Tunisian Tele-service: to a new model of high value added development

Mohamed BOUHARI¹, Rafika K.HABBOUCHI²

Abstract:

These recent years were marked by the development of new services, called tele-services provided remotely by using telecommunication modern networks. The tele-secretariat, telemarketing, tele-management (back office and accounting), call centers, remote software and financial services are examples of tele-services. The tele-services sector is considered as a source of job creation, as a transversal sector that intervenes in other sectors as textile, manufacturing industry, agriculture and as a strategic tool to strengthen the competitiveness of the economy. This new context includes several opportunities to developing countries. As for Tunisia, with an upgraded network, qualified human resources and with advantages in terms of labor costs, she accuses a delay in tele-services market. The experiences of countries leaders show that these ones have powerful infrastructure that allow Tunisia to be ranked among the welcoming destinations of offshore outsourcing.

The aim of this paper is to propose an alternative to join Tunisia to the leaders’ countries in the development of tele-services. What appended measures the change must there be in business? To answer these questions, we propose a digital model inspired from one adopted by several countries, as India, to success to create an internal market and references for technology and services of high added value. We show that investment in related activities less profitable and with less added value (as the distribution of computer equipment, the installation and maintenance of networks and the integration of software packages), the relatively less attractive incentive scheme, the lack of innovative projects and scope for building sites dedicated to off-shoring technology and low domestic demand explaining the delay of creating Tunisian references in terms of technologies and services at high added value. Take into account the Tunisian potentials, a strong involvement of private sector, public powers and a partnership university-company, become essential to improve the competitiveness and attractiveness of Tunisia as a reference offshore destination.

Key words: TIC, tele-services, offshoring, digital model, private/public powers.

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Introduction

These recent years, with the large scale expansion of the internet, online services, called tele-services\(^3\), take a new dimension building a branch of the tertiary sector.

Some countries, as India, China, Filipino, Malaysia, Russia, Romania, Vietnam and Mauritius, have done from tele-services an area of accelerated growth strategy based on export promotion. Experiments show that these countries, off shoring IT leaders have attached great importance to technological training. They began with the capture and processing of data. Subsequently, thanks to cheap labor in the areas of manufacturing engineering and advanced technology, they slipped to services with higher added value such as the outsourcing of business processes in finance and accounting, human resource management services and consulting services.

Tunisia early bet on telecommunications infrastructure, with significant investments in capacity and modernization. Skilled human resources and telecommunications infrastructure with fiber optics connecting the country to the world are advantages that allowed our country to stand first in Africa, the 35th largest in the world scale and be better rated as India (50th) and China (57)\(^4\). Despite its strengths, industrial companies are still in the observation phase and resources invested by the state they seem too far removed from their immediate concerns. Teleservices firms remain limited to call centers that form their own tele-actors.

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\(^3\) For this type of service, the provider is in the country of destination of outsourcing or off shoring, and the service consumer is in another country.

The objective of this study is to show how to make Tunisia a reference platform for activities tele-services and ICT offshore? How successful exporter of tele-services? What changes - required? What are the good practices that managers can apply?

While recognizing the diversity of experiences of the leading countries, this study attempts to answer the questions and to define a strategic framework for supporting Tunisian companies. We show that make Tunisia a hub for ICT and tele-services has real issues. To present some thoughts for a public policy and strategic directions for our country to become a global destination, we will put our analysis in a comparative approach. The construction of websites dedicated to technological offshoring, establishing innovative projects and the creation of a network of connections between related companies in the digital industry and universities form the employees in the sector brings our country to develop a competent workforce in certain occupations such as accountants or computer to meet global demand. The second section provides an overview of the market development of tele-services, its determinants and barriers. The third section explains this market development issues in Tunisia. In the last section, we present the strategic directions for our country to become a global destination.

2. Teleservices: Issues and attractive offshore destinations

Advances in telecommunications have facilitated the emergence of new services grouped under the term of tele-services. In this new context, so there is a sectoral shift from industry to services, the search for workforce skills and the available infrastructure, the emergence of technology park, tele-centers, cluster or digital districts (digital districts) and altered forms of international investment through direct subsidiaries in alliances and joint formulas. So the new integrated applications are developed and new relationships between companies and their subcontractors are introduced. Many companies have organized their activities in remote and landlocked locations by the use of outsourcing through tele-services.

2.1 Universal issues Teleservices

2.1.1 Types of tele-services
Teleservices, considered holders of investment, employment, growth and competitiveness\(^5\), designate any services via telecommunications tools. Tele-services, considered holders of investment, employment, growth and competitiveness, designate any services via telecommunications tools. They are a branch of the service with a set of activities ranging from outsourcing of IT services to other activities more or less complex. We retain two types of rankings.

The first classification distinguishes between functional departments, software programming services and real-time services (Table 1).

**Table 1: Examples of tele-services**

<table>
<thead>
<tr>
<th>Types of services</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional services / Servicing</td>
<td>translation, data entry, secretarial, accountancy</td>
</tr>
<tr>
<td>Software programming services</td>
<td>development of specific applications or generic applications</td>
</tr>
<tr>
<td>Real-time services</td>
<td>Call centers, security monitoring, remote monitoring of transport networks, remote reading.</td>
</tr>
</tbody>
</table>

Business needs are many. Some require teleservices computer-related TV as engineering, remote technical support, the TV software development and remote management of micro-computing equipment. Others need services that require a human presence and whose telecommunications network is the means of transportation in the image of the TV secretariat (telephone reception and permanence) and seize TV (TV typing, data entry). Other tele-services have become necessary and useful in routine management tasks such as accounting registration, accounting and financial analysis, direct marketing (mailing, phoning, direct sales), purchasing management, procurement and contracts, deadlines and recovery.

\(^5\) In developed countries, ICT is the main source of growth and jobs. In the United - States, the jobs created in the areas of computing, communications and entertainment are on the order of 400,000 in one year. In Europe, since the 80s, jobs related to software and computer tripled.
The second type of classification includes tele-services as a set of services according to their attractions. Companies appreciate the services bringing more value that depends on the possession of knowledge and their ability to adapt to new business emerged. We can distinguish two types:

- High-value Teleservices which include customized services: tele-working (contact center), electronic data processing, electronic payments and other similar activities, tele-entry, telemedicine, distance learning remote computer, remote archiving with document management, tele-translation, areas of expertise, engineering firms.

- Teleservices low value-added services include skilled standardized ready-to-wear that is - to - tell real time remote entry, remote home, remote secretarial, remote monitoring of transport networks, security monitoring, call centers).

Thousands of multinational call center operators (mail carriers, airlines, insurance companies, Internet service providers) work with labor costs and cheap telecommunications. For example, Amazon.com (Net of virtual libraries) in the hit parade of the most requested titles on the financial markets. Likewise an international translation agency developed in a small town can become a major employer in labor. It receives texts electronically from all over the world, oral or written, and needle, always electronically to translators and editors, also distributed worldwide.

2.1.2 Targeting Teleservices

For years, many countries have successfully launched in the promotion of ICT and teleservices industry. We can cite, among others, India, Malaysia, Brazil, Mexico and Mauritius.

India (the third largest reservoir engineers) and Mexico export activities related professional services, expertise in information systems projects, development of specific software, configuration software packages (software packages), the integration of complete systems to order and services related to the IT industry (networks, remote consultation and information databases, software packages lettings).
At the other extreme, Brazil, instead of exporting, built a software industry by maintaining a domestic market reserved for local businesses and preserving them from foreign competition. In Africa, Mauritius exports to specific teleservices Edition sector.

International outsourcing of computer services has seen significant progress. This new organization has led companies to outsource activities integrating into shoring and forming market segments. Outsourcing abroad grew strongly especially in low-cost countries (offshore outsourcing). Call centers are one of the areas of tele-services sector, which turned to offshore destinations to reduce costs. Also, the back office, accounting, IT services are Teleservices increasingly concerned. For example, the general company has outsourced some of its computer program development activities and accounting in China.

BNP Paribas has done the same for its software. Ireland has managed to get about 30% of all the activities of call centers from North America and serve the various European markets. Dublin est devenu la destination offshore des « call center » du monde entier.

The phenomenon of "software factory" allowed the technology firms to offshore software production activities in countries offering better price / quality than their country of origin.

2.2 Determinants of development of tele-services and attractiveness of offshore destinations:

In India, there are many factors behind its success. First, a national strategy shared by all the players introduced a technological culture which encouraged the use of tele-services. Then, lowering tariffs on computer hardware and software and the establishment of tax incentives for research and development have attracted innovative multinationals. Finally, better organizations of education and computer training with the

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1. These activities are: Tele-typing, data entry, remote translation, remote management and e-consultancy tele-services related to computers, the tele-engineering, technical hotline, the tele-development of software, remote installation, the tele-maintenance, smart microcomputer parks, remote backup and finally tele-archiving.
help of some foreign companies such as Siemens have given priority to the free flow of information. In Mexico, the relative success is due to a well-developed IT industry, a workforce that has reached critical mass, investment in IT to be competitive, and finally to a local market itself expanding. Other arguments fall of comparative advantage: an engineer costs 3 times less than in the US and skilled labor is 6 times less expensive.

The proximity of the United States and the establishment of the zone of North American free trade, NAFTA have facilitated the export of new materials and the displacement of some local manufacturers and software companies.

In industrialized countries, providing computer programming services cost between 50 and 200 US dollars per hour. While in the Asian countries, labor costs for the same type rating is lower. For example, in India the cost of labor is 15 to US $ 25 an hour. So the decline in labor costs is one of the primary motivations of off shoring tele-services. However, other factors may contribute to the profitability of a particular implementation of infrastructure quality, flexibility of labor, cultural and geographical proximity of the target market and finally the tax elements\(^7\). The common language and skilled labor attendance are reasons cited by companies that choose to outsource their services in one country over another.

The main exporting countries are tele-services English (India, Ireland, Caribbean) as the world’s leading outsourcing matters being the United States. The presence of a large Indian hand work of the United States in cutting-edge industries and trained in American universities has played a key role in the decision to outsource in this country and in the understanding of all the implications of implicit project in terms of quality and adaptation to the socio-cultural environment of the client.

Some studies show that the importance of these determinants varies depending on the type of project. According to the ANIMA study, if the project is a "high tech", the quality of the workforce is the main factor. But if the project is a "low tech", factors relating to labor costs and possibly financial aid take over. Likewise, the remuneration is variable because the concept of tele-service encompasses a large number of activities.

Between a telephone advisor responsible for informing the client, a specialist financial analyst on a product and a programmer working for a software company, the skills required and the wages are not the same.

\(^7\) The study of Ernst & Young in 2002.
Some outsourcers are looking for low cost of open hand and real estate, while others attach great importance to the quality and availability of labor. The decrease in labor costs is a necessary but not sufficient. The example of Ireland shows that relatively high wages are not deterrent to other factors such as the quality of labor, taxation, common language and culture.

2.3 Difficulties to the development of tele-services

ICTs offer SMEs the opportunity to benefit or offer existing remote services at lower cost and to offer new online services. However, these benefits are not observed by all companies. Organizational factors related to cost and information security (the emergence of IP network protocol) and transaction prevents companies to adopt ICT. Similarly, the lack of knowledge of the profitability of projects related to ICT and sometimes the high costs of Internet communications have hindered SME IT investment. Small businesses have not taken the initiative to outsource some work, such as billing and accounting, as they do not have a skilled workforce that exhibits more professional rigor. They estimate that the cost of commissioning new software is heavy, the time for change is long and the cost of monitoring applications is growing.

For example, the indirect costs associated with the implementation of software, training, processing procedures and upgrading of the information system, can be up to five times the price the software itself.

The study E-Business Watch (2006) shows that a minority of companies recognize ICT impact the revenue growth, the efficiency of their production processes and productivity (33%, 44% and 40% respectively of all sizes). To business confidence in e-business advance the size of their company as an explanatory factor (68%). For example, 75% of small businesses (1 to 10 employees) who are reluctant to advance e-business the size of their business as brake, against 36% of medium businesses. But other factors appear to have a significant importance: the cost of change (40% of companies of all sizes), complexity (35%) or safety concern (33%).

Within SMEs, the disparities in the integration of ICT are also a function of the size of companies. The core indicators of e-commerce across the 25 European countries show the considerable differences. 21% of medium-sized enterprises (50-249) account for 13% of their sales online against more than 1% of small businesses (between 10 and 49 employees) (source: Eurostat 2006). Were clear differences vary by sectors. 83
% for hospital activities, 38% of the power sector companies and 37% of construction companies have a website. It can be said that the strategies of ICT adoption are dependent on the size of firms and the characteristics of different sectors. Public action will therefore have to take into account all these reservations for effective policy.

3. Problems and tele-services development prospects in Tunisia:

Today, Tunisia is one of the best equipped in the country telecommunications infrastructure in Africa. These infrastructures have allowed the development of mobile telephony, broadband internet (very underdeveloped), intranet and extranet networks, the circulation of digital data and also the development of the media. In parallel with infrastructure networks deployed in the country, he creates a socio professional fabric very active area for deployment of ICT services and favorable human resources to the development of activities related to ICT.

To identify export conditions Teleservices, a number of specificities will be examined to illuminate the Tunisian case is-to-say, the assets of Tunisia ICT, constraints preventing the development of tele-services market and the classification of our country among others.

3.1 The assets of Tunisia ICT

The upgraded telecommunications network permits to foreign call centers installed in Tunisia to contact their customers in Europe and submit their tenders. In the area of infrastructure, Tunisia has made great efforts to increase Internet bandwidth (GB/s) to meet the needs of businesses, from 1.28 in 2006 to 60 in 2011. The opening of the telecommunications sector has resulted in the increased number of subscriptions to fixed and mobile telephone networks (in thousands) and total tele-density (mobile, fixed) per 100 inhabitants and strong growth of Internet access. The development of telecommunications in Tunisia was initially led by the incumbent Tunisie Telecom. Two mobile companies have been added.

As observed elsewhere, mobile telephony is the dominant means of communication, with coverage reaching more than 100% of the Tunisian population. The penetration of the internet is evolving but is still limited. In 2013, there are
approximately 1,410,568 subscribers. Tunisia thus finds itself ranked 66th in the world and 10th country in Africa in terms of numbers of users. She is also 10th in the Middle East North Africa (MENA) region in terms of the percentage of people using the Internet. According to the report of the Tunisian Institute Survey (2013, 5.81 million Tunisian Internet users, or 53% of the population of the country.

Table 2: Evolution of the main indicators of computerization

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2004</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total tele-density (mobile, fixed) per 100 inhabitants</td>
<td>49.5</td>
<td>126.9</td>
<td>128.7</td>
<td>125.4</td>
</tr>
<tr>
<td>Number of subscriptions to fixed and mobile telephone networks (in thousands)</td>
<td>493920</td>
<td>1360540</td>
<td>1394280</td>
<td>1373430</td>
</tr>
<tr>
<td>Number of subscriptions to Internet</td>
<td>121000</td>
<td>858247</td>
<td>1114273</td>
<td>1410568</td>
</tr>
<tr>
<td>Number of Internet subscriptions per 100 inhabitants</td>
<td>1.21</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Number of computers</td>
<td>568106*</td>
<td>1593183</td>
<td>1593183</td>
<td>1593183</td>
</tr>
<tr>
<td>Number of computers per 100 inhabitants</td>
<td>5.7*</td>
<td>14.9</td>
<td>16.3</td>
<td>18.3</td>
</tr>
</tbody>
</table>

* 2005

The number of ADSL subscriptions as shown in Table 3 continued to increase but with a penetration rate of 5% Tunisia remains far from the standards of developed countries (in France ADSL penetration rate is 38%).

3G has experienced since its launch in 2010, a dramatic change. This technology has become an alternative for areas not covered by fixed lines Tunisie Telecom which has enabled many cities within the country to enjoy the facts of the Internet.

Table 3: Evolution of ADSL subscriptions and 3G

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSL subscriptions</td>
<td>478457</td>
<td>541635</td>
<td>512385</td>
<td>518760</td>
</tr>
<tr>
<td>subscription Key 3G</td>
<td>92759</td>
<td>254145</td>
<td>557148</td>
<td>846372</td>
</tr>
</tbody>
</table>

Source: INT and ITU

Meanwhile, Tunisia has quality human resources and relatively abundant.

Table 4: Evolution of human resources

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2004</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students enrolled in courses of ICT.</td>
<td>33309</td>
<td>56385</td>
<td>54294</td>
</tr>
<tr>
<td>Percentage of students enrolled in courses ICT</td>
<td>10.7%</td>
<td>16.3%</td>
<td>------</td>
</tr>
</tbody>
</table>
Number of ICT graduates | 4524 | 15346 | 13008 |
Percentage of ICT graduates | 11.2% | 17.8% | ------- |

Source: Ministry of Information and Communication Technologies

Teleservices firms so there are operational resources with a short training. Nationalities mainly French and Italian companies operating in Tunisia provide remote services to demanding customers who are abroad.

Call center are new features that require multiple skills, mastery of language, ease of communication, teamwork and willingness to meet challenges. Ericson, Microsoft, Cisco, Teleperformance, Siemens, Sopa, Soft, Stream are the major foreign groups that have come to our country to develop their activities.

The leading role played by ICT in enhancing competitiveness, explains the importance given to these tools within the Upgrading Program (PMN). The introduction of ICT in enterprises is, in fact, eligible for benefits FODEC that supports and up to 50% of the cost of hardware and 70% software. Are well supported in this context, hardware and network installation, the development of specific applications and CAD / CAM equipment as well as a wide range of software⁸.

We quote also made efforts to establish telecenters or public Internet centers (publinets) in all regions and to generalize the computer in most educational institutions and vocational training centers.

Greater Tunis is a technology that is in three communities: "El Ghazala», "Charguia", and "Berges du Lac". The first is characterized by a high concentration of engineers, researchers and ICT technicians, the second is known for its manufacturing industrial base inherited from the 70s (development model based on import substitution) and the third s’ appears as the modern architecture of the site and marked the most luxurious of the capital.

Techno Park Elghazala, one of the largest technology parks in Africa, aims to spread the use of ICT in various economic sectors and promote the export of tele-services.

**Table 4: Evolution of the connection to computer networks**

<p>| Management software (CAPM, CMMS, CRM, HRM, ERP, cost accounting, business management) |
| Technical software (CAD / CAM / CAM, calculation software) |
| Collaborative and documentary programs (GED, Workflow, archiving) |
| The basic software (Network Management, Firewall) |</p>
<table>
<thead>
<tr>
<th>Indicators</th>
<th>2004</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Web sites</td>
<td>1775</td>
<td>-----</td>
<td>12454</td>
<td>12684</td>
</tr>
<tr>
<td>Companies located in the center Elghazala</td>
<td>34</td>
<td>95</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>Companies located in cyber parks</td>
<td>44</td>
<td>113</td>
<td>149</td>
<td>149</td>
</tr>
</tbody>
</table>

Tunisia has real potential to become a reference platform for ICT activities offshore. First, the geographical and cultural proximity to Europe and the presence of numerous foreign affiliates’ potential donor sequence can foster partnerships with our country.

Then, the low labor costs put Tunisia in a very good position compared to many African, European and American (wage costs is 400 DT / month). Finally, graduates (master’s and postgraduate level) generally accept tele-actors positions that do not require the level of qualification.

Despite these strengths, Tunisia has failed to create an internal market and references in technology and high value-added services like India and Ghana, for example, hosting, as of the year 2000 a society (ACS) specializes in the treatment remotely claims of a large insurance company established in several US states. Some factors are currently preventing the industry to use and take.

### 3.2 blocking factors

The regulatory framework within which operates the telecommunications sector in Tunisia is considered relatively open, characterized by maintaining a low number of restrictions impeding the commercial presence of foreign operators.

The main restrictions relate to the allocation of operating system licenses and discretion margins affecting their allocation as well as higher levels of costs and quality of services rather less European standards.

The main obstacles to the spread of broadband in many countries are the high cost of access and the limited nature of the network.

In 2010, Tunisia has an ICT Price Basket (IPB) equal to 2.5 % of average income, against 3% in Algeria, 3.5 % for Egypt and 9.6 % for Morocco. If these countries have relatively well-established telecommunications network, ICT prices remain quite high relative to developed countries with IPB less than 1% of average income.

An affordable access cost is important for wider dissemination and stimulate demand for ICT. This issue must be resolved through sound regulatory policies as the
price declines are often the result of a process of liberalization and increased competition that favor the spread of ICT (ITU, 2011).

The ITU report (2009) showed that the Tunisian companies are more equipped since at least 83.3% of them own and use a computer. 70.5% of them are connected to the Internet with a broadband connection, 66% are connected to the Internet through telephone lines.

This technology is being adopted by our companies’ saw its ease and cost that remain within reach of the majority of our businesses. Connections with ADSL lines are increasingly adopted by companies. Above 52% of companies have a LAN? 4.5% of companies are linked to the Internet by leased lines. Only 7.1% use X-25 type lines to connect to the Internet. In contrast, 5.4% of companies are connected by means of ISDN lines. This includes the fact that this technology is not yet widely adopted in Tunisia.

If companies are at least equipped with computers and connected to the Internet, their employees are not obviously all regular users. The workplace, 19.7% of employees regularly use a computer and 14.5% access the Internet.

At the level of the connection to computer networks, more than 30.5% of Tunisian companies have a website. They appear less on Web because in eight countries: Europe, over 75% of companies have a website: Sweden, Denmark, Finland, the Netherlands, Germany, Austria, Iceland and the United Kingdom.

A weakness has been registered at the extranet networks that provide external partners (suppliers, customers,) secure access to the corporate information system. Indeed, only 6.2% of companies have set up an extranet.

The connection patterns are limited, since 63.5% of companies use the Internet to send and receive emails and 29.9% of them use the Internet to make use of banking or liaise with public authorities. The amount of electronic transfers through the site CCP net is equal to 907 million dinars. 59.8% of companies practice business intelligence via the Internet (for information on goods and services). This practice is much more widespread in finance and IT. 5.3% of companies deliver products online. Other tools organizing information and communication of the business, such as in-house intranet and extranet with key partners are of the order of 33.2% and 10.3%. Analysts said the delay in terms of computerization of Tunisian companies are estimated 7 to 10 years, while the lagging technical capabilities of engineering department of ICT firms by international standards is estimated at 3 years. Several factors can explain this
situation. First, most of SME investments are buying computer equipment, while investment in specialist software supply chain management, workflow and ERP is still very limited. Second, the Tunisian companies are not yet used to equip hardware outside their core business since they do not come to relate the benefits from an IT investment and the time horizon these benefits with the corresponding costs. Third, for some companies, the computerization of their accounts decreases their liberties with the taxation rules and makes them more transparent. Fourth, in terms of financial incentives, Tunisia has supported the further implementation projects during the crucial period of the life of a company, while the bulk of the cost is paid from the start. It appears that all these factors have not allowed the successful integration of e-business and the creation of an internal market for ICT use.

Despite the high costs of the communication infrastructure, Tunisia is internationally recognized as having ICT and service sectors based on the relatively well-developed information technology (ADB, 2012b).

3.3 Ranking of Tunisia on the various ICT markets and tele-services:

Global Location Service has built an index that classifies attractive countries offshoring. This index includes the following three variables: the financial attractiveness of the country, the availability and skills of human resources and the business environment.

As shown in Table 4, on a global ranking of 50 countries, the index ranked Tunisia 17th place at the best destinations for offshoring with a total of 5.22. This ranking is the result of three indices: an index of financial attractiveness of 2.86 territories; an index of availability and human resources expertise of 0.91 and finally an environmental index 1.45 Affairs.

We understand better since taken place in the world rankings thanks to good telecommunications infrastructure, a favorable tax environment and a skilled workforce and multilingual. Also it is important to stress that Tunisia Telecom has played a key role in the national promotion of the sector strategy. He put at the disposal of companies providing tele-services all means and latest technologies at lower cost⁹. The contract between Teleperformance Tunisie Telecom and Development Telemarketing has led to

⁹ Call centers in Tunisia; telemarketing Tunisia www.tunisie-fr.com consulted on 10 February 2010.
increased contact centers whose services are divided into technical service, sales, claims, customer loyalty. The number of call centers has increased from 130 in 2007 to over 200 in 2011\textsuperscript{10}.

In Africa, Egypt is at the 6th place as a global offshoring destination on the market with a total of 5.64. This country has good human resources and an environment of very positive business investment. Ceci renforce l'idée qu'en matière d'offshoring, il est important de promouvoir les formations aux métiers de l'externalisation pour des ressources humaines compétentes. Morocco occupied 30th place in the international ranking of the best destinations for offshoring. The most developed activity remains telemarketing with over 250 companies.

Internationally, India, China and Malaysia are best placed in the highest scorers, respectively, 6.89; 6.29 and 5.98. These countries have adopted strategies with two common. The first is related to the ability of ICT to renew development strategies. These countries have started with activities such as tele-entry then they are referred to quite specific activities: accounting, distance education, data research, and software development. A skilled workforce and low wage is the second feature. The low costs of labor were considered to be the highlight of these destinations despite recording a significant increase in wages. Other countries, such as Thailand, Indonesia and the Philippines, Vietnam, position themselves as the leaders of the global outsourcing market in terms of the best destinations. To fully integrate new technologies and leveraging to occupy places of choice in the outsourcing market, these countries have reorganized their education systems, the business environment and legal framework.

Table 5: Ranking of Global Service Location (2009)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Countries</th>
<th>Financial attractiveness</th>
<th>Availability and human skills</th>
<th>Business environment</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>India</td>
<td>3.13</td>
<td>2.48</td>
<td>1.3</td>
<td>6.91</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>2.59</td>
<td>2.33</td>
<td>1.37</td>
<td>6.29</td>
</tr>
<tr>
<td>3</td>
<td>Malaysia</td>
<td>2.76</td>
<td>1.24</td>
<td>1.97</td>
<td>5.98</td>
</tr>
<tr>
<td>6</td>
<td>Egypt</td>
<td>3.07</td>
<td>1.2</td>
<td>1.37</td>
<td>5.64</td>
</tr>
<tr>
<td>17</td>
<td>Tunisia</td>
<td>2.86</td>
<td>0.91</td>
<td>1.45</td>
<td>5.22</td>
</tr>
<tr>
<td>30</td>
<td>Morocco</td>
<td>2.62</td>
<td>0.93</td>
<td>1.42</td>
<td>4.98</td>
</tr>
</tbody>
</table>

Source: A.T Kearney (2009)

\textsuperscript{10} For example, call centers, for their location; they are exempt from taxes on the first ten years.
Clearly make Tunisia a hub for ICT and tele-services have real issues.

4. Tunisian model favoring outsourcing: Territorial Anchoring and interaction

Depending on its strengths and while consolidating all his acquired (Techno park, technology parks, off shoring zone, etc.), Tunisia must launch innovative projects and scope for building sites dedicated to technological off shoring. We postulate that a digital district for the area is a potential for development activities teleservices depending on the quality of the actors' strategies. This plan is inspired ICT development models in several countries (eg India) have succeeded in creating benchmarks for technology and high value-added services. We will initially analyze the central assumptions of the model. In a second step, we will focus on the presentation of numerical districts that are generalized, detailing mechanisms. Finally, we discuss the sustainability of this model in the future by asking if Elghazala technopolis begins a trend towards what might be called a "digital district.

4.1. Objectives

This model aims to achieve the following objectives:

- Create more competitive tele-services companies. These companies must diversify their products and position on targeted activities. Products for companies are: accounting registration, accounting and financial analysis, direct marketing (mailing, phoning, direct sales), payroll management, purchasing management, procurement and contracts management deadlines...

1. Creating an internal market it is - to - say arouse tele-services demand by promoting market opportunities and partnership for the benefit of developers. Digital technologies have emerged to help the company. Messaging, mobile telephony, video conferencing, e-mail, e-commerce, WEB, are components that affected financial management, production processes (automation, industrial automation), secretariats (office) and exchanges between functions (local, integrated management, Electronic Data Interchange).

A company heavily leverages digital technology to enhance competitive advantage. The structure of this company perfectly illustrates the relationship
between the analysis of customer needs and technology decisions it entails. The production strategy to offer resellers a quality product at very competitive prices and in near real time. The company is still listening to these vendors to adapt its range to the requirements of end customers and develop new products. Include several technologies that must be implemented by a company to achieve this goal either in production or sale. The company must have a CNC machine NC ( ) driven by an optimization software. Production management identifies each product throughout the production chain to packaging; the system used is a bar code read by laser guns. The identification system also facilitates the process control: material flows and discharges identification (assignment of a cause), working machines and work of operators. Particular attention is given to on-time production and delivery. For sale, all exchanges related to production should be scanned and integrated into an Electronic Data Interchange (EDI) system.

4.1 The central assumptions of the model

The development of a model that encourages outsourcing requires a coherent strategic plan based on the following two assumptions:

The first hypothesis is the idea that we center the production capability on "niche" markets. So a development strategy based on specialization could help the sector to focus its resources on niche markets where significant benefits can be developed.

Note that the size of the Tunisian ICT companies does not allow the realization of large software development projects.

A digital district incorporating a wide range of business related to the ICT activity taking into account both the production of goods services increases the Tunisian potential to be a strategic investment location for major international software companies, one of driving forces of the process of internationalization of the ICT industry.

A district is a group of some enterprises (SMEs) with a specialty (business, profession or product) in a limited area. It has original features in different areas such as labor, culture, local social networks, factors related to the local economic environment (dynamism, specializations, and shared resources), the continuing value of the quality of training and experience of the workforce.
By not want to reproduce an expensive western model and slow to develop, many emerging countries have built "cyber cities" such as Cyber city Mauritius, Internet City Dubai Internet City and the Multimedia Super corridor in Malaysia.

In the United - States, most digital districts were originally districts centered on electronics and high technology more generally. Most digital districts were formed through the gradual convergence and other activities related to the digital industry agglomeration.

Local networks of qualified firms revealing dynamism are the basis for synergies between institutions. Therefore, we will focus on the composition of a digital district to determine the underlying network externalities within it.

So a development strategy based on specialization could help the sector to focus its resources on niche markets where significant benefits can be developed.

The second assumption on the idea that the benefits of location must be built and improved, including strategies designed to capitalize on the unique strengths of each company. So the benefits are not a given and it is not only the relative benefits of low wages. In Tunisia, ICT specialists’ salaries are low compared to those of developed countries\(^\text{11}\). Despite this relative advantage by reporting to European countries, our country is clearly less attractive than its competitors in Africa. Tunisian wages do not provide a clear competitive advantage. So the problem must be addressed not only in terms of operating costs but taking into account all supply parameters. The lack of knowledge in terms of process and project management can easily reduce the benefits to wages in the eyes of multinational ICT companies. The lack of a labor-intensive and highly skilled limits the supply of specialized services (applications for mobile technology for example).

\[4.2\] The formalization of a digital strategic plan

The formalization of a digital strategic plan for the area is based on three main elements: building an innovative environment, public association Modes / private relationships university / ICT companies.

\(^{11}\) For example, the average cost per hour of a French specialist ICT is € 70 when that of a Tunisian is 8.8 Euros
4.2.1 **Innovative Framework:**

An innovative environment is based on three axes. The first concerns the technological dynamic where innovation plays an important role in the current transformation of the economic system. The second is related to the territorial dynamics. The territory Recognizes As an essential component of the Innovator model EST - An organization that can generate Resources and Actors needed for innovation. The Centers for Training and Research and Public Institutions and Local Government offices feed resources Specific (know –how). The third is based mechanisms and organizational changes that help or hinder coordination between actors. As shown in Figure 2, the innovative environment is a dynamic approach to the intersection of knowledge and local expertise oriented or reused by the current situation. According Cervoiser (2001), an innovative environment promotes economic development territorialized via:

- Competition through innovation, not production costs;
- Organization of the production system in networks and not on market mechanisms or hierarchical;
- Competition between territories and not between companies.

Referring to the balance sheet of American experiences, Gilles Le Blanc stressed the intrinsic characteristic of this type of digital district based on several factors locations are: the presence of the ICT related research centers, the spillover effects of pioneers, the role of international relations (commercial, academic,) and the voluntary policy of local authorities. This digital district includes a telecommunications cluster containing, at first, large North American telecom operators (US West, AT & T) and surrounded in a second step, by many telecom service companies with call centers. Telecommunications allow territorial development within the districts and technology parks cities (Bakis, Veyret & Bonnet, 1999).

**Figure 2: Paradigms innovative environments and territory- economic development**
4.3.2 Methods of public / private partnership

In all countries surveyed, public actors are the pioneers of e-government and project decision makers. The state intervention modalities or communities vary, with different degrees of involvement.

In some capitals, eg London, the government has created the conditions for the digital development, adapting legislation to create technology companies and negotiating support from investment funds. To give more confidence to investors off shoring, governments have implemented laws related to respect copyright and trade secret protection. These laws allow creating electronic trust.

In others, the communities are up fund experiments or specific programs. For example, the public company 22 @ Barcelona was provided with an operating budget of € 12m over four years, supported by the city. Amsterdam has earmarked a specific budget of € 5m annual funding for the experiments as part of the "Smart City".

The state defines a framework of incentives for the Private Sector involvement in the development of such areas. Some cities have built from the start of the public association Modes / Private Partnerships. In Amsterdam, the project was carried out with a public industrial partner (Liander, power operator in the Netherlands) and there has been the involvement of private partners (Accenture, Cisco, IBM ...).

Thus, Cisco involved in most projects of energy savings of San Francisco or Seoul through the research group "Connected Urban Development" took the role...
of overseeing the telecom infrastructure. IBM created the smart energy network. Accenture that transformed his office in Amsterdam in a pilot site, installing in its building technology "Smart Grid", was in charge of the integration of smart meter system and overseeing the analysis and use data. In addition, Accenture has transformed his office in Amsterdam in a pilot site, installing in its building technology "Smart Grid".

The City of London has built its proposed business location based on large international companies like Google or Facebook and on local businesses already in the neighborhood.

**The state sets up a high-speed infrastructure and Smart Grid.** The very high-speed networks and smart grid infrastructure is a constant concern in the projects of all investigated metropolises services to companies, universities and citizens all rely on these infrastructures thus form the basis of any approach to digital development of a territory.

The role of government in infrastructure has mostly been to ensure the fulfillment of the commitments of private actors in terms of deployment. They may fund projects in the event of default or in the case of highly interventionist states (examples of Singapore and Hong Kong).

**The State encourages operators to set a fixed flat rate for Internet connections.** Teleservices companies frequently use the telephone network to transmit data, images and voice. They are concerned with the quality and cost of telecommunications which have become important factors of competitiveness.

For access the internet rates, main channel of communication for teleservices companies; remain bound to the cost of local connection which is the same level as local calls.

<table>
<thead>
<tr>
<th>Type of conditions</th>
<th>Detailed Description</th>
<th>Metropolises that have these conditions in place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government commitment</td>
<td>Involvement in projects by participating as client highlighting projects through the creation of labels and communication tools (web portals)</td>
<td>Highlighting projects through the creation of labels and communication tools (web portals)</td>
</tr>
<tr>
<td>Legislative</td>
<td>Relaxation of laws and tax</td>
<td>London: overhaul of the laws on</td>
</tr>
</tbody>
</table>
and tax benefits. regimes to promote the implementation of innovative companies Allocation of land to the actors gradually depending on the nature of the projects intellectual property to allow the installation of web actors (e.g., Google) Barcelona: land use coefficient allocated based on usage

| Financing / Subsidies | Subsidizing of network infrastructures real estate construction financing for the creation of technology clusters Loan as funding from domestic banks | Singapore: m $ 715 subsidy to support the deployment of infrastructure THD with service operators and infrastructure operators Hong Kong: investment in real estate for the creation of several clusters (Cyberport, Hong Kong Science Park) |

### 4.2.2 Education / Business ICT:

Universities actively contribute to support entrepreneurship. In fact, the establishment of business within academic centers can facilitate the dissemination of entrepreneurial culture among students and researchers. It can be an effective way to develop synergy and that of the company.

The development of the Silicon Valley is the result of the presence of three types of factors. First, during the Second World War, the federal government has encouraged investment in defense technologies and the development of Stanford research laboratories. Then, the university was owner of 32,300 hectares of land, which allowed him to invite many companies to locate (implement) their research laboratory. Finally, the strong presence in the area of capital-risk companies attracted by the first success of HP and IBM.

Otherwise, the California legislative context was favorable to young university graduates or researchers to quickly multiply professional experiences. This results in some type of management based on the initiative of the individual and organizational innovation as technique. In France, as part of the Greater Paris program, universities and companies are grouped by sector of activities within a cluster.

In Barcelona, the district 22@ development agency has set up a virtual space named porta22. This portal that integrates innovative tools for skill assessments and training is available to universities and companies. It lists over 700 career profiles in 13 sectors, lists job in the neighborhood, offers fellowships and bridges between local start-ups and students looking for work experience.
To complete the package 22A, former industrial area southeast of Barcelona, has become in recent years a center of knowledge, both economic consolidation and new neighborhood connected and durable. The challenge was to renovate and densify the area, attracting new residents and new businesses while maintaining the existing social ties. 117 building or renovation plans have been approved; the majority funded by private developers. The city relied on a new network of advanced infrastructure (optical fiber, new transport infrastructure, smart grid, and waste treatment) which supplies five clusters: Media, ICT, Biotechnology, Energy and Design. Although these five poles are traditionally competitive sectors in Barcelona, they are consistent with the new positioning of the qualified capital city of knowledge.

### 4.3 Simulation of the identification of the supply of tele-services

It has a special interest to holders of ideas to develop several high-potential services such as e-education, e-medicine, e-government, remote monitoring, tele-entry, remote translation, training in ICT, assistance and counseling services SMEs / SMIs. Targeted development of these activities allows Tunisia to position itself among the leaders in tele-services. In this simulation, it is to give our country a strong position in the fields of digital work environments (ENT) and archiving. To do this, we must develop platforms and competitive and innovative software on the national and international market in these areas.

#### 4.3.1 Technical device

Microsoft Innovation Center (MIC) single in the Maghreb, is located in the Technology Park Elghazala of Tunis. This center, which was created following a partnership agreement between the Tunisian government and Microsoft (the global computer giant), seeks to support the development of the software industry in Tunisia.

The success of this project requires the stimulation of innovation, the development of intellectual capital and strengthening industrial partnership involving the different actors in the local fabric namely the government, universities, business IT and Microsoft partners. The complete project is nursery with business incubator of the El Ghazala technology park which is continuing its efforts to attract more micro-enterprises in the ICT field.

#### 4.3.2 A stronger partnership between the different actors
In recent years, the Tunisian university helped to entrench a culture of entrepreneurship among young people in training thousands of graduates. In addition, the creation of business incubators around academic institutions allows establishing the necessary mechanisms and structures to encourage initiative and entrepreneurship. This new approach aims to strengthen complementary links and exchanges between the company and the university.

It leverages scientific innovations by creating a complete detection system, training and support for young entrepreneurs. For example, it cites the Industry Promotion Agency (API), higher institutes of technological studies (ISET) and some engineering schools (ENIS, EFA) who supported this effort. In the same context, international cooperation agencies were quick to help by providing financial and technical support in the creation of a network of nurseries, nursery management training and in their integration into specialized international networks.

The introduction of a lively setting by the initiatives of the Ministry of Education and communities is needed to strengthen the role of digital technology and the partnership between the different actors. This framework must build a strong position in terms of IT equipment in schools and in terms of educational use.

### 4.3.3 Structuring Principles

Any innovative company needs laboratories recognized by their ability to innovate and their mastery of the latest technologies (Web 2.0 standards, new mobile devices). Also, it must seek innovative and ambitious R & D subjects. This is said because several transverse structures must ensure the operation of a project. These structures can move the steering committee, committees for research topics of Science and Ethics, observatory uses, desk to manage standards until the publication of the results.

An innovative project is implemented in three specific platforms: education (university building) - Search (Advanced Components Building) - Industrial Valuation (high-tech building assigned to a public company). A house or a technology center is a support for all common means necessary to the three platforms.

### 4.4.4 Results

1. In our example, the expected results are software capable of supporting the activity in question is - to - tell platforms and competitive and innovative software on
the national and international market in the field of digital work environments and in the domain archive. Tele-service ensures legibility over time of the preserved documents, by implementing documented formats, standards, and sustainable, an electronic document contains certain information such as the public key of a certificate holder, dates of start and end of validity the certificate. The librarians have used digital as a powerful tool for classifying items of documentary languages in bibliographical databases.

But the computer processing of natural language, production and the direct management of electronic records, the success of the Web and reasoning modeling have changed that. Scanning revealed structures related to the importance of metadata for processing on XML (Extendible Markup Language). Documents are stored in their original format to ensure their integrity. The company responsible for electronic archiving agrees that the tele-service systematically performs archiving documents in conditions guaranteeing confidentiality.

Tunisia can become a leading investment destination for foreign countries, not only in call centers, but also in offshoring IT and business process outsourcing. International companies are interested in the knowledge of the host country in a number of professions related to information systems: electronic banking, engineering consulting and integration of information systems (IS), geographic information systems, electronic content development Arabic language and decision-making.

For example, the French company Softissimo seeks to keep its market to the push technology contained on the Google translation. She believes that the developed technology will improve the linguistic resources especially bilingual dictionaries in conditions of very interesting cost. For this reason, the installation in another country becomes a necessity to translate documents not included in eg Arabic languages.

This project allows the combination of two companies with complementary tools. The first allows a user seeking information from documents in their own language but are in other languages they do not understand the second translates documents in languages not included.

However, some factors may delay the onset of such a result.

Among these factors are:

- Difficulties of access to credit: banks show an aversion to risks related to ICT investment.
- The lack of an innovation fund and an investment fund dedicated to ICT and tele-services industry.

- The lack of a strong link between industry and the university. Indeed if they allow the industry to have a scientific and technological advance, universities do not collaborate around transdisciplinary themes that require significant investments and require common platforms.

- Lack of skilled labor: training institutions do not meet the demand for training needs workforce of some specialty companies such as the right of ICT, regulation, economics of information. Short vocational courses are insufficient and the number of doctorates is still very modest.

- In terms of leadership, an almost non-existence of an organization whose sole mission is to develop tele-services: El Ghazala the park consists of a platform on ICTs offer opportunities in this field in terms of research and development.

- The absence of new legislation on electronic signatures, recognition of electronic contracts and the use of encryption mean.

**Conclusion**

Tunisia has relatively developed telecommunications infrastructure and a skilled workforce able to offer competitive services. Despite its strengths and the many measures taken by the government for building a local ICT market (tax exemptions associated with the company's training and for imported goods, subsidies seeking foreign markets) Tunisian ICT sector has shown a weakness in its development strategy for export.

For Tunisia becomes a reference platform for activities tele-services and ICT offshore, we thought of a digital strategy for our country to position itself in the global market for online services and to encourage off shoring in all its forms delocalized seizure, call centers, "process" IT and outsourced R & D. We have shown that this digital strategy can only be successful if no action challenging the structure and inner workings of the operating company of ICT and its relationship with its environment.

So that the benefits of ICTs are manifested and the successful integration of e-business by business should be established tax advantages to promote innovation and to define a framework of incentives for the private sector involvement. The latter is called
to implement partnership mechanisms with mixed project teams. It must meet the requirements of the ICT sector actors in functional buildings with efficient infrastructure for communication. This opportunity to encourage the production and export of software allows the proliferation of offshore development platforms and those of tele-services.

Public authorities must be involved for a better valuation of the university and research potential. The bridges between the world of education and research and the production of innovative services allow establishing technological culture and creating a large skilled labor pool, a platform of digital work environments and citizen platform. This promotes the creation of a new dynamism based on high technology activities.

The state should encourage the outsourcing of services by businesses, government and local communities. Setting international standards of business, modernizing the administration and local government, can generate a significant volume of business to business tele-services and lead to the creation of many specialized jobs based on intensive use of ICT in different sectors of the economy. It is said that a stronger involvement of public authorities not only to improve the competitiveness and attractiveness of our country, but also to strengthen its image as a reference offshore destination.
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