

Keynote Speech II:



Readiness for the Impact of Emerging Technologies

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Abstract:

Throughout history, technical innovation has always been the key driver of human progress. The use of new technologies brings positive changes to people and societies. It makes life easier, more pleasant, raises the standard of living, and improves human wellbeing, health and life expectancy. It also changes social frameworks, business dynamics, job types, and wealth distribution.

The introduction of digital technology a few decades ago has spurred a series of transformations that have significantly changed the way we live, work, transact, and interact. Innovation continues to accelerate in a large set of technologies and applications. New hardware, software, and algorithmic tools allow us to process information much faster and in much larger volumes. Moreover, the digital world is becoming increasingly intertwined with the physical world of machines, to which it is bringing ubiquitous intelligence and a perpetual flow of information.

These trends are driving us towards a very different future. That future has already started. A new wave of social, economic, and psychological changes is expected to abruptly affect almost everything we do. With change, many opportunities come along. Those who anticipate the course of the future, and prepare for it, will be ready to seize these opportunities and will come out winners. Those who chose to ignore the signs of change, will risk losing their livelihood and eventually hurting their families, businesses, and societies. Those who see the storm coming but react by standing still in panic, disgruntlement, and lamentation will be defenseless when the inevitable waves hit their shores.

This presentation overviews the trends in technology and applications, including Artificial Intelligence, Big Data Analytics, Robotics, Internet of Things, Industry 4.0, etc. The impact that such advances are likely to have on the high-tech as well as the low-tech job markets is outlined. Some actions and initiatives are proposed and discussed, with the purpose of triggering a larger debate on how individuals, businesses, academic institutions, and governments should prepare for the anticipated massive changes that are already beginning to affect our world.

Short Bio:

Dr. Ahmed N. Tantawy is an international Strategy and ICT Consultant. His engagement projects in the past 5 years include leading the strategic planning and providing executive advice for: enhancing the direct and indirect contributions of ICT to a national economy, building a sustainable ICT offshoring and outsourcing hub, stimulating the telecommunications industry through novel licensing schemes, developing the national governance and organizational

structures for establishing a secure digital society, deploying cloud computing across government agencies, and maximizing the impact of ICT on reengineering K-12 education in both developed and developing nations.

He also served as an investment advisor to a venture capital fund operating in the US and the Middle East, a member of the board of trustees of the non-profit foundation for the advancement of technical education, a senior consultant to the Office of the CTO of a major multinational corporation, an expert member of the board of directors of the Egyptian National Telecommunications Regulatory Authority, and a senior advisor to the Egyptian minister of ICT.

Between 1988 and 2013, Dr. Tantawy held several technical and executive positions at IBM. In 2008-2013, he was Chief Technical Officer and Senior Consulting Executive in the Growth Markets Region, where he initiated and oversaw the technical aspects of complex, innovative projects in Africa, Asia, Australia, Central & Eastern Europe, Latin America, and the Middle East. His focus areas included “smarter” applications in: government, education, healthcare, energy, transportation, and social inclusion.

From 2000 to 2008, he was the Technical Director of IBM in the Middle East and North Africa, where he developed several initiatives and built the Global Resource Centers in Egypt, which were among the early achievers of CMMI Level 5 certification and included the largest IBM global hub for software consulting services at that time.

Between 1998 and 2000, Dr. Tantawy was the Worldwide Technical Director of Advanced Technology Development for IBM’s Internet Division, leading the invention and development of very robust content protection and digital rights management techniques for electronic media assets distributed securely over digital broadcast networks as well as the Internet. In 1996 - 1997, he was worldwide Director and CTO of IBM’s Digital Media business unit, where he oversaw the development of hardware and software products for digital video-enabled solutions in various areas such as security, entertainment, and healthcare. He led development labs in the US, Italy, Japan, and Brazil.

From 1988 to 1995, Dr. Tantawy was a Research Scientist then Research Manager at the High Performance Communication Systems department at the IBM Thomas J. Watson Research Center in Yorktown Heights, New York. There, he initiated, obtained significant internal and external funding, and led several projects in the areas of: high performance protocols, interactive multimedia systems, autonomous decentralized systems, and high performance workstations. Dr Tantawy was a University Professor and an independent consultant in the USA, France, and the Middle East between 1980 and 1988. He led several projects in the fields of Factory Automation, National Health Information Infrastructure, and Satellite Data Networks. He also played a significant role in the establishment of the first College of Computer Science and Engineering in Saudi Arabia.

The technical contributions of Dr. Tantawy include 18 issued patents, 4 books and over 100 refereed scientific papers. He also served as the Editor-in-Chief of a book series on High Performance Computing and Communications, an Editor of 4 scientific journals, and the General Chair of 14 international technical conferences. He had special assignments with the US National Academy of Sciences and the US National Science Foundation. He served on the Board of Trustees and Advisory Boards of a number of universities and research institutes in the USA, Europe, and the Middle East.

Dr. Tantawy received his Ph.D. in Computer Engineering with highest honors from Grenoble, France in 1980. He earned his B.Eng. and M.Sc. degrees in Electrical and Computer Engineering with distinction and highest honors from Alexandria University, Egypt. He also received advanced education in technology management and corporate leadership at IBM (1993-2006), Harvard (1995) and MIT (1999 and 2012).