



Interoute

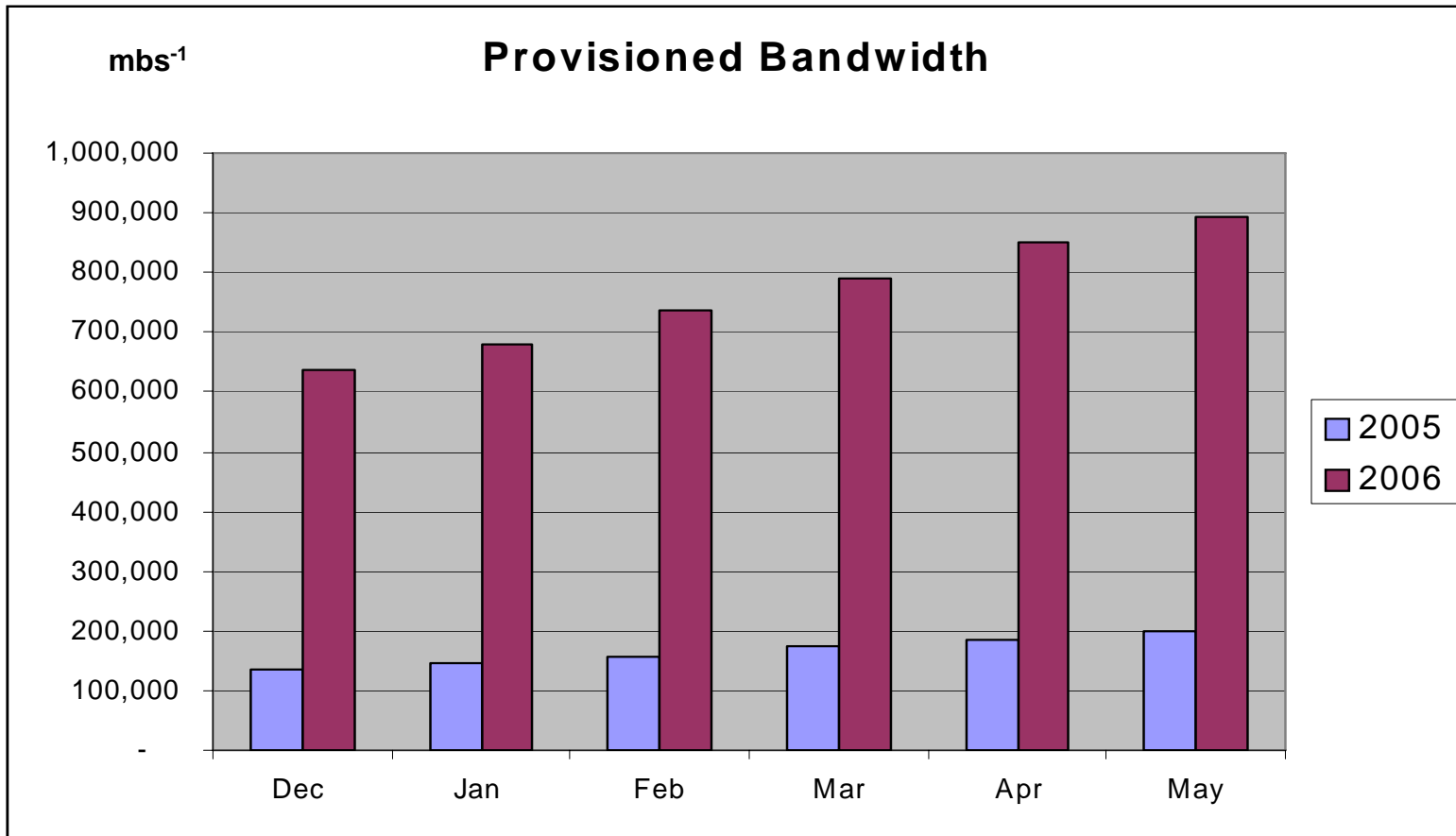
Web 2.0, Identity 2.0, Virtualisation?

Is it all about a Network?

**Microsoft is a platform company
not a software company**

- Ray Ozzie Microsoft CTO – 2006

2006 – the end of the Bandwidth Glut



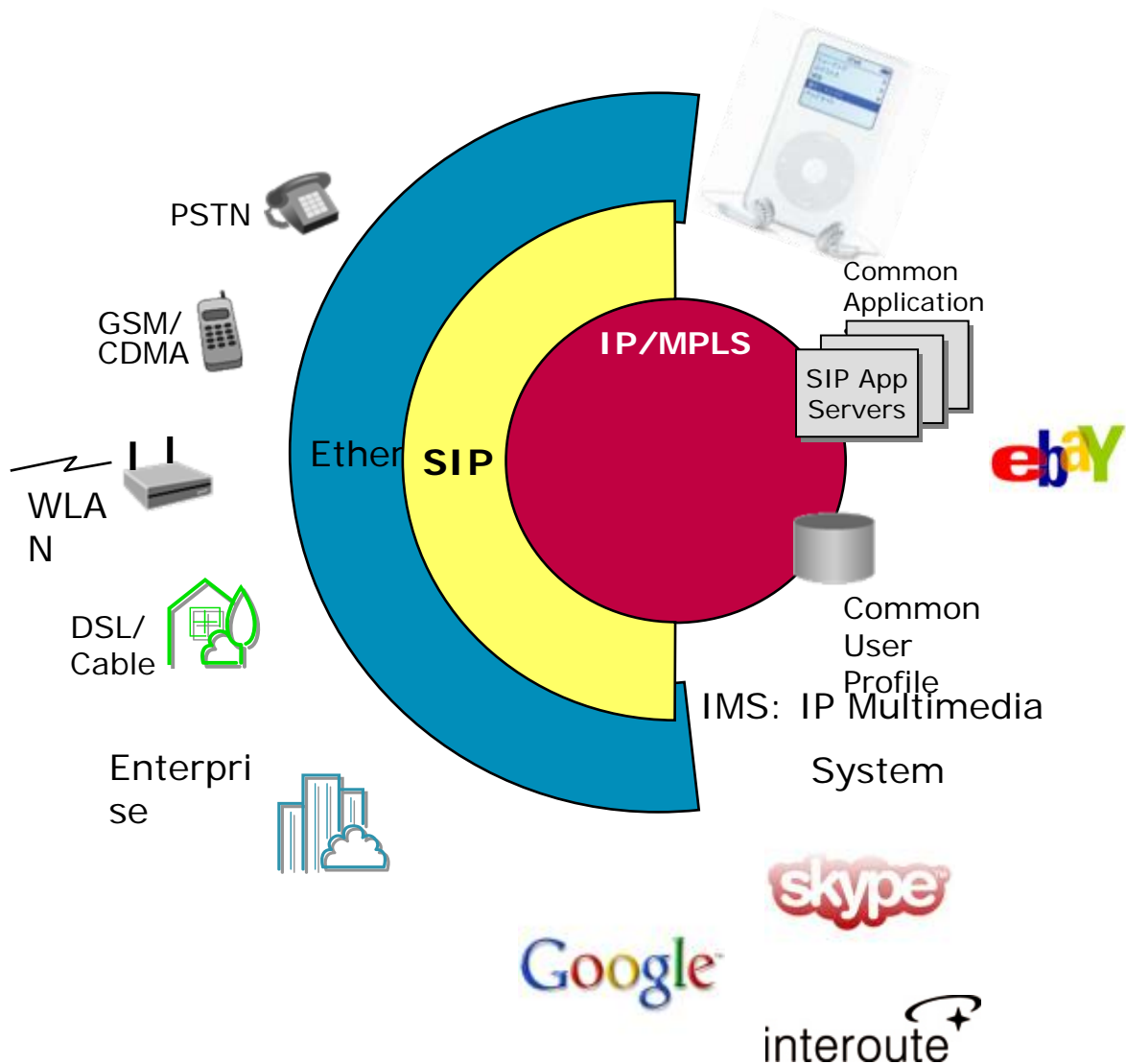
- **A 5 fold increase in network capacity over that last 20 months**
- **Combined with the move towards high capacity services**
- **Driving bandwidth at lower revenues per mb.**

Open Standards Finally Driving Convergence

End users expect mass access to all services regardless of geography or technology

Consumer convergence is in ahead of the enterprise

Service portability is assumed across any device and access scenario



Shift from Access networks to “The Network”

6 years ago
conventional
wisdom held
that the local
loop help the
value to the
customer

The internet and
the proliferation
of a access
agnostic
transport
protocol (IP) is
redefining this
relationship

“Over the top”
content is
creating value
but not for

“Access to the end user is where the next boom is going to be. It's great to have a backbone, but without access to the end user, it's next to useless,” said Jilani Zeribi, a senior analyst with the IT consultancy Current Analysis. (1999)

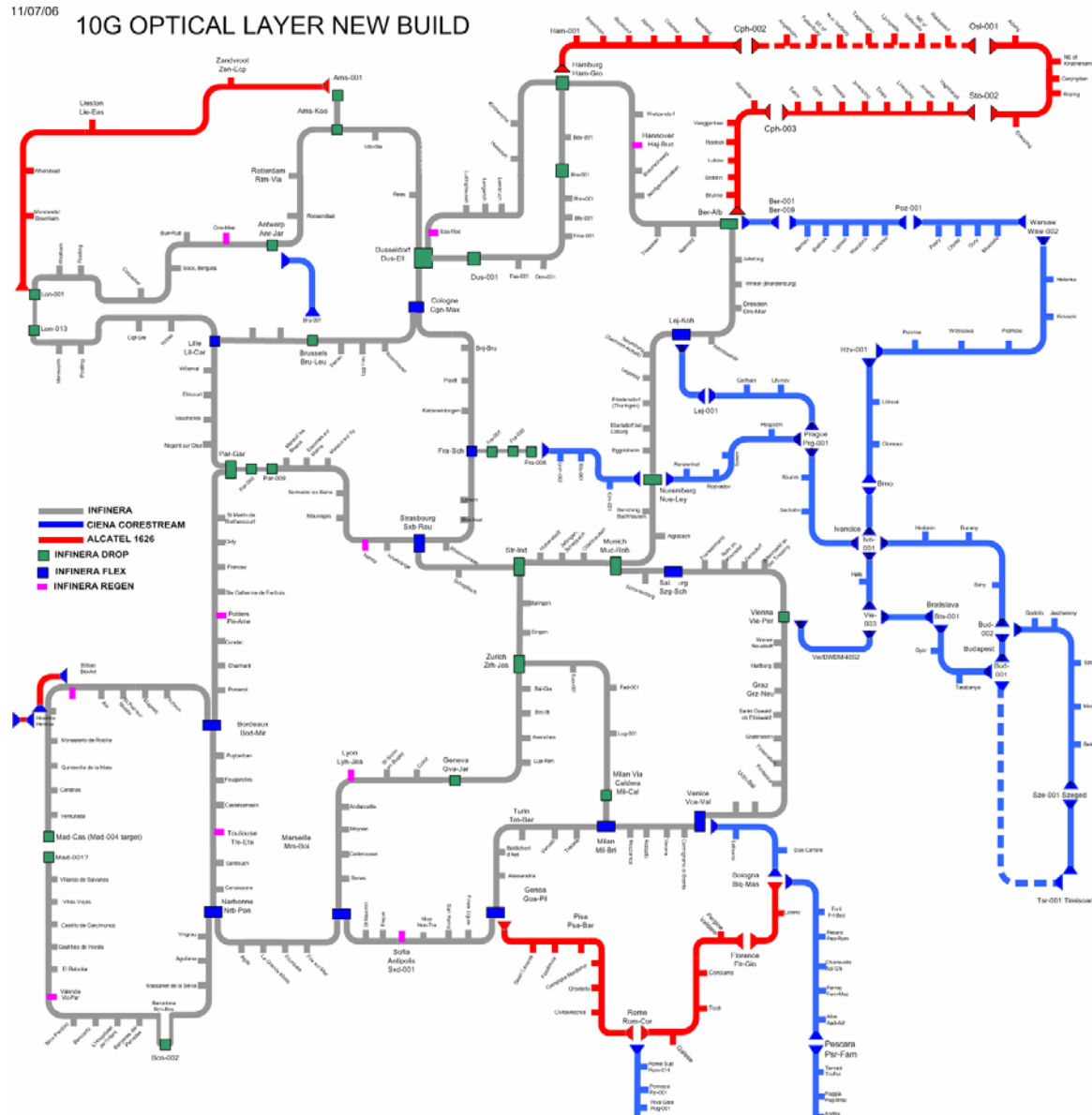
“mobile broadband is just another available access option, users won't need to consciously decide which network technology is right for them. From the end-user's perspective, laptops equipped with, for example, Wi-Fi, WiMAX, 3G and dial-up creates a ‘best available network’ experience”. Information Week 2005

Viviane Reding, information society commissioner for the EC - increased pressure on telcos to adopt “structural separation” — splitting their services units from their wholesale units; and the creation of one regulator to govern the whole of the telecoms sector across the EU. 2006

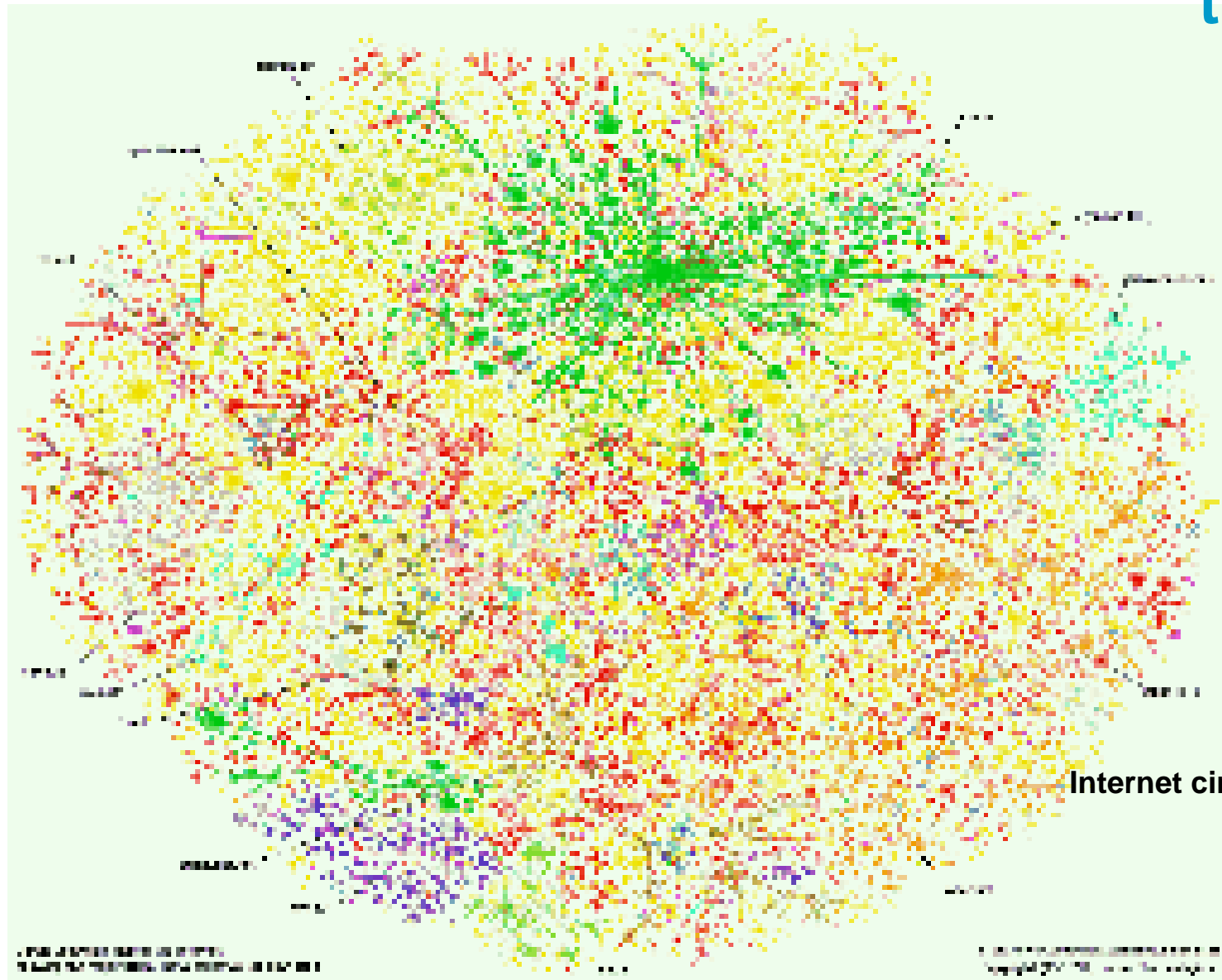
The consequences

Optical Supply side

- **Consolidation - fewer suppliers**
 - Move to higher bandwidths puts pressure on suppliers to get cost base correctly aligned
- **Infrastructure becoming more of a factor**
 - Fibre costs as a % of cost have risen from 22% to 51% of total solution cost
- **Interoute deploys 100-200G per route to maintain < 4wk leadtime**



**Impact – 95% of all traffic will be IP –
wholesale model still one price anywhere in
the world**



Content and Geography Specific Routing

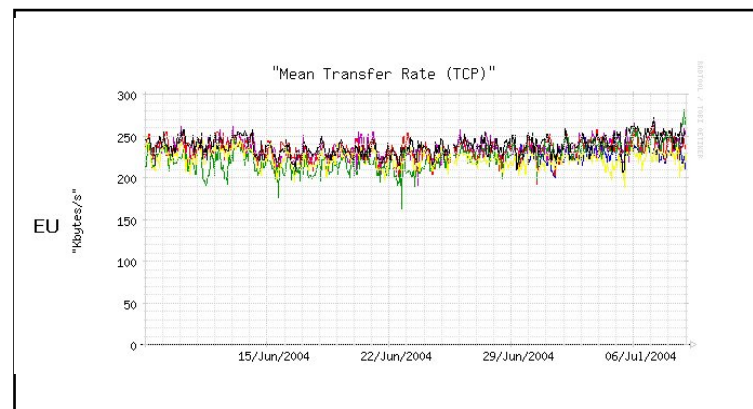
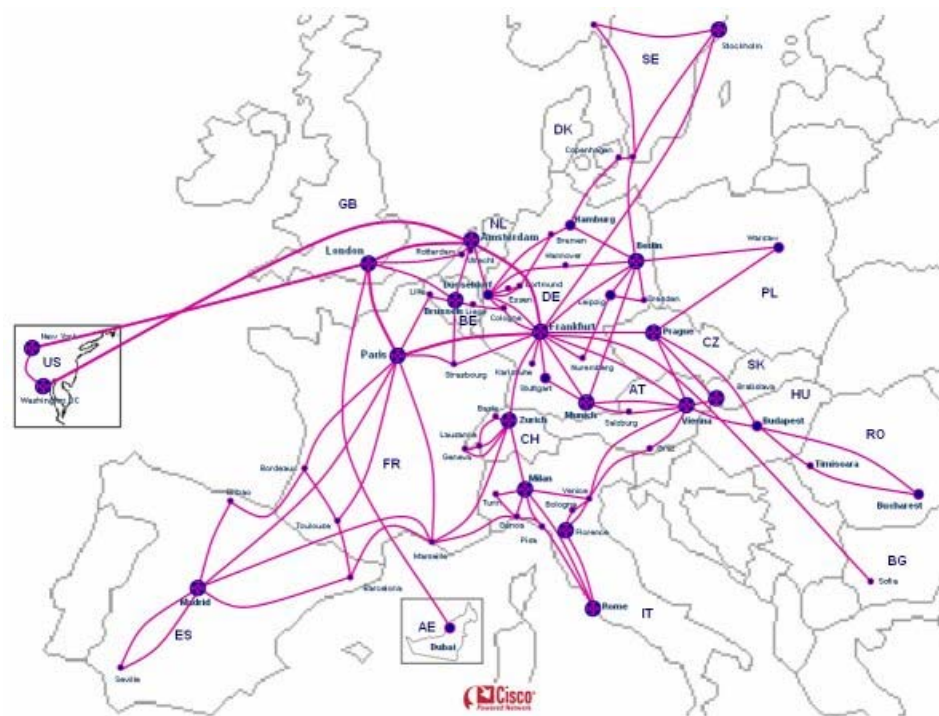
Major backbone providers
converging on common
performance metric

Route selection by price &
performance becoming
appropriate

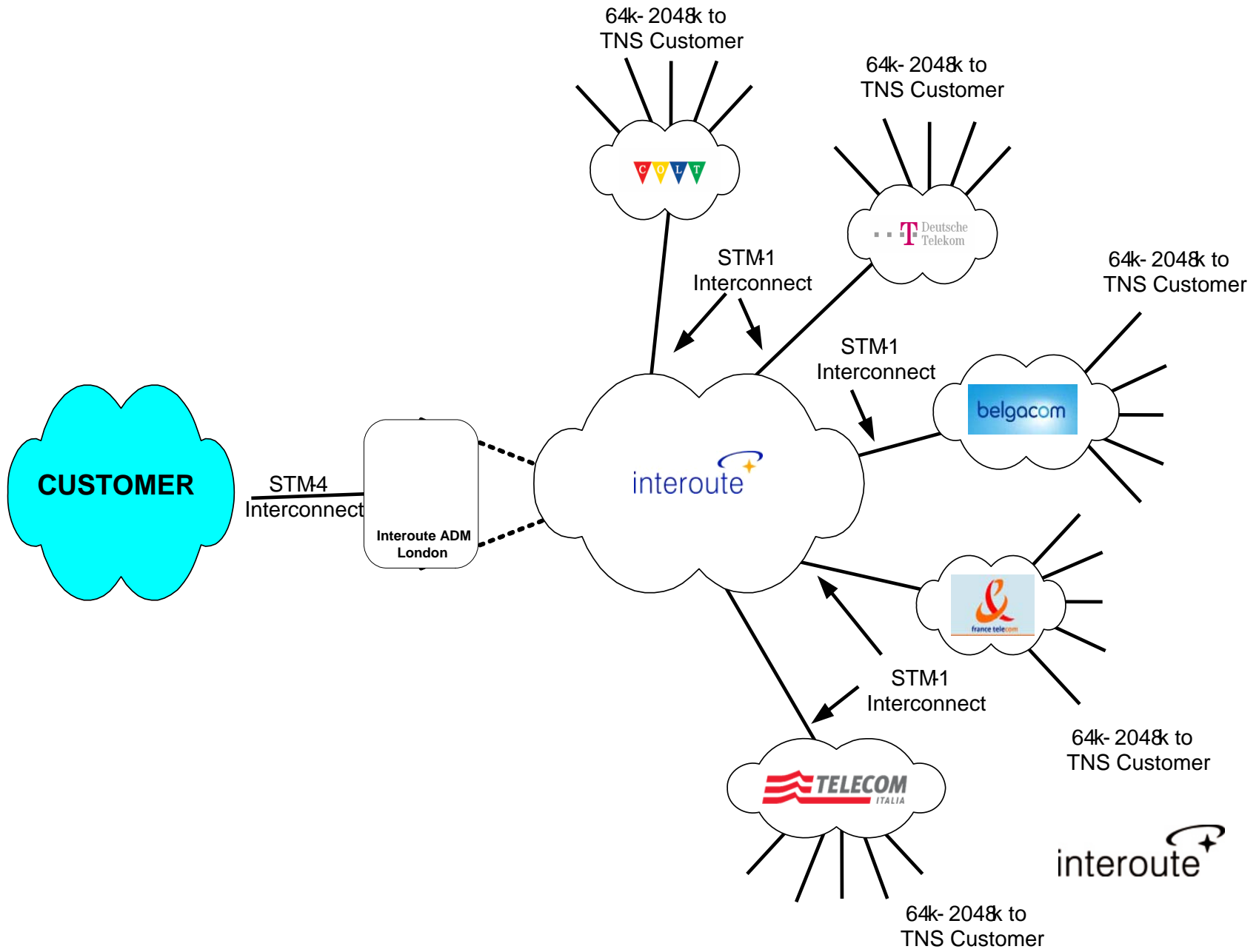
Hybrid solutions combining
ethernet “virtual peering”
with content specific

routes

	Sprint AS 1239
2	Level 3 Communications, LLC AS 3356
3	UUNET Technologies, Inc. AS 701
4	NTT America, Inc. AS 2914
5	AT&T WorldNet Services AS 7018
6	Sawis AS 3561
7	Global Crossing AS 3549
8	Abovenet Communications, Inc AS 6461
9	TeliaNet Global Network AS 1299
10	Teleglobe Inc. AS 6453
11	KDDI Corporation AS 2516
12	Cogent Communications AS 174
13	Qwest AS 209
14	Telecom Italia Sparkle AS 6762
15	Deutsche Telekom AG AS 3320
16	JAPAN TELECOM CO.,LTD. AS 4725
17	France Telecom AS 5511
18	Cable & Wireless AS 1273
19	AOL Transit Data Network AS 1668
20	CNCGROUP China169 Backbone AS 4837
21	Interoute Communications Ltd AS 8928

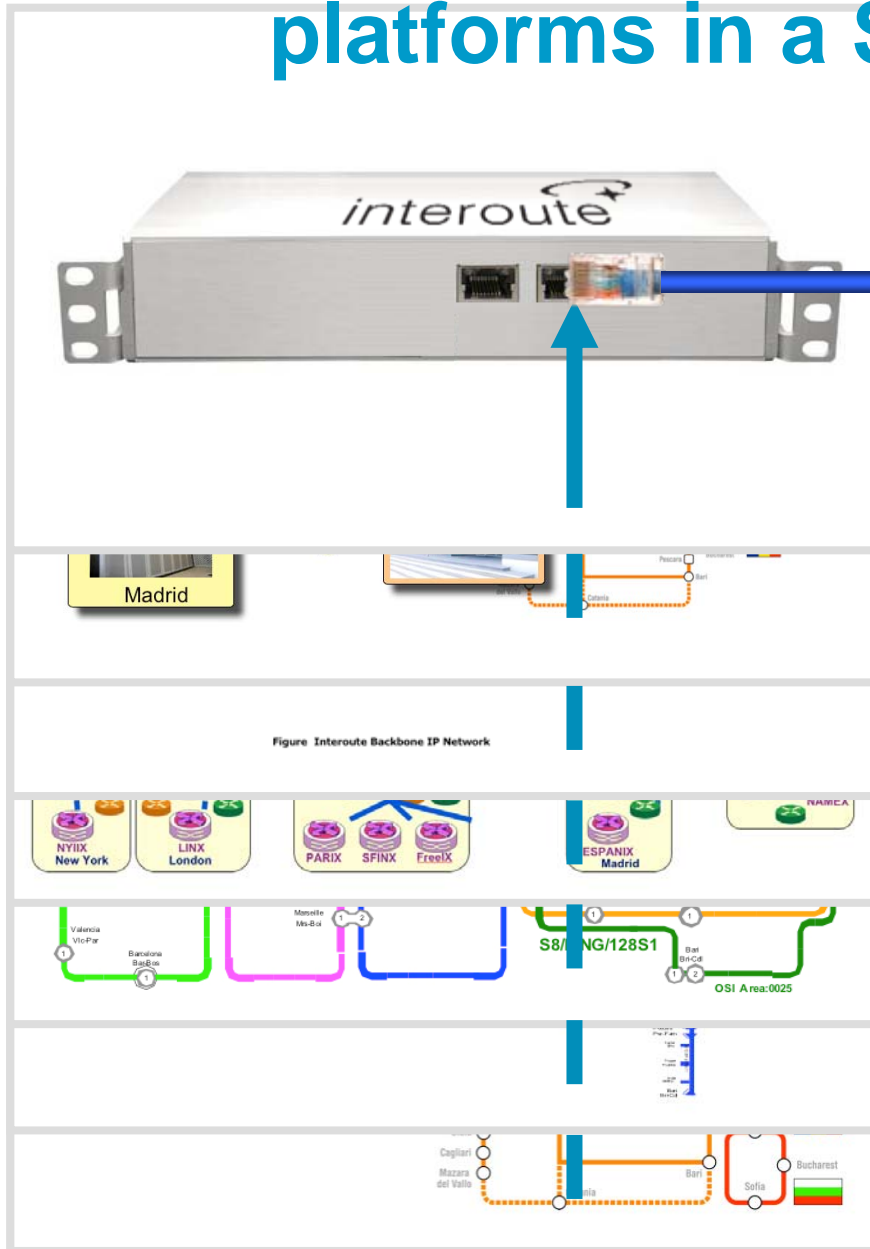


Plug Into Access Into The Platform!



Enterprise Infrastructure Virtualisation

Service Convergence – Multiple platforms in a Single Service instance



Co-location/DCs

Voice

IP

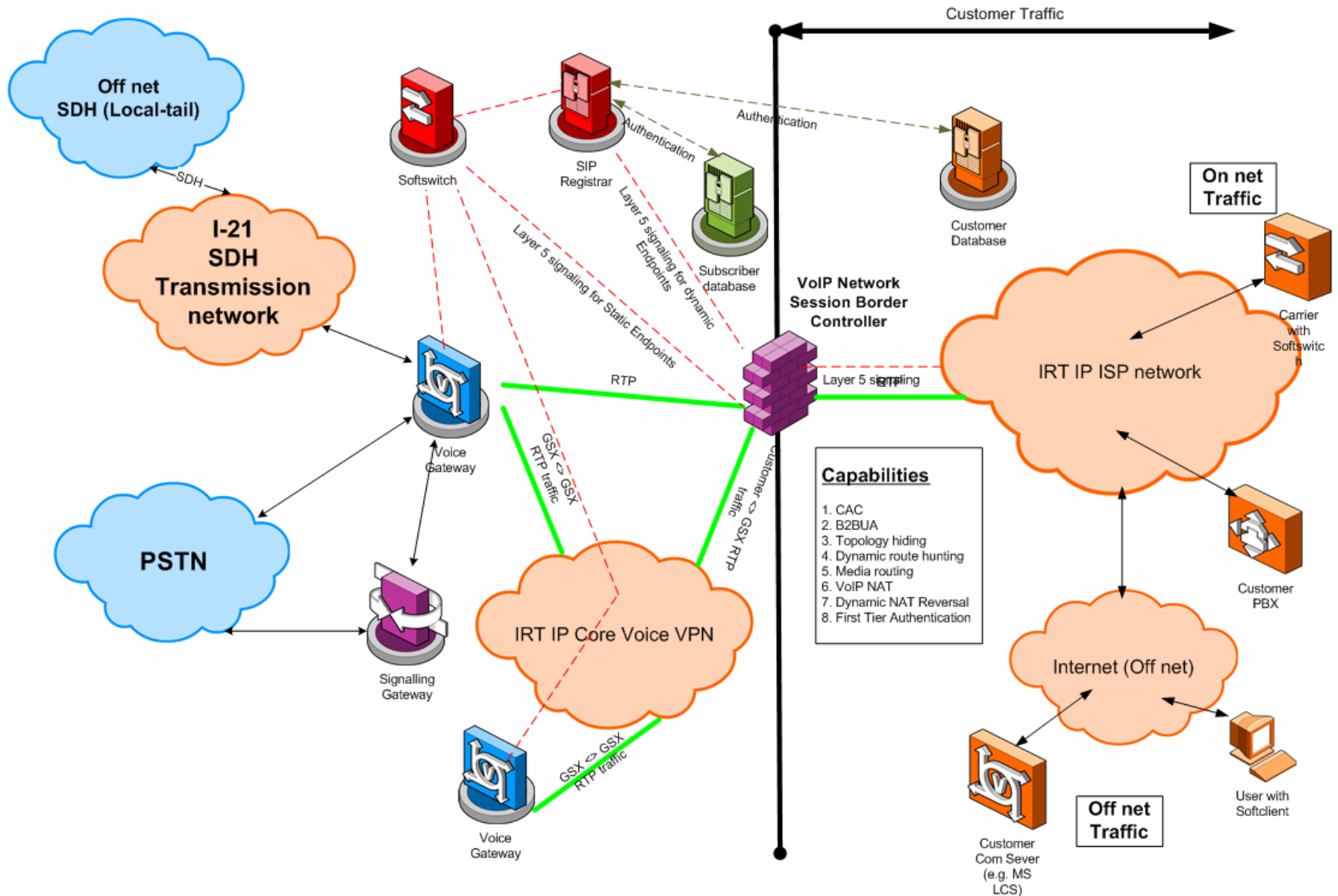
SDH

Optical

Infrastructure

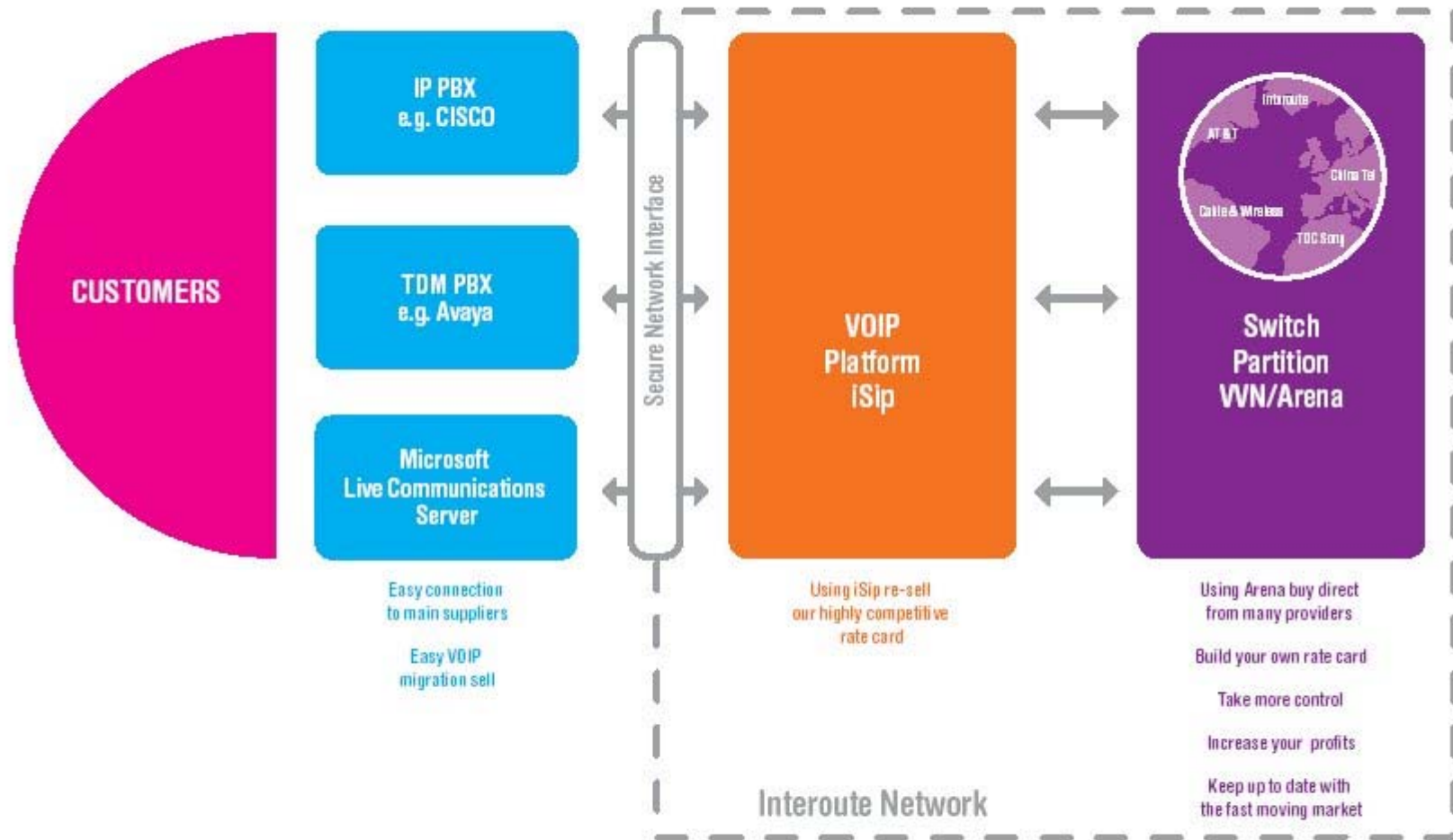
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Abstract this...



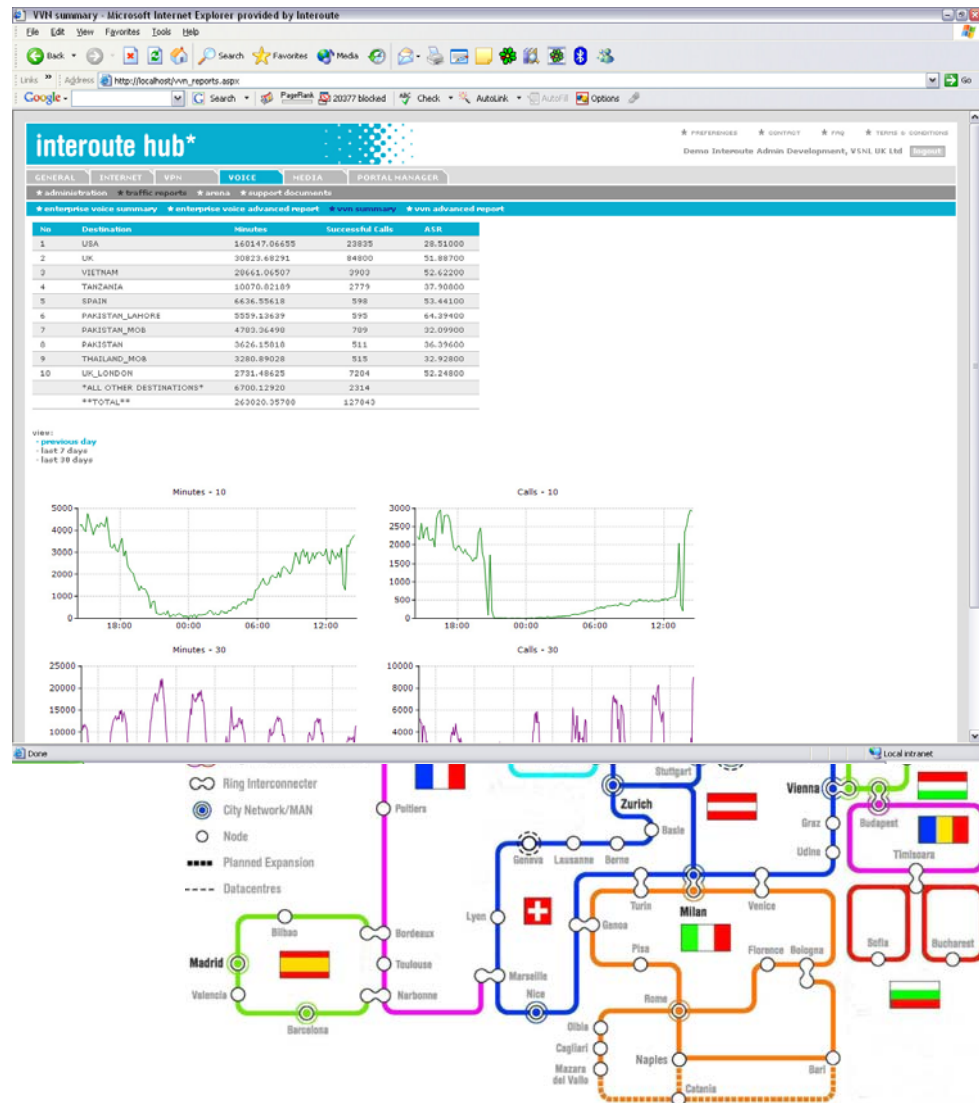
To this - end point to aggregator SIP based Communication Service Platform

Interoute's Voice Network



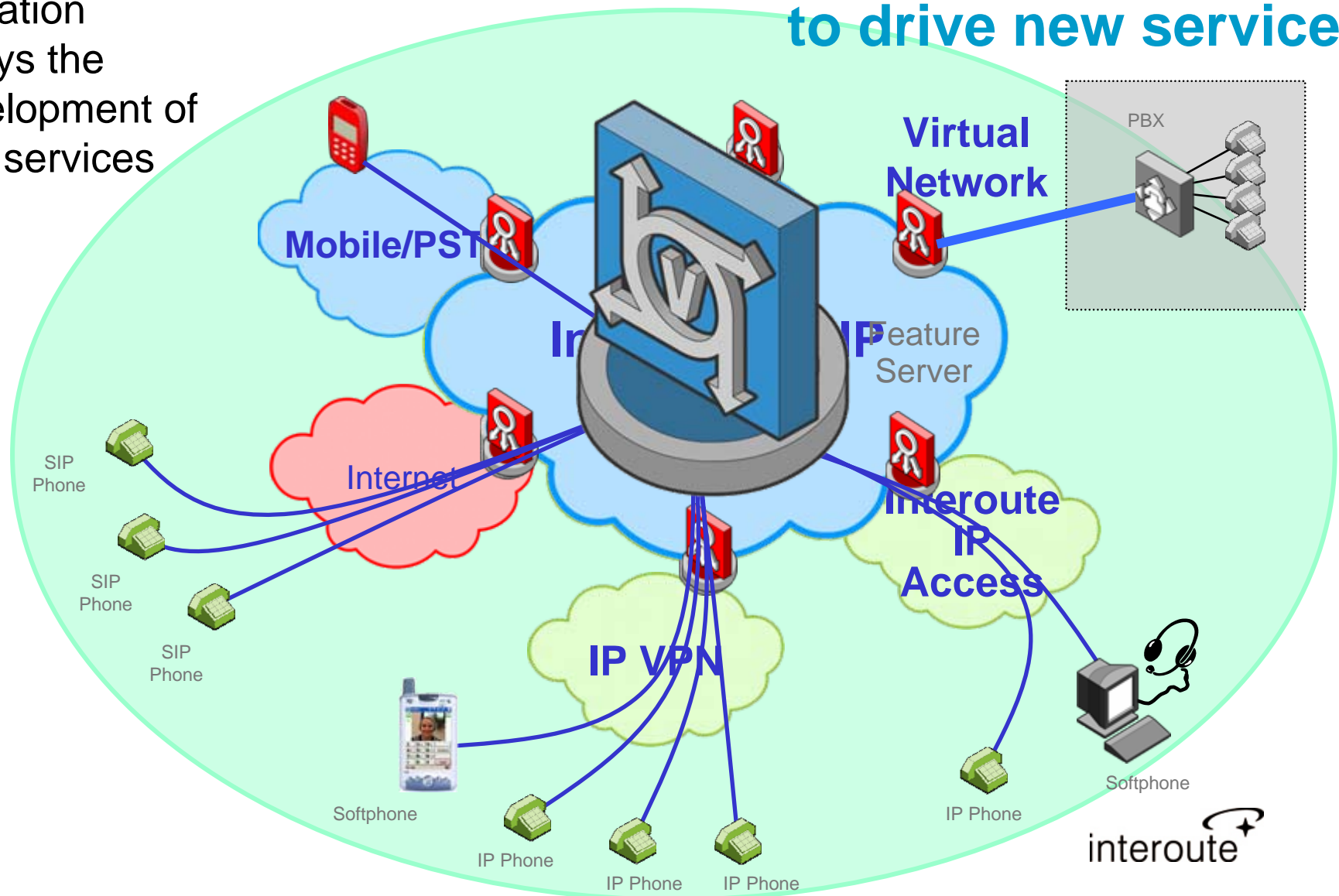
Carriers Carrier Virtualisation

- Virtual Voice Networks for carriers and resellers
- Routing - Abstracts voice services to the core elements
 - Dial plan
 - Route Labels
 - Routing Groups/Table
- Reporting
 - Web based self service portal for service control
 - Full online reporting suite
- Interconnect
 - TDM - C7, SS7, Q931,
 - IP - SIP, H323



Migration and the fear and cost of migration delays the development of new services

Enterprise Communication Create a “time zero” to drive new services

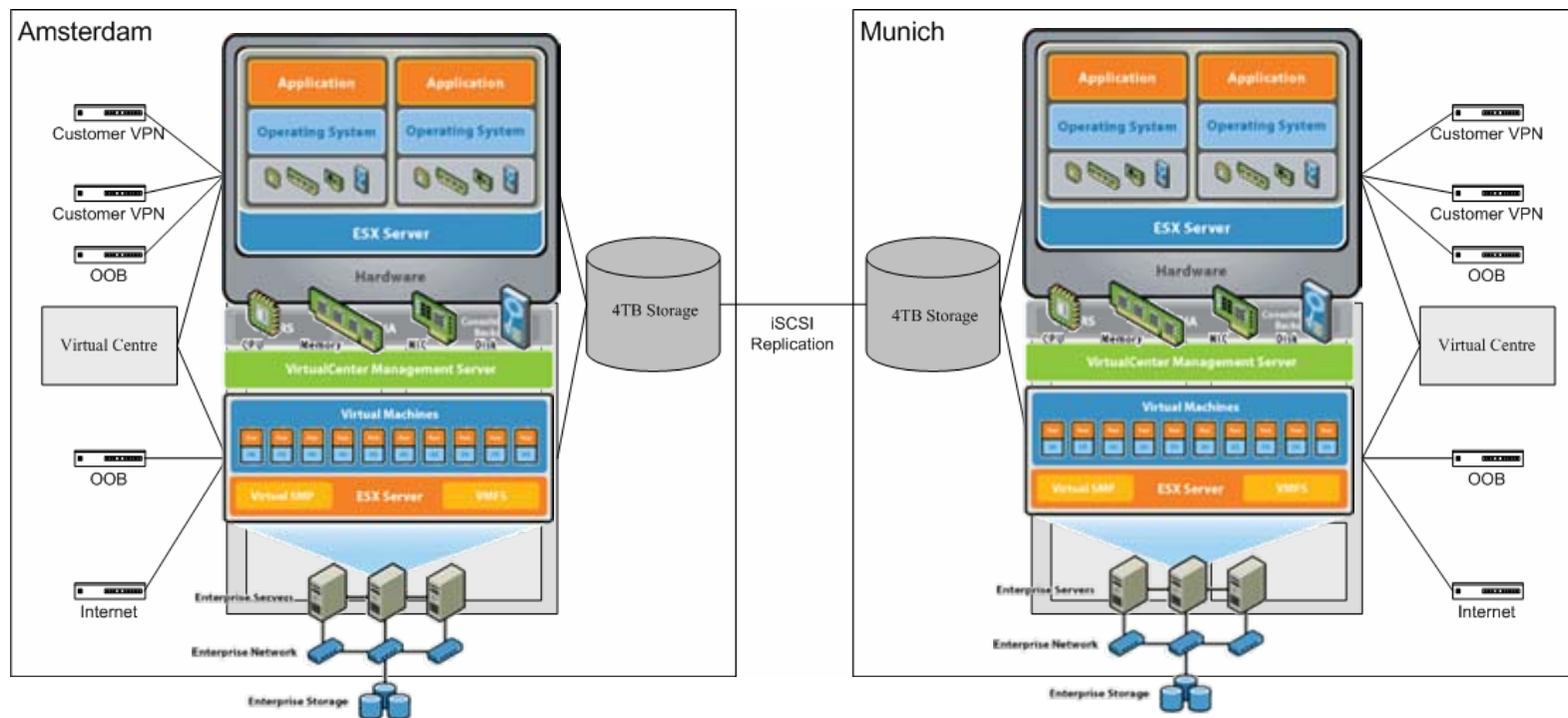




Adding - Virtual Application Hosting and Content Management

Overcome the single building dependency by spreading applications over multiple geographies

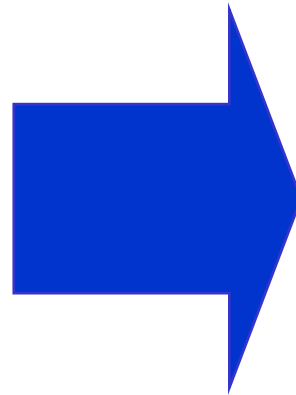
- More effective use of CAPEX than single data center model



But what about the user? - Identity 2.0

Identity 2.0 Silo'd in 1.0?

Identity 1.0



Identity 2.0?

amazon.com

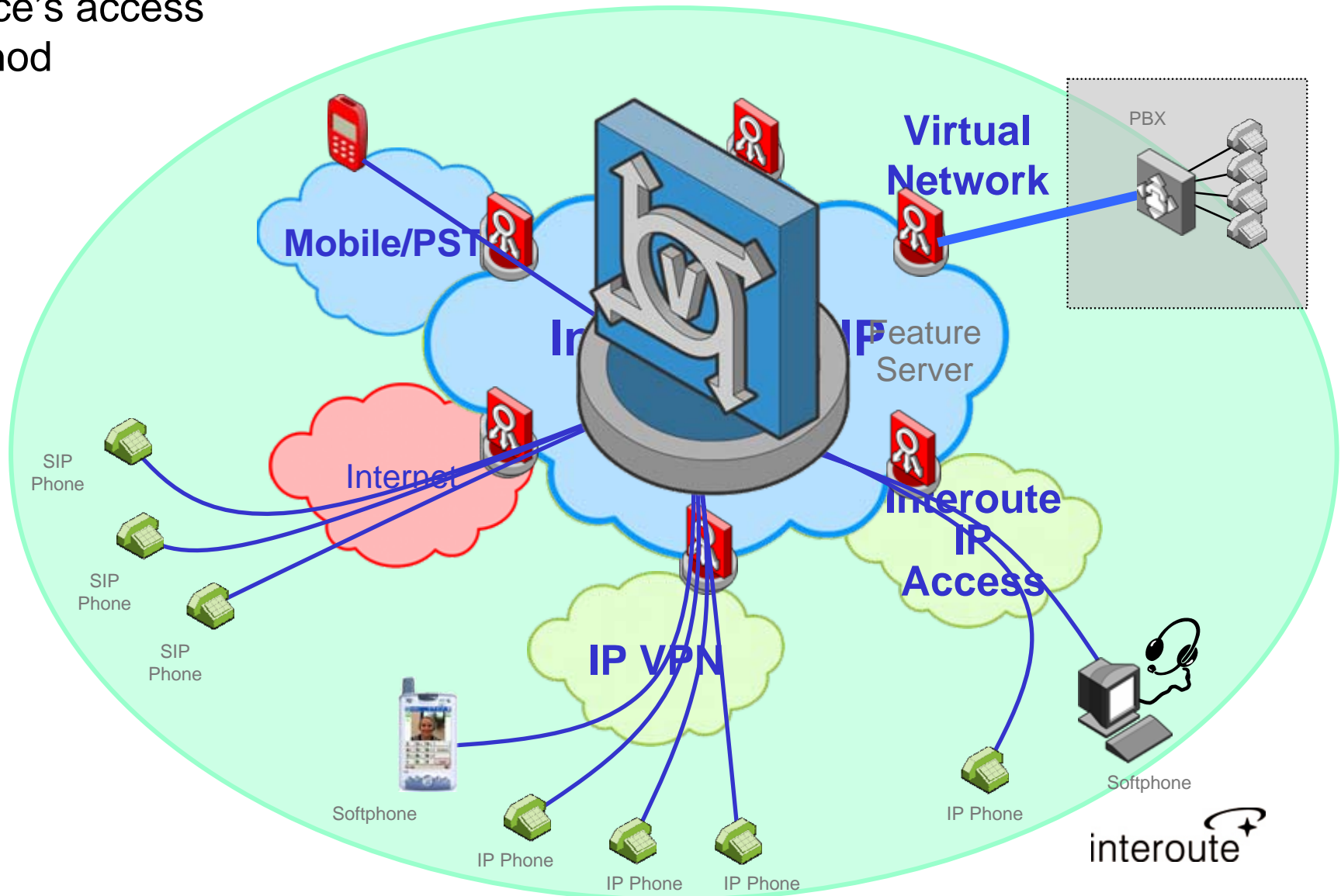
flickr^{BETA}



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You are defined
by your device
and your
device's access
method

Communication Identity



End Point Identity Dominance

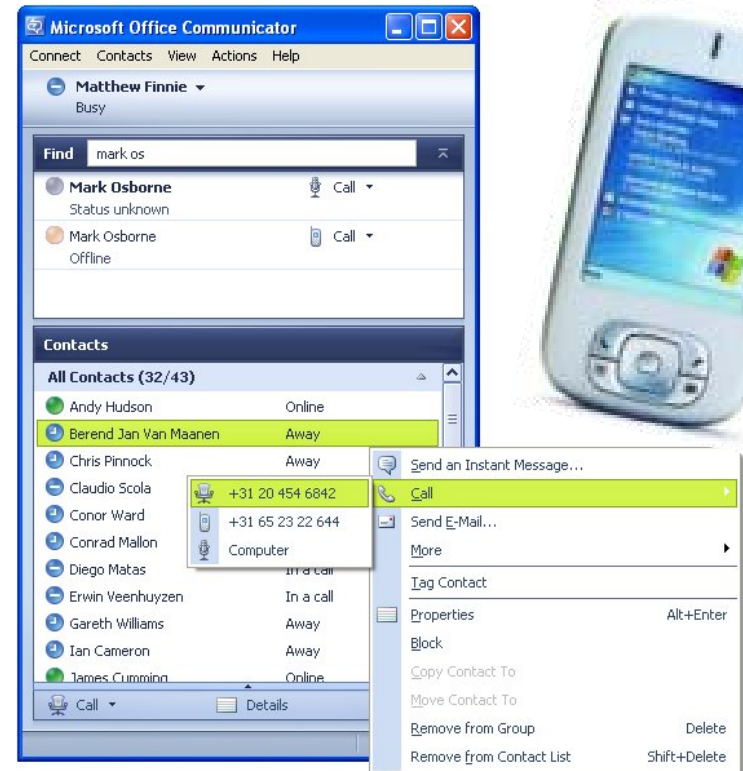
- **Hosted Commercial VoIP Subscriber Lines in Western Europe – IP Centrex (Gartner)?**
 - **<1,000,000**
- **PBX Lines in Western Europe**
 - **20,000,000**
- **Number of Microsoft Exchange users globally**
 - **500,000,000**
- **Global Mobile phones**
 - **2,140,000,000**

Skip the device - Subscriber Based Identity

Bridge the device divide through SIP based communication

- **Universal Resource Identifier (URI) - your email address**
- **E.164 Number – telephone number**

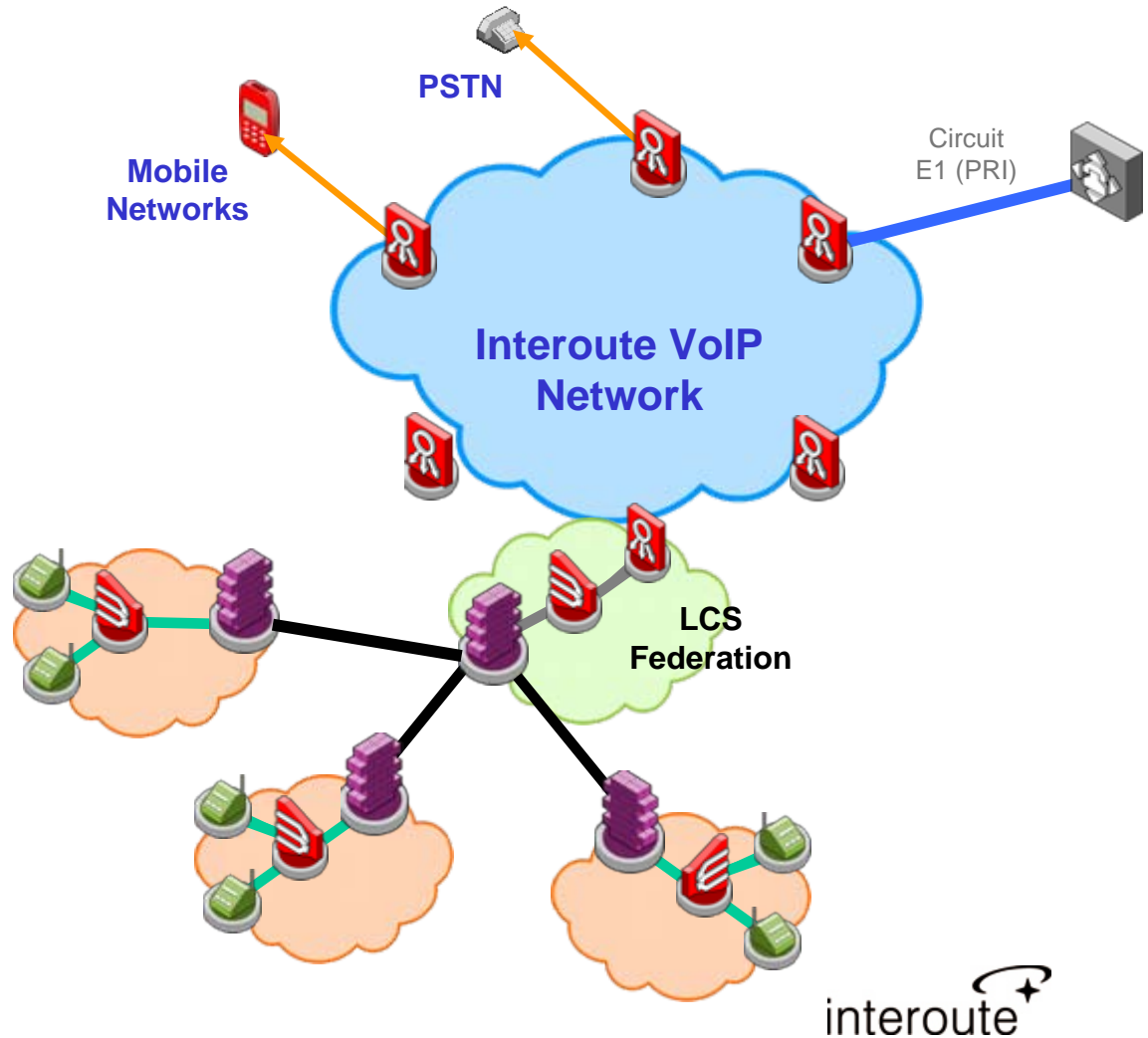
All devices (you) are mapped to the two dominant routing methods



URI = matthew.finnie@interoute.com \equiv E.164 = +44 207 002 1003

Build a community domain by domain

- Bring multiple communities together through a central “clearing house” securing communication and identity



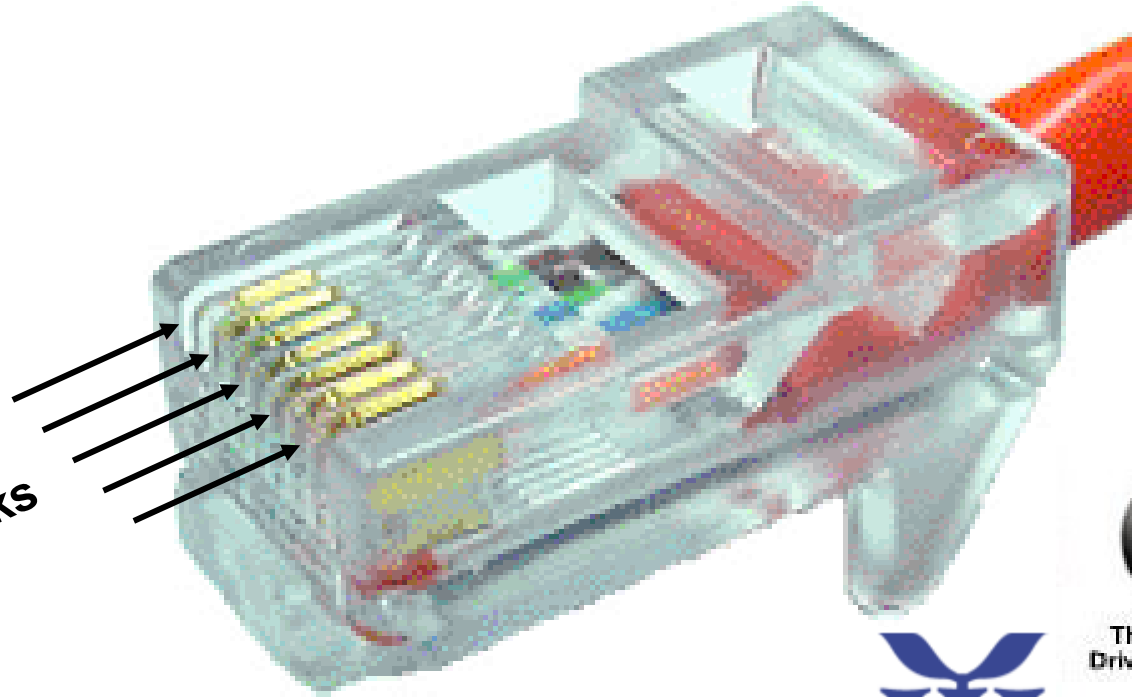
Service Platforms Summarised

Some buy like this



..or this

Ethernet
Corporate Data VPN
Corporate VOIP networks
Extranet Services
Internet Services



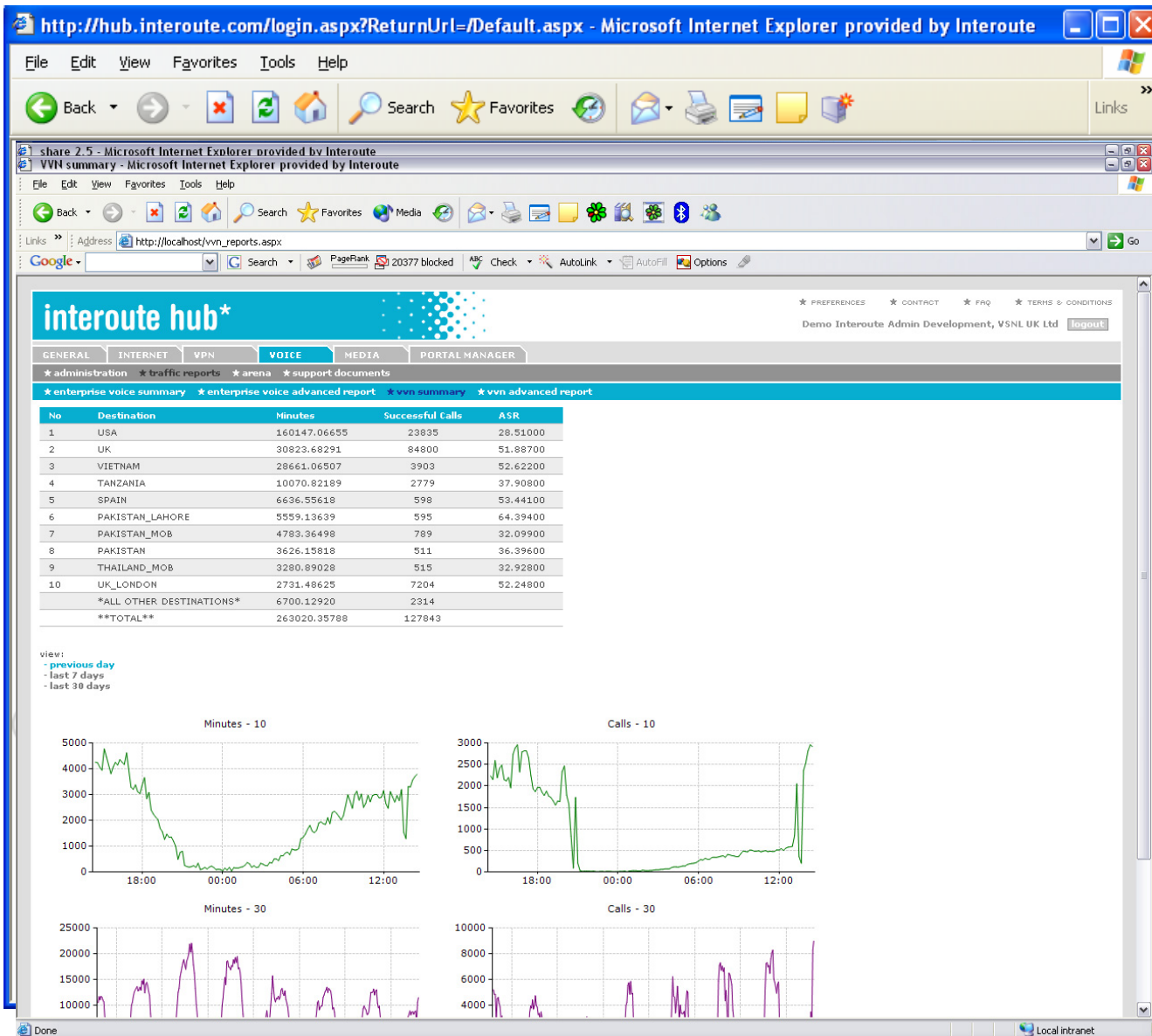
LE FIGARO



The Ultimate
Driving Machine



... increasingly, this



...and even this



interoute⁺

Concluding

There is demand and supply equilibrium

- timing and cost base are dictating supply

Big bandwidth is a function scale

Interesting times ahead for IP transit

The dominance of IP and the connectionless service model drives value into the services

Access businesses probably need to become more focused on the return on capital based on a simple transport model as service revenues become dispersed



Thank you

www.interoute.com

