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THE IMPACTS OF THE ALGERIAN ACADEMY OF SCIENCES AND TECHNOLOGIES ON THE SOCIETY

Abstract: In the context of the reforms lead during the 2000's, a new scientific landscape has emerged in Algeria giving birth to a knowledge-based society.

I will be discussing the scientific and technological activity in Algeria so far and highlighting its limited impact on the society.

We believe that the creation of an academy of sciences and technology will reinforce the dynamics between the academic world and the society through practical fields such as: technology, economics and culture.

1. THE TECHNOLOGICAL MUTATIONS IN THE NEW SOCIETY

The contemporary era has observed considerable revolutions due to technological sciences, mainly based on the development and the junction of applied mathematics and computer sciences. We qualify this as a digital revolution that has changed our relationship to the world. The digital revolution has transformed the methods of investigation, experimentation and conception in engineering. It also disrupted the techniques of communicating, questioning and producing which has prompted social mutations.

The information technologies have become part of our daily-life and are integrated in every economical, political and social activity. For instance we estimate that almost half of the world economical progress is due to information technologies, and thus, we may consider it as an effective power indicator of this new civilization, which is based on information, knowledge and communication.

2. APPROACHES FOR THE DYNAMICS TO TRANSITION

The science of matter provided us with several approaches to model dynamic systems, that have been extended to some human and social sciences. These mod-

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els have nonetheless faced some limits when it came the new social transition with complex, non-linear, indeterministic and big scale systems.

The first approaches that have been used by the futurist studies were based on the interdisciplinary intersection of evaluations made by different experts. For instance, the UNESCO carried out in collaboration with Futurible International, a prospective study on the state of the world in the 2000's. This study was achieved by surveys and the crossing of interdisciplinary experts that have come to reliable predictions, verified 20 years after.

The junction between statistics and the advanced computing have given birth to a new approach called Data Mining. Data mining allows the exploration of huge quantity of heterogeneous data with non-linear dynamics. In practice, Data Mining summarizes data through clustering similar individuals, shedding light on rare patterns and on the relationships that might exist between variables. All these operations help in better understanding the huge data stream we are facing, and thus allowing more reliable predictions.

3. THE ESSENTIAL ROLE OF SCIENCE IN THE NEW SOCIETY

Science plays a primordial role in the creation of knowledge-based societies. When science is seen as an essential driving force for development, we recognize at the same time that the implementation of scientific objective calls for certain other requirements to be fulfilled in developing countries. A strong link must exist between the universal nature of knowledge and socio-cultural realities of local context. Knowledge must be instilled into the local development practice with an integrated approach (scientific, economic and social) by linking between science, professional practice and social expectations. These principles deeply modify the educational and the training strategies.

4. NEW SOCIETY AND RISK MANAGEMENT

The wave of inventions made the societies more sensitive to the benefits of each new invention but also suspicious of the dangers and the threats that may present. The digital simulation is a key element for studying the relative risks and the quantification of the uncertainties of prediction.

Information technologies also became the first mean of communication between individuals, organisations and states. The theme of privacy data security is of great importance and holds an important place in Europe. Two axes of the 7th edition of PCRD (Programme-Cadre de Recherche et de Développement Technologique) were devoted to these questions.

The mutual confidence between entities remains an unsolved problematic, as it has recently been shown by the mass spying held by the American National Security Agency.

5. THE ALGERIAN SCIENTIFIC PRIORITIES FOR THE TRANSITION

The construction and the development of a national scientific space, is a high priority in the Algerian scientific policies. In the context of reforms lead during the

2000's, a new scientific landscape has emerged to lead Algeria towards a knowledge-based society.

The Algerian Academy of Sciences seeks to reinforce the scientific and technical fields and to improve their integration in the academic world as well as in the national policies. The process of building the Academy of Sciences and Technologies of Algeria is ongoing, in partnership with the French Academy of Sciences and the French Academy of Technologies. The institution has to be independent in its missions of promoting scientific teaching, transmitting knowledge, fostering international collaboration, playing an expert and advisory role and producing proposals and recommendations for a better use of technologies, for the general benefit of Algeria and abroad.

The process of appointing the academy members needs to be independent: they will be peer-elected once the academy is created with a nucleus of first founding members (few tens) to be selected for a list of Algerian scientists and engineers constituted by members of the Académie des Sciences (France), the Académie des Technologies (France), the Royal Society (United Kingdom), The National Academy of Sciences (USA) and the Royal Academy of Engineering (Sweden).

We believe that the creation of an academy of sciences and technologies will bring a considerable reinforcement to the dynamics between the academic-world and the society through practical fields such as technology, economics and culture and will lead Algeria towards a fully knowledge-based society.