Cloud Computing and Telecommunications
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Operations and Business Software
Why cloud computing is relevant?

- Higher Economies of Scale
- Flexibility and Innovations
- New business models: Pay per use, Min. CAPEX
- Efficiency of Standardized Services
- Anything as a Service and internet delivery
- Differentiation for consumer needs
- New cloud Architectures: Private / Public / Hybrid cloud

- Future Business Architectures in Transition
- Accelerated Ecosystem of Innovations
- End customer behavior changes
- Resource cost disruption and delivery innovation
Cloud computing and telecom stakeholders

- “X” as a Service
- Elastic and efficient IT
- SaaS sourcing

Customer

Corporate IT and service delivery

Vendor

CSP
Equipment vendor
IT & Telecom ISVs
SIs

PaaS for development
IaaS foundation
Cloud computing – telecom viewpoints

- Internet based new services
- Operational efficiency
- Application and network architecture
Telecom requirements for cloud computing

- Telco grade environment
- Corporate business processes
- Non-real time service assurance
- Real time service assurance

### Throughput
- Concurrent sessions
- Transaction duration
- Throughput

### Availability
- 99.999%
- 99.99%
- 99.9%
- 1/sec
- 10/sec
- 100/sec
- >100/sec
- >1000/sec

### Latency
- 5ms
- 150ms
- 500ms
- 1 sec
- 10 sec
- 1 min
- 1 hour
- 1 day

### Transaction duration
- Throughput
- Concurrent sessions

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Cloud computing in telecom - outlook

- Public clouds
- Telco cloud platforms (Telco PaaS)
- Cloud point solutions
- Integrated cloud solutions
- Private clouds
- Cross domain virtualization
- Embedded Virtualization
- Virtualized islands

Phase 1
Phase 2
Phase 3

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Industry topics

**Taxonomy – collaboration with other industry groups**
- Several exist today
- Example: precise definition of the “private cloud”
- Possible telecom industry extensions e.g. is there a “telco cloud”

**Costs of changing cloud providers should be reasonable**
- Technology agnostic clouds
- Minimal set of standard (or de facto) cloud APIs e.g. vCloud API

**Cloud computing regulations**
- Private data
- Security
- Location