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Review of Designated and Specified Services under Schedule 1 of the Telecommunications Act 2001

Draft decision on whether to commence an investigation under clause 1(3) of Schedule 3 of the Telecommunications Act 2001

Designated services under review:

- Interconnection with a fixed Public Switched Telephone Network (PSTN)
- Retail services offered by means of a fixed telecommunications network
- Local access and calling service offered by means of fixed telecommunications network
- Retail services offered by means of a fixed telecommunications network as part of bundle of retail services
- Chorus' unbundled bitstream access (UBA)
- Chorus' unbundled bitstream access backhaul
- Chorus' unbundled copper local loop (UCLL)
- Chorus' unbundled copper local loop network co-location
- Chorus' unbundled copper local loop network backhaul (distribution cabinet to telephone exchange)
- Chorus' unbundled copper local loop network backhaul (telephone exchange to interconnect point)
- Chorus' unbundled copper low frequency service (UCLF)
- Local telephone number portability service
- Cellular telephone number portability service

Specified services under review:

- Co-location on cellular mobile transmission sites

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Glossary

ACCC	Australian Competition and Consumer Commission.
ADSL	Asynchronous digital subscriber line.
ATA	Analogue telephone adaptor.
Baseband Copper	Commercial service supplied by Chorus, based on the designated UCLF.
Baseband IP	A wholesale service supplied by Chorus which can be used by retail service providers to provide voice services to end-users via Chorus DSLAM equipment in cabinets or exchanges. At the DSLAM, the voice signal is converted from analogue to IP which Chorus delivers to retail service providers at the first data switch (FDS). Additional handover points are available through Chorus' tail extension service. Baseband IP is intended to replace Baseband Pulse Code Modulation (PCM) over time and is available where Baseband Copper is not present.
Baseband IP Extended	Same as Baseband IP, but is a commercially offered option in areas where Baseband Copper is also present.
CPP	Calling Party Pays.
Designated service	A service described in Part 2 of Schedule 1. Includes both price and non-price terms for access.
DSL	Digital subscriber line.
DSLAM	Digital subscriber line access multiplexer.
EC	European Commission.
EUBA	Enhanced unbundled bitstream access.
FDS	First data switch.
FWA	Fixed-wireless access.
GPON	Gigabit passive optical networks.
IP	Internet protocol.
ISDN	Integrated services digital network.
ISP	Internet service provider - a company that receives and converts (formats) information to and from internet connections to internet end-users. An ISP purchases a high-speed link to the internet and divides up the data transmission to allow many more users to connect to the internet.
Layer 1	The 'physical link' layer of the OSI Model.
Layer 2	The 'data link' layer of the OSI Model.

LFC	Local fibre company.
LMNP	Local and mobile number portability.
LTE	Long-term evolution is a 4th generation mobile technology. Relative to 3rd generation mobile, the LTE specification enables 100 Mbps+ data transmission rates, increased system capacity and shorter transmission latency times.
MBIE	Ministry of Business, Innovation and Employment.
Naked broadband	Retail broadband services that are provided on their own, without being bundled with a voice service.
NRA	National regulatory authorities.
OSI Model	Open systems interconnection model.
PABX	Private automated branch exchange.
PBX	Private branch exchange.
POI	Point of interconnection.
POTS	Plain old telephone service - is a term used to describe a basic voice service provided over a copper network.
PSTN	Public Switched Telephone Network, as defined in Clause 5 of the Act.
RBI	Rural Broadband Initiative - the name given to the Government's initiative to roll-out a higher-speed broadband access network to rural households.
RPP	Receiving party pays.
RSP	Retail service providers.
Specified service	A service described in Part 3 of Schedule 1, which excludes the price payable for access to a specified service.
STD	Standard terms determinations are the Commerce Commission's primary mechanism for regulating telecommunications services under the Telecommunications Act 2001.
Sub-loop UCLL	Sub-loop unbundled copper local loop network – a regulated wholesale service that enables access to, and interconnection with, the Sub-loop Network.
TSO	Telecommunication Service Obligations.
UBA	Unbundled bitstream access – a regulated wholesale service that gives access to a full-speed DSL broadband service on Chorus' access network.

UCLF	Unbundled copper low frequency – a regulated wholesale service that enables access to and interconnection with, the low frequency band (being the frequency between 300 and 3400 Hz) in Chorus' copper local loop network.
UCLL	Unbundled copper local loop – a regulated wholesale service that connects a phone user to the local exchange and can be accessed by retail telecommunications providers to provide a voice and broadband service.
UFB	Ultra-Fast Broadband – the name given to the Government's initiative to roll-out a fibre-to-the-home access network to give households access to high-speed broadband.
VoIP	Voice over Internet Protocol – a way to send voice calls over a data connection such as a broadband connection.
Managed VoIP	Managed VoIP services - Publicly available telephone service, using internet protocol, provided through fixed-wireless, DSL, cable, and other fixed internet platforms whereby the retail service provider (RSP) controls the quality of service provided.
Unmanaged VoIP services	Software-based VoIP applications, offered exclusively as content-based services on a best-effort basis by providers that are not electronic communications providers (for example, VoIP using Skype, Hotmail, or Yahoo Mail). Some allow calls to mobile numbers and landline numbers.

Executive summary

1. This document sets out our preliminary assessment of whether there are reasonable grounds to commence an investigation into deregulating any of the 14 services in Schedule 1 of the Telecommunications Act 2001 (the 'Act') that are subject of this review. The obligation for the Commission to conduct an assessment for each service in Schedule 1, every five years, is contained in clause 1(3) of Schedule 3 of the Act.

2. To deliver competitive retail telecommunications services, Retail Service Providers (RSPs) require wholesale services. A number of wholesale services are subject to limited (and sometimes no) competition. In such cases access to these services may be mandated under the Act to promote competition for the long-term benefit of end-users.

3. Schedule 1 of the Act contains the regulated wholesale services, which are designated access services and designated multinetwork services (known together as designated services), and specified services.[1] The specification of the services in Schedule 1 sets out the general conditions of access, and can form the basis for access seekers and access providers to negotiate agreement.

4. Once a service is in Schedule 1, regulated terms of access can be given effect through a determination or a standard terms determination (STD).[2] However, in this review, we are only concerned with whether services should remain in Schedule 1 and not the status of any determination or STD.

5. As markets evolve, new retail services are developed and wholesale service providers can face increased competition, to an extent that it may no longer be necessary to mandate access to a Schedule 1 service. To this end, the Commission periodically considers whether regulation is still required. This is done at least every five years for each service by assessing whether competition may have developed to such an extent that continued regulation is no longer needed to promote competition for the long-term benefit of end-users.

6. Table 1 below sets out the services in Schedule 1 of the Act that are under review, our preliminary views on whether there are reasonable grounds to investigate deregulating each of the services, and the main reasons for our preliminary views.

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1 As regards the difference between Designated and Specified services, the Act simply says that Specified services appear in Part 2 of Schedule 1 and Designated services appear in Part 3 of Schedule 1. In practice, we are able to determine price and non-price terms for Designated services, but only non-price terms for Specified services. There are only two Specified services: national roaming and co-location on cellular mobile transmission sites.

2 We can create a bilateral determination for designated access and specified services, where these parties have not come to terms. We can also initiate an STD for those services if we want to extend regulated terms to all access seekers and access providers. Finally, an access seeker can apply for a multi-lateral determination if they want terms specified for a designated multinetwork service. The Commission can initiate this process as well if there are reasonable grounds to do so.

Table 1: Summary of preliminary views

Services under review	Reasonable grounds to investigate?	Main reasons
Interconnection with a fixed Public Switched Telephone Network (PSTN), including origination and termination of calls. *Designated – no STD in place*	No	The supply of termination services is unlikely to be constrained in the absence of regulation. This is because call termination is an essential input into retail calling services to fixed-line numbers, and an increase in the fixed termination rate is unlikely to result in called customers switching away from the terminating operator under the Calling Party Pays principle. In the absence of an STD or any bilateral determination, interconnection tariffs and conditions are established on commercial bases. However, we consider that the interconnection service should remain in Schedule 1 in case commercial negotiations fail.

Services under review	Reasonable grounds to investigate?	Main reasons
Wholesale access to Chorus' copper network		If wholesale access services to Chorus' copper network were removed from Schedule 1 of the Act, Chorus would not be constrained by potential competition. There is no competition in terms of wholesale providers and there are no economic incentives for a retail service provider to roll-out another network. UFB has a more limited footprint than UBA and UCLL or UCLF, so is still not a comprehensive geographic substitute for Chorus' copper services.
Chorus' unbundled bitstream access (UBA) *Designated – STD in place*	No	The UBA service remains important as the key wholesale input for RSPs to provide retail broadband services in areas where it is not viable to unbundle the copper loop at the cabinet or exchange level, for economic or technical reasons.
Chorus' unbundled copper local loop (UCLL) *Designated – STD in place*	No	The UCLL service also remains an important basis for competition in areas where unbundling has occurred, and is likely to remain so during the transition to UFB.
Chorus' unbundled copper low frequency service (UCLF) *Designated – STD in place*	No	If UCLF was deregulated, the only alternative for Spark and other RSPs would be to unbundle at the cabinets, but this would be a much higher cost option involving a significant investment, covering equipment in cabinets, sub-loop co-location and sub-loop backhaul..

Services under review	Reasonable grounds to investigate?	Main reasons
Wholesale access to Spark's fixed network		
Local access and calling service offered by means of a fixed telecommunications network *Designated – no STD in place*	Yes	We consider that there are reasonable grounds to start an investigation into omitting this service from Schedule 1 of the Act. Resale access lowers barriers to entry at the retail level, by allowing competitors to enter and supply retail end-users with voice access and calling services without having to invest in their own switching or VoIP-based equipment. However, the deployment and increasing penetration of alternative wholesale services which support the delivery of fixed calling services is likely to diminish the importance of resale access. Such wholesale alternatives include Chorus' UBA, Baseband IP and Baseband IP Extended services as well as UFB-based wholesale services offered by Chorus and the Local Fibre Companies (LFCs). These wholesale services are becoming widely available and appear to compete with Spark's resale services.

Services under review	Reasonable grounds to investigate?	Main reasons
Retail services offered by means of a fixed telecommunications network. *Designated – no STD in place* This service includes the following two components:		
i. A non-price-capped retail access and calling service (which differs from a local access and calling service), including for example ISDN or Centrex-based services. ISDN and Centrex-based services provide retail customers (typically business customers) with the ability to transfer calls between extensions, divert calls, and put calls on hold. Such functionality is either provided using customer premises equipment (in the case of ISDN services) or exchange-based equipment (in the case of Centrex services).	Yes	We consider that there are reasonable grounds to start an investigation into omitting this service from Schedule 1 of the Act. We understand that the development of hosted IP-based services may provide increasingly competitive alternatives to ISDN/Centrex services by delivering similar functionality and features to business customers over broadband connections. Hosted IP-based services can be delivered using wholesale services supplied by Chorus or LFCs.
ii. A value-added non-price-capped retail service that is supplied in conjunction with an access and calling service, and includes 'smartphone' messaging services such as Call Minder, Call Waiting, and Caller Display services.	Yes	We consider that there are reasonable grounds to start an investigation into omitting this service from Schedule 1 of the Act. Our view on this service is based on our preliminary view in respect of the local access and calling service (see above).

Services under review	Reasonable grounds to investigate?	Main reasons
Retail services offered by means of a fixed telecommunications network as part of a bundle of retail services *Designated – no STD in place*	Yes	We consider that there are reasonable grounds to start an investigation into omitting this service from Schedule 1 of the Act The bundling of retail services remains an important feature of the telecommunications industry, with broadband services often supplied in a bundle with a landline. However, Spark's competitors have been able to offer competitive bundles of retail services without seeking access to the regulated "parts of bundle" service. This view is consistent with our preliminary view on the local access and calling service (which recognises the increasing availability of alternative wholesale services which support the delivery of voice services), and our preliminary view that regulated access to Chorus' copper network should remain (which supports the delivery of broadband and voice services).

Services under review	Reasonable grounds to investigate?	Main reasons
UBA & UCLL related services		
Chorus' unbundled bitstream access backhaul *Designated – STD in place*	No	Chorus supplies commercial and regulated backhaul services to access seekers throughout the country. In addition to Chorus, there are a number of other network operators who provide or are capable of providing transmission capacity, but only where there is sufficient scale to justify the roll-out of backhaul links (larger inter-city routes and some metropolitan areas). In the remaining areas, which are still significant, Chorus is the only supplier of transmission capacity services. We are aware that backhaul services are typically provided on commercial terms. However, we consider that the backhaul services should remain in Schedule 1 in case future commercial negotiations fail.
Chorus' unbundled copper local loop network backhaul (from the distribution cabinet to telephone exchange) *Designated –STD in place*	No	
Chorus' unbundled copper local loop network backhaul (from the telephone exchange to interconnect point) *Designated – STD in place*	No	
Chorus' unbundled copper local loop network co-location *Designated – STD in place*	No	For an access seeker wishing to interconnect with Chorus UCLL network, there are no viable alternatives to co-location in Chorus' local exchanges or distribution cabinets. We are aware that UCLL co-location services are typically provided on commercial terms. However, we consider that the UCLL co-location service should remain in Schedule 1 in case commercial negotiations fail.

Services under review	Reasonable grounds to investigate?	Main reasons
Number portability		
Local telephone number portability service Cellular telephone number portability service *Designated – Determination for both services in place*	No No	An easy switching process is essential to reducing barriers to switching and in turn promoting competition in the retail markets. Deregulating these number portability services might hinder the competitive process by creating barriers for end-users to change retail providers.
Co-location on cellular mobile transmission sites *Specified – STD in place*	No	The ability to co-locate equipment on the infrastructure of another mobile network operator facilitates the efficient deployment of mobile technology through the sharing of the costs of facilities such as towers and masts. This is particularly important to reach more remote areas and to quickly deploy new technologies such as 4G LTE and 5G. Mobile co-location promotes competition in the downstream retail market for mobile services by enabling smaller operators to extend their coverage by leasing space on existing infrastructure owned by the larger mobile operators.

7. The content of this draft decision is laid out as follows:

   7.1 Background – summarises the regulation of services under Schedule 1, and our previous reviews and investigations of Schedule 1 services.

   7.2 Decision making framework - sets out the approach that we use for our review. This includes the legislative and analytical framework for considering whether there are reasonable grounds to commence an investigation.

   7.3 Review of the services - contains an overview of how the regulated services relate to retail services that are supplied to meet the needs of end-users, a detailed description of each of the regulated services being considered in this review, and our assessment of the competitive constraints that may exist in respect of each of the regulated services. We conclude with our preliminary

views on whether there are reasonable grounds to consider deregulating each of the regulated services.

7.4 Attachment 1 – provides the history of the regulated services in Schedule 1

8. Interested parties are encouraged to provide submissions on the preliminary views expressed in this paper. Submissions are due by 5pm on the 23 of May 2016.

Background

9. In this section, we summarise the regulation of services in Schedule 1, and our previous reviews and investigations of Schedule 1 services. This provides context for the current review and our preliminary views, which are set out in the sections that follow.

Schedule 1 services

10. Clause 1(3) of Schedule 3 of the Telecommunications Act 2001 ('the Act') requires us to review each service in Schedule 1 every five years, to determine if there are reasonable grounds to commence an investigation into deregulating any of those services.

11. Schedule 1 currently contains 14 designated services (including 12 designated access services and two designated multinetwork services), and two specified services. For designated services, we are able to determine price and non-price terms of access, but we are limited to determining only non-price terms of access for specified services.

12. The supply of Schedule 1 services will only be subject to regulated terms where a determination or STD is in effect. Regulated terms of access for a Schedule 1 service are set through one of the following processes:

12.1 a bilateral determination between an access provider and an access seeker for either a designated access service or specified service;[3]

12.2 a multilateral determination between access seeker(s) and access providers for a designated multinetwork service;[4] or

12.3 a s30 STD, where the terms of access that we set apply to all access seekers and all access providers.[5]

13. In the current review, we are considering whether to commence an investigation in respect of 14 of the Schedule 1 services.[6] We are only reviewing whether the 14

[3] Under subpart 2 of Part 2 of the Act.
[4] Under subpart 3 of Part 2 of the Act.
[5] Under subpart 2A of Part 2 of the Act.
[6] The Schedule 1 services that are not part of the current review are the National Roaming service and the Mobile Termination Access Service (MTAS), as these were reviewed under Clause 1(3) in 2013 and 2015 respectively.

services should remain in Schedule 1. Any review of the actual determinations or STDs would be subject to a different process (such as s30R in the case of STDs).

Previous reviews and investigations of Schedule 1 services

14. This section summarises the main reviews and investigations of Schedule 1 services that we have undertaken since the Act came into force. More information on these processes, in relation to each regulated service, can be found in Attachment 1 – The history of designated and specified services in Schedule 1.

15. We are required to consider at least every five years whether regulated services should remain in Schedule 1 of the Act. The first five year review of the Schedule 1 services took place in 2005 in the lead-up to the Act's fifth anniversary (our '2005 review'[7]). At that time, the statutory test was whether there were reasonable grounds to extend the Specified and Designated services for up to two years.[8] Section 65 of the Act required that all services in Schedule 1 would expire after five years unless they were extended.

16. In our 2005 review, we decided to investigate retaining 10 of the 13 services in Schedule 1. Our subsequent investigation in 2006 (our '2006 investigation') determined that three services would be allowed to expire,[9] and the other 10 services (PSTN interconnection (2), resale services (4), number portability (2), and *national roaming* and *co-location on cellular mobile transmission sites*) would be retained.[10] This was done by extending the period of regulation for these services through statutory amendment in 2006.[11]

17. In December 2006 section 65 was repealed, removing the five year time limit for Schedule 1 services. In addition, the current process of reviewing these services every five years, to identify if there are reasonable grounds to remove any service from the schedule, was formally enabled in clause 1 of Schedule 3 of the Act.

18. The December 2006 statutory amendment also introduced the six unbundled services that now largely define regulated fixed copper services in New Zealand (ie, UBA, UCLL and the associated backhaul and co-location services).[12]

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7 "Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate", 16 November 2005

8 "Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate", 16 November 2005, paragraph 1.

9 The three services that were allowed to expire in 2006 were the National toll-free telephone number portability service, Telecom's fixed PSTN to mobile carrier pre-selection service, and Co-location of equipment for fixed telecommunications services at sites used by Broadcast Communications Limited.

10 "Schedule 3 Investigation into the Extension of Regulation of Designated and Specified Services Final Report", 28 August 2006

11 Telecommunications Amendment Act 2006 (No 53), 30 October 2006.

12 Prior to these unbundled services coming into existence the Commission had added two early versions of unbundled services to Schedule 1 by order in council in 2004, which were then removed in the December 2006 Amendment Act. The services were: "*Access to, and interconnection with Telecom's Public Data Network (PDN)*; and the associated *Telecom's Fixed PDN Backhaul*. When expressed in the Commission's determinations these services became known as the unbundled bitstream services (UBS).

19. From 2006 to 2010 there were additional reviews and investigations for *national roaming*, *co-location on cellular mobile transmission sites*, and mobile termination services. As a result of these investigations, changes were made to national roaming and the *Mobile Termination Access Service* (MTAS) was introduced as a designated service to Schedule 1.

20. In February 2009, Telecom requested that the Commission investigate whether the resale services should remain regulated.[13] We launched an investigation in September of that year and published our final report in December 2010 (our '2010 investigation').[14]

21. Our 2010 investigation resulted in the following recommendations that were integrated into Schedule 1 by Order in Council on 30 May 2011.

    21.1 The *bundle of services offered by means of Telecom's fixed telecommunications network* service was to be removed from Schedule 1.

    21.2 The description of the *retail services offered by means of Telecom's fixed telecommunications network* was to be changed to exclude broadband and data services, and to ensure the service provided for a business local access and calling service. [15]

22. Later in 2011 further amendments were made to Schedule 1 of the Act through the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 ("the 2011 Amendment Act"), which came into effect on 1 July 2011. These amendments:

    22.1 replaced "Telecom's" with "a" in the title for two of the resale services offered by means of an FTN;

    22.2 removed "Residential" from the beginning of the title of the third resale service to make it *a local access and calling service offered by means of a FTN;*

    22.3 consolidated the two interconnection services into one service, *interconnection with a fixed PSTN*; and

    22.4 introduced a new *unbundled copper low frequency service* (UCLF) as a designated service in Schedule 1.[16]

23. From July to September 2011 the Commission undertook the second five year review of Schedule 1 services (our '2011 review').[17] The amendments to national roaming (in 2008) and the introduction of MTAS (in 2010) meant the timings for the five year

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13 "Reasons for Commerce Commission decision to investigate Resale services", 24 September 2009, para 4.

14 "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001 (or if not omitted, amended in some form)", 16 December 2010.

15 Telecommunications (Retail Services and Bundle of Retail Services) Order 2011, SR2011/200.

16 See, Schedule 3 of the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011.

17 "Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001", 16 September 2011

review for these services were deemed to be distinct from the other 14 services potentially under review in 2011.

24. There were also other services not reviewed in 2011 including:

24.1 the UCLF and Interconnection with a fixed PSTN services, because they had just come into existence; and

24.2 the three remaining resale services,[18] because the Commission concluded that there had been no significant changes for these services since they had been investigated the year before.[19]

25. For the remaining nine regulated services, the Commission found that there were no reasonable grounds to investigate removing them from Schedule 1 at that time.

Decision making framework

26. This chapter outlines our proposed framework for undertaking this review. The current review is the third five year review in which we are required to consider whether there are reasonable grounds to commence an investigation to omit any designated or specified services in Schedule 1 of the Act.

Scope and timing of this review

27. This review is limited to considering whether there are reasonable grounds for commencing an investigation into omitting the regulated service from Schedule 1 of the Act. It does not extend to introducing a new service, or amending an existing regulated service. This does not preclude us from considering in the course of this review whether or not the introduction of a new service and/or the amendment of an existing service is appropriate. However, any recommendations in this regard would be made in a separate process.[20]

28. For each service in Schedule 1, we are required to carry out a review at least every five years from the time the service came into effect.[21] Where a designated service or specified service has been amended or altered, the effective date of that service coming into effect is the date the altered or amended service came into effect.[22]

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18 Retail services offered by means of a fixed telecommunications network; Local access and calling service offered by means of fixed telecommunications network; Retail services offered by means of a fixed telecommunications network as part of bundle of retail services

19 "Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001", 16 September 2011, paragraph 15

20 Under Clause 1(1) of Schedule 3, we are able to commence an investigation into whether any of the services in Schedule 1 should be amended (including amending *inter alia* the service description, any applicable conditions, and (in the case of designated services) the pricing principles).

21 A review can be commenced no earlier than 12 months before the end of each five year interval: Schedule 3, clause 1(4) of the Act.

22 Clause 1(3) of Schedule 3. We think this approach fits the intent of the enabling provision, and is consistent with our previous approaches (Eg Commerce Commission "Final decision on whether to

29. In our review we have considered current market conditions as well as how competitive conditions may change in the foreseeable future. For example, we recognise that a number of designated services contained in Schedule 1 of the Act are likely to face increasing competition from alternative wholesale services.

30. The telecommunications industry is characterised by a high rate of technological change, where services can develop quickly and so can the competitive constraints. In this regard it is relevant to note that we are able to start an investigation at any time under clause 1(1) of Schedule 3 of the Act.

31. This ability to investigate under Schedule 3 enables us to revisit the scope of regulation within the next five years to reflect commercial or technological developments where necessary.

How we will identify whether there are "Reasonable Grounds" to commence an investigation into omitting a regulated service

32. We consider that reasonable grounds to investigate omitting a service from Schedule 1 are likely to exist where the evidence suggests that competition may have developed to such an extent that continued regulation is no longer needed to promote competition in telecommunications markets for the long-term benefit of end-users. This approach is consistent with past decisions for this type of review. [23]

33. We do this in the following way: first, we will consider competitive developments at the retail level, as this is where services are supplied to end-users using the regulated services as an input. It is important to consider competitive constraints that operate at the retail level in order to be able to assess the extent to which competition in the retail market relies on access to the regulated services.

34. Next we then consider each of the regulated wholesale services that are the subject of this review. In each case, we are interested in examining the competitive constraints that may exist in respect of each of the regulated services. This involves identifying the following constraints.

    34.1 Whether there are any direct substitutes for the regulated service. This will be the case where wholesale alternatives are available to access seekers who are using the regulated service but could viably switch in the event that the price of the regulated service increased. For the purposes of this review, we have taken into account evidence before us on the extent to which access seekers have actually been switching between wholesale services.

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investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of the Telecommunications Act 2001" 16 September 2011 at [4]).

[23] This approach is consistent with our previous views on this matter. See, previous service deregulation reviews, eg, Commerce Commission "Final decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of the Telecommunications Act 2001" 16 September 2011, Commerce Commission "Final Decision on whether to investigate omitting National Roaming from part 3 of Schedule 1", 20 September 2013 and Commerce Commission "Consideration of whether to commence an investigation into whether to omit the Mobile Termination Access Services from Schedule 1 of the Telecommunications Act 2001", 23 September 2015.

34.2 The extent to which any direct substitutes (identified above) act as a genuine competitive constraint on the regulated service. If direct substitutes are supplied by the same access provider, these are unlikely to represent a sufficient constraint on the regulated service (unless the direct substitute is also regulated).

34.3 Whether there are any constraints that operate indirectly through the retail level (from which demand for the wholesale service is derived). For example, an increase in the price of the regulated service may be passed through to the retail price of the service supplied to end-users using the regulated input. If such an increase in the retail price were to induce end-users to switch to other retail services that do not rely on the regulated input, such switching of demand away from the regulated input may indirectly constrain the access provider.

35. This provides the basis for our preliminary view on whether there may be reasonable grounds to start an investigation into whether the regulated services can be removed from Schedule 1 of the Act.

36. In undertaking our review, we have had regard to differences in competitive intensity in regions where competing infrastructure has been deployed. In previous Schedule 3 investigations, we have defined distinct geographic markets for a number of services (such as fixed local access services and backhaul services), in order to take account of geographic variations in competition. However, for the purposes of this review, we do not consider it necessary to define sub-national markets. Rather, where relevant we have taken geographic differences into account, such as the geographic availability of alternative wholesale services.[24] Where a Schedule 1 service is supplied in a region where competition is limited, it is likely to be appropriate to retain the service in Schedule 1.

37. At this stage we are only considering whether there are *reasonable grounds* to commence an investigation to omit the regulated services from Schedule 1. In the event that we conclude that there are, we will carry out a more comprehensive assessment of competition and the potential impact of withdrawing regulation. Such an investigation will be informed by our own research and assessment, and interested parties will be invited to make submissions.

Role of section 18 for this review under clause 1(3) of Schedule 3 of the Act

38. In reaching our view on whether there are reasonable grounds for commencing the investigation as referred to above, we must make the decision that will give, or is likely to best give, effect to the purpose set out in section 18 of the Act:[25]

> … to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand by regulating, and providing for the regulation of, the supply of certain telecommunications services between service providers.

[24] In addition, the significance of cabinetisation is likely to complicate the delineation of geographic market boundaries, as UCLL uptake has generally not been viable in respect of cabinetised lines.

[25] Section 19 of the Act.

39. Section 18(2) and (2A) identify particular matters that we are required to consider when determining what promotes competition in telecommunications markets for the long-term benefit of end-users:

> (2) In determining whether or not, or the extent to which, any act or omission will result, or will be likely to result, in competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand, the efficiencies that will result, or will be likely to result, from that act or omission must be considered.
>
> (2A) To avoid doubt, in determining whether or not, or the extent to which, competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand is promoted, consideration must be given to the incentives to innovate that exist for, and the risks faced by, investors in new telecommunications services that involve significant capital investment and that offer capabilities not available from established services.

40. As the High Court has observed, section 18(1) is the "dominant" provision in section 18, and subsections (2) and (2A) "are specified for the purpose of assisting analysis under section 18(1)".[26] In this sense, subsections (2) and (2A) are not isolated considerations on their own. Rather, they form part of the consideration of whether competition is promoted to the long-term benefit of end-users.

41. Put simply, we are required to make a decision that promotes competition for the long-term benefit of end-users, and as part of those assessments we must consider the impact of our decisions on efficiencies as well as investment in capital intensive new telecommunications services.

42. In the context of this review, reasonable grounds to investigate whether a Specified or Designated service should be omitted from Schedule 1 are likely to exist where the evidence before us suggests that circumstances have changed since the relevant service was added to Schedule 1 to the extent that:

    42.1 continued regulation may no longer be necessary to promote competition; or

    42.2 existing regulation may be having a negative impact and removing the regulation may best promote competition for the long-term benefit of end-users.

Review of the services in Schedule 1

43. This review covers 14 of the services in Schedule 1. A number of these services share similar traits, and we have grouped the services according to these common characteristics for ease of assessment.

44. We have grouped the services in the following way:

    44.1 Interconnection with a fixed Public Switched Telephone Network (PSTN);

    44.2 Wholesale access to Chorus' copper network;

[26] Chorus v Commerce Commission [2014] NZHC 690 at [34].

44.2.1 Unbundled Bitstream Access (UBA);

44.2.2 Unbundled Copper Local Loop (UCLL);

44.2.3 Unbundled Copper Low Frequency Service (UCLF);

44.3 Wholesale access to Spark's fixed voice services;

44.3.1 Local access and calling service offered by means of a fixed telecommunications network;

44.3.2 Retail services offered by means of a fixed telecommunications network;

44.3.3 Retail services offered by means of a fixed telecommunications network as part of bundle of retail services;

44.4 UBA/UCLL related services - Backhaul and Co-location;

44.4.1 Chorus' UBA backhaul;

44.4.2 Chorus' UCLL backhaul (from the distribution cabinet to telephone exchange;

44.4.3 Chorus' UCLL backhaul (from the telephone exchange to interconnect point);

44.4.4 UCLL network co-location;

44.5 Number portability services;

44.5.1 Local telephone number portability service;

44.5.2 Cellular telephone number portability service; and

44.6 Mobile co-location.

How the regulated services relate to end-users' needs

45. Each of the wholesale services that are the subject of this review are used by RSPs to supply retail services to end-users. Figure 1 below shows:

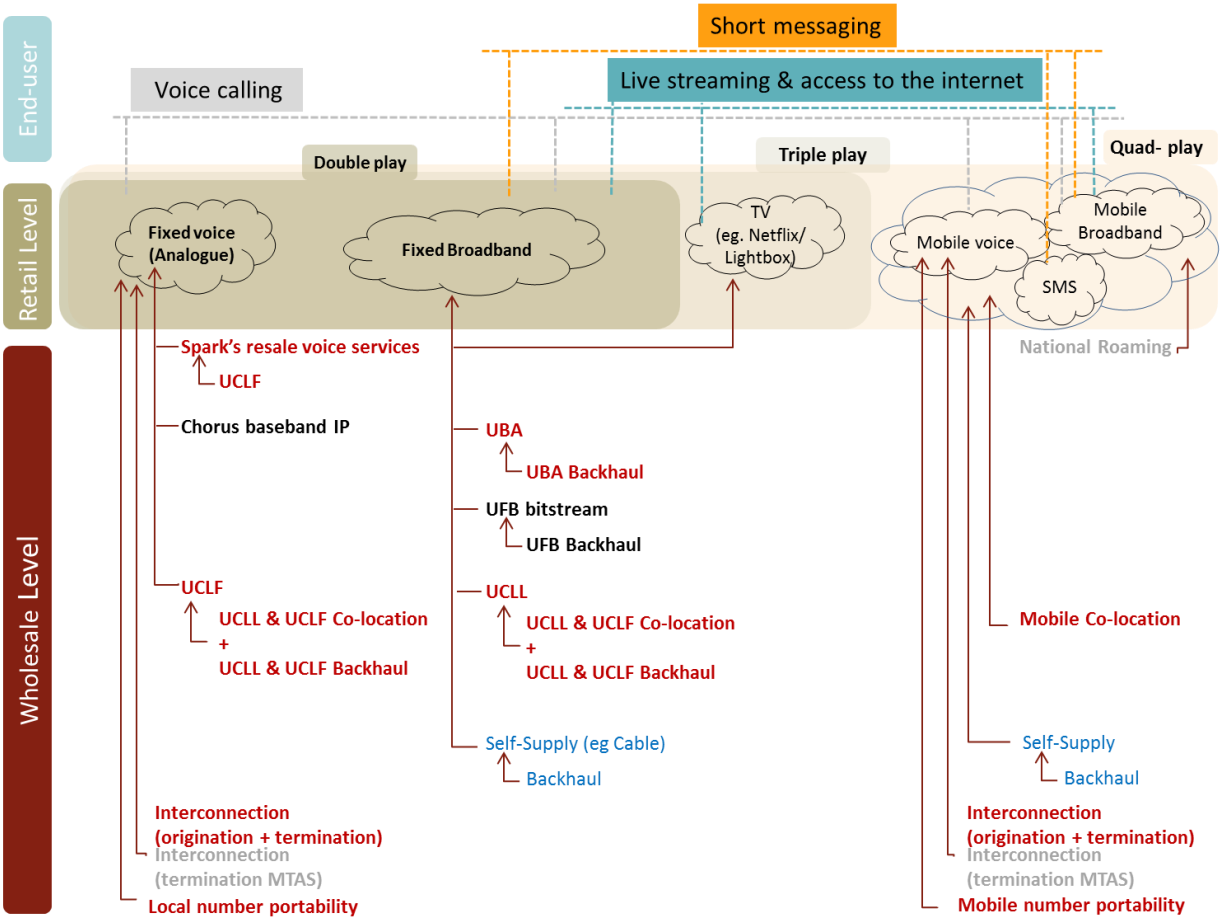
45.1 a first level, with the most common *end-user* telecommunications needs: voice calling, short messaging and access to the internet/live streaming;

45.2 a second level, with the different services/plans available at the *retail* level to satisfy those needs; and

45.3 a third level, with the telecommunications *wholesale inputs* required to supply those retail services.

46. We have highlighted in red the wholesale services in Schedule 1 under this review. In grey are the services under Schedule 1 that do not form part of this review because they have been reviewed recently (national roaming and MTAS). In black are wholesale services that are currently subject to contractual agreements under the UFB initiative and Baseband IP, a service the price of which is based on UCLF. The self-supplied services equivalents to the main regulated services are in blue.

Figure 1: From Schedule 1 to end-users



47. As can be seen, retail services such as voice and broadband rely on regulated wholesale inputs. For example,

47.1 interconnection with a fixed PSTN is an input into the supply of retail voice calls between subscribers of different networks;

47.2 wholesale access to Spark's fixed voice services is an input into the supply of retail fixed-line voice services (including access to a fixed telecommunications network and fixed calling services);

47.3 the UBA and UCLL services (and the corresponding backhaul and co-location services) are used as inputs into the supply of broadband services as well as retail fixed-line voice (VoIP) services;

47.4 the UCLF is used as an input into the supply of retail analogue fixed-line voice services;

47.5 local and cellular number portability services facilitate switching between retail suppliers of fixed-line voice and mobile voice services respectively; and

47.6 mobile co-location is an input into the supply of retail mobile services.

48. In this section, we look at the retail level of the telecommunications markets to understand whether changes have occurred since the 2011 amendment that may reduce the need to regulate the wholesale inputs. This includes changes in competition and/or in the usage of retail services by end-users.

Increasing importance of bundles of services

49. Standalone services both on mobile and fixed networks are still available but bundles of services are increasingly the preference of end-users. Figure 1Figure 1: From Schedule 1 to end-users shows the more prevalent bundling options. While bundles of voice and broadband over fixed-line (double play) and bundles of voice, broadband and SMS over mobile access are the most common, bundles combining fixed telecommunications services and TV (triple play) or bundles combining additional mobile communications (quad-play) are gaining popularity given the additional discounts that such bundles offer to end-users.

50. The bundles reflect the way end-users see the telecommunications services. We observe that RSPs are now emphasising the key features of broadband services (including data caps and access speed) and also describing the allowance of voice minutes included. When voice was the predominant telecommunications service for most end-users, networks were optimised for voice traffic while also carrying data. Nowadays telecommunications networks are optimised for data traffic, while also carrying voice.

51. The predominance of data over voice has a significant impact on competition and consequently on regulation. For example, the fact that consumers prefer bundles with access to broadband, combined with the fact that networks are now mainly designed to support data, emphasises the importance of regulated access to the wholesale inputs for broadband services. Similarly, if voice services are increasingly provided over data networks or IP-networks, it may be relevant to gain a deeper insight into IP-interconnection during this transition.

52. From a regulatory point of view our goal is to ensure that RSPs can buy the main components of a bundle in order to be able to build their own competitive bundled offerings and compete in the retail market.

Retail voice services – options available

53. At the retail level, end-users can purchase voice services in a number of ways, including by purchasing the following:

53.1 a Voice over Internet Protocol (VoIP) service.

53.2 a traditional fixed-line voice service;

53.3 a mobile voice service;

54. In our 2010 investigation into the regulation of resale services, we concluded that mobile services and VoIP services were not close substitutes for fixed-line voice services.[27] As part of the current review, we have considered whether this conclusion remains appropriate.

VoIP services

55. In our 2010 investigation, we found that VoIP services were not, at the time, an effective alternative to traditional voice services. We noted that the Enhanced Unbundled Bitstream Access (EUBA) service provided a real-time class of service over a broadband connection, enabling access seekers to offer VoIP services to end-users. However, we also noted that there had been very little uptake of the EUBA service, which suggested that VoIP was not at the time providing an effective substitute. We noted that the ACCC (2008) had also concluded that VoIP services were unlikely to be an effective substitute for PSTN voice services due to VoIP quality of service limitations.[28]

56. Our current view is that managed VoIP-based services[29] are now likely to provide end-users with a similar level of functionality and experience as traditional fixed-line voice services, usually for a lower price. In addition, managed VoIP services, such as those supplied over the UFB networks, typically allow end-users to retain their existing handsets which can be plugged into terminal equipment at the end-user's premises.[30] RSPs have been able to use wholesale access services such as UCLL and UBA to offer managed VoIP services to end-users. Although the uptake of UCLL and UBA services has slowed in recent years, the growth in these services for the provision of managed VoIP services has been a contributing factor to the decline in Spark's retail share of fixed-line connections since 2007, as indicated in Figure 2.

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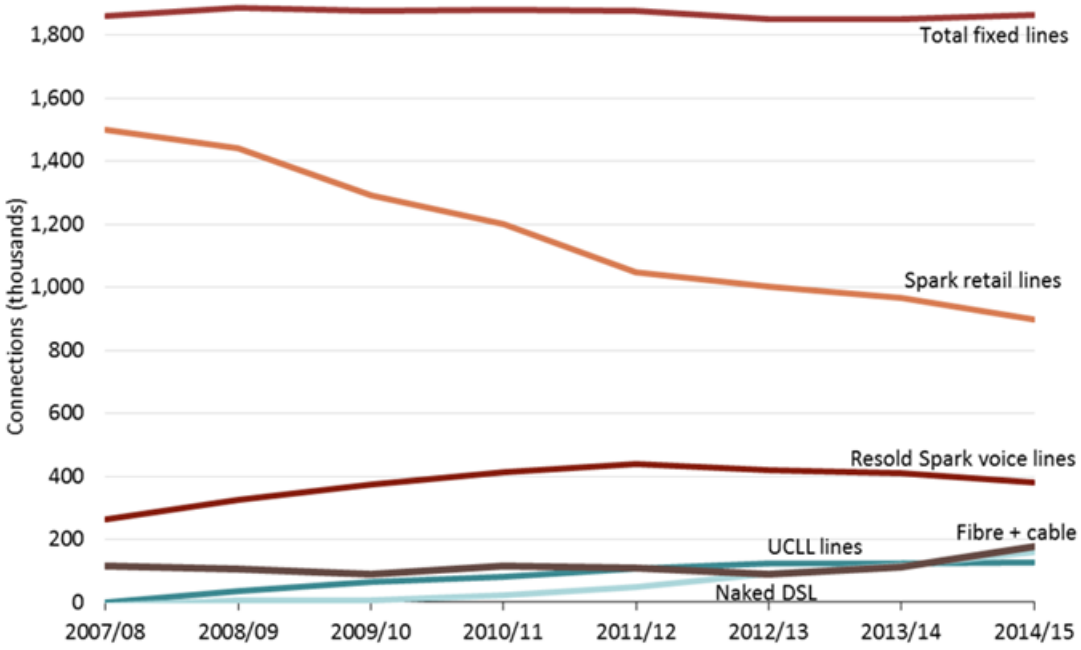
27 Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraph 289.

28 Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraph 287.

29 Managed VoIP services are publicly available telephone services using internet protocol (provided through fixed wireless, DSL, cable, and other fixed internet platforms) whereby the RSP controls the quality of service provided. For example Spark's plan "Ultra Fibre® 100 with home phone" comes with a landline and a phone number as well as broadband. The landline connects the end-user to the public phone network so the end-user can make local, national, international and mobile calls from the home phone even though it is a VoIP service that runs on the fibre network. Other examples include voice services provided by 2talk and Orcon.

30 While we acknowledge that the availability of VoIP services is increasing rapidly, particularly due to the roll-out of UFB, it is still significantly lower than that of PSTN-based voice. This is why there is still relatively low uptake of VoIP services (the percentage of geographic numbers used to provide VoIP in June 2015 was approximately 11%).

Figure 2: Fixed-line connections



Source: Commerce Commission, based on Annual Telecommunications Monitoring data.

57. Regulators in other jurisdictions have come to similar conclusions. For example, in its 2014 inquiry into the declaration of fixed-line services, the ACCC concluded that plain old telephone service (POTS) emulation and 'carrier-grade VoIP' services are substitutable for traditional fixed voice services over the copper network.[31]

58. Similarly, the EC has also acknowledged the increasing importance of VoIP telephony, noting that for residential customers in particular, there are unlikely to be any significant costs associated with migrating to managed VoIP services. The EC notes that "in view of lower overall costs and additional functionalities of managed VoIP telephony, the migration towards managed VoIP is well underway and expected to accelerate."[32]

59. In light of the above discussion, our view is that managed VoIP services are now likely to be close substitutes for traditional fixed-line voice services.

60. On the other hand, unmanaged VoIP services, such as Skype,[33] show significantly different characteristics in terms of quality, and require the calling and called parties to be logged into the same application. As such, they do not appear to be close

31 .ACCC, "Public Inquiry into the fixed line services declarations: Final Report", April 2014, page 15

32 EC, "Explanatory Note Accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/12/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services", 9 October 2014, page 22.

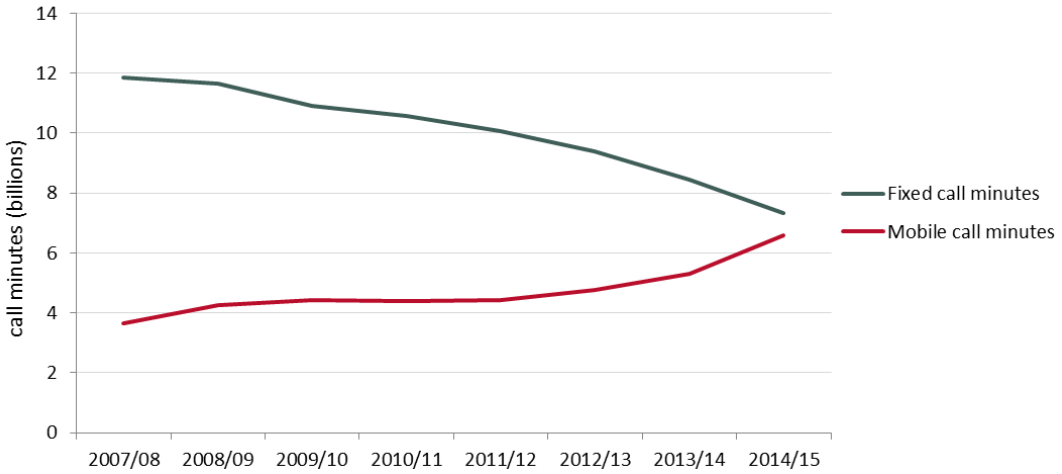
33 Unmanaged VoIP services are software-based VoIP applications, offered exclusively as content-based services on a best-effort basis by providers that are not electronic communications providers (example: VoIP using Skype, what's app or google +,).

substitutes to fixed-line voice services, and this is the conclusion most other national regulatory authorities (NRAs) have reached.[34]

Fixed and mobile voice services

61. As shown in Figure 3, the volume of mobile call minutes has been increasing in recent years. During this period, the volume of fixed call minutes (including free local calling, national and international) has been declining, although the majority of call minutes (53% in 2015) continue to be originated on fixed networks.[35]

Figure 3: Total fixed and mobile call minutes



Source: Commerce Commission, based on Annual Telecommunications Monitoring data.

62. Although it appears that end-users are substituting mobile minutes for fixed-line minutes, there is little evidence at this time to suggest that end-users are replacing their fixed-line with a mobile subscription (or that the provision of mobile services is constraining the price of fixed-line services, as discussed below). In the five years to 2014/15, the number of mobile subscriptions increased by a total of 19%, while the number of fixed connections has remained largely stable (Figure 4). This suggests that households are using fixed and mobile services as complementary services, rather than giving up their fixed-line altogether.[36]

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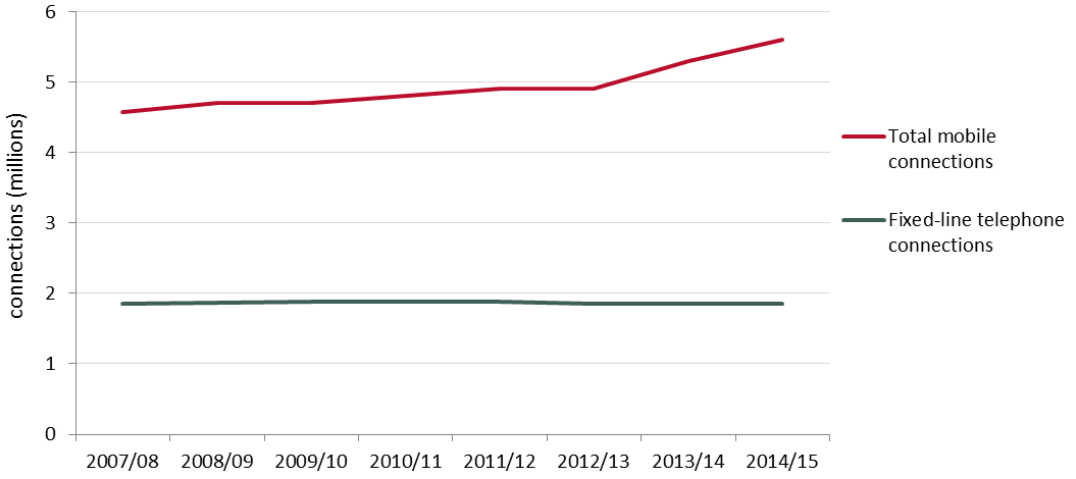
34 EC, "Explanatory Note Accompanying the document Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/12/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services", 9 October 2014, page 25.

35 By comparison, in the UK, the volume of mobile call minutes overtook the volume of fixed call minutes in 2011. See Ofcom "Communications Market Report 2012", 18 July 2012, page 281. Ofcom continues to define separate markets for fixed and mobile services, partly due to the relatively low number of mobile-only households (11% in 2013). See Ofcom "Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 Volume 1: Draft statement on the markets, market power determinations and remedies", 19 May 2014, paragraphs 3.29, 3.35.

36 According to Statistics New Zealand's 'Household Use of ICT' survey, 87% of households had access to a landline in 2012 (89% of households in 'rural' areas). See Tables 1a and 1b

Figure 4: Fixed-line and mobile connections



Source: Commerce Commission, based on Annual Telecommunications Monitoring data.

63. This pattern of usage for these services has taken place during a period where the cost of mobile usage has decreased relative to landline usage. Indeed, the price of mobile services has dropped significantly in recent years.

64. As we observed in our Annual Telecommunications Monitoring Report 2014, mobile prices for both lower-use and higher-use baskets have fallen dramatically since 2011. For example, the mobile prepaid price associated with 100 calls had dropped from $132 in 2011 to $29 by August 2014.[37] Similarly, the monthly price for a high-usage on-account mobile plan had also dropped, from $139 in 2012 to $60 in 2014.[38] Updates undertaken for the 2015 annual monitoring report show the prepaid price for 100 calls had fallen further to $21 in February 2016 and the price for 900 calls had fallen to $31.

65. By comparison, the monthly price of a residential fixed-line connection has increased since 2010. In 2010, we reported that the price of Telecom's standard residential line rental plan ('Homeline') was $40 per month in Wellington and Christchurch, $44 per month in Auckland, and $48.30 per month for the rest of New Zealand.[39] Currently, Spark charges $53.50 per month for a landline and free local calling in all regions.[40]

66. The observation that Spark's (formerly Telecom) retail prices for fixed local access and calling service have increased during a period in which mobile prices have fallen suggests that fixed local access and calling prices have been largely unconstrained by mobile pricing. This is supported by the observation in Figure 4 above that the number of fixed connections has remained stable in recent years.

37 Commerce Commission, "Annual Telecommunications Monitoring Report 2014", page 31.
38 Commerce Commission, "Annual Telecommunications Monitoring Report 2014", page 32.
39 Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraph 293.
40 See https://www.spark.co.nz/shop/landline/ (accessed 4 March 2016).

67. In light of the above discussion, our preliminary view is that mobile voice services are more likely to be regarded as a complement to, rather than a substitute for, fixed-line connections.

Retail broadband services – options available

68. At the retail level, end-users can purchase broadband services in a number of ways, including by purchasing the following:

68.1 a fixed broadband service (fixed or fixed-wireless); or

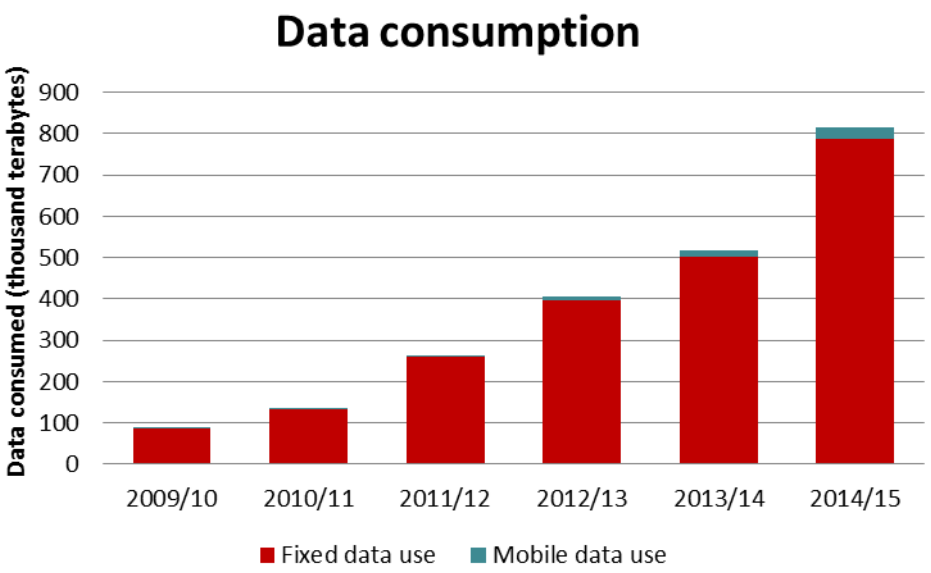
68.2 a mobile broadband service

69. As broadband services become an essential part of our daily lives, we observe several changes of usage patterns at the retail level of telecommunications markets, as described below.

Fixed-line, Fixed-wireless and mobile broadband services

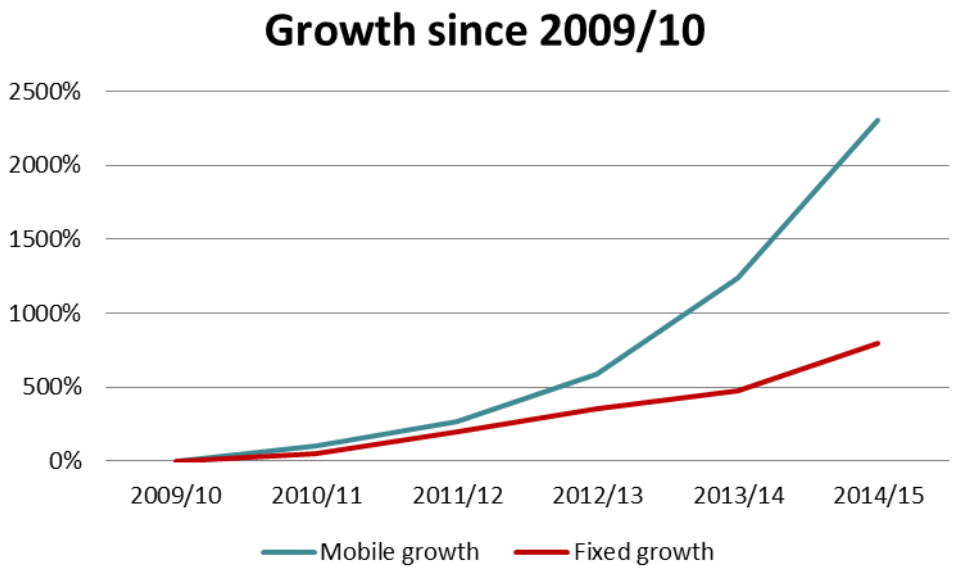
70. The total volume of data used on fixed and mobile broadband networks has been increasing rapidly in recent years, as shown in Figure 5 and Figure 6 below. The total volume of fixed data usage increased from just under 100,000 TB in 2009/10 to 780,000 TB in 2014/15. Mobile data also increased strongly (albeit from a low base), reaching 26,000 TB in 2014/15 (from 1,000 TB in 2009/10).

Figure 5: Total data usage on fixed and mobile networks



Source: Commerce Commission, based on Annual Telecommunications Monitoring data.

Figure 6: Growth in data usage on mobile and fixed networks

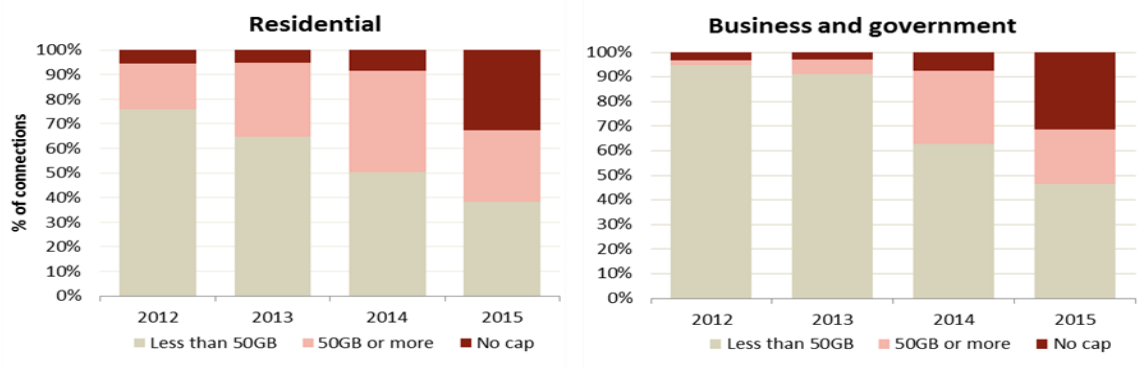


Source: Commerce Commission, based on Annual Telecommunications Monitoring data.

71. To support and facilitate that growth in data usage, ultra-fast broadband and 4G mobile telecommunications technology are being rolled out to a significant part of the country. The Government target is to have 90 per cent of the population having 4G mobile coverage by the end of 2019.[41] As a result, retail broadband services are offered over high-speed fixed networks as well as mobile networks. We have therefore considered whether mobile broadband services are likely to be close substitutes for fixed broadband services.

72. Figure 7 and Figure 8 below show that there is a clear and increasing appetite among end-users of broadband for larger data caps and faster access speeds.

Figure 7: Data caps of broadband internet connections[42]

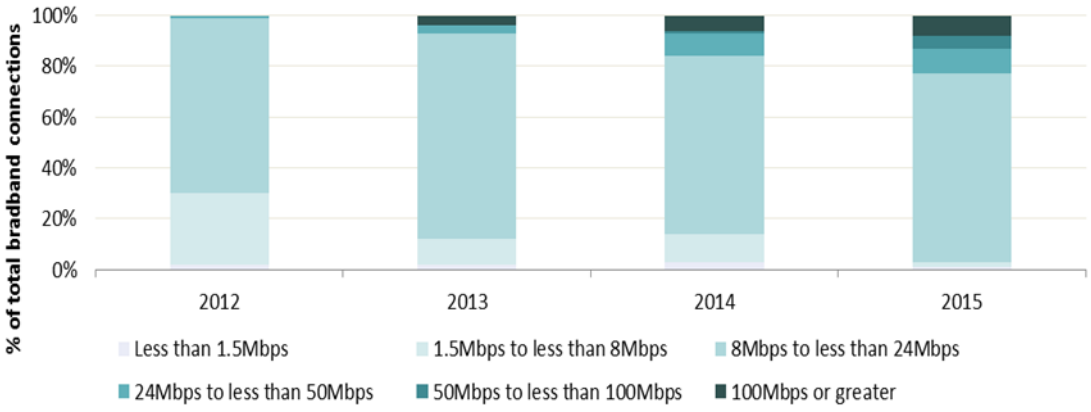


Source: Internet Service Provider Survey 2015, Statistics New Zealand

41 MBIE, Targets for rural broadband connectivity

42 All forms of broadband connections except mobile handset connections

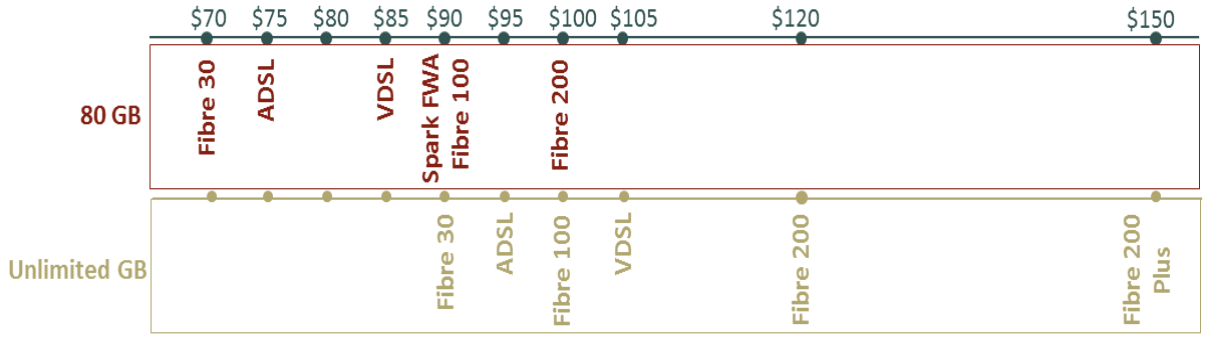
Figure 8: Download speed of broadband internet connections[43]



Source: Internet Service Provider Survey 2015, Statistics New Zealand

73. Fixed-line broadband services are supplied using DSL, cable, fixed-wireless, and fibre technologies. We observe a chain of options of speed and data allowances across the different fixed-line technologies. Figure 9 below shows the average price of naked broadband plans over ADSL, VDSL, cable and fibre.

Figure 9: Naked broadband plans - prices and data allowances



Source: Providers' websites, April 2016

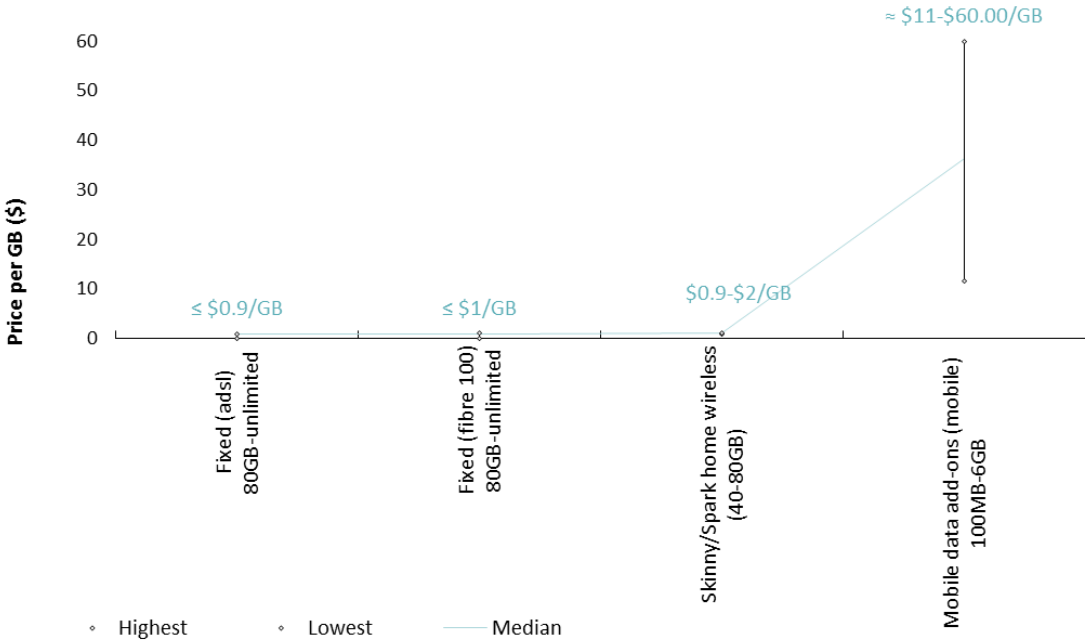
74. In this chain of options end-users are generally more interested in the price and functionalities of the plans than in the type of technology. Fibre is a good substitute for copper where available for approximately the same price, given its better performance. Copper may also be a good substitute for fibre, particularly for customers less demanding of quality. For example, the price points for ADSL shown in Figure 9 are comparable to the price points for entry-level fibre services offering similar speeds and the same data allowances.

75. A number of operators offer broadband services using fixed-wireless access (FWA). These broadband services are delivered to end-users over a wireless network, but provide similar features to a fixed-line broadband service. For example Spark and Skinny's FWA services are delivered over Spark's 4G network, with end-users connecting to the service by way of a wireless modem. Retail broadband plans over FWA are offering similar data allowances as ADSL services.

[43] All forms of broadband connections except mobile handset connections

76. Mobile broadband services are also available in bundles with mobile calling or as a data add-on. The data allowances of mobile broadband services are typically much lower, and the cost per GB much higher, than for fixed-line broadband services as shown in Figure 10.

Figure 10: Mobile and fixed broadband plans - characteristics and prices



Source: Providers' websites, April 2016

77. The comparison between fixed and mobile broadband plans shown in Figure 10 above indicates that mobile broadband plans are still generally not comparable in terms of prices and data allowances. For example, an 80GB ADSL naked broadband plan costs $75 per month, which is equivalent to $0.94 per GB, while the per GB price on a mobile plan ranges from $12.50 per GB in a 6GB plan to $60 per GB in a 100MB data add-on.Fixed and mobile plans are also generally not comparable in terms of performance. Maximum speed and service reliability of mobile networks are usually lower than those observed on high-speed fixed networks.

78. Average data usage per fixed broadband connection remains significantly higher than for mobile broadband. The average volume of data used per fixed broadband connection reached almost 50GB per month in 2014/15 (up from 10GB per month in 2010/11). End-users appear to typically use fixed and mobile broadband services as complements rather than close substitutes in most settings. We are observing the development of LTE mobile services, but we understand that in general end-users still appreciate the convenience and performance of fixed-line broadband services given the lower prices, faster speeds and higher data caps, when compared to mobile broadband services.

79. The existing market structure, whereby the mobile service providers are also providers of retail fixed-line broadband services further underscores our assessment

that mobile services have a more complementary relationship with fixed services at this time.

Wholesale inputs

80. Wholesale services subject to this review that contribute to the provision of retail voice and broadband services are:

80.1 Interconnection with a fixed PSTN

80.2 Wholesale access to Spark's fixed voice services

80.3 Wholesale access to Chorus' copper network

80.4 Backhaul services

80.5 UCLL Co-location service

80.6 Co-location on cellular mobile transmission sites

81. At the wholesale level, the structural separation of Telecom was enabled through the 2011 Amendment Act. This has led to a situation in which Spark, who supplies a number of regulated (resale) services, now faces competition from a number of Chorus' regulated or commercial services (such as Chorus' Baseband IP service). We have taken into account the competitive implications of structural separation in our assessment below.

82. The relevance of each of these wholesale services is discussed in detail in the following sections.

Wholesale services

Interconnection with a fixed PSTN

Definition of the designated service

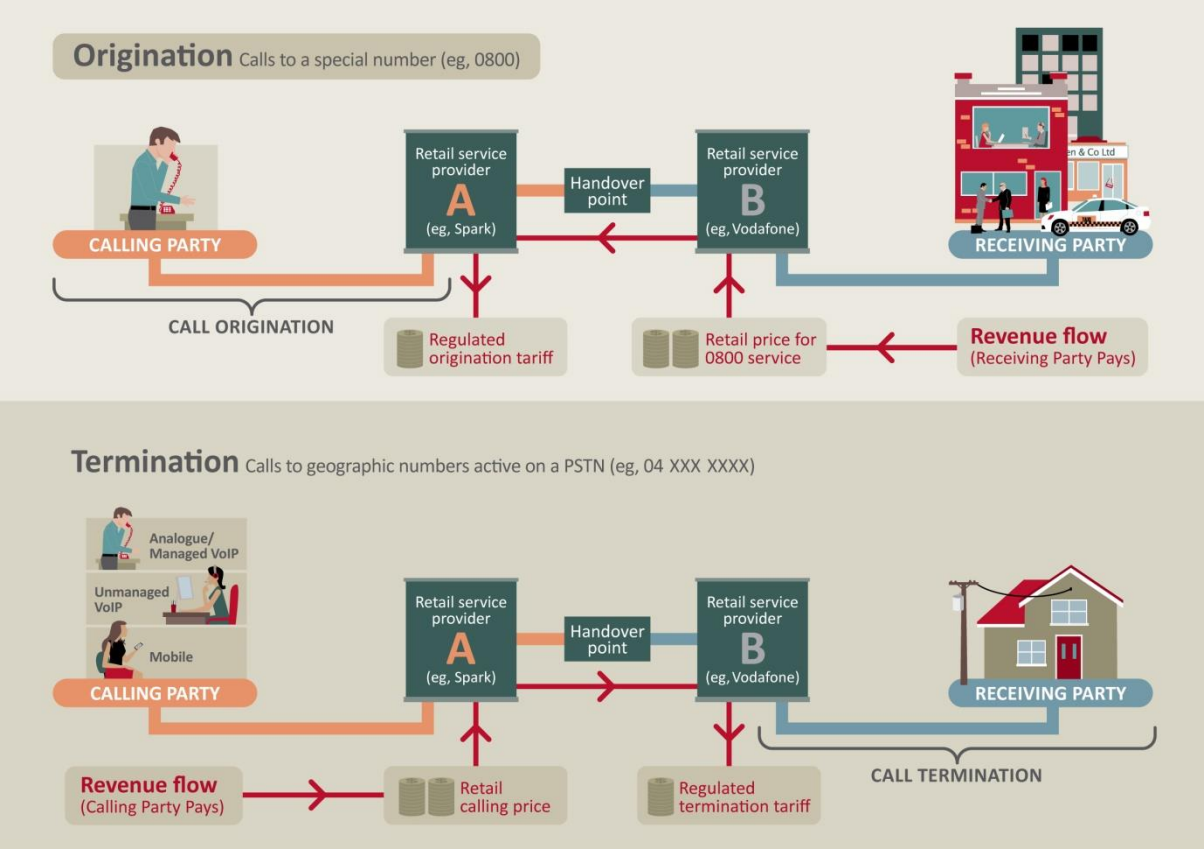
83. The Act refers to origination and termination of voice and data calls on a fixed PSTN. This covers calls originated on any network and terminated on a fixed PSTN number (eg 04 xxx xxxx) or originated on a fixed PSTN number and terminated on a special number (eg 0800 xxx xxx). Origination is also an input used by toll by-pass operators in order to provide toll services to their customers.

How the interconnection service is used

84. The interconnection service relates to calls between different networks (often referred to as 'off-net' calls).[44] The origination and termination of off-net calls involving a fixed PSTN, and the associated revenue flows, are illustrated in Figure 11 below.

[44] For a call between subscribers on the same network (sometimes referred to as an 'on-net' call), call origination and call termination are 'self-supplied' by the network operator. For such calls, the network operator incurs the costs of originating and terminating the call, and recovers those costs from its own customers who make or receive the call.

Figure 11: Origination and termination on a fixed PSTN



85. Call origination is a wholesale service whereby an originating operator does not charge the calling party for starting the call. The provision of this service exists in the following situations.

85.1 Calls to special numbers - the 0800 numbers are the most typical special number. The receiving party pays the terminating operator for the call, which then compensates the originating operator for the cost of starting the call by paying the wholesale origination tariff. This model of payment is often referred to as Receiving Party Pays (RPP), which means the receiving party pays for the origination and termination of the call.

85.2 Toll by-pass - the call is originated in one telecommunications provider's fixed network using the access code of another telecommunications provider, who has a commercial relationship with the end-user for the call being made. The telecommunications provider who has the commercial relationship with the customer compensates the originating operator for the cost of starting the call by paying the wholesale origination tariff.

86. Call termination is a wholesale service that consists of terminating a call (voice or data, including dial-up) that was originated on another network. The terminating operator receives the call at the handover point closest to the receiving party and

delivers it to the geographic number dialled (eg. 04 xxx xxxx).[45] The terminating operator does not charge the receiving party for the service. Instead it charges the originating operator a wholesale termination tariff. This model of payment is often referred to as Calling Party Pays (CPP), which means the calling party pays for the origination and termination of the call.

87. Interconnection is an essential input to complete calls between different networks. In order for a network operator to be able to deliver any-to-any connectivity to its customers, that operator must be able to interconnect with other networks. In the absence of interconnection, a network operator would only be able to offer calls between its own subscribers and would not be able to terminate its customers' calls on other networks nor receive calls from other networks.

88. The goal of regulated interconnection is to prevent discrimination between RSPs, thereby facilitating competition and reducing entry barriers, as well as ensuring that retail prices are not raised by excessive wholesale interconnection tariffs.

Background to regulation of the interconnection service

89. In 2001 the Act established two designated fixed PSTN interconnection services. One covered interconnection with Telecom's fixed PSTN and the other covered interconnection with other fixed PSTNs.

90. A single designated fixed PSTN interconnection service was created by the 2011 Amendment Act. Interconnection with Telecom's fixed PSTN became the broader *Interconnection with a fixed PSTN* service, and the service for interconnection with other fixed PSTNs was omitted from Schedule 1.

91. Prior to 2011 the two PSTN interconnection services were considered as part of our 2006 investigation, where we concluded that interconnection should remain a regulated service on the basis that the supply of interconnection services was subject to limited competition.

92. At the time of the 2011 review we decided that the newly amended fixed PSTN interconnection service was not eligible to be reviewed.

Preliminary views on whether there are reasonable grounds to commence an investigation

93. Our preliminary view is that there are no reasonable grounds to commence an investigation into the deregulation of the interconnection service in Schedule 1 of the Act..

94. There are no direct substitutes for interconnection with a fixed network. Under the CPP principle, the termination rate is set by the called network and paid by the calling network. The called party is not billed for the call, and therefore has no

[45] In the case where the telecommunication provider who initiates the call chooses to hand the call over at a point that is not the closest to the location of the receiving party then, in addition to the termination service, the terminating provider also provides the transit service which is charged for on a commercial basis.

incentive to respond to the termination rates. Each PSTN operator can behave independently of its competitors and customers in relation to termination charges.

95. In addition, any indirect constraints operating through the retail level are unlikely to result in the calling party switching to other ways of contacting the called party, such as calling their mobile number or using unmanaged VoIP type calling, such as Skype. This is because the fixed termination rate is a small proportion of the retail price for a call to a fixed number, and the regular habit of using fixed-line calling.

96. If the interconnection service were not regulated, there would be incentives to discriminate between RSPs in relation to access to interconnection and/or raise termination tariffs.[46] This would lead to increased retail prices and reduced competition in the retail market for calls to a national number. Such an outcome would not be in the long-term interest of end-users.

97. We are aware that current interconnection tariffs and conditions, agreed between parties, are established on a commercial basis.[47] However, as long as the service remains in Schedule 1, the Commission retains its powers to determine conditions of access if commercial negotiations fail,[48] and to seek enforcement of access conditions in the High Court in the event of a breach. [49] Therefore, we consider it important to keep the service under Schedule 1 part 2 of the Act.

98. Although our review is focused on the potential removal of the service from Schedule 1, the provision of IP-based voice services may be a relevant consideration for the description of the interconnection service, and we recognise that an alteration to the service may be required in due course. Interconnection conditions for IP-networks are substantially different from PSTN interconnection, for example protocols are different; it requires a lower number of points of interconnection; and costs are significantly lower. In addition, IP-interconnection allows for the development of new services.

99. Although any amendment to this service would be by way of a separate process, we welcome views on the need to amend this service in light of the IP-based telephony developments, and on whether there are any barriers to the migration towards more efficient interconnection arrangements.

Wholesale access to Chorus' copper network

Definition of the designated UBA, UCLL and UCLF services

100. There are three services in Schedule 1 of the Act that regulate wholesale access to Chorus' copper network:

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46 For example, a PSTN operator could impose an inefficient number of points of interconnection, or raise termination rates. Higher termination rates would increase the cost of calls between networks, which can make it more difficult for network operators with a smaller customer base to compete.

47 See public statement by Telecom and TelstraClear January 2006

48 Under subpart 2 of Part 2 of the Act. Specifically, section 20 of the Act enables parties to make an application to the Commission, as was the case of 2degrees application for determination for designated access service in 2009.

49 Section 156O of the Act.

100.1 Chorus' UBA;

100.2 Chorus' UCLL; and

100.3 Chorus' UCLF.

101. These three wholesale services are inputs used to provide the most common retail telecommunications' services at a fixed location.

UBA

102. The UBA service is a wholesale service which provides access to Chorus' active electronic equipment in addition to the copper lines that connect to end-user premises. The UBA service enables access seekers to provide broadband services to end-users without having to invest in their own exchange-based equipment. This service has two main components.

102.1 The UCLL component represents the network infrastructure used to connect consumers' homes and workplaces to Chorus' local telephone exchange buildings.

102.2 The UBA additional costs component (also known as the "UBA increment") represents the electronic equipment, software, and other additional infrastructure required to provide the regulated UBA service over Chorus' UCLL network.

UCLL

103. The UCLL service provides access to the local loop between end-user premises and Chorus' local exchanges. Access seekers can use the UCLL service, along with their own equipment located in the local exchange, to provide broadband services to end-users.

104. UCLL was designed to provide access seekers with the opportunity to move up the ladder of investment. With UCLL, access seekers gain access to Chorus' passive local loop and install their own equipment at the exchange. This enables the access seeker to differentiate the characteristics of their retail service, thereby competing more effectively.

105. We made two separate STDs for the UCLL service: the UCLL STD for non-cabinetised lines; and the SLU STD for cabinetised lines.

105.1 In November 2007, we published a STD for Telecom's unbundled copper local loop network (the UCLL STD).[50] In the UCLL STD, following consultation with interested parties, we

[50] Commerce Commission "Standard Terms Determination for the designated service Telecom's unbundled copper local loop network" 7 November 2007, Decision 609

specifically excluded local loops connecting end-users to distribution cabinets.

105.2 In June 2009, we published a further STD for Telecom's unbundled copper local loop (the SLU STD).[51] The SLU STD includes three services: the sub-loop UCLL service, the SLU co-location service, and the SLU backhaul service.

UCLF

106. The UCLF service enables access to the low frequency in Chorus' copper local loop network. This service connects the end-user's premises to the handover point in Chorus' Exchange. The UCLF service is available from an exchange whether or not the exchange is directly connected to a distribution cabinet, although it is also available from a distribution cabinet if required.[52]

107. The UCLF STD also sets the price limit for the TSO network service.[53]

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51 Commerce Commission "Standard Terms Determination for the designated services of Telecom's unbundled copper local loop network service (Sub-loop UCLL), Telecom's unbundled copper local loop network colocation service (Sub-loop Co-location) and Telecom's unbundled copper local loop network backhaul service (Sub-loop Backhaul)" 18 June 2009, Decision 672.

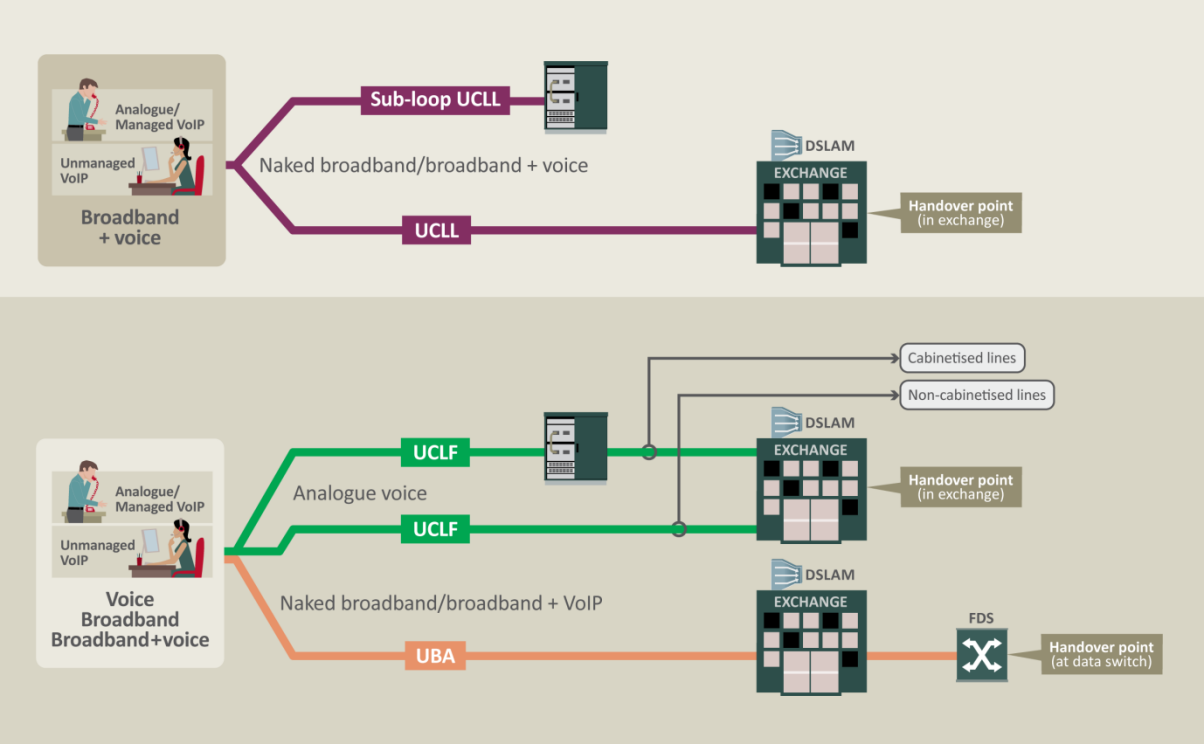
52 Final UCLF STD Service Description, 24 November 2011

53 "Telecommunications Service Obligations (TSO) Deed for TSO Network Service", November 2011 . Principle one of the TSO deed for TSO network service says that "Chorus will charge Telecom no more than an amount equivalent to the regulated price of Chorus' unbundled copper low frequency service (as amended from time to time) for TSO network service (…)". The TSO network service means the baseband service provided to Spark as the input to provide local residential telephone service under the Telecom TSO Deed. Baseband service provides the ability for service providers to offer analogue telephony services, regardless of their access technology. Chorus may change access technology, in which case they give notice to service providers, so that migration can be planned.

How UBA, UCLL and UCLF services are used

108. The UBA, UCLL and UCLF services are illustrated in Figure 12 below.

Figure 12: UBA, UCLL and UCLF services



109. In most cases voice and broadband can be purchased separately (although not from different RSP's for the same line). However, bundles including fixed telephony and fixed broadband access to the internet are the preference of most households, as the bundled price is more favourable. For example, a standalone voice plan costs $53.50 a month, a naked broadband plan with unlimited data usually costs $95, but an unlimited broadband plus voice plan costs $105 – only $10 more,[54] which is less than 20% of the voice standalone price.

Background to regulation of the UBA, UCLL and UCLF services

110. The UBA and UCLL services were introduced into the Act in 2006. In our 2011 review, we concluded that reasonable grounds did not exist to investigate deregulating these two services because they remained important in promoting competition.

111. The UCLF service was introduced through the Telecommunications Amendment Act in 2011.[55] This will be the first time this service has been reviewed.

54 Based on retail service providers websites in March 2016.

55 See, Schedule 3 of the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011.Also see Attachment 1 – The history of designated and specified services in Schedule 1.

Relevant wholesale services

112. In this section we analyse whether regulated access to Chorus copper network in the form of UBA, UCLL and UCLF remain essential wholesale inputs for retail services.

Voice

113. UCLF remains essential for the delivery of a voice service (by Spark or other RSPs) from exchanges on cabinetised lines.[56] The UCLF service description covers the copper lines from end-users to local exchanges—whether or not the line is cabinetised—but the UCLL STDs exclude the copper lines from cabinets to exchanges. Spark has its voice switches in the exchanges and other RSPs will be able to provide a voice service over the copper lines where they have unbundled that exchange..

If UCLF was deregulated, the only alternative for Spark and other RSPs would be to unbundle at cabinets, but this would be a much higher cost option involving significant investment, covering equipment in cabinets, sub-loop co-location and sub-loop backhaul. No cabinets have been unbundled to provide voice and broadband and unbundling cabinets just for voice would require much higher prices. Broadband

114. We have seen in Figure 7 and Figure 8 above that consumers show an increasing appetite for faster speeds and higher data allowances in terms of their internet plans. In order to serve the retail market for fixed broadband services, RSPs have three wholesale options available:

114.1 UBA;

114.2 UCLL; and

114.3 UFB bitstream

115. UBA is a layer 2 service[57], which limits differentiation at the retail level in terms of speed or capacity. However, it continues to be a relevant service for access seekers. The main reasons for the relevance of this service for RSPs are:

115.1 UBA facilitates market entry, because it requires relatively low levels of investment;

115.2 UBA remains important in areas where it is not viable to unbundle at the cabinet or exchange level, due to economic or technical reasons; and

115.3 with the advent of UFB, many retail providers no longer wish to invest in copper-based services, ie, unbundling at the exchange.

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56 See, Schedule 3 of the Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011. Also see Attachment 1 – The history of designated and specified services in Schedule 1.

57 OSI Model

116. UCLL is a layer 1 service, [58] providing access to the physical components of the network only. This allows greater margins to the access seeker to invest in its own electronics and offers a higher degree ofservice differentiation. The UCLL service remains an important basis for competition in areas where unbundling has occurred, and is likely to remain so during the transition to UFB.

117. UFB bitstream (layer 2) can be a close substitute for UBA given end-users' demand for faster internet speeds and higher data caps. However, its coverage seems likely to be less than UBA both now and in the foreseeable future. For this reason UFB bitstream at layer 2 is not yet a close substitute for UBA.

118. Given the characteristics of the three services discussed above, we consider that they are not close substitutes for one another.

Preliminary view on whether there are reasonable grounds to commence an investigation

119. Our preliminary view is that there are no reasonable grounds to commence an investigation into the deregulation of these services in Schedule 1 of the Act. We consider that the UBA, UCLL and UCLF services continue to be relevant inputs to the most popular telecommunication services at a fixed location on the retail markets, ensuring service continuity at reasonable prices for the following reasons.

    119.1 The UBA service remains important in areas where it is not viable to unbundle at the cabinet or exchange level, due to economic or technical reasons.

    119.2 The UCLL service also remains an important basis for competition in areas where unbundling has occurred, and is likely to remain so during the transition to UFB.

    119.3 UCLF remains essential for the delivery of a voice service (by Spark or other RSPs) from exchanges on cabinetised lines. The UCLF service description covers the copper lines from end-users to local exchanges—whether or not the line is cabinetised—but the UCLL STDs exclude the copper lines from cabinets to exchanges..

120. UFB is still not an alternative given its limited geographic footprint compared to UBA and UCLL.

121. Fixed-wireless access (FWA) services may provide some indirect constraint on the wholesale access services offered by Chorus. However our preliminary view is that it is too early to determine if such a constraint exists given that such FWA services have only emerged recently.

122. There is no competition in terms of wholesale providers for the fixed-line access to end-users and there are no economic incentives for a retail service provider to roll-out its own network. Given the lack of direct or indirect substitutes for these regulated services, we consider Chorus would not face sufficient competitive

constraints in the event that wholesale access services to Chorus' copper network were to be omitted from Schedule 1 of the Act,

Wholesale access to Spark's voice services

Definition of the designated resale services

123. Schedule 1 of the Act currently contains three designated resale services provided by Spark:

123.1 Local access and calling service offered by means of a fixed telecommunications network. This includes the basic residential (retail price-capped) and business (retail non-price-capped) line rental services, including local calling services (as the access line and local calls are typically supplied in a bundle).[59] In the following sections, we refer to these services as 'local access and calling services'.

123.2 Retail services offered by means of a fixed telecommunications network, being defined as either of the following services.

i. A non-price-capped retail access and calling service (which differs from a local access and calling service), including for example ISDN or Centrex-based services. ISDN and Centrex-based services provide retail customers (typically business customers) with the ability to transfer calls between extensions, divert calls, and put calls on hold. Such functionality is either provided through the customer premises equipment (in the case of ISDN services) or exchange-based equipment (in the case of Centrex services). In the following sections, we refer to these types of service as 'ISDN/Centrex services'.

ii. A value-added non-price-capped retail service that is supplied in conjunction with a service described in (i) above or a local access and calling service. We have previously taken the view that this includes 'smartphone' messaging services such as Call Minder, Call Waiting, and Caller Display services, as these are typically supplied in conjunction with the access line.[60] In the following sections, we refer to this type of service as 'value-added services'.

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[59] Spark's residential price-capped service is offered in accordance with the "TSO Deed for Local Residential Telephone Service", November 2011. This Deed requires Telecom to offer a 'local residential voice telephone service' which provides a line rental and free local calling service. The retail price for this service is capped in real terms (at its November 1989 level).

[60] Commerce Commission, Determination on the TelstraClear Application for Determination for 'Wholesale' Designated Access Services (Decision 497), 12 May 2003.

123.3 Retail services offered by means of a fixed telecommunications network as part of a bundle of retail services. In the following sections, we refer to these as 'parts of bundles'.

How resale services are used

124. Resale services enable access seekers to resell end-to-end services to retail customers, and are designed to lower barriers to entry at the retail level by allowing competitors to enter and supply retail end-users with voice access and calling services, increasingly in the form of bundles with other services, without having to invest in their own switching or VoIP-based equipment. Such access may be important for a number of reasons. For example, resale services enable access seekers to establish a retail customer base and build sufficient scale at the retail level, which may then support further investment in its own infrastructure.[61] In areas where such investment may not be viable, resale allows access seekers to reach retail customers in order to provide national coverage or to offer bundles of services (such as a fixed-line and a mobile service).

125. The specific resale services in Schedule 1 allow access seekers to purchase a range of voice services from Spark in order to be able to compete with Spark by selling retail voice services at a fixed location, either as a standalone service or as part of a bundle of voice and access to the internet. As discussed further below, resale has been an important means by which access seekers have been able to enter and compete at the retail level in the supply of fixed local access and calling services.

Background to regulation of resale services

126. The regulated resale services were introduced in 2001. We initially set the price and non-price terms of access for the resale services through the following determinations:[62]

126.1 Decision 497 (12 May 2003), which related primarily to non-price-capped retail services and value-added services. Decision 497 expired on 12 November 2004.

126.2 Decision 525 (14 June 2004), which related to price-capped and other residential services. Decision 525 expired on 14 December 2005.

126.3 Decision 563 (9 December 2005), which related primarily to data services. Decision 563 expired on 9 December 2007.

127. Resale services have since been supplied by the formerly vertically-integrated Telecom (and now Spark) on commercial terms, although the regulated resale services remain as a backstop in Schedule 1.

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61 Resale represents the lowest 'rung' or entry point on the 'ladder of investment', whereby competitors can establish a retail customer base before progressively investing more and moving to other forms of wholesale access (such as UBA and UCLL) where viable.

62 Each of the decisions listed here were bi-lateral determinations relating to applications by TelstraClear.

128. At the time of the original resale determinations and our 2006 investigation, Telecom was a vertically-integrated supplier of retail and wholesale services. The regulated resale services represented an important form of wholesale access to Telecom's competitors, as the UBA and UCLL services were not at that stage included in Schedule 1.

129. In our 2006 investigation, we found that Telecom had a very high market share of local access and calling services outside of the main metropolitan centres, and concluded that resale services should remain as designated services in Schedule 1.

130. In our 2010 investigation, we noted that competition was occurring in metropolitan areas, for example with competition from TelstraClear's cable network and through the uptake of UCLL. However, we again found that Telecom faced limited competition outside the metropolitan areas, and that uptake of Telecom's resold services in non-metropolitan areas had been increasing and represented the main source of competition for Telecom in those areas. We recommended that the resale of local access and calling services remain in Schedule 1.[63]

131. A number of important developments have occurred since our 2010 investigation. These developments include the following:

131.1 The regulated resale services in Schedule 1 of the Act were amended in line with our 2010 investigation by Order in Council on 30 May 2011. The changes involved narrowing the retail service offered by means of a public telecommunications network to exclude broadband and data and to focus on business voice products such as ISDN and Centrex. Also the resale of bundles of services was omitted from Schedule 1.

131.2 The 2011 Amendment Act was passed, enabling the structural separation of Telecom while also making a number of changes to the three resale services.[64]

131.3 The 2011 Amendment Act also introduced UCLF as a designated service that allows for the use of the low frequency band on the copper line at Chorus' exchanges and caps the price for Chorus' Baseband copper service and Baseband IP service.

131.4 Chorus has introduced its Baseband IP Extended service, as a commercial variant of its Baseband Copper service.

131.5 Alternative wholesale services, such as UBA, UCLL and UFB-based services, have continued to be used by RSPs.

132. We have taken these developments into account in the current review, as discussed below.

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63 We also recommended that resale of broadband and data services be excluded from Schedule 1, due to the availability of alternative regulated services such as UBA.

64 See Attachment 1 – The history of designated and specified services in Schedule 1. The 2011 Amendment Act also consolidated the two PSTN interconnection services. See Attachment 1 – The history of designated and specified services in Schedule 1

Relevant wholesale services

133. The majority of the resale services sold by Spark relate to fixed local access and calling services, which include standard residential (ie, price-capped) and business (non-price-capped) line rentals. While the number of resold local access and calling services increased from 168,000 in 2007 (representing 9% of total fixed connections), to 440,000 in 2012 (23% of total fixed connections),[65] since 2012 it has declined to 382,000 connections in 2015 (21% of total fixed connections), with most of these (73%) being residential connections. The decline in the number of resold local access and calling services is likely to reflect competitors buying Chorus' Baseband services, which as discussed further below allows them to provide their own voice service to end-users.[66]

134. The number of resold business ISDN/Centrex services has also dropped, from approximately 28,000 services in 2013 to 23,000 services in 2015, although on a channel-equivalent basis these services appear to remain significant.[67]

135. There are a number of wholesale services which could be potential alternatives to the resale services supplied by Spark, and these are discussed below.

UCLL and UCLF

136. Our 2010 investigation noted the importance of assessing competition at the wholesale level, as there are a number of alternative wholesale inputs that can be used to deliver retail services and to facilitate competition at the retail level. We considered whether alternative wholesale services should be regarded as a close substitute for resale services. We concluded that the UCLL service was unlikely at that time to be regarded as a sufficiently close substitute for resold local access services to be included in the same market, as a service provider purchasing resold local access would be unlikely to switch to UCLL in response to an increase in price of the resale service.[68] We also noted that resale may be a geographic complement to the UCLL service, enabling an access seeker to offer services in those areas where unbundling is not viable.

137. Our preliminary view remains that the UCLL service is unlikely to be a substitute for resold local access services, for the reason given in our 2010 investigation.[69] Indeed, it appears that access seekers are less likely now to respond to an increase in price of resale services by investing in UCLL, due to the deployment of the UFB: data received from Chorus indicates that the number of UCLL services supplied to access seekers

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65 Commerce Commission, "Annual Telecommunications Monitoring Report", 2014, page 4.

66 Commerce Commission, "Annual Telecommunications Monitoring Report", 2014, page 17.

67 ISDN connections deliver multiple voice channels to end users. For example, an ISDN Basic Rate Access (BRA) service provides up to two voice channels per connection, and an ISDN Primary Rate Access (PRA) service provides up to 30 voice channels per connection.

68 Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraphs 304, 305.

69 Since our 2010 investigation, Telecom has structurally separated. As a result, the access provider of resale services (Spark) is a different entity from the access provider of potential alternatives services such as UBA and UCLL (Chorus).

has started to decline recently, from 127,000 connections on 31 December 2014 to 123,000 connections by 30 June 2015, and further to 116,000 connections as of 31 December 2015.[70]

138. Similarly, UCLF and the Baseband Copper service are unlikely to be substitutes for resale given that RSPs prefer to offer voice services as part of a bundle of services. RSPs are unlikely to unbundle at the exchange to provide a voice only service.

UBA

139. The UBA service includes basic and enhanced variants. The EUBA service includes a real-time class of service which supports latency-sensitive applications such as voice services. Developments in VoIP technology and bandwidth available to service providers have allowed VoIP-based services to be provided without having to rely on the real-time variants of the EUBA service. As a result, although the uptake of the real-time EUBA services is low, the use of naked UBA services has been increasing (from 117,000 services as of June 2014, to 159,000 connections as of June 2015, and further to 180,000 connections as of December 2015). RSPs using naked UBA services can meet the voice requirements of their end-users through VoIP and/or mobile services.

Baseband IP and Baseband IP Extended

140. RSPs can also use Chorus' Baseband IP and Baseband IP Extended services to deliver voice services via Chorus equipment located in exchanges or cabinets. Baseband IP and Baseband IP Extended convert an analogue PSTN-compatible 2-wire voice frequency into a bitstream service that can be delivered to an RSP at the first data switch (FDS). RSPs can also use Chorus' Baseband IP Tail Extension service to backhaul the service to another Chorus Point of Interconnection (POI).[71]

141. The pricing of the Baseband IP service is linked to the designated UCLF service. For the Baseband IP Extended service, the price includes an additional monthly charge ($5.50) to cover the additional costs of supplying the service, such as the costs of transmission from the local exchange to the FDS.

142. Information supplied to us by a number of service providers indicates that they are reducing their reliance on resold access and increasingly purchasing alternatives such as Chorus' UBA, Baseband IP and Baseband IP Extended services, and UFB, where these are available.[72]

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70 Chorus Half-Year Report for the six months ended 31 December 2015, page 7.

71 See Chorus Service Description for Baseband services.

72 As noted above, we have previously commented that the number of Spark resold voice services has declined in recent years, and that one reason for this is likely to be increased usage by competitors of Chorus' Baseband service. See Commerce Commission, "Annual Telecommunications Monitoring Report", 2014, page 17.

UFB

143. There is also an increasing migration of end-users from copper-based services to fibre-based services. Chorus has reported that the number of Chorus fibre connections increased from 44,000 connections in June 2014 to 88,000 connections in June 2015 and to 125,000 connections as of 31 December 2015.[73] According to MBIE, the total number of end-users connected to UFB services (including Chorus and the LFCs) increased from 106,025 connections in June 2015 to 162,913 connections in December 2015.[74]

144. Chorus and the LFCs offer wholesale bitstream access services, which allow for the provision of fibre-based voice services to end-users. The UFB bitstream access services include an analogue telephone adaptor (ATA) voice port on the optical network terminal, and into which PSTN-compatible handsets can be connected.

145. Our preliminary view is that where wholesale services such as the UBA, Baseband IP, Baseband IP Extended, and UFB bitstream services are available, they are likely to be reasonably close substitutes for the resale of local access and calling services.

Preliminary views on whether there are reasonable grounds to commence an investigation

146. Our preliminary view is that there are reasonable grounds to commence an investigation into the deregulation of all resale services in Schedule 1.[75]

Local access and calling service offered by means of a fixed telecommunications network

147. Our preliminary view is that there are reasonable grounds to commence an investigation into the deregulation of Spark's "Local access and calling service offered by means of a fixed telecommunications network" in Schedule 1 of the Act.

148. At the retail level, Spark competes with a number of other service providers in the supply of local access and calling services. Spark's competitors are offering retail services and bundles of retail services in a number of ways, including using resold services supplied by Spark, wholesale services supplied by Chorus (including UBA, UCLL, Baseband and UFB services), or by deploying their own fixed infrastructure (such as cable or fixed-wireless networks).

149. Since 2007, Spark's share of retail fixed connections has declined significantly. This can be seen by comparing the total number of fixed connections in the earlier Figure 4 (which have remained stable at around 1.85 million connections), with the number of Spark retail fixed connections as shown in Figure 2. Evidence of this increased competition is that Spark's share of retail fixed connections has dropped from over

[73] Chorus Half-Year Report for the six months ended 31 December 2015.

[74] MBIE - UFB deployment progress December 2015

[75] Our preliminary view is that there are reasonable grounds to consider deregulating Spark's resale services due to competition from wholesale alternatives such as Chorus's UBA and Baseband IP and Baseband IP Extended services. However we do not consider that there is a symmetric competitive constraint which could justify retaining resale regulation but deregulating the UBA service. This is because the UBA service is also important for supplying broadband services (whereas the existing resale services relate to the provision of voice services). In addition, resale services do not facilitate product differentiation by RSPs.

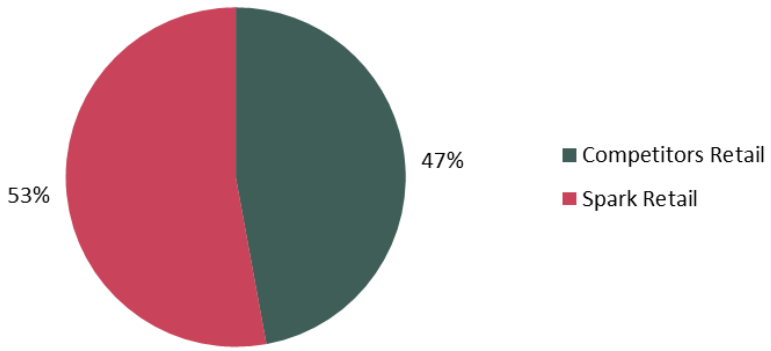
80% in 2007 to just over 50% in 2015. On a revenue basis, Spark's retail share has fallen from 79% in 2007 to 58% in 2014,[76] to 57% in 2015.

150. The fall in Spark's retail share of fixed connections has coincided with a significant increase in the number of resold local access and calling services. As noted in paragraph 133, the number of resold local access and calling services has increased from 168,000 in 2007, peaking at 440,000 connections in 2012. The number of resold local access and calling services has since started to decline, with 382,000 resold connections as of June 2015. As noted above, this decline is likely to reflect competitors moving to other wholesale services, such as Chorus' Baseband services. The reduction in the number of resold services has also coincided with an increase in the number of naked DSL services.

151. Figure 13 summarises the retail shares of fixed access connections, and shows that Spark supplied 53% of these connections in 2015. Spark's competitors at the retail level collectively supplied 47% of retail fixed connections in 2015. Figure 14 provides a breakdown of the competitor fixed connections in 2015 (the "Competitors Retail" share in Figure 13), with just under half (48%) of competitor retail fixed connections supplied using resale in 2015, and with UCLL and UBA accounting for approximately one-third (35%) of competitor retail connections. The use of competitor-owned network infrastructure (eg cable) and fibre-based access services accounted for the remaining share of retail fixed connections.

152. Figure 13 and Figure 14 show that resale accounted for 23% of retail fixed access connections (ie, 48% of the non-Spark share of 47%) in 2015.

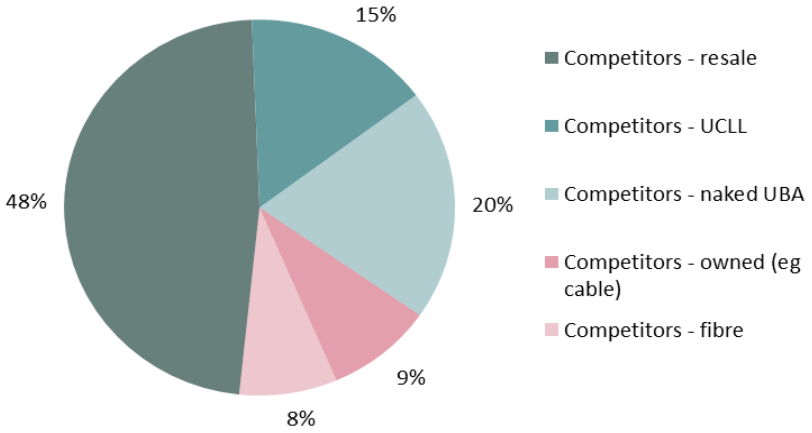
Figure 13: Retail fixed connections (2015)



Source: Commerce Commission estimates based on industry data.

[76] Commerce Commission, "Annual Telecommunications Monitoring Report 2014", page 4 ("Spark share of fixed-line rental revenues (%)").

Figure 14: Breakdown of competitor fixed connections (2015)



Source: Commerce Commission estimates based on industry data

153. The availability of resale has, therefore, been an important factor in allowing competitors to enter and compete in the supply of retail fixed access services.

154. The UBA and UCLL services are also important sources of competitive supply, providing access seekers with greater ability to innovate but also requiring more access seeker investment. For example, the UBA service provides a connection from the end-user to the FDS, and so the access seeker must either invest in its own backhaul network or acquire backhaul from another provider in order to interconnect with Chorus' network at an FDS. Where the UCLL service is used, the access seeker must additionally invest in its own active equipment at the local exchange.

155. Although resold access remains an important source of competition at the retail level, the increasing availability of substitutes such as Chorus' Baseband IP and Baseband IP Extended service as well as UBA and UFB-based services is likely to reduce the importance of resold access over time. We have observed above that the recent decline observed in the number of resold local access and calling services may be due to competitors starting to take up other wholesale options to deliver voice services to their customers.[77] We also noted that although the availability of the Baseband IP service was geographically limited, Chorus had announced plans to extend the coverage of both Baseband IP services.[78]

156. In its 2015 annual report, Chorus commented on the availability of Baseband IP, stating that "Baseband IP connections, used by RSPs to deliver a VoIP service over copper, continued to grow but are not yet material. Baseband IP is currently available across about 10% of Chorus' connections."[79] [80] In May 2015, Chorus announced that it was intending to extend the coverage of the service to

77 Commerce Commission, "Annual Telecommunications Monitoring Report 2014", page 17.
78 Commerce Commission, "Annual Telecommunications Monitoring Report 2014", page 17.
79 Chorus Annual Report 2015, page 17.
80 According to Chorus' Half Year Report for the six months to 31 December 2015, Chorus supplied 6,000 Baseband IP connections at the end of 2015. This is equivalent to approximately 1.5% of the 382,000 resold connections supplied by Spark resold services as of June 2015.

approximately 68% of copper connections within the next 12 months, subject to demand.[81]

157. We understand that this level of coverage could be extended further towards the coverage of the UBA service, as the investment required to offer Baseband IP and Baseband IP Extended is incremental to the investment underlying the UBA service. Most of the incremental investment required by Chorus for the Baseband IP service relates to the cost of additional cards which are installed in the DSLAM equipment used to supply UBA.

158. During our conference on the UCLL and UBA final pricing principle, Chorus referred to its DSL coverage as being 93% of the population.[82] As Chorus' Baseband IP Extended service is delivered using its DSLAM equipment, Chorus' DSL coverage provides an indication of the potential reach of the Baseband IP Extended service.

159. We also understand that Chorus' Baseband IP services allow RSPs to deliver voice services using the same equipment for both copper and fibre customers.[83] This suggests that where an RSP has invested in fibre-based services, the incremental cost for that RSP to use Baseband IP to offer voice services to non-fibre customers may be relatively low. As noted earlier, Baseband IP Extended is also delivered by Chorus to points of interconnection at the FDS for the EUBA service, allowing the RSPs to access the service without having to extend their own networks.

160. As noted earlier (at paragraph 140), the pricing of the Baseband IP Extended service is based on the regulated price of the UCLF service, plus an additional monthly charge ($5.50). The additional monthly charge is not regulated, although it is likely to face some constraint from the pricing of regulated or commercial backhaul services available from the local exchange, as well as by the price of Spark's commercial resale services.

161. The importance of resale access services supplied by Spark is, therefore, likely to diminish as Chorus extends the availability of its Baseband IP Extended service in response to demand. This is consistent with information supplied by a number of service providers, who appear to be reducing their reliance on resold access services and increasing their use of Chorus' Baseband services.

162. While we understand that uptake of Chorus' Baseband IP service is not yet significant, with Chorus reporting 6,000 Baseband IP services as of 31 December 2015, we are interested in the extent to which Baseband IP acts as competitive constraint on Spark's supply of resale services. We are interested in the views of parties on the potential uptake of the Baseband IP and Baseband IP Extended service, including any additional costs that RSPs must incur to use the service, and any limitations of the service compared to Spark's resale services.

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81 Chorus, "Full launch of Baseband IP Extended", Informer 258, 8 May 2015.

82 Commerce Commission "UCLL and UBA Services Final Pricing Principle Conference held on 15-17 April 2015", page 165

83 Chorus informer 258.

163. We are also aware that the UBA and Baseband IP services are unlikely to reach all end-users with a fixed access line. This indicates that there will be some end-users who will not be able to be reached using Chorus' wholesale services.

164. However, it is unclear whether RSPs currently use Spark's resold services to reach those end-users who lie beyond Chorus' DSL coverage. In addition, the Telecommunications Service Obligation (TSO), which constrains the retail pricing of the TSO services, will protect such end-users at the retail level. In these areas, other technologies are developing, such as fixed-wireless, 3G/4G (including as part of the RBI), and satellite. All of these can be used by service providers to deliver retail local access and calling services to end-users.

165. We also note that the inclusion of managed VoIP services as close substitutes for traditional fixed-line voice services at the retail level suggests that Spark's resale services may face an indirect constraint through switching between services at the retail level. For example, in the event that Spark increased the prices it charged for resale services (the prices of which being set on a retail-minus basis), this is likely to flow through into an increase in the retail prices of those resold services. This increase in retail prices may in turn lead to end-users switching to alternatives such as managed VoIP services, which do not rely on Spark's resale services. As a result, Spark would risk losing the entire revenue stream from such end-users.

Retail services offered by means of a fixed telecommunications network

166. Our preliminary view is that there are reasonable grounds to commence an investigation into the deregulation of Spark's "ISDN/Centrex" services (ie services under sub-part (a)(i) of the service description) in Schedule 1 of the Act.

167. We understand that the development of hosted IP-based services may provide increasingly competitive alternatives to ISDN/Centrex services by delivering similar functionality and features to business customers over broadband connections. With a hosted IP-based service, customers can avoid the need to install PBX equipment at their premises. Such alternatives can and are being used by service providers and are likely to constrain Spark in the supply of business access services such as ISDN, Centrex, and PABX services.

168. We also consider that there are reasonable grounds to commence an investigation in respect of value-added services (which are referred to in sub-part (a)(ii) of the service description). We have previously taken the view that value-added services (such as messaging services supplied in conjunction with the access line) should be included in the local access services market, as it was not clear that these services could be supplied in isolation from the access line. For example, in our 2010 investigation, we defined a product market for fixed-line local access services, including smartphone services.[84] Given our view that there are reasonable grounds to investigate the local access and calling services, our preliminary view is that there

[84] Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraph 289.

are also reasonable grounds to commence an investigation in respect of value-added services.

Retail services offered by means of a fixed telecommunications network as part of bundle of retail services

169. Our preliminary view is that there are reasonable grounds to commence an investigation into the deregulation of resale of parts of bundles in Schedule 1 of the Act.

170. Bundling can give rise to anti-competitive concerns where a firm bundles contestable products with non-contestable products. In our 2010 investigation we said "In these circumstances, the firm may leverage its market power in the non-contestable market to the potentially competitive market".[85]

171. We also observed that local access services are often bundled together with services such as toll calls, value-added services (ie, call waiting, call forwarding and voice mail), as well as internet access. Given that Telecom faced limited competition in the wholesale market for local access services outside the main metropolitan areas, Telecom could potentially use bundling to gain an advantage in the supply of other fixed-line services (such as broadband and tolls).

172. Although we recommended omitting the resale of bundles from Schedule 1 during our 2010 investigation, we recommended that the resale of parts of bundles should be retained as a valuable safeguard against the potential anti-competitive effects of bundling.[86]

173. The bundling of retail services remains an important feature of the telecommunications industry, as broadband services are often supplied in a bundle with a landline. However, Spark's competitors have been able to offer competitive bundles of retail services without seeking access to the regulated 'parts of bundle' service. As discussed above in relation to the local access and calling service, alternative wholesale services which can be used to supply voice services are becoming increasingly available. In addition, our view is that regulated access to Chorus' copper network should remain, providing RSPs with access to the wholesale inputs required to supply broadband services. In our view, the wholesale inputs required to provide competitive bundles of voice and broadband services are therefore available and there may no longer be a need for regulated resale of parts of bundles.

174. We consider that there are reasonable grounds to start an investigation into omitting resale of parts of bundles from Schedule 1 of the Act. This is consistent with our view on retaining regulated access to Chorus' copper network (see below), and the above discussion of other wholesale services such as UFB and Baseband IP,

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85 Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraph 219.

86 Commerce Commission, "Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001", 16 December 2010, paragraph 232.

Backhaul services

Definition of the designated services

175. Schedule 1 of the Act currently contains three designated backhaul services supplied by Chorus.

175.1 Chorus' UBA backhaul service, which provides transmission capacity between the trunk side of a FDS (where the UBA service terminates) and the access seeker's nearest available POI.

175.2 Chorus' UCLL backhaul service (distribution cabinet to telephone exchange), which provides transmission capacity between Chorus' distribution cabinet and Chorus' local exchange for the purposes of providing access to Chorus' UCLL network.

175.3 Chorus' UCLL backhaul service (telephone exchange to interconnect point), which provides transmission capacity between Chorus' local exchange and the access seeker's nearest available POI, for the purposes of providing access to Chorus' UCLL network and Chorus' UCLF service.

176. The regulated backhaul services facilitate the use of the UCLL and UBA services by providing access seekers with the ability to reach the points in the Chorus network where the UCLL and UBA services terminate. The backhaul services can be provided over copper, fibre, or other transmission media (such as microwave), and provide the transmission capacity with which access seekers can convey UCLL or UBA traffic between their end-users and their own networks.

177. The UCLL backhaul service provides Ethernet-based transmission capacity at 100Mbit/s and 1Gbit/s.[87] The UBA backhaul service provides Ethernet-based transmission capacity at 50Mbit/s, 100Mbit/s, 200Mbit/s, and 1Gbit/s.[88]

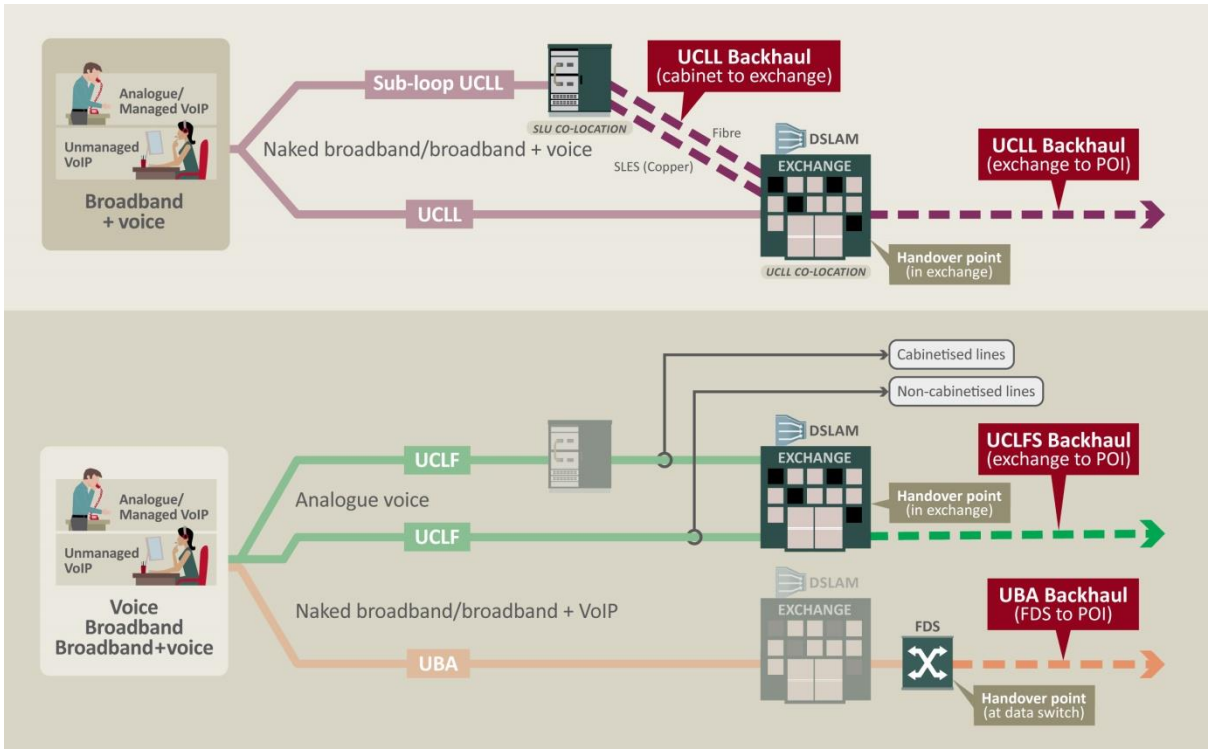
[87] "Standard Terms Determination for Chorus' Unbundled Copper Local Loop and Unbundled Copper Low Frequency Network Backhaul (Telephone Exchange to Interconnect Point) Service Schedule 1 UCLL and UCLF Backhaul Service Description", 27 June 2008 (updated 30 November 2011).

[88] "Standard Terms Determination for Chorus' Unbundled Bitstream Access Backhaul Service Schedule 1 UBA Backhaul Service Description", (updated 17 May 2012).

How backhaul services are used

178. The backhaul services are illustrated in Figure 15 below.

Figure 15: UCLL backhaul and UBA backhaul



179. The regulated backhaul services can be combined with other regulated access services (such as UCLL, UCLF or UBA) in order to supply retail broadband and voice services to end-users.

180. Each of the backhaul services contained in Schedule 1 of the Act can only be used for the purposes of connecting to a specific regulated access service. For example, the UBA backhaul service provides transmission capacity which can only be used to support the UBA service. Similarly, the UCLL backhaul service can only be used for the purposes of connecting to the UCLL and UCLF services. UCLL traffic and UBA traffic cannot be carried over the same regulated backhaul service.

Background to regulation of backhaul services

181. The regulated backhaul services were added to Schedule 1 in 2006, along with the UCLL and UBA services and were amended in 2011 to include the UCLF service.

182. We set the price and non-price terms of access for the regulated backhaul services in a number of STDs:

182.1 Decision 626 (27 June 2008), which relates to the UCLL backhaul service (from the exchange to the interconnect point);[89]

89 "Standard Terms Determination for the designated service Telecom's unbundled copper local loop network backhaul (telephone exchange to interconnect point)", 27 June 2008.

182.2 Decision 627 (27 June 2008), which relates to UBA backhaul service;[90]

182.3 Decision 672 (18 June 2009), which relates to the UCLL backhaul service (from the distribution cabinet to telephone exchange).[91]

183. We understand that Chorus supplies a small number of regulated backhaul services to some service providers, although the majority of backhaul services supplied by Chorus are on commercial terms. The regulated backhaul services remain available under the various backhaul STDs as backstops to the commercial services.[92]

184. We have previously assessed the level of competition in the supply of the UCLL and UBA backhaul services.

185. In Decision 626, we were required to assess whether Telecom faced limited (or was likely to face lessened) competition in the supply of transmission capacity between Telecom's local exchange and the access seeker's nearest available POI.[93] We defined separate wholesale markets for transmission capacity on each primary link and on each secondary link of the UCLL backhaul service.[94]

186. We found that Telecom faced effective competition on those links where at least one wholesale-only competitor was present. On other links where we concluded that Telecom did face limited competition, the regulated UCLL backhaul service was made available to access seekers.

187. We have since conducted a number of further competition assessments under section 30R to ensure that the regulated backhaul services are only available where there is limited (or likely to be lessened) competition.[95] The last competition review was completed in October 2012, in which we updated the links on which Chorus faced limited competition.[96]

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90 "Standard Terms Determination for the designated service Telecom's unbundled bitstream access backhaul", 27 June 2008.

91 "Standard Terms Determination for the designated services of Telecom's unbundled copper local loop network service (Sub-loop UCLL), Telecom's unbundled copper local loop network co-location service (Sub-loop Co-location) and Telecom's unbundled copper local loop network backhaul service (Sub-loop Backhaul)", 18 June 2009.

92 Unlike the earlier resale determinations which had an expiry date, the backhaul Standard Terms Determinations remain in force. Under the 2006 amendments to the Telecommunications Act, STDs must not include an expiry date.

93 The UCLL backhaul service description in Schedule 1 contains a competition test as a condition of the service. The UBA backhaul service contained a similar condition, although the competition test did not apply until the expiry of three years from the 2006 amendments to the Act. As a result, Decision 627 did not contain a competition assessment.

94 A Primary Link referred to the link between a local exchange and its serving or parent exchange at which an access seeker could interconnect with the UCLL backhaul service. A Secondary Link referred to a link between serving exchanges.

95 See Section 30R Reviews

96 "Review of the designated backhaul services: Decision No. NZCC 29", 5 October 2012.

188. We also considered whether there were reasonable grounds to deregulate the backhaul services as part of our 2011 review of the Schedule 1 services.[97] We noted that the three backhaul services were necessary to give effect to the regulated UBA, UCLL, and sub-loop services in order to facilitate competition in downstream retail markets. We concluded that there were no reasonable grounds to commence an investigation in relation to the backhaul services.[98]

189. In the following sections, we consider the wholesale market in which backhaul services are supplied. We then consider the evidence on how competition is working in the relevant markets, which provides the basis for our preliminary view on whether there may be reasonable grounds to commence an investigation into whether to deregulate these services.

Relevant wholesale services

190. We have previously defined UCLL backhaul (and UBA backhaul) by reference to primary links and secondary links.[99]

190.1 UCLL backhaul on a primary link refers to transmission capacity between a local exchange and the parent exchange at which an access seeker can interconnect with the UCLL backhaul service.[100]

190.2 A secondary link refers to transmission capacity between parent exchanges. As a parent exchange will serve as an aggregation point for a number of local exchanges, secondary links typically refer to higher volume routes.

191. We have also previously concluded that there are likely to be varying levels of competitive intensity in different geographic regions, due to the localised deployment of competing networks. We defined relatively narrow geographic markets for each point-to-point primary link and secondary link, and assessed whether Chorus faced limited competition in respect of each of those links.[101]

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97 "Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001", 16 September 2011.

98 "Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001", 16 September 2011., paragraph 35.

99 See for example, Commerce Commission "Review of designated backhaul services" (NZCC29), 5 October 2012, paragraphs 27, 28, and 33.

100 For the UBA backhaul service, the primary link refers to transmission capacity between the First Data Switch (FDS) and the relevant parent exchange.

101 In previous assessments of competition for backhaul services, we took into account competing fibre networks that were either directly connected to a local exchange owned by the former Telecom ("existing competitors") or were sufficiently close to exercise a competitive constraint on backhaul services supplied from that exchange ("near competitors"). This is similar to the approaches taken in other jurisdictions. For example, when assessing competition on backhaul transmission routes, the ACCC takes into account competing regional fibre network operators whose network is in close proximity to (within 1km of) a Telstra exchange. See ACCC, "Domestic Transmission Capacity Service: An ACCC *Final Report* on the review of the declaration for the Domestic Transmission Capacity Service", March 2014, page 21. Ofcom also take into account competing fibre networks within 200 metres. Ofcom "Business Connectivity

192. For the purposes of the current review, we do not consider it necessary to define the precise geographic dimensions of the market(s). However, we remain of the view that competitive conditions are likely to vary between geographic regions. This is evidenced by the ongoing operation of competing networks such as those identified in previous competition reviews relating to the regulated backhaul services (which is discussed further below).

Preliminary views on whether there are reasonable grounds to commence an investigation

193. Our preliminary view is that there are no reasonable grounds to commence an investigation into the deregulation of the backhaul services in Schedule 1 of the Act.

194. Chorus supplies commercial and regulated backhaul services to service providers throughout New Zealand. In addition to Chorus, there are a number of other network operators who provide or are capable of providing transmission capacity. For example:

194.1 Vodafone owns a national fibre optic transmission network which connects the main centres throughout New Zealand;

194.2 Vocus (formerly FX), has deployed and operates a national fibre optic network;[102] and

194.3 Vector Communications operates metropolitan fibre networks in Auckland and Wellington, and offers wholesale backhaul services from Chorus exchanges throughout the Auckland region.[103]

195. There are a number of other network operators who own localised fibre networks, including CityLink and the LFCs (Northpower, Ultra-fast Fibre, and Enable).[104]

196. As part of structural separation, Spark was allocated a share of the former Telecom's fibre cables. However, during the last competition review of the designated backhaul services, we noted Spark's public statement that during the period of that review, it did not intend to offer backhaul services using its own fibre in locations where:

196.1 Spark has fibre that passes through an exchange; and

196.2 Spark has fibre that passes close to an exchange and potentially meets the near entrant criteria

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Market Review: Review of competition in the provision of leased lines", 15 May 2015 (consultation), page 69.

102 According to the Vocus website, its national fibre network covers 4200km based on a fully redundant architecture, with points of presence in the main urban and provincial centres. See http://www.vocus.co.nz/new-zealand

103 see http://vectorcomms.co.nz/solutions/list-services/wholesale-solutions/exchange-backhaul

104 In our previous competition review of backhaul services, we listed fibre operators who we considered were a competitive constraint on Chorus in the supply of backhaul services. See Commerce Commission "Review of designated backhaul services" (NZCC29), 5 October 2012, Table 6 and Table 9.

197. At that time we concluded that Spark was not a competitive constraint on the relevant backhaul links.[105]

198. We are not aware that Spark has altered its position with respect to the provision of backhaul services since our last review of the designated backhaul services in October 2012. Therefore, we have not placed significant weight on Spark as an existing competitive constraint on Chorus in the supply of backhaul services.

199. In our previous review of competition in the supply of backhaul services,[106] we found that Chorus faced competition in the supply of UCLL backhaul services from a significant number of local exchanges. As summarised in Table 2, we assessed competition on a total of 215 UCLL/UCLF backhaul primary links, and concluded that Chorus faced effective competition on 171 of those links. We also found that Chorus faced effective competition on 42 out of 62 UBA backhaul primary links. Of the UCLL backhaul and UBA backhaul secondary links, Chorus faced effective competition on 36 of 38 secondary links.

Table 2: Summary of UCLL and UBA backhaul competition review, October 2012

	Total number of links assessed	Competitive	Not competitive
UCLL backhaul primary links	215	171	44
UBA backhaul primary links	62	42	20
UCLL backhaul and UBA backhaul secondary links	38	36	2

Source: Commerce Commission, NZCC29 5 October 2012.

200. In other words, most of the backhaul links that we assessed were found to be competitive, due to the presence of existing network competitors connected to the Chorus exchange or FDS or being sufficiently close to exercise a competitive constraint.

201. However, we also found a number of routes where Chorus faced limited competition, particularly for backhaul from the local exchange or FDS (ie, primary links).

202. Our view is that Chorus faces competition in the supply of backhaul services on larger inter-city routes (where there has been sufficient scale to attract entry), as well as in a number of metropolitan areas. However, there remain geographic regions where Chorus is the only network operator supplying wholesale transmission capacity services.

105 Commerce Commission, NZCC29 5 October 2012, paragraphs 56, 58, and 59.
106 Commerce Commission, NZCC29 5 October 2012.

203. Therefore, our preliminary view is that there are not reasonable grounds to commence an investigation into omitting the UCLL and UBA backhaul services from Schedule 1. Backhaul services remain an important wholesale input into many downstream telecommunications services including retail broadband and voice services. Although Chorus faces competition from other network operators in the supply of backhaul services on a number of routes, there remain significant parts of the country where Chorus is the only option for backhaul services.

204. While access seekers typically acquire backhaul transmission capacity on a commercial basis, the removal of the designated backhaul services from Schedule 1 would be likely to leave Chorus unconstrained when setting the terms on which it supplies backhaul services in many areas. In our view, the ability of an access seeker to avail itself of the terms in the STD or to request a s30R review in respect of the designated backhaul services, is likely to provide a constraint on Chorus in those areas where Chorus faces limited competition.

205. During this review we have not considered whether there are reasonable grounds to commence an investigation into amending the UCLL and UBA backhaul services, as amending an existing designated service is beyond the scope of clause 1(3) of Schedule 3.

206. However, we would welcome views on whether the existing designated backhaul services should be amended to reflect developments such as increasing demand for bandwidth resulting from the UFB, RBI, and LTE deployments. In particular, we would welcome views on whether the current restriction on each of the designated UCLL and UBA backhaul services (that each backhaul service can only be used for the purposes of connecting to a specific regulated access service) remains appropriate.[107] Any such amendments would be considered as part of a separate process under clause 1(1) of Schedule 3.

UCLL Co-location service

Definition of the designated service

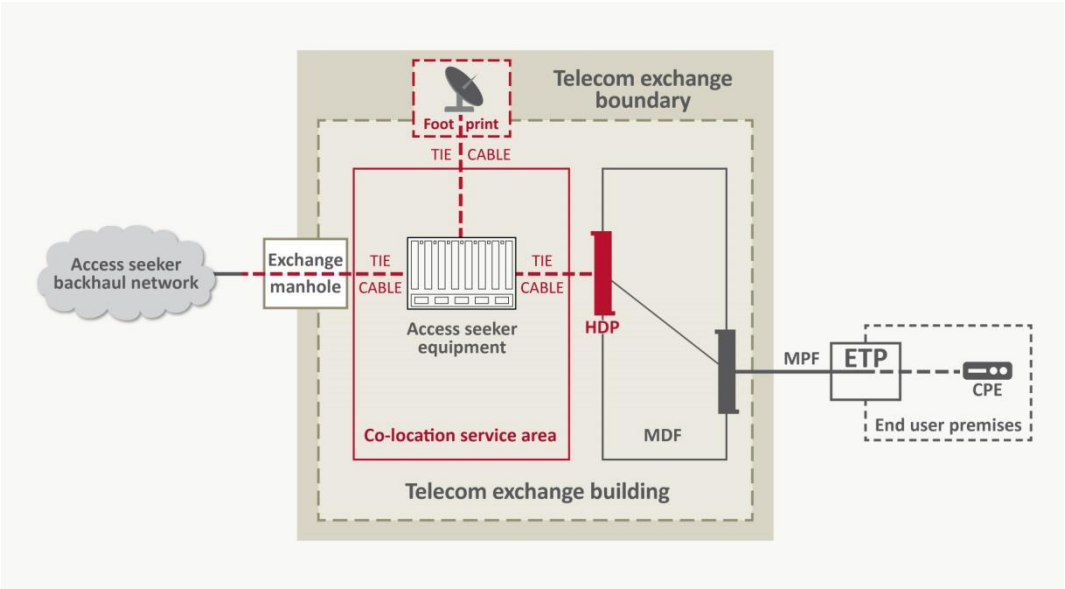
207. The UCLL co-location service is defined in Schedule 1 as providing co-location facilities for an access seeker's equipment in Chorus' local telephone exchange or distribution cabinet, in order to provide access to Chorus' UCLL network and UCLF service.

[107] This feature of the regulated backhaul services in New Zealand differs from regulated transmission capacity services in other jurisdictions. For example, in Australia, the Domestic Transmission Capacity Service (DTCS) is a regulated (declared) service, which can be used by access seekers for backhaul in relation to fixed and mobile services. See ACCC "Domestic Transmission Capacity Service: An ACCC Final Report on the review of the declaration for the Domestic Transmission Capacity Service", March 2014, page 28. Ofcom also notes that the main users of leased line services are enterprise customers, mobile network operators, and LLU operators. See Ofcom "Business Connectivity Market Review, Review of competition in the provision of leased lines", 15 May 2015, paragraph 3.3.

How the UCLL co-location service is used

208. The UCLL co-location service is illustrated in Figure 16 below.

Figure 16: UCLL co-location



209. The UCLL co-location service enables access seekers to install their own equipment in Chorus' local exchanges and distribution cabinets for the purposes of accessing the UCLL and UCLF services.

Background to regulation of UCLL co-location services

210. The designated UCLL co-location service was added to Schedule 1 of the Act in 2006, along with the UCLL and UBA services.

211. For co-location in a local exchange, we set the price and non-price terms of access to the UCLL co-location service in Decision 610.[108] We set the price and non-price terms of access to the UCLL co-location service in respect of distribution cabinets in Decision 672.[109]

212. According to the STD Service Descriptions,[110] the co-location services include the provision of space, power, air-conditioning, cable racks, tie cables, and other associated infrastructure and services to support access seeker equipment located in the local exchange or the distribution cabinet. The co-location services can be

108 "Standard Terms Determination for the designated service Telecom's unbundled copper local loop network co-location", 7 November 2007.

109 "Standard Terms Determination for the designated services of Telecom's unbundled copper local loop network service (Sub-loop UCLL), Telecom's unbundled copper local loop network co-location service (Sub-loop Co-location) and Telecom's unbundled copper local loop network backhaul service (Sub-loop Backhaul)", 18 June 2009.

110 "Standard Terms Determination for Telecom's Unbundled Copper Local Loop Network Co-location Service Schedule 1 Co-location Service Description", 7 November 2007; "Standard Terms Determination for Chorus' Sub-loop Unbundled Copper Local Loop Network Services Schedule 1 Sub-loop Co-location Service Description", 18 June 2009.

combined with the UCLL and UCLF services and the UCLL backhaul services to supply retail broadband and voice services to end-users.

Preliminary views on whether there are reasonable grounds to commence an investigation

213. Our preliminary view is that there are no reasonable grounds to commence an investigation into the deregulation of the UCLL co-location service in Schedule 1 of the Act. Co-location services are essential in order for an access seeker to be able to access and interconnect with Chorus' UCLL network.

214. For an access seeker wishing to interconnect with Chorus' UCLL network, there are no viable alternatives to co-location in Chorus' local exchanges or distribution cabinets. Although an access seeker could in principle use remote co-location where it installs its equipment in its own cabinet or exchange, this is unlikely to be an economic alternative to renting space and the associated services within Chorus' facilities.[111]

215. Given the discussion above, and our preliminary view in respect of the UCLL service, we consider that the UCLL co-location service should remain a designated service in Schedule 1.

216. During this review we have not considered whether there are reasonable grounds to commence an investigation into amending the UCLL co-location service, as amending an existing designated service is beyond the scope of the current review. However, we would welcome views on whether the existing designated co-location service should be amended. Any such amendments would be considered as part of a separate process.

Number portability

Definition of the designated services

217. There are two services in Schedule 1 of the Act that regulate number portability:

217.1 the Local telephone number portability service - a service that enables an end-user of a fixed telephone network service to change providers of that service but to retain the same telephone number within a local calling area; and

217.2 the Cellular telephone number portability service - a service that enables an end-user of a cellular telephone network service to change providers of that service but to retain the same telephone number (including the same cellular network access code).

How the number portability services are used

218. Number portability allows an end-user to switch service providers while maintaining their existing telephone number.

[111] The UCLL co-location STD allows an access seeker to use remote co-location. See for example, Decision 672, 18 of June 2009, paragraph 69 and Figure 2.

219. Each of the number portability services are fundamental inputs that promote competition in downstream retail telecommunications markets by reducing the barriers to switching for end-users, ensuring that the process is easy to start and that customers are not left without communications for a long period.

220. The absence of number portability would likely hinder the competitive process by raising switching costs that customers must incur in order to change their service provider. Customers often prefer to keep their number when changing telecommunications' provider. High switching costs tend to undermine competition and do not promote the long-term benefit of end-users because they are likely to make entry and expansion more difficult and markets less competitive.[112]

Background to regulation of portability services

221. The local and cellular number services were introduced in the Act in 2001, and this is their third review.[113] The 2005 review concluded that there were reasonable grounds for these services to remain in Schedule 1 and the Commission instigated an investigation into retaining them.[114]

222. The conclusion of the 2006 investigation was that number portability should remain in Schedule 1 of the Act because these services promote competition in both fixed and cellular mobile markets for the long-term benefit of end-users, as they facilitate the process of switching between providers.[115]

223. In our 2011 review we again formed the view that number portability should remain in Schedule 1 of the Act on the basis that number portability remained an important element of New Zealand's competitive telecommunications regime.[116]

224. The number porting arrangements for local and mobile numbers are defined In the Determination for the designated multinetwork services of local telephone number portability service and cellular telephone number portability service (Decision 705).[117] The Local and Mobile Number Portability (LMNP) and Network Terms detail the processes that enable end-users to port their numbers. It also sets out the rights and obligations of parties to these terms in a number portability environment to

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112 Commerce Commission, Determination on the multi-party application for determination of 'local number portability service' and 'cellular number portability service' designated multinetwork services, Decision 554, 31 August 2005.

113 See Attachment 1 – The history of designated and specified services in Schedule 1.

114 As noted earlier, at the time of the 2006 investigation, the Schedule 1 services were deregulated after five years unless extended.

115 Commerce Commission, Schedule 3 investigation into the extension of regulation of designated and specified services final report, 28 August 2006, paragraph 175

116 Commerce Commission, Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001, 16 September 2011".
See Attachment 1 – The history of designated and specified services in Schedule 1.
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117 Commerce Commission Determination for the designated multinetwork services of 'local telephone number portability service' and 'cellular telephone number portability service, 15 December 2010

ensure voice calls and short messages to and from ported numbers are correctly routed.

Preliminary views on whether there are reasonable grounds to commence an investigation

225. Our preliminary view is that there are no reasonable grounds to commence an investigation into the deregulation of the number portability services in Schedule 1 of the Act. Our conclusion is based on our view that number portability continues to be a relevant wholesale input that empowers end-users to promote competition in the retail markets for fixed and mobile telecommunications services. The number portability determination ensures that the process for porting the telephone number while switching providers is easy to initiate and that end-users are not left without communications for a long period.

Co-location on cellular mobile transmission sites

Definition of the specified service

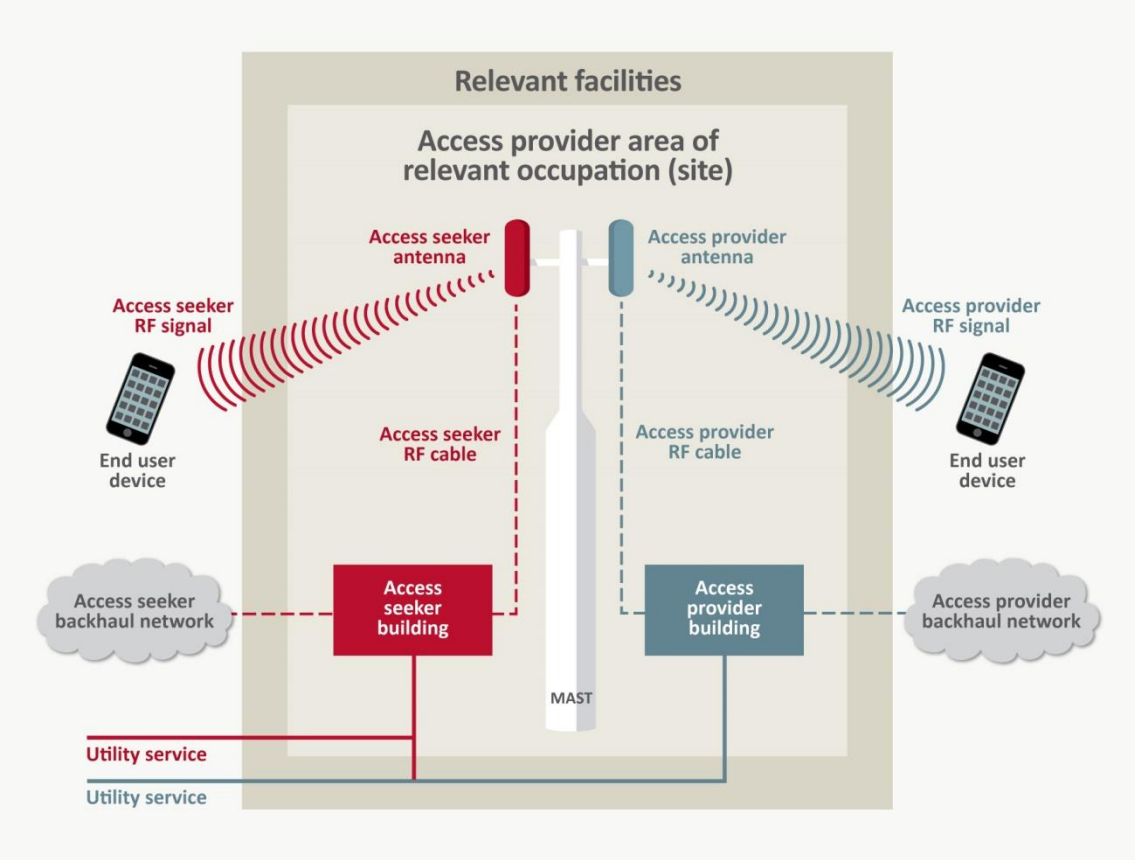
226. The specified service 'Co-location on cellular mobile transmission sites' in Schedule 1 of the Act requires cellular mobile telephone network operators to provide for co-location on towers, poles, masts, or other similar structures, along with associated utility services. According to the service description contained in the STD[118], utility services include services such as the provision of lighting, air-conditioning, and power.

[118] "Standard Terms Determination for Co-location on Cellular Mobile Transmission Sites, Schedule 1 Mobile Co-location Service Description", 11 December 2008, paragraph 2.3,

How the mobile co-location service is used

227. The mobile co-location service is illustrated in Figure 17 below.

Figure 17: Mobile co-location service



228. Mobile co-location is used to share the costs of deploying a mobile network, particularly in more remote areas where the costs of building mobile sites have to be recovered across a relatively dispersed customer base. Co-location can be an important way of encouraging efficient network deployment, because of the network build costs (particularly in remote areas) and the importance of being able to offer retail mobile services with national coverage.

Background to regulation of mobile co-location services

229. The mobile co-location service was included as a specified service in Schedule 1 of the Act in 2001.

230. We have previously considered whether the specified mobile co-location service should remain in Schedule 1.

230.1 In the 2006 investigation, we concluded that the specified mobile co-location service should remain in Schedule 1 on the basis that in the absence of regulation, the established mobile network operators (Telecom and Vodafone)

could deter or delay the entry and expansion of a third mobile network operator.[119]

230.2 In the 2011 review, we again concluded that the specified mobile co-location service should remain a regulated service. We noted that regulation of co-location would promote competition, efficiency, and more rapid deployment of competing infrastructure.[120]

231. We have also previously considered whether to amend the service. During 2007, we undertook a further Schedule 3 investigation into whether to amend the specified mobile co-location service to become a designated service.[121] We found that competition had not resulted in many instances of co-location, and that the number of mobile co-locations was low at that stage (with only seven co-location sites).[122] However, we concluded that the issues which were preventing effective mobile co-location at the time were related to non-price terms, and that the mobile co-location service should remain a specified service.[123]

232. We set the non-price terms of access for the mobile co-location service through a STD in 2008.[124] The STD covers issues such as provisioning of the co-location service, forecasting,[125] and interference management.

Preliminary views on whether there are reasonable grounds to commence an investigation

233. Our preliminary view is that there are no reasonable grounds to commence an investigation into the deregulation of the mobile co-location service in Schedule 1 of the Act. Our conclusion is based on the fact that mobile co-location use is increasing, and also on the important role co-location plays in terms of deploying new mobile sites and promoting competition and expansion in the provision of retail mobile services.

234. The ability to co-locate equipment on the infrastructure of another mobile network operator facilitates the efficient deployment of mobile technology through the sharing of the costs of facilities such as towers and masts. The ability to share such

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119 Commerce Commission "Schedule 3 investigation into the extension of regulation of designated and specified services Final Report", 28 August 2006, paragraphs 129, 130.

120 Commerce Commission "Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001", 16 September 2011, paragraphs 29, 30.

121 Designation of the mobile co-location service would extend regulation to the price terms of the mobile co-location, as well as the non-price terms.

122 "Schedule 3 investigation into amending the co-location service on cellular mobile telephone transmission sites", 14 December 2007, paragraph 50.

123 "Schedule 3 investigation into amending the co-location service on cellular mobile telephone transmission sites", 14 December 2007, paragraph 112.

124 "Standard Terms Determination for the specified service Co-location on cellular mobile transmission sites", Decision 661, 11 December 2008.

125 Forecasting relates to both the access provider (for the reservation of space to accommodate forecast requirements for capacity) and the access seeker (to ensure efficient provision of the mobile co-location service).

costs is likely to become increasingly important as a mechanism for reaching more remote areas with current and new technology such as 4G LTE and 5G.

235. Mobile co-location can promote competition in the downstream retail market for mobile services by enabling smaller operators to extend their coverage by leasing space on existing infrastructure owned by the larger mobile operators.

236. Information provided by the mobile operators as part of the current review indicates that there has been some co-location occurring, particularly during the period 2012-2015. Some of these co-locations have been a result of the RBI, although a significant proportion of co-locations are on non-RBI sites.

237. There are a number of potential alternatives to mobile co-location, including the deployment of an operator's own infrastructure and the national roaming service. However, in rural areas it is unlikely to be efficient or commercially viable to build duplicate infrastructure. In terms of roaming, the specified national roaming service remains an important backstop to commercial roaming services, although co-location provides greater flexibility in terms of the technology deployed.

238. During this review we have not considered whether there are reasonable grounds to commence an investigation into amending the mobile co-location service, as amending an existing designated service is beyond the scope of clause 1(3) of Schedule 3. However, we would welcome views on whether the existing specified co-location service should be amended. Any such amendments would be considered as part of a separate process under clause 1(1) of Schedule 3.

Submissions to this consultation

239. We invite submissions on our preliminary views set out in this draft decision.

240. Submissions are due by 5pm on 23 May 2016. Your response should be provided as an electronic copy in an accessible form.

241. Submissions should be sent by email to: telco@comcom.govt.nz. If you have any inquires please contact filomena.antunes@comcom.govt.nz.

242. We intend to publish all submissions on our website. Any confidential information should be clearly marked. When confidential information is provided, submitters should provide both confidential and public versions of their submissions. The responsibility for ensuring that confidential information is not included in a public version of a submission rests with the party making the submission.

COMMERCE COMMISSION NEW ZEALAND
Te Komihana Tauhokohoko

Attachment 1 – The history of designated and specified services in Schedule 1

This table provides a brief summary chronicling the history of each service contained in Schedule 1 of the Telecommunications Act 2001 (**TA**).

The dark grey boxes indicate that the service has been deregulated.

Service	Activity	Result/ outcome
Designated services		
Interconnection with a fixed PSTN	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	The original title for the service was *Interconnection with Telecom's fixed PSTN.*[1]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC established reasonable grounds to launch an investigation into extending the period of regulation for this service.[2]
	30 May – 28 Aug. 2006 – Service investigated under Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[3] In 2006, statutory amendments were used first to extend the period of regulation for this service,[4] and then to abolish the time limitation on this service and all other Schedule 1 services.[5]
	1 July 2011 – Service title amended	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the word "Telecom" with "a" in the service title.[6]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3, of the TA	CC decided not to review this service because it had been recently amended.[7]
Interconnection with fixed PSTN other than Telecom's	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	Service initially created to cover the limited PSTN interconnection not offered by Telecom.[8]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC established reasonable grounds to launch an investigation into extending the period of regulation for this service.[9]
	30 May – 28 Aug. 2006 – Service investigated under Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[10] In 2006, statutory amendments were used first to extend the period of regulation for this service[11] and then to abolish the time limitation on this service and all other Schedule 1 services.[12]
	1 July 2011 – Service deregulated	The *Telecommunications (TSO, Broadband, and Other Matters)*

Service	Activity	Result/ outcome
		Amendment Act 2011 omitted this service from Schedule 1.[13]
Retail services offered by means of a fixed telecommunications network (Contains a competition condition)	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	The original title for this service was *Retail services offered by means of Telecom's fixed telecommunication network*.[14]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC established reasonable grounds to launch an investigation into extending the period of regulation for this service.[15]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[16] In 2006, two statutory amendments were used first to extend the period of regulation for this service[17] and then to abolish the time limitation on this service and all other Schedule 1 services.[18]
	13 Feb.– 24 Sept. 2009 – Service reviewed outside of 5-yearly cycle	Early 2009 Telecom requested CC review deregulating this service. CC reviewed the service and established there were reasonable grounds to investigate.[19]
	26 Aug. – 16 Dec. 2010 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended changing the service description to more clearly provide for a single-service business local access and calling service.[20]
	30 May 2011 – Service amended by Order in Council	Service amended by order in council, to create the focus recommended by CC.[21]
	1 July 2011 – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced "Telecom" with "a". The service description and pricing principles for this service were also slightly amended to allow for different arrangements in operating this service pre and post 3 years after Telecom's separation day. [22]
	14 July – 16 Sept 2011 – Reviewed under Clause 1(3) of Schedule 3, of the TA	CC found no reasonable grounds for new investigation as there had been no developments in the period since the last investigation.[23]
Local access and calling service offered by means of a fixed telecommunications network (Contains a competition condition)	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	The original title for this service was *Residential local access and calling service offered by means of Telecom's fixed telecommunications network*.[24]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC established reasonable grounds to launch an investigation into extending the period of regulation for this service.[25]
	30 May – 28 Aug. 2006 – Service	CC recommended the regulation for this service be extended by two years.[26] In 2006, two statutory amendments were used first to extend

Service	Activity	Result/ outcome
	investigated under Clause 1(1) of Schedule 3 of the TA	the period of regulation for this service[27] and then to abolish the time limitation on this service and all other Schedule 1 services.[28]
	13 Feb.– 24 Sept. 2009 – Service reviewed outside of 5-yearly cycle	Early 2009 Telecom requested CC review deregulating this service. CC reviewed the service and established there were reasonable grounds to investigate.[29]
	26 Aug. – 16 Dec. 2010 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended retaining this service.[30]
	1 July 2011 – Service title amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011:* • removed "Residential" from the beginning of the service title; and • replaced the term "Telecom" with "a". The service description and pricing principles for this service were also slightly amended to allow for different arrangements in operating this service pre and post 3 years after Telecom's separation day.[31]
	14 July – 16 Sept 2011 – Reviewed under Clause 1(3) of Schedule 3, of the TA	CC found no reasonable grounds for new investigation as there had been no developments in the period since the last investigation.[32]
Bundle of retail services offered by means of Telecom's fixed telecommunications network *(Contained a competition condition)*	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	This service is established as one of the original 13 regulated services.[33]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC established reasonable grounds to launch an investigation into extending the period of regulation for this service.[34]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[35] In 2006, two statutory amendments were used first to extend the period of regulation for this service[36] and then to abolish the time limitation on this service and all other Schedule 1 services.[37]
	13 Feb.– 24 Sept. 2009 – Service reviewed outside of 5-yearly cycle	Early 2009 Telecom requested CC review deregulating this service. CC reviewed the service and established there were reasonable grounds to investigate.[38]
	26 Aug. – 16 Dec. 2010 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended omitting this service as it would be unlikely to promote access to the bundled services access seekers need and would be unlikely to promote competition.[39]

Service	Activity	Result/ outcome
	30 May 2011 – Service deregulated	Service removed by CC through the *Telecommunications (Retail Services and Bundle of Retail Services) Order*.[40]
Retail services offered by means of a fixed telecommunications network as part of (sic) bundle of retail services (Contains a competition condition)	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	The original title for this service was *Retail services offered by means of Telecom's fixed telecommunications network as part of (sic) bundle of retail services.*[41]
	27 Feb. – 14 Aug. 2003 – Service initial pricing principle (IPP) reviewed	CC agreed to commence the investigation into amending the IPP for this service on 27 February 2003, in response to a request from the Minister of Communications.[42] The final investigation report (with recommendations for change) was released on 14 August 2003.[43]
	11 Dec. 2003 – Order amending Service IPP gazetted.	The IPP for this service was changed to eliminate double discounting for price-capped services in wholesale service bundles, and to make the IPP consistent with other designated services. The amending order came into effect 28 days after gazetting.[44]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC established reasonable grounds to launch an investigation into extending the period of regulation for this service.[45]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[46] In 2006, two statutory amendments were used first to extend the period of regulation for this service[47] and then to abolish the time limitation on this service and all other Schedule 1 services.[48]
	13 Feb.– 24 Sept. 2009 – Service reviewed outside of 5-yearly cycle	Early 2009 Telecom requested CC review deregulating this service. CC reviewed the service and established there were reasonable grounds to investigate.[49]
	26 Aug. – 16 Dec. 2010 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended retaining this service because it would be useful safeguard against the anti-competitive effects of bundling.[50]
	1 July 2011 – Service title amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "a". The service description for this service was also slightly amended to include services offered by "a" fixed telecommunications network, rather than "its" fixed telecommunications network.[51]

Service	Activity	Result/ outcome
	14 July – 16 Sept 2011 – Reviewed under Clause 1(3) of Schedule 3, of the TA	CC found no reasonable grounds for new investigation as there had been no developments in the period since the last investigation.[52]
Access to, and interconnection with, Telecom's fixed Public Data Network (PDN) *(Contained a competition condition)*	***19 Dec. 2001*** – Section 64 of the original TA required CC to review Telecom's local loop and fixed PDN	Section 64 of the TA required CC to review and report back to the Minister on whether the additional services should be included as designated or specified service in Schedule 1.[53]
	22 Dec. 2003 – CC recommends creating new PDN service	CC conducted the review under s 64, and extended its focus through powers in Schedule 3 to focus on elements related to the s 64 focus. CC did not recommend regulating Telecom's local loop network but recommended giving designated status to two PDN related services: • access to the unbundled elements of Telecom's local loop network[54] • access to, and interconnection with, Telecom's fixed PDN.[55]
	2 Sep. 2004 –service introduced and Schedule 1 amended	The *Telecommunications (Fixed Public Data Network) Order 2004* introduced the new service *Access to, and interconnection with, Telecom's fixed PDN* as a designated service in Schedule 1.[56]
	22 Dec. 2006 – service deregulated	The *Telecommunications Amendment (No.2) Act 2006* removed this service from Schedule 1 of the Act.[57]
Telecom's fixed Public Data Network (PDN) backhaul *(Contained a competition condition)*	***19 Dec. 2001*** – Section 64 of the original TA required CC to review Telecom's local loop and fixed PDN	Section 64 of the TA required CC to review and report back to the Minister on whether the following services should be included as designated or specified service in Schedule 1.[58]
	22 Dec. 2003 – CC recommends creating new PDN backhaul service	CC conducted the review under s 64, and extended its focus through powers in Schedule 3 to focus on elements related to the s 64 focus. CC did not recommend regulating Telecom's local loop network but recommended giving designated status to two PDN related services: • access to the unbundled elements of Telecom's local loop network[59] • access to, and interconnection with, Telecom's fixed PDN.[60]
	2 Sep. 2004 –service introduced and Schedule 1 amended	The *Telecommunications (Fixed Public Data Network) Order 2004* introduced the new service *Telecom's fixed PDN backhaul* as a designated service in Schedule 1.[61]

Service	Activity	Result/ outcome
	22 Dec. 2006 – service deregulated	The *Telecommunications Amendment (No.2) Act 2006* removed this service from Schedule 1 of the Act.[62]
Chorus's UBA (Contains a competition condition)	***22 December 2006*** – Service included in Schedule 1 of the TA via statute	This service was introduced to Schedule 1 of the TA in 2006 by amendment act, [63] with a STD following on 12 December 2007.[64]
	1 July 2011 – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "Chorus" in the service title and throughout the service description. The service description and pricing principles for this service were also slightly amended to allow for different arrangements in operating this service pre and post 3 years after Telecom's separation day.[65]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC was unable to find reasonable grounds to investigate deregulating this service because: • it has a competition condition; [66] and • evidence indicated many of Telecom's wholesale based competitors used this service. [67]
Chorus's unbundled bitstream access backhaul (UBA Backhaul) (Contains a competition condition)	***22 December 2006*** – Service included in Schedule 1 of the TA via statute	This service introduced to Schedule 1 in 2006 by amendment act,[68] with a STD following on 27 June 2008.[69]
	1 July 2011 – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "Chorus" in the service title and throughout the service description. The service conditions were also slightly amended to remove expired provisions.[70]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC was unable to find reasonable grounds to investigate deregulating this service because it has a competition condition, and because it is necessary for delivering UBA.[71]
Chorus's unbundled copper local loop network(UCLL)	***22 December 2006*** – Service included in Schedule 1 of the TA via statute	This service introduced to Schedule 1 in 2006 by amendment act,[72] with a STD following on 7 November 2007.[73]
	1 July 2011 – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "Chorus" in the service title and throughout the service description. The service

Service	Activity	Result/ outcome
		conditions were also slightly amended to recognise Telecom's demerger.[74]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC was unable to find reasonable grounds to investigate deregulating this service because it was important in promoting competition, and provided the opportunity for sub-loop unbundling as a complementary voice alternative.[75]
Chorus's unbundled copper local loop network co-location (UCLL Co-lo)	***22 December 2006*** – Service included in Schedule 1 of the TA via statute	This service introduced to Schedule 1 in 2006 by amendment act,[76] with a STD following on 7 November 2007.[77]
	1 July 2011 – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "Chorus" in the service title and throughout the service description. The service description was changed to reflect the introduction of UCLF, and the conditions were removed.[78]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC was unable to find reasonable grounds to investigate deregulating this service because it was necessary to enable access to the local loop network (and it thereby promoted competition).[79]
Chorus's unbundled copper local loop network backhaul (distribution cabinet to telephone exchange)(Sub-Loop Backhaul)	***22 December 2006*** – Service included in Schedule 1 of the TA via statute	This service introduced to Schedule 1 in 2006 through an amendment act,[80] with a STD following on 18 June 2009.[81]
	1 July 2011 – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "Chorus" in the service title and throughout the service description. The service conditions were also removed.[82]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC was unable to find reasonable grounds to investigate deregulating this service because it was necessary to enable the regulated sub-loop service (contained within UCLL).[83]
Chorus's unbundled copper local loop network backhaul (telephone	***22 December 2006*** – Service included in Schedule 1 of the TA via statute	This service introduced to Schedule 1 in 2006 by amendment act,[84] with a STD following on 27 June 2008.[85]

Service	Activity	Result/ outcome
exchange to interconnect point)(UCLL Backhaul) (Contains a competition condition)	***1 July 2011*** – Service amended by statute	The *Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011* replaced the term "Telecom" with "Chorus" in the service title and throughout the service description. The service description was changed to reflect the introduction of UCLF, and the conditions were removed. The service conditions were also slightly amended.[86]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC was unable to find reasonable grounds to investigate deregulating this service because it was necessary to enable UCLL.[87]
Chorus's unbundled copper low frequency service (UCLF)	***1 July 2011*** – Service included in Schedule 1 of the TA via statute	This service was introduced to Schedule 1 in July 2011 through an amendment act, as part of a number of amendments designed to ensure that the entities replacing Telecom, after structural separation, would still function.[88] The STD for this service followed on 24 November 2011.[89]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	This service was not eligible for review during this review process.
Mobile termination access service (MTAS)	***27 Sept. 2010*** – Service included in Schedule 1 of the TA	Service introduced by Order in Council – *Telecommunications (Mobile Termination Access Services) Order 2010* (2010/262) 23 August 2010 – the service commenced 28 days after Gazetting.[90] The STD for this service came into effect 5 May 2011.[91]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	This service was not eligible for review during this review process.[92]
	16 June – 23 Sept. 2015 - Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC decided that there were no reasonable grounds to de-regulate this service.[93]
Designated multinetwork services		
Local telephone number portability service	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	This service is established as one of the original 13 regulated services.[94]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with	CC decided to that there were reasonable grounds to launch an investigation into extending the period of regulation for this service by a

Service	Activity	Result/ outcome
	s 65 and Schedule 3 of the TA	further two years.[95]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[96] In 2006, two statutory amendments were used first to extend the period of regulation for this service[97] and then to abolish the time limitation on this service and all other Schedule 1 services.[98]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC found no reasonable grounds to deregulate this service, noting number portability remained an important element of New Zealand's competitive telecommunications regime.[99]
Cellular telephone number portability service	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	This service is established as one of the original 13 regulated services.[100]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	The Commission decided to that there were reasonable grounds to launch an investigation into extending the period of regulation for this service by a further two years.[101]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[102] In 2006, two statutory amendments were used first to extend the period of regulation for this service[103] and then to abolish the time limitation on this service and all other Schedule 1 services.[104]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC found no reasonable grounds to deregulate this service, noting number portability remained an important element of New Zealand's competitive telecommunications regime.[105]
National toll-free telephone number portability service	***19 Dec. 2001*** – Service included in original TA	This service is established as one of the original 13 regulated services.[106]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC found no reasonable ground to investigate extending the regulatory period for this service, noting that industry had established a joint venture for toll-free number portability in NZ.[107]This service was left to expire.
Telecom's fixed PSTN to mobile	***19 Dec. 2001*** – Service included in original TA	This service is established as one of the original 13 regulated services.[108]

Service	Activity	Result/ outcome
carrier pre-selection service	***4 Aug. to 16 Nov. 2005*** – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC decided to leave this service to expire on 19 December 2006, as *satisfactory commercial solutions were in place between industry participants*.[109]

Specified services		
National roaming	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	This service is established as one of the original 13 regulated services.[110]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	The Commission decided to that there were reasonable grounds to launch an investigation into extending the period of regulation for this service by a further two years.[111]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[112] In 2006, two statutory amendments were used first to extend the period of regulation for this service[113] and then to abolish the time limitation on this service and all other Schedule 1 services.[114]
	10 May – 10 Oct. 2006 – Service reviewed as part of an examination of the mobile services market	CC found that there were reasonable grounds to investigate: • amending the terms of this service; and • moving this service from a specified to a designated service.[115]
	15 Dec 2006 – 10 Mar. 2008 – Service investigated under Schedule 3 of the TA	CC recommended the following changes to the description of this service in Schedule 1: • removing the 2G restriction and making the service technology neutral; • permitting access seekers to apply for a determination when an agreement is in place; • clarifying an access seekers initial coverage area to comprise 100 cell sites or no less than 10% of the population; • reducing access seekers roll-out requirement to 65% of NZ's population, and reducing the spectrum requirement from national coverage to 65% coverage of NZ's population; and • introducing new conditions to improve the compatibility between access providers and seekers, and to improve the network build incentives for access seekers.[116]

Service	Activity	Result/ outcome
	11 Aug. 2008 – Service amended by Order in Council	Changes recommended by CC were introduced by the *Telecommunications (National Roaming) Order 2008*, which came into effect on 11 September 2011.[117]
	14 July – 16 Sept. 2011 – Service considered but not reviewed under Clause 1(3) of Schedule 3 of the TA	CC determined that this service was not eligible for review as the service has been changed in August 2008.[118]
	31 July – 20 Sept.2013 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC determined that this service was still a relevant service for competition in the mobile telecommunications markets. CC found there were no reasonable grounds to deregulate this service.[119]
Co-location on cellular mobile transmission sites	***19 Dec. 2001*** – Service included in Schedule 1 of the original TA	This service is established as one of the original 13 regulated services.[120]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	The Commission decided to that there were reasonable grounds to launch an investigation into extending the period of regulation for this service by a further two years.[121]
	30 May – 28 Aug. 2006 – Service investigated under Clause 1(1) of Schedule 3 of the TA	CC recommended the regulation for this service be extended by two years.[122] In 2006, two statutory amendments were used first to extend the period of regulation for this service[123] and then to abolish the time limitation on this service and all other Schedule 1 services.[124]
	10 May – 10 Oct. 2006 – Service reviewed as part of an examination of the mobile services market	CC found that there were reasonable grounds to investigate moving this service from a specified to a designated service.[125]
	15 Dec 2006 – 14 Dec. 2007 – Service investigated under Schedule 3 of the TA	CC decided that price for this service was not a great issue and that the service did not need to be moved to designated status. But CC found that there was significant non-price issues and indicated that an STD would be established to resolve them.[126]
	14 July – 16 Sept. 2011 – Service reviewed under Clause 1(3) of Schedule 3 of the TA	CC noted that this service was essential in the efficient entry and expansion to the mobile market. Therefore, they could find no reasonable for the deregulation of services.[127]

Service	Activity	Result/ outcome
Co-location of equipment for fixed telecommunications services at sites used by Broadcast Communications Limited	***19 Dec. 2001*** – Service included in original TA	This service is established as one of the original 13 regulated services.[128]
	4 Aug. to 16 Nov. 2005 – Service reviewed in accordance with s 65 and Schedule 3 of the TA	CC decided to leave this service to expire on 19 December 2006, because *absent any indication from potential access seekers of co-location at BCL's sites that there are concerns regarding access to the service, the Commission does not consider that there are reasonable grounds to investigate its extension*.[129]

1 Telecommunications Act 2001 (No. 103), 19 December 2001, Schedule 1, subpart 1 of Part 2, p 2151.
2 Commerce Commission, *Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate*, 16 November 2005, p4, paragraph 17.
3 Commerce Commission, *Schedule 3 Investigation into the extension of regulation of designated and specified services: Final Report*, 28 August 2006, pp31-32, paragraphs 102-103.
4 Telecommunications Amendment Act 2006 (No 53), 30 October 2006, s 4, p2.
5 Telecommunications Amendment Act (No 2) 2006 (No 83), 18 December 2006, s 30.
6 Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (No 27), 30 June 2011, Schedule 3, p127.
7 Commerce Commission, *Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001*, 16 September 2011, p3, paragraph14.
8 Telecommunications Act 2001(No. 103), 19 December 2001, Schedule 1, subpart 1 of Part 2, p 2153.
9 Commerce Commission, *Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate*, 16 November 2005, p4, paragraph 17.
10 Commerce Commission, *Schedule 3 Investigation into the extension of regulation of designated and specified services: Final Report*, 28 August 2006, pp31-32, paragraphs 102-103.
11 Telecommunications Amendment Act 2006 (No 53), 30 October 2006, s 4, p2.
12 Telecommunications Amendment Act (No 2) 2006 (No 83), 18 December 2006, s 30.
13 Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (No 27), 30 June 2011, Schedule 3, p56.
14 Telecommunications Act 2001, (No. 103), 19 December 2001, Schedule 1, subpart 1 of Part 2, p 2155.
15 Commerce Commission, *Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate*, 16 November 2005, p4, paragraph 17.
16 Commerce Commission, *Schedule 3 Investigation into the extension of regulation of designated and specified services: Final Report*, 28 August 2006, p23, paragraphs 61-62.
17 Telecommunications Amendment Act 2006 (No 53), 30 October 2006 s 4, p2.
18 Telecommunications Amendment Act (No 2) 2006 (No 83), 18 December 2006, s 30.

[19] Commerce Commission, *Reasons for Commerce Commission decision to investigate Resale Services*, 24 September 2009, pp 3-4, paragraphs 12-22.
[20] Commerce Commission, *Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001 (or if not omitted, amended in some form)*, 16 December 2010, p 60, paragraphs 253-254.
[21] Telecommunications (Retail Services and Bundle of Retail Services) Order 2011, (2011/200), 30 May 2011, clause 3(1).
[22] Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (No 27), 30 June 2011, Schedule 3, pp 128-129.
[23] Commerce Commission, *Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001*, 16 September 2011, p3, paragraphs 15-16.
[24] Telecommunications Act 2001 (No. 103), 19 December 2001, Schedule 1, subpart 1 of Part 2, p 2158.
[25] Commerce Commission, *Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate*, 16 November 2005, p4, paragraph 17.
[26] Commerce Commission, *Schedule 3 Investigation into the extension of regulation of designated and specified services: Final Report*, 28 August 2006, p27, paragraph 80.
[27] Telecommunications Amendment Act 2006 (No 53), 30 October 2006, s 4, p2.
[28] Telecommunications Amendment Act (No 2) 2006 (No 83), 18 December 2006, s 30.
[29] Commerce Commission, *Reasons for Commerce Commission decision to investigate Resale Services*, 24 September 2009, pp 3-4, paragraphs 12-22.
[30] Commerce Commission, *Final Report on whether the Resale Services should be omitted from Schedule 1 of the Telecommunications Act 2001 (or if not omitted, amended in some form)*, 16 December 2010, p X, paragraphs xxi-xxiv.
[31] Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 (No 27), 30 June 2011, Schedule 3, pp 129-131.
[32] Commerce Commission, *Final Decision on whether to investigate omitting certain Designated and Specified Services from Schedule 1 under clause 1(3) of Schedule 3 of the Telecommunications Act 2001*, 16 September 2011, p3, paragraphs 15-16.
[33] Telecommunications Act 2001 (No. 103), 19 December 2001, Schedule 1, subpart 1 of Part 2, p 2159.
[34] Commerce Commission, *Review of Designated and Specified Services under the Telecommunications Act 2001: Decision to Investigate*, 16 November 2005, p4, paragraph 17.
[35] Commerce Commission, *Schedule 3 Investigation into the extension of regulation of designated and specified services: Final Report*, 28 August 2006, p23, paragraphs 61-62.
[36] Telecommunications Amendment Act 2006 (No 53), 30 October 2006, s 4, p2.
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