



Prof. Dr. Ahmed N. Tantawy

Strategy Advisor and Former Scientist, Inventor, and Business Executive

Keynote title: Government Improvement through Scientific Research and Innovation

Bio

Dr. Ahmed N. Tantawy is a lifelong learner and educator, an engineer, an inventor, a scientist, and a former senior business executive. He enjoys conceiving, planning, structuring, and managing innovation ecosystems and effective organizations that are centered around people and purpose.

Since 2013, Dr. Tantawy has been serving as an expert advisor to multinational corporations, the World Bank, the UN and various government agencies. He is currently a senior advisor to the Egyptian Minister of Communications and IT and the Founding Director of the Applied Innovation Center, where national challenges are addressed through the application and adaptation of emerging technologies. He is also a member of the Board of Directors of various national-scale initiatives in the Middle East, a member of the Board of Directors of Telecom Egypt's Data Services company, and a Trustee of two Not-for-Profit Organizations working in the fields of Education and Sustainable Social Development of underprivileged communities. He was a member of the Board of Directors and the Executive Committee of the Egyptian National Telecommunications Regulatory Authority, a member of the Executive Committee for the Development of the Suez Canal Region, a senior advisor to various cabinet ministers, the Executive Director of an international Nanotechnology initiative, and a principal investment advisor of a Venture Capital fund operating in the US and the Middle East.

Dr. Tantawy held several technical and executive positions at IBM Corporation. From 2008 to 2013, he was Chief Technical Officer and Senior Executive Advisor in the Growth Markets Region, where he oversaw the company's mega-projects in Central and Eastern Europe, Central and South America, Africa, Asia, and Australasia. From 1996 to 2008, he was the CTO of IBM's Telecom and Media Industry Solutions Unit then the entire Internet Division, directing Product

Development Labs in the US, UK, Germany, Italy, Japan, Brazil, and Egypt. Among his accomplishments during that period, he built and led IBM's largest Software Services Delivery Hub, which developed advanced products and solutions to clients across the world. He also pioneered the introduction of secure digital content distribution as a viable business and introduced effective security mechanisms to support various e-business applications. From 1988 to 1996, he was a Research Scientist and Manager at IBM's Thomas J. Watson Research Center in New York.

Dr. Tantawy has always been involved with academic institutions. Between 1980 and 1988 he was a University Professor in the USA, France, and Saudi Arabia. Over the years, he served on the Boards of Trustees and Advisory Councils of a number of universities and research institutes around the world and held special oversight assignments with the US National Academy of Sciences and the Egyptian Supreme Council of Universities.

Dr. Tantawy's scientific contributions include 34 inventions, 18 issued patents, and the publication of 4 books, 2 book chapters, and over 100 refereed papers. He was the Editor-in-Chief of a book series on High Performance Computers and Communications and an Editor of 4 scientific journals. He participated in the organization of over 50 IEEE, ACM, and IFIP conferences, serving as the General Chair of 14 among them.

His practical experience and technical interests include: Architecture and Design of Large Systems, High Performance Networks, Information Privacy, Data Security, Embedded Systems, Factory Floor Automation, Smart and Secure Cities and Buildings, Artificial Intelligence Applications, Nanotechnology Applications, Digital Transformation Strategies, and Tech-fueled Socio-Economic Growth Initiatives.

Dr. Tantawy holds a Ph.D. in Computer Engineering with highest honors from Grenoble, France and earned his B.Eng. and M.Sc. degrees in Electrical and Computer Engineering with distinction and highest honors from Alexandria University, Egypt. He attended advanced executive education programs in Business Administration, Corporate Governance, and Technology Management at Harvard, MIT, and IBM.

Government Improvement through Scientific Research and Innovation

Abstract:

The role and structure of governments have been continuously evolving over the centuries because the nature and reach of their functions continue to increase in complexity and diversity. Moreover, in addition to their national importance, government actions and decisions have an increasingly deeper and more significant impact on people's welfare, economic prosperity, security, rights to privacy, and many other key aspects of their lives. Throughout history, governments have used technology to enhance its operations. In the past couple of decades, digital transformation has been implemented around the world with varying degrees of sophistication and success. Some technological products, services, and operational models have been developed specifically for government use. The term GovTech has been

coined to refer to such technologies. In more recent years, the rapid advances in Communications and Information Technologies have opened the door for more opportunities for governments to explore and exploit such technologies in view of streamlining their operations and enhancing their functions. Furthermore, it is becoming increasingly critical for all governments to adapt and adopt new technologies if they want to stay in synchronization with the rest of the world. In order to enable their very survival within the international community, they must have world-standard infrastructures for: communication, cross-border movement of people and goods, financial and commercial transactions, official exchange of documents, etc. Moreover, the security of their people, institutions, and infrastructure will be at risk if proper technical tools and procedures are not adequately implemented. The level of readiness of governments to adopt new technologies and constantly adapt is becoming a measurable indicator of their nations' competitiveness. Unfortunately, the divide is growing between the few leading governments and the ones that lack crucial elements, which include primarily a sufficiently large and properly skilled workforce, that is capable of designing, building, and operating an adequate physical, legislative, operational, administrative, and change management systems. This presentation addresses these issues and highlights the critical importance of scientific research and applied innovation in adapting emerging technologies to the needs and conditions of a nation and to achieving a level of efficiency and cost-effectiveness that is inherently specific to each nation. Real examples from various countries, including Egypt, are given. Concrete relevant R&D projects are proposed for Egyptian researchers, entrepreneurs, and officials in charge of digital transformation and administrative development.