Internet of Things and Cloud: Converging the opposites towards the Future Internet

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**IoT and Cloud**

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<tr>
<th><strong>Cloud</strong></th>
<th><strong>IoT</strong></th>
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<td>Cloud is about transparency: to be connected to a theoretically unlimited computing and storage capabilities, and the technological ability of transferring terabyte torrents between data centres.</td>
<td>Internet of Things is about connecting smart objects: the ability of identifying, sensing and controlling every single component, subsystem and environment.</td>
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IoT and Cloud

IoT is seen though as an enabler of Cloud Computing: the predictions of scale (Cisco predicts 50 billion connected objects by 2020) of data generation by passive and active sensors, requires a new balance between human intervention and planning and autonomous M2M operations.
Growth can be a surprise

Mobile Internet Outpaces Desktop Internet Adoption

iPhone + iTouch Users = 8x AOL Users 8 Quarters After Launch

iPhone + iTouch vs. NTT docomo i-mode vs. Netscape vs. AOL Users
First 20 Quarters Since Launch

- Mobile Internet
  - iPhone + iTouch
  - Launched 6/07
  - ~57MM

- Desktop Internet
  - Netscape
  - Launched 12/94
  - ~25MM

- Mobile Internet
  - NTT docomo i-mode
  - Launched 6/99
  - ~11MM

- Desktop Internet
  - AOL
  - v 2.0 Launched 9/94
  - ~7MM

Subscribers (MM) vs. Quarters Since Launch
Introducing the IoT-A tree:

- a generic Reference Model, derived from Business considerations, application-based requirements and current technologies,
- able to generate different Reference architectures depending on domain-specific requirements,
- to be used as a blueprint for concrete architecture design.
A smart Home where no energy is wasted, where interactive walls are able to display useful information, as well as pictures of art, videos of far-away friends or relatives.
Intelligent Transportation Systems where public and private transportation interacts, choosing the best path to avoid delays and congestions, and where multimodal transport is smooth and easy.
Productive business environment where offices become smart and interactive, where factories relay production-related data in real-time, where face-to-face meetings are established through holograms and where documents are fully integrated in the workflow.
Efficient logistics environment where safety and environmental concerns are ubiquitously embedded into the process
Ultimate retail environment where consumers are supported to have a healthy and convenient shopping experience, where full traceability of products is standard.
Smart health, non-intrusive monitoring system, preventing serious illness by adjusting the environment and selecting appropriate drugs and diet.
Smart Cities, where productive areas, retail, residential and green spaces will coexist and will be enhanced by IoT technologies.
All IoT application domains will generate a huge amount of data.

Need for “near-infinite” computation and storage capabilities.

Need for interoperability between IoT “clouds” and Internet.
Heterogeneous Architectures
Thank you for your attention