

*Science and the New Landscape of the 21st Century:
role of universities in transforming societies and shaping cultures*

Dr. Alaa I. Ibrahim, Physics Department
E-mail: ai@aucegypt.edu

The world of the 21st century will be shaped and led by knowledge-based societies and nations. Globalization has already set the stage for this era through making the world interconnected more than ever and the tools of empowerment accessible to all. This revolution has been driven by breakthroughs in science and technology whose impacts touch every aspect of our lives today. To lead and compete in this era we must embrace a science literate and appreciative culture. Rooted in our heritage from the Ancient Egyptian through the Roman and Arab/Muslim epochs, nurturing this spirit is a proven catalyst to stimulating a knowledge-based society; to fostering innovation and creativity; and to promoting good citizenship and governance, and thus development. But how can we induce this transition from our present reality as a country and region? Societal transformations do not emerge in vacuum. They require a cultural context driven by visionaries and institutions. With a majority of youth among our population (more than any other region in the world), universities and educational institutions are poised to play a pivotal and vital role through realizing their untapped potential in fostering public engagement with science and knowledge while bridging the divide between science on one hand and arts and humanities on the other hand, which will also yield cross-disciplinary collaboration among their faculty and students and true enrichment to the curricula.

As more and more scientific and technological issues – ranging from climate change to renewable energy, from new epidemic outbreaks to natural disasters, and from pioneering biomedical research to the social controversies stirred into debate by new medical practices – appear in the daily news and influence so much of our public discourse locally and across the globe, the need for the scientific and intellectual community to convey highly complicated technical information and their implications to mass audiences grows ever apace. Furthermore, as they attempt to address these issues with the general public, the need to enliven their communications so that they truly resonate with non-specialist audiences becomes ever more urgent.

To achieve this effectively and widely, universities need to launch new initiatives with formal and informal programs. New bridging courses and curricula will need to be introduced to connect Science and other disciplines, including Mass Communication, History, Performing and Visual Arts, among others, so that graduates could be ready to play an effective role. Universities will also need to revamp their community outreach role and activities through offering informal learning programs that genuinely engage the youth and the society at large. In essence, there needs to be a dialogue between the intellectual and scientific community and the society (including civil society organizations). The benefits of such a dialogue are mutual and countless. Because science in the popular native media as well as science museums, nature centers, aquaria, planetaria and the likes are rather scarce in our locale, the need to create informal learning opportunities is indispensable.

Informal learning encompasses a variety of venues and media and offers valuable learning outcomes for people from all walks of life, ages, and socioeconomic backgrounds and abilities. It allows people to explore and pursue their own interests and it provides useful social interactions. While formal learning stops for most people when they finish school or university, informal learning activities encourage people to become lifelong learners. At schools and universities, it enhances and enriches formal learning through leading to further inquiry and enjoyment. Research shows that participation in informal learning activities is linked to academic success and even good public policy.

Beginning April 19 through May, a carnival of activities will come to campus with the Cairo Science Festival [1], held in collaboration with and concurrent to the Cambridge Science Festival (the first annual Science Festival in the U.S., organized by MIT and Harvard). The festival is a public celebration of science and technology in recognition of their key role in our everyday life. The festival will present science and technology to the campus community and the society through activities that bring science (in its broad sense including engineering, medical, and social sciences) from the classrooms and research laboratories to informal and entertaining media such as interactive shows and exhibitions, art galleries, visual and performing arts, and public lectures and dialogues.

The festival will be a platform to blend and enjoy science and arts together and to challenge students' creativity to offer unconventional means work of science communication. And for sure, there will be prizes! The festival will feature Nobel laureates, distinguished Egyptian expatriates, and will showcase leading local research groups. It will also engage students and members of the general public through allowing them to organize and host their own events.

The role of universities to stimulate knowledge-based societies through formal and informal programs will be a focal point at the fifth annual conference of the Harvard Arab Alumni Association on April 22nd in Doha, Qatar [2]. In a panel entitled "*Transforming the Arab World into a Knowledge-Based Society*" which I am organizing, the conference speakers will discuss the impact of science, technology and globalization on the future of the region and the role of universities and learning institutions. Such discussions across our region are a healthy sign to charting a better future for the region. The 21st century is clearly bringing more potential and power to learning institutions. With an accelerated pace of technology evolution (Fig. 1a) and a rewarding impact of embracing new technology and knowledge (Fig. 1b), it is both urgent and remunerative for us to tune to and to play the new scores. As the region's oldest and most prestigious English language university in the region and with a vibrant science and arts/humanities programs and a new program on Global Affairs and Public Policy, AUC is poised to play a crucial role in the upcoming years and decades.

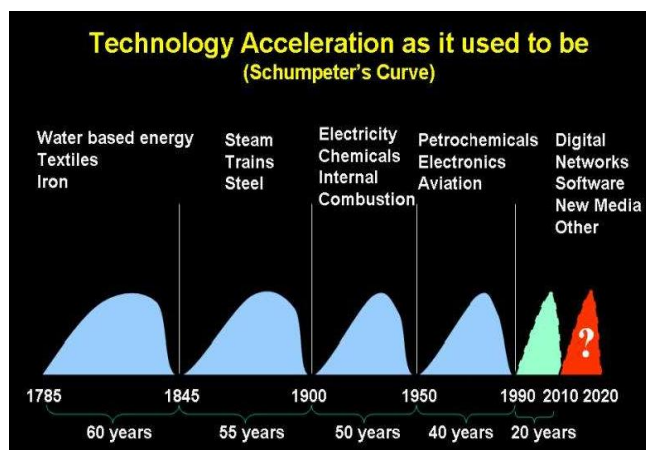


Fig. 1a: History of Technology Acceleration

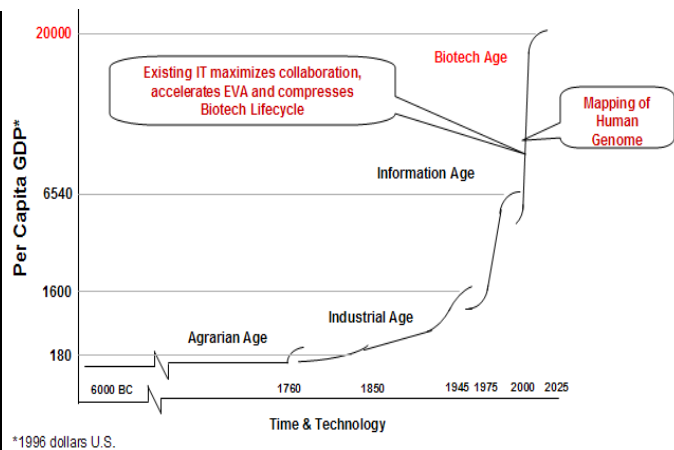


Fig. 1b: Impact of New Technology on GDP

The human passion and curiosity to know and understand nature, the universe, and ourselves is an important value to cultivate. It led the first man to discover fire and to learn how to hunt and plant. In the 20th century, it led man to walk on the moon, to understand the atom and light and harness their power, and to decipher the human genetic code. This value is essential for our species to survive and thrive, and to our country and region to recapture and surpass their legacies. It is a birthright for every person to experience and enjoy this connection with nature and it is an act of civic duty for scientists, intellectuals, and universities to make it happen.

[1] Cairo Science Festival, April 18 – May 30, 2010. CairoScienceFestival.org and ScienceAndSociety.org
 [2] Harvard Arab Alumni Association 5th Annual Conference, April 22, 2010 Doha, Qatar. HarvardArabAlumni.org/event.php