Building Digital Trust in the Internet of Things Ecosystem

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Speaker:
Prof. Muhammad Khurram Khan, Center of Excellence in Information Assurance (CoEIA), King Saud University, Riyadh

Organizer:
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Abstract:

The agglomeration of embedded intelligence and Internet connectivity plays a key role in upheaving the paradigm of Internet of Things (IoT). It is estimated that by 2025, there would be approximately 100 billion connected devices with a total economic impact of USD 3.9 Trillion to USD 11.1 Trillion. Consumers embrace potential advantages of IoT products and applications because of the benefits and services they get. However, when these smart IoT devices collect and share personal information, consumers become very concerned about the security of devices and privacy of their personal information. If reasonable security is not provided and consumer's personal information is exploited for criminal acts, then trust upon adopting these IoT devices could be compromised. Hence, the prosperity and wide adoption of IoT ecosystem are highly reliant on establishing consumer's trust.

In this talk, we will firstly provide a definition of the consumer trust upon adopting IoT technology. Secondly, we will present a conceptual model to reflect the influential factors that stimulate consumer's trust, so that they could willingly adopt, purchase and use IoT products. Furthermore, we will highlight the security requirements to be considered while developing IoT products and applications. Moreover, we will also shed light on *'five acts'*, which could violate security and privacy of IoT consumers. In addition, four *W's* of privacy to engage consumers with high-level of satisfaction in adopting IoT products and applications will be discussed. Finally, we would identify a number of future challenges that need to be resolved in IoT products and services, and some recommendations would also be addressed to preserve consumer's trust in IoT.

Speaker Biography: Muhammad Khurram Khan is currently working as a Full Professor at Center of Excellence in Information Assurance, King Saud University, Saudi Arabia. He is the Editor-in-Chief of *Telecommunications Systems* Journal published by Springer since 1993. He is on the editorial board of several top-class international journals. He is also on the organizing committee and TPC of dozens of international conferences. He is an author of over 325 publications and an inventor of 10 US/PCT patents. His research areas of interest are Cybersecurity, IoT security, digital authentication, biometrics, and technological innovation management. He is a fellow of the IET (UK), a fellow of the BCS (UK), a fellow of the FTRA (Korea), and a senior member of the IEEE. His detailed profile can be visited at http://www.professorkhurram.com