharmaceuticals ▪ Insurance companies ▪ Banks o Develop before and after business workflows which demonstrate ROI in terms of cost reduction, time to market, new market penetration o Identify and target small businesses with no ICT activity (e.g. email) and develop training (In Ireland less than 50% of companies employing less than 10 use email (2001)) o Target IT companies that can develop a low cost accounting package which addresses local tax laws. This would be the Jordanian version of QuickBooks and other similar packages which are cheap but not suitable for the local market o Identify opportunities where INTAJ can act as a facilitator for cross sector collaboration in use of ICT o Examine opportunities for cross sector investment in R&D which will drive Jordanian industry competitive advantage o Intaj working on adding 1% tax to be used in R&D	ICT services sector o Grows domestic ICT business

Communications

ISSUE	ACTION REQUIRED	RESULTS
o Cost of broadband services high in relation to GDP o Competition in ISP and broadband services poor by international standards (Europe & US) o Internet penetration low by international standards need to match investment to opportunity	o Expand competition in broadband market to create demand and drive down prices o Review wireless broadband potential and license spectrum o Develop price penetration matrix based on GDP to limit inappropriate investment o Assess the gap between business needs and current infrastructure provision o Internet penetration is still low due to the fact that local phone calls are expensive (5 cents per minute) and the fact the PC's are expensive – costs must be reduced to drive Internet adoption – employee purchase schemes and tax breaks should be considered	o Price led market expansion o Barriers to ICT adoption reduced o ICT value proposition easier to sell

Sector Collaboration and Competition

ISSUE	ACTION REQUIRED	RESULTS

o Evidence of price led competition eroding quality of service o Jordan does not have regional competitive advantage o Focus on exports from immature businesses inappropriate	o Develop RFP response training so that businesses issue proposals in line with international competition o Identify real rather than aspirational competitive advantage and focus investment appropriately o Government and Industry sector procurement should be revised to be value focused rather than price focused to drive ICT application acquisition.	o ICT quality of service improved o Destructive competition reduced o Export potential developed o Value led growth.

Education

ISSUE	ACTION REQUIRED	RESULTS
o Graduate competencies must be aligned to business needs o Business and Academia (especially private colleges) not adopting collaborative strategies	o Review industry needs and identify gaps which could be filled by developing graduate skill sets more closely aligned to business needs o Review management hiring practice (Jordanian vs foreign nationals) and identify management training shortfalls that could be addressed by colleges – option here is to motivate graduates to take lower salaries in Jordan with education credits – e.g. creation of student loan which does not need to be paid back if employed in Jordan for X years o Identify current industry / university collaboration and promote as model to develop graduate productivity – focus on current collaborative colleges and drive benefits towards same o Identify and promote industry internships of university students as a means of tailoring graduate skills to industry needs – this has not worked to date because of course structure – redesign course to provide 6 months internships as per other countries o Overcome resistance in academic sector with grant aid for initiatives which motivate joint industry academic projects	o Industry and ICT sector productivity improvement o Accelerated graduate productivity and shorter training cycle

Industry Competitiveness

ISSUE	ACTION REQUIRED	RESULTS
o ICT deployment in industry and service sectors is seen as a driver of competitiveness for	o Metrics for establishing actual and potential return on investment must be established o Prioritisation process of investment by rate of return and strategic importance of sector to be established and agreed by INTAJ and industry	o ICT ROI tracked and verified o Realistic ICT plan to meet

the Jordanian economy		unique Jordan demands established

Roadmap for 2020

ISSUE	ACTION REQUIRED	RESULTS
o Roadmap currently led by other market examples some of which are inapplicable (Ireland) o Capacity to absorb ICT services needs to be established o Investment needs to be prioritized by ROI potential	o Penetration of ICT in businesses to be established in order for training and communications initiatives to be effective o Trojan Horse examples of ICT driving business efficiency when barriers removed to be communicated (JTB) o Business maturity and ICT absorption capacity matrix to be developed to prioritize investment	o ICT ROI maximized o Realistic ICT plan to meet unique Jordan demands established o Export potential developed

Market Trends

ISSUE	ACTION REQUIRED	RESULTS
o Global industry trends to be considered to identify future Jordan opportunities	o Establish think tank comprising university, industry and Intaj members with narrow focus on future industry trends which can be leveraged by emerging Jordan ICT – e.g. shared services, communications, remote monitoring etc o Measure group performance by number of initiatives which result in incremental employment	o Effective planning o Incremental employment