

Assessing ICT Policy Development and Implementation in Developing Countries: a Case Study from Morocco

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Abstract

In this paper, we present an analysis of the national Information and Communication Technologies Strategy in Morocco during the last 20 years, along with numbers and facts related to what has been achieved in the ground and what has not. Our aim is to demonstrate that, like Morocco, many developing countries invest a lot of money and time in elaborating ambitious and costly ICT strategies, consisting mainly of deploying sophisticated technologies and infrastructures, without any care to the actual impact of these technologies on the daily life of citizens and, more generally, on human and economic development. Some indications are provided in the conclusion of the paper as to how our countries could better use ICTs to serve the purpose of good governance.

Keywords:- ICT Strategies, Morocco, Developing Countries, Good Governance, eGovernment.

1. Introduction

In the last years, Morocco experienced an important development in the use and production of ICTs. This development has been fuelled by the active involvement of government in the continuous structuring, planning and promotion of diverse ICTs aspects, since the middle of 1990's. Despite being constrained by human development challenges and regional political uncertainty in today's "Arab Spring," Morocco has emerged as a trailblazer in certain areas with particularly impressive mobile broadband results. This would not have been possible without early visioning. Morocco was one of the first countries in the Middle East and North Africa region that institutionalized a regulatory environment for promoting competition in the telecom sector and as such made great strides in leveling the playing field for private operators to enter and succeed in the market (InfoDev 2011).

Globally, Morocco's national ICT strategies and plans were partially successful in achieving their goals. They certainly contributed to a clear improvement in the telecom field (regulations, infrastructure, accessibility, coverage, etc.) and in the IT market (cost, commerce, private sector applications & services, etc.). But, at the same time, they led to a number of failures, including unachieved/unimplemented programs, a huge budget, no local data/contents, very poor eGovernment applications, no social impacts, etc. By far, Morocco is not the worst case of developing/African countries in relation to the use and dissemination of technology, but it offers a good case study which is typical of the current state of many e-government projects in developing countries.

2. ICT Policy Development and Achievements Process in Morocco during the last 20 years

This section aims at providing a historical perspective on the ICTs development process in Morocco, including the goals, objectives and activities carried out within each of the 3 phases this country went through during the last 20 years.

2.1. The period of 1994-2000

This period corresponds to a pre-national strategy elaboration phase and mainly the liberalization of telecommunications and its related regulations and legislations. This phase was presented as a pre requisite for the country to elaborate a national ICT strategy, and the government worked on a number of prerequisite actions, including: (LLA 2004):

1. The promulgation of law (24-96) related to the liberalization of the telecoms market;
2. The creation ANRT (National Telecom Regulatory Agency), in 1997, with the mission of "regulating, monitoring/controlling, planning and promoting" the telecommunications sector in Morocco;
3. The creation SEPTI (State Secretariat for Post and Information Technology), in 1998, under the auspices of the Prime Minister. The main mission of SEPTI was to establish a national and integrated IT strategy to enable the entry of Morocco into the information society. SEPTI was also considered as the administrative governance body in charge of ICTs affairs;
4. The creation of the first private Telecommunications Company of, Ittissalt Al Maghrib/IAM, also known as the historical operator;
5. The creation of a state owned company "Poste-Maroc" to exclusively take care of postal services.

The most important achievements of this period are:

- The liberalization of the Telecommunications field, with more competitive costs, diversified services/usages, modern/performing infrastructure, better access, higher service quality, business opportunities for individuals and SMEs, etc.
- The launching of the first ICT Park in Morocco (Casablanca Techno-Park) which quickly became the "Place to be" for ICT Companies, and a huge area around it specialized in ICT oriented services and products.

2.2. The period of 2000-2008

Several dysfunctions appeared during and after the previous period, especially in relation to dependencies vis-à-vis the historical operator, the interconnection costs, the lack of market opportunities visibility, etc. Other important dysfunctions were related to the low performance of SEPTI (State Secretariat for Post and Information Technology) and its heavy bureaucracy, the lack of effective/sustainable political support and the weakness of ICT skills/profiles. These dysfunctions triggered a new governmental action under the framework of e-Maroc strategy with the main following main 5goals:

- **Enhance the regulatory/legal framework** (revisit law no. 24-96; Oblige telecom operators to regularly provide specific statistics and facts pertaining to the monitoring and planning of the activities; Better define the relations between the telecom operators and national telecom regulation agency -ANRT-, and; State access rules to the common infrastructure of the historical operator, etc.);
- **Reinforce the Moroccan telecoms network** (Deployment of optical fiber all over the country; Spread of the GSM and WiFi coverage in all urban agglomerations; Promotion of land line phones to prepare high speed ADSL connections; Anticipate/manage the congestion of the frequencies spectrum; Increase the global outgoing bandwidth; etc.).
- **Local contents development:** three areas were defined: eGovernment; Economic contents; and Social contents. Morocco central government defined e-Government as making available online administrative services in order to enrich the digital content and makes the administration interacting/serving the public in better ways, speedy manner, and with higher productivity. E-Maroc (e-Maroc 2010) aimed at developing an eGovernment interoperable platform to access/use/reuse all the
- data/information/services that were developed under its auspices based on a national protocol/standard for Electronic Data Exchange (EDI) and for e-Services (applications, formats, environment, etc.). Several eGovernment projects were planned for under e-Maroc strategy, including (eGov Committee 2006):
 - Idarati project which targeted the simplification of procedures and a better service quality for citizens, through the development of e-Services;
 - The national portal as a unique entry point to all administration services (data and processes) of e-Maroc strategy;
 - The interoperability center: To publish the national ICT standards/protocols; to share government platforms, applications and services; and to promote the use of open/free software;
 - etc.
 - **Accessibility to all:** e-Maroc set three main objectives (eGov Committee 2006):

- Promote and support Internet access through Communication and sensitization campaigns, very competitive rates; Cybercafés: good business opportunity, good incentives, etc.;
- Rural areas coverage through PACTE “Programmed Accès aux Télécoms” program (9200 remote areas hosting a total of 2 million inhabitants).
- Promote and support the equipment acquisition and usage through GENIE: A three-year program of \$11million aiming at providing schools (over 8,600 schools and high schools) with Internet-connected multimedia rooms by 2008. Infrastructure, teacher training, and the development of pedagogical content were part of this national program.
- **Trainings/preparations of ICTs skills**, capable of qualitatively and quantitatively fulfilling the needs of the ICTs Market and its future evolution, including basic ICT skills learning in schools curriculum: contents, applications, learning methods, etc.; Revisiting the engineering/ICT schools’ Curriculum to reflect the market needs; Creating/setting up new ICT schools in collaboration with the Industry; Developing packages to encourage continuing/adult education on ICTs and Training and “producing” of 11.500 ICT graduates per year (including at least 4700 engineers).

Globally, in terms of achievements, e-Maroc was a partial success. On the positive side we have (ANRT 2009) & (ITU 2011):

- A liberalized and attractive telecommunications market with a solid infrastructure;
- One of the highest broadband penetration rates in Africa and in the Arab Region, and among the lowest broadband prices. In 2008, over 99 per cent of all Internet subscribers had a high-speed connection (InfoDev 2011).
- A dynamic/competitive ICTs market: GSM, Internet, A/V, equipment, etc.
- Mobile Phones: 23.5 Millions (5th in Africa) representing a penetration rate of 75% for individuals and 66% for households (8th in Africa) (ITU 2011);
- Land lines: 3.1 Millions (a penetration rate of 33% for households) (ANRT 2011);
- PCs: for Businesses, one PC for every 2 employees, among which the half connected to the Internet. For households the penetration rate is 27% (ANRT 2011);
- Internet penetration rate: 3% for the whole population (or 0.8 Millions) and 14% for household (3rd in Africa) (ITU 2011);
- Cybercafés everywhere covering almost all population access needs;
- An almost universal coverage (including remote areas) (InfoDev 2011);
- Government Web Sites (mostly static/informational): 287 sites corresponding to 68% of public offices/entities having a web page (ANRT 2011);
- A few good success stories including eFez project, e-Customs, Maroc Tele Commerce,

CNSS/DAMANCOM, e-Budget, digital passport, digital driving license, etc.

On the negative side, we can mention:

- The high cost/budget of e-Maroc projects and the opacity of its management;
- The high turnover in the ministries responsible for ICT policy;
- The low number (or even non-existence) of e-services and transactional portals. The official number of e-services (286 among which 74 are interactional) announced by the government is far from being accurate!
- The lack of local contents and, approximatively, 90% of Internet traffic involves web resources located outside Morocco;
- The national Interoperability platform of e-Government has simply not been developed;
- No sharing of resources, data, skills, etc.;
- Many projects were simply not implemented, including the e-Health, e-Wilaya, e-Invest, Cyberbases, CACs, e-Procurement, e-Tenders, DGCL, etc. Other projects were weakly implemented including, e-Justice, GENIE, Regional Portals, e-Foncier, Damancom, etc.;
- The performance in the vital social sector (education, health, justice, public administration) is worse: weak connectivity/equipment, no contents, no applications, no localization, no educational approach, etc.;
- Training poorly conducted and led to low or no results and/or impacts;
- E-commerce is barely developed in businesses, given the weak usage rate and the lack of interest by businesses. Only 5% of Moroccan businesses used online purchasing and 2% online vending. 38% of businesses with an access to the Internet consider that customers are not ready for e-Commerce and 37% believe their products are not suitable for e-commerce. As for individuals, the issue of payment security is often mentioned as a strong impediment to online trade by businesses (27%);
- The international ranking Morocco, related to e-Government and Digital readiness, was globally around 100.

2.3 The period of 2009-2013

Following the global achievements of e-Maroc, a radical rupture/shift in terms of ICT strategies/plans was recommended/operated as part of a new ICT national strategy: Maroc-Numeric 2013, which is to the second national ICT program in Morocco (eMaroc-2013 2011). This ambitious program built on the lessons learnt of the previous strategy and promotes ICTs as a national priority to ensure an economic growth and a sustainable societal development/evolution in a globalized world. Its global budget was 5MMDH (650 Million US\$ - a long term loan from the World Bank!)

Maroc-Numeric 2013 set 4 strategic priorities with 4 supporting measures:

- **Social transformation:** this priority consists of equipping with PCs and Internet connection as many families, individuals and companies as possible, through specific packages and promotional offers (for students, instructors, SMEs, etc.). As well, this priority targets the development of local content capable of raising the interest of Moroccan to use, produce and promote the Moroccan digital content.
- **Public services:** this Priority consists of promoting ICTs as a main tool to enhance good governance through the provision of eGovernment services (transactional) to citizens and businesses. This will impact the global ranking of Morocco in the different international e-Indexes. Another aim of this priority is to set up an efficient and empowered governance structure.
- **SME support:** his priority consists of promoting/supporting the automation/computerization of SMEs which will impact their organizational structure, their governance and their productivity. Specific programs will be designed to fund the equipment as well as the training/sensitization actions needed for an effective usage of ICTs.
- **ICT industry:** this priority consists of boosting the Moroccan ICT industry and consolidating the excellence niches including offshoring and delocalization. The specific actions of this Priority would address the funding schemes, the administrative processes, the logistics and research and innovation.

Further to the 4 strategic priorities of Maroc-Numeric, several supporting measures were also planned, including (eMaroc-2013 2011):

- **The Human Capital:** to set up a specific unit to govern/manage the Human Capital, elaborate customized training packages to fit the needs of the IT industry and, revise engineering schools curriculum to strengthen their link with the market;
- **The Digital Trust reinforcement:** through a new law, appropriate organizational structures and awareness about Cyber Security.

The most important achievements of this priority are:

- Around 8000 Engineer profiles per year, including formal/typical engineering + Science and Technology oriented degrees (www.omtic.gov.ma);
- Around 1000 ICT qualified teachers -academic and professional- (www.omtic.gov.ma);
- Creation of « Maroc Numeric Fund », with a capital of 100MDH, to support start-ups. So far, six start-ups have been funded, mainly in e-commerce, new media and e-tourism (www.mcinet.gov.ma);
- Rabat Techno-park (www.technopolis.ma) has been built (over 300 hectares!) and is now operational with world class infrastructures and services;

- An IT Cluster has been set-up in order to support the emerging of innovative projects with a high added value (www.mcinet.gov.ma).
- The development of offshoring in Morocco is progressing at fast pace, and the country is now regarded as the benchmark country for offshoring in the world. The offshoring has created, at the end of 2011, 52,000 jobs and produced a turnover of 7.6 billion dirham.

3. GLOBAL ANALYSIS OF ACHEIVEMENTS

There is no doubt that, over the last 20 years, Morocco made significant efforts in terms of planning, resources allocation, and political engagement to promote ICTs for good governance. Consequently, Morocco ranks top 5 in Africa in many ICT related areas, including (UN 2012) & (ITU 2011): Global Coverage; Speed and Bandwidth; Traffic (ongoing and outgoing); Number of households with high Speed

Connections; Regulations; Telecom market opportunities and added values. The contribution of ICTs in the global economy of Morocco is also considerable (ANRT 2011) & (eMaroc-2013 2011): a revenue of 50 Billion Moroccan Dirham (MAD) / or 6 Billion US\$; 7% of the GDP; 40,000 jobs; 2.7% of the global government annual budget; An average annual budget of 1 Billion MAD by the government to support ICTs support/promotion.

In contrast with the relative good performance in the telecommunication field and in the business of IT, there is still a huge deficiency in the use of ICT to promote and boost human and social development in Morocco, including:

- Very low performances in the vital social sectors including, weak connectivity/equipment, no contents, no e-services, no educational approach, etc.
- Lack of local contents, applications and services;
- Very low number of e-Government services and transactional portals;
- High rotation/change rate within the official governance/coordination structures; and its opacity;
- Insufficient ICT Skills (quality and quantity) at the managerial and operational levels.
- Low E-Transformation effect (through e-readiness, e-awareness and e-appropriation).

These deficiencies clearly impacted the recent ranking of Morocco in different international indexes (UN 2012): E-Government Development Index: 0.421 (world av. 0.497); Online Service Index: 0.248 (world av. 0.439); Infrastructure Index: 0.277 (world av. 0.326); Human Capital Index: 0.443 (world av. 0.721) and; e-Participation Index (for year 2010): 0.129 (world av. 0.205).

4. CONCLUSION AND DISCUSSION

It is important to recall that the word “Rupture” has officially emerged as a leitmotiv in the design of both e-

Maroc and Maroc-Numeric, in order to mark a clear separation between the different strategies and to implicitly recognize the failures. This suggests that the Government was not satisfied with what happened and simply wanted to “turn the page” recognizing somehow that there were some messes, here and there, in the whole strategy which did not allow to reach all the goals. So nothing related to “connecting”, synchronizing and smoothing the transition between strategies’ (in terms of results and impact) and looking at what went well and what did not, has been done. One important lesson learnt with respect to the ICT planning in Morocco is the inappropriateness of the “Rupture” and “Counter Reaction” management style in the design of national ICT strategies. It is important to recognize the failures and to identify/understand the mistakes in order not to perpetuate them. Government organizations face great levels of uncertainty in developing and providing e-government services because of the complexity of the technology, deeply entrenched organizational routines, and great diversity in the acceptance of technology by individuals. In the particular case of E-government systems, there is a need of much more than technical wizardry for developing and operating successful online services. This includes developing strategic approaches for organizing and assembling tangible resources such as computers and networks and intangible resources such as employee skills and knowledge and organizational processes. The Electronic Government for Developing Countries Report (ITU 2008) mentions: “Using ICT effectively to serve citizens online is a struggle for many governments, particularly in developing countries.” The issues of preparedness, adoption and use ICT infrastructure and tools are often called e-readiness (Hanna 2010). E-readiness assessments are performed to determine a country’s capacity to use and apply ICT. These are primarily focused on the extent to which governments have the capacity to implement applications and users have the capacity to take advantage of them. They help to determine which types of services can realistically be provided, which barriers are likely to be encountered, and which complementary initiatives are necessary to enhance impact and sustainability (Hanna 2010). (Guida & Crow 2009) listed other important governance-related factors that contribute to such failures such as: lack of transparency, weak citizen involvement, resistance by entrenched bureaucracy, corruption, regressive policy and regulatory environments and, Unskilled human resources. In order for developing countries to engage in a successful ICT4D Strategy they should consider best practices and lessons learnt of other countries. It is also important for them to consider the theoretical indications such as those of (InfoDec 2009), (Guida & Crow 2009) and (ITU 2008). Unfortunately, up until today, there are no signs the Moroccan Government (and so many other developing countries worldwide!) is aware of the importance of these issues in its global effort to use ICT to support a societal change and to boost businesses, economy and human development. Here follow some indications that, in our

view, could be considered to better seize the potential of ICTs in Morocco and in developing countries more generally:

- **e-Localization:** consists of developing Localized Applications, Data and Tools (LADT), needed by Moroccans in their daily life, both for work and leisure. The LADTs should be developed in the different languages of Morocco, including Arabic, Darija, Tamazight, Hassani, Chelha, Soussi, etc. They should focus, value and capitalize on the common social and cultural traits of Moroccans and their economic interests. Example of LADTs would include data of the national patrimony to be digitized, appropriate interfaces adapted to different regions of Morocco, applications for Souks (e-Souks), for land management and exploitation, for schools and hospitals, for mosques, for local sounds and music, for sport, etc. The potential is huge for LADTs in Morocco and the impact in terms of usage, appropriation, readiness and awareness is likely to be even larger. The LADTs could also include G2C applications (which we consider in this study rather under e-Government applications).
- **e-Education:** e-Education is the key for a successful integration of Morocco and Moroccans in the knowledge society. It is one of the main channels to build and consolidate the ICT awareness and readiness in any country. Unlike what has been planned for and done by the government so far, the focus should be more on the contents, the pedagogy, the trainers and the messages to be conveyed to apprentices, rather than on the equipment, cost and access. The later aspects are important but should be part of another priority.
- **e-Government:** This is a very important aspects for Morocco and Moroccans to benefit from the advantages of ICTs, and, at the same time, to raise their level of usage, appropriation, readiness and awareness. The impact of e-Government on good governance has been demonstrated in different studies and the debate is no more at this level but rather on how to take full benefit of this technology and what the highest priority fields are for a specific country. From this perspective, and in the case of Morocco, G2G infrastructure, data and applications are the pre requisite to enable any future e- application. This would include the digitization of all back office data in strategic areas including education, health, public administration, etc., open public data access, the elaboration of national standards for Electronic data exchange and applications interoperability, the development of an updated, “who’s who” contents, etc. Then would come after G2C regulations, applications and services, including those related to social sectors such as citizens’ record office, health, educations, etc.
- **ICT skills training:** The development of the ICT sector and the massive use/dissemination of its tools, in any country, require the availability, in quality and

quantity, of the right skills. Comparing to other countries, the number of trained skills per year in Morocco is very low (around 8000 all inclusive) and the needs are continuously increasing at the level of industry, services and public administration. Hence, it is mandatory to considerably increase the number of IT engineers, scientists and technicians through the consolidation and “update” of the current academic institutions, the creation of new ones and the elaboration of a more adapted and practical curricula to fulfill the current needs and to anticipate and accommodate the development of the Moroccan ICT market.

- The raise of awareness among the public at large about the importance of ICT and its potential, and;
- The consolidation of offshoring and outsourcing as a niche of Morocco in the ICT market worldwide.

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