Internet of Things: An Integral Part of the Future Internet

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Internet of Things

• Integral Part of the Future Internet, with specific aspects
  – Real-World Integration
  – Heterogeneity of „Devices“ and Networks
  – Mobility
  – Managing Scale
  – Continuous Sensemaking
  – Distributed Intelligence
Future & Real World Internet

Better Processes and Better Decision Making
Heterogeneity

Devices
- RFID
- Sensors & Actuators
- Mobile Phones
- PLCs & Embedded Systems
- ...

Networks
- WAN, LAN, PAN, ...
- (Mobile) Phone Networks
- Wireless Sensor & Actuator Networks
- ...

Future Internet
Mobility: What and Where
Mobility: What and Where

- Mobility of ...
  - Entities of Interest
Mobility: What and Where

• Mobility of ...
  ... Entities of Interest

  ... Nodes
Mobility: What and Where

• Mobility of ...
  ... Entities of Interest

  ... Nodes

  ... Networks
**Distributed Intelligence**

Business Process supported by a cross-layer service

- Direct access to web service enabled devices
- Indirect access to devices via middleware

Cross-domain heterogeneous device collaboration

ERP

Dynamic Discovery of Devices / Services & P2P Communication

Cross-layer SOA Collaboration
Summary

• The Internet of Things is an integral part of the Future Internet
  – No separate architectures for the Internet of Things, the Internet of Services, the Internet of Contents etc.
  – However, heterogeneity and „design for change“ needs to be taken into account
• Services and service platforms provide the glue and are key for interoperability
• Top-Down engineering of the Future Internet unlikely
  – „Let chaos reign, and then rein in the chaos“
  – Standards are good, but ...
Thank you!

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The Internet of Things is ...

‘A world where physical objects are seamlessly integrated into the information network, and where the physical objects can become active participants in business processes.

Services are available to interact with these ‘smart objects‘ over the Internet, query and change their state and any information associated with them, taking into account security and privacy issues.’

RFID, Sensor Networks etc. are just enabling technologies!