INTEGRATION OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN THE ALGERIAN UNIVERSITIES : WHAT ARE THE PROSPECTS ?

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Abstract : *The ICT, that we are discussing today increasingly, have invaded every sector of human activity, including education. The ICT has been a growing interest, both from the political authorities and experts and even ordinary Internet users. The Internet has emerged as an important tool for development and poverty reduction in a sustainable manner. The context of changes that saw higher education in Algeria is partly explained by the increasing role of the technologies of information and communication (ICT) in society in general and universities in particular. Indeed, these technologies can push the boundaries and the spatial and temporal barriers hither to impassable, particularly in terms of accessibility to higher education for millions of students.*
Keywords : *ICT, Higher education, Algeria.*

Résumé :
Les NTIC, que nous discutons aujourd'hui de plus en plus, ont envahi tous les secteurs de l'activité humaine, y compris l'éducation. La TIC présente un intérêt croissant, pour les autorités, les experts politiques et même les utilisateurs ordinaires de l'Internet. L'Internet est devenu un outil important pour le développement et la réduction de la pauvreté. L'évolution de l'enseignement supérieur en Algérie est en partie expliquée par le rôle croissant des technologies de l'information et de la communication (TIC) dans la société en général et les universités en particulier. En effet, ces technologies ont pu repousser les limites et les barrières spatiales et temporelles en termes d'accessibilité à l'enseignement supérieur pour des millions d'étudiants.
Mots-clés : *TIC , Enseignement supérieur , Algérie.*

Introduction

In 1993, when the Vice President of the United States, Al Gore, announced the opening of a new site, the information superhighway, we could imagine that we would address a technological revolution affecting all sectors of contemporary societies. Universities, especially those of the most developed countries have contributed in terms of research, the emergence of new information technologies. Since the invention of the bouquet of IP by Vinton Cerf in 1974, fifteen years were enough to create the foundations of a collective intelligence.

However, the effort of the university sector has focused on research and prototyping of new tools, leaving their socialization. Uses have been studied so little. This is the field of education and training, one of the key areas of activities of modern society, which has benefited least from the contribution of new information technologies and communication.

However, the scientific community is the source of most of the technical and methodological solutions for the development of New Technologies of Information and Communication (ICT) such as the Internet. But the current context in information is characterized by the influx of digital solutions that disrupt established realities. The University must now reflect on these practices and their inevitable entry into the world of teaching and research.

DEFINITION OF THE ICT

The concepts of information technology and communication (ICT) and new information technology and communication (NICT) group techniques used in the treatment and transmission of information, mainly from the information technology, the Internet and telecommunications.

By extension, they also indicate the sector of economic activity in information technology and communication.

The concept of "information technology and communication" are two typical characteristics of new concepts: it is frequently mentioned in contemporary debates, its semantic definition is unclear. We can also observe that in this expression the term technology, which strictly speaking means discourse on technique, is used in place of technique that is both simpler and more accurate.

New Technologies of Information and Communication (ICT) denote ICT that have just been invented. The first step towards the Information Society were begun during the invention of the electric telegraph, fixed telephone, radio and finally television. The Internet, mobile communications and GPS (Global Positioning System) can be considered ICT's. The reconciliation between IT (Information Technology) and telecoms date of the last decade of the twentieth century; miniaturized devices "multifunction" are on the market in 2005-2006 (followed by television programs on mobile phone).

This concept of ICT was established at the initiative of many networks that following the evolution in networking engineers thought necessary to distinguish these old technologies. However, no boundary exists between ICT and ICTs and therefore one can legitimately ask if this is an ICT becomes old. This leads to a trend that is the disappearance of the term.

In different literatures we find that there is no consensus on the definition of ICT had their heterogeneity and complexity. Indeed, one can distinguish the authors the following definitions:

HERBERT SIMON: (Nobel Prize for Economics 1998). He argues that these technologies help to make: "All information available to men in verbal or symbolic form, also in computer-readable form; books and memories are stored in semiconductor memories ..." As information technology and communication can be defined as: "the set of computer and telecommunications technologies, they are the result of a convergence of technologies, they allow the exchange of information, and their treatments, they also offer new ways.. and methods of communication. "

CARPENTER: "The (ICT) are a set of technologies used to process, edit and share information, specifically the scanned data. The birth of ICT is mainly due to the convergence of three activities. Strictly speaking, ICT's are made.

• the télécommunications sector which includes himself services and equipment;
• the field of information technology including hardware, software and services;

• the audiovisual field that primarily involves the production and audiovisual services, and consumer electronics. "

As for the OECD, its definition is a bit broader as it includes also the wholesale industrial equipment. The idea is to keep all the economic sectors that contribute to the visualization, processing, storage and transmission of information by electronic means.

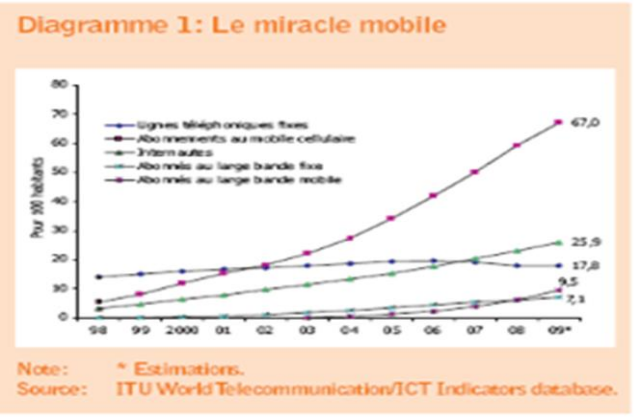
THE ICT ON THE WORLD

Despite the economic crisis, the use of services of information technology and communication (ICT) such as mobile telephony and Internet, continues to increase worldwide. At the end of 2009, an estimated 4.6 billion the number of mobile cellular subscribers, representing a rate of 67 per 100 people across the globe (Figure 1). Last year, the mobile cellular penetration in developing countries has surpassed the 50 100 to reach, according to one estimate, 57 100 inhabitants at the end of 2009; although this is still well below the average for developed countries, the penetration rate is over 100 percent, the rate of progress remains remarkable: in developing countries, the mobile cellular penetration has indeed more than doubled since 2005, when she was only 23 100.

The use of the Internet has also continued to increase, although at a slower pace. In 2009, an estimated 26 to 100 of the world's population (1.7 billion) using the Internet. In developed countries the percentage is much higher than in developing countries, four out of five people still lack access to the benefits of being online; and then, China alone accounted for a third of Internet users. The rate of Internet penetration in developed countries reached 64 percent at the end of 2009, while in developing countries it was only 18 percent (and only 14 percent if we subtract the China). An important issue to increase the number of users "online" is the limited availability of access to fixed broadband, which is essentially the prerogative of users in developed countries and some developing countries. More than half of subscribers to fixed broadband in developing countries are in China, which overtook the United States as the largest market for fixed broadband in the world in 2008, penetration of wide band is 23 per 100 inhabitants in developed countries against only four percent in developing countries (or two if we subtract China). In the area of mobile broadband is observed by against promising trends. The advent

of high-speed access to mobile Internet in a number of countries increasingly favor more importantly the number of users, particularly in developing countries. In fact, the number of mobile broadband subscribers has increased steadily and in 2008 surpassed those for fixed broadband: at the end of 2009 the number of mobile subscribers was estimated at 640 million against 490 million for subscribers broadband fixed.(DOCUMENT THE SENTENCES)

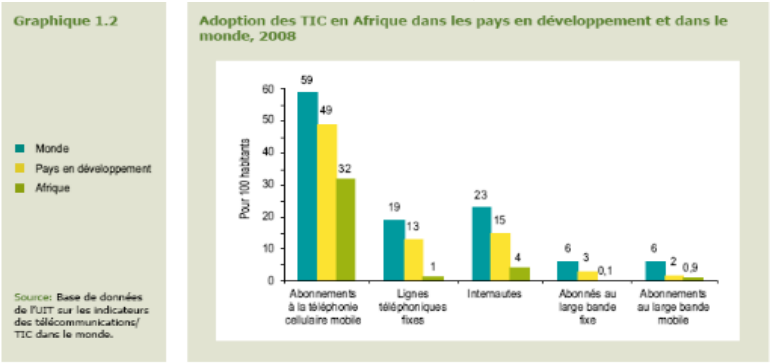
Figure 1: Evolution of ICT worldwide.



ICT IN AFRICA

Although Africa has made impressive progress regarding the penetration of ICTs, it is well behind the rest of the world, it is remarkable in the following graph:

Figure 2 : Adoption of ICTs in Africa in Developing Countries and the World, 2008



ICT IN ALGERIA

The Algeria as a developing country is in its infancy in terms of the market economy. The ICT sector when it's no different. Just like the economy, ICT penetration in the domestic economy remains weak.

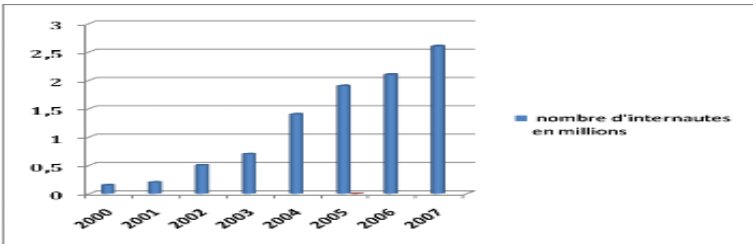
The preferred hydrocarbon sector:

The hydrocarbons sector is having a special way technologically. Sonatrach which has its own system in the field of both training and research at all levels ensures itself the training of its staff according to its needs. Just check out his site to see how it is in the field of ICT, as in other fields, advanced by excellence over the whole country, with its feature-based mineral-exporting sector.

The changing use of the Internet in Algeria:

Connection to the Internet is growing in Algeria. As the following number of online graph shows increased from nearly 120,000 in 2000 to over 2.5 million in 2007.

Figure 3 : Evolution of the users of internet in Algeria



ICT AND EDUCATION

Researchers in cognitive psychology that pay close attention to the benefits of ICT in learning, memory, understanding, we usually say that we retain 20% of what we hear, 30% of what we see 50% of what we see and hear, 10% of what we read, 80% of what they say, 90% of what we do .So understand that ICT is to great use in the field of education.

The development of computer applications in education starts with the idea of individualizing instruction. This idea is influenced by conceptions of learning that will first mechanistic Pavlov, Thorndike, Watson and Skinner. They will participate in a major movement in American psychology, behaviorism. This individualization of

instruction will first take the form of programmed instruction paper and pencil and then programmed instruction assisted teaching machines and finally, the computer-assisted instruction. Gradually, in the wake of the work of Piaget is becoming known in the United States, will develop an alternative to teaching computer programmed based on a constructivist approach to learning that Seymour Papert of MIT will sponsor through a language developed specifically for education, LOGO. For some time develops a new concept of ICT in education is the E-Learning, distance learning process based on multimedia resources, which allows one or more people to train from their computer. Multimedia materials used can combine text, graphics in 2D or 3D, sound, image, animation and even video.

Presumably, ICT has various positive or negative impacts on learning outcomes. On the positive side, one could mention the improvements attributed to the use of ICT in classrooms, and among the negative effects influence more general intensive use of ICT on cognitive and language abilities of students. Despite the importance of this subject, it seems there are few statistics showing these impacts to a national or international level. On the implications of ICT on expectations for learning and school performance, the report of the expert meeting OECD / CERI March 2007 (OECD, 2007) states: "It is not surprising results, as shown by a number of reports on the research, are at least indecisive or contradictory ".

The International Association for the Evaluation of Educational Achievement (IEA) conducted surveys and case studies on the relationship between ICT and education. A sound modules SITES (Second Information Technology in Education Study) project focuses on a set of case studies on innovative practices using ICT (174 studies in 28 countries) (IEA, 2003).

An analysis of 174 case studies SITES above that "technology contributes to significant changes in the classroom. They present a very different picture from that of the traditional classroom where the teacher makes its way through the class and the students take notes or work on worksheets. In many countries around the world, they show important similarities in how the technology is used. "(IEA, 2003).

ICT AND HIGHER EDUCATION

The information technology and communication (ICT) is increasingly used and adopted to varying degrees by higher worldwide institutions. ICT is as much as a classroom delivery on campus as an open and distance learning.

ICT in higher education are used to: develop course materials, content distribution; content sharing; communication between students, teachers and the outside world, the creation and dissemination of presentations and lectures; academic research; administrative support; student enrollment.

Higher education institutions in developing countries enjoy the best software and hardware available to them despite the challenges posed by inadequate telecommunications infrastructure, lack of teacher training, a lack of specialists with experience in technology information to support the development of ICT, maintenance, and technical assistance in institution of higher education.

The action plans and positive investment in ICT is clearly beneficial for higher education institutions (HEIs) while ICT did not replace the learning or traditional teaching methods such as rooms class. Certainly, ICTs can provide greater access for different target students, and have become essential means for enriched learning experiences, especially for distance educators and students separated by time and space.

The coordinated implementation of new action plans reworked likely require the participation of foreign ministries (such as telecommunications, trade, health), national, private and non-governmental agencies (for accreditation and recognition when necessary).

ICT IN THE ALGERIAN UNIVERSITIES

Algerian higher education is undergoing a process of modernization which is reflected in two important reforms: first, the implementation of the European System Master Degree Doctorate (LMD) and, secondly, the development of technologies information and communication for education (ICTE).

Since 2004, the Algerian Ministry of Higher Education has set up a virtual national commission of education, whose primary mission is the establishment of the Virtual University in the various institutions of higher education. This is to promote a way of teaching that should allow educational institutions to meet the triple challenge: coping with the increasing number of students, address the shortage of teachers and facilitate access to education in remote populations academic institutions (women and people living in rural areas in particular).

- Hopes to a virtual university

Among the projects of the Information Society that controls the Ministry of Higher Education and Research, the distance learning plays a vital role. Due to the size of the country, sparsely populated and underserved regions utilities, this concept appears indeed strategic to better disseminate knowledge throughout the territory. The virtual university project is led by the University of Continuing Education, an organization created in 1990 and home to nearly 50,000 students each year. For young people who have not gone beyond the baccalaureate and seeking degrees bac +3 through night school type, UFC already practice distance learning through the post for three years. It already uses ICT in the dissemination of his teachings, through its website. It is also the focal point in Algeria of the Avicenna project of the European Commission, which aims to connect schools on both sides of the Mediterranean, for lessons by videoconference, and soon the Internet. But the project has not resulted in Algeria, because of inadequate telephone infrastructure, a legal framework to be defined, but also an educational project that is not yet finalized.

CONCLUSION

The ICT has become a powerful tool for economic and social development. They are the source of continuous innovation at the heart of the growth of economies and create new development opportunities. It is undeniable that the integration of our development in the context of globalization is necessary to avoid irreparable split with the world's economies. The transformation of our society into a society based on Knowledge is actually a vital issue.

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