

# Tunisia ICT Status and International Cooperation in ICT Development

## Introduction

International cooperation among all stakeholders is vital for ICT development, the strengthening of international cooperation and solidarity aimed at enabling all countries to develop ICT infrastructure and ICT-enabled services that are viable and competitive at national and international levels.

Economic and financial liberalization and the rapid application of information and communication technology (ICT) are pushing economic, trade and financial relations in different regions closer. Rather than being contrasting trends, globalization and regional cooperation can and should proceed simultaneously.

## 1. Tunisia ICT Status

Tunisia has embarked, for the past decade, on a vast program to make the most of the prospects offered by the ICTs for the social and economic development of our country. The ICT growth was 22% in 2004; five times the National economic growth. An ambitious strategy for the development of ICTs was established, based on the following main lines:

- 1- The establishment of the legal and statutory framework to support the development and use of ICTs.
- 2- The construction of infrastructures for the knowledge economy and the resulting creation of new employment opportunities.
- 3- The establishment of a capacity-building plan consisting essentially in upgrading the system of education and training and in

developing specialized and non-specialized human resources in the field of ICTs;

4- The promotion of the private sector in the ICTs field.

Since 1999, Tunisia has gone into a process of updating the legal framework about ICTs. Tunisia has now an advanced and comprehensive legal ICT framework:

- ☑ Promulgation in 2001 of a new telecommunication act and the creation of National Regulation Authority. Two private operators received until now licenses for a mobile phone and for data transmission via Vsat technology. Other projects are in process about a data transmission license and the choice of a strategic partner for Tunisia Telecom ,
- ☑ adoption in 2000 of a law regarding electronic commerce and exchange with the establishment of a National Agency for electronic certification as a Root for a digital signature infrastructure,
- ☑ Tunisian legislation about IPR is full compliant with WIPO recommendations
- ☑ adoption in 2004 of a law about privacy protection,
- ☑ promulgation in 2004 of a law about information security and the creation of a National Agency on Information Security,

This legal framework has helped develop the Tunisian infrastructures:

☑ Concerning Fixed line phones: A 12% penetration rate was achieved in 2004, which is expected to reach 24% by 2009. The total number of subscribers is 1250000, 34800 of them in rural areas. Finally, the service is ensured by 2 operators, PSTN – Tunis telecom- and Vsat –Divona-

☑ Regarding the Mobile phone network: penetration rate was 36% in 2004, and has reached 56% in 2006. The market is shared by Tunisie Telecom and Tunisiana who offer GPRS and MMS services since 2005. Furthermore 3G Trial Networks (UMTS) were set up in 2005 for the second phase of the WSIS covering Tunis, Hammamet and Sousse.

☑ As for the Data transmission: many technologies are available such as ADSL, Frame relay, ISDN, LS, ...International bandwidth supplied by Tunisie Telecom is 900 Mbits/s and expected to reach 2,5 Gbits/s by 2009. Internet services and supplied by 12 Internet Service Providers:

- 7 community ISP (Health, resarch, education, universities...)
- 5 general ISP

Aware of the pivotal role of the Internet in the process of economic and social development, Tunisia is making an all-out effort to promote access to the Internet for all and everywhere. Accordingly, all the institutions of secondary and higher education and of scientific research have been connected to the web. The connection of all basic education schools and all public libraries, which has been underway for the past three years, will be completed by the year 2006. Moreover, the availability of an average of one computer per classroom at primary and secondary school levels is expected to be achieved by the end of 2009.

University and secondary education curricula have been reviewed to include instruction in

ICTs and take advantage of the opportunities they provide in the acquisition of knowledge, particularly through the e-learning approach around the concept of virtual schools and universities.

Access to the Internet across the territory and for all communities is currently provided, as a first step, through 380 community-based public facilities. A new program has been decided for the establishment, by the year 2009, of a public communal facility in each and every village. We expect to reach 5 millions internet users by 2009 so about 50% of the population.

Aware of the need to integrate children at an early age into the ICT culture, Tunisia has undertaken, since 1996, a program for the development of regional public information centres for children and information centres for disabled children.

The family also, as the main unit of Tunisian society, has been involved within this plan, through the establishment, since 2001, of a national “family computer” program which enables low-income families to obtain a computer under easy financing terms, and to have access to the Internet at a symbolic cost.

Being a country with limited natural resources, Tunisia has focused its efforts, over the past fifty years, on its human capital and the capacity-building process. Accordingly, investments in education account for nearly 7% of the GDP, and 25% of the population is enrolled in schools and universities. The share of research and development investments in the GDP has more than doubled in five years to attain 1% in 2004. It will represent 1.25% of the GDP in 2009.

Through the institution of compulsory schooling for six-year-olds, the percentage of children of that age-group in full-time education has increased to 99%. The illiteracy rate in the 10-

29 age brackets has been reduced from over 50% in the early 1960s to less than 7% at present. The total number of university students has multiplied by 40 between the 1960's and now. Around 10% of those students are pursuing diploma-and degree- awarding education in ICTs with an enrolment of the order of 24,000. To prevent the risk of exclusion and marginalization at the level of other categories of the population, Tunisia has adopted a program of adult and life-long education.

In this context of total commitment to the modernization of our economy and to the utilization of ICTs to promote its development and diversification, a national program has been put in place, aimed at bringing about a new dynamics for the establishment of ICT-producing and innovating enterprises. The best illustration of Tunisia's successful experience in ICT sector, is the telecommunications technology park of "El Ghazela" which is one of the biggest and rare projects in Africa and Middle East. The project aims at implementing a policy of operational, scientific and academic partnership, with the assistance of private operators acting in the field of telecommunications.

A plan for the creation of business incubators at the level of university education with a technological component has also been initiated to enable young people with innovative ideas or products to finalize their projects and establish their own enterprises. Targeted financing mechanisms particularly through risk capital, have also been set up to accompany the enthusiasm of young ICT project promoters.

Within the same framework, it has been decided to launch a program for the installation of a cyber-park network in each Governorate by the year 2009 to enable young Tunisian experts to

offer their cyber-services and exercise new trades.

Thus it comes no surprise, that Tunisia is today the most advanced country in its region regarding ICT's development . According to a recently issued report by the World Economic Forum in Davos, Tunisia was ranked first in Africa and 31st among 104 Countries considered as the most developed in ICT sector, as regards the Networked Readiness Index Rankings. Tunisia's ranking was even better than some developed Countries in Europe and some BRIC countries.

## **2. International Cooperation**

During the last few years, Tunisia strengthened efforts to integrate the Knowledge Globalization, tightening ties with regional groups and International Organisations acting in the ICT field like :

- The United Nations Organization
- International Telecommunication Union
- Universal Postal Union
- European Union
- The World Trade Organization
- The World Bank
- The Arab League
- Arab Maghreb Union
- RASCOM
- PAPU
- Community of Sahel and Sahara States...

Tunisia acquired a rich experience in telecommunication, postal services, implementation and management of technological parks.. and has engaged in helping Less Developed Countries reduce the digital divide separating them from the rest of the world. Tunisia has become an ICT Regional Center in the region. In this context Dr. Jerome

Karle, Nobel Laureate said "I believe that the appropriate role for Tunisia in the continuing development of the information society in Africa should be the role of leadership".

The favourable geo-strategic position in Africa and the Middle East, combined with expertise and know-how is helping it become a regional Hub bridging the gap between Developed Countries and LDCs, and responding to LDCs specific needs in technology transfer, training, and development.

A triangular cooperation has been initiated between Tunisia, the African countries and the European Union, Japan, Korea and Canada.

### **3. Tunisia Korea Cooperation**

Korea succeeded in accumulating within short time world class technologies and know-how, a fact proven by the country's ranking 9th under the world Economic Forum's Technology index. Korea is also n 1 in the world in terms of broadband internet service penetration rate, CDMA handset market dominance, TFT-LCD's market dominance as well as several other IT products. Korea should be also proud to have the world highest subscriptions for internet services. On the other hand, Korea ICT's industry is placing itself as the new engine of the Korean economy, contributing up to 13% of the country's GDP.

Korea is also seen worldwide as a leader and a focal point of knowledge, contributing substantially in scientific researches and innovation, especially in high technologies, including ICT's and biotechnology, in which Korean researchers and scientists have a big word to say

Tunisia is keen to take benefit from the rich and successful experience of Korea in ICT's sector. In this respect, Tunisian Minister of Communications Technologies, Mr. Montasser Ouaili, paid recently three visits to Korea, respectively on November 2004 and on May 2005 and 2006. During these visits, the Tunisian Minister of Communications Technologies met with the Korean Minister of Communication and Information H.E Roh Jun-Hyong as well as with several CEO's and business executives of the Korean ICT's companies. H.E also met with Presidents of several Agencies and Institutes operating in ICT sector, including International Cooperation Agency for Korea IT, KADO and DGK-KTC.

A Memorandums Of Understanding has been signed in order to reinforce bilateral cooperation, enhance cooperation between private sector and research and training centres. A s well as the creation of a work team charged with the elaboration of a cooperation program and ensure its follow up.

### **4. Bilateral cooperation cases studies**

#### **a) *Project 09-TUN/98/01 (ITU-CERT)***

The objectives of this project were to bring to the CERT the necessary means :

1. To achieve the missions which was allotted to him on the level of: Equipment plan: By achieving Studies related to the national networks deployment, Technical acceptance of equipments and equipments type approval:

Strategic Plan : Elaborating strategic studies related to planification and direct decision makers to the appropriate technologies

National Quality program: Assisting public and private sector in the set up of their quality programs.

2. To be a reference center for studies in the regional scale

The evaluation of this project outcome shows its success in fact :

- ☑ Set Up of a type approval lab
- ☑ The CERT has developed necessary Expertise to ensure :
  - Studies for all operators and all technologies
  - Planning and dimensioning of GSM Networks
  - Evaluation of QoS for GSM networks
  - Strategic studies such as Voice over IP technologies, Maghrebin Telecommunication satellite and Internet Qos.
  - Piloting the project of installation of the Tunisian experimental mobile third generation network UMTS
  - Preparation of Major international events
- ☑ The CERT becomes a reference center for studies in the regional scale and cooperate with several African governments such as Mali, Tchad, Senegal, congo... The Cert is also a Node of the excellence center for the arab region

**b) Project between CERT (Tunisia) – DGACPT (Republic of Congo)**

The first phase of this project was the elaboration of the new national frequency plan for the digital radio- broadcasting (bands III, IV and V) in accordance with the recommendations of the intermediary session of the regional conference about radio-communications (Geneva 2004). It has been achieved with success. And has thus enabled Congo to assert its right to manage this rare resource.

The second phase of this project which is in process consist on the Set up of a system of

automated management and control of the radioelectric spectrum.

In the optic of a win to win partnership, the CERT regularly hosts Congolese students for trainings in order to form them for the technologies deployed for this project.

## **5. International cooperation and the WSIS**

Aware of the role of ICT's in reducing disparities between developed and developing countries in terms of development and access to knowledge, Tunisia proposed in 1998 in Minneapolis the holding of a World Summit on the Information Society; this proposal was adopted by the International Telecommunications Union (ITU) plenipotentiary conference.

In 2003, the UN Organisation entrusted the ITU with the organisation of a Summit on the Information Society in two phases : the first in Geneva, the second in Tunis.

The WSIS is without doubt the best example of organized and efficient international cooperation. The importance of cooperation has been outlined by its omnipresence in the documents presented in both phases of the Summit:

**a) Geneva Plan of Action: Document WSIS-03/GENEVA/DOC/5-E**

*Cooperation was used 26 times and presented under C11 "International cooperation among all stakeholders is vital in implementation of this plan of action and needs to be strengthened with a view to promoting universal access and bridging the digital divide, inter alia, by provision of means of implementation.*

*a) Governments of developing countries should raise the relative priority of ICT projects in requests for international cooperation and assistance on infrastructure development projects from developed countries and international financial organizations.*

*b) Within the context of the UN's Global Compact and building upon the United Nations Millennium Declaration, build on and accelerate public-private partnerships, focusing on the use of ICT in development.*

*c) Invite international and regional organizations to mainstream ICTs in their work programmes and to assist all levels of developing countries, to be involved in the preparation and implementation of national action plans to support the fulfilment of the goals indicated in the declaration of principles and in this Plan of Action, taking into account the importance of regional initiatives".*

**b) Declaration of Principles Document WSIS-03/GENEVA/DOC/4-E**

*60. We aim at making full use of the opportunities offered by ICTs in our efforts to reach the internationally agreed development goals, including those contained in the Millennium Declaration, ...*

*61. In order to build an inclusive global Information Society,....Therefore, while appreciating ongoing ICT cooperation through various mechanisms, we invite all stakeholders to commit to the "Digital Solidarity Agenda" set forth in the Plan of Action. ...*

*62. Regional integration contributes to the development of the global Information Society ...*

*63. We resolve to assist developing countries, LDCs and countries with economies in transition through the mobilization from all sources of financing...*

*64. The core competences of the International Telecommunication Union (ITU) in the fields of ICTs—assistance in bridging the digital divide, international and regional cooperation ...*

"Cooperation" was used 13 times.

**d) Tunis Agenda for the Information Society : Document: WSIS-05/TUNIS/DOC/6(Rev.1)-E**

"Cooperation" was used 28 times in paragraphs 9,18,27,40,41,45,47,51,53,54,69,71,83,86,88,90, 91 and 119.

**e) Tunis Commitment : Document WSIS-05/TUNIS/DOC/7 -E**

*9. We reaffirm our resolution in the quest to ensure that everyone can benefit from the opportunities that ICTs can offer, by recalling that governments, as well as private sector, civil society and the United Nations and other international organizations*

*16. We further commit ourselves to evaluate and follow up progress in bridging the digital divide... including the Millennium Development Goals, and to assess the effectiveness of investment and international cooperation efforts in building the Information Society.*

*30. Recognizing that disaster mitigation can significantly support efforts to bring about sustainable development and help in poverty reduction, we reaffirm our commitment to leveraging ICT capabilities and potential through fostering and strengthening cooperation at the national, regional, and international levels...*

*31. We commit ourselves to work together towards the implementation of the Digital Solidarity Agenda, as agreed in paragraph 27 of the Geneva Plan of Action...*

*33. We acknowledge that, while technical cooperation can help, capacity building at all levels is needed to ensure that the required institutional and individual expertise is available.*

*37. We are convinced that our goals can be accomplished through the involvement, cooperation and partnership of governments and other stakeholders.....*

"Cooperation" was used 7 times

**6. Regional cooperation in globalization Era**

Economic and financial liberalization and the rapid application of information and communication technology (ICT) are pushing economic, trade and financial relations in African region closer. Rather than being contrasting trends, globalization and regional cooperation can and should proceed simultaneously. Better management of globalization requires better management of regional cooperation, with national policies aligned to these processes to maximize benefits.

There are a wide variety of economic and non-economic reasons for a horizontal cooperation among countries in Africa.

- ☑ The increasing digital divide,
- ☑ The unsatisfied demand for ICT services,
- ☑ The capacity limitations of individual countries.

A horizontal cooperation makes capitalizing on combined productive capacity, economies of scale and scope possible. It makes dealing with regional disparity easier

#### ***a) Regional cooperation in Africa:***

Most of the ICT cooperation in Africa takes place at:

1. the level of Pan African bodies like the African Development Bank (ADB), African Union (AU), African Telecommunications Union (ATU) and Economic Commission for Africa (ECA). These focus largely on the upstream participation of African countries in global negotiations and the down-stream cooperation for the implementation of global regimes/ideals at local levels
2. regional initiatives such as the Regional African Satellite Communication (RASCOM), the New Partnership for African Development (NEPAD) and the E-Africa Commission that aim towards promoting horizontal cooperation for the expansion of ICTs infrastructure and applications through national and international investments

3. regional Economic Communities (RECs) like the Common Market for Eastern and Southern Africa (COMESA), the Inter-Governmental Authority on Development (IGAD), the East African Community (EAC), the Economic Community of West African States (ECOWAS), the Economic Community for Central African States (CEMAC), the Indian Ocean Commission (IOC), the South African Development Community (SADC) and the Arab Maghreb Union (AMU) that focus in all aspects of cooperation (horizontal, upstream and downstream). These often focus on trade facilitation including creation of monetary unions, modernization of customs, and simplification of export and import procedures. The regional association for regulators attached to these RECs such as the East African Associations for Regulators, Post and Telecommunications Operators (EARPTO), the Telecommunication Regulators Association of Southern Africa (TRASA), the West African Telecommunications Regulators Association (WATRA), and a recently established Association of Regulators of Information Technology and Communications in East Africa (ARICEA) play a significant role in promoting cooperation and harmonization in the telecommunications and ICT sectors in their respective regions.

4. thematic institutions like the African Advanced Level Telecommunications Institute (AFRALTI) and L'Ecole Supérieure Multinationale des Télécommunications (ESMT) that promote regional cooperation in human resources development in the telecommunications field. There is also a thriving cooperation between Universities and research centres with the aim to build human resources specialized in a few ICT disciplines through horizontal cooperation among selected players.

Each of the above institutions creates different spheres for regional cooperation addressing different aspects of ICT development

### ***b) gaps for efficient regional cooperation***

The effort towards regional cooperation and integration in Africa has a fairly long history. From the Congo Basin Treaty the South African Customs Union in 1910, and to the treaty that established the African Union in 2001, the African continent has been consummated with regional cooperation and integration. In effect, the efforts to bring about regional cooperation and integration in Africa surpass that of any other regions. The World Bank estimates that there are more than 200 regional cooperation organizations in Africa of which more than 80% are inter-governmental..

As a result, there has been a proliferation of schemes operating within the same geographic area with overlapping membership and duplication of mandates, which made regional investment, trade and political and economic integration rather slow.

### ***c) Towards an efficient cooperation***

In order to achieve the expected goals of regional cooperation (south-south) it is necessary:

- implement appropriate regional, sub regional and national programs which can bring potential benefits to the members.
- strengthen intra regional and inter regional cooperation on various issues of interest through appropriate sub regional and regional programs and inter regional dialogue.
- establish closer relationships with funding agencies for resource mobilization and for developing joint programs.
- Set up mechanisms to harmonize actions between different regional cooperation institutions
- strengthen relationships with concerned UN agencies and other international,

regional and sub-regional organizations for achieving synergy of efforts.

### **Conclusion**

In the final analysis, South-South cooperation on issues related to technology cannot be isolated from the wider trends of globalization. Such cooperation should be designed as a strategic approach to leverage technical knowledge from wherever it is located, but not as an exclusive political device that could further isolate developing countries. In other words, South-South cooperation should start with basic units such as regional integration and then be extended to other developing countries as well as the global community.

These regions constitute another opportunity to extend international partnerships beyond national borders and allow for the establishment of genuine global technological communities. In the final analysis, it is this ability to leverage global resources that gives strategic meaning to South-South cooperation.