



ICT POLICY FOR AFGHANISTAN

*A digital agenda for development and social
change*

2018-2022

Draft

Ministry of Communications and Information Technology
(MCIT)



Contents

1. Introduction	3
2. Vision 2022	4
3. The Policy Context	5
4. ICT Policy Goals and Targets	6
5. Strategic Focus Areas	9
5.1 ICT Infrastructure	10
5.2 Applications and Content	13
5.2.1 E-Government: ICT in Government	14
5.2.2 E-Education: ICT in Education	17
5.2.3 E-Health: ICT in Health	19
5.2.4 E-Business: ICT in Business and Trade	21
5.2.5 E-Agriculture: ICT in Agriculture and Rural Development	22
5.2.6 E-Environment and Natural Resources Management:	24
5.2.7 ICT in Disaster Management:	25
5.2.8 ICT in National Security	25
5.2.9 Development of Local Content	26
5.2.10 Digital Media	27
6. ICT Industry, Markets and Competition	29
7. ICT Knowledge, Skills and Education	31
8. Bridging Digital Divide	34
9. Laws and Regulations	
10. Financing and Budgeting	36



Abbreviations

ANPDF	Afghanistan National Peace and Development Framework
ANDC	Afghanistan National Data Center
ANTRA	Afghanistan Telecom Regulatory Authority
AfCERT	Afghanistan Cyber Emergency Team
ANDMA	Afghanistan National Disaster Management Authority
E-GIF	E-Government Interoperability Framework
ERP	Enterprise Resource Planning
FDI	Foreign Direct Investment
G2B	Government to Business
G2C	Government to Citizen
G2G	Government to Government
GIS	Geographical Information System
DCN	District Communication Network
GMS	Government Metadata Standards
ICT	Information and Communication Technology
ISO	International Standards Organization
ISSD	Information Systems and Security Directorate
IVR	Interactive Voice Response
IXP	Internet Exchange Point
MAIL	Ministry of Agriculture Irrigation and Livestock
MDG	Millennium Development Goals
M-Government	Mobile Government
MRRD	Ministry of Rehabilitation and Rural Development
M-Services	Mobile Government Services
MCIT	Ministry of Communication and IT
NICTAA	National ICT Association of Afghanistan
NIXA	National Internet Exchange Point of Afghanistan
PKI	Public Key Infrastructure
E-Government	Electronic Government
E-Education	Electronic Education
E-Health	Electronic Health
E-Business	Electronic Business
E-Agriculture	Electronic Agriculture
E-Environment	Electronic Environment
E-Learning	Electronic Learning
E-Services	E-Government Services
VAS	Value Added Service



Draft National ICT Policy- Afghanistan



VCN
WHO
XML

Village Communication Network
World Health Organization
Extensible Mark Up Language

1. Introduction

During the last two decades Afghanistan has made considerable progress in the field of information and communication technology (ICT). In 2002 the country had telephone subscription population of some 50000 and in 2018 this is estimated to have risen to about 23.65million. The country has evidently come a long way from having just one phone for every 540 persons in 2002. From almost total absence of internet in 2002 the country has now 62 national and international internet service providers with an internet subscription population of nearly 5.23 million. The use of computers in the departments and agencies of the Government of the Islamic Republic of Afghanistan has been growing very rapidly in last years. Several strategic ICT programmes including the E-Government programme is being pursued by the Government to bring in transparency and efficiency in the working of the Government and delivery of public services. Government of Afghanistan continues to be committed to expanding and optimizing ICT within the country to improve public services delivery, accelerate economic development and social change for the benefit of every Afghan. This document describes the digital agenda of the Government during the next Five years including its Vision, Goals and MCIT approaches that intends to achieve its long term vision and strategic goals.

2. Vision

MCIT's vision for Afghanistan is a digital connected Afghanistan

3. The Policy Context

The Afghanistan National Peace and Development Framework is our plan to achieve self-reliance and increase the welfare of our people. We will build a productive and broad-based economy that creates jobs. We will establish the rule of law and put



Draft National ICT Policy- Afghanistan



an end to corruption, criminality, and violence. Justice and the rule of law require that we step up the fight against corruption, reform our courts, and make sure that ordinary citizens can exert their constitutional rights with confidence. We will change the structure of our economy from one of import and distribution to one where a thriving private sector, from small farmers and urban businesses to large manufacturers, can successfully export Afghan products to regional and global markets. We will make strategic investments in infrastructure, human capital, quality service delivery, and technology; backed by a robust and well-regulated financial sector that can channel money to where it can best be spent. Growth will be inclusive and balanced. As the economy grows, Afghanistan will be able to expand investments in the health and education of our people. Achieving these goals requires a collective effort to overcome fragmentation, increase accountability, and introduce proper policies for sustainable growth.

The Afghanistan National Peace and Development Framework (ANPDF) is a five-year strategic plan for achieving self-reliance. The sustainable development that will help Afghanistan meet its many challenges, bring an end to poverty, and ensure security and stability for the country will take longer than a single generation to realize. We must move our country beyond its history of war and poverty and begin the long journey to prosperity.

The Framework presents a long-term development narrative for Afghanistan by providing consistent high-level guidance to government and other stakeholders. It articulates our immediate and long-term development priorities, highlights key reforms, and outlines priority investments needed to achieve our development goals. It sets the economic, political and security context for our approach to development, which is built around agriculture, extractive industries and trade. This context leads to a fiscal strategy that will guide budgetary allocations to support policy goals and ensure the sustainable management of public investment.

The ANPDF further focuses over Infrastructure and Connectivity Program, in order to accomplish increase in transit and connectivity, including telecommunications and the investment emphasize is on cross-border water, energy, digital and transport infrastructure, airports, telecoms, roads, rail, fiber-optic, logistics reform and etc.



4. ICT Policy Goals and Targets

In line with its Vision 2022–MCIT will expand and enhance ICT usage in the country, expand the telecommunication and IT infrastructure and services, ensure universal ICT access to all citizens and in general expand the ICT sector. MCIT recognises that ICTs, if optimally and strategically employed, can be very powerful and effective tools for good governance, economic development and social change. Therefore, the approach of the MCIT would be to optimally to adopt ICT as a tool for effective and transparent governance and as an enabler in various economic and social sectors in country. MCIT will also strategically promote private sector driven ICT industry as an economic sector in its own right that significantly contributes to national GDP and job creation.

The under mentioned ICT policy goals MCIT has set for itself are derived from the national strategic governance and development goals and priorities as much as the need for promoting ICT industry as an important sector of the economy and encouraging ICT innovation and adoption in Afghanistan at large in order to realise the Vision 2022 of Afghanistan as a progressive knowledge based society.

A. High Level ICT Policy Goals

A.1 MCIT will follow an integrated and holistic approach to ICT development in the country which would aim at maximising penetration and diffusion of ICT in Afghanistan; both within the Government and at all levels in the Afghan society and IT Communities.

A.2 MCIT will develop and promote ICT as an enabler of increased efficiency and productivity in all economic and social sectors and industry domains in the country.

A.3 MCIT will optimize the use of ICT in all its departments, agencies and ministries for management of Government operations and a tool for enhanced efficiency, effectiveness and transparency in public governance, and service delivery.

B. E-Governance- ICT in Government Policy Goals

B.1 All the Government ministries, departments and agencies both at the central and provincial levels would be optimally computerised and their



Draft National ICT Policy- Afghanistan



operations re-engineered, digitized and networked in line with the E-Government and M-Government plan of the Government under Governance and consultation of Ministry of Communication and IT.

B.2 All public services, other than the ones which cannot be delivered through electronic means, would be delivered as E-Services or M-Services as per the E-Government Plan and law of MCIT

B.3 Transparency in public sector recruitment, procurement and service delivery would be enhanced through optimised use of ICTs. 90 per cent of all public procurement and recruitment would be ICT based using appropriate E-recruitment and E-procurement systems, through a centralized enterprise resource planning (ERP) application developed by Asan Khedmat (MCIT)

B.4 Citizen participation in governance and democratic processes in the country would be strengthened and enhanced through optimal ICT applications of MCIT.

B.5. All citizens of the country would have convenient means to access the E-Services of the Government either on individual access devices or through E-Service centre(s) located within ANDC (Afghanistan National Data Center) in MCIT within convenient distances (not to exceed 1 hour travel time) from the location of the service recipient.

B.7 MCIT will simplify public service processes by re-engineering them and will ensure increase in service delivery to all citizens of the country.

B.8 The use of ICTs in the justice sector would be promoted to enhance rule of law and transparency in the legal processes. ICT based Systems and applications would be developed and deployed across the country, as a part of MCIT's E-Government programme to bring in effectiveness, efficiency and transparency in all the legal institutions and organs of the state And integrate all Justice Sectors and Relevant Ministries.

C. ICT investment and Industry Development

C.1 The Government will encourage ICT private sector to play a central role in driving economic growth and innovation, while creating employment and generating income through skill development and productivity improvement.



Draft National ICT Policy- Afghanistan

C.2 Private sector(s) investment in the ICT sector would be encouraged via different existing concepts like public private partnerships to ensure a supportive ICT sector investment, resulting in the market prices of ICT products and services to fall to a level equal to or lower than the average markets prices prevailing in central and south Asian countries. Private sector investment in the ICT sector, currently estimated at USD 2 billion is targeted to rise to USD 8 billion by the year 2022.

C.3 The expansion of the domestic ICT industry would be encouraged and promoted by MCIT, so that domestic products and services including connectivity, E-services and public services would be at least 40 per cent of the total ICT products and services marketed in the country.

D. ICT human resources development

D.1 ICT literacy within the Government would be expanded. 80 per cent of all Government staff at various levels would be ICT literate.

D.2 ICT awareness and literacy within the general population of the country would be promoted by MCIT. 70 per cent of population will be exposed to different level of ICT awareness and / or literacy programmes.

D.3 ICT skills within the country would be increased via educational institutions. All the universities and institutes of higher learning would be encouraged to offer ICT graduate and post graduate courses as well as short duration ICT courses as per the strategic ICT Skill development plan of MCIT..

D.4 ICT education will be mandatory in all schools of the country. ICT education will be embedded within the school curriculum of all schools in the country.

D.5 At least 70 per cent of all school, college and university teachers would be trained in the use of ICT tools and systems in education based on the contents of the curriculum.

D.6 All primary, secondary schools, colleges, institutes of higher learning and Universities in the country will be equipped with ICT labs and equipment.



Draft National ICT Policy- Afghanistan



There will be at least one computer and associated software for every 5 students enrolled, and connected to each other through a centralized hub located in MCIT.

D.7 At least 30 per cent of all primary and secondary schools in the country would be ‘*smart schools*’ where education and learning would be based on intensive use of ICTs.

D.8 Electronic Learning (E-Learning) would be promoted and integrated as an important component of the Government policy to eradicate illiteracy and provide universal education to all children and provide a platform for life-long learning and skill development among adults.

D.9 Education management including its planning, monitoring and control at the central and provincial levels would be undertaken using integrated national education management information system.

D.10 MCIT will interconnect all Schools and Islamic Centres Through Optic Fiber Cable Connection (Afghan Telecom) Backbone as well Microwaves to a centralized location where e-Education applications are hosted (ANDC). And accessible on demand in all area of country.

D.11 MCIT will strive to identify and predict areas of ICT that will be required in the next 5-10 years for Afghanistan market and persuade educational institutes to adapt their curricula towards those directions.

D.12 MCIT in consultation with private sector will identify the major gaps in knowledge and skillset of current ICT workforce and develops short and long term programs to increase the competency of ICT workforce.

D.13 MCIT increases the investment in ICTI to offer various degree and non-degree programs in order to train highly calibrated scientists and engineers that can fulfil the skills required in next 5-10 years.

E. ICT in Health (E-Health) Goals

E.1 E-health and the use of ICTs in the management of health services to the citizens would be developed and promoted by MCIT. All the public and private sector hospital and health centres would be encouraged to maximise ICT use including development and deployment of hospital information



Draft National ICT Policy- Afghanistan



systems, drug control, drug inspection system and patient record management system.

E.2 Telemedicine in the country would be promoted as a part of the Government's policy to provide universal health care services to all citizens of the country. All major hospitals in Kabul, Herat, Kandahar, Jalalabad and other urban centres would have at least one telemedicine delivery centre and every district would have at least one telemedicine centre with appropriate skilled staff and ICT infrastructure and connected to each other through MCIT Fiber-optic ring.

E.3 Management of the public health centres and public hospitals and monitoring of the public health would be undertaken with the development and deployment of appropriate health information management system at the national and provincial levels by MCIT.

F. Other Major Goals

F.1 All citizens of the country would have access to broadband telecommunication and internet services.

F.2 Content on the web in Dari, Pashtu and other local languages would be increased. This will include entertainment and learning content for various age groups and social segments in the country. The content on the web would be closely controlled and monitored to ensure that it is consistent with the culture and tradition of the country.

F.3 Private sector and non-government organizations will be encouraged to adopt ICTs in the management of their operations and in their interactions with other stakeholders.

F.4 Infrastructure for E-business would be developed and deployed, including public key infrastructure and associated institutions and systems so as to promote on line business transactions, nationally and internationally.

F.6 Appropriate ICT laws and regulations would be developed and deployed to monitor and regulate the ICT sector consistent with the need to respect the human rights of Afghanistan citizens.

5. Strategic Focus Areas



Draft National ICT Policy- Afghanistan

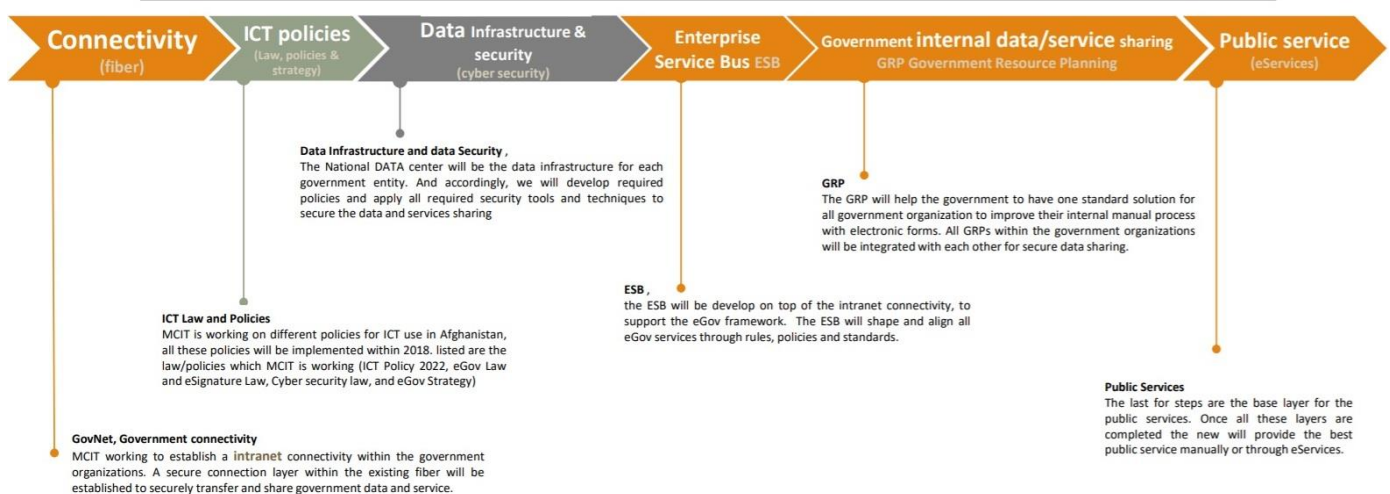


ICTs are very effective and powerful technologies which leave no aspect of economic and social life untouched. Going by international experience, it can be observed that there is a strong correlation between employment of ICT and positive macro-economic growth. ICTs are highly evolving, innovative and dynamic and impact practically all domains of human life, industries and sectors; both at micro and macro levels. However, to harness ICT for maximum benefit these technologies have to be closed adapted to local conditions and aligned with the local needs.

During the last years telecommunication and ICT infrastructure and services have expanded considerably and ICT has made significant penetration in the Government, business and in the Afghanistan society generally. Yet it can be observed that we have a long way to go to realise full benefits of ICT in governance, social and economic development, security and stability and poverty reduction. MCIT has adopted a strategic approach to developing the ICT sector and to optimize ICT application and to reach long term ICT goals; and thereby significantly contribute to the achievement of national development goals.

The key ICT result areas for strategic focus of MCIT are depicted in the figure below. Apart of the four pillars of the strategy and policy matrix there are three cross cutting areas of strategic importance.

ICT Roadmap (2022)





6. ICT Infrastructure

On a broad basis the ICT infrastructure includes all hardware, networks, communication equipment and software that enable telecommunication, information and data management and enable individuals, organizations and businesses to access information resources. However, the most fundamental is the telecommunication and internet infrastructure. MCIT's role in the enablement of the telecommunication and ICT infrastructure and services is essential and fundamental. The telecommunication infrastructure in Afghanistan has expanded sharply during last years, guided by the Afghanistan Telecommunication and Regulatory Authority Policy for telecommunication sector of Afghanistan. As the ICT technology is dynamic and evolving with new technologies being developed and deployed with improved availability of equipment, supplies and services of computers, telecommunications, multimedia information providers, broadcasting (radio and television) and content it raises many issues regarding interconnection policy and equipment standards for interconnectivity. In addition, in the case of Afghanistan, the availability of ICT infrastructure must be associated with the availability of other basic services like electricity supply which would make the ICT infrastructure usable.

The telecommunication development and regulations will continue to be guided by the Government's *Telecom and Internet Policy*. The basic guiding principles of MCIT's strategy and policy in the development of the ICT infrastructure would be the following:

Universal Access: Recognizing the right of every citizen of Afghanistan to affordable telecommunication and internet services MCIT's Policy is to enable the rapid growth of affordable communications and internet access to all of its people so they may experience the Digital Age, wherever they are and whoever they may be. Establish a National Backbone Network around the country that connects major domestic population centers and our international neighbors.

Market Driven Free Competition: In the development of the ICT infrastructure of the country MCIT will continue to embrace a market regime based on aggressive market liberalization, transparent and non-discriminatory regulation, fair competition and private sector participation.



Licensing and Spectrum Management: ATRA will continue to

manage the licensing and spectrum management for telecom, broadcasting and internet services according to the Telecom and Internet Policy and The Telecom Law in force. Recognizing that the information and communication technology sector is by its nature highly dynamic and innovative with perpetual availability of new technologies and converged services licensing and management policies and practices would be modified and adjusted to facilitate the adoption of the new technologies for the benefit of the consumers.

Internet Development and Expansion: Recognizing that availability of high speed internet at affordable cost is critically important for expanding the demand for internet services and for delivery of government services to the public the Government will set up national IXPs (NIXA) and hierarchical IXPs in collaboration with other countries as well as regional information and communications infrastructure.

Promoting Broadband It will be the strategy and policy of MCIT to encourage the development of the broadband communication and internet in the country, both on the supply and demand sides. On the supply side the network operators would be encouraged to go broadband, adopt new technologies and offer VAS and converged services. On the demand side MCIT will encourage expansion of demand for broadband internet by adopting and expanding its usage within the government and encouraging schools and other institutions in the country to go broadband.

Information Security: MCIT will accord highest importance to the protection of the ICT infrastructure as well as information resources under its jurisdiction. Considering the vulnerability of ICT infrastructure and assets to damage and attacks by criminals and terrorists. MCIT in collaboration with network operators and other stake holders will develop and implement strategies and systems to ensure highest level of security to networks and telecommunication infrastructure in the country. Similarly, MCIT will accord the highest level of importance to the protection of the information assets and citizen data that would be routinely in the data bases of the Government at the Afghanistan National Data Centre located in MCIT. Afghanistan Cyber Emergency Team (Af-CERT) of the Government of Afghanistan in collaboration with the network operators national and internationally and other stakeholders will develop and



Draft National ICT Policy- Afghanistan



implement policies and procedures for quick restoration of ICT backbone infrastructure and services should an attack occur with all Government Entity and ensure highest level of Security applied in Country. While MCIT will develop policies and procedures for protecting its information assets and resources it will also develop standards and guidelines for protecting ICT infrastructure and information resources existing outside the Government and also ensure highest level of cyber awareness has been conducted.

Public Key Infrastructure: MCIT has developed and deployed Public Key Infrastructure (PKI) including the hardware, software, policies and associated institutional arrangements so that certification of digital signatures would be possible and online transactions will be undertaken by individuals and businesses in Afghanistan, with confidence and through e-transaction LAW by ISSD.

Accessibility Infrastructure: In accordance with its Universal Access policy MCIT will provide broadband telecom and internet coverage to all parts of Afghanistan including last mile connectivity infrastructure. However, MCIT recognises that provision of ICT infrastructure alone may not assure accessibility to all citizens of Afghanistan. Inability of the citizens to take advantage of the available communication and internet facility may arise due to non-affordability or non-availability of individual access devices. To mitigate against these possibilities MCIT will establish digital communication and e-Service centres for remotely located communities and rural population of Afghanistan.

5.1.1 Telecom Development and Regulations

Telecommunication infrastructure for voice and data services is central to the development of the *Information Society* that we envision to usher in the next five to eight years. One of the main goals would be to ensure that the telecom infrastructure covers all parts of the country and that telecom services are available to all communities and people of Afghanistan following the *Universal Accessibility* and coverage principle. At the same time MCIT will take all actions as may be necessary to ensure that each Afghan can take advantage of the telecom coverage that is available in accordance with the *Universal Service* principle of the Government.



Draft National ICT Policy- Afghanistan



MCIT through ATRA will employ the international best practices and methodologies to evaluate, monitor and regulate the telecom and internet coverage and service delivery in all parts of the country and identify *market efficiency gaps* that exist in the telecom coverage and in collaboration with the Telecom Operators in the country fill the gaps as may be identified from time to time.

MCIT will determine the *true access gaps*, that is areas where operations may be commercially unprofitable and advise the Telecom operators to provide telecom and internet services in these areas through support from the Telecom Development Fund (TDF).

Through the Telecom and internet policy of ATRA competition in the telecom markets of the country will be evaluated and monitored. Market share of telecom operators and telecom traffic at the major gateways and exit points would be perpetually evaluated to monitor the possible dominance of any operator in the market.

MCIT recognises that *Quality of Service* as a part of the broader question of consumer rights and protection including privacy of consumer data and information from the perspective of the consumers is an important issue and a matter of concern to them. MCIT will adopt a reasonable approach towards quality service delivery based on the baseline data currently available from primary and secondary data sources. Quality of service regulations and consumer protection laws would be put in place to ensure that the operators meet their *Quality of Service* obligations to their customers.

6.1 Applications and Content

If Afghanistan has to leapfrog into the Digital Age and if the goals of the Vision 2022 are to be realised in the next ten years the ICT penetration and diffusion in the country has to be accelerated. The adoption of ICT by the Government and major private sector organizations, during the last ten years, has been appreciable. This penetration has been so far, however, restricted to only urban centres and to only certain levels in organizations. Horizontal diffusion of ICT across the country to provinces, districts and rural areas has to occur; so also vertical penetration of the ICT has to occur in the organizations that have already made a beginning. The adoption of ICT by individuals, businesses and organizations has shown significant growth in



recent years. The main challenges to accelerated ICT penetration and diffusion are the high cost of access devices, lack of accessibility, lack of skills and know how. It will be the policy of MCIT to promote and accelerate the ICT application within the Government and all sectors of the economy and all industry domains and indeed all sections of the Afghanistan society. The following application areas would be particularly focused on.

5.2.1 E-Government: ICT in Government

During last years MCIT has vigorously followed on the application of ICT for improving its administration and delivery of public services. Towards this end MCIT has undertaken a number of initiatives, projects and programmes. This has included the design and development of the E-Government strategic master plan, E-Government Systems Architecture, E-Government Interoperability framework (E-GIF), Afghanistan National Data Center, National ID card project, E-Government Resources Centre, training and skill development activities, centralized passport online systems by Asan Khedmat, Digitizing and Computerizing Work Permit for local and foreign employees, centralized asanERP and a large number of projects at the level of individual departments and agencies of the Government aimed at digitizing the operations and development of ICT infrastructure. The aim of MCIT is to develop and deploy the E-Government in a phased manner corresponding to the development of the readiness of the various agencies of the Government. MCIT is currently designing and developing M-Government, as a component part of the its broader E-Government agenda so that the wide penetration of the mobile phones in the country, currently covering 80 per cent of the country's population, can be taken advantage of as an effective means of connecting with the citizens, delivering public services effectively at lower cost, enhancing citizen participation and democracy and the overall efficiency of the public administration. The following major policies will guide the Government to accelerate its E-Government transformation.

- MCIT will be service oriented and citizen focused and will follow a bottom up phased approach in developing and deploying E-Government in the country.
- MCIT recognises that maximum efficiency and governance effectiveness can be achieved only if all the component agencies and departments of the



Draft National ICT Policy- Afghanistan

Government operate as parts of a single connected Network and ~~coordinated~~ Digital Government rather than as independent, disconnected units. This MCIT approach will be the guiding philosophy of MCIT.

- The E-GIF standards and policies already developed by MCIT will guide the implementation of the E-Government. MCIT recognises that for effective development and roll out of E-Government it is essential that the individual technical systems at various departments and agencies of the government should interoperate with each other, exchange data with each other and virtually operate as a single system. For this to happen uniform and compatible policies and standards have to be used all across the government. These policies, developed as a part of the E-GIF, will be implemented across the Government by MCIT.
- The policies, guidelines and technical standards globally and locally developed by MCIT, that form a part the Government's E-GIF will be followed by all the departments, agencies, ministries and government institutions at all levels in the country as a mandatory requirement.
- *Open and Free standards:* As a policy MCIT would adopt open and free technical standards rather than proprietary standards. However, in exceptional circumstances if a proprietary standard is accepted as a technical standard by MCIT there must be a strong justification for its acceptance.
- *Internet and world wide web:* MCIT recognizes the importance of internet and the World Wide Web as the basic platforms on which the emerging knowledge and information society of the world rests. Therefore, alignment of all government of Afghanistan ICT systems with the internet and the World Wide Web and adoption of all common specifications used on the internet and World Wide Web would be a central policy of MCIT.
- *Extensible Markup Language (XML):* With the emergence of XML as the preferred means of data exchange between data systems the world over, XML would be used as the primary standard for data exchange between ICT systems of the government.
- *Content Management in Government:* The Information content and documents of the government of Afghanistan in English and official languages of the



Draft National ICT Policy- Afghanistan



country: Pashtu and Dari, would be managed using the Government of Afghanistan metadata standards (GMS) based on internationally accepted Dublin Core Model (ISO 15836)

- *Delivery Channels:* It would be the policy of MCIT to support multiple channels for service delivery. Although desktops and laptop computers using browser technology would be main means of accessibility, the systems adopted by all government departments and institutions should permit access and service delivery thorough other means like the public kiosks, web TVs and mobile devices; and should also interface and integrate well with the traditional means of personalized service delivery.
- *Universal Service:* In line with the policy of MCIT to provide service universally to cover all citizens of Afghanistan irrespective of their location, gender, age, status and education, special attention would be given to the needs of citizens with visual or other disabilities in the design and deployment of technical systems, especially in the formulation of standards related to access, presentation and customer interface.
- *Information Security in Government:* MCIT recognises that Information is an important resource in the knowledge society that we envision for our country. At the same time, we recognize that threats to its integrity and safety are manifold. Therefore, the protection of data and information resources within the government of Afghanistan; whether in its databases, documents, applications or in transit over its networks; will be accorded the highest priority by all agencies, organs and institutions of the Government through Cyber Security Directorate of MCIT.
- *E-Services and M-Services:* Public Services to be delivered by the Government through electronic means will be developed and implemented in a phased manner in accordance with the E-Government Strategic Master Plan and M-Government Strategic Master Plan of MCIT. These services will be designed and developed in service oriented manner to maximise the citizen satisfaction and minimise the development time and costs. E-Government and M-Government G2G, G2B and G2C applications and services that enhance



Draft National ICT Policy- Afghanistan

Government efficiency, transparency and delivery of public services will be accorded the highest priority.

- *E-Government Institutional Arrangement:* E-Government Directorate and E-Government Resources Centre within the Ministry of Communication and IT will be the main organs of the Government responsible for the planning, development and deployment of the E-Government programme of the Government including auditing the quality of E-services, Implementation of the E-GIF and provision of support to the agencies of the Government in the implementation of its various E-Government initiatives.
- *Information Systems Security:* Cyber Security Directorate (Information Systems and Security Directorate) of MCIT will be the main organ of Cyber Security for the Government with standards and best practices including responses to the Cyber Attacks and eService penetrations. ISSD is also responsible to provide support to agencies of the Government in implementation of Secure platforms and infrastructure to mitigate Cyber-attacks aimed to defeat Government data.

5.2.2 E-Education: ICT in Education

Government recognises that it faces some serious challenges in reaching its strategic goals to expand educational opportunities to all its citizens, provide lifelong educational opportunity to all and mitigate wide spread illiteracy in the country. The MCIT also recognises that ICT application could be an effective tool for delivery of education, improving the overall learning process and in better managing the education sector of the country. MCIT is committed to expanding the use of ICT for education and optimise its application in the education sector. The ICT in Education strategy of MCIT would be multipronged consisting of the following component parts

- Expand ICT education & integrate ICT from primary school level,
- Expand ICT as an enabler for better learning and teaching processes,
- Expand ICT use for remote education,
- Expand ICT as a means for better education management
- Expand ICT as a tool for better scientific research and innovation.

The following ICT in education policies will be followed:



Draft National ICT Policy- Afghanistan



- ICT education will be considered as mandatory in all primary and secondary schools of the country. ICT education will be embedded within the school curriculum in all schools in the country.
- Government Schools, Colleges and Universities will be provided adequate ICT infrastructure, computing resources and broadband internet to ensure availability of ICT to teachers, students and administrators.
- Private educational institutions will be required to computerise and provide for ICT in their institutions as a mandatory precondition for institutional registration and licensing.
- Private educational institutions at the primary, secondary and tertiary levels will be encouraged through provision of fiscal and monetary incentives, in order to adopt ICTs, establish adequate ICT infrastructure and systems in their institutions.
- MCIT will, in a phased manner, transform all primary and secondary schools into smart schools, where intensive use is made of ICT as an educational tool both by the students and teachers.
- MCIT will launch an intensive programme of education for teachers on the use of ICT in education. These educational courses for teachers will be provided in the local languages of choice of teachers to ensure maximum level of required ICT knowledge being transferred.
- Electronic Learning (E-Learning) would be promoted and integrated as an important component of the Government policy to eradicate illiteracy and provide universal education to all children and provide a platform for life-long learning and skill development among adults. Considering the universal availability of mobile phones in the country, m-learning content and courses would be developed and offered as a part of the E-Learning programme of the country.
- To encourage girl education in the country e-learning education centres integrated with the local level community centres and mosques, will be established in rural and remote areas, which would have the resources to hold distance classes in a culturally acceptable manner.



Draft National ICT Policy- Afghanistan



- Education management including its planning, monitoring and control at the central and provincial levels would be undertaken using ICT based integrated national education management information system developed and introduced by MCIT.
- Educational Institutions of Higher learning, both in the private and public domains, will offer degree courses at bachelors and masters levels in ICT related subjects as a mandatory requirement. The institutions of higher learning will be encouraged to offer research based ICT degrees at masters and doctorate levels.
- Educational Institutions of Higher Learning in the country would be encouraged to collaborate and cooperate with each other to share computing resources, establish national online library and undertake joint educational and research projects on ICT related subjects.
- Institutions of Higher Learning and Research will be encouraged to establish campus wide electronic learning and research environment and collaborate with each other and with other regional and international institutions of higher education and research to develop and deploy integrated and interoperable ICT infrastructure and systems to enable collaborative education and research.
- With the development of Innovations and Research Centre Labs within Kabul University and ICTI, MCIT will provide a centralized ICT HUB for professors and students to encourage with the development of new idea's, algorithms, researches and create Job opportunities.

5.2.3. E-Health: ICT in Health

Even though the last ten years has seen considerable improvement in the public health, the overall situation remains grim, with low life expectancy, high child and maternal mortality indicators. The availability of public health services in the country, especially in the remote and rural areas of the country is poor due to a variety of reasons, including lack of trained and professional health workers, doctors and nurses, lack of health infrastructure, hospitals, modern medical equipment and lack of sufficient financial resources to expand the public health infrastructure. ~~Government~~ MCIT sees ICT as an effective tool to mitigate the constraints that we currently face in



Draft National ICT Policy- Afghanistan

improving public health services. We recognise that ICT cannot replace the services of a doctor or the caring provided by a trained nurse, but it can leverage the meagre resources that we have to reach a larger population and bring in efficiency in the public health domain.

Following would be the strategic focus of the Government MCIT in ICT In Health area:

- Expand the use of ICT by health institutions in the country including hospitals and clinics through provision of resources, technical and professional trainings and establishment of the ICT infrastructure in these institutions.
- Promote use of ICT for monitoring and control of public health in the country and establish systems to prevent spread of diseases and early warning systems in case of impending epidemic.
- Develop health sector management system and unified standards for health data exchange and sharing among national health institutions compatible with WHO and other international health organization system's standards and guidelines by MCIT.
- Promote ICT and mobile technology based system for health sector monitoring, patient data exchange, surveys and field data collection.
- Disseminate health information on prevention of diseases and health guidelines for citizens and health workers in local languages using multiple delivery channels, including mobile devices.
- Promote tele-medicine and e-health in the country through establishment of required tele-medicine infrastructure and skills in the country.

The major e-health policy of the Government would be as following:

- MCIT will maximise and optimize the application of ICT in public hospitals and clinics through establishment of ICT infrastructure, systems and enhancement of staff's skills.
- MCIT will endeavour to expand use of ICT in Ministry of Public Health, in its institutions and in all other government agencies of connected with Public



Draft National ICT Policy- Afghanistan



Health for the purpose of enhancing efficiency and effectiveness in proper Management of the public health in country.

- A National Health Sector Information Management system will be developed and implemented by MCIT for ensuring an effective planning, managing and monitoring of public health and delivery of public health services across the country.
- Health Data and Information Standards included in E-GIF those are developed by MCIT will be the used as standard for health information management adopted by all health institutions, both in public and private domain throughout the country.
- Citizen's or the patient's personal data collected by the Government health institutions will be maintained secure in government databases and will be considered as highly confidential information of them, which shall not be disclosed to any un-authorized entity, except to other health institutions for the purpose of delivering health services or except through the applicable legal processes and will be hosted inside ANDC.
- The government recognises that it has limited resources in terms of responding to the needed public services. and therefore, the Government will leverage its resources to provide better and faster medical services through e-health and tele-medicine.
- Doctors, nurses and other health workers will be trained on effective usage of ICT for delivering standard health services at various levels from health clinics in districts and hospitals to referral hospitals in urban centres.
- *M-Health*: MCIT recognises the ubiquity of mobile phones in the country and therefore, will develop and deploy mobile based applications for delivery of basic public health services as well as use mobile based ICT system for dissemination of health information, health warnings and encourage citizens to seek health related services and information using mobile phones and other devices.
- *Telemedicine development and roll out*: To leverage its health related resources MCIT will develop the tele-medicine infrastructure both at the delivery and receipt ends, in a phased manner from the pilot stage in some hospitals



Draft National ICT Policy- Afghanistan

and some districts in the beginning to a nationwide rollout in ten years.

Tele-medicine infrastructure will be based on international standards and practices and will be hosted inside ANDC. It would be designed to inter-operate with such networks available in the neighbouring countries, so that telemedicine services could also be sourced internationally, as the situation demands.

- *Quality of Health Services:* Government recognises the importance of delivery of quality health services to every Afghan. Health services, which are timely, affordable and delivered in the most efficient manner with minimal errors. Delivery of high quality drugs and patient services is essential to improving the health of every citizen. Towards this end MCIT will optimise use of IC technologies like bar coding and Radio Frequency, identification (RFID) to minimise errors and to maintain control on the delivery of hospital services and medication processes, which includes prescribing, order communication, product labelling, packaging, compounding, dispensing, distribution, and administration.

5.2.4. E-Business: ICT in Business and Trade

The Afghanistan's traditional products including carpets, rugs, leather products, handicrafts, fresh fruits, flowers and dry fruits have large international market. On account of lack of systematic market development, instability in the country and simple lack of knowledge in the international market have limited the country's market share to a lower level. Application of ICT in international business development could open out international market for Afghan products. Adoption of ICT in business is also expected to bring in efficiency in operation of the Afghanistan business sector thereby reducing costs and increasing profits. The expansion of mobiles in the Afghanistan for communication and other value added services like mobile money transfer and mobile wallet applications are significantly influencing the day-to-day lives of individual Afghans, as much as facilitating financial transactions between business partners thereby expanding overall business volumes.

The following strategies and policy on E-business will be followed:



Draft National ICT Policy- Afghanistan



- MCIT will encourage private business organisations and trading houses to adopt ICT within their organizations. This will be done through provision of incentives and tax relief on ICT investments and ICT imports, technical guidance and support.
- MCIT will create an enabling environment for business organizations to adopt ICT and conduct online business with confidence. Towards this end MCIT's Cyber Security Directorate has established the Public Key Infrastructure and digital signature certifying organization, so that online business transactions could be undertaken with full confidence.
- MCIT in collaboration with the Private business associations will encourage establishment of online business portals for various product groups of the country, which would disseminate information about the Afghan products to international markets and disseminate market information to local businesses; provide a platform to local business to conduct online business with their customers in the local and international markets.
- MCIT will develop and deploy ICT based applications that would make interaction of the business organizations with MCIT easy and fast. This will among others include, Business Registration, Online Custom Duty payment, Online filing of Tax Returns and other similar applications.
- MCIT will promote and encourage mobile technology and other innovative ICT applications that would facilitate business transactions and trade expansion in a cashless environment. This would among others, include banking laws and regulations that facilitates cashless business transactions, establishment of mobile e-money operators and their agents in all parts of the country and increase in cap on the payments made by businesses for Government services and taxes using cashless instruments and methods.

5.2.5. E-Agriculture: ICT in Agriculture

More than seventy per cent of the population of Afghanistan is engaged in Agriculture and the economy of the country is virtually based on Agriculture. Most of the products that the country exports abroad are agro products. Hence, the development of the agriculture sector is closely related to national economy and social



Draft National ICT Policy- Afghanistan



wellbeing of the people of Afghanistan. The importance of the Agriculture cannot be over-emphasized. Only about 10 per cent of the total land area is now cultivated and most of the cultivated land is rain irrigated or irrigated by streams. The policy of the Government is to expand farm production through expansion of the area under cultivation and increase in land productivity. Rural income would expand if agriculture production expands and if higher prices are obtained by farmers for their production. The rural landscape will also change if the crop mix can change leading to higher total income to farmers. And if the agro products could be processed and valued added before reaching the local and international markets. These strategic moves to develop the Agriculture sector and therefore, the rural economy can be leveraged through the effective application of ICT.

The Government's E-Agriculture Policies are:

- MCIT, through the Ministry of Agriculture, Irrigation and Live Stock (MAIL) will adopt ICT in the planning, management and monitoring of the Agriculture sector and in the delivery of Agriculture related services to farmers and other stake holders connected to the sector.
- MCIT will develop its institutional capacity and ICT infrastructure and systems to enable provision of timely advice and extension of services to farmers on various aspects of agriculture, horticulture, animal husbandry, agro processing and other related subjects. Mobile phones and devices, TV and radio will be the preferred channels of delivery of E-Agriculture services.
- MCIT will develop and deploy optimal ICT based agriculture project and programme planning and M&E systems to systematically plan, monitor and evaluate agriculture and rural development projects in the country.
- MCIT will develop and deploy dynamic Agriculture information databases and ICT systems to disseminate up to date information on Agriculture markets, prices, supply and demand using mobile devices, computers, TV and Radio as delivery channels.
- MCIT will develop and deploy databases and ICT systems, which would enable provision of weather, soil, and other Agriculture information of use and interest to farmers on mobile phones, computers, TV or radio.



Draft National ICT Policy- Afghanistan



- ICT based *Early warning systems* will be developed and deployed on impending crop disease, climate change, floods and adverse weather conditions.
- Government recognises that the rural development and agriculture are very intimately intertwined. Therefore, MCIT's concerned departments and other agencies including MAIL and MRRD will collaborate in the development of E-Agriculture services and coordinate these with other services that are delivered through traditional channels.
- ICT awareness and basic know how the rural agriculture community would be raised through mass media campaigns using mobile devices, TV and Radio.
- ICT based on demand and interactive E-Agriculture and rural development services will be made available in local languages on mobiles and computers, Radio and TV in user-friendly manner.

5.2.6. E-Environment and Natural Resources Management:

Management of the country's environment and its natural resources is a priority for the Government. During the recent decades of war and instability, the environment has been badly damaged with deleterious consequences on climate, natural water supply, soil condition, productivity and quality of peoples' life. Afghanistan is richly endowed with natural resources, including minerals and natural gas deposits to the tune of several trillion United States dollars. These resources have remained largely unused or have been exploited in a random manner by warring factions to finance war or terror activities. Government is committed to managing its environment systematically and to responsibly and sustainably use its national natural resources for the benefit of the people. The focus of MCIT would be to apply ICT in Environment and Natural Resources management to enhance planning, management and monitoring capacity of the Ministry of Mines and Ministry of Environment; develop environment and natural resources data bases and GIS information repositories, maps and applications for use across the Government.



Draft National ICT Policy- Afghanistan

Government ICT Policies in the management of the environment and country's natural resources are as following:

- MCIT will develop infrastructure, systems and skills within the Government for optimal adoption of ICT for the purpose of efficiently managing its environment and natural resources including land, water, forests and mineral deposits and for their sustainable and responsible use for the benefit of the people of Afghanistan.
- Local and traditional knowledge and practices in the management of the environment and country's natural resources would be captured and integrated with the modern practices in these fields using the appropriate ICT tools and techniques.
- Environment and natural resources' databases and information repositories and maps will be developed and made available across the government as a common resource of the country by MCIT.
- MCIT will develop and deploy appropriate GIS and remote sensing applications and systems to support the Environment and Natural Resources Management system of Country within GIS Directorate of MCIT.

5.2.7. ICT in Disaster Management:

Afghanistan is prone to disasters. Afghanistan National Disaster Management Authority (ANDMA) of the Government has developed the strategic national plan for disaster management, which aims at the provision of early warning to citizens and other government functionaries of the likely disasters, enhance the disaster preparedness of the Government and provision of post disaster relief and rehabilitation. ICTs have considerable applicability in these fields of activities of the ANDMA and the ICT plays a crucial role in disaster management.

ICT policy of the MCIT in disaster management is as following:

- MCIT recognising the important role that ICT can play in the management of disasters will provide the ICT infrastructure, equipment, communication, devices and software applications as required to equip ANDMA and other connected agencies of the Government at all levels to undertake their mandate more effectively and efficiently.



Draft National ICT Policy- Afghanistan



- MCIT will enhance ICT skills of staff in ANDMA and other relevant agencies, and will provide appropriate ICT training to community leaders across the country especially in disaster prone areas of the country.
- Periodic mock drills will be undertaken to ensure that the communication networks and other ICT systems are at top working condition at all times.

5.2.8. ICT in National Security

The welfare and development of a nation goes hand in hand with the level of security and stability that it enjoys. One of the important focus area of ANPDF is national security, which in the context of Afghanistan is the most important strategic key result area, as the country faces possible threats from individuals and organizations within and outside the country. ICT role in supporting national security is important and indeed indispensable.

MCIT's ICT policy for national security is as following:

- MCIT will optimise the use of ICT in the tasks of national security. For this purpose, the required ICT infrastructure, systems and applications will be developed and deployed in appropriate agencies of the Government including the Ministry of Interior, Ministry of Defence, National Police and others as may be required.
- MCIT will provide ICT training as appropriate to all agencies staff connected to national security, enhance and refresh these skills at periodic intervals.
- National security intelligence network will be supported with ICT systems and the state of the art technologies in information gathering and analysis, to maintain an edge over the adversaries and enemies of the nation.
- Cyber security infrastructure and systems will be strengthened and kept in constant state of readiness to prevent damage to vital installations of the country and ensure minimization of the possible damage should an attack occur on MCIT systems.
- Security at the borders and all entry points will be strengthened with application of ICT to thwart moves by undesirable elements with bad intentions to gain entry into the country.



Draft National ICT Policy- Afghanistan



- Database of elements considered as threats to national security and peace will be developed and maintained and will be accessible to authorised officers and security staff of the Government and MCIT.

5.2.9. Development of Local Content

Existence of the locally relevant content in local languages is crucially important to promote use of internet and to accelerate the adoption of ICT in the day to day life of society. Afghanistan ICT eco-system is characterised by lack of content in Dari and Pashtu and other languages and content that is relevant to local conditions. With the expansion of the internet it is easy for anyone to access content from distant markets and communities. This accessibility for the growth of foreign knowledge has its limitations as to its relevance to local conditions and may undermine the local cultural heritage. The foreign knowledge acquired on the web should be strategically matched by collection and dissemination of local knowledge and content that is relevant to local conditions. ICT systems and internet should be a conveyor of locally relevant messages and information, providing opportunities for local people to interact and communicate with each other, expressing their knowledge, heritage and culture in their own languages. MCIT has taken a lead to develop ICT terminology in Dari and Pashtu through its localization project. Additionally, E-GIF mandates the development of Government vocabulary in Dari and Pashtu. These and other initiatives of the Government for expansion of local content and localization of content will need to be accelerated in the next ten years.

Government's ICT policy on promotion of local content will be:

- MCIT will encourage the use of local language applications and content in its systems, websites and portals.
- Government will provide free access to its archives and information repositories on national culture, tradition, art and religion to local content developers.
- MCIT will encourage the use of Dari and Pashtu by local content developers in order to promote local culture, art and entertainment content to attract local users and Afghan Diaspora.



Draft National ICT Policy- Afghanistan



- Government will discourage content, which is considered detrimental to the cultural values and religious sentiments of the people of Afghanistan.
- MCIT will encourage the local communities to gather and develop local content and upload the same on to local social networking sites.
- In collaboration with the universities, social and cultural associations and organizations in Afghanistan. MCIT will encourage development of local content for entertainment and education for wider dissemination on the web.

5.2.10 Digital Media

Media plays an important role in mass communication, entertainment, education, public participation and strengthening democracy. The Government's overall policy has been to promote free democratic media within the guidelines given by the Government and within the law of the land. With the application of new ICT, the media's reach and influence increases enormously. We have now a large digital media sector in the country with web publishing, 55 TV stations both national and regional and more than 170 radio stations. With the fibre optics and satellite, communication expanding the media's reach and influence is expected to increase. Considering the important role that media broadcasting can play in the country for disseminating information, education, entertainment and overall socio-economic development of the country, MCIT is committed to develop the sector with modern IC technologies and to provide a rational and effective framework to govern the establishment, ownership, control, management and delivery of information, entertainment and educational services to all Afghans through provision of efficient and reliable broadcasting.

During the last ten years, the mobile technology and internet diffusion in the country has been fast. Now nearly 19 million people subscribe to mobile phone services and nearly 2 million Afghans use internet. Parallel to the expansion of internet and mobile connectivity the social media, primarily Facebook, Twitter and Youtube, adoption and use is also increasing at an unprecedented pace. The social media development in the country is a welcome development to enhance the democratic and participatory processes in the country and bring in the youth and other social groups into the national mainstream.



Draft National ICT Policy- Afghanistan



The policy of MCIT for the digital media development is:

- MCIT will encourage the growth and development of broad-casting and media industry that is efficient, competitive and responsive to the needs of the people of Afghanistan.
- MCIT will create an enabling environment to increase investment into the broadcasting, increase competition and adoption of modern technologies to provide top rated services at affordable prices.
- MCIT will encourage the growth and development of digital social media in the country. Though, at the present time the social media platforms are mostly foreign based Government would encourage the local private companies, non-governmental organizations, academia and social groups to launch local social media vehicles and platforms to accelerate the growth of responsible social media in the country.

6.0 ICT Industry, Markets and Competition

From a meagre start in 2002 the ICT industry in Afghanistan has shown significant growth with 59 Information Technology (Hardware, Software, IT Service Companies) , 62 Internet Service Providers and 06 Telecom Operators constituting the ICT industry at present. The present ICT industry sector comprises telecom operators, Internet service providers, IT consulting companies, software companies, Hardware companies, networking companies, and some ICT trading firms. Even though there has been growth in the ICT industry during the last ten years, the growth is not commensurate with the potential opportunities that exist. If the ICT sector Vision 2022 is to be achieved and Afghanistan has to leapfrog to be a knowledge based society, in the next ten years the ICT industry has to grow and develop at a much faster rate than it has in the last ten years. ICT industry has to develop both as a supplier of ICT products and services to local market supporting the ICT led transformation of various social and economic sectors and as an industry sector in its own right. On both counts, the ICT industry development is important. Nurturing the young technical talent of the country is another area that would need serious considerations. This will include amongst others the technical and management



Draft National ICT Policy- Afghanistan



support to young technologists in the country who may wish to start their ICT based business ventures but may be handicapped on account of lack of capital and business knowhow. Local ICT enterprises would need to be incubated to maturity, provided with incentives and support to raise capital, manage business and market their products and services.

The main challenges to the development and growth of the ICT industry are lack of trained and professional manpower, high cost of support services, high cost of inputs, lack of infrastructure and investment. The basic economic development principle of the Government, as enshrined in the ANPDF, is development of private sector led market economy with the Government to create an enabling environment for industry to prosper. MCIT is pursuing the same strategy in the development of the ICT industry. In pursuance of this strategy, MCIT has taken various initiatives, including the *Technology and E-Government Complex Project* aimed at nurturing new ICT industries to maturity within a developed controlled environment and *Innovation support programme (ISP)*, which is aimed at supporting mobile technology innovation and diffusion.

The main tenets of the MCIT ICT Industry policy are:

- MCIT will promote ICT industry growth by encouraging private sector investment into this industry through the provision of a mix of fiscal and monetary incentives.
- MCIT will promote private sector and universities to form strong relations. It starts by placing start up incubation and Innovation Support Program centres in close proximity to major computer science faculties.
- MCIT will further promote the business-academia relationship by providing tax-relieves to businesses who have strong innovation-oriented relationships with universities.
-
- MCIT will encourage and promote development of local ICT industry and Special programme assistance would be designed to promote local hardware assembly units, business process outsourcing (BPO) companies and call centres to feed local and export markets.



Draft National ICT Policy- Afghanistan



- MCIT will encourage increased competition in the ICT markets of the country leading to a decrease in the cost of ICT products and services for the ultimate benefit of the consumers and expansion of the market for ICT products and services in the country.
- MCIT will offer preferential treatment to local ICT firms in Government contracts for ICT products and services.
- MCIT will develop and nurture a culture of ICT innovation and entrepreneurship through grants, prizes, technical support and guidance to the emerging ICT entrepreneurs in the country.
- MCIT will enact appropriate laws to protect the Intellectual Property Rights (IPR) of ICT innovators.
- MCIT will promote, encourage and support research and development activities in the areas of ICT and strengthen the national capability to develop research programs and locally relevant projects in the ICT field.
- MCIT in collaboration with NICTAA and all ICT Communities will identify such ICT product and or service areas in which the country could have natural advantage as possible ICT areas to be developed for export markets

7 ICT Knowledge, Skills and Education

MCIT recognises that lack of ICT awareness, knowledge and skills in the country is a serious constraint to the development of the ICT sector, and to the adoption and diffusion of ICT in the country. Lack of ICT awareness among the leaders and managers in Government, private sector and other organizations makes it difficult for these managers to take ICT related decisions optimally. Lack of ICT awareness among the general population is an even more serious constraint as out of ignorance and lack of knowledge large sections of the population think of ICT as tools for the educated and sophisticated. ICT managers and technologists are also in short supply. A recent study by the *World Bank supported ICT Sector Project* has indicated that the demand for ICT professionals in the country is likely to triple from the current 88000 to



Draft National ICT Policy- Afghanistan



over 350000 by 2015. The same study has estimated 25 million ICT users in the country by 2015. Serious gaps have been identified between demand and supply of ICT skills at various levels in the country.

MCIT, private sector and educational institutions in the country have undertaken several initiatives to mitigate ICT skill shortage in the country. ICT academies have been established, graduate level courses in ICT are now being offered in almost all the universities in the country. Private institutes of technology have been established that offer short specialized courses in ICT as well as diploma and bachelor degree level education in ICT. It is however observed that at the present time there is no established standardised process for evaluation or certification of the different courses offered by various training centres. Access to Online and distance learning for ICT is also still limited. The training facilities are mostly located at few urban centres. In the government and private organizations, banks, trading firms and non-government organizations ICT training activities are now being undertaken to create awareness, impart basic ICT skills to users and to develop skills of technical ICT personnel. Though these activities are encouraging, the Government has to take strategic long-term action to accelerate the development of the ICT knowledge base and skills in the country and has to follow policies for ICT skill development across the country.

The ICT skill shortage has to be seen in its broader context. Hard choice has to be made between increased reliance on imported ICT human capital versus developing a local cadre of ICT experts. However, the country will continue to import specialised ICT skills in selected areas, the vast majority of ICT skills must be locally developed. ICT education at the primary and secondary school levels will be integrated into the normal education curriculum in parallel to the expansion of the ICT education at University and Technical Vocational levels to mitigate the ICT skill shortage in long run. In addition, there are opportunities for enhancing ICT skills though online education, life-long learning and distance education.

MCIT's policy for development of ICT Awareness, Knowledge and Skills will be as following:

- Recognizing the: wide spread lack of ICT awareness knowledge and skills in the country MCIT in association with civic society, business organizations and



Draft National ICT Policy- Afghanistan



non-governmental organizations will launch mass media campaigns to enhance ICT awareness among general population using all multimedia channels including TV, Radio, print and digital media.

- MCIT will develop and launch programmes for ICT education and awareness for Government, business and community leaders and managers. Government managers will be required to attend short duration mandatory formal ICT awareness courses.
- MCIT will expand the ICT education at the university level thorough expansion of the volume of enrolment for ICT degree courses, expansion of the ICT vocational training institutes and integration of ICT into the normal curriculum of primary and secondary schools, colleges and universities.
- MCIT will encourage universities, institutes and training institutes in the country to offer their courses in e-learning mode, using internet, computers and mobile as delivery system, in parallel with courses offered traditionally so that students and working individuals not capable of attending classes due to financial problems and time constraints can attend these courses online, at their convenience.
- MCIT will give special attention to providing new learning and ICT access opportunities for women and youth, the disabled and disadvantaged, particularly disenfranchised and illiterate people, in order to address social inequities in the country.
- MCIT in association with ITRCA, NICTAA, NITPAA, InternetSociety Afghanistan and all other ICT Communities and universities and ICT related academic institutions; will develop standards for examination and evaluation of the quality of ICT courses offered by the various ICT training institutions in the country. All ICT training institutes in the country will be required to follow these standards.
- MCIT in collaboration with the private sector will develop and put in place appropriately designed service categories for different cadres of ICT personnel and define minimum salary scales for each category in order to secure their retention and better on the job performance.



Draft National ICT Policy- Afghanistan



- MCIT in collaboration with the private sector, universities and ICT training institutes will develop and implement internship schemes, so that ICT students will earn while they learn.
- MCIT will encourage lifelong learning by providing ICT related training and skill enhancement opportunities to its employees.
- MCIT will develop e-courses on various ICT related subjects integrated with appropriate Learning Management System and encourage its employees to complete the courses online at their convenience. Private sector organizations will be encouraged to do likewise.
- MCIT will encourage the universities and ICT related institutions of higher learning to collaborate on developing digital learning content in Dari and Pashtu on ICT subjects and establish a national ICT e-library accessible to all students and individuals those are interested in ICT.

8. Bridging Digital Gap

Digital Divide or Gap is commonly referred to as lack of infrastructure for communication and accessibility to telecommunication and internet so that some sections of the population are left out of the digital revolution that is globally sweeping across. In the case of Afghanistan, the Digital Gap challenge has to be seen in a much broader perspective. Digital Gap in Afghanistan is multidimensional. On one hand, we have a large section of the population that is remotely located where the telecommunication, internet and accessibility infrastructure is non-existent and is not yet of a standard that would enable all services to be delivered. On the other hand we have large sections of population, who are excluded from the digital mainstream, due to other constraints like lack of knowledge on how to make effective use of ICT and internet, cultural constraints that do not allow women and girls to use computers and internet, financial constraints that prevent some sections with low income to spare money for computers or internet time, lack of applications and contents in local languages and of local relevance that discourages many not to go onto the ICT/ internet bandwagon, a large section of the population (more than half in rural areas) are illiterate, defined as people who can neither read nor write any language- making it difficult for them to participate in the ICT revolution and lastly we have a large



Draft National ICT Policy- Afghanistan



population of weakly abled or disabled people. The issues of digital divide cut across all strategic ICT focus areas. These have been broadly considered in this document under various strategic and policy areas mentioned above. However, the challenges of digital divide are very significant to warrant policies that are specifically targeted to mitigate them.

MCIT's policies on eradication of Digital Divide are as follows:

- In accordance with its *Universal Service Policy* to reach Government services to every citizen of Afghanistan. MCIT will ensure that all citizens of Afghanistan participate in the digital revolution irrespective of their location, social status, gender, income, education and cultural background.
- Government recognises that due to traditional and cultural issues women have not had opportunities to fully participate in the social, economic and political life of the country. Women have also had limited opportunities for education, especially in fields considered as too technical and traditionally radical. MCIT will increase the enrolment of the women in ICT courses of Universities and colleges and increase their employment in the ICT technical and management areas, in the public service.
- MCIT will encourage the private sector and non-governmental organizations to increase employment of women in the ICT area both at technical and management levels.
- MCIT recognises that provision of telecommunication and ICT infrastructure alone is not enough for rural population to take advantage of the ICT potential for development of rural areas. MCIT will take a holistic approach to ICT as a tool for delivery of public services and development of rural areas. ICT infrastructure and services for rural areas will be designed and developed in parallel to other non ICT inputs those may be required to make ICT as productive and usable in such rural communities.
- MCIT in collaboration with civic society will encourage rural and disadvantaged communities to adopt ICT in areas where its impact for the betterment of the lives of these communities would be maximum.



Draft National ICT Policy- Afghanistan



- MCIT will ensure that the ICT based public services are provided in the local languages, user interfaces with Government technical systems are friendly and are closely aligned with the user needs.
- MCIT will develop and deploy ICT service delivery systems keeping in mind the needs of special population groups like youth, old persons, physically and visually disadvantaged persons.
- In parallel to its policy to eradicate wide illiteracy in the country MCIT will develop systems for delivery of ICT based public service systems, which provide for voice based services like IVR based services on mobile phones and would allow for assistance to users by Government staff, in areas and communities where it is required.

9.0 Laws and Regulations

The Telecom and Internet Policy 2003 and the supporting Telecom Law has been the main instruments for regulating the ICT sector. As the ICT penetration and adoption is picking up both within the Government and within the society, at large new sets of laws have been drafted coming under what is termed as the ICT law. The ICT Law of Afghanistan is now in at the final stage of enactment. The draft ICT law is aimed at facilitating E-Afghanistan programme of MCIT. The aim of the Law is to facilitate and regulate electronic communications and transactions; to provide for protection of consumers and personal data in the electronic environment, to set out the framework for domain name registration and regulation, the framework for content regulation, to prevent abuse of information systems and encourage the use of e-government services. Laws and regulations in the use ICT in the Government and society must support ICT infrastructure covering the Telecom and internet laws and regulations. In this regard, MCIT's policy would be as following:

- MCIT will design and implement e-government and e-administration regulations in the form of laws, government decrees, ministerial or municipal decrees in order to establish necessary legal environment for adoption of technology in the Government and delivery and use of E-Services.



Draft National ICT Policy- Afghanistan

- Appropriate Monitoring and Evaluation system will be developed and implemented in the various agencies of MCIT to continually monitor and regulate the development of the E-Government and attainment of E-Government policy goals of MCIT.
- MCIT recognises that adoption of ICT by businesses is crucial for raising Afghanistan's productivity potential and future growth prospects. The adoption of ICT and development of e-commerce will stimulate micro level efficiency and thereby the economy of the country as a whole is expected to get a boost. Appropriate regulatory system will be developed and implemented across the Government MCIT to monitor E-business and commerce in the country.
- The MCIT will develop and implement appropriate regulations, in order to monitor the use of ICT in education, health, agriculture and other major ICT applications' areas.
- Appropriate mechanism and laws will be developed and implemented to monitor, evaluate and regulate the uptake and penetration of ICT in the society at the level of households in the rural and urban areas as well as overall social and economic impact of ICT.

9. Financing and Budgeting

The implementation of the above mentioned ICT sector policy will require investment that can run into billions of Afghan currency. ICT sector has been an important contributor and the largest recipient of the foreign direct investment (FDI). It is estimated that the ICT sector has so far attracted FDI to the tune of close to US dollar 2 billion. As the ICT sector grows, the tax receipts from the sector would correspondingly grow. MCIT's strategy for financing the ICT sector development would involve expansion of the ICT sector and therefore tax receipts from the sector, expansion of the FDI, better financial management and optimization, monitoring and financial controls, enhancement of private public partnership and fund raising from international philanthropic and aid organizations and expansion of support from international development organizations.

MCIT's Policy on ICT financing and budgeting would be as following:



Draft National ICT Policy- Afghanistan



- MCIT will adopt the principle of *minimization of the cost of ownership* in evaluating all its ICT investment projects.
- MCIT will adopt a holistic and enterprise wide ICT investment planning and control process thereby avoid duplication and wasted investments.
- MCIT will create a conducive investment environment in order to attract foreign direct investment into the ICT sector.
- MCIT will encourage Afghan diaspora to invest in the ICT and ICT related sectors of the economy.
- MCIT will encourage private public partnership in expanding investments into the ICT sector. Many of the strategic projects would be left for the private sector to undertake under supervision of or in partnership with the Government. In principle, the growth of the ICT in the country would be private sector led within the overall policies and guidelines of MCIT.
- MCIT will seek expanded donor support and attract major international ICT companies to promote ICT infrastructure, ICT services and seek financial assistance of international development and philanthropic organizations for projects that would have considerable social and economic impact.