CLOUD CONNECTIVITY

OFFENSE & DEFENSE

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3 KEY MESSAGES

1. Cloud without connectivity is useless (public, private or hybrid)
   Cloud is in the air, you have to get to it (Consumer Mobile Cloud)

2. Managed Connectivity – Operator Defensive play for Traffic increase
   Interoperability & Cloud Services – Operator Offensive play

3. Phase 1 of Cloud Computing is about Data Centers (IT/Enterprise)
   Phase 2 is about Consumers, Mobility & Operator
WHAT IS CLOUD COMPUTING?

THERE ARE (TOO) MANY DEFINITIONS
COMMON GROUND OF MOST DEFINITIONS:
PAY-PER-USE
ELASTIC CAPACITY
SELF-SERVICE INTERFACE
RESOURCES ARE VIRTUALIZED
WHY IS CLOUD GETTING ATTENTION?

DEVICES

Connectivity
CLOUD

Storage
LOCAL

Processing

NETWORK & DATA CENTERS (INCLUDING SERVICES)

Connectivity
CLOUD

Storage

Processing

DECADES OF DEBATE ON CENTRALIZED VERSUS DISTRIBUTED
WHY IS CLOUD GETTING ATTENTION?

- **Device, Network/DC** (Size/Speed at Cost/unit)
  - Bandwidth
    - 1Gb
    - 1Tb
    - 1Pb
    - 1EB
    - 1ZB
    - 1YB
  - Storage
  - CPU

- **If you can process more, you store more**

- **If you can store more, you download more**

- **If you can download more**
  - You will store and process more

- **And finally two orthogonal requirements**
  - Virtualization = location does not matter but
  - Mobility = location matters
THE NEW BROADBAND WORLD
REALITIES OF CONNECTIVITY

Device Momentum
Resource Utilization
Applications
Content and apps storage
Power Consumption
Business Models

Shared
Dedicated
Defined & tested
Own device
Irrelevant
Flat Rate

Personal
Shared
100s per day
Cloud
Low
Differentiated
THREE WAVES OF MOBILE BROADBAND EVOLUTION

Mobile Broadband 1st Wave

Establishing Market

Standard

Price

One-size fits all

Subs

Mobile Broadband 2nd Wave

Differentiating Services

Smart

Price

Demand-based Pricing / QoS

Subs

Mobile Broadband 3rd Wave

Connecting Everything

Scale

Connections

50 billion connections

Time

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RIGHT CONNECTION GIVES RIGHT EXPERIENCE (CLOUD IS IN THE AIR)
Connectivity will be the performance bottleneck and differentiator in the world of cloud services on mobile devices
Analysts agree:

Infrastructure:
- Running applications in the cloud will create a huge increase in network traffic.

Cloud computing must deliver a good user experience.
- Network delays (latency) must be minimised.

This will require a significant infrastructure build to provide the capacity and make sure it is not constrained.

Source: Nomura Dec 2009
3 KEY MESSAGES

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Managed Connectivity – Operator Defensive play for Traffic increase

Interoperability & Cloud Services – Operator Offensive play
OPERATOR ROLES & CHALLENGES

VALUE-ADD SERVICE PROVIDER

Position, Payment
TV, Music, Storage

COMMUNICATION PROVIDER

Telephony, SMS

CONNECTIVITY PROVIDER

Mobile BB Access
Fixed BB, VPN Services

WEB SERVICES

2X REVENUE

2X CAPEX

USERS & DEVICES

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OPERATOR OPPORTUNITIES

1. Defend Value
2. Control Pipes
3. Innovate
4. Move Up in Value Chain

WEB SERVICES

VALUE-ADD SERVICE PROVIDER

COMMUNICATION PROVIDER

CONNECTIVITY PROVIDER

USERS & DEVICES
Ericsson enables Operators & Verticals to provide Cloud Services & InterOperable OTT. Ericsson is the Connectivity & Communication Enabler.

Value-Add Service Provider

Communication Provider

Connectivity Provider

Web Services

Users & Devices

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3 KEY MESSAGES

Phase 1 of Cloud Computing is about Data Centers (IT/Enterprise)

Phase 2 is about Consumers, Mobility & Operator
CLOUD SERVICE PROVIDERS: TELECOM CLOUDS

- Cloud Service Providers: Telecom Clouds
- Operator Network
- Data Center
- Internet
- Enterprises
- Consumers
- Trust Security Locality
- NW & DC
- e2e Mgmt
- e2e Mgmt
THEM COM SERVICES OVER CLOUD

Issues related to:
latency, security, locality, SLAs
Re-using the same virtual image across clouds
Today’s APIs to different cloud technologies are very different
CONNECTIVITY & END TO END VIEW

Cloud Ecosystem

Devices

Applications

Quality connection

Service differentiation

Secure Communication services

Application enrichment

SCREEN-2-SERVER IS THE NEW END-2-END
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