

# Trends & Challenges for ICT Standardization



Know the *Unknown*™

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1. ICT Trends in the next decade
2. Challenges for ICT Standardization

- Connected Society and globalization
  - ⊕ Rapid spread of broadband, wireless technologies and other next-generation networks (like optical fiber) have paved the way for connect society
  - ⊕ With the help of internet and low cost infrastructure like VoIP, outsourcing has spread to core business services and are no longer restricted to manufacturing.

- Changes in delivery models and business models
  - ✦ Through modern communication technologies, producers, publishers and vendors enter into direct contact with customer
  - ✦ New business models include retail purchase, subscription fees, pay-per-play, advertising and selling/renting digital objects through internet.

- Convergence and integration
  - ⊕ Merging of Voice, Video and data
  - ⊕ Modern mobile phones integrate capabilities of voice recording, playing music, listening to radio, taking and viewing photographs and showing street maps

- Smart objects and artificial intelligence
  - ⊕ RFID tags and other computing devices have led to location-based services, which follows the location of objects and users through a variety of position-determining technologies. Navigation and asset tracking are most common applications.
  - ⊕ Artificial intelligence is already used in speech recognition, data mining, e-mail spam filtering and natural language processing.

- Security
  - ✦ IT-industry is becoming aware of the necessity of information security, and security of associated software, hardware and infrastructure that facilitate its use.
  - ✦ There is increased need to fight unsolicited emails (spam), which is the largest source of computer threats.
  - ✦ Advanced encryption and digital rights management will prevent unauthorized access of digital contents from digital music to e-books, videos and computer games.

- Pervasiveness of ICT
  - ⊕ ICT is used in several other areas like toys, health care, construction etc.
  - ⊕ The pervasive nature of ICT requires ICT-related standardization efforts to be taken in any possible economic area (from household instruments such as a fridge to business processes such as electronic invoicing) making it difficult to delimit the scope of working areas and responsibilities.



- Service oriented
  - ⊕ Current and future ICT related industry is much more focused on the provision of services than on products.
  - ⊕ The standardization efforts have been product oriented. It is a challenge to adapt their procedures and readjust their efforts towards the standardization of services.

- Interoperability
  - ⊕ Interoperability poses important challenges. Standardization is being regarded as an essential tools to foster interoperability.
  - ⊕ Achieving a sufficient level of interoperability at the network/device/service/application level is a complex matter involving various types of actions and various types of actors.