Unleashing the Potential of Tomorrow's Applications and Devices

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Key Scenarios
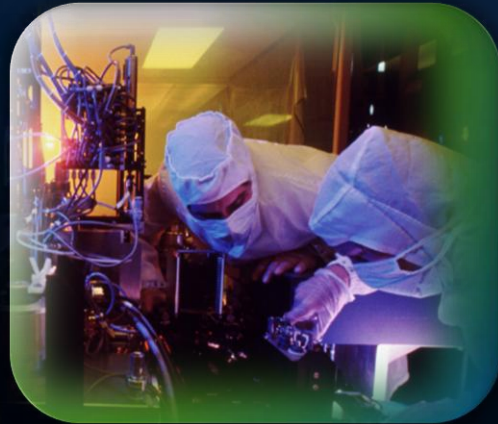
Healthcare

Education

Energy & Environment

Science & Engg. Innovation

Open & Transparent Govt

DOS

GUI

INTERNET

CLIENT+CLOUD

NATURAL
USER INTERFACE

COMPUTING
EVERYWHERE

CLIENT+CLOUD

CONTINUOUS
NETWORKING

Increasing
Abstraction

NEW DATA
MODELS

NATURAL USER
INTERFACE

MODELING
REPLACES
CODING

Four Form Factors

WORKING AT
YOUR COMMAND

VS.

WORKING ON
YOUR BEHALF

Key Applications and Trends (2013/14)

Bandwidth

3D Movies using 1TB Blueray discs broadcast @ 256mbps

Medical Imaging Centers generating 60TB/year

3D Rendering @ 64-128Mbps Quad HD resolution

➡ *Data and storage exceed the growth of broadband*

Devices

>1bn WW Wi-Fi chips/yr in handsets, laptops and PDAs

>1 bn WW mobile bb subs in handsets & other devices

Providers constrained to fraction of 4G capability

➡ *Massive proliferation and demand for spectrum*

Throughput

Less than 1/3 of US households passed by fiber

LTE initially projected to deliver avg 7-12 Mbps down

A household watching 12 hrs/week of HD video will consume over 200 GB/month

➡ *Deployment patterns and consumption caps evidence a growing digital divide*

Quality of Service

Visual networking & telepresence @ 60 milliseconds

Telesurgery @ 1 millisecond

➡ *Latency-sensitive applications need to be accommodated*

Broadband: Key Recommendations

- High-capacity wireline capacity premised on connectivity to anchor institutions, with "Interconnection" requirements enabling access into communities

- Increased access to spectrum based on real usage, and leveraging innovations in software & radio technology

- Universal service reform focused on high-capacity broadband and wireless deployment

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