



Islamic Republic of Afghanistan  
Afghanistan National Development Strategy

# Information and Communication Technology

1387 - 1391 (2007/08 - 2012/13)

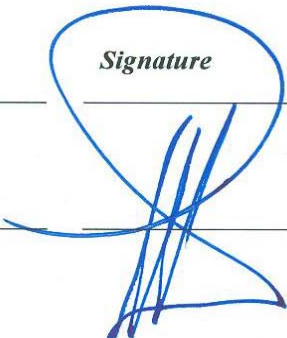


Pillar III, Infrastructure



# Information & Communication Sector Strategy

Approved by  
Sector Responsible Authorities

<i>Ministry/Agency</i>	<i>Name of Minister/Director</i>	<i>Signature</i>
Ministry of Communication & Information Technology	H.E. Eng. Amirzai Sangin	

**February 2008**

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Feb 2008



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*In the name of Allah, the Most Merciful, the Most Compassionate*

## Vision for Afghanistan

By the solar year 1400 (2020), Afghanistan will be:

- A stable Islamic constitutional democracy at peace with itself and its neighbors, standing with full dignity in the international family.
- A tolerant, united, and pluralist nation that honors its Islamic heritage and deep aspirations toward participation, justice, and equal rights for all.
- A society of hope and prosperity based on a strong, private sector-led market economy, social equity, and environmental sustainability.

## ANDS Goals for 1387-1391 (2008-2013)

The Afghanistan National Development Strategy (ANDS) is a Millennium Development Goals (MDGs)-based plan that serves as Afghanistan's Poverty Reduction Strategy Paper (PRSP). It is underpinned by the principles, pillars and benchmarks of the Afghanistan Compact. The pillars and goals of the ANDS are:

1. Security: Achieve nationwide stabilization, strengthen law enforcement, and improve personal security for every Afghan.
2. Governance, Rule of Law and Human Rights: Strengthen democratic practice and institutions, human rights, the rule of law, delivery of public services and government accountability.
3. Economic and Social Development: Reduce poverty, ensure sustainable development through a private sector-led market economy, improve human development indicators, and make significant progress towards the Millennium Development Goals.

# Foreword

For the preparation of the Afghanistan National Development Strategy





*In the name of Allah, the most Merciful, the most Compassionate*

Six and half years ago, the people of Afghanistan and the international community joined hands to liberate Afghanistan from the grip of international terrorism and begin the journey to rebuild a nation stunned by a long past of violence, destruction and terror. We have come a long way in this shared journey.

In just a few years, as a result of the partnership between Afghanistan and the international community, we were able to draw up a new, Constitution, embracing the values of democracy, freedom of speech and equal rights for women. Afghans voted in their first ever presidential elections and elected a new parliament. Close to five million Afghan refugees have returned home, making it one of the largest movement of people to their homeland in history.

Thousands of schools have been built; over six million boys and girls have been enrolled, the highest level ever for Afghanistan. Hundreds of health clinics have been established boosting our basic health coverage from 9 percent six years ago to over 85 percent today. Access to diagnostic and curative services has increased from almost none in 2002 to more than forty percent now. We have rehabilitated 12,200 km of roads. Our rapid economic growth, with double digit growth almost every year, has led to higher income and better living conditions for our people. With a developing network of roads and a state-of-the-art communications infrastructure, Afghanistan is better placed to serve as an economic land-bridge in our region.

These achievements would not have been possible without the unwavering support of the international community and the strong determination of the Afghan people. I hasten to point out that our achievements should not make us complacent distracting to face the enormity of the tasks that are still ahead. The threat of terrorism and the menace of narcotics are still affecting Afghanistan and the broader region and hampering our development. Our progress is still undermined by the betrayal of public trust by some functionaries of the state and uncoordinated and inefficient aid delivery mechanisms. Strengthening national and sub-national governance and rebuilding our judiciary are also among our most difficult tasks.

To meet these challenges, I am pleased to present Afghanistan's National Development Strategy (ANDS). This strategy has been completed after two years of hard work and extensive consultations around the country. As an Afghan-owned blueprint for the development of Afghanistan in all spheres of human endeavor, the ANDS will serve as our nation's Poverty Reduction Strategy Paper. I am confident that the ANDS will help us in achieving the Afghanistan Compact benchmarks and Millennium Development Goals. I also consider this document as our roadmap for the long-desired objective of Afghanization, as we transition towards less reliance on aid and an increase in self-sustaining economic growth.

I thank the international community for their invaluable support. With this Afghan-owned strategy, I ask all of our partners to fully support our national development efforts. I am strongly encouraged to see the participation of the Afghan people and appreciate the efforts of all those in the international community and Afghan society who have contributed to the development of this strategy. Finally, I thank the members of the Oversight Committee and the ANDS Secretariat for the preparation of this document.

Hamid Karzai

President of the Islamic Republic of Afghanistan

# Message from the Oversight Committee

For the preparation of the Afghanistan National Development Strategy







*In the name of Allah, the most Merciful, the most Compassionate*

We are pleased to present the Afghanistan National Development Strategy, which reflects the commitment of the Islamic Republic of Afghanistan to poverty reduction and private sector-led economic growth for a prosperous and stable Afghanistan. The ANDS Oversight Committee (OSC) was mandated by the Government to produce a Millennium Development Goals-based national strategy that is Afghan-owned and meets the requirements for a Poverty Reduction Strategy Paper. The OSC met on a regular basis to design, discuss and oversee the development of the strategy, including the identification of the needs and grievances of the people, and the prioritization of resource allocations and actions. To embrace ‘Afghanization’ and ownership, the OSC facilitated inclusive and extensive consultations both at national and sub-national levels.

Sustained fiscal support and continuous evaluation and monitoring are essential now to meet the challenges ahead related to ANDS implementation. The democratic aspirations of the Afghan people are high, yet financial resources remain limited. While much has been accomplished since 2001, more remains to be done as we move from “Compact to Impact”. The Afghan Government with support from the international community must act decisively, strategically, and with an absolute commitment to the ANDS goals and vision.

We look forward to working with our government colleagues, civil society representatives, tribal elders and religious scholars, the private sector, the international community and, most importantly, fellow Afghans to implement the ANDS, to help realize the Afghanistan Compact benchmarks and Millennium Development Goals.

**Prof. Ishaq Nadiri**  
Senior Economic Advisor to  
the President  
Chair, ANDS and JCMB

**Ahmad Zia Masoud**  
First Vice-President

**Dr. Rangin Dadfar Spanta**  
Minister of Foreign Affairs

**Dr. Anwar-ul-Haq Ahady**  
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# Acknowledgments

For the preparation of the Afghanistan National Development Strategy



*In the name of Allah, the most Merciful, the most Compassionate*

The Afghanistan National Development Strategy (ANDS) could not have been developed without the generous contribution of many individuals and organizations. The ANDS was finalized under the guidance of the Oversight Committee, appointed by HE President Hamid Karzai and chaired by H.E. Professor Ishaq Nadiri, Senior Economic Advisor to the President and Chair of the ANDS Oversight Committee. The committee included: H.E. Rangeen Dadfar Spanta, Minister of Foreign Affairs; Anwar-ul-Haq Ahady, Minister of Finance; H.E. Jalil Shams, Minister of Economy; H.E. Sarwar Danish, Minister of Justice; H.E. Haneef Atmar, Minister of Education; H.E. Amin Farhang, Minister of Commerce; and H.E. Zalmi Rassoul, National Security Advisor.

We would like to sincerely thank the First Vice-President and Chair of the Economic Council, H.E. Ahmad Zia Massoud. Special thanks are also due to H.E. Hedayat Amin Arsala, Senior Minister and H.E. Waheedullah Shahrani, Deputy Minister of Finance and the Ministry of Finance team. In addition, we would like to thank the Supreme Court, the National Assembly, Government Ministries and Agencies, Provincial Authorities, Afghan Embassies abroad, national Commissions, the Office of the President, Civil Society Organizations, and International Community.

All Ministers, deputy ministers and their focal points, religious leaders, tribal elders, civil society leaders, all Ambassadors and representatives of the international community in Afghanistan; and all Afghan citizens. National and international agencies participated actively in the ANDS consultations. Their contributions, comments and suggestions strengthened the sectoral strategies, ensuring their practical implementation. Thanks are also due to the Ministry of Rural Rehabilitation and Development for their significant contributions to the subnational consultations. Special thanks are further due to the President's Advisors, Daud Saba and Noorullah Delawari for their contributions, as well as Mahmoud Saikal for his inputs. We are also indebted to the Provincial Governors and their staff for their contributions, support and hospitality to the ANDS staff.

Special thanks go to Wahidullah Waissi, ANDS/PRS Development Process Manager, for his invaluable contribution and for the efforts of his team of young Afghan professionals who dedicated themselves tirelessly to completing the I-ANDS, Afghanistan Compact and the full ANDS in consultation with both national and international partners. The Sector Coordinators included Rahatullah Naeem, Farzana Rashid Rahimi, Shakir Majeedi, Attaullah Asim, Mohammad Ismail Rahimi, Zalmi Allawdin, Hedayatullah Ashrafi, Shukria Kazemi, Saifurahman Ahmadzai, and; the Sub-National Consultations Team consisted of Mohammad Yousuf Ghaznavi, Mohammad Fahim Mehry, Shahenshah Sherzai, Hekmatullah Latifi, Sayed Rohani and Osman Fahim; and Malik Sharaf, Naim Hamdard, Saleem Alkozai, Ahmadullah Kakar, Mir Ahmad Tayeb Waizy, Sayed Shah Aminzai, Khwaga Kakar and Mohammad Kazim. Thanks to Nematullah Bizhan for his special contribution from the JCMB Secretariat. We are also indebted to the many national and international advisers who supported this effort. In particular, we would like to thank Zlatko Hurtic, Paul O'Brien, Jim Robertson, Barnett Rubin, Peter Middlebrook, Richard Ponzio, Anita Nirody, Shakti Sinha, Ashok Nigam, Christopher Alexander and Ameerah Haq.

Finally, I would like to thank all who contributed towards this endeavor in preparation of the first Afghanistan National Development Strategy, a milestone in our country's history and a national commitment towards economic growth and poverty reduction in Afghanistan.

Adib Farhadi,

Director, Afghanistan National Development Strategy, and  
Joint Coordination and Monitoring Board Secretariat

The complete list of contributors to this Sector Strategy is on the next page.

**The Information and Communication Technology (ICT) Sector Strategy** was developed as a result of the commitment and efforts of members of key Afghan ministries, United Nations, donors, NGOs, civil society and the private sector.

The invaluable contribution of H.E. Eng. Amirzai Sangin, Minister of Communication and Information Technology; has been invaluable in the development of this sector strategy.

Finally, we would like to thank everyone who assisted the ANDS Secretariat in working to develop the ICT Sector Strategy. We look forward to the firm commitment of all our stakeholders throughout the implementation of this strategy.

Certainly, contributions to the ICT Sector will remain key to the success of this strategy in particular, and of the ANDS in general.

**Special thanks also go to the following for their valued help and support:**

H.E. Baryalai Hassam, Deputy Minister, Ministry of Communication and Information Technology ; Ajmal Ayan, Planning Director and International Relations, Ministry of Communication and Information Technology; Muhammad Aimal Marjan, Director General ICT, Ministry of Communication and Information Technology Oliver Dziggel, Legal Regulatory Advisor, Telecom Regulatory Board, Ministry of Communication and Information Technology; Bhupa Nanda, Advisor to Ministry of Communication and Information Technology and Rahatullah Naeem (ANDS).

# Map of Afghanistan





## Afghanistan National Development Strategy (ANDS) Structure

SECURITY	GOVERNANCE	SOCIAL AND ECONOMIC DEVELOPMENT					
Pillar 1	Pillar 2	Pillar 3	Pillar 4	Pillar 5	Pillar 6	Pillar 7	Pillar 8
1 - Security	2 - Good Governance	3 - Infrastructure & Natural Resources	4 - Education & Culture	5 - Health & Nutrition	6 - Agriculture & Rural Development	7 - Social Protection	8 - Economic Governance & Private Sector Development
Sectors							
Security	Justice	Energy	Education	Health and Nutrition	Agriculture and Rural Development	Social Protection	Private Sector Development and Trade
	Governance, Public Administrative Reform & Human Rights	Transportation	Culture, Media and Youth			Refugees, Returnees and Internal Displaced Persons	
	Religious Affairs	Water Resource Management					
		Information and Communications Technology					
		Urban Development					
		Mining					
Cross-Cutting Issues							
Capacity Building							
Gender Equity							
Counter Narcotics							
Regional Cooperation							
Anti-Corruption							
Environment							





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# Acronyms and Abbreviations

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<b>ACSA</b>	Afghan Computer Science Association	<b>GSM</b>	Global System Mobile
<b>ATRA</b>	Afghanistan Telecommunication Regulation Authority	<b>ICT</b>	Information and Communication Technology
<b>CCN</b>	Copper Cable Network	<b>ICTTC</b>	ICT Training Center
<b>CDC</b>	Community Development Council	<b>IN</b>	Intelligent Network
<b>CDMA</b>	Code Division Multiple Access	<b>ISP</b>	Internet Service Provider
<b>DCN</b>	District Communication Network	<b>IXP</b>	Internet Exchange Point
<b>FDI</b>	Foreign Direct Investment	<b>MCIT</b>	Ministry of Communications & Information Technology
<b>G2B</b>	Government to Business (Application)	<b>LFSP</b>	Local Fixed Service Provider
<b>G2C</b>	Government to Consumer (Application)	<b>NDC</b>	National Data Center
<b>G2G</b>	Government to Government (Application)	<b>NGO</b>	Non-governmental Organization
<b>GCN</b>	Government Communication Network	<b>OFC</b>	Optical Fiber Cable
<b>GIS</b>	Geographical Information System	<b>PABX</b>	Private Automatic Branch Exchange
<b>GIPI</b>	Global Internet Policy Initiative	<b>PKI</b>	Public Key Infrastructure
<b>GPRS</b>	General Packet Radio Services	<b>SIM</b>	Subscriber Identification Module
<b>GPS</b>	Global Positioning System	<b>VCN</b>	Village Communication Network
<b>GSI</b>	Globecomm Systems International (Contractor)	<b>WLL</b>	Wireless Local Loop
		<b>WTO</b>	World Trade Organization







# Executive Summary

## PROVIDING STRATEGIC LEADERSHIP TO THE ICT SECTOR

In February 2007, cabinet approved the re-naming of the Ministry of Communications to the Ministry of Communications & Information Technology (MCIT) as an acknowledgement of the central role that the information and communications technology (ICT) sector<sup>1</sup> will play in accelerating Afghanistan's full participation in the global Information Society. MCIT will provide strategic leadership to ICT sector development, and it will act as the focal point for all of the stakeholders to help shape future policies and to promote large-scale projects.

The ICT Council was established by Presidential Decree in May 2007 as the primary forum for all of the stakeholders. The ICT Council includes representatives from the government ministries, plus business (service providers), civil society (relevant associations) and academia.

### STAKEHOLDERS & STRATEGIC CHANNELS

In every economy in the world, the government is always the single largest buyer of goods and services. In this role as mega-consumer, governments are also able to play a leading role in the development of sectors, industries, products and even commercial process. In the case of the development of the ICT sector in Afghanistan, the government has explicitly acknowledged the role it must play, and through the ICT Council, MCIT will achieve the following objectives:

- Promotion of ICT development

- Create awareness in the ministries and public about the importance of ICT
- Encourage implementation of required ICT solutions and systems in each Ministry through CIO (Chief Information Officer) Culture
- Make ICT as a cross-cutting tool to support the ANDS
- Coordination of ICT Activities
  - Create awareness about existing situation of ICT in the country
  - Coordinate new activities among ministries and/or donors
  - Avoid duplications and waste of resources
- Policies and Standards for ICT
  - Establish Policies and procedures
  - Establish the Legal framework for ICT
  - Create ICT standards
  - Establish proper procedures for data integrity, security and access
  - Ensure Privacy protection
  - Create Emergency preparedness
- E-Government initiatives
  - Develop strategic plan for e-Government
  - Promote e-Government to deliver services effectively, reduce bureaucracy and fight corruption
  - Ensure interoperability of systems and solutions
  - Example: National ID, Passport, License, Land Ownership Register etc

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<sup>1</sup> The ICT sector is fully defined in Part II.

By mobilizing resources to build up the ICT sector within the public sector institutions, MCIT will also be accelerating the development of ICT support capabilities of the private sector in Afghanistan, both through contracts and via participation in the policy processes of the ICT Council.

The ICT ecosystem is characterized by

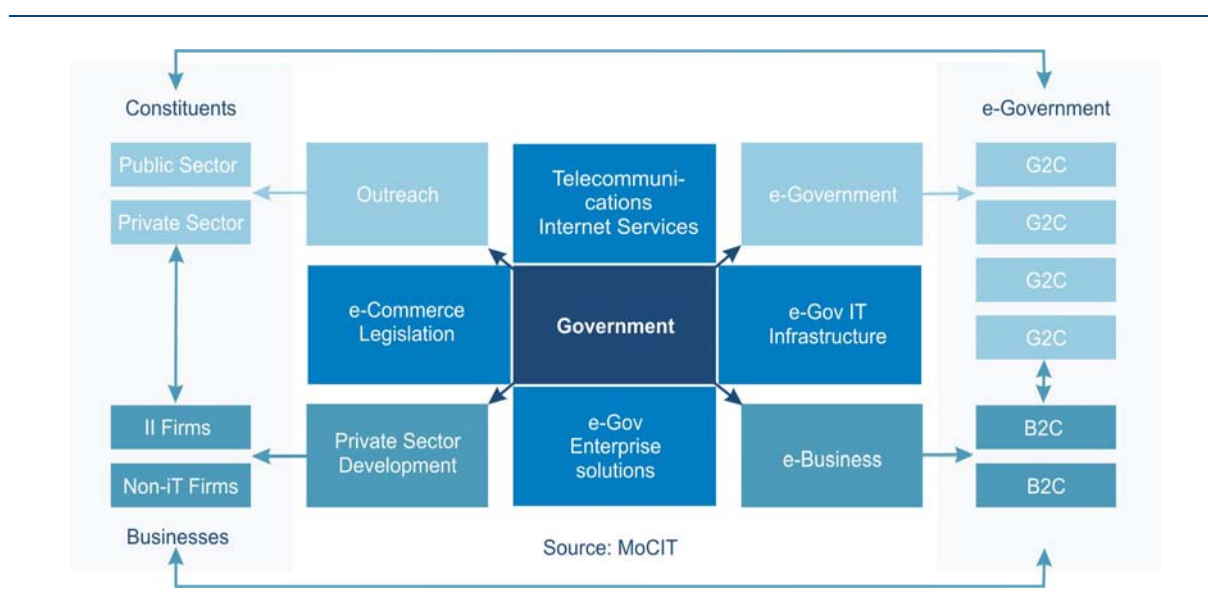
stakeholders and relationship channels. For example, an inter-Ministerial electronic personnel and payroll system is an example of a Government-to-Government (G2G) channel.

Electronic procurement is an example of G2B. Ultimately, as the ICT market matures, it will resemble a matrix of relationships, as in the table below:

	Government <sup>2</sup>	Citizen	Business	Education
Government	G2G	G2C and G4C	G2B	G2E
Citizen		C2C		
Business	B2G		B2B	
Education		E2C		E2E

These relationships are already well understood and it will be the task of the ICT Council to foster their development in Afghanistan. Several logical high-priority starter programs have already been identified and are listed in the Programs section below .

**Figure 1:** A graphic illustration of the ICT ecosystem.



<sup>2</sup> Government includes the health sector.

<sup>4</sup> MOI, Afghan Geodesy and Cartography Head Office agree that there are 217 provincial and rural municipalities having populations of more than 5000 people.

## KEY STRATEGIC TARGETS FOR ANDS

This ICT sector strategy carries forward two elements that were adopted in the Interim ANDS (I-ANDS) with adding up the third:

- Telecom access to 80% geographic coverage of populated<sup>4</sup> areas by 2010, ensuring equitable access to most of the population, including women
- US\$100 million revenue contribution to treasury by 2010
- Transforming Afghan society into information based society by 2013

The approach taken to achieve the first target is wireless service. From July 2003 to July 2007, the total number of mobile subscribers has grown from 1,800 to over 4 million and from 6 to over 250 urban areas.<sup>5</sup> Afghanistan now has five nationwide mobile service providers plus three regional licensees. Competitive incentives will continue to spur the expansion of access to ever more remote areas. For the next five years, MCIT policies, working through the Afghanistan Telecom Regulatory Authority (ATRA) will also deploy satellite solutions to the less populated areas where personal mobile is too costly. The current program is to reach at least 3000 villages by 2010. Plans are also underway to issue new licenses for the provision of fixed wireless access for broadband internet.

The second target has been dictated by the Ministry of Finance. The ICT sector is already the most heavily taxed, primarily because it is comprised of the largest law-abiding enterprises in Afghanistan, and therefore an easy target for collections. As more licensees enter the legitimate market, great care should be given to reduce – not increase – the burden on the sector. A World Bank study is being prepared which will provide guidance to the ICT Council, and ultimately the cabinet, on improving the tax regime to avoid placing an unfair burden on this nascent industry which is providing vast economic benefits in terms of

employment and development. With the new telecom infrastructure e.g. Fiber optic ring and national data centre, new business like call centers will spur in the sector contributing to the government revenues.

With the achievement of third target Afghans will be able to enjoy their day to day life. The establishment of national data center by end of 2008, implementation of e-Government, e-Commerce, m-Commerce, e-Health (telemedicine) towards the end of 2010 will enable afghan to enjoy the information age. The new mandate of MCIT and establishment of ICT council will strengthen the political well to achieve the third target.

## IMPEDIMENTS

The impediments to the healthy future of the ICT sector are:

- Security – impeding the ability to build and maintain ICT infrastructure in remote areas
- Literacy – the high level of illiteracy reduces the immediate impact of many internet applications
- Corruption – adds a significant burden on legitimate business processes
  - Human Resource – the low level of ICT work force is another hurdle to the adoption and promotion of ICT
  - In particular, the low literacy rate and limited mobility severely constrains the access of women to internet services.
  - There is a limit to the level of taxation that can be imposed on this industry

## SOLUTIONS

The ICT sector also brings solutions that will help address these impediments, which will bring cross-cutting benefits to the whole of Afghan society:

- Security – wireless technologies require less infrastructure to cover a wider territory, and citizens will no longer be isolated from government

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<sup>5</sup> All licensees are required to register each user. By 2008, ATRA will require each licensee to provide aggregate number of users by gender, district and nationality.

- Literacy – once access to the internet is available, it can be used for education, in particular women, and it is proven to be easy for children to self-teach, which will increase the ICT literate work force. Furthermore, Internet learning and distance learning programmes should be developed for women.
- Corruption – when you make information widely available, you eliminate abuse by the bureaucracy and make the government more accountable.
- Capacity Development – MCIT now has ICT training centers established in 16 provincial capitals and will deploy training centers in all 34 capitals by the end of 2008<sup>6</sup>
- Lowering the cost of communication. Developments in this market, particularly increased competition have driven prices down from around \$US3 per minute to less than 10 cents per minute

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<sup>6</sup> *The complete list of the ICT centers already established and planned for 2008 is in annex*

# INTRODUCTION

## DEFINITION OF THE ICT SECTOR

Information & Communications Technology (ICT) is defined as the infrastructure, applications and services that are helping to shape the Information Society.

By **infrastructure**, we primarily mean the computers and all other IP based devices that is linked on a global basis by the public internet (or other private access networks). Locally, these devices are either linked to each other by wire infrastructure (Ethernet) or wireless infrastructure (WiFi) or they can connect directly to the internet using the infrastructure of a telephone company.

Software makes it possible for various **applications** to utilize the computer hardware. Basic software includes word processing, spreadsheets and relational databases for desktops or laptops. But, as used in this Sector Strategy, the relevant applications mean enterprise-wide or government-wide software, including especially those that are web-enabled, meaning that they can be accessed by any IP enabled device or terminal worldwide (with appropriate security measures).

**Services** consist of all those E-enabled G2G, G2C, G2B services e.g. e-Passport, e-Land registration, e-Procurement.

Today, there are over 1 billion personal computers in use worldwide.<sup>7</sup> There are 1.3 billion internet users, compared with 1 billion in 2005, 420 million in 2000 and 45 million in 1995.<sup>8</sup> The value of worldwide telecom services was US\$123 billion in 2004, projected to reach US\$282 billion in 2010. The value of ICT equipment sold was US\$198 billion in

2005 is anticipated to reach \$447 billion by 2010.<sup>9</sup>

## THE IMPORTANCE OF THE ICT SECTOR TO AFGHANISTAN

The ICT sector is one of the important parts of the infrastructure of any country and it plays a vital role for further growth of any economy and seeing its due importance it has been placed under pillar three Social and Development in the Infrastructure and the natural resource consultative group of the Afghanistan National Development Strategy.

ICT will enable the government to successfully execute the broad reconstruction effort. A modern telecommunications sector, incorporating e-government initiatives wherever possible, will enhance the effectiveness, efficiency and transparency of the public sector and the provisioning of social services. In this case such provision of services has largely occurred through the enabling environment created within the sector for sustained private sector investment.

Today when the telecommunication revolution has reduced the world to a global village its development is important for the Afghanistan as well. As all the communities of our people face the “tyranny of distance” and the alienation associated with remote geographical conditions of Afghanistan. Women in particular face movement restrictions due to security concerns and conservative tradition. To restore cultural and social normalcy throughout the country it is essential that all 365 districts, major villages and rural areas be integrated with Kabul, with each other, and with the rest of the world. ICT is a basic enabler of informal social and economic discourse necessary in the

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<sup>7</sup> Computer Industry Almanac – <http://www.c-i-a.com>

<sup>8</sup> International Telecommunication Union – <http://www.itu.int>

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<sup>9</sup> Research and Markets – <http://www.researchandmarkets.com/reports/c21014>

strengthening of civil society and the promotion of economic activity (e.g. access to markets and pricing). In particular, it can give access to information to those women whose movements are restricted.

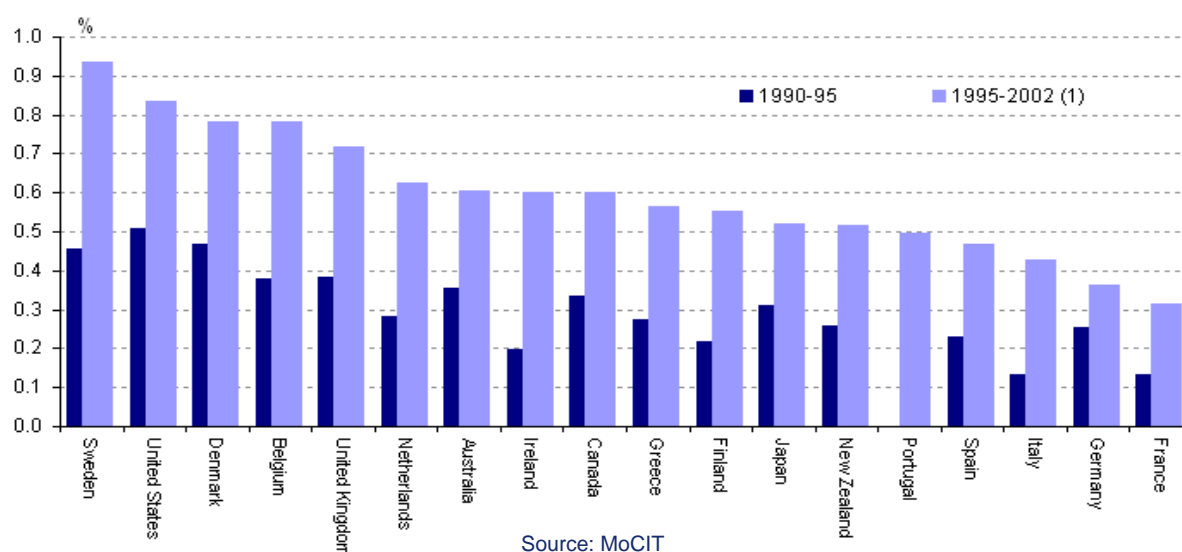
ICT is necessary for the resumption of productive capacity and stimulating activity in all sectors of the Afghan economy. It plays a critical role in reestablishing basic economic linkages by relieving communication bottlenecks from financial, governmental and cultural information flows. ICT is an essential enabler for boosting productivity and creates a climate for job creation, investment and sustainable growth. In fact; currently there are more 50 thousand people who have been provided with direct and indirect job opportunities in this sector since 2002. Research data shows that positive economic effects flow to all parts of a community once basic telephone access is achieved. And now with the advent of Internet the flow of market information is more rapid enabling the market stakeholders enjoy the availability of business/economic statistics thus the information technology revolution which has influenced all the economies in the world can't leave Afghanistan as exception and it has started making ripples by becoming a sole sector which contributes maximum to the exchequer or the national treasury of our country. The contribution of the ICT sector for 2005 estimated at 20% of national domestic revenue collection which is going to rise further will provide government more revenue for carrying out its fight against

poverty reduction and reconstruction of the nation and thus this sector will contribute directly or indirectly in poverty reduction crusade of the nation.

Civil preparedness, education, NGO and community outreach, peace-building and national security efforts are all strengthened when reliable and robust ICT network resources are distributed widely throughout society. ICT is a strategic sector that urgently requires further rapid modernization by encouraging further private sector investment into the sector. It plays a unique role as a facilitator in the overall reconstruction effort – from providing a support infrastructure for humanitarian, aid and other NGO relief workers to improving education, supporting emergency operations and social welfare and boosting the economy.

Administrative reforms being accepted as one of the major challenges by the government of Afghanistan can be tackled with the use of ICT by introducing G2G (Government to Government), G2B (Government to Business) and G2C (Government to Citizen) services. As per the international experiences technology can be one of the strong factors helping reduce the bureaucracy and increase the accountability and transparency. Thus the ICT sector has a crucial role to play in economic growth, in poverty reduction and in overall development of the nation.

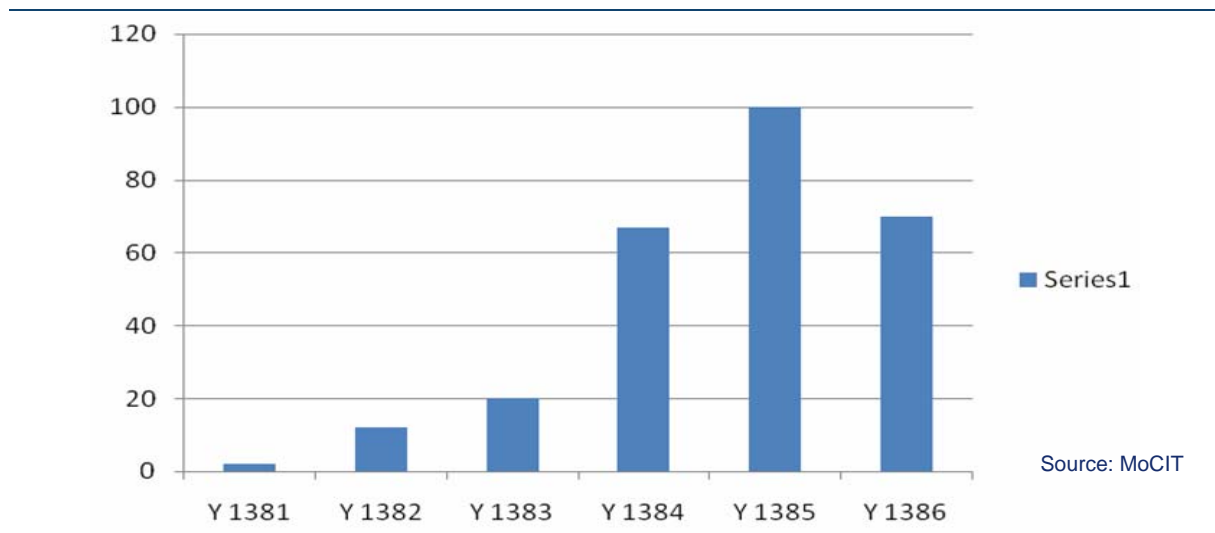
**Figure 2:** economic growth, in poverty reduction and in overall development of the nation.



## ACHIEVEMENTS:

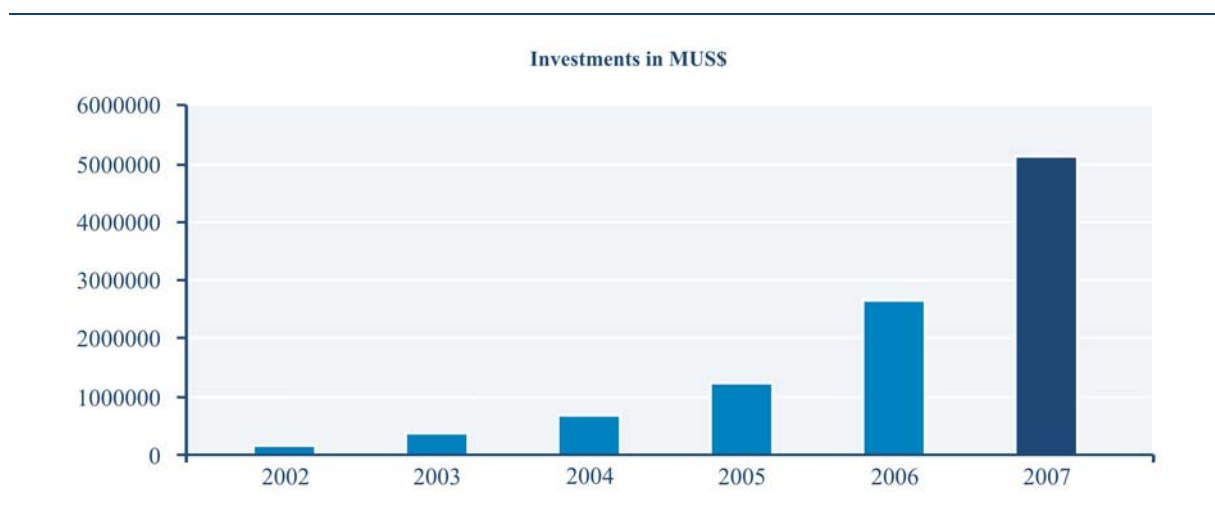
- Four nationwide mobile licenses have been issued, generating one time US\$90 million in license fees and US\$ 70 million recurrent annual revenue (end 1386)

**Figure 3:** recurrent annual revenue



- The ICT Sector is Afghanistan's biggest success story in terms of attracting private sector investment US\$925 million (Dec 2007). Expected to reach US\$1.5 billion by end 2010.

**Figure 4:** Investment in ICT Sector

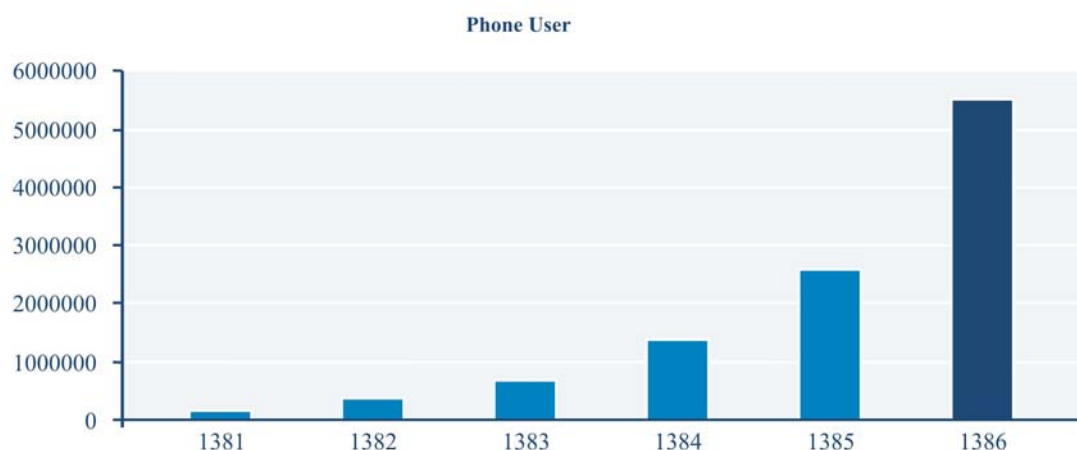


Source: MoCIT

- There are almost 4.5 million subscribers, as of Dec 07. This will reach to 5 million March 31st 2008(End of 1386) .This is equivalent to 18 % penetration ( one phone for each 5 people)
- There are close to 2000 towers now installed. Telecom services now covers more than 250 cities, towns and populated areas. The population of the covered areas is over 75% of population.

**Figure: 5** Phone Users

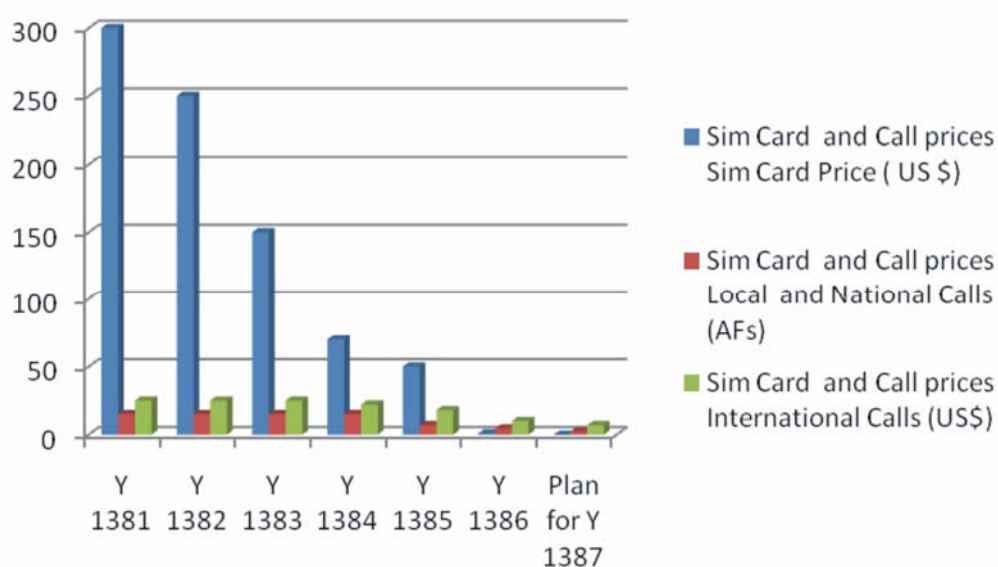




Source: MoCIT

- Call prices reduced from 15 Afs to 1 Afs and sim prices reduced from 300 US\$ to 1 US\$

**Figure 6:** Reduction in call prices

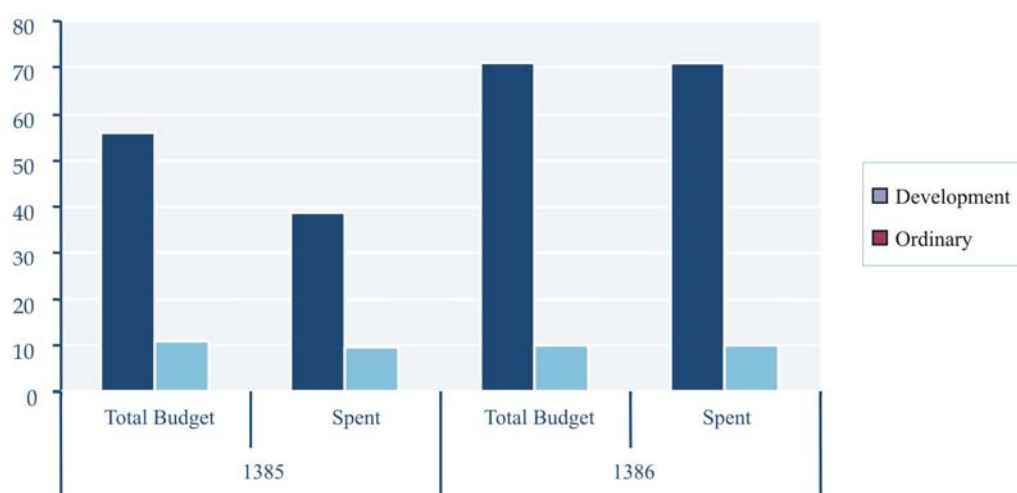


Source: MoCIT

- Above 81 % of Development Budget for the current year is has already been spent and it is expected that the complete Development Budget this year will be spent.

Figure 7 on the next page: Development Budget





Source: MoCIT

- Direct and Indirect jobs created for over 60,000 People
- More than 1,000 people trained in basic ICT skills and is establishing training centers in each of the 34 provinces by MCIT

## CHALLENGES & CONSTRAINTS – IMPEDIMENTS TO GROWTH

- Lack of security
- Government bureaucracy (length of time for simple decisions)
- Lack of electricity and high cost of diesel fuel for generators
- Lack of clear property rights
- Low level of literacy and informational content in the local languages.
- High tax burden, especially with policies explicitly targeting this sector( From Operators point of view)

**Provincial Developmental Plan (PDPs):** MCIT has actively utilized its video conferencing capabilities to reach out to all 34 provincial capitals and many of the 240 district capitals that are presently served by the District Communications Network (DCN) infrastructure. MCIT has also worked with Parliament to reach all communities. MCIT has furthermore conducted planning sessions by bringing together representatives from all

34 provinces for work shops in Kabul. ATRA is in the process of instituting even greater responsiveness to the communities, by making available financial support from the Telecom Development Fund (TDF) upon request from community leaders.

The ICT Sector Strategy incorporates feedback, proposed projects and comments from the Sub National Consultations (SNCs) and is a response to the people's needs and development goals (see attached annex IV).

## ICT AND POVERTY REDUCTION AND ECONOMIC GROWTH

Role of ICT in Poverty Reduction, Economic Growth and Good Governance

- ICT helps in accelerating literacy which will in turn help in reduction of poverty
- Provision of over 80,000 employments by end 2010.
- Adoption of ICT literacy and basic skills by all young Afghans
- ICT enabled high potential for employment (Call centers, software development and etc)
- ICT can be the engine of economic growth ( 10 % Penetration growth is equal to 1 % GDP
- Economic growth through increased private sector investment in ICT sector

- Enabling m and e commerce,
- Promote transparency and citizen access to public information
- Promote government efficiency, reduce cost
- Reduce corruption through streamlining ICT and automate customs processing, procurement and licensing etc.

## REFORM POLICIES:

The ICT sector strategy was initially adopted in July 2003, and has consistently been the reference template for all subsequent reform policies, procedures and activities.

Based on the principles of the ICT strategy, the Telecom Law was promulgated by the President on 18 December 2005 (Official Gazette 878 - 23 February 2006). The law is already compliant with the World Trade Organization (WTO) Basic Telecom Agreement (BTA) framework requirements, notably, that it separates the three basic functions and assigns responsibilities to three independent sector elements:

- Policy - MCIT
- Regulation - ATRA

- Operations - Licensed Service Providers.

The main effect of the Telecom Law is the establishment of the independent sector regulator, called ATRA. The legal authority of ATRA rests with its 5-member Board, which was appointed by the President on 6 June 2006.

MCIT has just started drafting the ICT Law. The telecom law addresses the telecom infrastructure and services but the law doesn't cover the content of the services. The ICT law will address issues such as legal recognition of electronic/digital signatures and formation of electronic contracts (affecting transactions both in public and private sectors), content regulation, competition regulation, electronic evidence, data privacy protection, consumer protection and rights, domain name registration and regulation, intellectual property rights, encryption and security, financial and banking sector law and regulation relating to electronic transfers and settlements, taxation of transfers, customs, jurisdiction, dispute resolution and civil and criminal offences, limitations of liability of internet service providers, cyber piracy and digital rights management, facilitation of e-government and cross border interoperability of e-commerce frameworks affecting trade.

## HISTORY UP TO 2002

Modern telecommunications technology arrived in Afghanistan in 1930 with a small exchange built in Kabul. The network was gradually expanded to five additional urban areas via copper wire but this infrastructure had been decimated by 23 years of conflict and under-investment since the mid-1970s. At the beginning of the transitional government in 2002, the infrastructure was negligible and services were extremely limited. Wealthy people could afford to use satellite phones (at a cost of US\$5 per minute) and those less fortunate either traveled to neighboring countries to place a call or to post a letter. But in reality, the majority of Afghans were simply isolated without communications.

In early 2003, Afghanistan had fewer than 15,000 functioning telephone lines for a population of approximately 25 million. This means a telephone penetration rate of 0.06%, among the lowest in the world. In addition to a shortage of basic telephone switching capacity, the local transmission network delivering last mile services, presented an even more difficult bottleneck. The cabling conduit, trunk cables and copper wires were also old or completely destroyed.

Afghanistan did not have a functioning long distance network to provide national or international connectivity. The absence of transmission and switching facilities meant that citizens could only complete calls within their own cities and were unable to reach any other parts of the country or the outside world.

### ADOPTION OF MODERN POLICIES

The government adopted the first modern policy for the ICT sector in October 2002, which was immediately posted to one of the first government websites. This initial broad

policy statement was further refined and split into two separate policies – one for basic telecom infrastructure and regulatory principles, and a second for ICT applications and a vision for the Information Society in July 2003.

The government has not veered from these policies and they remain in force to this day. Their principles have subsequently been given a statutory basis, in the form of the Telecom Law that was promulgated in December 2005 (published in Official Gazette 787). The telecom infrastructure aspects are being implemented by ATRA, which was established in June 2006. The ICT applications aspects are being implemented via the ICT Council, which was established in May 2007. The transparent approach taken to the adoption of the policies and the consistency of the vision from design to implementation has produced rapid results. These results have been formally acknowledged in two film documentaries – the first produced by the World Bank, and the second produced by USAID in 2006. In addition, there have been numerous favorable articles published in the leading business media, including *The Economist*, *The Wall Street Journal* and *The Financial Times*.

### THE EXPLOSION OF COVERAGE, ACCESS & USAGE

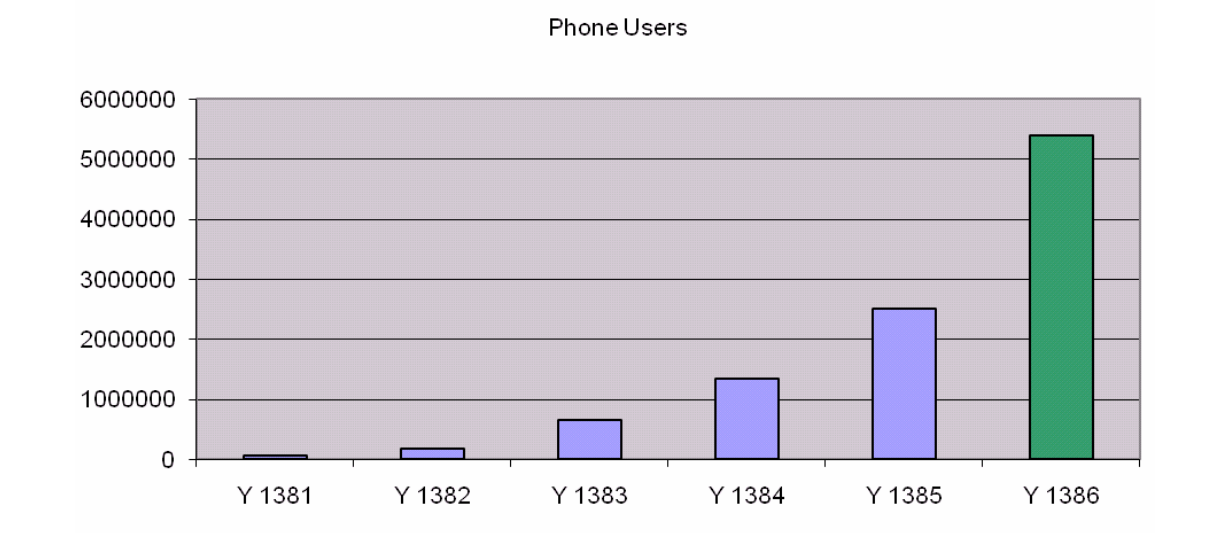
The fact that most of the existing infrastructure was either antiquated or broken meant that Afghanistan was free to abandon them and essentially start again with a fresh slate. In 2003, the obvious choice for personal communications was wireless. Global standards for wireless mobile meant that the equipment was reliable, cheap and could be

deployed rapidly. So wireless was a good fit for the Afghan market.

In July 2003, two nationwide mobile (GSM) networks began operation, following an international competitive tender. The licenses required commercial service to be offered in

Kabul within six months of the effective date, with nationwide service within 18 months. Pursuant to the original Telecom Policy, these first two licenses also were provided a legal duopoly for three years.

**Figure 8:** Coverage and phone users



Source: MoCIT

In October 2005 and May 2006, two additional nationwide mobile (GSM) licenses were awarded, with identical terms and conditions as earlier.

There was immediate strong demand for the mobile services, and has gone from zero to over twelve percent of the population, as documented in the table below:

The additional two licenses have clearly illustrated the benefits of competition, namely:

- Rapid expansion of coverage to new communities- 250 major urban areas to date
- Reduction of prices – from US\$0.30 to under US\$0.07 per minute
- Call per second is considered as 40% decrease in the prices
- Wider selection of optional features – voicemail, SMS.

A report from licensees indicates that the ICT market in Afghanistan is growing faster now than any time in its history, and still accelerating. In January 2007, the three mobile networks were adding 100,000 net subscribers per month – and by August 2007, close to

180,000 were being added per month (as a fourth licensee entered the market). It is estimated that approximately 70% of Afghans now live within a coverage area of a telecommunications network.<sup>10</sup>

## AFGHANISTAN COMPARED WITH REGIONAL NEIGHBOURS

In just four short years, Afghanistan has made remarkable progress in bridging the digital divide, as compared to neighboring countries as of December 2006.

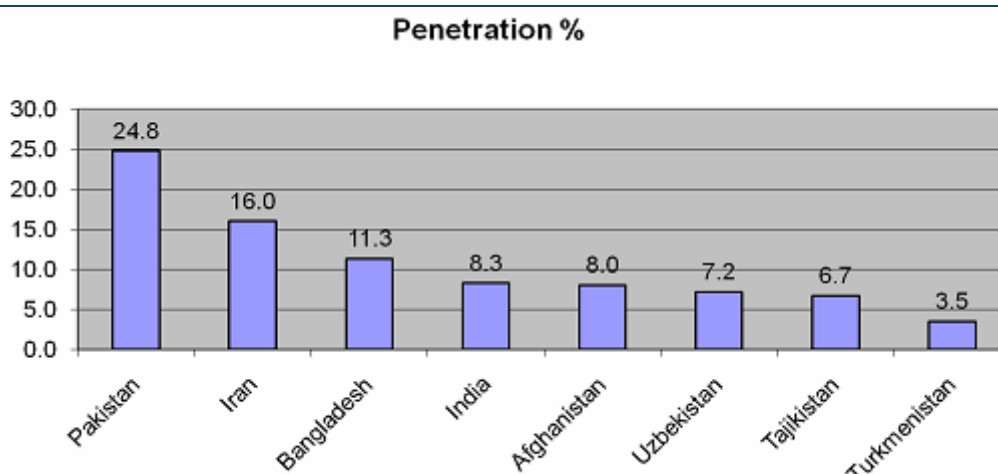
### A. Current Institutional Framework

The Ministry of Communications & Information Technology (MCIT) is responsible

<sup>10</sup> As was noted earlier, ATRA will require all licensees to provide aggregate data on users, including gender and district location, for a better demographic understanding of the market development.

for providing the institutional leadership for the ICT sector in Afghanistan. MCIT's ICT Policy Department has the primary responsibility for developing ICT policy and it supervises the implementation of certain ICT projects, like the National Data Center (NDC). MCIT's Planning & Policy Department supervises the implementation of certain large-scale infrastructure projects, including the Optical Fiber Cable (OFC) project and the Copper Cable Network (CCN) project. The Afghanistan Telecom Regulatory Authority (ATRA) was established by the Telecom Law

as an independent institution operating within the political framework of MCIT. This means that its 5-member Board is appointed by the President. It also is financially independent, in that its administrative costs are fully recovered on the basis of regulatory, licensing and spectrum fees that are paid by the private sector. Afghan Telecom is presently a corporation that is 100% owned by MCIT. It is being privatized pursuant to government policies articulated in the July 2003 *Telecom & Internet Policy*, the Interim ANDS and the MCIT Sector Strategy published in April 2007.



Source: MoCIT

MCIT also has a department for capacity building, called the Information Communication Technology Institute (ICTI). It provides specialized technical training and issues vocational certificates and has just launched a 4-year ICT bachelors program (the first class of 50 students have recently commenced studies). Since 2003, it is also in the process of considering a transformation to public-private partnership in order to ensure that its curriculum meets the needs of the private sector (which has a huge demand for properly skilled workers). Also, MCIT has been fortunate to receive considerable capacity building support from the UNDP, which has trained over 2000 MCIT staff in English and IT. Approximately half of the MCIT is women, and more than one-third of the trainees are women.

The ICT Council is the primary forum for all stakeholders in the ICT sector. It consists of all of the government institutions that already have ICT activities, and it is open to all other institutions as they acquire ICT infrastructure

and applications. The ICT Council is chaired by the First Vice President and its total membership is fully inclusive of all interested parties, including the private sector, civil society organizations, and academia.

As of September 2007, the main government institutions utilizing ICT – and therefore the most active members of the ICT Council – are: Da Afghanistan Bank (DAB), the Ministry of Finance (MOF) and the Ministry of Foreign Affairs (MOFA). The Parliament has also become an important institutional player in the ICT sector, both in terms of policy and utilization. Parliamentary review of Telecom Law began in April 2007 and amendments are expected by the end of 2007.

## B. Current Legislative Framework

The Telecom Law was promulgated by the President on 18 December 2005 (Official Gazette 878 – 23 February 2006). The law is already compliant with the World Trade

Organization (WTO) Basic Telecom Agreement (BTA) framework requirements, notably, that it separates the three basic functions and assigns responsibilities to three independent sector elements:

- Policy – MCIT
- Regulation – ATRA
- Operations – Licensed Service Providers.

The main effect of the Telecom Law is the establishment of the independent sector regulator, called ATRA. The legal authority of ATRA rests with its 5-member Board, which was appointed by the President on 6 June 2006. The Telecom Law empowers ATRA to make Implementing regulations and normative acts. Generally, these regulations fall into three categories, pursuant to ATRA's own Code of Procedure, which was adopted in October 2006:

- Administrative Rules (hiring, firing, documentation)
- Procedural Rules (public consultations, rule-making, appeal)
- Substantive Rules (licensing obligations, consumer protection)

The ICT sector is also governed by many other laws because most of the services are provided by the private sector. The related commercial legislation includes, for example:

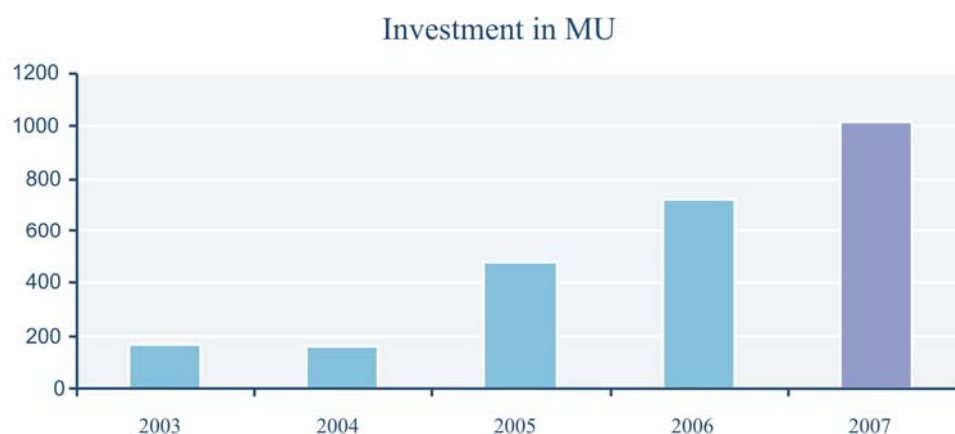
- Investment Law (July 2006)
- Arbitration Law (January 2007)
- Corporation Law (pending)
- ICT Law (pending)

MCIT has just started drafting the ICT Law. The telecom law addresses the telecom infrastructure and services but the law doesn't cover the content of the services. The ICT law will address issues such as legal recognition of electronic/digital signatures and formation of electronic contracts (affecting transactions both in public and private sectors), content regulation, competition regulation, electronic evidence, data privacy protection, consumer protection and rights, domain name registration and regulation, intellectual property rights, encryption and security, financial and banking sector law and regulation relating to electronic transfers and settlements, taxation of transfers, customs, jurisdiction, dispute resolution and civil and criminal offences, limitations of liability of internet service providers, cyber piracy and digital rights management, facilitation of e-government and cross border interoperability of e-commerce frameworks affecting trade.

## ATTRACTING PRIVATE INVESTMENT INTO ICT SECTOR

From 2003 to 2007, approximately US\$800 million has been invested by the private sector into the ICT sector of Afghanistan. According to numerous studies by the World Bank and other observers, this is by far the largest investment into the licit economy. MCIT estimates that an additional US\$750 million will be invested by the end of 2010.

**Figure 10 :** Private Investment in ICT Sector



Source: MoCIT



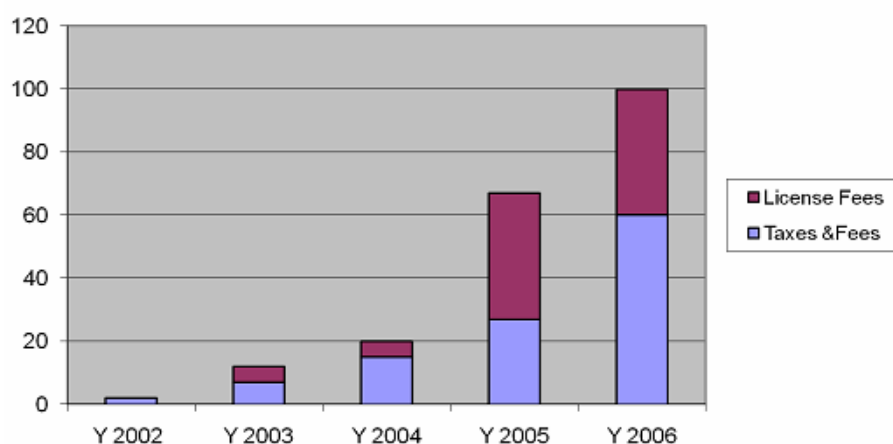
## MOST ACTIVE DONORS IN ICT IN AFGHANISTAN

MCIT has been working extensively with both the donor community and the private sector since 2002. The primary donor relationship has been with USAID and the World Bank, but there have also been projects and activities supported by the ITU, UNDP, JICA and the Governments of China, India, Iran and Korea. The list of private sector partners is even more extensive. The primary ones include the four nationwide mobile licensees (Areeba, AWCC, Etisalat and Roshan), as well as GSI, Motorola, Samsung, Huawei and ZTE.

Furthermore, the private sector “window” of the international financial institutions is also very active:

- Asian Development Bank (lending US\$75 million to Roshan)
- International Finance Corporation (lending US\$40 million to Areeba)

**Figure 11: ICT Sector Contribution**



Source: MoCIT

## INTEGRATING ICT INTO ANDS AND OTHER CROSS-CUTTING THEMES

### ANDS CROSS CUTTING ISSUES:

**Gender Equality:** Mobile and Electronic commerce will make it possible for women to

If aid effectiveness is measured on the basis of return on investment, then the role of the donors in the rapid development of the ICT in Afghanistan can only be deemed to be exceptionally high.

## ICT Sector Contributes 20% of All Government Revenues

For the government fiscal year that ended on 20 March 2007, the ICT sector contributed approximately 20% of all government receipts to the treasury of Afghanistan. The ICT sector is heavily taxed, because it is law-abiding and is highly visible. The main elements of the contributions are:

- Business Receipts Tax = 10%
- Spectrum Fees = 2%
- Telecom Development Fund = 2.5%

The contribution of the ICT sector to the treasury is illustrated below:

work at home and be commercially viable without offending cultural sensitivities.

**Counter-Narcotics:** Well connected societies are the lesser victims of narcotics and terrorism besides low employment is another breeding factor for terrorism, ICT will connect afghan society and will create job opportunities and facilitate ground for entrepreneurship.

**Anti Corruption:** E-Governance and other e-Enabled services will reduce the corruption chances. If information is shared among all then it is less prone to force any entity for corruption.

**Regional Cooperation:** Fiber optic, national data centre, local content development, regional data repositories, regional cyber crime, regional data interconnection and such others are all good examples of regional cooperation which will be furnished by ICT.

**Environment:** Telephone services and the internet reduce the need to travel, which saves expenditures on gasoline and eliminates harmful emissions.

**Capacity Building and Institutional Reform:** The institutional reform phase began in 2003 and has almost been completed: Afghan Telecom was incorporated in 2005, the Afghanistan Telecom Regulatory Authority (ATRA) was established in 2006, and the Afghan Postal Commission (APC) was established in 2007. What remains is to incorporate Afghan Post and to attract private investors into Afghan Telecom in 2008. Capacity building also began in 2003 and continues. The PRR process was completed in 2007 and MCIT's internal training exceeds all other government institutions, especially with respect to learning English and IT skills. MCIT has 16 training centers now offering job-enhancing capacity building and will have these facilities operating in all 34 provinces by 2010. MCIT (and Afghan Telecom & ATRA) regularly send appropriate personnel abroad to receive advanced technical and professional training from the ITU and other institutions.

## **Others:**

In September 2007, the ANDS at one of its CG meetings has acknowledged that ICT is itself a cross-cutting theme, because it makes significant contributions to achieving the government's goals in ANDS themes. For example:

**Security:** Terrorists are taking advantage of the physical isolation of many communities to forcibly hold them back from integration into Afghan society; several ICT projects (like TDF, DCN, VCN) will provide the basic connectivity to eliminate this obstacle to progress. Another aspect is the storage and

processing of authentic people and physical data of the county, which will reduce the opportunities of producing false and fake information.

**Governance and Rule of Law:** With the implementation of e-Government and e-Democracy the rule of law will be strengthened. ICT makes the government more accessible and more inclusive.

**Education:** With the introduction of Internet and distance learning to Afghan society the education sector will enter in to a new paradigm.

**Health:** The telemedicine and e-Health will enable Afghans living in far and remote areas of the country to benefit from the health facilities in metropolitan cities of the country and the rest of the world.

**Social Protection:** Through having national wide data bases with people data on it, it will enable the citizen as well the government to securely host, process and produce the authentic data about individuals thus reducing the tempering of people data. Thus no entity will abuse any one with the false testimonials in the society.

**Agriculture and Rural Development:** Through ICT we can promote the local commodity markets, by giving access to the farmers and other local business to market their product over the internet. Data bases of first hand information for farmers will help them cultivate the right crop and market it in the right place in the right time.

**Economic Governance and Private sector Development:** It is always important to have the right information (facts and figures) in the right time to make a good economical decision. Most of the time the economical data in Afghanistan is missing, thus discouraging the FDI and economic growth. The bureaucracy is another factor of this discouragement, ICT can play vital role through the implementation of different MIS, the private sector development and economical governance will foster.

## **Impediments**

The major challenges to achieve the telecommunications goals are security,



administration and financial bureaucracy, late approval of the annual budgets and development projects as well as weak implementation and technical capacity, which are the major concerns. Therefore, a strong capacity building effort is required to upgrade the capability of personnel and the government is also coping to assure that an acceptable security environment and refined administration and financial procedures be developed for sound business.

Lack of security across Afghanistan has the following two primary negative impacts on the growth and development of the telecommunications sector.

Lack of security will dramatically slow down licensees' ability to extend network coverage and service provision into insecure parts of the country, thereby limiting the ability of

Afghans in those areas to benefit from the provision of affordable telephony services. A sustained lack of peace and security will simply reduce foreign private investors and stakeholders' willingness to continue to invest in the sector. Given that much of the expansion of the sector has been driven by private sector investment to date, it should be expected that continued expansion will also result from further private sector investment. Investment levels may drastically be reduced in light of continued insecurity.

Lack of coordination among the government entities and lack of political will in the area of ICT is a major challenge; MCIT through the ICT Council will try to address the issue.

Lack of localized/local content is also slowing down the pace of the ICT promotion and adoption.



# CHAPTER I

## POLICY FRAMEWORK

### OVERALL STRATEGY FOR ICT SECTOR

#### Strategic Vision:

“Make affordable information and communication services available in every district and village of Afghanistan through enabling market economy,

#### Goals:

- To bring every resident (men and women alike), every home and school, every business and every public sector institution into the digital age and online;
- To create a digitally literate Afghanistan, supported by an entrepreneurial culture ready to finance and develop new ideas;
- To ensure that the whole process is socially inclusive, builds consumer trust and strengthens social cohesion.

MCIT’s strategic vision, which was first stated in May 2003 and recently presented to the ICT Council, is:

“To make affordable communication services available in every district and village of Afghanistan through enabling market economy, so that all Afghans, men and women alike, can use ICT to expeditiously improve Government, social services, foster the rebuilding process, increase employment, create a vibrant private sector, reduce poverty and support underprivileged groups”.

The objectives of the MCIT have been rapid development of the ICT sector by having multiple operators providing world-class quality services at reasonable prices. In July 2003, the MCIT adopted its Telecommunications and ICT Policy with the aim to promote rapid telecom development

through private sector investments. The Islamic Republic of Afghanistan firmly recognizes the importance of embracing telecommunications & ICT technologies to achieve the nation’s development and reconstruction goals.

The ICT Policy is fully compliant with the sector framework required by the World Trade Organization (WTO) by making the MCIT responsible only for policy, by establishing an independent sector regulator Afghanistan Telecommunication Regulatory Authority (ATRA) and by corporatizing Afghan Telecom as the first step to removing the government from the provision of services to the public. The Policy encourages private investment through the introduction of measured competition; established Afghan Telecom as a state-owned corporation with the right to accept private investment; and supports rapid expansion of telecommunications and Internet services at the local level.

The policies recognize the use of ICT to provide healthcare, social services, and citizen’s services, promote systems that accommodate convergence of various technologies and networks through providing a favorable investment and taxation environment. The policies will enhance government effectiveness by using e-government technology and by establishing a national data centre, to promote effective ICT training courses foster the capacity to trade goods and services by electronic means.

#### A. Overall Policy Framework:

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## **B. Needs Assessment**

The demand and supply in the sector is purely market driven and it has been observed in the developing economies that it is the economic growth and the purchasing power of the people which gives further growth to this sector. In 2003, the World Bank did its initial needs assessment of ICT in Afghanistan, and provided recommendations which were generally accepted and incorporated in the *Telecom & Internet Policy* (July 2003).

To date, closest thing to market analysis was GIPI a project by ACSA report (December 2006).

MCIT is conducting the first E-Readiness survey by the end of 1386, which will indicate the state of ICT in the country and the needs will be spelled out.

## **C. Priority Policies & Objectives**

The top policy priorities for the ICT sector strategy are:

- To bring every resident (men and women alike), every home and school, every business and every public sector institution into the digital age and online;
- To create a digitally literate Afghanistan, supported by an entrepreneurial culture ready to finance and develop new ideas;
- To ensure that the whole process is socially inclusive, builds consumer trust and strengthens social cohesion.

MCIT will achieve these objectives by providing leadership in the following strategic elements (the corresponding programs are discussed further below):

## **Enabling Environment**

The enabling environment means the written policies, laws, regulations, procedures, standards and other normative acts that ultimately comprise the legal-regulatory framework. As noted above, much of framework has already been accomplished.

Going forward, MCIT will be the primary force in further developing and improving the enabling environment, in order to attract additional private investment to the ICT sector. MCIT will work through the ICT Council to ensure that the enabling environment truly meets the needs of all Afghans, with particular attention to the needs of women. Public consultations will continue to be an important ingredient to achieve this strategy. In the past, MCIT has used videoconferencing to reach stakeholders in each of the 34 provincial capitals, plus has conducted periodic briefings in the districts (including the Community Development Councils) and semi-annual meetings in Kabul. This approach has proven successful and will be continued.

## Infrastructure

Infrastructure includes telecom networks, hardware and physical facilities necessary to provide access to services.

The largest percentage of infrastructure has been deployed by the private sector since 2003. However, in very limited cases, where the private sector has shown unwillingness or inability to respond to infrastructure demands on a timely basis, MCIT has stepped in to take the leadership and utilized public funds. The best example is the national OFC ring, which is being funded using US\$65 million from the treasury.

## Applications

Applications refer to the business processes that are carried out utilizing the ICT infrastructure. For example, once a point of connectivity has been established in a particular village, the basic application will generally be telephone services, allowing the citizens at this location to communicate with everybody else on a worldwide basis. Depending on the location, additional ICT infrastructure may include computer terminals, which then enable additional applications, including internet access, distance learning and even telemedicine. Afghans living in close proximity of the access networks will be able to access the government services on line e.g payment of taxes, health services, distance learning etc.

## Literacy

There is no easy way to overcome the high illiteracy rate in Afghanistan, which is frequently estimated at more than 70% nationwide. Regardless of the approach, it will surely take decades to reach the acceptable literacy rate in developed economies. But the linkages between jobs, economic growth, prosperity and literacy is very clear – Afghanistan will not become a stable economy without first achieving major progress in addressing literacy.

ICT can play a significant role in accelerating literacy. Within three years, ICT infrastructure and applications will be accessible to more than 80% of the population of Afghanistan. The Telecom Development Fund (TDF) – a program that is described in detail below – can

facilitate ICT access to every school nationwide. However, this will not be enough. Working through the ICT Council, the teaching curricula has to be updated and expanded to take advantage of this access channel.

In many emerging markets – Egypt for example – the literacy challenge has been addressed by exposing all school children to distance learning on a mandatory basis. The miracle of ICT is that even the youngest children have a remarkable ability to rapidly accept new technologies, to the point that they quickly out-master their teachers and parents.

Literacy leads to participation – in the work force, in the democratic process and in strengthening the fabric of society.

## D. Desired Outcomes

### Enabling Environment

- The ICT Council, through the MCIT, will work to achieve the following:
  - By Jaddi 1386 (end-2007), support good governance by adopting a short list of priority programs, projects and funding mechanisms to ensure that ICT is deployed to support the timely implementation of the national elections in 1388 (2009).
  - By Jaddi 1387 (end-2008), promote transparency and citizen access to public information by adopting Rules and Procedures to require all government institutions to publish documents on their official websites (as a supplement to the Official Gazette).
  - By Jaddi 1387 (end-2008), promote government efficiency, reduce costly waste and ensure information system interoperability by adopting a full set of Rules and Procedures that will govern the competitive procurement and utilization of ICT by all government institutions.
  - By Jaddi 1388 (end-2009), reduce corruption by reviewing all government services and making recommendations for the adoption of ICT to streamline and automate (for

example, customs processing, procurement and licensing).

- By Jaddi 1387 (end- 2008), the CIO (Chief Information Officer) culture will be implemented in the government.
- By Jaddi 1387 (end- 2008), the e-Government resource centre will be established, which will be a central brain drain for the e-government projects of the government.
- By Jaddi 1387 (end-2008), MCIT will attract private investment for Afghan Telecom to reduce the financial burden on the treasury, and adopt the legal instruments for private investment into Afghan Post.
- By Jaddi 1389 (end-2010), the ICT sector will contribute 5 billions Afs (US\$100 million) annually to the national treasury by broadening the tax base (attracting additional investors to the market, rather than over-burdening the existing ones).
- By Jaddi 1389 (end-2010), ATRA will foster a transparent legal-regulatory regime that attracts a further 37.5 billion Afs (US\$ 750 million) in private sector investment, and adds 50,000 in sector employment.
- By Jaddi 1387 (end-2008), MCIT will submit draft ICT Law governing e-Transactions, electronic commerce, electronic signatures and cyber crimes to the Parliament for promulgation.

## Infrastructure

- By Jaddi 1389 (end-2010), national ICT networks will be expanded and interconnected so that more than 80% of Afghans will have access to affordable telecom services.
- By Jaddi 1387 (end-2008), Afghan Post offices will be modernized using ICT to ensure reliable collection and distribution of mail.
- By Jaddi 1387 (end-2008), Afghanistan National Data Centre will be ready to host the e-government applications
- By Jaddi 1388 (end-2009), ICT Village will be established in Kabul, this facility will

attract the FDI and local investments in the ICT market.

## Applications (E-Afghanistan)

- By Jaddi 1387 (end-2008), cross-cutting electronic government applications will be launched to support the government efficiency and reduce bureaucracy e.g. e-Procurement, e-document Management System.
- By Jaddi 1387 (end-2008), the infrastructure of mobile networks will be adapted to enable mobile commerce, meaning the use of phones to transfer funds and conduct other financial transactions (pay utility bills and taxes, make retail purchases).
- By Jaddi 1389 (end-2010), all Afghans should have the possibility of obtaining basic medical diagnosis by remote ICT access and having a health smartcard providing secure, confidential access to networked patient information.

## Literacy

- By Jaddi 1387 (end-2008), unified Curriculum and regulatory framework for the private ICT training centers will be drafted in cooperation with Ministry of Education.
- By Jaddi 1387 (end -2008), MCIT will have established one IT Training centre in 34 provincial capitals each to facilitate the ICT literate work force in the provinces as well.
- By Jaddi 1388 (end-2009), all schools should have access to the internet and multimedia resources, together with a basic curricula that includes browsing, searching and messaging.
- By Jaddi 1389 (end-2010), digital literacy must be adopted as one of the mandatory basic skills of all young Afghans. The internet and multimedia resources must be introduced in schools and education must be adapted to the digital age.
- By Jaddi 1397 (end-2018) all pupils should be digitally literate by the time they leave school. For details regarding outcomes refer to Annex I (Action Plan).



## Capacity Building

There has been an enormous loss of skilled professionals from Afghanistan over the last two and half decades of the civil war in the country. Afghanistan has either lost such people or they were forced to leave the country because of the political plights. The government of Afghanistan recognizes the critical importance of embracing capacity building to achieve the nation's development and reconstruction goals. The lack of local capacity for the management and implementation of the projects is the main problem to further develop the reconstruction of the country

Empowering the capacity building is one of the government's high priority and most attentive project in Afghanistan to start comprehensive capacity building with initial funds available at provincial and capital level, which is the key to the development of the capacity of civil servants; therefore, further support to above is needed to allow them to continue providing these much-needed services.

Within the Ministry, employees have received ongoing training in basic computer skills and English, which is the primary language for business worldwide. It is the goal of MCIT that by the end of 2007, every employee will have a written job description that addresses their contribution to the achievement of MCIT's goals, that a performance appraisal will be conducted every six months and that training will be mandatory to achieve professional conduct and career advancement. MCIT has initiated a public dialogue to transform its ICT Training Center into a public-private partnership so that the technical curriculum is modernized to reflect the needs of prospective employers. MCIT has also begun collaborating with the University of Kabul to accelerate the formation of the Public Administration Institute as the vehicle to raise the standard of institutional capacity building.

In 1973 ITU in collaboration with UNDP had established a very well equipped **"Telecommunication Training Centre, TTC"** in Kabul Afghanistan. At that time the TTC had been recognized as a special college by Ministry of Education of Afghanistan to train the students at Telecommunication Engineering and Technicians level. Most of the

existing technical staff of the MCIT are graduates of this centre or were trained in this centre. Since its inception, more than 1,200 well-trained professionals have graduated from this centre. During the two and a half decades when Afghanistan was faced with invasion, civil war and isolation, most of the technological infrastructures of the country including this Centre were badly damaged and all laboratory equipments of the Center were destroyed. More serious is the damage to human capacity and knowledge due to the fact that two generations missed to get education and most of the previously educated class have migrated or have become too old. Also, nearly all instructors of the Center had left the country.

MCIT has included development of human resources among its highest priorities. Development of human resources in communication and information technology plays a significant and important role in the reconstruction and development of the country both from social as well as economical point of view. In fact, telecommunication is the key ingredient of economic development. The whole process of development of this sector depends on the availability of trained and qualified people in the market. The huge task and challenge in reconstruction of Telecom sector and its modernization, depends on training young Afghan students and full capacity development of the existing staff which has been disconnected from the new era of the information and communication technology and the advances made in the last two and a half decades.

Therefore, by taking into account the acute need of skilled human resources development, priority was given for rehabilitation and reconstruction of this Training Centre by the MCIT. To achieve this goal, in December 2003, an agreement was signed between the ITU, the Government of I.R. of Iran (as the Donor country) and the government of I.R. of Afghanistan.

## Poverty Reduction

The ICT sector directly benefits poverty reduction in the following manner:

1. Attracting private sector investment into Afghanistan means that the IROA does not

have to utilize its own scarce resources (treasury) on building this infrastructure.

2. The US\$800 million that has been invested between 2003-2007 is largely for infrastructure, which becomes a lasting part of the "value" of the economy.

3. A portion of that investment goes to employment, both direct and indirect. Some of the jobs are for unskilled labor (such as construction of the towers, transportation and security) but a vastly larger and growing share goes for skilled jobs (such as sales, marketing, management and customer support). Moreover, these roughly 50,000 new jobs that were created since 2003 are the highest paying opportunities for Afghans in the licit economy.

4. All of the ICT companies also expend a considerable amount of time and money in training their work force. In fact, because of the rapid growth of the sector since 2003, there is actually a shortage of skilled workers, so on-the-job training is becoming increasingly important to recruit and retain the most talented Afghans.

5. With approximately 2000 base stations (transmission towers) now deployed, the mobile companies today reach around 70% of the population of Afghanistan, and they will reach 80% coverage by 2010. By virtue of wireless access, more and more people have the option to communicate, to receive education and to pursue licit employment.

## **E. . Inputs & Outputs**

### **Fiscal Implications**

The ICT sector today brings approximately 20% of tax receipts to the treasury. As more service providers enter the market and as long as each of them continues to grow, the value will also rise. It is expected to reach US\$100 million by 2010. In addition, the privatization of Afghan Telecom will bring a significant windfall to the treasury. Broadening the tax basis by private sector competition to meet the demand of the users (where the money is coming from). Right now, collect 14.5% of revenues:

- Custom duty for the importation of the infrastructure = 8%
- Telecom Development Fund (TDF) = 2.5%
- Spectrum Fees = 2%
- Business Receipt Tax (BRT) = 10%
- Income tax = 10%
- Payroll/health benefits and life insurance = 10% (rough estimate)

Every additional user brings the multiplier effect of these revenue resources to the government. Meanwhile, each company hires additional staff and employee payroll has additional tax benefits to the government.

## **F. Programs**

### **Program One: The Enabling Environment**

The Afghanistan Telecommunication Regulatory Authority (ATRA) and the ICT Council are the primary mechanisms to achieve MCIT's strategies and goals. In particular, ATRA will continue to issue licenses that attract private sector investment, pushing the availability of telecom services further into every village in Afghanistan. Each existing and new licensee will pay licensing fees and spectrum fees, as well as taxes and customs duties, which will reach a volume of 5 billion Afs (US\$100 million) by Jaddi 1389/2010. Each existing and new licensee will also invest in telecom infrastructure, expected to reach a further 37.5 billion Afs (US\$750 million) by Jaddi 1389/2010. ATRA is committed to achieving the following projects in the coming by 2010.

MCIT established the Afghan Postal Commission (APC) in June 2006 in order to achieve the WTO benchmark to separate policy, regulatory and operations. The APC has taken some rudimentary steps to become an independent sector regulator, but it requires a vast amount of technical assistance and institutional capacity building. Among the top priorities for the sector is the adoption of a transparent licensing regime, including a license for Afghan Post. Afghan Post is presently an administrative department of MCIT, but in order to attract foreign direct investment, Afghan Telecom should be re-



structured and incorporated, just as was done with Afghan Telecom (for projects detail see attached annex III).

**Telecom Development Fund (TDF):** ATRA will conduct a public consultation to define the terms and methodology for multiple projects to accelerate the construction of wireless networks in rural and underserved areas of Afghanistan. Examples of likely projects are: creation of community telecenters; provision of internet connectivity to schools; rapid mobilization of Village Communication Network (VCN) to respond to requests from community leaders. ATRA will work closely with Provincial and District governors, the Provincial Development Councils (PDC), the Provincial Reconstruction Teams (PRT), the provincial directors of the MCIT, the members of Parliament, donors and other interested parties to ensure that these new access facilities meet the immediate needs of the rural users and women. The immediate goal is to provide basic telephony connectivity, but further needs such as distance learning, remote payment of salaries and access to microfinance via mobile commerce platforms will be promoted. Special programmes will be established to assist women to access microfinance.

By Jaddi 1386 (end-2008), the Afghanistan Telecommunication Regulatory Authority (ATRA) will conduct public consultations to complete all of the normative acts that are required by the Telecom Law, including:

- Procedural Rules (Voting, Appeal)
- Administrative Rules (Hiring, Spending, Reporting)
- Substantive Rules (Licensing, Frequency Assignments).

By Jaddi 1386 (end-2008), ATRA will complete an independent audit of its finances, with particular focus on the Telecom Development Fund (TDF). The results of the audit will be submitted to the Government as part of an annual report of activities published on the ATRA official website.

By Jaddi 1387 (end-2009), ATRA will have launched international competitive tenders to provide telecom and ICT services in rural underserved areas of Afghanistan, using the TDF.

By Jaddi 1389 (end-2011), the majority of ATRA professional staff will have completed certification program in the newly launched Public Service Institute at Kabul University (or equivalent). The employment of women will be particularly favoured and ATRA will strive to increase the percentage of female staff to 30%.

## Removing the Government from Provision of Telecom Services

- By Jaddi 1386 (end-2007), Afghan Telecom will be fully restructured and will be ready to introduce new products and services to improve its commercial position in the market. The first phase will be to move to prepaid calling and to automate all the internal operations.
- By Jaddi 1387 (end-2008), it is expected that most retail customers will be receiving full mobility services and institutional customers will have wired broadband services.
- By Jaddi 1386 (end-2007), a fully functioning ICT Council will be in place to avoid duplication and waste and to improve the professional capabilities of the staff.
- By Jaddi 1387 (end-2008), the ICT Council will select the first cross cutting e-government applications (for example it might be payroll, procurement).
- By Jaddi 1387 (end-2008), the CIO culture will be implemented in the government.
- By Jaddi 1387 (end-2008), the e-Government resource centre will be established, which will be a central brain drain for the e-government projects of the government. By Jaddi 1389 (end-2008), MCIT will submit draft ICT Law governing e-Transactions, electronic commerce, electronic signatures and cyber crimes to the Parliament for promulgation.

## Program Two: Infrastructure

The traditional structure of the communications sector is comprised of telecom and postal services. Afghan Telecom will continue to refine its commercial strategy to better meet the needs of the consumer and react more successfully to the new competitive

market conditions. Afghan Telecom will deploy new wireless technologies to make service more affordable and comparable with what is now offered by the GSM licensees. It will also move to adjust its retail prices to be cost-oriented, as required by the Telecom Law, and will migrate to a pre-paid service platform to eliminate the non-payment problem. Based on what has been done with Afghan Telecom, MCIT will go the same path with Afghan Post (for projects detail see attached annex III).

Afghan Post is active at approximately 400 facilities nationwide, but the vast majority is in very poor physical condition and generally lacks ICT. Taking advantage of those locations with ICT, Afghan Post has recently entered into a commercial arrangement with Western Union to provide funds transfer services and will offer money order and other financial services in the near future. Afghan Post implemented a self-service kiosk and is in the process of automating its sorting processes to improve customer service.

The primary ICT infrastructure programs by Jaddi 1388 (end-2010) include:

- Expansion of telecom service coverage to 3000 villages, 150,000 digital lines in 5 major cities and highways, including roads to major border points.
- Implementing the national fiber optic ring to further enable national and international communications at lower prices with good quality.
- Extending the reach of the existing GCN and DCN locations to all schools within 10-30 kilometers via wireless (WiMAX) as is presently being done with the PGCN.
- Accelerate the deployment of towers in rural and underserved communities, using subsidies from the TDF, if necessary.

**Fiber Optic Ring:** Afghan Telecom will continue to supervise the MCIT's major infrastructure programme, which will link the six major cities of Afghanistan via fiber optic cable. This system will also link to neighboring countries like Iran and Pakistan to eliminate the high cost of satellite connectivity, this making retail calls and internet access more affordable to more people. MCIT will retain ownership of the system until it can be privatized to provide

non-discriminatory access to all licensees. The supply and construction contract was awarded to a Chinese supplier in November 2006 and the project is expected to be fully complete by the end of 2008.

**District Communications Network (DCN):** Afghan Telecom will continue its satellite system to reach all of the 365 districts with at least a basic level of telephone services. In many cities, where demand warrants it, the DCN will offer additional community services, such as distance learning and access to microfinance.

**Village Communications Network (VCN):** VCN will be a further extension of the DCN satellite network, which will eventually reach 5-6,000 communities throughout Afghanistan. A financial analysis of the DCN operations revealed that a low-cost version could be commercially viable if the package configuration is scaled down. Nevertheless, donor funding would be essential to achieve a rapid roll-out.

**Broadband Access:** An integrated public safety network, linking local, regional and national players – ATRA is responsible for assigning spectrum for all commercial and public service requirements. ATRA will conduct a public consultation to define the terms of an international competitive tender for multiple nationwide licenses of new broadband wireless services. Pursuant to the Telecom Law, the licenses will be awarded by an auction that may bring substantial fees to the treasury and include mandatory network construction milestones.

- By Jaddi 1386 (end-2007), organize a Public Safety Task Force, consisting of the Ministry of Interior, the Afghan National Army, the border protection forces, the President's National Security Advisor and the police, fire and ambulance entities
- By Jaddi 1387 (end-2008), facilitate the adoption of the appropriate technical standards, including the assignment of spectrum frequencies, to ensure interoperability of all public safety elements and to establish protocols for emergency response at the local, provincial and national levels. Guidance will be based upon the technical specifications already

contained in the ANA TETRA network procured by international competitive tender in 2006, as well as international best practices using TETRA systems in Germany and elsewhere.

- By 2009, identify gaps in coverage and capability and obtain donor funding to achieve reliable public safety network architecture. The network will be managed by the individual user groups, and additional technical training will be included as part of the competitive tender solicitation requirements.

**National Data Center (NDC):** The NDC is being refurbished and by Jaddi 1387 (end-2008) will be the secure physical hub for many government-wide networks and computer applications. It will also contain a research and development centre to allow Afghans to conduct research as per the needs of the country and afghans society The NDC will also facilitate web hosting and other advanced web services presently available only outside of Afghanistan. An e-Government resource centre will be hosted in the national date centre, which will be the central location for the development of main e-enabled services projects for the government.

**Internet Exchange Point (IXP):** The IXP will be housed in the NDC and provide a shared platform that will eliminate the need to send vast volumes of internet traffic outside of Afghanistan via satellite. Presently, every electronic message has to be routed to external hubs (in Dubai, Hong Kong or elsewhere) even if both the originating and terminating location is within Afghanistan.

### **Program Three: Applications (E-Afghanistan)**

The official name of the Ministry has been changed from the Ministry of Communications to MCIT to reflect its new, broader responsibilities which extends beyond just communications to include also information technology (computers and networking).

For the promotion and development of ICT, MCIT has designed E-Afghanistan as a program which covers E-Government, Cyber

Security, National ICT Council, Internet Governance, Building ICT Capacity, Localization and ICT standards. ,

These activities will enable Afghanistan to fully benefit from ICTs and in the course of coming 10 years Afghan society will be based on information fully benefiting from the international market and opportunities. To achieve that goal the following projects are planned and are underway (for projects detail see attached annex II).

**National Identity Management Initiative (NIMI):** The ICT Council must act quickly to avoid a serious waste of financial resources that is just over the horizon.

During the national elections in 2004 and 2006, more than US\$200 million was spent on the entire process, which included the rudimentary documentation of “qualified voters” at over 60,000 locations nationwide. In order to meet donor benchmarks, all of this work produced over 2 million paper records, with absolutely no forward-planning that would avoid the need to repeat the entire process in all future elections.

Consequently, the United Nations (UNAMA) and the Independent Election Commission (IEC) have assessed that the entire data set from the previous two elections are incomplete, unreliable and unusable for the 2009 elections. In mid-2007, UNAMA and IEC have undertaken two pilot projects to explore the use of ICT to create a new qualified voter database. Once again, individual voter data will be collected at more than 60,000 locations, but this time it will be a combination of biometric scans and paper (that will eventually be stored electronically). It is estimated that close to US\$100 million will be spent on the 2009 elections (to be funded largely by USAID).

It is imperative that the maximum lasting value of this expenditure accrue to the people of Afghanistan. The ICT Council will need to coordinate the following projects:

- Mapping (digital mapping of the election districts)
- Identity Cards (starting with the Civil & Voter Registry)

- Valuable Documents (Ministry of Finance printing of passports, drivers licenses, birth & death certificates, etc)
- Census.

The basic idea is to create a minimum “core personal data set” that would eliminate the need to repeatedly collect the same information at various government institutions.

**Electronic Government (e-Gov):** e-Gov applications will make the provision of government services more efficient and transparent, this reducing fraud and corruption. Examples include automated procurement and logistics, driver’s license and passport renewals and fiscal services (payroll, budget, and customs).

- By mid-2007, bring the ICT Council to becoming a fully-functioning institution that will guide the adoption of government-wide standards and ICT policies and coordinate ICT projects and resources amongst all institutions to reduce duplication and wasteful spending
- By mid-2007, drive the ICT Council to reach an agreement of the top ICT priorities and conduct a nationwide e-Readiness assessment (including infrastructure, applications and human resources)
- By the end of 2007, define a suitable e-Government project that will serve as the template for all future cross-cutting ICT applications, and obtain donor funding for rapid implementation
- By mid-2008, have the first e-Government project deployed on a small scale and by the end of the year, fully deployed across all institutions
- By 2008, identify further e-Government projects and obtain donor funding as needed
- By 2009, ensure that e-Government applications reach to the provincial, regional and district levels MCIT will work with the new 5-year US\$200 million USAID Capacity Development Program

(CDP) to ensure that training is provided to all potential user groups.

- By 2010, deploy the broader suite of e-Government applications.
- The MCIT will work closely with the Ministry of Education and Kabul University to mobilize the necessary resources to ensure that the youth of Afghanistan are e-Ready

## Accelerating E & M commerce

- By the end of 2007, ATRA will organize a task force to promote the adoption of technical standards so that mobile phones can be used to access commercial bank accounts as part of an inexpensive medium for microfinance and trade
- By the end of 2008, mobile commerce should be possible on a nationwide basis and also facilitate standard commercial transactions amongst users and vendors
- By the end of 2008, the MCIT will facilitate the establishment of Electronic Certification Authority in collaboration with Da Afghanistan bank responsible for the issuance of Public Key Infrastructure (PKI) certificates.
- By 2009, the IXP should substantially reduce nationwide internet costs by eliminating the need to route all traffic outside of Afghanistan
- By 2009, the PKI should foster the creation of domestic electronic commerce sites, including government electronic procurement

## Smart cards for secure electronic access:

- By the end of 2008, the ICT Council will adopt a suitable national standard for smart cards that may be used as the basis for a National Identity Card, National Healthcare Card and other official and commercial purposes
- By the end of 2010, the ICT Council will facilitate donor funding to integrate these smart cards into applicable e-Government projects.



## **Electronic participation for the disabled and the disadvantaged (including women)**

- By the end of 2010, the ICT Council will adopt standards requiring the design and content of all official websites and e-Government applications to be accessible to persons with disabilities. These are specially-designed features geared only to overcome disabilities such as blindness (Braille keyboards, voice conversion into text, etc.)
- By the end of 2008, the ICT council will support MCIT to ensure all such official websites and e-Government applications are fully functional.

## **Healthcare online**

- By the end of 2008, the ICT Council will work to obtain donor funding for a pilot project that will utilize the District Communications Network (DCN) as the basis for remote healthcare (possibly diagnosis, exchange of basic medical information and real-time remote treatments) MCIT is already working with the Ministry of Health for the initial pilot phase, which is to utilize teleconferencing facilities and high-speed broadband connections that can rapidly display color images on standard computers.
- By the end of 2010, MCIT will work with the Ministry of Health, the Ministry of Environment and the Ministry of Labor to adopt a plan for all Afghans to have the possibility of having a health smartcard providing secure, confidential access to networked patient information.
- By the end of 2008, MCIT will establish MPCT (Multipurpose community Technology Centers) to be used for the E-Agriculture, e-Health and other such e-services for the local communities.

## **Program Four: Literacy**

The low level of literacy is one of the fundamental barriers to economic prosperity in Afghanistan. ICT can play a major role in reducing this hurdle, because it eliminates distance and makes the world of information available 24 hours a day, 7 days a week.

The United Nations recognizes that in the modern world, there is actually a very wide range of literacy that is needed:

- Information Literacy – the skills required to organize and search for information, while also analyzing the information.
- Critical literacy – the ability to engage in critical thinking, and judge the intention content and possible effects of written material or information.
- Mobile literacy – the ability to use mobile technology, such as the mobile phone and its non-voice functions.
- Media literacy and research literacy – the ability to be a discerning reader and the ability to find various type of information.
- Cultural literacy – the ability to understand cultural, social and ideological values in a given context.
- Legal literacy – the knowledge of basic legal rights and how to protect those rights.
- Visual literacy – the interpretation of images, signs, pictures and non-verbal (body) language.

The ICT Council wants to ensure that the citizens of Afghanistan are on a path towards increased literacy, which will lead to more skilled jobs and a sustainable economy. The Minister of MCIT envisions addressing each of the three plateaux of literacy:

- Basic literacy
- English literacy
- ICT literacy.

On a worldwide basis, 771 million people aged 15 and above do not have basic literacy skills. Worldwide, only 88 adult women are considered literate for every 100 men. Literacy rates are lowest among linguistic, ethnic, religious and other minority groups. Illiteracy tends to prevail in low-income, often heavily indebted countries with widespread household poverty.

Literacy, by facilitating access to written information about socio-political events and processes, can enable people to participate more fully in such things as community meetings, commercial activities and national

political life. Literacy also enables people to become aware of, and exercise, their rights. For example, after developing literacy skills, a woman in Mexico learned how to search for information on the internet and accessed materials relating to human rights. From this, she learned that her father, who was in prison, was being held unjustly. With her new knowledge and with legal advice, she achieved her father's release.

In addition, literacy skills open up opportunities for active participation in the emerging "knowledge societies." In knowledge societies, with new technology and the growth of the internet as a public network, the work of modern businesses, governments, health systems and institutions is made possible because of the capacity to generate written information and communicate it quickly to others, no matter where they are in the world. Without literacy skills, the scope for participation in such societies and public knowledge would be extremely limited.

**Basic literacy** means the ability to read and write and therefore learn and ultimately be employed. There are over 6 million school-age children in Afghanistan, and the Ministry of Education has the primary responsibility for educating them. ICT can immediately help provide access to a uniform teaching curricula and content, aiding both teachers and students. DCN is already operating in each of the 220 largest urban areas of Afghanistan, and MCIT has made these facilities available to the Ministry of Education for use. For example, the Ministry of Education has a distance learning department that utilizes weekly televised courses – these programs can be loaded to a server and downloaded at any DCN upon demand. The MCIT will work with the Ministry of Education to ensure that the next generation of youth will be ICT ready.

**English literacy** is on the critical path towards ICT literacy. In large part, this is because most software applications are still generated in English. But even the process of "localizing" these packages requires a solid understanding of English first. The UNDP had been providing English training to the MCIT (and other government institutions) since 2003, but the funding ended in 2006. MCIT, working through the ICT Council, is in the process of attracting new donor sources to continue this

training. The CDP appears to be a good possibility for this.

**ICT skills** can generally only be acquired once basic literacy has been achieved. It can be broadly defined in three categories:

- ICT practitioner skills – the capabilities required for researching, developing, designing, strategic planning, managing, producing, consulting, marketing, selling, integrating, installing, administering supporting and servicing ICT systems.
- ICT user skills – the capabilities required for the effective application of ICT systems and devices by the individual. ICT users apply systems as tools of their own work. User skills cover the use of common software tools and of specialized tools supporting business functions within an industry (such as banking). At the general level, they cover "digital literacy."

E-business skills – the capabilities needed to exploit opportunities provided by ICT, notably the internet; to ensure more efficient and effective performance of different types of organizations; to explore possibilities for new ways of conducting business, administrative and organizational processes; and to establish new businesses (for projects detail see attached annex II).

Some examples of ICT workers include:

- Database design, development and administration
- Digital media (animators, artists, web developers)
- Enterprise systems analysis and integration (process analysts, application integrators)
- Network design and administration
- Programming and software engineer
- Technical support
- Technical writing and training
- IT sales and marketing
- Contact center operations (call centers)
- Data encoding and transcribing (content conversion).

In Afghanistan, the linkage between literacy and employment is presently very warped, because the international donor community and their contractors pay the highest wages, even for relatively “unskilled” work such as drivers, cooks and security guards. In order to prepare Afghanistan for the future (once this international distortion is removed) it is important to recognize the literacy deficiency in three dimensions:

- Shortage – insufficient numbers of skilled people in the labor market or in an occupational segment.
- Gap – a competence shortfall between the current and needed competence levels of individual staff within organizations.
- Mismatch – a misalignment between the competence of the trainee or graduating student/learner and the expected competence needs of the employers. Mismatch is assumed to arise from the failure of the educational system to deliver the courses, curricula and skills that are actually sought by employers.

In order to address these considerable deficiencies, the ICT will provide leadership within the ICT sector by:

- **Raising awareness** – exchanging information and good practice for the promotion of science, math, ICT, teacher training and gender issues; encouraging awareness campaigns to provide parents, teachers and pupils with an accurate understanding of opportunities arising from ICT education and careers and reinforcing the links between ICT and innovation.
- **Developing supporting actions and tools** – supporting the development of an e-Competence framework, of an e-Skills career portal; promoting multi-stakeholder partnerships, quality criteria

for industry-based training, new curriculum guidelines including services sciences and appropriate incentives, especially for SMEs.

- **Fostering employability and social inclusion** – launching an initiative on e-Inclusion in 2008 with a view toward substantially reducing the digital divide by 2010; encouraging corporate social responsibility initiatives; and promoting how public and private funding instruments can support such initiatives.
- **Promoting better and greater use of e-Learning** – promoting the development of courses and mechanisms facilitating the exchange of e-Skills training resources; supporting the networking of e-Learning and training centers with neighboring countries and promoting successful e-Learning strategies.
- **Promoting long-term cooperation and monitoring progress** – maintaining a regular dialog with donors and neighboring countries; releasing an annual report presenting a synthesis of supply and demand and assessing the impact of global sourcing on ICT jobs and occupations.
  - By end of 2008, MCIT will establish ICT training centers in each of the 34 provincial capitals.
  - By end of 2008, MCIT in cooperation with Ministry of Education will draft the curriculum and regulatory framework for the ICT training center in the private sector.
  - By the End of 2011, MCIT will be graduating for the first time 50 students with bachelor’s degrees in different fields of communication and information technology.





# CHAPTER II

## ICT SUB-SECTOR STRATEGIES

The ICT sector strategy envisions an ecosystem of many stakeholders. The government is the main actor in the development of the sector, and works through the ICT Council to reach all stakeholders. There are four primary ICT sub-sectors:

- Government & Health (Provincial, District & Community level)
- Consumers (Constituents, Citizens & Civil Society)
- Business
- Education (Academia, Research & Technology Transfer).

### GOVERNMENT:

The government is the focal point for, and facilitator of, all of the ICT sub-sector strategies. As already noted above, the ICT Council is the forum for the stakeholders. Looking to the future, the hardest task facing the ICT Council will be reaching out to government institutions outside of Kabul. ICT will also help to achieve this goal, so as the infrastructure and application programs are activated, this strategy will be self-sustaining.

One example of a program that is already well underway is the videoconferencing platform that connects several offices in Kabul with at least one government office in each of the provincial capitals. The President regularly uses this technology to reach out to government officials, media and civil society representatives (like elections coordination) in one or all 34 end points.

A second program is underway to extend basic connectivity to all government institutions in each of the provincial capitals. The Provincial Governors Communications Network (PGCN), funded by the US military, uses the latest wireless technology (WiMAX)

that connect all locations within 10 kilometer radius (depending on topology) with broadband access that can be used for voice, fax, internet and videoconferencing.

The ICT Council will need to consider additional programs and projects to drive the impact of ICT down to the most grassroots level, meaning greater participation at the provincial, district and community levels. Consideration must also be given to integrating the Parliament into these initiatives, because each elected official will be more effective with more robust connectivity with their local constituency.

### CONSUMERS:

Because of the high level of illiteracy in Afghanistan, most consumers depend on word-of-mouth, and to a much more limited extent, radio and television. Consequently, there is not a very strong consumer voice detectable, which also fosters corruption, fraud and poor quality goods and services.

The first nationwide consumer help line was established by ATRA in February 2007. It caters primarily to protect and assist consumers of mobile telephone services. Each week, an average of 300 legitimate complaints are registered and resolved. This ATRA office is a safety net to all consumers to ensure that the five major telecom licensees provide the services as promised. The ATRA consumer help line is a supplement to the consumer care lines established by each of the service providers (which is a firm license requirement). The utility of the ATRA consumer line was proven in May 2007, when the number of calls spiked to 1000 per week in reaction to malicious and erroneous rumors emanating from Pakistan and Iran about bizarre mobile handset malfunctions.

Similar consumer help lines are now being considered to report customs corruption at the frontier border posts, assist arriving passengers at Kabul airport and generally report government fraud, waste and abuse.

## **BUSINESS:**

The only way for a stabile economy to emerge in Afghanistan is for legitimate private sector development to flourish. As noted by the World Bank's "Doing Business Indicators" the chief barrier to entry is the very high level of corruption. Afghanistan should look to the most business-friendly places like Hong Kong and Singapore as a suitable template for attracting new investment (and de-emphasize the neighboring countries).

For example, two commercial laws that were promulgated in January 2007 require a central business registry to be established. This would replace the present system that requires registration of companies with the Commercial Court of Kabul. This goal for this registry should be to make it as easy to register a company as in Hong Kong, Qatar or Delaware (in the United States). Using ICT, the registration process can be accomplished in under 15 minutes, online, from any place in the world. Using electronic commerce, the entire process can be 100% transparent and

also give prospective investors a very favorable first impression of the business climate in Afghanistan.

## **EDUCATION:**

Illiteracy is the enemy of economic progress. In many developing countries, the political leadership has recognized that the most effective method of rapidly raising the literacy rate is to focus primarily on the youth. In Egypt, a government initiative launched in 1998 is now widely considered a good model to make the large number of youth employable, by giving them access to ICT from the very earliest age. While the program has evolved over the past decade, the key ingredients are: free access to ICT at all schools, integration of ICT into the normal school curricula (for example, web research of relevant topics) and multi-media courseware (including short courses upon demand).

In the near term, the ICT Council can foster the development of linkages between existing ICT infrastructure and applications to accelerate progress in literacy. For example, the Ministry of Education already prepares hourly educational programs that are broadcast on national television. Discussions have proposed to make this library of educational programming available upon demand via the internet.

# CHAPTER III

## CROSS CUTTING AND OTHER SECTOR RELATED ISSUES

In September 2007, the ANDS leadership agreed to designate ICT as a cross cutting element.

ICT is already fundamentally mainstreamed each of the cross cutting elements.

In addition, ICT also contributes to the advancement of the previously-designated cross cutting elements.

### GENDER EQUALITY:

There is not now, nor has there ever been any specific barrier to women in the acquisition or use of ICT. Mobile phones can be purchased at thousands of retail outlets across Afghanistan.

More importantly, ICT contributes greatly to gender equality because of the wireless nature of the majority of ICTs available. Mobile phones allow women to communicate with family and friends – and indeed conduct business – in the privacy of their homes, in those communities where cultural edicts prevent free and open travel. In addition, Afghan Telecom also offers equipment that even connects computers to the internet by inexpensive wireless access up to five kilometers from the towers.

### COUNTER NARCOTICS (AND COUNTER INSURGENCY):

From the very start of the mobile service availability in Afghanistan, communities have welcomed the erection of mobile towers, not only because of the direct benefit of connectivity to the outside world, but also the indirect benefits of local jobs.

The licensees have all reported that once a mobile tower is erected in a community, the community rallies around the infrastructure to protect it.

Once the mobile service is available, the community is immediately able to report illicit activities. ATRA has recently commenced the process to assign a national short code to allow citizens to report illicit activities (counter narcotics and counter insurgency) to a central help line.

### Regional Cooperation:

MCIT has begun the construction of a fiber optic ring that will connect the six major urban centers, with further spurs to each of the neighboring countries. In fact, the fiber optic connection to Iran is already operational.

Once complete, this system will allow traffic to transit through Afghanistan – and this will generate revenues, just as transiting products and over flight fees generate revenues for the treasury.

### ANTI-CORRUPTION:

The use of ICT increases transparency in all commercial and governmental transactions. The fact that the bureaucracy frequently require multiple signatures and official stamps is seen by many as a rent seeking barrier to efficient business.

In addition, as more government laws, regulations and procedures are published on the official websites of the government institutions, the citizens will be able to verify and comply.

## ENVIRONMENT:

The use of ICTs makes the world flat, meaning that a wide array of activities can be conducted remotely, instantaneously and 24 hours a day. This substantially reduces the need for travel. For example, President Karzai today routinely conducts meetings with the 34 provincial governors via video or teleconference facilities provide by Afghan Telecom.

## CAPACITY BUILDING AND INSTITUTIONAL REFORM:

The institutional reform phase began in 2003 and has almost been completed: Afghan Telecom was incorporated in 2005, the Afghanistan Telecom Regulatory Authority (ATRA) was established in 2006, and the Afghan Postal Commission (APC) was established in 2007. What remains is to incorporate Afghan Post and to attract private investors into Afghan Telecom in 2008. Capacity building also began in 2003 and continues. The PRR process was completed in 2007 and MCIT's internal training exceeds all other government institutions, especially with respect to learning English and IT skills. MCIT has 16 training centers now offering job-enhancing capacity building and will have these facilities operating in all 34 provinces by 2010. MCIT (and Afghan Telecom & ATRA) regularly send appropriate personnel abroad to receive advanced technical and professional training from the ITU and other institutions.

Risk Assessment (major constraints to implementation: security, capacity, etc.)

- Regime changed will paralyze policies
- The project might be delayed due to the security reasons
- The project might be delayed because of missing coordination among the government entities.
- Lack of information and local content
- Lack of coordination among the ICT implementing and adopting agencies.
- Lack of trained HR and local e-govt expertise.
- Geographic condition of rural Afghanistan
- Government official interference
- Lack of financial Resources,
- Bureaucrat resistance to change
- Lack of funding to implement government ICT system
- Unavailability of Land
- Resistance to change in the business process.
- The buy in from the local data network owners could delay the project implementation
- Lack of human resource could delay the implementation of the project.
- Bureaucrat resistance to chang

# CHAPTER IV

## IMPLEMENTATION FRAMEWORK

### MONITORING AND EVALUATION

Monitoring and evaluation will be performed by the ICT Council.

The aim of the ICT Council is to develop a common understanding among all stakeholders on the nature and implementation of ICTs in Afghanistan in order to enhance the coordination among all stakeholders of ICT in Afghanistan. The ICT Council is “multilateral,” “transparent” and “democratic” as well as with the notion of the full involvement of government agencies and

stakeholders of ICT sectors in Afghanistan. For details refer to Annex II (Monitoring Matrix)

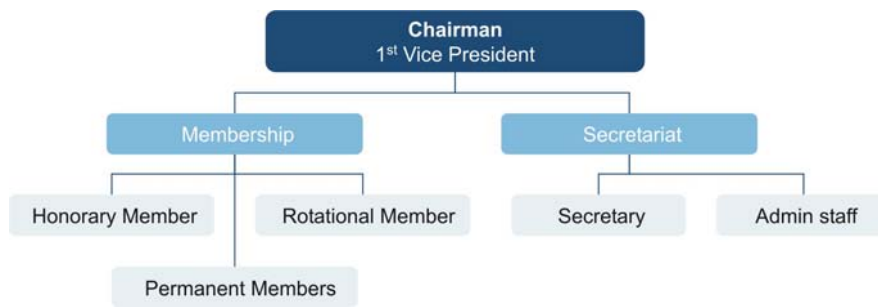
There is an urgent and fundamental need to ensure that the Afghan public, private sectors are able to work in tandem with the work undertaken by the international standard bodies. The council shall broadly address the issues affecting the growth and development of the internet, including the setting common sets of standards / policies. The establishment of National ICT council is to build the required national technical and professional skills for the government, and to ensure wider access to information for all stakeholders of ICT in Afghanistan.

Source	Number of Seats	Membership Status
Ministry of Communications & IT	2	Permanent
Ministry of Education	1	Permanent
Ministry of Higher Education	1	Permanent
Ministry of Finance	1	Permanent
Ministry of Economics	1	Permanent
Ministry of Commerce & Industries	1	Permanent
Ministry of Interior	1	Permanent
Ministry of Foreign Affairs	1	Permanent
Ministry of Culture & Information	1	Permanent
3 Rotational Exclusively for Ministries that are not permanent members	3	Rotational
AISA	1	Permanent
ISP Association	1	Permanent
GSM/Telephone Operator Association	1	Permanent
Association of Private Media Organizations	1	Permanent
Association of ICT Vendors	1	Permanent
Honorary members		
ICT Expert Honorary Member	1	Rotational
Consumer Advocate	1	Rotational
<b>Total number of members</b>	<b>22</b>	

Below is the proposed organizational structure of ICT council:

- Chairman (1st vice president)

- Secretariat (provided by MCIT)
- Members
  - Permanent Members



## Secretariat Terms of Reference

The following are some of the activities that will be carried out by the secretariat and they are subject to changes as deemed appropriate.

- To keep good track of day to day activities;
- To keep continuous track of the major ICT initiatives
- Promote inter-Ministerial coordination of major ICT initiatives;
- Responsible for drafting meetings minutes of the meetings and making it available to all members;
- Organizing and arrangement of the meetings;
- Presenting status report of the activities carried out by Council;
- Coordinating matters among the members and the board of ICT Council;
- Responsible for archiving all documentations in regard to Council (bylaws of the Council, standards, petitions etc)
- Primary liaison to the National Project Support Office (NaPSO) in the office of the Senior Economic Advisor to the President (SEAP).

## APPENDIX I: SECTOR INVESTMENT PROGRAM

Between early 2003 and the end of 2007, around US\$800 million has been invested into the ICT infrastructure of Afghanistan. Most of this amount is private investment related to the construction of the mobile networks, which now includes over 2000 base stations

(transmission towers) all over the country. Based on the goal of providing access to 80% of the population by 2010, it is estimated that an additional US\$650 million will be spent to further extend these networks (note also that this projection is based on the fact that the fourth nationwide mobile licensee, Etisalat, has only just begun to deploy its network).

In addition, Afghan Telecom which is fully owned by MCIT, has also begun several significant infrastructure projects. The national fiber optic ring commenced construction in early 2007 and is expected to be complete by the end of 2008. The project will cost over US\$65 million, paid entirely from the treasury of Afghanistan. Afghan Telecom has also launched a copper-wire based expansion to deploy 300,000 new subscriber lines in the six major urban areas. This project will cost around US\$40 million, also funded entirely by the Afghan treasury.

Consequently, the total projected investment program for the ICT sector is approximately US\$755 million until 2010.

## APPENDIX II: ACHIEVEMENTS (2002-2007)

Reform and development activity at the MCIT has been brisk. Among the accomplishments MCIT has made since 2002 are the following:

- Creating an enabling environment in which telephony penetration has risen from 0.06% to app 12 % in over last 3 years, which represents faster growth in comparison to the neighboring countries.
- Adopting and Publishing the Telecom Law (December 2005)



- Finalizing and Publishing the Telecom and ICT Policy
- Establishing of Afghan Telecom as a state owned enterprise (2005).
- Issuing the first national unified services license to Afghan Telecom (2006).
- Creating Afghanistan Telecommunication Regulatory Authority (ATRA).
- Issuing 4 GSM licenses
- Issuing 15 national and local Internet Service Provider( ISP) licenses
- Rehabilitating the Telecommunication Training Centre and upgrading it to the Information Communication Technology Instituted ( ICTI)
- Renaming the Ministry of Communications ( MoC) to Ministry of Communication and Information Technology ( MCIT)
- Establishing ICT Directorate in MCIT
- Regaining the Recognition of the +93 country code by major international and regional carriers
- Establishing 12 ICT centers n Kabul and provinces
- Recovering the Afghanistan's .af domain name
- Establishing MCIT web site ([www.mcit.gov.af](http://www.mcit.gov.af))
- Expanding District Communications Network (DCN) in more than 170 Districts.
- Expanding of Government Communications Network( GCN) in all provincial capitals as well as 42 ministries and other major governmental organization
- Implementing 150,000 landline copper cable network
- Expanding District Communications Network (DCN) in more than 220 Districts.
- Expanding of Government Communications Network( GCN) in all provincial capitals as well as 42 ministries and other major governmental organization
- Implementing 150,000 landline copper cable network





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ICT Assessment Report – GIPI (December 2007)

# ANNEX I: ICT SECTOR STRATEGY ACTION PLAN

PILLAR : INFRASTRUCTURE				
SECTOR : INFORMATION & COMMUNICATION TECHNOLOGY				
Expected Outcomes	Policy Actions or Activities	Category	Time frame	Responsible Agencies
E-Afghanistan created	Internet Exchange point	Development	2008-2010	MoCIT
	ICT Village	Development	2008-2010	MoCIT
	E-Government	Development	2008-2013	MoCIT
	National Internet Registry of Afghanistan (NIRA)	Development	2008-2011	MoCIT
	Afghanistan Cyber Emergency Response Team (AfCERT)	Development	2008-2011	MoCIT
	National Identity Management Initiative (NIMI)	Development	2008-2013	MoCIT
Enabling Environment	Development of policies, laws, regulations procedures and other normative acts to accelerate the role of telecom services to citizens	Legislation	2008-2010	MoCIT
	Establish Telecom Development Fund (TDF)	Legislation	2008-2013	MoCIT
	Drafting the ICT Law	Legislation	2008-2009	MoCIT
	Develop CIO (Chief Information Officer) culture in government organizations	Institution Building	2008-2009	MoCIT
	Movement of the government institution to a modern level of services to the citizens	Institution Building	2008-2013	MoCIT
	Developing Curriculum and Regulatory Framework for ICT Training Centers in the Private Sector	Institution Building	2008-2011	MoCIT
	Develop rules and regulations to require all government institutions to publish documents on their official websites (as a supplement to the Official Gazette)	Institution Building	end 2008	MoCIT
	Adopt a full set of Rules and Procedures that will govern the competitive procurement and utilization of ICT by all government institutions	Institution Building	end 2008	MoCIT
	Reduce corruption by reviewing all government services and making recommendations for the adoption of ICT to streamline and automate (for example, customs processing, procurement and licensing)	Institution Building	end 2009	MoCIT
	Pilot home based ICT related work for women	Development/ Gender Cross Cutting Issues	3rd 2008	MoCIT
ICT Literacy improved	Establishment of ICT centers in 34 Provincial capitals	Development	2008-2011	MoCIT
Improved ICT coverage and Infrastructure	Optical fiber backbone	Development	End 2008	MoCIT
	Government online (web presence)	Development	2008-2013	MoCIT

**PILLAR : INFRASTRUCTURE****SECTOR : INFORMATION & COMMUNICATION TECHNOLOGY**

<b>Expected Outcomes</b>	<b>Policy Actions or Activities</b>	<b>Category</b>	<b>Time frame</b>	<b>Responsible Agencies</b>
	E-government Resource Centre	Development	2008-2013	MoCIT
	Copper Cable Network	Development	2008-2013	MoCIT
	Expansion of District Communication Network (DCN)	Development	2008-2013	MoCIT
	Expansion of Microwave System	Development	2008-2013	MoCIT
	Village Communications Network (VCN)	Development	2008-2013	MoCIT
	Modernization of Postal Services	Development	2008-2013	MoCIT
	National Data Centre (The electronic data of the government will be securely hosted and will be available to all entities upon request and level of access)	Development	2008-2013	MoCIT
	The National Data Centre will have information on crosscutting issues like anti-corruption, counter narcotics, and environment.	Development/ Cross Cutting Issues	2008-2013	MoCIT

## ANNEX II: ICT SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE			
SECTOR: INFORMATION AND COMMUNICATION TECHNOLOGY			
Expected Outcomes	Indicators	Baseline	Targets
E-Afghanistan created	Index on the progress of creation of E-Afghanistan	E-Government policies, strategies and pilot projects are already launched.	E-Afghanistan created by 2013
Enabling Environment	# of government offices having official web presence	15	All Government Offices (2013)
	# of provincial government offices having official web presence	3	All Prov. Government Offices (2013)
	# of government offices having Chief Information Officer (CIO)	0	All Government Offices (2013)
	# of government offices connected through the fiber optic	20	All Government Offices (2013)
	Index on the progress of putting legal enabling environment for the ICT Sector in place.	At present telecom law, An independent regulator ATRA and open telecom market is the guarantor of the enabling environment.	Enabling Environment by 2013
ICT Literacy improved	Index on the progress of building institutions for the ICT Sector.	Ministry of Communications and IT and National ICT Council are the existing.	ICT Sector institutions will be built (2013)
	Index on the progress of establishment of ICT centers in 34 Provincial capitals	15	Improved ICT Literacy, 34 provinces 2013
Improved ICT coverage and Infrastructure	Index on the progress of putting in place improved infrastructure for the ICT Sector.	GCN, DCN, VCN, CCN, OFC and NDC projects are brought, implemented at present.	By end-2010, a national telecommunications network to be put in place so that more than 80% of Afghans will have access to affordable telecommunications.
	% of Afghans having access to affordable telecommunications	70%	80% (2010)
	% increase in annual revenue generated from the ICT Sector	USD 75 million	More than US\$ 100 million dollars per year are generated in public revenues by end 2010
	% of population access to mobile phones	20%	Increased Access to mobile phones
	number of internet users	500,000	Increased Access to internet
	# of Post Offices connected to a well-functioning communication network and equipped	44	Increased number of post offices connected

## ANNEX III: LIST OF PROGRAMS AND PROJECTS (INFORMATION AND COMMUNICATION TECHNOLOGY SECTOR)

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)						Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392 +						
1	AFG/0309701	National Fixed Line Network (digital lines) in Kabul, Jalal Abad, Kandahar, Mazar, Takhar, Farah, Khost, Ghazni, Baghlan including Puli Khumri & Kunduz provinces	1383		15.000	30.00	29.00				74.000	15.000	59.000	AFG	Core	MoCIT
2	AFG/0310301	Phase I National Fiber Optic Network (519 Km, Kabul Kandahar)	1383		29.500						29.500	29.500	0.000	AFG	Core	MoCIT
3	AFG/0806101	Microwave Network	1387		2.000						2.000	0.000	2.000		Core	MoCIT
4	AFG/0806201	Expansion of Internet Network	1387		2.000						2.000	0.000	2.000		Core	MoCIT
5	AFG/0311001	District Communication Network	1387		1.00	0.00	0.00				1.000	1.000	0.000	USAID	External	MoCIT
6	AFG/0780601	Satellite remote sensing data	1386		0.07	0.00	0.00				0.070	0.070	0.000	IND	External	MoCIT
	Total:				49.57	30.00	29.00				108.570	45.570	63.000			

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (INFORMATION AND COMMUNICATION TECHNOLOGY SECTOR)

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
1	Construction of Communication Directorate in Shibar & Waras district.	Bamyan	MoCIT	1388	
2	Construction of radio station with building in Nilli. One station (25 rooms).	Daikundi	MoCIT	1388	
3	Activate the internet system in kunar Province Beneficiaries. All Province.	Kunar	MoCIT	1388	
4	Construction of a centre for Information & Technology in Gardez City. (5,000 beneficiaries).	Paktia	MoCIT	1388	



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