

The Future Internet and The Internet of Things

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The Future Internet

The Internet plays a crucial role in many people's lives and is becoming one of the most important infrastructures people depend on. It has grown from a network that connected a few computers to share printers and exchange email to a global infrastructure that moves massive amounts of information and offers a highly diverse set of services.

As the Internet scales to dimensions that were unthinkable when it was conceived, it is becoming apparent that there are challenges caused by this massive growth and the ever increasing popularity of online services. Research on Future Internet is carefully reconsidering the design decisions taken for the Internet to prepare it for the tasks ahead and its broadening role in society. Several trends are emerging in research on Future Internet.

Software-Defined Networking (SDN) is a new design paradigm for networks that separates control from data plane in networking equipment. This design promises a network that is simpler to operate, more efficient and more flexible in meeting the needs of applications.

Information Centric Networks (ICN) recognizes that the vast majority of Internet traffic is to access content. Research on ICN acknowledges this fact and investigates new network principles that are centered around delivering information objects rather than connecting computers.

The Internet of Things (IoT)

On the basis of the great success of Internet, Internet of Things will connect various types of objects in the physical world. Through sensing, transmission and processing of information of things, IoT can achieve the information exchange of people to machine, machine to machine in wide areas and in big scales, thus to achieve efficient and smart use of material resources and physical world. IoT will benefit the peoples of the world, and promote the formation of smart, green, inclusive and sustainable development model.

Internet of Things will reshape the global information infrastructure on the basis of Internet. But there are still huge challenges we have to face to achieve the large-scale deployment and application of IoT, e.g, how to sense effectively a huge number of ubiquitous and diverse objects, how to connect such a large object into the network and transmit and interconnect efficiently, and how to deal with such big data of things to get valuable information and knowledge for decision-making.

To realize the value of IoT for human society, we need solve the bottlenecks faced

from all aspects of the technology, standards and cost by its large-scale application. Such, we need to consider the design of the architecture of IoT, the development of low-cost, low-power and intelligent sensors, the WSN and the support of IPv6, the enhancement of existing network to support M2M communications. We also need to solve many kinds of problems while deployment of various IoT applications in large-scale, such as smart grids, intelligent transport, smart healthcare application etc. The session will be to discuss the key issues and path for the development of Internet of things.