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June 22, 2010

Via Electronic Filing
Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re : *Notification of Ex Parte Presentation*
GN Docket No 09-191; WC Docket No. 07-52

Dear Ms. Dortch:

On June 21, 2010, Alcatel Lucent representatives Marcus Weldon, Chief Technology Officer, and Paul Kenefick, Vice President – Government Affairs, along with Adam Krinsky, counsel to Alcatel Lucent, met with Paul de Sa, Chief, Office of Strategic Planning and Policy Analysis, and then with Ruth Milkman, Chief, Wireless Telecommunications Bureau (“WTB”) and the following staff from WTB and the Wireline Competition Bureau (“WCB”): Stephen Buenzow (WTB), Sandra Danner (WTB), Blaise Scinto (WTB), John Spencer (WTB), Claude Aiken (WCB), Bill Dever (WCB), Jennifer Prime (WCB), Carol Simpson (WCB), Kristine Fargorstein (WCB), Sade Oshinubi (WCB).

During the meetings, Alcatel Lucent discussed its filings in the above-captioned proceeding. In particular, the company used the attached presentation to discuss the findings in the White Paper, “Analysis of the impact of traffic growth on the evolution of Internet access,” attached to its initial comments; the importance of QoS-enabled managed services; the promise of user-generated applications enablement; and recent developments in the Wholesale Applications Community.

In accordance with Section 1.1206(b) of the Commission’s rules, this letter is being filed electronically with your office. Please contact the undersigned if you have any questions.

Sincerely,


Paul Kenefick

cc:

Paul de Sa

Ruth Milkman

Stephen Buenzow

Sandra Danner

Blaise Scinto

John Spencer

Claude Aiken

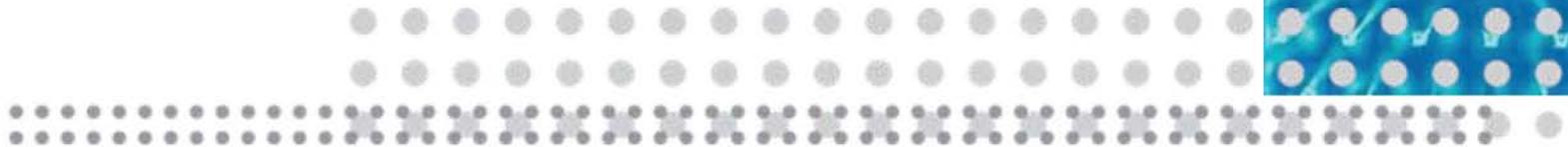
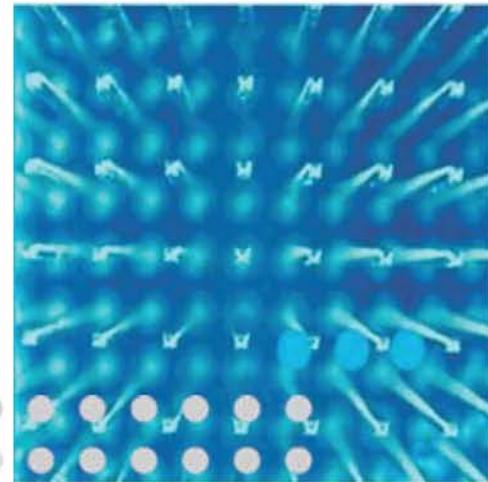
Bill Dever

Kristine Fargorstein

Sade Oshinubi

Jennifer Prime

Carol Simpson



Marcus Weldon

CTO, Alcatel-Lucent

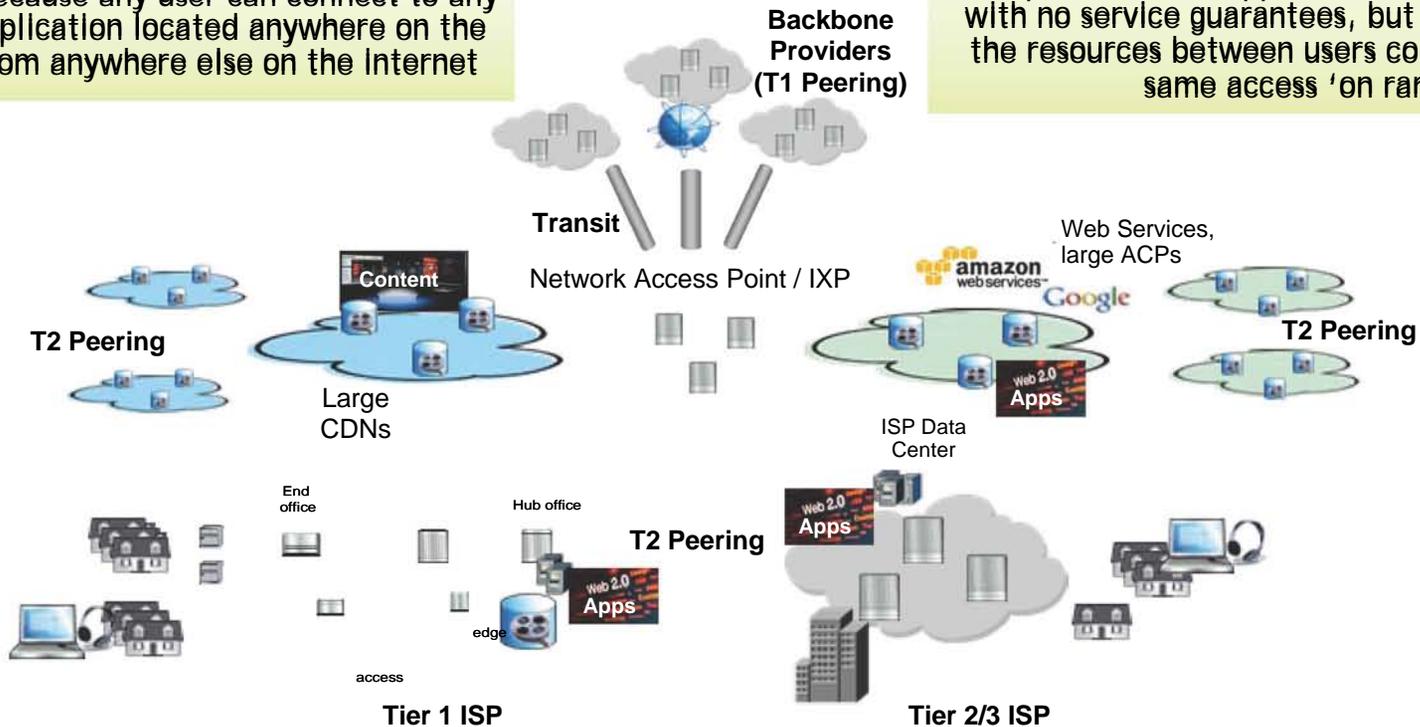
Bell Labs

The Open Internet : What Exactly Is It?

The Internet is a series of interconnected private, managed IP networks and public networks that connect through transit links and peering links

It is Open because any user can connect to any Internet application located anywhere on the Internet from anywhere else on the Internet

The Open Internet supports 'best effort' transport, with no service guarantees, but ~equal usage of the resources between users connected via the same access 'on ramp'



The 'on-ramps' to the Open Internet are primarily provided over managed IP networks, which also support managed services with specific QoS guarantees

But not all Internet services are equally accessible:

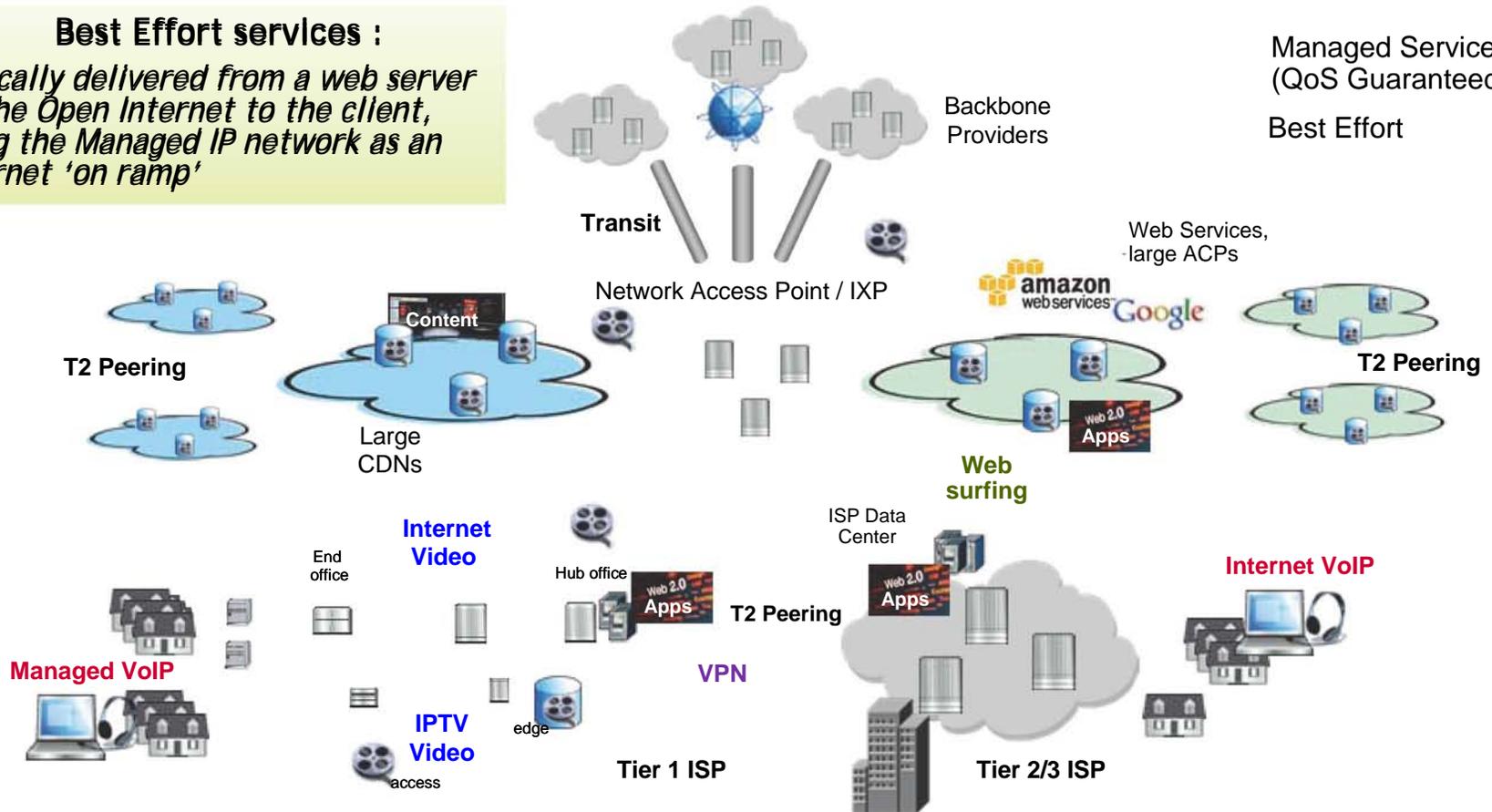
- Content Data Networks (CDNs) enhance delivery of content
- Networks of Data Centers enhance access to applications
- Different service tiers are offered to improve users' access

Best Effort Services and Managed Services : What's the Difference? (View as Build)

Best Effort services :

Typically delivered from a web server on the Open Internet to the client, using the Managed IP network as an Internet 'on ramp'

Managed Service
(QoS Guaranteed)
Best Effort



Managed services :

Typically delivered from a web server within the Managed IP network to the client and only traverse the Managed IP network

What exactly led to the success of the Open Internet and what harms it?

Content and Applications

Openness of Internet

(anyone can access any app)

Affordable broadband (fixed + mobile)

(it doesn't cost an arm and leg)

Convergence of Networks (to IP)

(one network fits all)

Simplicity and philosophy of IP

(anyone can contribute; 'rough consensus/working code' mentality)

Proliferation of IP-enabled devices

(PCs, Laptops, Netbooks, Smartphones, eBooks, Gaming consoles, STBs)

Bandwidth limitations

(dial-up doesn't cut it and broadband isn't broad enough)

Limited accessibility/reach

(the utility increases with ubiquity)

Security and Rights concerns

(Protect my data, identity, content)

Usage of IP-enabled devices

(time + money cost of devices and device evolution)

Poor quality of experience

('slow & low' speed and resolution)

Network Infrastructure

FTTx-promoting regulation

(Open access at Ethernet or IP layer)

Competition

(Cable MSOs vs. Telcos, Fixed vs. Mobile)

Demand

('they came as it was built')

Network convergence

(one network to build, for all services)

Massive IP/Ethernet technology market

(lower cost of devices, networks)

FTTx-hampering regulation

(infrastructure sharing mandates)

Geographies and topographies

(how far and how hard to reach)

Cost of networks

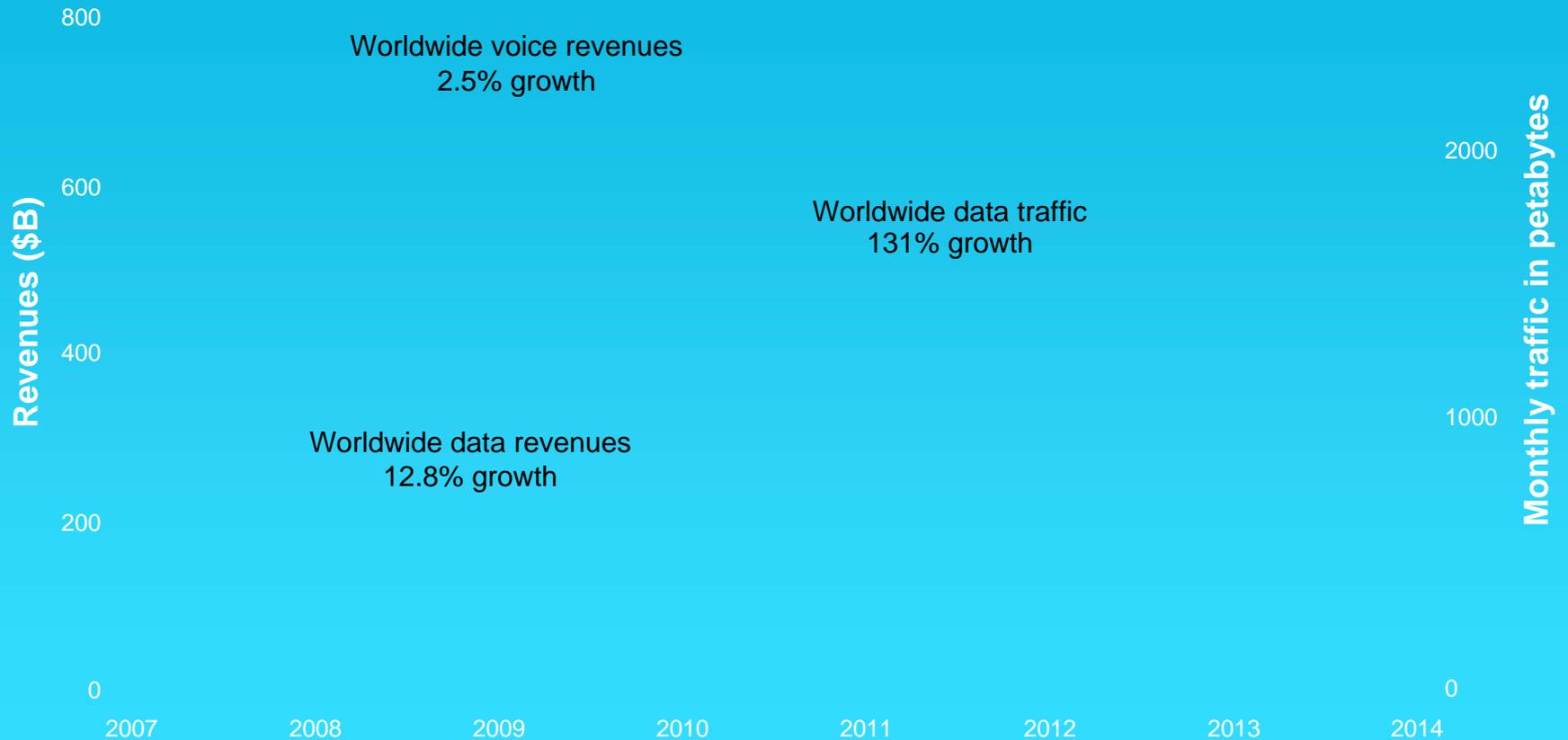
(capital and cultural cost of IP transformation)

Lack of competition

(high cost of services + access)

So what's the problem?

An economic instability as revenues no longer track traffic growth



Source: Pyramid Research/Light Reading

A closer look: Fixed High Speed Internet Revenue and Network Cost

Conservative traffic model assumptions



Source: Bell Labs Modeling and Network Planning

A closer look: Mobile Data Revenue and Network Cost

Conservative traffic model assumptions



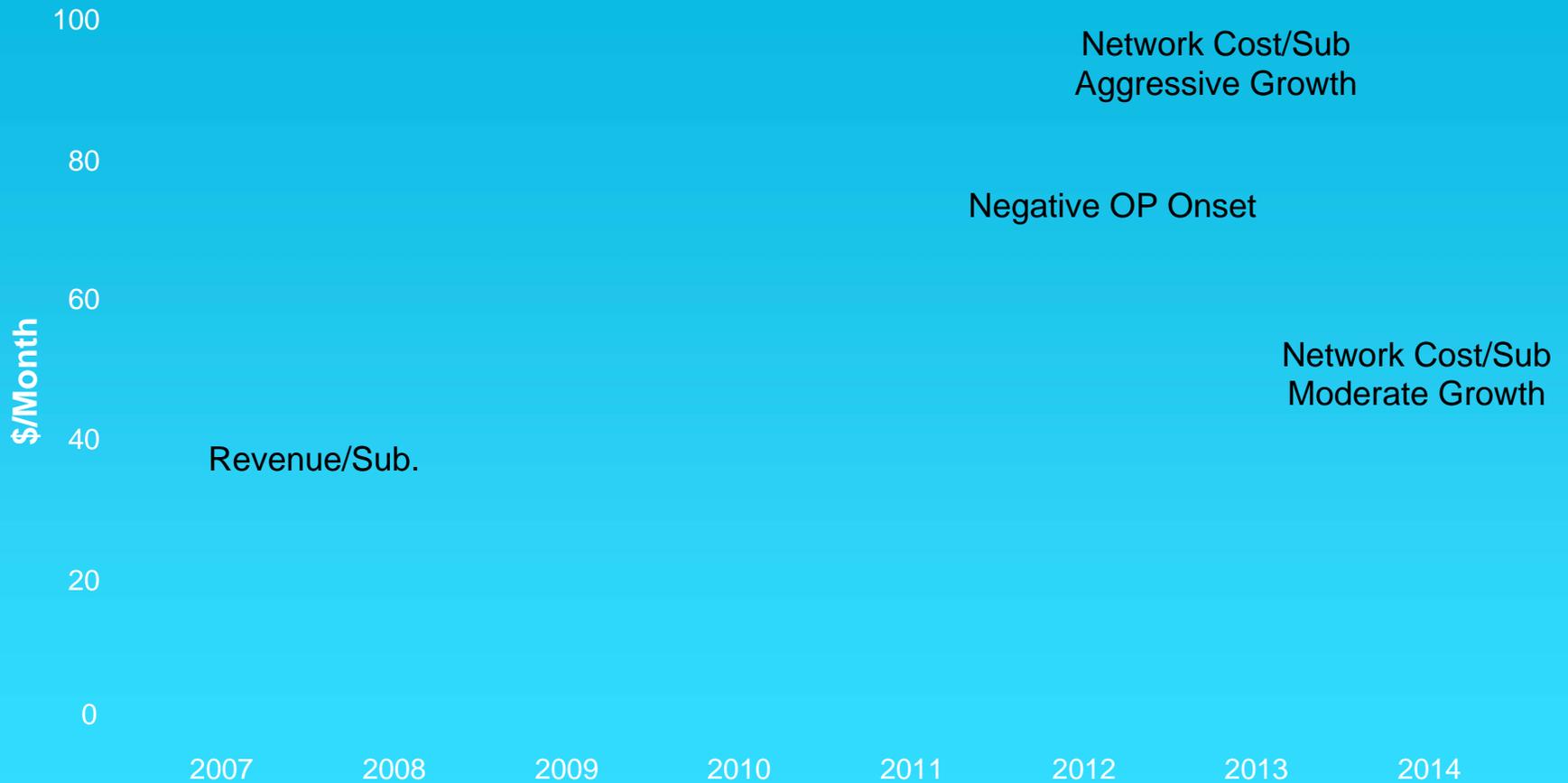
Source: Bell Labs Modeling and Network Planning

A closer look: Mobile Data Revenue and Network Cost



Source: CTO and Bell Labs Network Modeling

A closer look: Fixed High Speed Internet Revenue and Network Cost



Source: CTO and Bell Labs Network Modeling

What's the solution?

Managed services for revenue sharing and investment for the good of all

The Proposed Model

New user-centric
'managed
services' generate
new revenue

Applications and
Content (and user
experience)
benefit from
increased capacity

Revenue drives
new network
capacity
investment

The Supporting Analysis

Overall Network Capacity



Best-Effort Network Capacity



Source: Bell Labs Mathematical Sciences Research

So where do we stand today ?

- The industry is already moving towards a 'application-enabled' model with:
 - Network/Provider and Device APIs exposed uniformly and universally to application developers to allow a better, more consistent end user (app) experience
 - Business models/revenue sharing for mutual benefit (apps developers, API brokerage network providers and device manufacturers)
= "Managed Services"
- Increases *coupling* between app and network (and user):
 - Increases need for per-app, or per-user, or per-app, per-user "SLAs"
 - Increases need for network to manage QoS/CoS of apps to ensure SLA is met
= "Managed Services"



Supporting the Wholesale Applications Community



Home

What is WAC?

WAC benefits

News & downloads

Register interest

Supporting the Wholesale Applications Community

- > The Wholesale Applications Community (WAC) is an industry alliance formed from global operators and device manufacturers dedicated to establishing a simple route to market for developers to expose their new applications to a customer base of over 3 billion customers.
- > WAC is fully supported by the GSMA, and plans to use output from the work already in progress on open network APIs (GSMA OneAPI project).
- > The new industry alliance is inviting players from across the ICT industry, not only operators and device manufacturers, but also developers and Internet players to join forces and build an alliance based on openness and transparency.



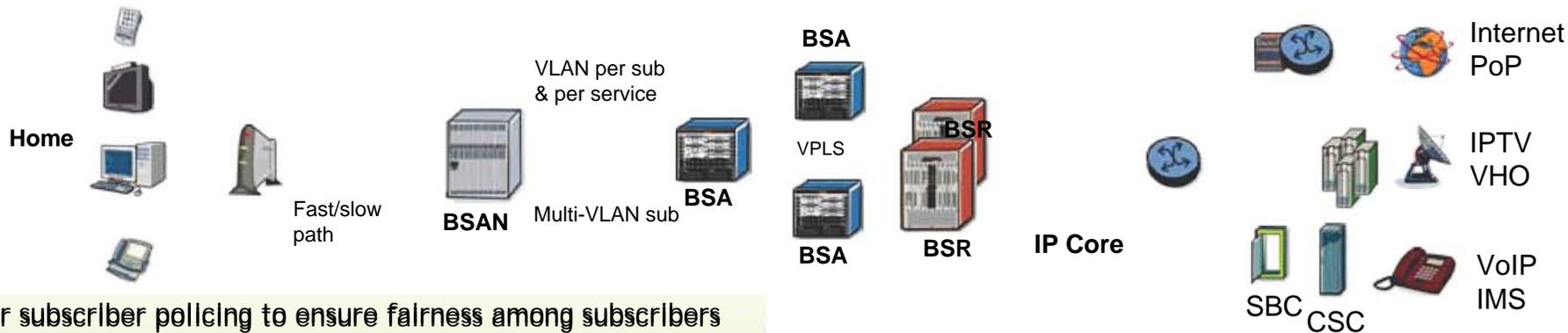
Increasingly, the transmission of the bits over the network will have to become user-, application- and service-context-dependent

⇒ We're not in Kansas (= the world of the Plain Old Data Service "PODS") any more

Beyond PODS: New Enhanced Data Services (NEDS)

- Path selection for optimized transmission

- Per service MPLS header manipulation for service isolation and path selection
- Per service policing and shaping to ensure fairness among services
- Per service queuing to ensure QoS for critical services
- MPLS header manipulation for path protection



- Per subscriber policing to ensure fairness among subscribers
- Per subscriber VLAN header manipulation to ensure privacy
- Per service VLAN header manipulation for service identification
- Per service queuing to ensure QoS for critical services
- Ethernet/IP header manipulation for user security
- Subscriber interface configured to provide desired SLA

- IP header manipulation for public-private IP translation

- Per service queuing to ensure QoS for critical services
- Path selection for network protection

The IP Converged network carries all services on a share infrastructure that must therefore support a multitude of packet processing features that allow the network to ensure that services can co-exist and delivered with the quality of experience expected by consumers and apps developers/providers

Comparison with Plain Old Telephony Service (POTS)

- Circuit switched path selection

- DSx/SDH/SONET path protection


POTS/ISDN


DLC/MSAN

SDH/SONET


ADM


Class 5 Switch

Legacy PSTN


Class 4 Switch

- Header and payload are unchanged throughout network

- Subscriber Interface SLA is fixed
- Subscriber privacy ensured by circuit switching

The Legacy PSTN network carries only one service in a circuit-switched fashion, so techniques to identify and coordinate services and ensure fairness are not required.