

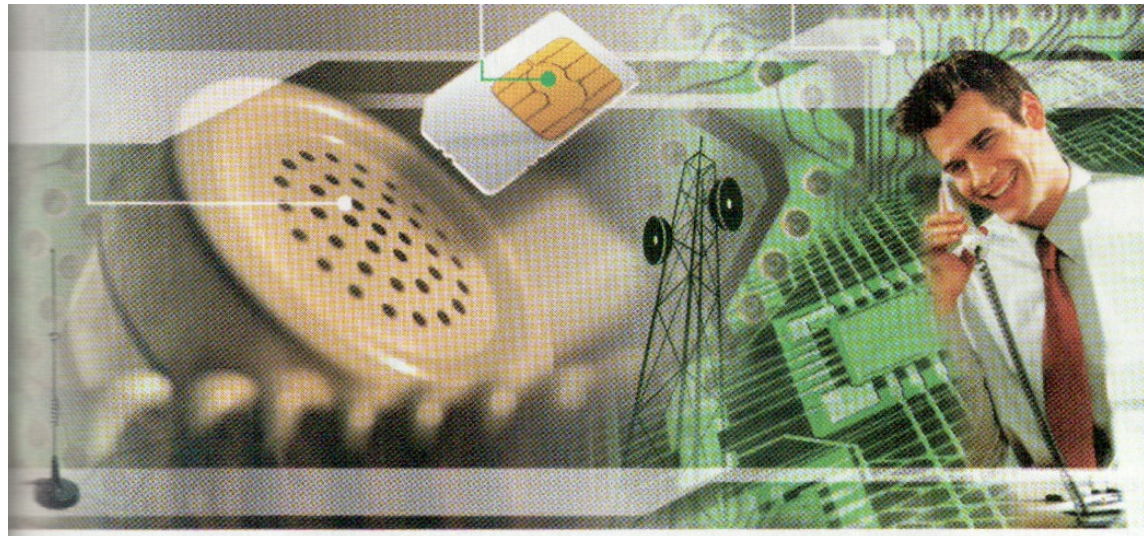


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## **INTERNET OF THINGS ( IoT )**

### **Training Workshop : 5 Days**

#### **Workshop Agenda**

The Internet of Everything (IoE) creates \$14.4 trillion in Value at Stake — the combination of increased revenues and lower costs that is created or will migrate among companies and industries from 2013 to 2022.

Source - CISCO

#### **Internet of Things**

#### **Architecture, Protocols and Services**



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ITU-T in its recommendations, ITU-T Y.2060 (06/2012) has defined Internet of things (IoT) as “Global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies. Through the exploitation of identification, data capture, processing and communication capabilities, the IoT makes full use of things to offer services to all kinds of applications, whilst ensuring that security and privacy requirements are fulfilled.”

The Internet of Things was “Born” between 2008 and 2009, when the number of things connected to the Internet exceeded the number of people connected. By 2020, 50 billions of devices are predicted to be connected. It is envisioned that the physical things/devices will be outfitted with different kinds of sensors and actuators and connected to the Internet via heterogeneous access networks enabled by technologies such as embedded sensing and actuating, radio frequency identification (RFID), wireless sensor networks, real-time and semantic web services, etc. IoT is actually a network of networks with many unique characteristics.

IoT will continue to combine Big data, Analytics, The Cloud, Artificial Intelligence (AI), robotics, and Automation to propel industries forward and create the next industrial revolution.

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What is Internet of Things ( IoT )

Defintion & Characteristics of IoT

Physical Design of IoT

Things in IoT and IoT Protocols

Logical Design of IoT

IoT Functional Blocks, IoT Communication Models, IoT Communication APIs

IoT Enabling Technologies - Wireless Sensor Networks, Cloud Computing, Big Data Analytics, Communication Protocols, Embedded Systems

IoT objects & Services

Structural Aspects of IoT

Key IoT Technologies



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IoT Levels and Deployment Templates

Evolving IoT Standards

IoT OSI Protocols

( Zigbee / IEEE 802.15.4 / RF4CE / IEEE WBANs / IEEE WPAN / NFC / DSRC / Cellular & Mobile Network Technologies for IoT / M2M, UMTS, LTE, IPV6 for IoT, Mobile IPV6 for IoT, 6LoWPAN )

## **Internet of Things ( IoT ) Vision**

IoT Strategic Research and Innovation Directions

IoT Applications

Internet of Things and Related Future Internet Technologies

Infrastructure - Networks and Communication - Processes



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Data Management - Security, Privacy & Trust

IoT – Value Creation for Industry

Future Concepts - Smart Objects

IoT – Value Creation for Industry

IoT Application Examples

“Smart” applications, including cities, water, agriculture, buildings, grid, meters, broadband, cars, appliances, tags, animal farming and the environment

## **IoT & M2M**

M2M introduction

Difference between IoT & M2M



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SDN & NFV for IoT

Detailed Reference Models

IoT Reference Model & Reference Architecture & Protocols

Business Scenarios

Domain, Information, Communication Model

System Use Cases

IoT Platforms Design Methodologies

IoT Standardization

## **IoT Global Developments & Business Models**

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Defining IoT field from the macro perspective. In particular, we consider the major IoT market segments, their size and expected growth, and analyze the specific requirements of these segments, as well as the available connectivity alternatives.

Viewing IoT field from the intermediate-level perspective. With a focus on the IoT business ecosystems of companies sharing certain assets in their products and services, identifying the players of the ecosystem and their roles, and considering the value created by different roles.

Taking the micro-level viewpoint by studying the business models of the IoT companies, their business opportunities, drivers and challenges, as well as the earning logic.

**Workshop Trainer - <http://www.sanjeevgoel.in>**

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