

Emergence of the Knowledge-Based Economy in Algeria

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Abstract :

In industrialized countries, the knowledge-based economy has become a reality for the citizen, who lives the knowledge-based economy in their daily life. Citizens are confronted with this new prerequisite which makes knowledge an essential hiring criterion. High-tech jobs, managerial functions, the digital economy, smart government, broadband and telecommunications, require a number of knowledge-based skills that do not exist in a traditional economy. Then, and in terms of citizen-public service relationship, the citizen in his relations with the administration (government, banks, school, hospital, etc.) is faced with a new expectation which makes knowledge a condition. Immaterial capital, or capital knowledge, has become the true wealth of a country. known as the knowledge economy, it attempts to overcome the major concern of economists for material goods and to focus on intangible elements that have to do with the production of knowledge, science, technical skills, and also "human capital". These various elements are distinguished by many aspects of traditional "material" economic goods in terms of appropriation and rivalry in their use and transmission. While material goods are generally characterized by "rivalry", in the sense that the use of a good by an agent prevents another agent from using the same good, knowledge has a nature of good. The objective of this article is to shed light on the concepts of the knowledge-based economy and how do managers of Algerian companies perceive the concept of knowledge-based economy ?

Keywords : Knowledge-Based Economy, Economie in Algeria Intangibles, Innovation, information and communication technology.

INTRODUCTION

In just a few years, a new component has emerged as a determining engine of economic growth: "The immaterial." As the economy has changed. Today, real wealth is not concrete, it is abstract, it is not material, it is immaterial, known as the knowledge economy tries to overcome the major concern of economists in regard to material goods and to bring attention to intangible elements that have to do with the production of knowledge, science, technical skills, and also the "human capital".

In the essential criteria of economic dynamism, intangible capital or, knowledge capital, has become the true wealth of a country, called the knowledge economy, tries to overcome the major concern of economists for material goods and to bring attention to intangibles that have to do with the production of knowledge, science, technical skills and also "human capital". These various elements are distinguished by many aspects of traditional "material" economic goods in terms of appropriation and rivalry in their use as in their transmission. While material goods are generally characterized by "rivalry", in the sense that the use of a good by one agent prevents another agent from using the same good, knowledge has a nature of good.

This knowledge economy offers a form of transversal coordination between market and enterprise and leads to the nesting of the economy and society. It remains to be seen whether Algerian companies are succeeding in this transformation? And by what procedures?

The objective of this article is to shed light on the notions of the knowledge-based economy and how do managers of Algerian companies perceive the concept of knowledge-based economy ?

1. KNOWLEDGE-BASED ECONOMY

Knowledge Economy, Knowledge Management, Know Society, Knowledge Society, New Economy. All these terms resend today at : the economy based on knowledge. (our veille focuses on the knowledge-based economy). Before starting the veille, we will define each of the terms reference returned in the concept of "knowledge based economy".

At the base of the knowledge-based economy is Knowledge Management. The latter brings together all the techniques used to identify, to organize, to stored and provide internal and external knowledge (Economic intelligence) to members of organizations. It's not just about acquiring information but indeed an exchange allowing the capitalization of knowledge within the organization. The Knowledge Management is an expression which stems from the knowledge economy, it is above all a term that applies to all organizations.

The knowledge economy, marks a new phase in the history of the economy. According to some economists, this phase began at the end of the last century, in the 1990s. This economic mutation would be the mercantilism and industrial capitalism, two currents having already participated in the regulation of capitalism. For this same current, we also talk about "New Economy" or "Post-industrial economy".

The post-industrial economy, so called post-industrial society, or new economy, corresponds to the society and economy of developed countries. These societies and their economy are much less based on industrial and agricultural production from previous centuries. This economy has two essential characteristics. The first is the rise and predominance of the tertiary sector, that is to say services. The second characteristic is the fact that knowledge, creativity and information are the foundations today of development. They have become the raw materials of the modern economy, the knowledge economy, but also the most sought-after form of knowledge, knowledge capital.

The knowledge based economy describes both as a discipline of economics, which research object is knowledge, it is a phenomenon specific to the contemporary period which, results in a change in the functioning of economies by rapidly and strongly developing the service sector rather than relying solely on initiatives of traditional industrialization, which is typical of the economy based on knowledge. The knowledge-based economy is a new way of designing development strategies, in which the politics concerning knowledge and innovation play a central role (Aubert, 2004). The knowledge based economy rests on four pillars : Innovation, Institutions, information and communication technologies and formation.

The Knowledge-Based Economy, a concept that the representatives of the World Bank admit "still vague because used in a multidimensional criteria space which characterizes an area, the meeting of a set of conditions which allow to think that it probably something going on around the knowledge economy, the new economy ...".

Furthermore, the knowledge based economy involves spécifications of processes by which economic agents (public and private) contribute to production, and the use and dissemination of knowledge. Therefore, education, training, research and development, innovations and information, and communication technology are at the heart of the knowledge-based economy.

According to A. Djeflat (2006)¹, the objective and strategy of the European Union is to make knowledge economy and society the most dynamic and most competitive in the world. he knowledge economy is based on activities with high added innovative and competitive value, and which rests on four pillars : education and training, research and development, and innovation, information and communication technologies and the organizational system.

We can use as a definition of the knowledge based economy :

"The capacity for an economy to create and use knowledge for the production of goods and services, and where mastery of technology and innovation constitute key factors for sustainable economic and social development"². Arrow (1962)³ is at the origin of a first economic knowledge conception. According to this one, the innovation activity is separate from conventional production activities. Knowledge is produced by a specialized sector from a production function which combines skilled labor and capital. In the same perspective, Organization for Economic Co-operation and Development (OECD) defines knowledge-based economies as " those that are directly based on production, the distribution and the use of knowledge and information" (OECD 1996).

Foray and Lundvall (1996)⁴ and Foray (2000)⁵ develop an original approach according to which knowledge-based economies are formed from a double phenomenon : "A long trend, relating to the increase of resource dedicated to production and the transmission of knowledge (education, formation, R&D, economic coordination) and others, a major technological event - the advent of the information and communication technologies -" (Foray, 2000)⁶

On the following we will analyse the pillars of the knowledge-based economy. These pillars determines a better framework for the emergence of an economy ;

1.1. Innovation and Knowledge-Based Economy

The knowledge based economy and innovation, two notions clearly related. First, Innovation being none other than creation and the application of new knowledge for productive returns (Penrose, 1959 ; Drucker,

¹ A. DJEFLAT (2006), « L'économie de la connaissance : nouvelle source d'avantages compétitifs », in Revue Partners Economie, n° 02- Juillet 2006, rubrique Economie de la connaissance, page 48-49.

² DJEFLAT, « Economie de la connaissance et knowledge management: quels défis et perspectives », texte non publié, Université de LILLE 1.

³ Quote by General Planning Commission, development service, industriel and technologic, Redactor : Sandrine Paillard, « Les indicateurs de l'économie de la connaissance ». Introductory note to the work of the expert seminar of experts gathered under the axis « La France dans l'économie de la connaissance » of the work program of SDTI. This note benefited from comments by Sandrine Haas, Mohamed Harfi, El Mouhoub Mouhoud and Rémi Lallement

^{4,5,6} Quote by General Planning Commission, development service, industriel and technologic, Redactor : Sandrine Paillard, « Les indicateurs de l'économie de la connaissance ». Introductory note to the work of the expert seminar of experts gathered under the axis « La France dans l'économie de la connaissance » of the work program of SDTI. This note benefited from comments by Sandrine Haas, Mohamed Harfi, El Mouhoub Mouhoud and Rémi Lallement

1993). Second, the politic of innovation is a fundamental pillar for the implantation of the knowledge-based economy. Innovation is not considered exclusive of services R&D the big companies, it is the result of interactions of several actors, which is registered for a purpose of increasing all the knowledg, including human knowledge, of the culture and society as well use of this body of knowledge for new applications. The "necessity of innovation" gets stronger, since innovation tends to become the almost unique way to survive and prosper in highly competitive and globalized (David et Foray, 2002).

The knowledge based economy only develops if the enterprise adheres to it and actively participates in production and in the knowledge management. In this regard, the enterprises, are able to organize the complementarity between external knowledge wich are produced by different incentive actions and which, can be capitalized in various forms and their internal knowledge.

1.2. Information and Communication Technology and Knowledge-Based Economy

The information and communication technologies hold central place in to the knowledge economy for several reasons. On the one hand, this technologies are produced in a sector where innovation activity is intense., and on the other hand, the information and communication technologies, which can be called generic technologies, are behind process and product innovations in all the economy. The use of information and communication technologies promote potential for activity creation as they allow remote access to information and even knowledge. Not only they allow the transmissions of written messages and everything that can be "digitized", but they also allow access to knowledge systems on which we can act from a far (remote experimentation), and distance learning in an interactive relationship.

The information and communication technologies group toghether the techniques used in the treatment and transmission of information, mainly computer science, the internet, and telecommunications.

We can distinguish several types of information technologie impact on knowledge creation : The first is simply the creation of a potential abundance of informations, which is truly revolutionary, the second type of impact relates to the rise of creative interactions between, for example, product designers, providers and end users which facilitates work and collective learning. The third type of impact lies in the treatment possibilities by the new technologies of gigantic databases. The fundamental role played by new technologies and knowledge as key factors in the development of production in society is not negligible. The knowledge acquired throughout life called "by experience" is just as important as education or vocational formation. Individual intellectual capital is essential for the development of a knowledge society. We see here the efforts to be made in terms of appropriation of new technologies by disadvantaged people.

1.3. Education & formation and knowledge-based economy:

The institution empowered to create knowledge, it is the institution of education in general, that is to say schools with the three levels of education, universities, research institutions scientists and vocational training centers. The backbone of the knowledge-based economy is knowledge.

Education and formation appear to be key conditions for an enterprise success and national economies. Raising the general level education itself has important effects on the functioning of the labor market The indicators constructed from data relative, education and training allow to evaluate skills and knowledge (or "human capital") acquired during the formal education process. These indicators are used to assess the stock and investment in human capital. The adequacy of the education system's response to the needs of the economy and the training systems are eventually centered centres on the enterprise (work-astudy, continuing education). Wealth creation now resides in knowledge and skills.

Access to knowledge for all is essential and the learning capacity of people and businesses creates a collective dynamic which, requires the multiplication of interactions and cooperative relationships between actors. Various economic studies In Algeria the emerging training and skills market, which is difficult to structure and does not manage to return the return the essential of its potentialities and transform the awesome latent resources in human assets can be mobilized in sectors with high added value⁷.

1.4. Instituions and knowledge-based economy :

The objective is to have an economic and institutional regime which should encourage entrepreneurship ; e-administration and e-governance are now functions which fundamentally restructure practices, instruments but also the relationships between, on the one hand, administrations, authorities and public authorities and, on the other, users, citizens and citizens.

⁷BAHLOUL Mohamed, (2015), "le capital humain, comme socle d'un nouveau développement : éléments pour une analyse comparée du système éducatif algérien", Summary of the report (volume IV) delivred to the Prime Minister - 15 january 2013 by the Professor Abderrahmane MEBTOUL

Successful models have relied heavily on institutions that have worked towards the establishment of the knowledge-based economy⁸. How can institutions get into the mainstream and become stakeholders in the knowledge-based economy ? What for example will be the roles the institutions various actors (managers, executives, employees, unions, etc.) will have to adopt ?

2. TRANSITION TO THE KNOWLEDGE-BASED ECONOMY IN ALGERIA

The concept of knowledge-based economy refers to these profound changes that the world has known since the 1960s. There are at least three developments that have contributed to the development of this concept as we know it today. The first evolution is that of the 1960s with the appearance of new industries based essentially on scientific discovery and their impact on productivity and economic growth such as the introduction of super computer. The second evolution is that of the years 1980-1990 which focused on the emergence of new industries based essentially on the use of information as in the sector banking, finance and TIC, and a third evolution which took place from the 2000s where a dichotomy between classical economy emerged, driven by industrial and manufacturing production and the use of fixed assets, and new economies (new savings) driven by service, information, knowledge, and the intangible in general.

The fundamental formula which accelerated this transition from a classical economy to a knowledge-based economy is above all the democratization of the production tool

Algeria is gradually and firmly integrating into the world economy, notably in the framework of the establishment of the free trade area with the European Union. This deal means that our businesses (in the midst of changes) need to be more competitive in order to keep up with the pace imposed by large renowned companies on a planetary scale that are well versed in new managerial techniques and in developing knowledge by extending the capacities of their uses. As an independent country, Algeria has significant natural resources and tends to make efforts to end its dependence on the income generated by these resources and to make its way to a knowledge-based economy.

This growing role played by knowledge can be explained by the socio-economic and technological changes which have accelerated thanks to among other elements, the development of information and communication technologies. Therefore, the transition to a growth pattern geared more towards technical progress, innovation and the development of human resources is essential, as the regime based primarily on the accumulation of physical capital begins to show its limits.

The knowledge-based economy builds communication, information, knowledge and skills as a production on its own right and presents them as the the principal key of value creation, the critical resource of economic competitiveness, and the essential productive asset of the attractiveness of organizations and territories. The knowledge and the know-how form at the same time a contextual and nomadic, and a conceptual capital both organizational and relational, and a source of positive externalities, "invisible work" increasing returns and rents of innovation, position or scarcity⁹.

Algeria's size in population and territory is sometimes considered to be a complicating factor for its insertion in the knowledge-based economy. However, if there's a will as witnessed by the diaspora that has often succeeded when favorable conditions are in place, no obstacles will prevent an effort towards knowledge-based economy. Although few performance achievements have been fulfilled in some areas, Algeria has a strong potential allowing it to chart a path toward the new economy¹⁰.

Diversification of the economy is a condition for this mutation. In the situation in which Algeria finds itself, one cannot diversify if the investment is still closed.

But what is the knowledge-based economy in Algeria? What is its degree of development? How is knowledge generated? how do we enable better knowledge management? What is the degree of this mobilization?

The awareness and the more or less awakened requirement of the Algerian consumer, the development of the means of information and communication, TIC and in particular the Internet all these are all factors that continue to upset or rather revolutionize the economy Algerian.

The use of the Internet to create collective & individual access and the appropriation of information and communication technologies is done fairly regularly; the technologies of information are the foundation of this

⁸ DJEFLAT Abdelkader, (2006) "L'économie fondée sur la connaissance – Etat des lieux et perspectives pour l'Algérie", Dar El Adib, Oran-Algérie, p107.

⁹ Léo DAYAN, Université de Paris I Panthéon-Sorbonne (2005.), « ECONOMIE DE LA CONNAISSANCE ET DURABILITE - ECOEFFICIENCE, ATTRACTIVITE , COMPETITIVITE - concepts / techniques / stratégies / terrains / éthiques / pratiques - LE LIEN LE LIE LE LIANT », Colloque International : la connaissance, un nouveau levier et défi de la compétitivité pour les entreprises et les économies. Faculté des sciences économiques et de gestion de l'Université de Biskra - Algérie , 12-13 novembre 2005.

¹⁰ Abdelkader DJEFLAT, (2015), "Sans économie de la connaissance, l'Algérie régressera : capital humain et transfert technologique et managérial, pivot du développement", Summary of the report (volume IV) delivered to the Prime Minister - 15 january 2013 by the Professor Abderrahmane MEBTOUL

revolution; In Algeria the third pillar (TIC) records the best score (even if there is still space to grow). A new discipline that is starting to impose itself and is becoming more professional in Algeria, is digital marketing, in the field of training, masters were already launched and one of the proofs that the discipline takes a considerable place and prepares for different trades whether at the advertiser or in the agency : Web-marketeur, trafic manager, community manager, Webmaster editorial, project manager web/marketing interactif, mobile project manager, consultant e-business, etc.

This research work arises as a main question which can be formulated as follows :

"Are Algerian companies successfully integrating into the knowledge-based economy?"

The general objective of this investigation is to make a modest contribution to the progression of knowledge of a little explored area, and yet, of a considerable importance which is, the contribution of marketing to inserting enterprises in the development of the knowledge-based economy in Algeria. What are the best practices ? how to disseminate them and adapt them to specific local situations?

A new structure in charge of knowledge management activities allows the company better knowledge management! in order to react much more quickly to changes in market trends and allow it to be integrated into the knowledge-based economy.

3. DISCUSSION

The analysis that we present in a synthetic way allows us to highlight a number of characteristics of knowledge-based economy in Algeria, summarized around two main points :

- on the one hand, the interest accorded to the knowledge-based economy in Algeria
- on the other, the involvement of the company in the knowledge-based economy

The discussion we are having, is based on the one hand, on documentary analysis (*desk research*) to lead to the elaboration of a panorama on fundamental notions, and on the other hand is based on an analysis of the interviews that we conducted with a number of companies managers.

This analysis is thus carried out simultaneously with extremely different organizations in terms of size and profession. The lack of similar work and benchmarks, and the myriad of existing elements encouraged us to focus our work in order to reduce the field of analysis.

3.1. Interest granted in the activities of the KBE in Algeria

At the practitioner level, the concept of knowledge-based economy covers very diverse perceptions and realities ; The majority of the managers of the companies interviewed did not put forward a technical definition evoking the pillars for the development of knowledge-based economy.

While the concept of knowledge-based economy in companies is important, they may not understand its terms and concepts.

A full awareness of the role of the knowledge-based economy in the current stage characterized by a profound change in the algerian economy.

No company interviewed has a structure dedicated to knowledge-based economy activities, the event is new (as some managers prefer to recall).

3.2. Enterprise involvement in the knowledge-based economy

Almost all of the managers interviewed showed knowledge-based economy practices in their companies in the use of all staff, the IT tool and the computerization of their services and the purchase of IT equipment, as well as the formation of staff in the various discipline (IT, accounting, legal and finance) no manager cited formation on TIC practices.

Almost all of the companies questioned do not use the Internet and the intranet, as well as the extranet, within their structures and services, neither internally with staff nor externally with their customers.

No means used for the capitalization of the experience and the know-how of the seniors before their retirement ; they prefer to work in foreign companies after their retirement.

During our interviews with the managers we found that staff formation often remains too technical (accounting and finance).

4. PRINCIPLE RESULTS

A full awareness of the role of the knowledge-based economy in the current stage characterized by a profound change in the algerian economy, implies an imperative recourse to the knowledge-based economy and its role is gaining ground. An observation is revealed by all the managers interviewed in algerian companies.

A new culture is taking hold, consolidating and pushing companies to realize the benefits of knowledge-based economy.

Most companies spontaneously put into practice knowledge acquisition and conversion processes without knowing it exactly.

The knowledge-based economy is conceived in the company, these practices seem to be a confused mixture of traditional rules and modern rules.

The practice of knowledge-based economy is more instinctive than reasoned, whole sections of the field of knowledge of knowledge-based economy are still little explored by Algerians companies.

The advent marked a decisive turning point in the activity of Algerian companies. "... we have just started ..." (as some managers prefer to recall)

However, certain specificities appear when we act according to the status of the company. This is how when we apprehend the answers provided by big companies, they are more advanced with international changes, the knowledge-based economy as much as concept exists.

IN CONCLUSION

The concept of knowledge-based economy has definitively integrated the vocabulary of managers in the same way as that of staff or management.

Despite the strong will of Algeria to diversify its economy, unfortunately the transition to the knowledge-based economy is not very apparent given the predominant characteristic of its economy, known as "rentier". The absence of an economy that creates wealth other than hydrocarbons is an established fact.

Knowledge-based economy is not a fad and it is not just a structures collection of knowledge and information. The knowledge-based economy is an economic, creative value system, sensitive to the interactions between these pillars such as ICT, human resources, innovation and services and a culture that promotes this interaction.

It allows companies to use their knowledge and skills to make sustained competitive advantages and to develop their capacity for innovation.

Knowledge today is the result of intelligent applications, services and managerial practice, that is to say the intangible, as opposed to the tangible hardware and industrial infrastructure that characterized the classical economy. In Algeria the potential for this transition exists given the investments that the state has made in the economy, but there still needs to be a vision and a strategy that would allow better management of this transition.

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