



Ethernet briefing – Proposed DTCS variation

15 December 2009

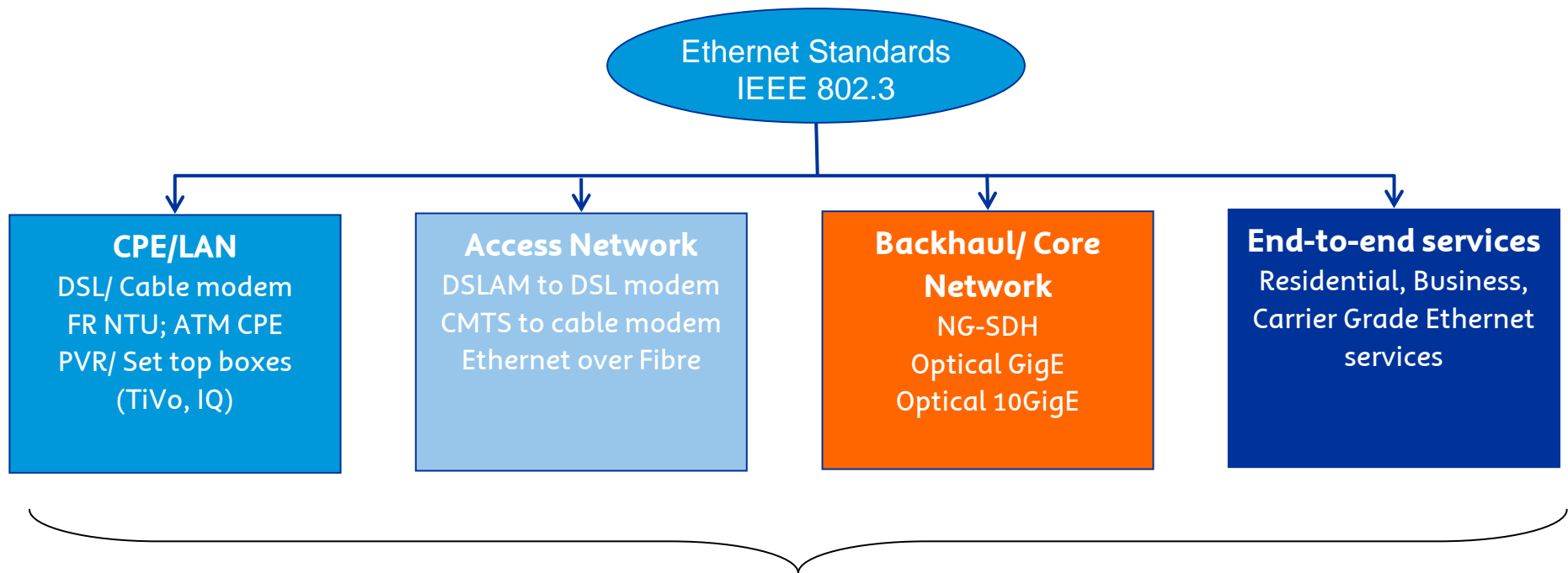


- A wide range of residential and business data services are likely to be caught by the amended service definition (and not just those supplied by Telstra)
- The amended service description may result in 'double-regulation' of the same infrastructure by different wholesale suppliers at different layers:
 - Regulation may apply at multiple layers (Layers 1, 2 and 3);
 - and across multiple infrastructure types e.g. Fibre, CAN, Microwave etc
- Existing declared services and existing DTCS service description already enable competitive supply of Ethernet services
- Potential regulation of NBN Co access network

Telstra would like to better understand the objectives behind the proposed amendments

Concept of “Ethernet” is very broad

Ethernet is a “family” of standards which apply both across the network hierarchy and across the end-to-end /upstream input divide:



The proposed Service Description could potentially encompass the whole of the Ethernet family – this creates significant complications.

Ethernet provides a number of service capabilities



Ethernet standards describe functions across layers 1 and 2:

1. Physical Layer Interfacing

- Ethernet interfaces provided on ATM, SDH, etc networks to reduce customer adaptation cost

2. Aggregation

- Combining multiple physical Ethernet interfaces into a logical bundle, to avoid purchasing multiple physical interfaces

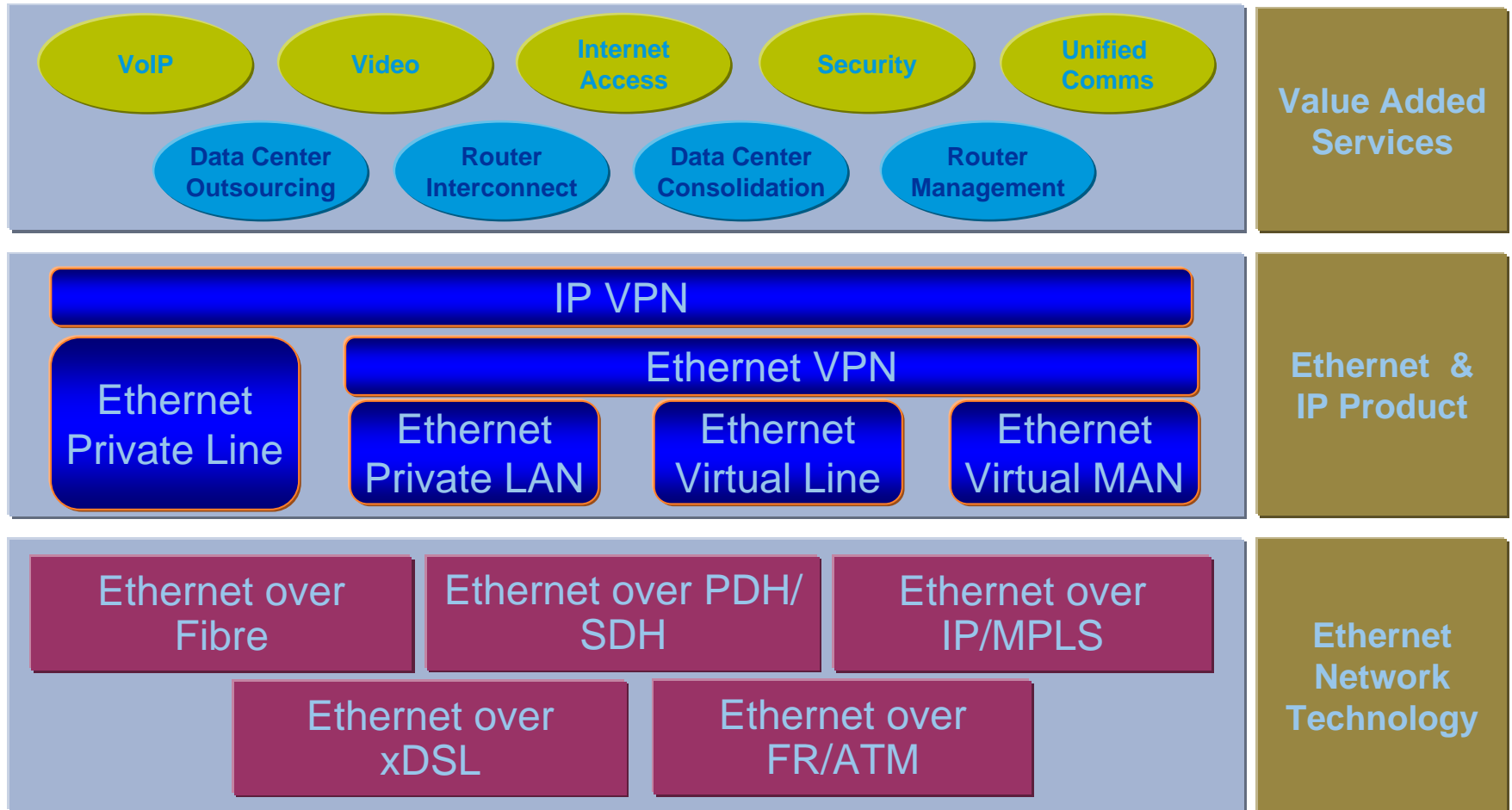
3. Switching

- Allowing multiple sites to talk through a “cloud” of shared bandwidth

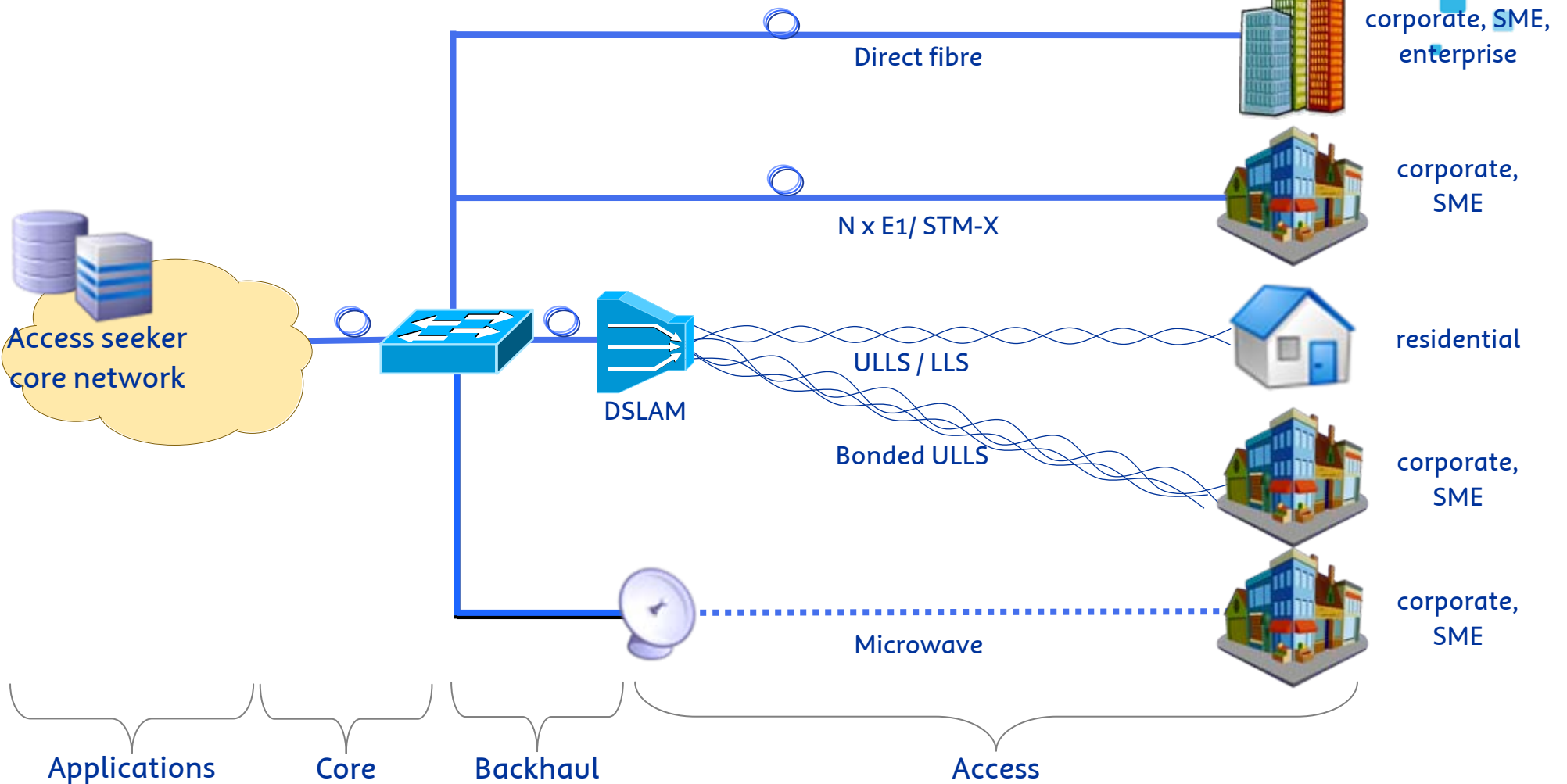
4. Class of Service

- Prioritising traffic according to a range of attributes (VLAN, 802.1p, UNI, etc) to avoid over-dimensioning capacity

Ethernet is both a service and a presentation option



Ethernet is versatile – it may be deployed over different infrastructure in different parts of the network

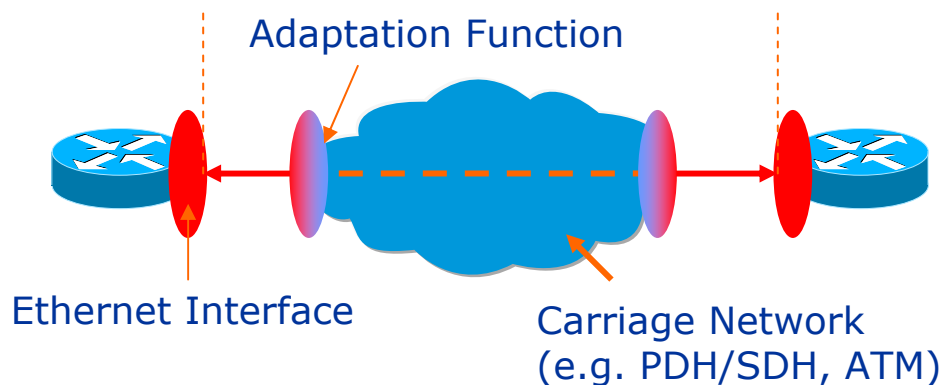


NOTE: IP/ Ethernet is becoming ubiquitous given greater efficiency of packetised networks.

Ethernet can be, and is, created from other services



- Ethernet interface at Layer 1:
 - Adapts the signal transported over an underlying technology to an Ethernet hand-off for the access seeker using convertor equipment.
 - Underlying carriage network can consist of SDH, ATM, Ethernet, IP/MPLS, Wavelengths, Dark/Managed Fibre, Wireless (HSDPA and Microwave)
- Access seekers can provide own adaptation/Ethernet interfaces at Layer 1 to create an Ethernet service











Commercial wholesale Ethernet services are already widely available in the market



- Layer 2 Ethernet services are offered by Telstra and others at wholesale:
 - may acquire regulated transmission from Telstra (PDH/ SDH) or 3rd party suppliers of transmission for resupply as Ethernet;
 - can supply over infrastructure such as ULL/SS, Fibre and/or Microwave.
- End-to-end Ethernet services are also offered by Telstra and others at wholesale:
 - often supplied over native Ethernet given higher quality
 - may also be supplied over regulated SDH/PDH transmission
- Significant wholesale competition – suppliers of both forms of Ethernet include Optus, AAPT, Pipe, Nextgen, Uecomm, etc

A few examples of Ethernet services



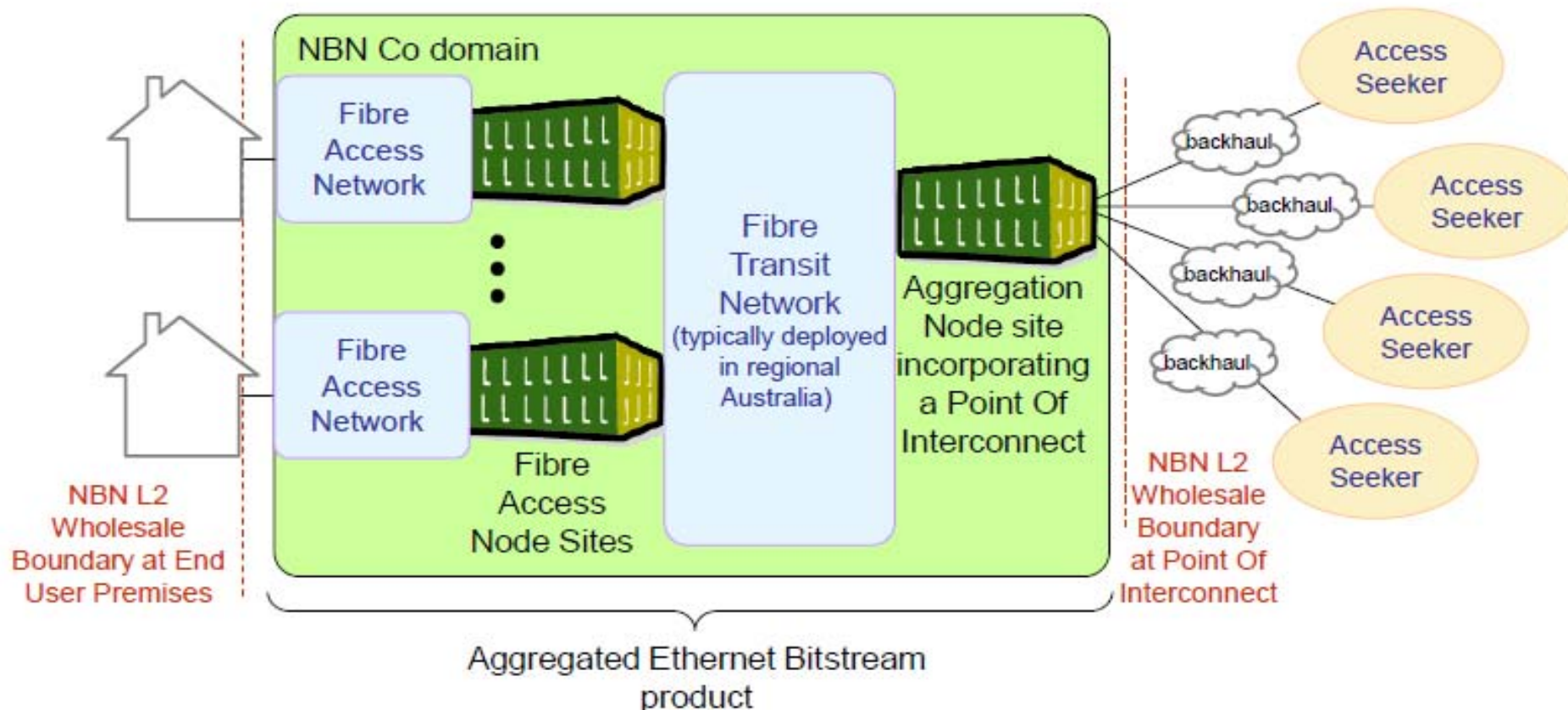
Provider	Product Name	Fact Sheets
Optus ¹	Optus Ethernet & E-Link	  Optus Ethernet E-Link Brochure
Nextgen ¹	Nextgen Ethernet	 Nextgen Ethernet
TPG/Soul ^{1`2}	Digital IP	   DIP x.21 DIP Ethernet DIP Fast Ethernet
Internode ²	Extreme SHDSL	 Extreme SHDSL
Uecomm ^{1`2}	Ethernet VPN	 Ethernet VPN
AAPT ^{1`2}	Wholesale Ethernet	Bonded ULL through over 100 exchanges

^ Other fibre based delivery

¹ Wholesale service

² Retail service

“Aggregation Node” Point of Interconnect

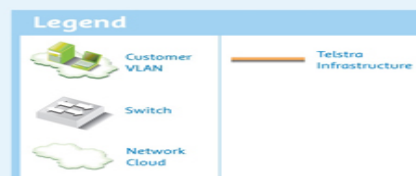


New service description results in double-regulation



- While proposed amendment is positioned as a limited adjustment to transmission service as wholesale input, it may substantially broaden the scope of regulation:
 - wholesale customers that resell their own wholesale services may be regulated;
 - results in double-regulation as the same DTCS service description can apply at multiple layers to the same infrastructure, including where a Layer 2 Telstra wholesale SDH service is resold as a Layer 3 wholesale Ethernet service

Wholesale Business Grade Ethernet Point to Point Ethernet

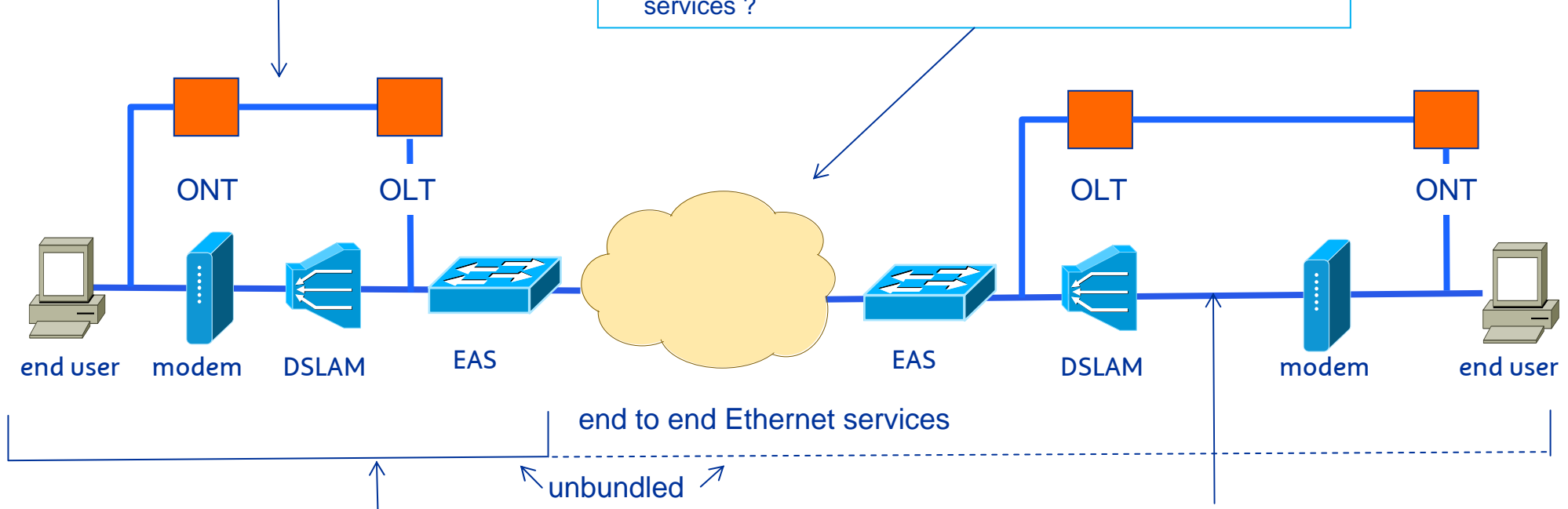


Summary of issues raised by DTCS Variation



- is regulation of Ethernet local access premature given NBN Co's announced intention to lodge SAU?
- Could regulation of local access impede NBN Co's investment?

- Is regulated access to Ethernet transmission required given that the availability of upstream inputs is already addressed by the DTCS service description?
- Is regulated access required given the extent of existing competition and the commercial availability of Ethernet services ?



- Is inclusion of a resale service legitimately a “minor variation” given the very substantial extension in scope?
- Is regulated access to resale service even required given the availability of upstream inputs?
- What is the appropriate scope of regulation, particularly given the likelihood of double-regulation of infrastructure?

- Is regulated access to Ethernet in the local network required given the ‘build or buy’ alternatives for underlying layer 1 input and the layer 2 DTCS input?