

11th Annual Telecommunications and ICT Summit

**NZ telecommunications
in the transforming environment**

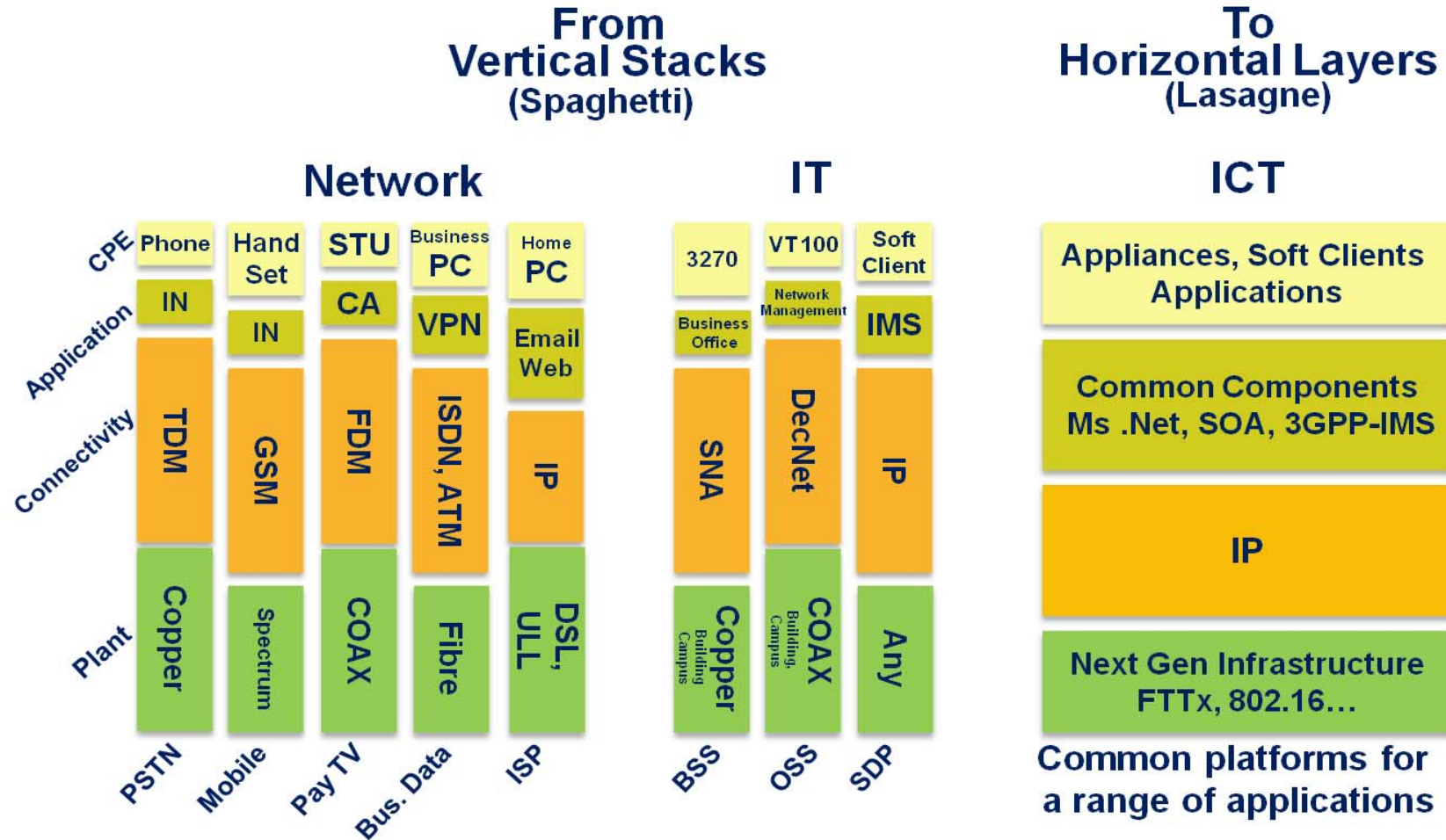
Dr Ross Patterson
Telecommunications Commissioner



Overview

- Transition from PSTN to NGN
- Competition and Regulatory Issues
- The Open Access
- Challenges

The Shift to All IP



Source: iMediate Consulting 2008

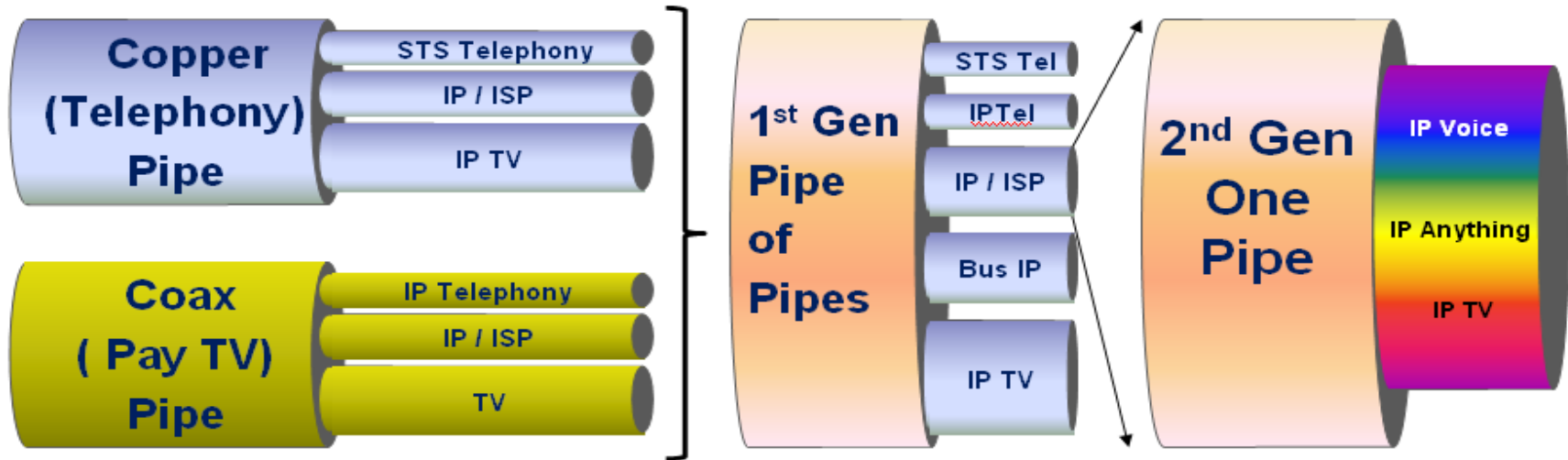
Evolution from Legacy to all IP

Legacy

Transition

First Generation

Second Generation



1st Era – Legacy Pipes

2nd Era - Transition

3rd Era – End Game

Fixed	FTTE (Core)		FTTN	FTTH
Wireless	2G	2.5G	3G	4G/ LTE

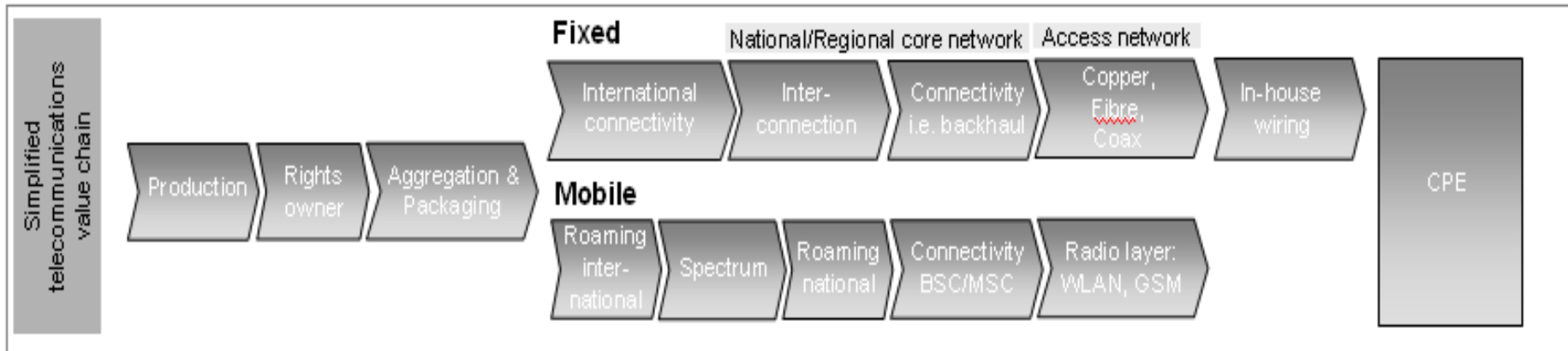
Source: iMediate Consulting 2008

Generic and simplified value chains in the telecommunications industry

Content & Applications

Distribution

End-user



Issues raised	Exclusivity Catching legislation	Backhaul capacity: STM-x Ethernet type technologies	FTTC, FTTB, FTTH	Ownership	Standard setting (e.g. plugs, ...)	Charging mechanisms retail
	Copyright National international	International backhaul: Undersea cable	Open Access Options	Quality		
	Availability of applications	Interconnection: Number of POI	Architecture: PON P2P		Set-top boxes, handsets, handhelds, etc.	
		Spectrum management	Other technologies: GSM/GPRS 3G <u>Doocsis</u> 3.0 ...			
		Quality of Service: End-to-end, best effort, etc.	Service obligations (TSO)			
		Numbering	Investment funds: Private vs. Public vs. Partnerships			
		Charging mechanisms wholesale: Cost based Capacity based Value based Revenue Share B&K				
		Wholesale services in an IP world				

All IP Networks: Potential Effects on Competition

Effects that potentially increase competition

- Shift to 'commoditised' packet-switched networks
- Separation of transport from application layer
- New market entry by non traditional telecommunication infrastructure providers eg, power companies
- Market entry of application and content providers
- Economies of Scale: Decreasing cost per unit due to increasing volumes
- Public investment into fibre based access networks
- Economies of Scope: New platforms can be shared between a range of different services
- Further development of alternative network technologies such as WiMax

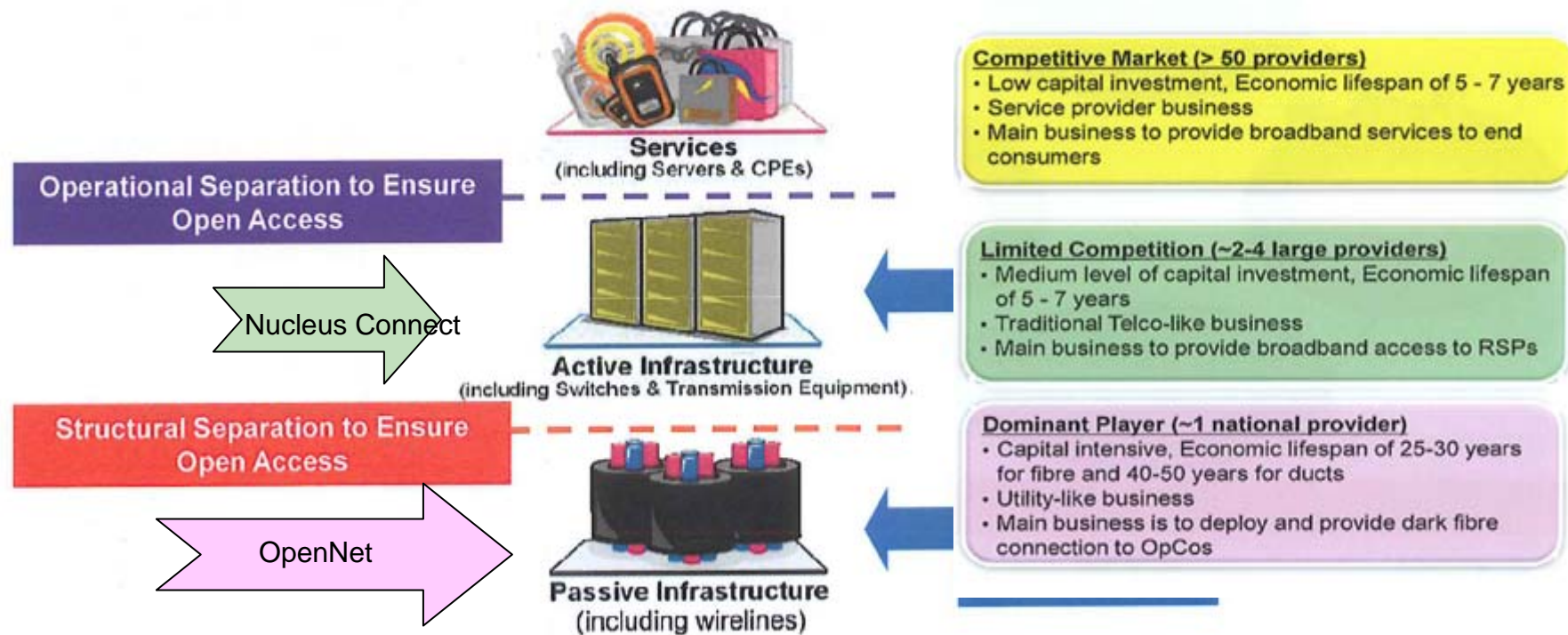
Effects that can limit potential competition

- Backward integration: Exclusivity on bottleneck inputs (eg, content)
- Forward integration: Extension of existing bottlenecks further out in the network architecture (ie, Set Top Boxes)
- Standard setting and interoperability
- International backhaul and Net neutrality
- Degradation of quality of end-to-end quality of service
- Pricing mechanisms (ie, IP Interconnection)
- Potential crowding-out effect of public investment initiatives in broadband
- In-house wiring

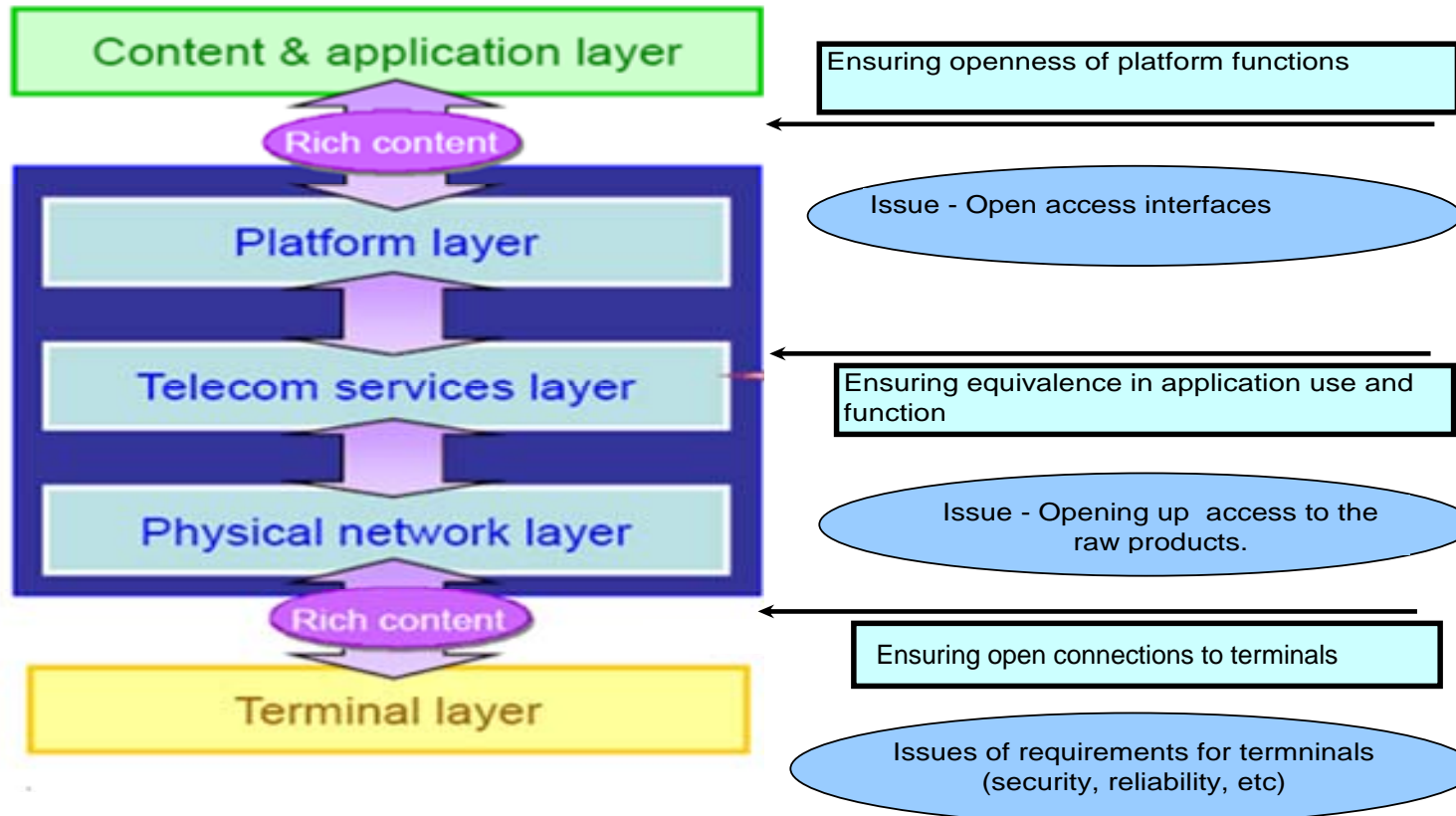
What is Open Access

- “*Open Access means the creation of **competition in all layers** of the network allowing a wide variety of physical networks and applications to interact in an open architecture. Simply put, **anyone can connect to anyone** in a **technology-neutral** framework that encourages innovation, low cost delivery to users, It encourages market entry from smaller, local companies and seeks to prevent a single entity from becoming dominant. Open access requires **transparency** to ensure **fair trading within and between the layers** based on clear, comparative information on market prices and services.” (Infodev 2005 – Adopted by the International Telecommunications Union).*

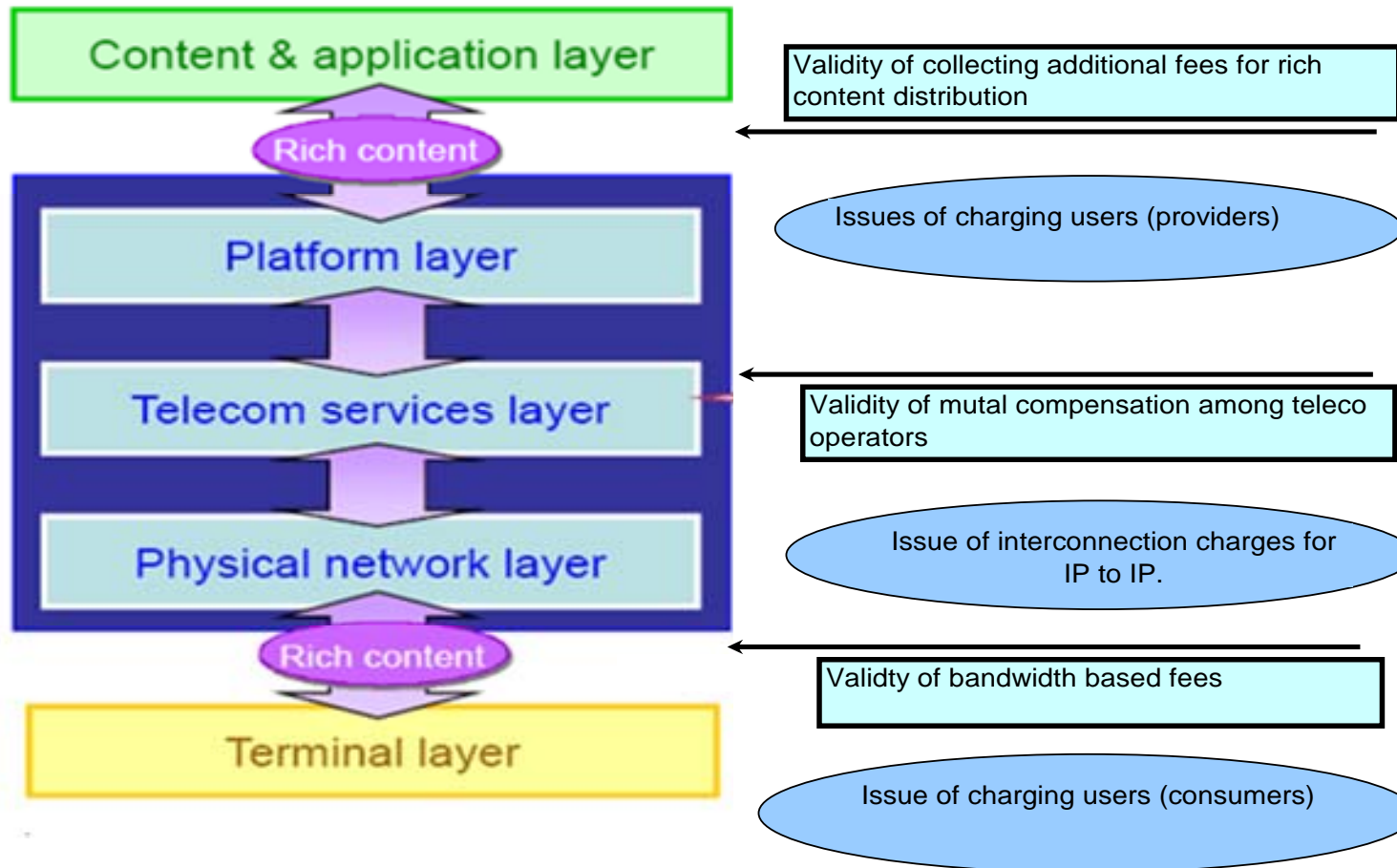
Structural & Process Innovations Next Gen NBN Concept Layers



Ensuring unfettered technical Access within and between layers



Ensuring unfettered commercial access within and between layers



Challenges

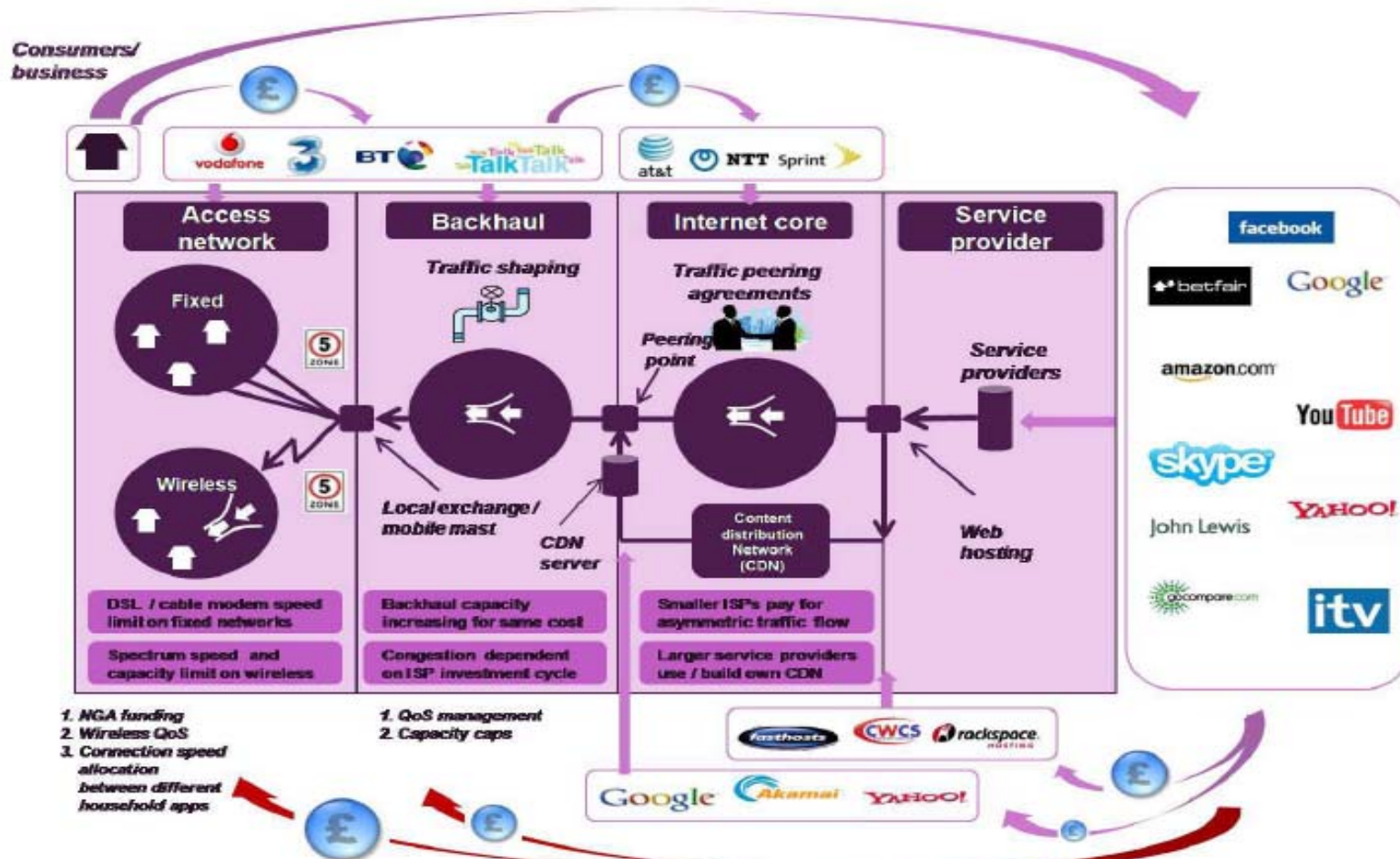
Demand side issues and Willingness to Pay

Net Neutrality

Shifting Bottlenecks

Traffic Management and Net Neutrality

The Internet Distribution Chain



Source: Ofcom

Net Neutrality

Principle that internet users should be able to access any web content and use any applications they choose without restrictions or limitations imposed by the service providers

Principle that 'pipe' owners need to manage traffic and congestion and obtain fair revenue for services that use the pipe.

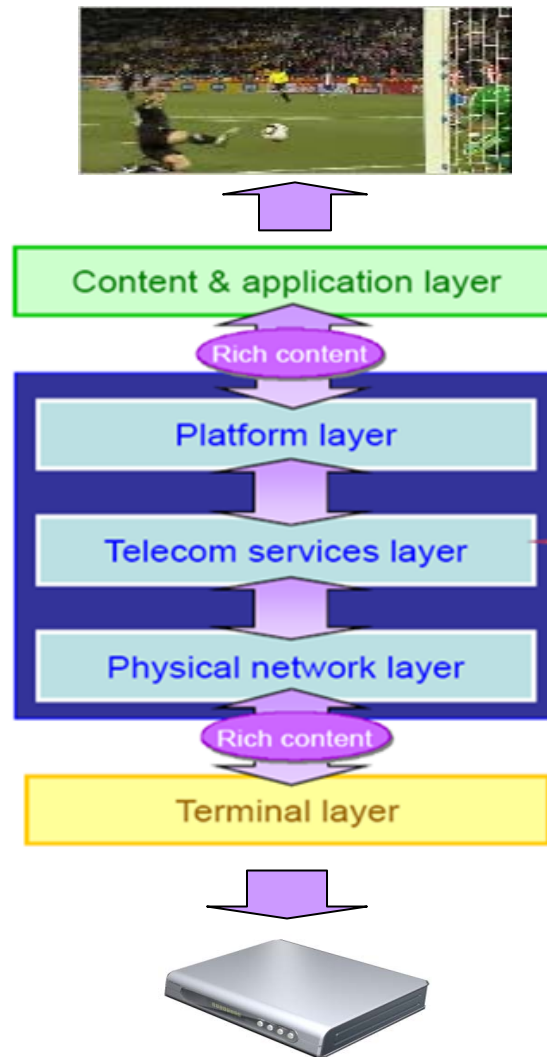
The Concern:

Application of different and anti-competitive treatment to different services, applications, destinations or devices.

including:

- Blocking access to services, sites or devices
- Decreasing the quality or priority of specific packets
- Discrimination against particular technology or service groups
- Price discrimination or the provision of 'unwarranted' charges.

Shifting Bottlenecks



Singapore - Mandated access to exclusive content in the pay TV market

“This measure will allow consumers to watch an exclusive channel through their preferred pay TV retailer, regardless of which retailer acquired the rights to that channel, and access available content from a single set-top box. Consumers would no longer require multiple set top boxes or switch retailers each time the rights of exclusive content change hands. This will facilitate greater consumer access to pay TV content, and re-focus competition to other aspects such as service differentiation and competitive packaging.”

Mr Lui Tuck Yew, Acting Minister for Information, Communications and the Arts,
12 March 2010

“The Prize, in the converged world, is to become the effective controller of the home hub.”

David Currie, Chairman, Ofcom, 12 November 2007