



The Fourth Industrial Revolution – Opportunities and Challenges

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“We stand at the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another”. That was the inspiring talk of Mr. Klaus Schwab at the 2016 WEF land marking the outbreak of the 4th Industrial Revolution driven by ICT advancement in Mobile Devices, Cloud Computing, Internet of Things Platforms, Location Detection Technologies, 3D Printing, Big Data Analytics, and advanced human-machine Interfaces.

The Functional Attributes of 4IR include: Smart Clouds achieving scalability, low IT cost, mobility, and reduced complexity, Collaborative IT Solutions for fostering innovation, reduced time-to-market, improving productivity, minimizing capital expenditure, and introducing efficient training mechanisms. Wireless Intelligence, Distribute Manufacturing, and Integrated Enterprise Ecosystem are also among the functional attributes of 4IR.

In its scale, scope, and complexity, the transformation caused by the Fourth Industrial Revolution will be unlike anything humankind has experienced before. We do not know how just it will unfold, but one thing is clear; the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society.



Biography of Prof. Yousry S. Elgamal



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Prof. Yousry Elgamal, Professor of Computer Engineering, senior advisor at The Arab Academy for Science and Technology, and Chairman of The Computer Scientific Society (CSS), Alexandria-Egypt. He served as The Minister of Education of Egypt 2005-2010, Chairman, Board of Trustees, Egypt Japan University of Science and Technology (E-JUST) 2010-2014, and the senior consultant of the National Telecommunications Institute of Egypt. He is a member of the group of experts preparing The Global Knowledge Index, and The Chairman of The Information and Communication Committee at The National Committee of Education, Culture, and Science (UNESCO, ALECSO, ISESCO).

Elgamal has also served in a number of capacities at The Arab Academy for Science and Technology and Maritime Transport including Vice-President for Education and Research, Founding Dean of College of Engineering and Technology, Founding Chairman of Electronics and Communication Department, and Assistant to the President for Informatics. He served also as a Lecture of Nuclear Electronics at The Atomic Energy Agency (IAEA).

He received his B.Sc. in Electrical Engineering from the University of Alexandria 1968, his M.Sc. from Ain-Shams University 1977. Prof. Elgamal holds a D.Sc. in Computer Science from the George Washington University 1985, and a recipient of Richard Merwin Award 1984. He is a board member of the Center of Special studies and Programs (CSSP) and the Center of Science and Planetarium, Bibliotheca Alexandrina. Dr. Elgamal is an active member of the Civil Society of Alexandria as a chairman of The Society of Friends of Music and Arts, and former president of The Yacht Club of Egypt in Alexandria.