MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

CONVERGENCE

Regulating communications for the future

Review of the Telecommunications Act 2001

New Zealand Government

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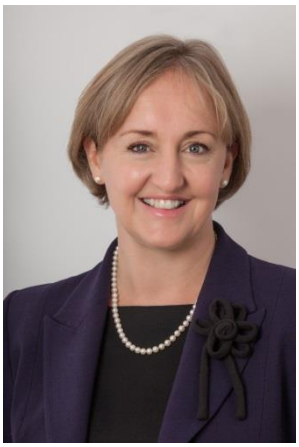
Table of contents

Appendices

Foreword



Since the Telecommunications Act was passed in 2001, we've seen rapid change in New Zealand's communications industry. Technology shifts and innovation are transforming the way we live, work and do business.

Convergence and the global reach of the internet are breaking down the barriers between traditional industries which is providing unprecedented opportunities for New Zealand to compete on the world stage.

New Zealanders' demand for data is increasing exponentially, prompted by rapid uptake in services like video streaming which is just the start of what the next generation of broadband can deliver. We're also increasingly reliant on mobile networks and expect reliable, always-on connectivity at home, at work and on the move.

Our regulatory system needs to be able to support the delivery of competition, choice, and better quality services at reasonable prices for consumers. However the existing law was designed at a time when we had a single, vertically integrated monopoly, dominating a market structured principally around copper-based voice services.

It's vital we have the right regulatory settings in place to support the future of communications in New Zealand. This discussion paper continues the Government's review of the Telecommunications Act 2001 and seeks views on a range of options for communications regulation post 2020.

In this dynamic environment, we need to make sure our regulatory systems can keep up with the pace of change. A predictable, proportionate and flexible regulatory framework for communications will enable competition, innovation, investment, and growth across the economy which ultimately is better for consumers. The more certainty communications sector investors have about the regulatory environment, the better placed they are to deliver more technology choices for consumers.

This paper looks at the sector from the ground up. It canvasses several approaches to getting the regulatory settings right for the communications sector – to adapt to a changing environment, and to promote investment and innovation.

Some key things the paper looks at are the breaking down of barriers between communications industries, an assessment of our regulatory systems, price setting for broadband and how we can support further growth for mobile services.

I strongly encourage relevant stakeholders, businesses and consumers to participate in this discussion. It's an important opportunity to contribute to the future of New Zealand's communications sector.

Hon Amy Adams
Minister for Communications

Executive summary

Digital communications technologies are impacting almost every aspect of our lives. We rely on them for business, government, education, health and in our communities. The communications sector is a critical enabler of economic growth in the twenty-first century.

This brings exciting opportunities for consumers and businesses. We see new local players getting access to a global market place. Meanwhile, kiwi consumers can access new international providers to receive content and services. These innovative services can bring huge benefits in terms of more choice and lower prices.

Our expectations are changing rapidly too. Data and applications are now mission-critical for businesses. Consumers expect reliable, always-on internet connections, and want to be able stream video and audio anywhere in the country – at home, at work, and on the move.

Government has a key role to play in ensuring New Zealand is ready for these developments and is poised to take advantage of the opportunities of technological change. This document forms part of a comprehensive cross-Government work programme examining the impact of convergence and technological change on our markets and public policy settings.

This Review looks at the underlying regulatory settings for communications markets. If done right, these settings will support economic growth for all New Zealanders by encouraging innovation, investment in high quality networks, and competitive and efficient services.

Where do we want to go?

The Government's long-term vision is for a vibrant communications environment that provides high quality and affordable services for all New Zealanders, and enables our economy to grow, innovate and compete in a dynamic global environment. In the future:

- high quality fixed and mobile broadband connectivity at competitive prices should be readily available to all New Zealanders, and to sectors critical for growth (for example, business, education, health and government);
- players in the communications environment should be able to innovate, invest and compete, without being tied down by out of date regulatory approaches;
- business and the broader economy should be able to take advantage of the opportunities provided by high speed connectivity to expand and compete in new markets; and
- key communications infrastructure and networks should be reliable, secure and resilient.

Good regulatory settings are critical to achieving this vision. Regulation should only be implemented where it is necessary, and the regulatory environment must be clear and predictable – supporting the evolution of this fast-moving sector.

Why do we need this review?

The pace and impact of change has major implications for the design of our regulatory frameworks. The New Zealand communications market itself has also undergone fundamental change since industry-specific regulation was introduced in 2001.

The 2011 amendments to the *Telecommunications Act 2001* (the Telecommunications Act or the Act) anticipated the need for Government to respond to these significant changes. The Act requires the Minister for Communications to conduct a review of the policy framework for regulating telecommunications services in New Zealand (the Review).

The Review addresses six main issues:

1. New Zealand's communications regulatory systems may need change to address the reality of a converged sector, and to regulate consistently across networks and content;
2. our regulatory systems may be unable to cope with the pace of change in technology and markets (for example, in addressing new issues like net neutrality);
3. jurisdictional issues are arising due to the global nature of the internet, resulting in potentially inconsistent treatment of the same services;
4. communications regulation was designed for a different era and may need to be adapted to reflect today's competitive environment;
5. uncertainty has been generated from the operation of the telecommunications regulatory regime, and needs to be minimised; and
6. we need to maintain and build on competition in mobile markets.

The Review is a critical step to ensure we have a regulatory regime to support growth and innovation in the future, not a regime dealing with yesterday's problems.

The evolution of the New Zealand communications sector

The telecommunications sector was once based around voice calls delivered using a fixed line network managed by a single national network operator. It is now part of a converged communications sector, which is open access, competitive, data-based, mobile and device-centric.

In recognition of these changes, in this document we use the term 'communications' to refer to the broad sector which includes telecommunications network and retail providers, broadcasters, and over-the-top application and content providers. 'Telecommunications' is used to specifically refer to networks and infrastructure that carry data and voice services.

After market liberalisation in 1989, New Zealand relied mainly on generic competition law (under the *Commerce Act 1986* (the Commerce Act)) to deal with competition problems in the communications sector.

From 2001, the Telecommunications Act established an increasingly comprehensive system of regulation for telecommunications networks. Later, the Ultra-Fast Broadband (UFB) tender process required successful bidders to be wholesale-only, which ultimately led to the structural separation of Telecom's fixed network and retail businesses. The Commerce Act remains the main economic regulatory backstop in the broadcasting sector.

Competition has increased

Regulation of the communications market has encouraged competition and delivered benefits to consumers. Over time, the retail share held by Telecom (now Spark) has diminished significantly – although competitors are still heavily reliant on Chorus' copper and fibre networks for fixed line access to customers. The entry of 2degrees has challenged the two established mobile operators, especially in the pre-paid sector.

Competition has also been enhanced significantly by new technologies that enable content and applications to be delivered online:

- consumers can choose new bundles of services at increasingly competitive prices, including voice, broadband, mobile and video content;
- over-the-top (OTT) players have become increasingly important to consumers, and services such as Skype, Google, Facebook, and Trade Me have become leading consumer brands;
- video streaming services such as Netflix, Lightbox, Quickflix and Neon have changed the way many consumers access content services, and are disrupting the content and audience share of broadcast television; and
- as services migrate online, there has been competitive disruption across a wide range of markets not traditionally connected with telecommunications, such as postal services, recorded music and print media.

Despite these changes, the telecommunications industry has only experienced a slight fall in total revenues. This has been mostly driven by a fall in traditional fixed line telephone revenues, while mobile and fixed line broadband revenues have increased.

While regulation has supported the growth of competition, the operation of the Telecommunications Act regime has generated uncertainty and potential inconsistencies.

The Government has increasingly intervened to secure investment in infrastructure through initiatives such as the fibre-to-the-node upgrade, which enabled higher speed VDSL services, and the UFB and Rural Broadband Initiative (RBI) programmes.

Figure 1 shows the evolution of the communications sector regulatory environment from market liberalisation in 1989 onwards.

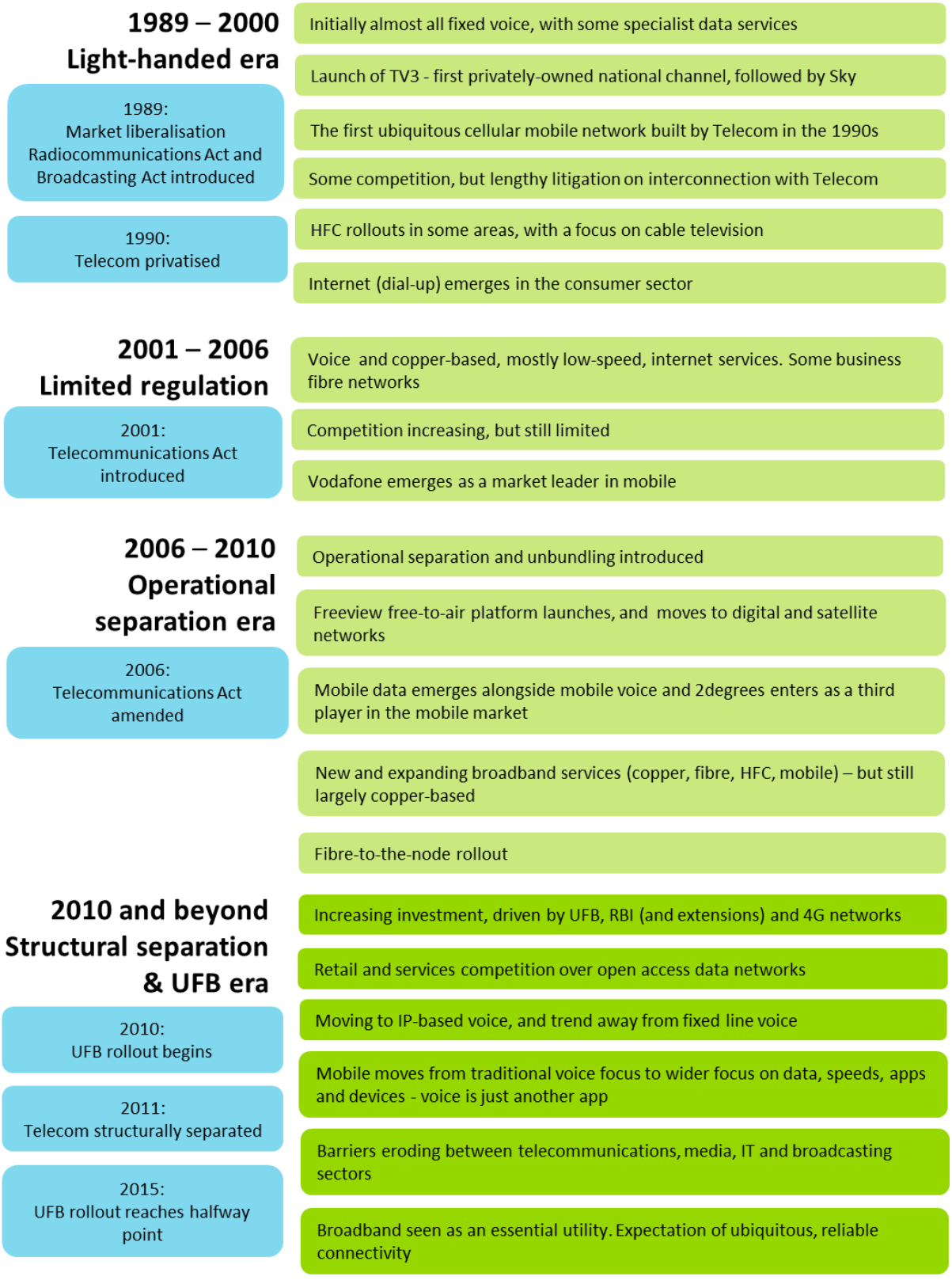


Figure 1: History of the communications sector regulatory environment in New Zealand

What are the current trends?

Convergence is reshaping our communications markets

Convergence is one of the most influential changes to the communications sector in the past decade. Convergence is the blurring of boundaries between once separate industries, due to the ability to provide a range of services over a single network, and the ability of different networks to carry similar kinds of service.

Figure 2 shows the changes resulting from convergence.

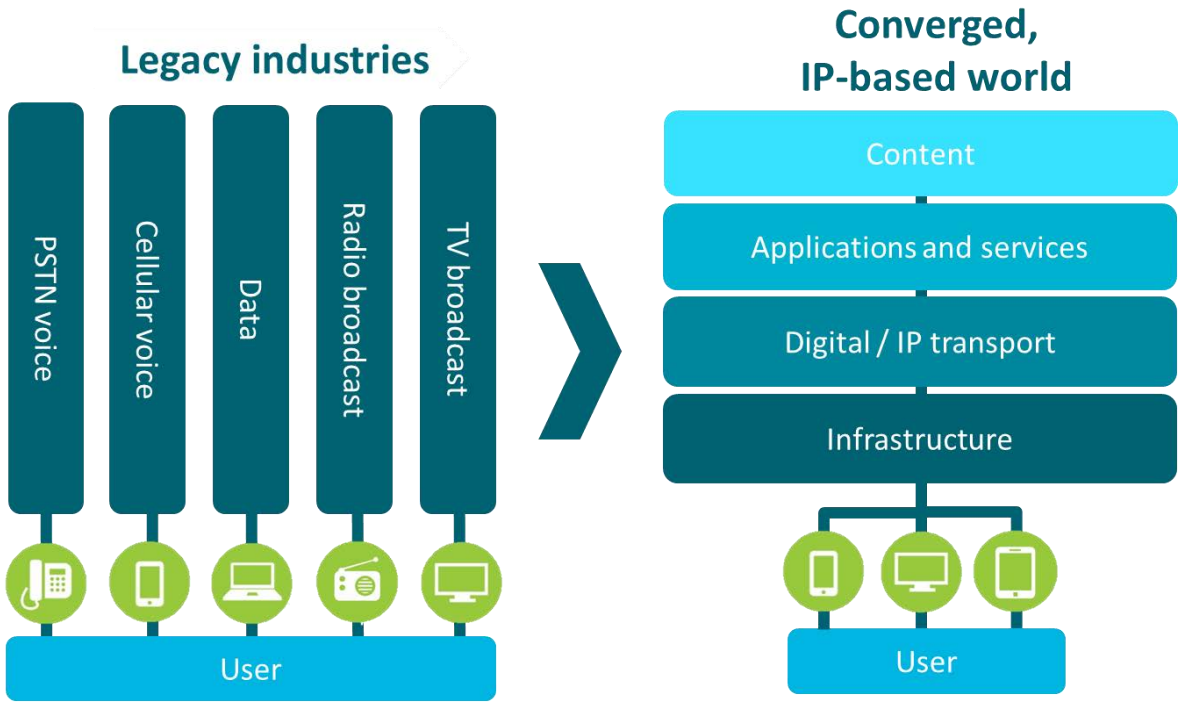


Figure 2: Changes resulting from convergence

Broadcasting, information technology and telecommunications are no longer separate. They are converging into a broad communications market where content and services are all provided over data-based networks. The edges are blurring, and much innovation can occur in these new spaces. We need to ensure our regulatory frameworks allow that innovation, while also providing for regulation where it is needed.

Patterns of use are changing

Mobility is central

The advent of smartphones, tablets, internet-enabled devices like e-readers and televisions has opened our eyes to the possibilities of communications networks.

Mobility and mobile data are becoming increasingly essential to the way New Zealanders communicate. New Zealand now has 118 mobile connections per 100 people. By 2019, more than 90 per cent of New Zealanders will have access to 4G networks, capable of theoretical maximum download speeds of up to 300 Mbps. We expect mobile data (speed, size of caps and cost) will become the principal driver of consumer choice in mobile services.

Adoption of mobile smart-devices has also meant that consumers want and expect to move seamlessly between networks: from a home WiFi connection over the UFB network, to mobile data on the go, and using free WiFi networks where available.

Power is shifting to 'over the top' players

Services are becoming data-based, and voice, which was once the backbone of our communications systems, is now just another application alongside many others, including real-time video calling.

Innovation and competition are increasingly happening at the device and application levels. As consumers, our relationships with global companies like Google and Apple are now central, with the core telecommunications networks in a supporting role.

Machine-to-machine communications, or the 'internet of things', will play an increasing role with smart devices and smart meters in homes, businesses and farms becoming increasingly prevalent. Vodafone estimates this will lead to 20 million connections on their New Zealand network by 2020.

Our use of data is increasing exponentially, to support this use of advanced applications, and driven by increasing broadband speed, quality, and availability. Cisco predicts that annual internet traffic will increase threefold between 2014 and 2019 to hit a record two zettabytes, and local telecommunications providers are already reporting a significant increase in data use over the first half of 2015. The average New Zealand household now uses about as much data in a year as the whole country used each month in the late 1990s.

The internet is eroding national boundaries

We now expect to be able to access content and services from around the world instantly and there are unprecedented opportunities for New Zealand businesses to expand beyond our borders.

Meanwhile, international players entering the New Zealand market online mean we need to consider how our regulation (for example, content classification and taxation) should apply to these businesses.

Investment in networks will support continued growth

While much of the innovation we are seeing in communications markets is centred on applications, content and over-the-top services, our communications networks are enabling this change. They will do the heavy lifting to supply the data and speed users now expect.

The Government has invested in the UFB and RBI programmes to build first class communications infrastructure around the country. Our three mobile networks have extensive coverage of the New Zealand population and are upgrading to high speed 4G technology.

These initiatives will lead to impressive infrastructure capability by 2020, but there will be ongoing demand to keep up with consumer expectations. This will require significant investment. In the mobile sector, there is likely to be pressure for a transition to 5G services around this time. There are also likely to be further opportunities for upgrading network capability in rural areas.

Our networks will need to be resilient. Services delivered over communications networks are increasingly mission-critical, and even life-supporting. It will remain important to provide incentives to invest, lessening reliance on government intervention to drive network upgrades.

Competition and markets are changing

The scope for anti-competitive behaviour in the telecommunications sector has diminished with the structural separation of Telecom and the arrival of wholesale-only Local Fibre Companies (LFCs). Despite recent market consolidation, retailers now face strong incentives to differentiate their services through affordable, innovative and quality service offerings – including bundling their products with voice, mobile, fixed, and content packages.

This has been achieved against a backdrop of regulation, and it is not clear that competition is sustainable without this support. While fixed network owners now have fewer incentives to discriminate, they may still be able to charge monopoly prices to the disadvantage of consumers. There are unlikely to be strong incentives to keep increasing the quality of their wholesale service offerings, without some regulatory stimulus (such as requiring unbundling), and rules will need to be retained to prevent them entering retail markets.

Need for a regulatory regime

Overall, the Government's view is that economic regulation to promote competition and look after the interests of end-users will still be needed in some communications markets, particularly given that fixed networks will still have natural monopoly characteristics.

While the use of mobile connectivity is increasing, relative to fixed services, we do not expect mobile networks to compete effectively with fixed networks in their core business of broadband access by 2020. Despite the increased capability of 4G technology, mobile data services are still likely to provide a less consistent service, and remain more expensive than equivalent fixed line services.

Competition between mobile networks has been successful, but remains vulnerable.

We consider that competition law is likely to remain sufficient as a backstop to manage any competition issues emerging at the content and application layers.

Our regulatory systems should continue to meet our policy objectives of promoting competition, innovation and investment for the benefit of end-users, but in a way that is suitable for the changing digital environment. It is important to provide the regulatory system with the maximum flexibility to respond to change, while allowing and incentivising deregulation if technological changes or new business models create new opportunities for competition that we have not anticipated. In a rapidly changing market, regulation also needs to be technology neutral, more timely, less complex and able to respond to market changes.

The operation of the regulatory framework has created uncertainty

Regulation of the communications sector has succeeded in supporting the growth of competition. However, there has been uncertainty in the operation of the Telecommunications Act. There have been major challenges in the implementation of wholesale regulated pricing for copper services and in providing clarity about how the framework deals with investment and innovation.

The setting of copper prices has been an ongoing source of debate, with a lengthy process involving benchmarking against international services, and then full cost modelling based on a hypothetical network, and further uncertainty as to whether these prices will be backdated. Considerable industry resources have been invested in lengthy regulatory pricing proceedings.

This uncertainty has a negative effect on incentives for investment and innovation, with flow-on effects for consumers.

Regulating communications for the future

The key question is – how do we keep our regulatory systems up to date with these fundamental changes in markets and technologies?

Why do we regulate?

Regulation is a means to an end. We aspire to an economy with open, competitive markets, but in some markets competition is limited. Competition keeps markets in check and protects consumers by ensuring that no individual business has the ability to dictate prices or terms. In a competitive market, if a business raises prices too high, provides poor quality products, or fails to innovate, then it will lose market share.

In some types of markets, there is a high risk of one business gaining market power that allows it to give less and charge more. This is particularly true for markets with 'natural monopoly' characteristics such as telecommunications networks, electricity networks and water. These markets have very high barriers to entry – they require significant sunk investments, meaning that the first businesses to enter these markets may gain a first mover advantage, and there are significant economies of scale. Even where a small number of firms have entered the market, competition may still be limited. Competitors may initially rely on wholesale access to the incumbent's network to supply services to consumers.

Where a market has these features, and where general competition law (under the Commerce Act) is insufficient to promote the long-term benefit of end-users, and the benefits of regulation materially exceed the costs, regulation can be introduced.

In these situations, economic regulation places legal constraints on certain types of behaviour – for example, by limiting the ability of a business to charge monopoly prices, or restricting its ability to deter competition in downstream markets (such as retail services). The effect of well-designed regulation should be to emulate (as closely as possible) the outcomes of a competitive market.

The Review addresses six main areas in which the environment is evolving in ways that challenge our current regulatory systems. These six areas are examined in turn below.

Risk of 'siloed' regulation as convergence accelerates

Broadcasting, media, information technology and telecommunications markets are rapidly merging into a broad communications market.

However, our regulatory systems for communications are based on a historic split between traditional service labels.

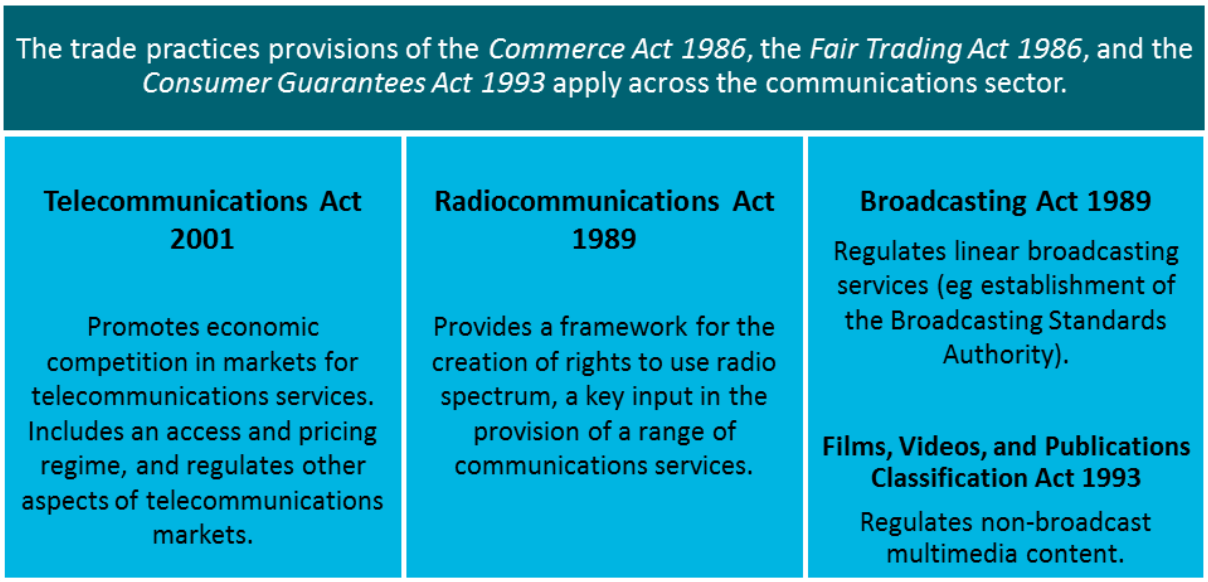


Figure 3: Regulatory systems for communications in New Zealand

To respond to convergence, and take advantage of the opportunities it brings, the Government is undertaking a cross-cutting programme of work across the communications sector and other sectors impacted by digital disruption. As a part of that wider work programme, the Review provides an opportunity to reassess the scope and language of communications regulation. Our regulatory system should 'treat likes alike' across the converged communications sector, and be flexible and durable enough to cope with future change.

Under the current system, there are some gaps and inconsistencies in the treatment of communications services. For example:

- over time the importance of competition and social policy considerations relating to the allocation of radio spectrum has increased. Neither the Radiocommunications Act nor the Telecommunications Act specifically deals with this. Instead, these matters have been dealt with through sale terms such as spectrum caps, and competition consideration by the Commerce Commission (the Commission), generating uncertainty;
- broadcasting networks are specifically excluded from sector-specific economic regulation under the Telecommunications Act – an increasingly arbitrary distinction, given the convergence of broadcasting and telecommunications infrastructure; and

- for forms of regulation such as content classification requirements, providers of similar content or services over different platforms face uncertainty about their regulatory obligations. The Government is addressing this issue in detail through our 'Content Regulation in a Converged World' review.

In this paper, we consider options for the Government to manage regulation in a more consistent way across the converged sectors. We are seeking views on a proposal to create a more cohesive 'Communications Act' for economic regulation of the sector by:

- amending the exception for broadcasting that is currently in the Telecommunications Act[1]; and
- incorporating new tools for strengthening competition and social policy considerations in the allocation of radio spectrum.

Whether our regulatory regime can keep up with the pace of change

Disruptive change is solving some regulatory problems but causing others to emerge – raising questions about whether the regime can keep up with the pace of change.

On one hand, technology and market changes have made progress in resolving long-standing competition problems. For example:

- increasing competition for the provision of voice telephony services was a traditional objective for telecommunications regulation. Competition has really flourished since technology advanced to the point where high quality voice services can be provided by VOIP; and
- a rapid increase in competition in the distribution of online video content has addressed many previous concerns around content being held by the incumbent pay television broadcaster in New Zealand. Technology has advanced to the point where high quality video content can be delivered over broadband networks.

On the flipside, some new developments in the market are challenging the capabilities of our regulatory systems. For example, globally, there are discussions around regulating for 'net neutrality' to clarify the extent to which internet providers can prioritise, de-prioritise or charge for video traffic being delivered over their networks. This issue is likely to become more pressing in New Zealand as video streaming services gain popularity. Through the Review, we are seeking views on net neutrality and traffic management in New Zealand.

[1] We propose amending the exclusion of broadcasting services by re-wording the exception so that (a) broadcasting transmission networks and infrastructure will come within the scope of the Telecommunications Act, but (b) any content transmitted over those or any other telecommunications network will remain excluded from the scope of the Telecommunications Act.

The possible retirement of the copper network in UFB areas is another example of a change that could be held back or distorted by our regulatory systems. Chorus is currently required to provide regulated copper services on request to access seekers. The Government's view is that regulatory requirements should support the delivery of quality, affordable services to the end-user, without compelling Chorus to be inappropriately bound to a certain technology.

We are interested in your views on how to achieve this balance through more technology neutral network regulation, and how best to ensure a smooth transition if Chorus sought to decommission its copper network.

Jurisdictional issues as the internet breaks down geographic borders

As the internet breaks down distinctions between borders, New Zealanders can access services and content from all over the world. While there are plenty of benefits for consumers, this trend raises questions about how we define participants in the New Zealand communications sector. That definition is important for the consistent application of regulation.

For example, concerns have been raised about whether internationally-domiciled companies providing services in New Zealand are (or should be) bound by local requirements around tax, content classification and industry levies.

The Government is considering these issues as part of our wider convergence and digital disruption programme of work, including through our 'Content Regulation in a Converged World' discussion document and review of GST and cross-border services.

Telecommunications regulation was designed for a different era

The Telecommunications Act was designed in 2001 for a different era – a time of vertical integration, with Telecom owning the fixed line network and also competing in retail markets, and before the rollout of the UFB network. It was introduced with a focus on competition problems in the sector at that time, such as interconnection of competing networks with Telecom, discrimination in favour of Telecom's retail services, and low levels of competition and investment.

Many of these problems have been resolved: the structural separation of Telecom has addressed discrimination issues in the fixed line part of the sector; the regulation of voice interconnection has been successful and has not been re-litigated; investment is occurring at high levels, albeit strongly supported by the Government's UFB and RBI programmes; and retail competition is strong. By continuing to rely on the current regulatory framework, we risk regulating for yesterday's problems.

Today we face very different issues.

In a copper world, New Zealand's regulatory regime was designed to promote the 'ladder of investment' concept – allowing Telecom's competitors to progressively 'climb the ladder' from retailing to making investments deeper into the network. In a UFB world, the Government expects that entry into fixed markets will now most likely take place at the retail level or through over-the-top services. Now, the tiered regulation that is characteristic of the 'ladder of investment' approach might be less relevant.

However, some of the tools deployed in a 'ladder of investment' context are still important. For example, the current unbundling requirements for copper and the unbundling requirement for UFB services post-2020 will likely have an important role in promoting innovation.

We are seeking views on whether the main purpose statement for the Telecommunications Act should be updated to recognise that opportunities to promote meaningful competition in some markets (like fixed line infrastructure) are limited. For example, the purpose statement could be amended to promote competition or 'outcomes consistent with outcomes in competitive markets'. We are also considering the case for amending the Act's purpose statement to explicitly promote growth, innovation, and efficient investment in communications markets for the long-term benefit of end-users.

Uncertainty in the regulatory regime

In an era of rapid change, where we rely on communications networks in every aspect of our lives, predictability in the regulatory regime is a key focus for Government. Regulatory predictability supports the delivery of competitive outcomes for end-users, and continuing network investment. However, the operation of copper pricing processes has proven to be uncertain and protracted.

Wholesale pricing for UFB and copper services will play an important part in the efficient functioning of broadband markets post-2020. Prices should enable consumers to make the transition where UFB services are available, facilitate robust competition, while getting the incentives right to support continued investment in rural areas which do not have access to UFB. We seek your views on how the wholesale pricing framework should be structured as we move into a UFB era.

An alternative form of economic regulation: utility-style regulation

The Telecommunications Act currently sets out a framework whereby the Commerce Commission can require a regulated access provider to allow other parties to access its networks and services, including doing so at wholesale prices determined by the Commission. Wholesale prices for fixed line services are typically set using TSLRIC – a pricing methodology where individual service prices are calculated on a replacement-costs basis, reflecting the theoretical costs that would be incurred by a hypothetical efficient operator building a new network.

Following the structural separation of Telecom, wholesale-only fixed line providers increasingly resemble businesses that are subject to 'utility-style' regulation (in particular electricity lines businesses). Getting wholesale prices 'right' is now more important than ever because, unlike when the Act was first drafted, structural separation means regulated entities now have very few other opportunities to generate revenue. In this environment, there may be a case for more consistency with the regulatory treatment of traditional utilities in New Zealand, such as electricity and gas networks.

A ‘utility-style’ regulatory approach is loosely characterised by setting a maximum allowable revenue for the regulated utility (which may include price caps), which should enable the regulated entity to more closely recover their actual costs and expenditure rather than theoretical costs. A utility-style framework for fixed line communications networks could be implemented under Part 4 of the Commerce Act (which regulates sectors including gas pipelines and electricity lines) or within a separate regulatory framework (such as the Telecommunications Act).

As well as being suited for the structurally separated fixed line communications sector, a utility-style approach has the benefits of being more widely understood by investors and supporting investment in high quality infrastructure. It could also provide greater stability and predictability through the ‘building block model’ (BBM) pricing methodology, which is discussed below.

This paper seeks your views on whether a utility-style model, such as under Part 4, is suitable for the fixed line communications sector.

Uncertainty relating to future treatment of UFB pricing

The wholesale prices for UFB services are capped until December 2019. Under the status quo, UFB suppliers will be able to price their wholesale services on a commercial basis beyond this date, until such time as the Commission decides there is a case to introduce pricing regulation.

It is likely that, under the status quo, UFB services will eventually become price-regulated: UFB has enduring natural monopoly characteristics, suppliers will face limited competition, and UFB will increasingly be the only fixed-access technology capable of meeting the bandwidth requirements of end-users. However, experience has shown the current regulatory process for moving to price regulation can take many years and is likely to inject considerable uncertainty into the market. In the UFB context, the Government believes such a long process could have adverse consequences for network owners, RSPs and consumers:

- uncertainty as to the regulatory settings that would eventually apply to UFB services will likely result in UFB suppliers delaying post-2020 investments and new UFB connections until such time as they can be satisfied they will receive a reasonable rate of return on their future investments; and

- a delay in implementing price regulation, if and when it is needed post-2020, could potentially subject consumers and RSPs to price shocks following the expiry of current UFB price caps.

We consider there is a case for taking steps now to provide regulatory certainty about how UFB services will be treated in the future, including by specifying the pricing methodology.

There is a strong case for implementing the ‘building block methodology’ (BBM – used in utility-style regulation and for telecommunications in Australia), rather than the TSLRIC methodology (which is used for copper services in New Zealand), for future regulation of UFB. We consider that BBM would generate more predictable long-term outcomes and would improve investment and innovation incentives for both access providers and seekers. The use of a BBM could reduce uncertainty.

This BBM pricing methodology could either be deemed into regulation post-2020 for UFB services (with the Commission applying the methodology to determine price caps from 1 January 2020), or remain as a regulatory backstop that could be triggered at a later date if the Commission recommends regulation.

Uncertainty caused by the copper pricing process

Through this Review, there is an opportunity to consider reforms to the copper pricing processes which have generated uncertainty in the sector.

The Government's preliminary view is that much of the recent regulatory uncertainty was a result of the benchmarking processes and the fact that the industry is working through full TSLRIC modelling for copper services for the first time. However, as discussed later, the TSLRIC price-setting process is inherently complex and contentious and is likely to lead to ongoing challenges. The rationale of using TSLRIC in order to provide the market with efficient build/buy signals will also be much less relevant following the completion of the UFB build. It may not provide the stability and certainty needed to support ongoing investment and innovation in the sector.

If UFB services are priced on a BBM basis, there may be a case for moving to BBM for copper as well. However, we recognise the need for a pragmatic and considered approach to any transition, to avoid a repeat of the lengthy processes seen in setting copper prices in the last few years. For clarity, we note that we are not proposing any immediate changes to the pricing process – any change would be implemented post-2020.

The Government has not yet reached decisions on these pricing matters for UFB and copper services, and welcomes your views.

Other ways to reduce uncertainty

We set out several other proposals in this paper to reduce uncertainty.

In wholesale pricing processes, the use of benchmarking to set initial prices can be inefficient, and we do not consider it should be necessary for the Commission to use a two-stage pricing process for all types of services. We also propose a simpler and timely intervention test in some circumstances, to replace the current lengthy Schedule 3 process for introducing regulation under the Telecommunications Act.

Other options which could make the regime more durable and predictable include: clarification or weighting of the purpose statement in section 18; improvements to the mechanisms for review and deregulation; introduction of 'special access undertakings'; and providing greater accountability for Commission decisions. We are seeking views on these matters.

Potential gains in mobile markets

In mobile markets, our goal is to see competition and investment drive increased coverage across New Zealand, including in rural areas, and the delivery of affordable, high-quality, and innovative service offerings.

Wholesale regulation of mobile markets has worked well over the past decade to help lower barriers to entry and increase competition – particularly infrastructure competition. Despite being a late entrant to the market, 2degrees now covers 88 per cent of New Zealanders through its own infrastructure.

However, competition gains in mobile markets appear vulnerable. A breakdown in roaming agreements or an inability for all three mobile networks to extend future technology rollouts, like 5G, beyond urban areas could significantly impact the market.

The absence of price regulation for co-location and national roaming may create incentives for inefficient infrastructure duplication, if commercial co-location and roaming prices are too expensive. Through this document, we want to test views on whether different models for sharing infrastructure could support competition and coverage objectives.

Another challenge for the mobile market is the management of competition and social policy considerations for spectrum allocation. There is significant uncertainty around the allocation process, as it is subject to competition considerations under the Commerce Act, and pro-competitive terms are managed through deeds and contracts. These issues were raised as part of the review of the Radiocommunications Act. Here we continue that conversation and consider some options for reform.

What happens next?

The Government will use the feedback received on this document to inform policy consideration and finalise views on the key issues. The Review is part of the Government's programme of work on the impact of convergence and digital disruption on our regulatory systems, and we will continue to work across government to take a consistent high-level approach.

Following policy consideration, we plan to undertake targeted consultation on more detailed implementation issues in early 2016. If required, legislative change would follow.

Submissions

You are invited to make a written submission on the issues raised in this discussion document. The closing date for submissions is **5pm, Tuesday 27 October 2015**.

Specific questions are listed at the end of relevant sections, and the full set of questions is listed at the end of this document. We welcome comment on some or all of the questions, as well as broader comment on the issues raised.

1. Goals for this Review

1.1. Why do we need this Review?

Broadband and the communications sector are key enablers of economic growth in the twenty-first century. Digital communications technologies are impacting almost every aspect of our lives. Having regulatory settings for communications markets which encourage innovation, investment in high quality networks, and a competitive and efficient retail and services sector will support economic growth for all New Zealanders.

New ways of doing business, with a shift to over-the-top (OTT) services and the convergence of telecommunications, broadcasting, information technology and media sectors, are challenging traditional business models. The structural separation of Telecom and the rollout of new infrastructure, including Ultra-Fast Broadband (UFB), are supporting competition and innovation. By 2020, very high speed internet connectivity will be available to most New Zealanders.

The pace and impact of change in markets and technology has major implications for the design of our regulatory frameworks. The 2011 amendments to the *Telecommunications Act 2001* (the Telecommunications Act or the Act) anticipated the need for the Government to respond to the significant changes in the communications sector. Section 157AA of the Act requires the Minister for Communications to conduct a review of the policy framework for regulating telecommunications services in New Zealand (the Review).This document forms part of the Review.

In 2013, the Government released and invited submissions on a discussion document *Review of the Telecommunications Act 2001*. The initial stage considered then current issues with wholesale price setting. It also signalled that future stages would consider the regulatory framework beyond 2020, when the roll out of the UFB network would be near completion.

In this document, we start with the Government's long-term vision for communications, and principles for the Review. We then look at developments in relevant markets and technologies. We assess the extent to which the current regulatory framework for communications is suitable for a post-2020 world, and whether it will support our long-term vision for communications markets.

From there, the document considers alternative options for regulation. We consider economic regulation for fixed line services; competition issues in mobile; and a number of potential reforms to other aspects of the Act.

We are seeking your views on the challenges with the current regulatory regime, and options for change.

Following policy consideration, if changes are needed, we plan to undertake targeted consultation on the more complex implementation issues. If required, legislative change will follow.

1.2. The Government's long-term vision for communications markets

The Government's long-term vision is for a vibrant communications environment that provides high quality and affordable services for all New Zealanders, and enables our economy to grow, innovate and compete in a dynamic global environment.

In the future communications environment:

- high quality fixed and mobile broadband connectivity at competitive prices should be readily available to all New Zealanders, and to sectors critical for growth (for example, business, education, health and government);
- players in the communications environment should be able to innovate, invest and compete, without being tied down by out of date regulatory approaches;
- business and the broader economy should be able to take advantage of the opportunities provided by high speed connectivity to expand and compete in new markets; and
- key communications infrastructure and networks should be reliable, secure and resilient.

Our regulatory settings need to support this vision, by promoting and supporting competition, innovation and investment in communications networks for the long-term benefit of end-users.

1.3. Regulatory principles

The following principles should govern the regulatory regime for communications.[2]

1. Clear necessity

Regulation should only be imposed where it is clearly justified. Deregulation should be considered where sufficient competition exists.

2. Predictability

The regulatory regime should be predictable and should not send conflicting signals. Predictability and stability is a necessary precursor to innovation, investment and market-entry.

3. Proportionality

The burden of regulatory rules and their enforcement should be proportionate to the expected benefits and potential harm.

[2] The principles are consistent with the requirements of section 157AA of the Telecommunications Act and the Treasury's Best Practice Regulation Model, and take into account views emerging from stakeholder engagement to date.

4. Transparency and accountability

The development and enforcement of regulatory rules should be transparent. In essence, this means that the regulator must be able to be held accountable for its decisions and be subject to public scrutiny.

5. Flexibility, including technology neutrality

A regulatory regime is flexible if the underlying regulatory approach is principles- or performance-based, policies and procedures are in place to ensure that it is administered flexibly, with non-regulatory measures (including self-regulation) being used wherever possible.

Industry participants should have the ability to adopt least-cost and innovative approaches to meeting their regulatory obligations.

Where possible, policies and regulation should be platform and technology neutral to support digital innovation and respond to technological change. This will ensure the durability of the regulatory regime.

1.4. Legislative requirements and scope for the Review

The Review is required to consider the policy framework for regulating telecommunications services in New Zealand against certain statutory requirements set out in section 157AA of the Telecommunications Act.

In conducting this Review, and in order to meet these requirements, we have taken a broader view than just assessing the Act, to look at communications markets and regulation as a whole. This broad view is necessary to break down silos between industries and pieces of legislation and assess whether our regulation will support competition, innovation and investment beyond 2020.

Section 157AA of the Act sets out the statutory requirements for this the Review. The Review must:

(a) consider whether the existing regulatory framework under the Telecommunications Act 2001 is the most effective means to—

(i) promote competition for the long-term benefit of end-users; and

(ii) promote the legitimate commercial interests of access providers and access seekers; and

(iii) encourage efficient investment for the long-term benefit of end-users, by—

(A) providing investors with an expectation of a reasonable return on their investment; and

(B) providing sufficient regulatory stability, transparency, and certainty to enable businesses to make long-term investments; and

(iv) support innovation in telecommunications markets, or deregulation where sufficient competition exists; and

(v) assess whether alternative regulatory frameworks, including (without limitation) generic price control, would be a preferable and more effective means of achieving these outcomes.

Each key decision point and preliminary view reached in this document has been considered in the context of section 157AA.

The Act also sets out requirements around consultation and other issues the Minister must take into account. The text of section 157AA, listing these requirements, is at **Appendix A**.

Questions

1. Do you have any comments on the Government's:

a. long-term vision for communications markets; and

b. regulatory principles?

2. Market analysis

This chapter examines current and future trends in communications markets in New Zealand. After considering the market now and post-2020, we come to the conclusion that while competition is evolving rapidly in the content, application and retail markets, there is still a need for regulation of some communications infrastructure.

The New Zealand communications market has experienced significant disruption and transformation over the past decade. Change has impacted how communications and content are created, delivered, and received, and it has reshaped our underlying competitive environment. We can expect continued disruption in the communications sector for years to come.

Communications markets

There are three main segments of the communications market that we look at in this chapter:

- *fixed line infrastructure*: these are the markets in which Chorus, the LFCs, Vodafone's Hybrid Fibre-Coaxial (HFC) network and other fixed line network providers operate;
- *fixed line retail*: these are the markets in which Retail Service Providers (RSPs) like Spark, Vodafone and CallPlus provide fixed line voice and broadband access services;
- *mobile*: these are the markets in which Spark, Vodafone and 2degrees provide mobile voice and data services.

OTT services increasingly compete in these and many other markets, going well beyond the provision of communications services.

2.1. Evolution of the communications sector

Over time, the New Zealand communications sector has evolved from an era when the incumbent network operator focused almost entirely on fixed voice services with very little competition, to a converged, open access, competitive, data-based world.

Since market liberalisation in 1989, government policy has focused on promoting market entry to increase competition across telecommunications markets. The national incumbent fixed line operator, Telecom, was first corporatised and then privatised in 1990. There was no sector-specific regulation – the sector was governed by general competition law under the Commerce Act. The main issue at that time was introducing competition to the market for voice calling.

In 1993, soon after Telecom launched its mobile network, BellSouth entered the market as a second mobile operator. BellSouth was bought by Vodafone in 1998 and its network was rapidly expanded in the ensuing years.

In the meantime, competition was evolving in the broadcasting sector. Competition began in free-to-air television with the entry of TV3 in 1989. New Zealand had a brief foray into cable television competition in the 1990s, with Telecom's short-lived 'First Media' trial and the Kiwi Cable HFC network, which was rolled out in parts of Wellington, Kapiti and Christchurch and continues to operate[3]. Sky Television launched New Zealand's first pay television service in 1990, moving over time to primarily transmit its service over satellite. Local broadcasting services have converted to digital transmission and are now delivering increasing amounts of content over broadband.

In 2000, in response to growing dissatisfaction with availability and pricing, a Ministerial review of telecommunications (the 'Fletcher Inquiry') recommended sector-specific regulation. The Telecommunications Act 2001 introduced a regime for third parties to access Telecom's network to sell their own services.

In 2006, the Government introduced a package of regulatory interventions, including the operational separation of Telecom and the introduction of local loop unbundling. Telecom committed to a fibre-to-the-node rollout, which would significantly increase the broadband speeds available to most New Zealanders on the copper network.

In mobile markets Vodafone continued to challenge Telecom by delivering new services including SMS and mobile broadband. 2degrees entered the market in 2009 and drove price competition, particularly in the pre-paid market segment.

In 2011, Telecom was structurally separated into Telecom (retail, now Spark) and Chorus (wholesale), a world-first. The rollout of UFB began in 2010 and is making fibre-to-the premises services widely available.

[3] This HFC network was eventually acquired by Vodafone in its takeover of TelstraClear.

Figure 4 shows the evolution of the communications sector regulatory environment from market liberalisation in 1989 onwards.

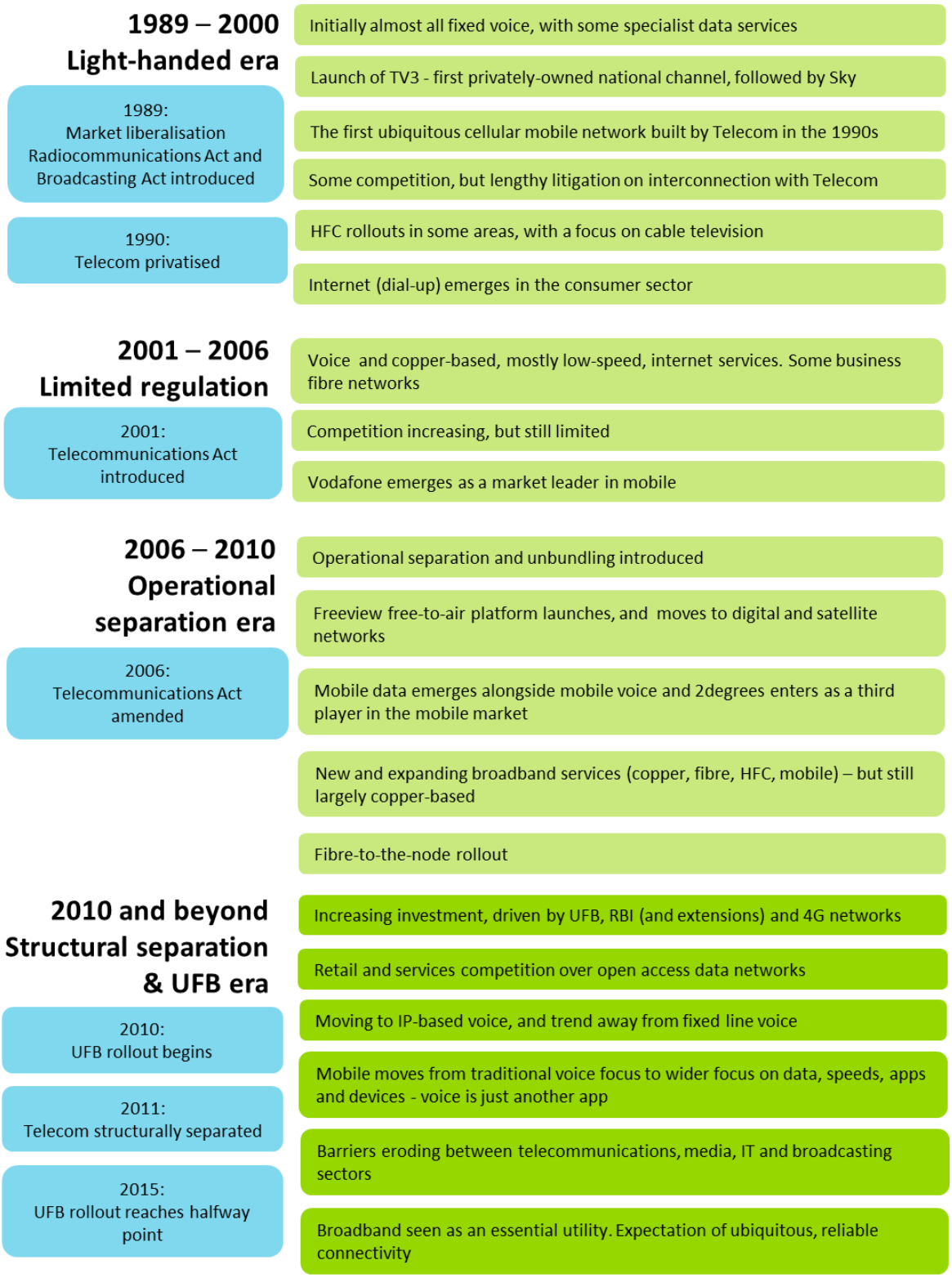


Figure 4: History of the communications sector regulatory environment in New Zealand

2.2. The current state of play

As we approach 2020, New Zealand's communications markets continue to evolve – with broadband speeds and data use increasing, markets converging, and increased innovation over data networks and OTT services. A snapshot of the current state of play is below.

2.2.1. Consumer behaviour is changing

New Zealand consumers are increasingly becoming reliant on communications networks and services. Mobility is central. We expect to move seamlessly between fixed and mobile networks at home, at work, or on the move. We expect high quality, too. Consumers want their voice and video calls, delivery of content, and online transactions to be seamless with no degradation of quality as they move between networks.

Innovation and competition are increasingly happening at the device and application levels.

Internet capable mobile devices are becoming cheaper, more prevalent, and more powerful. Innovations in consumer electronics, along with widespread access to high speed networks, will continue to drive demand for digital content.

Video streaming services have altered the way many consumers access broadcasting services. As well as supporting higher picture quality, televisions are becoming increasingly 'smart', allowing easy access to online content. Electronics retailer Noel Leeming has said sales of streaming devices (like Chromecast) were up by 150 per cent in the March 2015 quarter, compared to the same quarter last year.[4]

Reflecting this demand for content, we are seeing an explosion in data use. The appetite for data has increased significantly just in the first half of 2015:

- in March 2015, Chorus reported its network traffic had increased 40 per cent in just four months;[5] and
- according to Spark, average monthly data use per household had grown reasonably steadily at 50 per cent per annum for the past two years. From February to April 2015, it has accelerated to grow 29 percent in just three months – from 42.5GB to 55GB.[6]

Spark says that the average New Zealand house now uses about as much data in a year as the whole country used each month in the late 1990s.[7]

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[4] *Streaming goes mainstream*, NZHerald.co.nz. 13 May 2015. http://www.nzherald.co.nz/noel-leeming/news/article.cfm?c_id=1503808&objectid=11422222.

[5] *Chorus Quarterly Broadband Market Update March 2015*. https://www.chorus.co.nz/the-nz-market/quarterly-broadband-market-update-q1-2015.

[6] *SVOD sees internet usage surge,* NZHerald.co.nz. 12 May 2015. http://m.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11447302.

To satisfy this need for data, New Zealand consumers are moving to high or unlimited data plans as indicated by *Figure 5*.

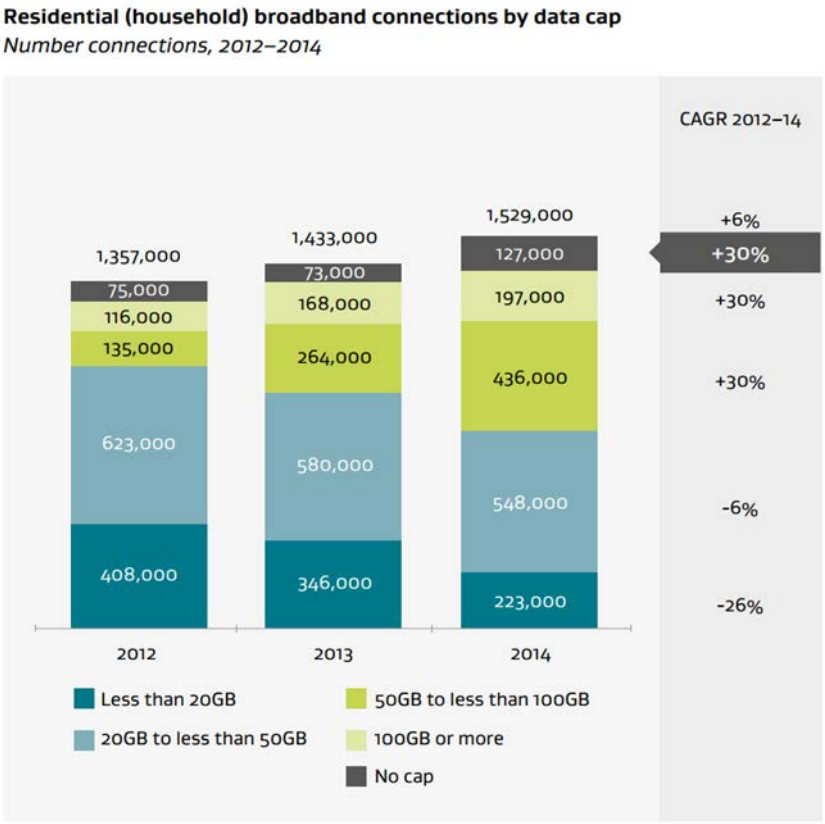

Figure 5: from Ministry of Business, Innovation & Employment, New Zealand Sectors Report Series, Information and Communications Technology, 2015.

Data use is expected to only increase, with the ongoing demand for content and increasing broadband speed, quality and availability.

Competition in the communications market has improved significantly as new technologies have enabled the provision of content and applications online. Services are becoming data-based while voice, which was once the backbone of our communications systems, is now just another application alongside many others including real-time video calling. Consumers have a choice of new bundles of voice, broadband, mobile and content services at increasingly competitive prices.

Geographic barriers are becoming less relevant. We now expect to be able to access content and services from around the world instantly. As consumers, our relationships with global companies like Google and Apple are now central, with the core telecommunications networks in a supporting role.

[7] Spark media release. 12 May 2015. http://www.sparknz.co.nz/news/video-streaming-revolution/.

As services migrate online, there has also been competitive disruption across a wide range of markets not traditionally connected with telecommunications, such as postal services, recorded music and print media.

2.2.2. Convergence

Convergence is the blurring of the boundaries between the broadcasting, telecommunications and information technology sectors, due to the ability to provide a range of services over a single network, and the ability of different networks to carry similar kinds of services. Instead of relying on traditional 'vertical' labels for legacy industries – like broadcasting and telecommunications – we need to look consistently across 'horizontal' layers – networks, data transport, and then the applications and content that run over those networks.

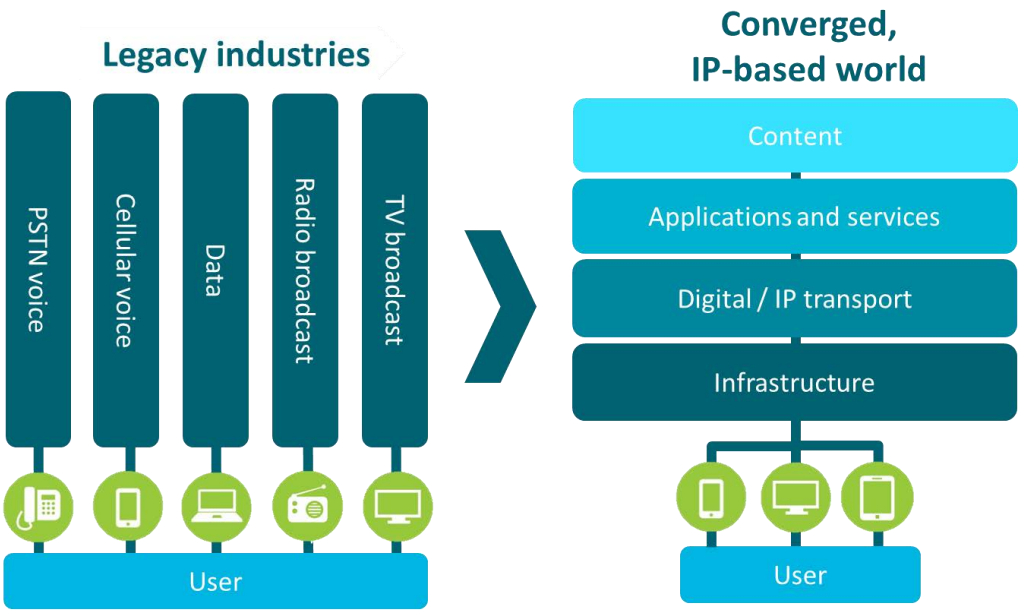

Figure 6: Changes resulting from convergence

Convergence between telecommunications and broadcasting sectors in New Zealand has mostly been in one direction, with telecommunications providers entering content markets by partnering with existing broadcasters (for example, Vodafone and Sky TV, Spark and Coliseum Sports Media), or by investing in new libraries of content rights (for example, Spark's Lightbox subsidiary). However, it is possible that traditional broadcasters will start to enter telecommunications markets, offering broadband services which support their own content offerings.[8]

[8] For instance, Sky TV has announced it will offer discounted broadband services from Vodafone in a bundle with its pay television service. In overseas markets, there has been a more significant move in this direction, with broadcasters / content providers themselves moving into the broadband market (Sky in the UK and Foxtel in Australia). Tangentially, we note electronics retailer Noel Leeming has begun bundling broadband services with goods such as High Definition (HD) and Ultra-High Definition (UHD) televisions.

Broadcasting and content markets

The traditional New Zealand markets for broadcast media content remain very popular; however the status quo is facing disruption.

According to research by NZ on Air in 2014[9], traditional linear television and radio broadcasting continues to be New Zealanders' most frequently accessed form of media, consistently capturing the biggest audiences. However, in recent years, improvements in the availability, reliability and cost of broadband have enabled the delivery and consumption of broadcast-quality content online. This has prompted a steady increase in new digital content delivery services with impressive growth in recent months. The Nielsen NZ Media Trends Report 2015 identifies that traditional television screen watching is starting to decline as watching on 'other devices' (for example, tablets and phones) is growing.[10]

We have recently seen a significant increase in the number of local video streaming offerings from both domestic and overseas content providers. Since August 2014, Netflix, Spark's Lightbox, Sky TV's NEON, and Freeview Plus have launched, joining a market already served by streaming operators like Quickflix and Coliseum Sports Media, as well as the on-demand services of TVNZ, Mediaworks and SKYGO. In response, traditional broadcasters face incentives to offer more and better online services as they compete with these new entrants for audiences, content, advertising revenue, and subscription fees. Vodafone has said that video streaming now makes up 60 per cent of its home broadband traffic.[11]

With the continuing trend towards delivering high-quality video content over broadband networks, traditional broadcasting platforms may eventually be supplanted – though it is difficult to predict with any certainty how quickly this may happen.

The Government's 'Content Regulation in a Converged World' review[12] examines the effects of convergence in the media sector on the regulation of content in New Zealand. That review is intended to be a 'health check' on our existing frameworks for the regulation of content, to ensure they reflect the current media landscape and remain fit for purpose.

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[9] *Where are the audiences? Benchmark survey of New Zealanders' media consumption.* NZ on Air, April 2014. http://www.nzonair.govt.nz/research/all-research/where-are-the-audiences/.

[10] Nielsen NZ Media Trends Report 2015, at http://www.shopnielsen.com/reports/nielsen-nz-media-trends-report-2015.

[11] *Rise in video streaming creates surge in home broadband traffic*. NZHerald.co.nz, 13 May 2015. http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11447564.

[12] See www.mch.govt.nz/contentregulation.

2.2.3. Level of competition

The Commerce Commission has indicated that as at 30 June 2014, Spark had a 49 per cent share of connections in the fixed line retail broadband market. The market share of Telecom (now Spark) has significantly decreased over the years as competition has increased. Vodafone is the clear second player in fixed line at 32 per cent, and the CallPlus Group (now M2 Group), under its various brands of Slingshot, CallPlus, Flip and recently merged Orcon, was the next largest player at 13 per cent.[13]

In the mobile market, Vodafone had approximately 41 per cent of the mobile market share based on reported connection numbers, followed by Spark at 35 per cent and 2degrees at 24 per cent at the end of June 2014. 2degrees' share of mobile revenues is lower than its share of connections, as a result of its smaller share of higher-value customers.[14] Both Vodafone and Telecom's (now Spark) mobile market share has decreased since 2009, whereas 2degrees' has increased significantly. In 2009, Vodafone's mobile market share was 49.6 per cent, Telecom was 46.6 per cent and 2degrees was 3.8 per cent.[15]

While there has been some consolidation between players, downward pricing trends discussed below suggest that the retail market is competitive. Some of the consolidation now taking place may strengthen challengers to Spark and Vodafone and improve competition – for example, 2degrees is now offering fixed line services following its acquisition of Snap.

2.2.4. Availability, uptake, pricing, and speeds

Availability

New Zealand consumers have access to increasingly high quality fixed and mobile broadband services.

Chorus' copper network is nearly ubiquitous throughout New Zealand, although there remain some areas without fixed line access, particularly in the most rural areas.

Vodafone operates an HFC network in parts of Christchurch and Wellington. There is also a range of 'metro area networks' (mainly fibre networks for business users) in the central business districts and industrial areas of the major cities (for example, Citylink in Wellington and Vector Communications in Auckland). In provincial and rural areas there is a range of smaller, niche broadband providers who tend to provide wireless services in specific geographic regions, for example Gisborne.net and Inspire.net.

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[13] *Annual Telecommunications Monitoring Report 2014*. Commerce Commission, June 2015. http://www.comcom.govt.nz/dmsdocument/13292.

[14] Based on approximation from the Commerce Commission's *Annual Telecommunications Monitoring Report 2014* and correspondence with the Commerce Commission.

[15] *Annual Telecommunications Monitoring Report 2009*, Commerce Commission, April 2010. http://www.comcom.govt.nz/dmsdocument/7565.

In June 2015, the build programme for the first stage of the UFB initiative reached its midway point. The UFB programme will ultimately reach 80 per cent of all New Zealanders. UFB networks are operated by Enable Networks in Christchurch, Ultra-Fast Fibre in the central North Island, Northpower in Northland and Chorus across the balance of UFB coverage areas.

Last year, New Zealand was number one among developed countries for annual growth of fibre connections, with an annual growth of 272 per cent from June 2013 to June 2014.[16]

In the mobile market, Vodafone and Spark's mobile networks reach around 97 per cent of the population. 2degrees reaches around 88 per cent of the population with its own infrastructure and relies on a national roaming agreement with Vodafone outside those areas.

Vodafone and 2degrees operate 2G GSM networks, and all three mobile providers operate 3G networks that deliver mobile broadband as well as voice and text messaging. Vodafone and Spark started rolling out 4G LTE networks in 2013, and 2degrees in 2014.[17] Vodafone completed its 4G network rollout in August 2015.[18]

A condition of sale in the 2014 allocation of 4G spectrum requires the three mobile network providers to roll out 4G LTE to at least 75 percent of their existing rural cell sites by 2019, and Spark and Vodafone are required to extend their existing rural coverage.

Rural and remote infrastructure is being upgraded. Stage one of the Rural Broadband Initiative (RBI) programme is due to be completed by the end of 2016. As of June 2015, 314 rural cell towers have been upgraded, 116 new towers constructed, and over 93,000 rural copper lines have been upgraded to deliver better broadband.[19] Broadband connectivity in rural and remote areas will continue to be improved through an extension to the RBI with $100 million funding, and mobile coverage will be extended in 'black spot' areas with $50 million funding.

Uptake

Increasing numbers of New Zealanders are connecting to the internet through both fixed and mobile connections. According to Statistics New Zealand, as of June 2014, there were: [20]

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[16] OECD Broadband Portal www.oecd.org/sti/broadband/oecdbroadbandportal.htm.

[17] *Annual Telecommunications Monitoring Report 2014*. Commerce Commission, June 2015. http://www.comcom.govt.nz/dmsdocument/13292.

[18] See https://www.vodafone.co.nz/press-release/vodafone-completes-nationwide-14-million-4g-upgrade-programme-launches-new-network-guarantee-for-customers.

[19] *Broadband Deployment Update*. Ministry of Business, Innovation and Employment, June 2015 http://www.mbie.govt.nz/info-services/sectors-industries/technology-communications/fast-broadband/documents-image-library/quarterly-broadband-deployment-update-june-2015.pdf.

[20] *Internet Service Provider Survey: 2014.* Statistics New Zealand. http://www.stats.govt.nz/~/media/Statistics/Browse%20for%20stats/ISPSurvey/HOTP2014/ISPSurvey2014HOTP.pdf.

- 90 internet connections for every 100 households, compared with 84 for every 100 in 2013; and
- 3.7 million active internet-connected mobile phones in the three months to June 2014.[21]

New Zealand now has 31.6 fixed broadband subscriptions per 100 people, which is above the OECD average.[22]

Mobile connections increased by eight per cent in 2013/14 to 5.3 million mobile connections.[23] Mobile connections to the internet have significantly increased, with increased availability of smart phone devices, data networks and applications. New Zealand is ranked ninth among the 34 OECD member countries with 98.8 terrestrial mobile wireless broadband subscriptions per 100 inhabitants, which is also above the OECD average.[24]

OECD figures for December 2014 show that New Zealand is second in the OECD for the use of machine-to-machine (M2M) cards, which are mostly used for electricity meters in New Zealand, with 24.95 M2M cards per 100 people.[25]

Retail pricing

In June 2015, the Commerce Commission released its *Annual Monitoring Report for 2014* which included benchmarking of New Zealand's retail prices for mobile and fixed line phone and broadband services against international prices.[26]

New Zealand fixed line plus voice and naked broadband prices were mixed when compared with a benchmarked set of countries. In the higher fixed line data baskets, New Zealand prices tended to be higher than average. Mobile prices, however, have decreased in recent years and are lower than the OECD average. These comparisons are shown in *Figure 7* below.

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[21] Excludes mobile wireless connections via a data card, dongle, USB modem or tablet SIM card.

[22] Organisation for Economic Co-operation and Development (OECD) Broadband Portal, *1.2. Fixed and wireless broadband subscriptions per 100 inhabitants, by technology, December 2014*. http://www.oecd.org/sti/broadband/oecdbroadbandportal.htm.

[23] *Annual Telecommunications Monitoring Report 2014*. Commerce Commission, June 2015. http://www.comcom.govt.nz/dmsdocument/13292.

[24] Organisation for Economic Co-operation and Development (OECD) Broadband Portal, *1.2. Fixed and wireless broadband subscriptions per 100 inhabitants, by technology, December 2014.*

[25] Organisation for Economic Co-operation and Development (OECD) Broadband Portal, *1.12. M2M/embedded mobile cellular subscriptions, Dec. 2014*. This is a new measure as at December 2014 and does not include all OECD countries as some countries were not able to collate the relevant data.

[26] *Annual Telecommunications Monitoring Report 2014*. Commerce Commission, June 2015. http://www.comcom.govt.nz/dmsdocument/13292.

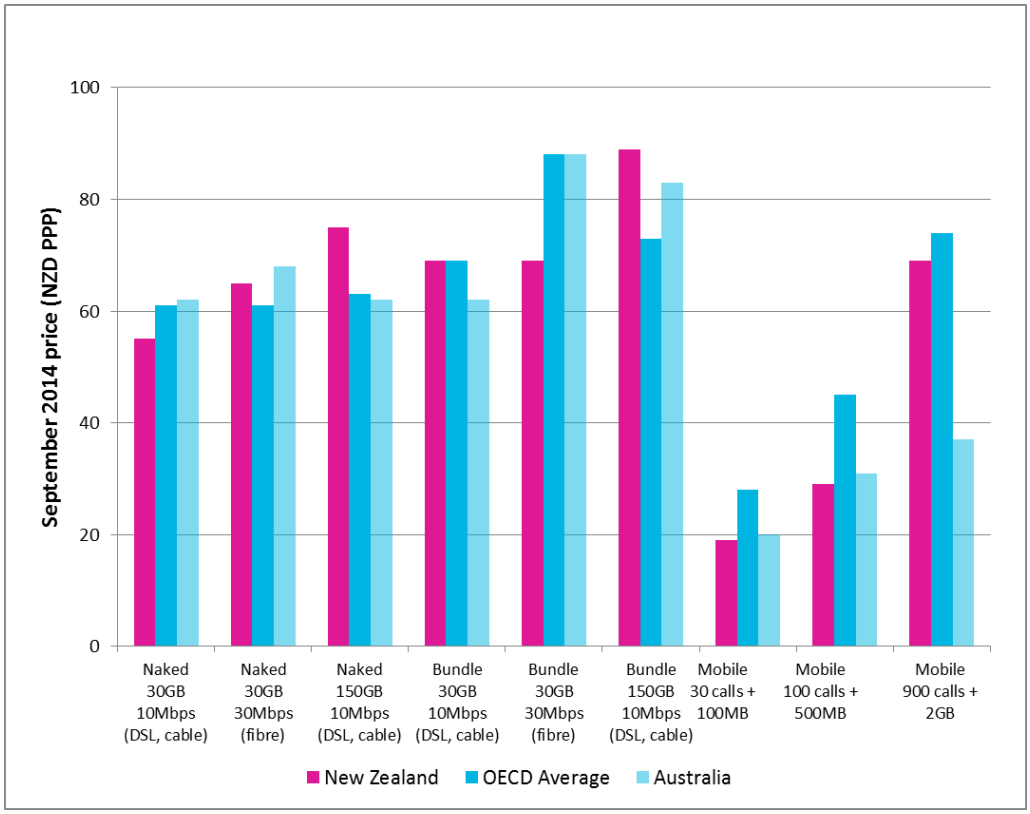

Figure 7: New Zealand telecommunications price comparison. Source: Commerce Commission, Annual Telecommunications Monitoring Report 2014, June 2015

Broadband pricing has continued to decrease. Spark says that in 1999, an ADSL 40GB package would cost $13,500 each month and today a 40GB and phone package will cost $75.[27] Prices have continued to reduce between 2013 and 2014.

For fixed line calling prices, the most significant decrease occurred in fixed-to-mobile calling, where the average price halved between 2005/06 and 2013/14.[28]

Mobile prices have decreased substantially over the past few years. The most significant decreases since 2011 were: [29]

- the prepay price that makes up the 100 calls basket, which began at $132 in 2011 and dropped to $29 by August 2014; and
- the on-account price of the large 900 calls basket which declined from $139 in 2012 to $60 by August 2014.

[27] *The World is Changing.* Spark http://www.sparknz.co.nz/news/theworldischanging/.

[28] *Annual Telecommunications Monitoring Reports 2009, 2013 and 2014,* Commerce Commission.

[29] *Annual Telecommunications Monitoring Report 2014*. Commerce Commission, June 2015. http://www.comcom.govt.nz/dmsdocument/13292.

For mobile, a basic $49 plan provides Spark customers with 400 minutes, unlimited texts, and 1.25GB of data. In 2009 the same package would have cost over $700 every month.[30]

Speeds

Average internet speeds have increased over the past few years. New fibre and VDSL services are providing significant improvements over conventional ADSL broadband services.

In the first quarter of 2015, Akamai reported that the average connection speed in New Zealand was 8.4Mbps, a 50 per cent increase from the same quarter the previous year (5.6Mbps). For mobile, New Zealand was reported as having average speeds of 7Mbps and average peak mobile connection speeds of 86.4Mbps.[31]

In June, Netflix rated New Zealand tenth out of 28 countries it measures based on the average prime time performance of all Netflix streams on each ISP network.[32]

As fibre penetration increases and 4G rollouts continue, average internet speeds are expected to trend upwards. By 2019, more than 90 per cent of New Zealanders will have access to 4G/LTE Advanced networks, capable of theoretical maximum download speeds of up to 300Mbps.

2.2.5. Investment and revenues

Investment

Telecommunications industry investments increased in 2013/14 to $1.69 billion, reaching the peak achieved in 2008/09, and up from the low of $1.24 billion in 2010/11 (see *Figure 8*). The increase was driven by 'hard' investment in the UFB fibre network and core and backhaul networks, and 'soft' investment in IT, product development, and systems.[33]

[30] *The World is Changing.* Spark http://www.sparknz.co.nz/news/theworldischanging/.

[31] *Akamai State of the internet Q1 2015 Report*, Volume 8/Number 1. https://www.stateoftheinternet.com/.

[32] Netflix ISP Speed Index for May. http://blog.netflix.com/2015/06/netflix-isp-speed-index-for-may.html.

[33] *Annual Telecommunications Monitoring Report 2014*. Commerce Commission, June 2015. http://www.comcom.govt.nz/dmsdocument/13292.

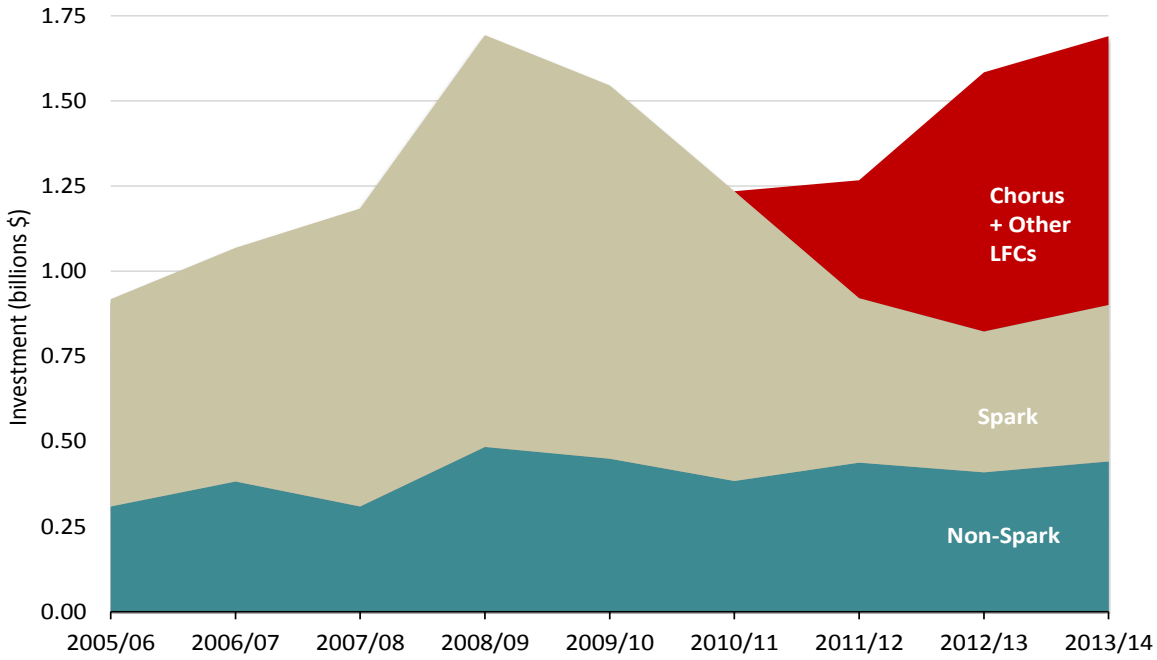

Figure 8: Telecommunications investment. Source: Commerce Commission, Annual Telecommunications Monitoring Report 2014

Revenues

Total retail telecommunications revenues had a modest decline for the second year in a row to $5.17 billion in 2013/14, down from a peak of $5.52 billion in 2011/12 (see *Figure 9*).

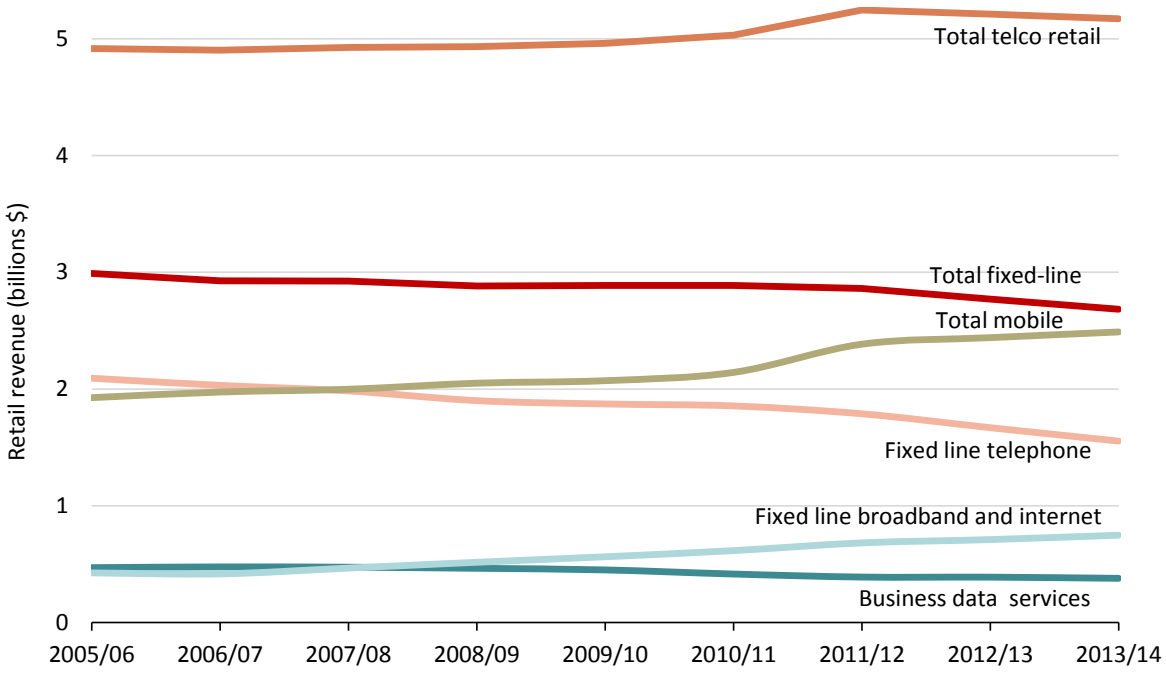

Figure 9: Telecommunications retail revenues by service. Source: Commerce Commission, Annual Telecommunications Monitoring Report 2014

While overall retail telecommunications revenues are decreasing slightly, this can largely be attributed to the decline in fixed line voice revenues. Total fixed line retail revenues fell to $2.68 billion in 2013/14 from $2.77 billion in the prior year, but the fixed line broadband and internet component continued to rise.

Total mobile retail revenues rose to $2.49 billion in 2013/14, up from $2.44 billion in 2012/13. However, the rate of increase has slowed in the past few years.

Fixed broadband and mobile revenues are increasing in addition to revenues that may be realised by new and traditional players through OTT data driven applications and convergence. These new areas may present opportunities for the telecommunications industry to offset revenue loss over the past decade. Innovation may also develop as traditional competitors expand into new markets and/or partner with other players to compete against new market entrants.

2.2.6. Industry changes

The structural separation of Telecom was a world-first. While the incumbent operators in some countries have been operationally separated (or been subject to lesser forms of separation such as accounting separation), Telecom completed full ownership separation from its network arm, Chorus, in November 2011. Since that time, Telecom has rebranded as Spark and is largely focused on retailing communications services.[34] Chorus operates as a wholesale-only network operator, managing both the copper network and the bulk of the UFB network build.

Some consolidation in the retail service provider (RSP) markets has occurred in the first half of 2015:

- in March 2015, 2degrees purchased RSP Snap for $26 million. 2degrees launched fixed line broadband services in July 2015; and
- in June 2015, Vodafone purchased WorldxChange, a provider of IP-based telephony services, for an undisclosed sum.

This is in addition to the acquisition across markets of the CallPlus Group and the customers of Woosh by the Australian telecommunications company M2 in June and July 2015, respectively, and Vodafone's acquisition of TelstraClear in 2013.

This consolidation trend does not appear to have had a major impact on competition to date. Competition is strong at the retail level, as indicated by price competition, innovation and the introduction of new services.

[34] Spark still operates in wholesale markets to some extent – for example, through the Public Switched Telephone Network (PSTN), national backhaul, and its part ownership of the Southern Cross Cable Network. It also operates a mobile network.

2.3. The future: communications markets to 2020 and beyond

2.3.1. Trends overview

It is clear that the key trends discussed above – the importance of OTT services, the demand for data, and the increasing role played by mobility – will continue.

Consumers will look for increasing headline and throughput speeds, and very high or unlimited data. Fixed line voice as a stand-alone service will continue to decline, with end-users migrating from traditional circuit-switched voice services to bundles of services including voice provided over data networks. The fixed line will be primarily used for fixed broadband access. Consumers will look for savings by bundling their mobile phone plan with their fixed line broadband services, and other content and OTT services.

In one of the clearest trends, data usage will continue to increase significantly in the future. We are likely to see mobile data (including speed and size of data caps) becoming the main driver of consumer choice and the primary basis for delivering voice services on mobile devices.[35]

Our UFB and RBI programmes (and the extension programmes) and three mobile networks will do the heavy lifting to supply the data and speed consumers expect now, in 2020, and beyond. There will be continued demand to keep up with consumer expectations and our networks will need substantial investment to stay ahead of the game. In the mobile sector, there is likely to be pressure for an evolution to 5G services and there are also likely to be further opportunities for upgrading network capability in rural areas.

Our networks will need to be resilient and reliable. We now rely on online services in every aspect of our lives and businesses, and having access to an always-on internet connection is increasingly critical. Providing incentives to invest will remain important, thereby decreasing dependence on government intervention to drive network upgrades.

2.3.2. Fixed line trends

In fixed line markets, we expect to see the UFB network increasingly displacing copper in most cities and towns by 2020 (particularly as the UFB extension programme is rolled out), although some users will still be accessing broadband over copper (as well as mobile, wireless and satellite) in rural areas. Migration of end-users from the copper network to the fibre network will continue to accelerate, and eventually Chorus will look to decommission its copper network in its UFB areas.

New DSL technologies like G.fast and Vplus could improve services in non-UFB areas and prolong the life of the copper network in LFC fibre areas. The RBI has already resulted in many rural copper lines being upgraded by Chorus and these are likely to continue operating for some time.

[35] When the mobile operators deploy voice-over-LTE in their 4G networks, even network-based voice calling will be data based.

We do not expect significant fixed line broadband infrastructure overbuild within the UFB footprint after the completion of the UFB programme.

Current levels of competition, innovation, and product differentiation in retail telecommunications markets should persist despite some market consolidation, given the current market structure, competitive momentum and regulatory support. High quality infrastructure will also lower barriers to entry for OTT players.

2.3.3. Mobility

Mobility will be a fundamental requirement as users rely on mobile devices to connect anywhere, at any time. Given the continuing demand for data and portability, WiFi networks can act as a backup to complement both mobile and fixed line retail packages. In the United States, Google has recently announced it will be launching 'Google Fi', a mobile virtual network operator (MVNO) service that provides mobile voice and broadband services seamlessly over both cellular and WiFi networks.

2.3.4. Other technology trends

As technology develops there are new forms of broadband delivery emerging. For example, satellite technology is developing and may deliver faster speeds and lower latency in the future. Google's 'Project Loon' is aimed at using high-altitude balloons to deliver broadband to rural and remote areas, areas with coverage gaps and areas recovering from disasters.[36] Mesh networks and future wireless standards also offer future possibilities for broadband delivery.

Machine-to-machine communications or the 'internet of things' will certainly play an increasing role, with smart devices and smart-meters in homes, businesses and farms becoming increasingly prevalent. There will also be further reliance on cloud computing technologies for data storage, hosting and management. Video content provision will continue to expand to a broader range of applications outside the consumer entertainment sphere, such as medical applications.

We also expect continued and growing recognition of the communications sector as underpinning New Zealand's economic growth. A healthy and competitive communications sector, supported by the right regulatory settings, will enable New Zealand to make the most of the digital economy.

2.4. The need for regulation to support ongoing growth

2.4.1. Competition in fixed line network markets

We have considered whether Chorus and LFCs are likely to be subject to competitive pressure after 2020. If fixed line networks were subject to effective competition, we could expect to see efficient prices and innovation develop in wholesale and retail markets without the need for regulation.

[36] See http://www.google.co.nz/loon/.

Our view is that Chorus probably will not be subject to sufficient pressure to constrain pricing. While the case is less clear for LFCs, they are still likely to face limited competition, as fibre becomes the preferred technology for broadband access.

Fixed networks still have natural monopoly characteristics. They have very high barriers to entry, and we do not expect total bypass or overbuild of the UFB network by another fixed network. This is discussed further at 3.4.1.

While structural separation in fixed networks has reduced incentives to inhibit or delay competition, it has not removed the incentives or ability for Chorus and LFCs to charge monopoly access prices.

Chorus's copper network and LFCs' UFB networks compete in some areas, and HFC cable networks provide some competitive pressure to both copper and UFB in Christchurch and Wellington.[37] There may be pockets of further fixed infrastructure development and limited competition from mobile networks, but overall this is unlikely to be sufficient to act as a competitive constraint on future wholesale pricing of the UFB network.[38]

We do not expect mobile networks to be complete substitutes for fixed networks in their core business of broadband access by 2020. Mobile data services are still likely to provide a less consistent service, and remain more expensive than equivalent fixed line services. For example, with Spark, $79 gets you 5GB of data on an open term mobile broadband plan, whereas customers can get 80GB for $69 and unlimited data for $89 on naked fibre and ADSL plans.[39] We acknowledge that there is a significant upside risk if mobile networks prove to be more competitive with fixed broadband than we set out here. If that were the case, then competition would be much more intense, and the case for continued regulation weaker.

For fixed line network markets, the Government believes there will be a continuing need for sector-specific regulation in the form of an access and pricing regime. Regulation targeted at fixed line networks will give end-users some of the benefits of competition by constraining prices, and encouraging innovation through an access regime.[40]

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[37] Our assumption is that in Chorus UFB areas, Chorus will eventually decommission the copper network – making UFB a replacement, not a competitor, to copper in most of New Zealand. In any case, Chorus owns both networks in its UFB areas, plus the rural copper network, and so there will not be significant competition to Chorus' networks outside LFC and HFC areas.

[38] We note that in a small number of cases, national regulatory authorities have found fixed and mobile broadband to be in the same market (usually the residential segment) and as a result have de-regulated fixed line broadband. However we also note the European Commission's comment that as fibre is deployed more widely, mobile broadband may be a less effective substitute (see http://europa.eu/rapid/press-release_IP-09-1888_en.htm?locale=en).

[39] Plans advertised on www.spark.co.nz, accessed at 30 July 2015.

[40] Regulation targeted at fixed line networks is focused on wholesale services delivered at layers 1 and 2 of the Open Systems Interconnection (OSI) model. We note that in some other jurisdictions, wholesale access has been regulated to ducts and/or poles, but in New Zealand the Commission has not investigated or recommended any regulation of layer 0 services to date.

The alternative would be to remove sector-specific regulation and rely on generic competition law alone to manage issues at the network layer. New Zealand's reliance on competition law before the introduction of the Telecommunications Act was widely regarded as ineffective, and this view led to the introduction of sector-specific regulation in 2001.[41]

2.4.2. Growth of competition in mobile markets

There are high barriers to entry in mobile markets, but competition supported by regulation has encouraged significant investment resulting in infrastructure competition. The entry of a third network operator, 2degrees, has increased competitive pressure and led to lower prices, particularly in the pre-paid segment of the market (although we note this increase is not reflected in the business segment of the market). Regulating mobile termination rates has also reduced fixed to mobile prices for end-users.

Mobile does not face the same significant changes we are seeing in fixed networks (for example, the players remain vertically integrated and infrastructure competition is ongoing). However, competition in mobile markets relies heavily on:

- mobile termination regulation reducing the scope for strategic behaviour; and
- the availability of national roaming services (which do not have regulated prices).

With the increasing importance of mobile communications, it is important that we maintain and build on the competition gains achieved over the past decade.

2.4.3. Traditional broadcasting markets

The chief intent of economic regulation[42] is to emulate the outcomes of competitive markets, including by constraining the misuse of market power. However, in the traditional broadcasting and pay television sectors, convergence has increased competitive pressure, so we do not see a need for any sector-specific regulation in this area.

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[41] The Ministerial Inquiry into Telecommunications reported in 2000 that "given the unique characteristics of the electronic communications sector … the Inquiry's view is that New Zealand's existing regulatory regime [generic competition law] is, and will continue for the foreseeable future, to be inadequate to meet the Government's objective … The Inquiry considers that, consistent with the view held by most other countries, industry-regulation is warranted. Such regulation must, however, be tailored to meet New Zealand's particular needs, having regard to its size and to its commercial environment." (*Ministerial Inquiry into Telecommunications – Final Report*, 27 September 2000).

[42] In the communications context, we use the phrase 'economic regulation' to refer to regulation adopting cost-oriented measures to control monopoly pricing, to ensure services are of a suitable quality and to ensure access is provided to regulated infrastructure on a timely basis.

The ability to provide services online and the erosion of historical industry and international boundaries have all contributed to an environment where competition can flourish. For example, new entry into the content distribution market has resulted in a rapid increase in competition for first release television, movies and live sport – reducing the market power of the incumbent pay television broadcaster, Sky Television.

Competition law (for example, to address anti-competitive conduct under the Commerce Act) is likely to remain sufficient as a backstop to manage any competition issues emerging in content markets.

2.4.4. Conclusion on the need for regulation

The Government's view is that targeted regulation will still be needed for some communications markets.

Overall, our view is that, given limited competition in key markets, some form of access and pricing regulation is still required. This will ensure our infrastructure continues to enable competition, innovation and investment in communications markets and meets the growing needs of consumers and businesses after 2020.

In the next chapter we discuss how changes in the communications sector impact the assumptions, goals and operation of the regulatory regime.

3. Is the regulatory framework fit for purpose? Six key problem areas

This chapter begins our assessment of the existing regulatory framework as required by section 157AA of the Telecommunications Act. It identifies the key areas in which the communications market is evolving beyond the original focus of the current regulatory system.

It also considers whether the goals, assumptions and processes embedded in the current regime require updating to suit the post-2020 environment, and to more effectively achieve the goals set out in section 157AA(a) of the Act.

The pace of change and the new communications environment described in the previous chapter have major implications for the design of our regulatory frameworks. This Review is critical to ensure we have a regulatory regime to support growth and innovation in the future – not a regime dealing with yesterday's problems.

The Government's preliminary view is that the existing regulatory framework is not the most effective framework for regulating the communications sector post-2020, when assessed against section 157AA(a) of the Act. Below we outline six problem areas that contribute to this preliminary view.

Why do we regulate?

Regulation is a means to an end. We aspire to an economy with open, competitive markets, but in some markets competition is limited. Competition keeps markets in check and protects consumers by ensuring that no individual business has the ability to dictate prices or terms. In a competitive market, if a business raises prices too high, provides poor quality products or fails to innovate, then it will lose market share.

In some types of markets, there is a high risk of one business gaining market power that allows it to give less and charge more. This is particularly true for markets with 'natural monopoly' characteristics such as telecommunications networks, electricity networks and water. These markets have very high barriers to entry – they require significant sunk investments, meaning that the first businesses to enter these markets may gain a first mover advantage, and there are significant economies of scale. Even where a small number of firms have entered the market, competition may still be limited. Competitors may initially rely on wholesale access to the incumbent's network to supply services to consumers.

Where a market has these features, and where general competition law (under the Commerce Act) is insufficient to promote the long-term benefit of end-users, and the benefits of regulation materially exceed the costs, regulation can be introduced.

In these situations, economic regulation places legal constraints on certain types of behaviour – for example, by limiting the ability of a business to charge monopoly prices, or restricting its ability to deter competition in downstream markets (such as retail services). The effect of well-designed regulation should be to emulate (as closely as possible) the outcomes of a competitive market.

In this chapter we identify some areas in which the environment is evolving beyond the intentions of the current regulatory system for communications:

- New Zealand's communications regulatory systems may need change to address the reality of a converged sector, and to regulate consistently across networks and content;
- our regulatory systems may be unable to cope with the pace of change in technology and markets; and
- jurisdictional issues are arising as the internet breaks down geographic borders.

In telecommunications markets in particular, we note that:

- telecommunications regulation was designed for a different era and may need to be adapted for today's competitive environment;
- there has been considerable uncertainty in the operation of the regulatory regime; and
- there is a need to maintain and build on competition in mobile markets.

The balance of this chapter steps through each of these problem areas.

3.1. Risk of 'siloed' regulation

Changes in the communications market have broken down traditional distinctions between sectors. This is creating a growing risk that regulation is contained in 'silos' and becomes less effective (or even counterproductive).

Broadcasting, media, information technology and telecommunications markets are rapidly merging into a broad communications market. Despite this, the language – and to some extent, the scope – of our regulatory systems is based on a historic split between traditional service labels.

The regulatory framework for communications in New Zealand comprises the regimes for telecommunications, broadcasting and radio spectrum.[43]

The core pieces of legislation are:

- the *Telecommunications Act 2001*, which promotes competition in markets for telecommunications services and establishes an industry-specific regulatory access regime, headed by the Telecommunications Commissioner within the Commerce Commission;
- the *Broadcasting Act 1989* (the Broadcasting Act), which regulates social aspects of the provision of linear broadcasting services;

[43] The regulatory framework is the system of laws, regulations, rules, procedures and organisations within which the regulation of communications services takes place.

- the *Radiocommunications Act 1989* (the Radiocommunications Act), which provides a framework for the creation and registration of rights to use radio spectrum – a limited resource and key input in the provision of a range of communications services, including telecommunications and broadcasting services; and
- the trade practices provisions of the *Commerce Act 1986*, the *Fair Trading Act 1986*, and the *Consumer Guarantees Act 1993*, which apply across the economy.[44]

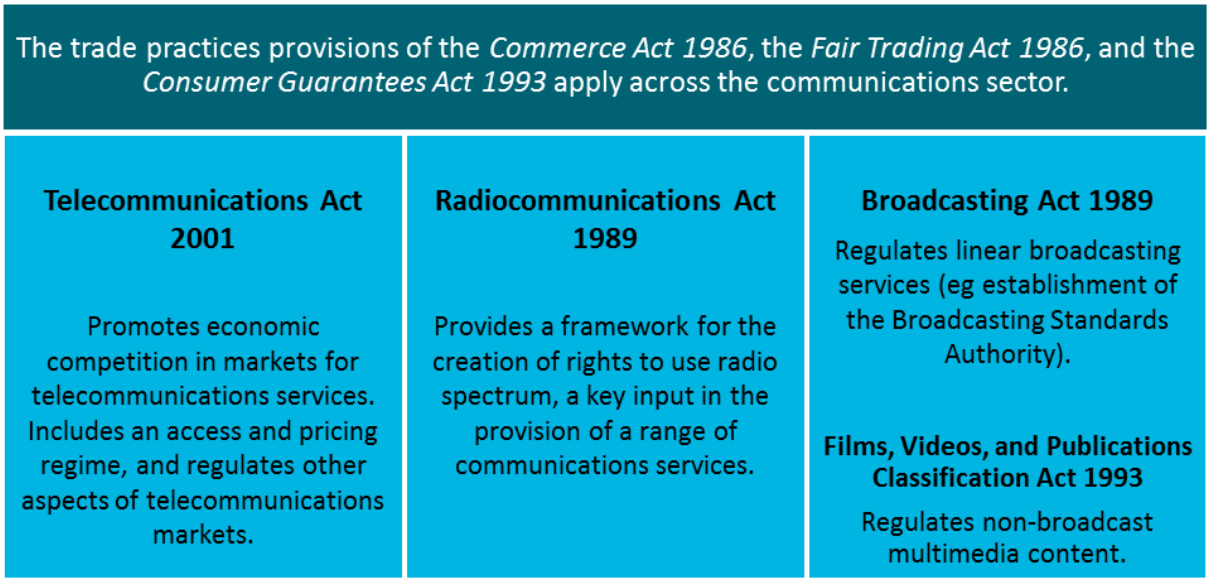

Figure 10: Regulatory systems for communications in New Zealand

Convergence has implications for the application and efficacy of our communications regulation. Converged communications services may not fit easily within existing legal frameworks, complicating compliance procedures, and posing the risk of uneven regulatory treatment. This could create distortions in competition between different delivery mechanisms for the same service and incentives for providers in the converged environment to pick and choose their method of service delivery.

This Review provides an opportunity to reassess the scope and language of communications regulation. Our regulatory system should 'treat likes alike' across the converged sector, and be flexible and durable enough to cope with future change. Under the current communications regulatory regime, there are already some gaps and inconsistencies. For example:

[44] There are also a number of other purpose-specific Acts, including the Telecommunications (Interception Capability and Security) Act, the Electronic Transactions Act, and the Unsolicited Electronic Messages Act.

- over time, the importance of competition and social policy considerations[45] relating to the allocation of radio spectrum for mobile communications has increased. Both the Radiocommunications Act and Telecommunications Act are silent on this. There is a strong case for clarifying competition policy considerations for radio spectrum, and doing so consistently with other regulation in the sector;
- the Telecommunications Act provides sector-specific economic regulation for the sector, but broadcasting networks are specifically excluded from that Act – an increasingly arbitrary distinction, given the convergence of broadcasting and telecommunications infrastructure; and
- for regulation such as content classification requirements, providers of similar content or services over different platforms face uncertainty about their regulatory obligations. The Government is addressing this issue in detail through its current review 'Content Regulation in a Converged World'.[46]

3.1.1. Consolidation of regulatory functions

The Government's view is that convergence trends mean that regulation needs to be approached in a more consistent way across the converged sectors. Our initial proposal is to create a more coherent framework by consolidating the economic regulatory functions for communications. This could be done by using the Telecommunications Act as a basis to form a new, more cohesive 'Communications Act'. We would propose to do this by:

- amending the exception for broadcasting infrastructure that is currently in the Telecommunications Act;[47] and
- incorporating new tools into the 'Communications Act' relating to radio spectrum allocation. These could include an undertakings regime to enforce competition aspects relating to radio spectrum, and providing for greater certainty as to the initial spectrum allocation process.[48]

The details of these proposals are discussed at Chapter 6.

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[45] In the context of radio spectrum, social policy considerations relate to the use of the spectrum; for example, to achieve a particular level of population coverage of a broadband service provided using that spectrum.

[46] See www.mch.govt.nz/contentregulation.

[47] We propose amending the exclusion of broadcasting services by re-wording the exception so that (a) broadcasting transmission networks and infrastructure will come within the scope of the 'Communications Act', but (b) any content transmitted over those or any other telecommunications network will remain excluded from the scope of the Telecommunications Act.

[48] These competition issues were initially canvassed in the *Review of the Radiocommunications Act* discussion document, and are now being addressed in this Review. Other aspects of the radiocommunications review are ongoing – refer to http://www.rsm.govt.nz/projects-auctions/current-projects/review-of-the-radiocommunications-act-1989.

The Government does not propose to combine all three pieces of current legislation into one Communications Act. The least disruptive approach to achieve regulatory coherence would be to consolidate the economic regulatory functions into the Communications Act, and leave the Radiocommunications and Broadcasting Acts to deal with specific non-economic aspects of regulation. For example, in this proposal we would retain spectrum licensing in the Radiocommunications Act and content regulation matters such as the establishment of the Broadcasting Standards Authority in the Broadcasting Act.

The result would be a regulatory framework that is more internally coherent, and which delineates regulation based on its central function rather than on traditional service labels. This would make the framework more enduring and able to cope with future change.

Figure *11* shows the proposed new structure.

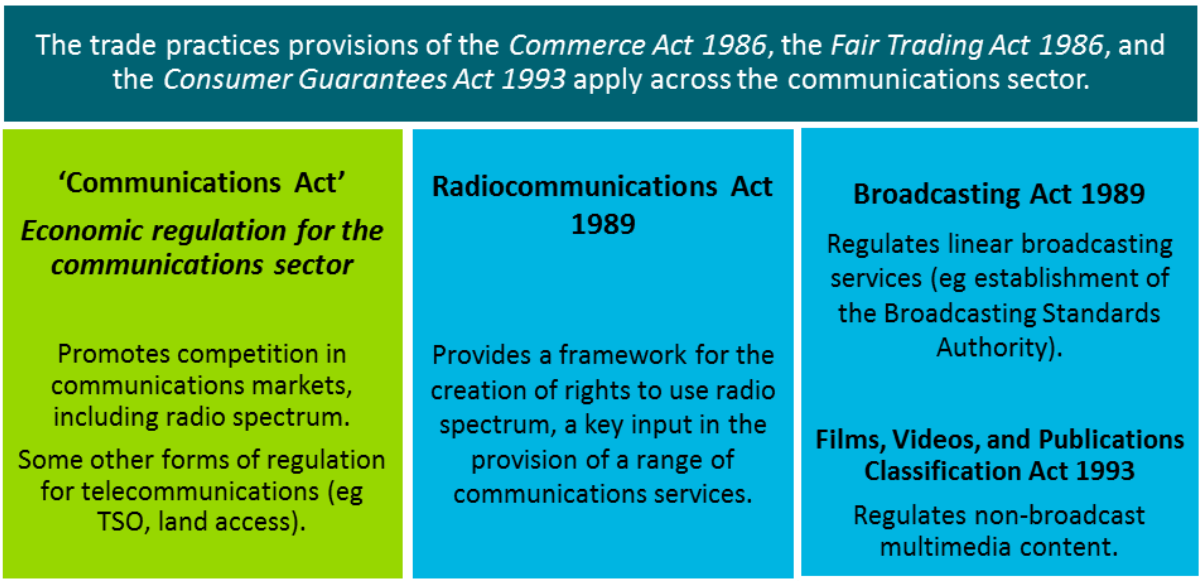

Figure 11: Proposed regulatory framework for communications

The Government has not made a decision on this approach and seeks your views.

Questions

2. What is your view on creating an overarching 'Communications Act' to consolidate economic regulation across the communications sector?

3.2. Can our regulatory regime keep up with the pace of change?

The pace of change is fast – it is unclear whether our regulatory regime can keep up.

In a rapidly changing market, regulation needs to be technology neutral, more timely, less complex and able to respond to market changes. In particular, it needs the flexibility to respond to change, allowing and incentivising deregulation if technological changes or new business models create new opportunities for competition that were not anticipated.

Disruptive change is solving some regulatory problems but causing others to emerge. On one hand, technology and market change have helped to resolve long-standing competition problems. For example:

- increasing competition for the provision of voice telephony services was a traditional objective for telecommunications regulation. Competition has really flourished since technology advanced to the point where high quality voice services can be provided by Voice Over Internet Protocol (VOIP); and
- a rapid increase in competition in the distribution of online video content has addressed many of the previous concerns around content being held by the incumbent pay television broadcaster in New Zealand. Technology has advanced to the point where high quality video content can be delivered over broadband networks.

On the flipside, some new developments in the market are challenging the capabilities of our regulatory systems.

New ways of using the internet, like the rapid increase in online video streaming services, require high-bandwidth data use. This puts pressure on our communications networks. Globally, regulators are taking steps on 'net neutrality' – whether internet providers can prioritise, de-prioritise or charge for video traffic being delivered over their networks.

The retirement of the copper network in UFB areas is another example of a change that could be held back or distorted by our regulatory systems. As end-users move to UFB services, it will become less efficient for Chorus to maintain its copper network in UFB areas. However, current regulation requires Chorus to provide regulated copper services on request. The Government's view is that regulatory requirements should support the delivery of quality, affordable services to the end-user, without being inappropriately bound to a certain technology.

Both of these issues are discussed in detail at Chapter 6.

3.3. Jurisdictional issues as the internet breaks down geographic borders

The ubiquitous nature of the internet is making it more difficult to define who or what regulation should be applied to.

As the internet breaks down distinctions between jurisdictions, New Zealanders can access services and content from all over the world. While there are plenty of benefits for consumers, this trend raises questions about how we define participants in the New Zealand communications sector. That definition is important for the consistent application of regulation.

For example, concerns have been raised about whether internationally-domiciled companies providing services in New Zealand are (or should be) bound by local requirements around tax, content classification and industry levies.

The Government is considering these issues as part of our wider convergence and digital disruption programme of work. Inland Revenue is consulting on the possible application of GST to cross border supplies of services and intangibles[49], and content classification is being addressed through the current review 'Content Regulation in a Converged World'.[50]

In the converged communications arena, a related issue is defining who is a participant in the sector, and what their obligations should be. For example, the Telecommunications Act requires companies who provide telecommunications services in New Zealand via some component of a public telecommunications network (and meet a revenue threshold) to pay the Telecommunications Development Levy (TDL). This targets companies who provide services at the network and transport layers (RSPs and network owners). Should local and international businesses that provide content and services over telecommunications networks be considered part of the industry for purposes such as the TDL?

We think the current arrangements, with the focus on telecommunications providers – rather than those who deliver their services over the top of the network at the content and application layers – are appropriate. However, we are open to views on this matter. We note that compliance and administration costs should be considered when assessing any proposed changes.

3.4. Telecommunications regulation was designed for a different era

The following three issues considered in this chapter relate specifically to the telecommunications regulatory regime.

The regulatory framework for telecommunications was designed in 2001 to address very different competition problems to those we face today. The goals, assumptions and processes embedded in the current regime need updating to suit the post-2020 environment.

The regulatory framework has delivered on supporting greater competition outcomes for end-users. The question is whether it will continue to do so in its current form, and whether it will remain fit for purpose leading up to and after 2020.

[49] See http://taxpolicy.ird.govt.nz/publications/2015-dd-gst-cross-border/overview.

[50] See www.mch.govt.nz/contentregulation.

The Telecommunications Act

The Telecommunications Act provides for the regulation of telecommunications services, establishing an access regime. An access regime is a set of rules that requires a regulated network provider to allow access seekers to access its network to receive regulated services, generally at a price determined by the regulator.

The Act also covers other forms of regulation such as the Telecommunications Service Obligation (TSO) and land access requirements.

The current telecommunications regulatory regime is characterised by a blend of approaches:

- low formal barriers to entry;
- very limited price control at the retail level;[51]
- structural separation, whereby providers of the copper and UFB networks are not permitted to undertake retailing; and
- shared regulatory responsibilities between government, the regulator and the industry itself.

A history of the communications environment in New Zealand is provided at section 2.1.

The Telecommunications Act was designed for a different era – a time of vertical integration, with the incumbent Telecom owning the fixed line network and also competing in retail markets – and before the rollout of the UFB network. It was introduced with a focus on competition problems in the sector at that time, such as interconnection of competing networks with Telecom for voice services, discrimination in favour of Telecom's retail services, and low levels of competition and investment.

Many of these problems have been resolved: the structural separation of Telecom has addressed discrimination issues in the fixed line part of the sector; the regulation of voice interconnection has been successful and has not been re-litigated; investment is occurring at high levels, albeit strongly supported by the Government's UFB and RBI programmes; and retail competition is strong.

By continuing to rely on the current regulatory framework, we risk regulating for yesterday's problems. The regulatory regime now requires a different focus.

The Telecommunications Act has been successful to date in delivering greater competition. However, as noted earlier, a regulatory regime will still be needed to protect end-users and promote competition in the communications sector.

[51] The local service TSO arrangements are the only form of retail price control.

The Government's preliminary view is that the existing regulatory framework is not the most effective way to regulate communications when assessed against section 157AA of the Telecommunications Act. It needs to be updated to suit the competitive market and policy goals of a post-2020 world.

The key changes in the communications sector which impact on our policy goals and assumptions are discussed below.

3.4.1. Impact of changes in the sector

Impact of structural separation

The creation of Chorus as a stand-alone wholesale network operator of both copper and UFB networks means that New Zealand now has a level playing field amongst retail fixed line operators. Strong open access and non-discrimination obligations also apply to other UFB and RBI providers.

Retailers now face strong incentives to differentiate their offerings through affordable, innovative and quality service offerings – including bundling with voice, mobile, fixed and content packages.

The key problem that the Telecommunications Act was trying to solve – competition with a vertically integrated operator with a strong presence in the retail market – is no longer relevant in New Zealand fixed line markets.

The problem has shifted from creating a level playing field in retail markets to ensuring end-users are protected from monopolistic behaviour which is not constrained by competition. Without competitive pressure, network owners still have the ability to charge monopoly prices, to refrain from passing on cost reductions to their customers, to hold back innovation, and to inhibit or delay competition.

Impact of UFB on fixed line infrastructure competition

Fixed line infrastructure competition through total bypass or overbuild of the UFB network by another fixed network appears unlikely, given:

- the significant costs involved due to New Zealand's low population density and geography (this is one of the reasons for the Government's investment in the UFB initiative);
- the UFB network was designed to provide open access, so provides a platform for RSPs to enter the market without having to make significant sunk investments up front; and
- the first-mover advantage the UFB suppliers have in building their networks.

3.4.2. The 'ladder of investment'

New Zealand's regulatory regime was introduced in an era of vertical integration. Over time, it has been designed to promote the 'ladder of investment' concept, primarily in regulated fixed line networks but also to some extent in regulated mobile networks.

The concept of the 'ladder of investment'

First articulated by Professor Martin Cave, the 'ladder of investment' theory proposed that a portfolio of fixed line copper wholesale services provided at different 'layers' of the network would lower the cost of entry and encourage infrastructure competition.

New entrants would not have to build an alternative network immediately to offer services. Instead, they could gradually build up a customer base using a suite of services offered over the incumbent's network (for example, starting with resale of the incumbent's retail services – the lowest 'rung' of the 'ladder'). Each 'rung' of the ladder would require more investment by the entrant, but would also offer opportunities to provide different services. An entrant would have incentives to move from offering resale services to providing bitstream services (the next 'rung'), and then to offering services using unbundled copper loops (the final 'rung').

The concept's logical conclusion is complete overbuild of the incumbent's network, resulting in infrastructure competition delivering benefits to end-users. Over time, the need for regulation would reduce as RSPs would have progressively rolled out their own infrastructure in order to compete with the incumbent network owner.

The regulated wholesale products provided on Chorus' copper network today are consistent with the ladder of investment theory.[52]

Is the 'ladder of investment' still relevant?

In a UFB world, fixed line infrastructure competition is unlikely to expand outside the current geographic footprint. Entry into fixed markets, at least on the national scale, will now be most likely to take place at the retail level, or through OTT services, using existing infrastructure.

The 'ladder of investment' theory may therefore no longer be the best basis for our communications regulatory systems – particularly for fixed line regulation. Post-2020, and after the completion of the UFB build, it may no longer be useful to set an explicit policy goal of promoting infrastructure competition in the fixed line network, nor to design the regulatory framework with that outcome in mind.

A move away from this regulatory objective for fixed line has implications for how we design an enduring regime for the communications sector. It impacts on the policy guidance which we provide to the regulator through the purpose statement in the Telecommunications Act, discussed below. It also challenges the 'build/buy' assumptions embedded in the current copper pricing methodology (Total Service Long Run Incremental Costs or TSLRIC).

[52] These are: resale of retail services supplied by Spark (PSTN and other services); Unbundled Bitstream Access (UBA), a managed bitstream layer 2 service; and Unbundled Copper Local Loop (UCLL), an unbundled layer 1 service which enables access seekers to install their own equipment in Chorus exchanges and provide their own bitstream service (equivalent to the UBA product). UBA and UCLL are defined at 3.5.2

However, we believe that the 'tools' deployed to support the theory (unbundling of particular parts of the network – particularly layer 1) still have some utility.

It is important to note that the Government will not be taking any steps to *limit* fixed line infrastructure competition if participants in the market seek to make such investments. There is already some level of infrastructure competition (for example, in HFC and LFC areas) and we are not looking to limit this competition or preclude further investments. We are not proposing to make any changes to the current arrangements for unbundling, which is discussed at 4.1.3.

Also important to note is that the lessening relevance of the 'ladder' concept relates to the fixed line networks in New Zealand, but not to mobile networks, where there is infrastructure competition. In that context the 'ladder' is more relevant.

3.4.3. Goals for regulation

Section 18 of the Telecommunications Act provides a purpose statement for Part 2 and Schedules 1 to 3 (the access regime parts of the Act). Section 18 (1) establishes that this purpose is to promote competition in telecommunications markets for the long-term benefit of end-users.

Promoting competition and outcomes consistent with competition

Promoting competition will remain a key focus for the regulatory regime. However, the current purpose statement assumes that competition is achievable or desirable in all regulated markets, and is our primary goal across communications markets.

As we noted above, fixed networks have natural monopoly characteristics and are unlikely to be overbuilt. In markets like these where competition is expected to remain limited, the role of regulation needs to go beyond promoting competition, to directly promoting end-user interests. The purpose of Part 4 of the Commerce Act, for example, includes promoting *outcomes consistent with outcomes produced in competitive markets*. This is because competition is unlikely in the industries regulated under Part 4 – like in fixed line communications networks.

Promoting growth, innovation and efficient investment

The current Act generally assumes that growth, innovation and efficient investment are outcomes that will result if the overarching objective of promoting competition is met.[53]

Growth, investment and innovation are increasingly important in the communications sector, as the sector drives growth across our wider economy. The Treasury's *Best Practice Regulation Model* states that regulation should support growth, and that economic objectives (competition, exports, and innovation) should be given an appropriate weighting relative to other specified objectives.

[53] This is currently codified in section 18. Section 18(2A) clarifies that consideration should be given to incentives to innovate in the context of assessing the test of competition for the long-term benefit of end-users. However this is a secondary consideration, rather than an explicit goal of the regime. The current explicit goal is set out in section 18(1) – to promote competition for the long-term benefit of end-users.

The Government has invested in UFB and RBI to build first-class communications infrastructure around the country. The three mobile networks have extensive coverage of the New Zealand population and are upgrading to high speed 4G technology. These initiatives will lead to impressive infrastructure capability by 2020, but there will be ongoing demand to keep up with consumer expectations.

At 6.1.1, we consider whether these changes should lead us to update the purpose statement in the Act – that is, should more weight be given to promoting outcomes consistent with investment and innovation? Or could it be argued that these matters are already being given sufficient weighting?

3.5. Uncertainty in the regulatory regime

The regulatory regime for communications has been beset by uncertainty and lengthy processes, particularly in the context of price setting for regulated copper services.

Improving regulatory certainty and predictability is a key focus for Government. Predictability and stability are necessary precursors to innovation, investment and market entry. Participants should be able to predict the outcomes of regulatory proceedings with confidence, without facing conflicting signals.[54]

Investment levels in telecommunications have been high, but in the fixed line sector this has largely been facilitated by government intervention rather than competitive pressure. It will be important that regulatory uncertainty does not inhibit continued investment after 2020 – instead, the Government wants regulatory settings to *support* investment.

There are two sources of major uncertainty in the current regulatory regime:

- uncertainty regarding the pricing methodology and approach that will apply to wholesale UFB services after 2019; and
- uncertainty generated by the copper pricing processes.

The Treasury has recently assessed the telecommunications regulatory framework in its *Best Practice Regulation Model* paper, published in February 2015:[55]

[54] This is the Government's goal – at the very least the Government expects that it should be possible to predict how a regulator will react to changing circumstances. Put another way, the regulatory system should not materially add to the uncertainty that already exists and businesses routinely deal with, such as technological change.

[55] See http://www.treasury.govt.nz/economy/regulation/bestpractice/bpregpa-feb15.pdf.

Telecommunications regulatory regime

Growth compatible	Proportional	Flexible / durable	Certain, predictable	Transparent, accountable	Capable regulators	Other
	+		-	+	+	+

Figure 12: Telecommunications regulatory assessment. Adapted from the Treasury's Best Practice Regulation: Principles and Assessments, February 2015

As part of this high-level check, the Treasury noted that the regulatory framework has been performing reasonably well to date in delivering greater competition and choice.

However, it gave the regime a 'red' grade for *predictability*, largely caused by the ongoing debates over the copper pricing process. This uncertainty has a negative effect on incentives for investment and innovation, with flow-on effects for consumers. The predictability of the framework has also been hampered by the underlying uncertainty caused by different views on the degree to which the regulatory framework should explicitly support the roll-out of UFB (or incentivise continued investment in copper access infrastructure).

Growth compatible, and *flexible and durable* received 'amber' ratings. These ratings also reflect the uncertainty in the operation of the telecommunications regime. We have already identified that supporting innovation should be a key goal for the communications regulatory regime, and that a flexible regulatory system will enable us to meet the challenges of a rapidly changing market. Later, we consider in detail some specific regulatory changes which may assist in increasing predictability in the regulatory system.

3.5.1. Uncertainty around future UFB pricing

We have discussed key features of the communications 'landscape' after 2020 above:

- there will be strong uptake of UFB services;
- there will not be strong competitive constraints on UFB wholesale pricing in most parts of New Zealand; and
- it may be more efficient in the long run to operate a single network rather than maintain two (copper and UFB) parallel networks.

These features suggest that the issue of price regulation of the UFB network is likely to emerge quickly after 2020.

Under the status quo, current UFB contracts will end in December 2019 and UFB wholesale pricing will then be set purely on a commercial basis. For UFB services to become regulated under the status quo, the Commerce Commission would have to carry out an investigation under Schedule 3 of the Telecommunications Act into UFB services and recommend regulation to the Minister, and this recommendation would have to be accepted. This would be a lengthy process, taking several years. Importantly, under the status quo it is unclear what pricing methodology the Commission would recommend if it decided to recommend regulation, nor how it would be implemented.

The Commission's copper pricing decisions may provide some guidance as to the approach it would take to fibre. However, our view is that this is not likely to give sufficient clarity in the context of setting prices for these newly built assets.

In the absence of certainty on the pricing methodology for regulated UFB services, UFB investors may view ongoing investments as risky and our view is that this uncertainty could chill investment after 2020.

It is also unclear what the impact on end-users would be when UFB providers can raise wholesale prices from 2020, especially given the time needed to complete a Schedule 3 investigation if intervention is needed.

The Government's view is that there is a need to provide greater certainty in relation to the future treatment of UFB pricing as we approach 2020, and now that we are halfway through the UFB build. This is discussed in Chapter 4.

3.5.2. Copper pricing processes

There has been considerable uncertainty generated by copper pricing processes.

The two core regulated copper broadband wholesale services offered by Chorus are the Unbundled Copper Local Loop (UCLL) service and the Unbundled Bitstream Access (UBA) service. These services underpin the vast majority of copper-based services in New Zealand.

Current prices for both UCLL and UBA are based on benchmarking with comparable overseas jurisdictions. A review of these prices is now underway. Final prices for both services will be set on the basis of the TSLRIC pricing methodology.

What are UCLL and UBA?

UCLL is a layer 1 unbundled copper local loop service. It provides access to the raw copper loops in Chorus' access network (the line from the exchange or cabinet to the end-user premises). The price for UCLL also determines the price for voice-only lines utilising Chorus' Unbundled Copper Low Frequency Service (UCLFS).

UBA is a layer 2 unbundled bitstream access service. It provides a managed bitstream service from an exchange to an end-user.

Both UCLL and UBA underlie the vast majority of residential broadband connections in New Zealand.

Regulatory pricing processes

Amendments to the Telecommunications Act in 2011 to enable structural separation required the Commission to implement cost-based pricing for the UBA service using the TSLRIC pricing methodology established in the 2001 regime. The provision for this Review was also included in the 2011 amendments to the Act, recognising that there would be a need to reconsider wider aspects of the 2001 regime (like the two-stage pricing process, the use of benchmarking, or the appropriate pricing principles) after structural separation had bedded in and the UFB rollout was near completion.

The setting of UCLL and UBA prices has been an ongoing source of debate, with a lengthy process involving benchmarking against international services, and then full cost modelling based on a hypothetical network, and further uncertainty as to whether these prices will be backdated. Considerable industry resources have been invested in lengthy regulatory pricing proceedings.

There has been uncertainty and variation in the wholesale price points released by the Commission during the benchmarking and pricing review processes, although we note that the most recent draft copper price released by the Commission in July 2015 remained very close to the initial draft decision released in December 2014.

Since structural separation, the level of fixed wholesale prices will be less important for competition, as all RSPs will face the same input prices. Given this level playing field, RSPs should be impacted less by the level of prices set by the Commission for Chorus' wholesale copper services. Prices for unbundled services and bitstream services are both set by the Commission on the same basis, so there should be no likelihood of a price squeeze. Competition should mean that any increase or decrease in costs will eventually be passed through to end-users, rather than retained by RSPs. No RSP should be able to get an enduring advantage by trying to hang on to these cost savings.[56]

Figure 13 presents a summary of price points that have been released by the Commission since separation.

[56] However, RSPs will face demands for investment to improve their networks from customers with increasingly high expectations. This may mean that RSPs choose to pass through lower input prices through investing in better quality services rather than through price cuts.

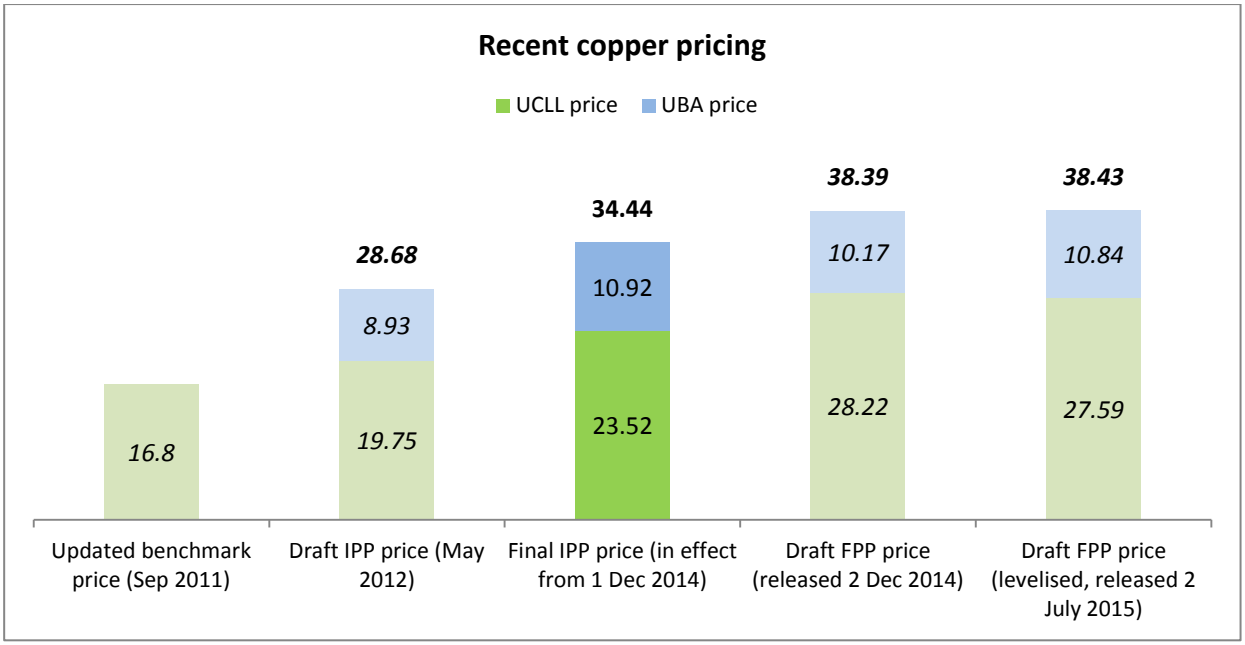

Figure 13: Recent UCLL and UBA pricing.[57] (Note: the brighter column represents the currently applicable prices)

The Government's preliminary view is that much of the recent regulatory uncertainty was a result of the benchmarking processes and that the industry is working through TSLRIC modelling for copper services for the first time (which is a process that leaves a large amount of discretion to the regulator). At 6.4, we discuss some potential changes to the process, with a view to simplifying and reducing its length.

However, as discussed later, the TSLRIC price-setting process is inherently complex and contentious and is likely to lead to ongoing challenges. It may not provide the stability and certainty needed to support ongoing investment and innovation in the sector.

3.6. Potential gains in mobile markets

Finally, mobile services are now essential to the way New Zealanders live and do business. We need to make sure competition in the mobile sector remains strong.

There has been success in promoting competition in mobile markets in recent years, with significant investment in the three mobile networks and a reduction in market concentration. Despite being a late entrant to the market, 2degrees now covers 88 per cent of New Zealanders through its own infrastructure. However, competition gains in mobile appear vulnerable. A breakdown in roaming agreements or an inability for all three mobile networks to keep up with future technology rollouts, like 5G, could significantly impact the market.

[57] "Updated benchmark price (Sep 2011)" was released by the Commerce Commission in its *UCLL averaging and section 30R reviews Conference – potential glide path for discussion at Conference* letter, 25 October 2011.

In mobile markets, our goal is to see competition and investment drive increased coverage across New Zealand, including in rural areas, and the delivery of affordable, high-quality, and innovative service offerings.

We note, however, that the gains from encouraging further infrastructure competition might diminish from this point. As mobile technology develops, the investment cycles in mobile networks appear to be getting shorter, with shorter periods for gaining returns on these investments. It may be challenging for the three mobile network owners to all deploy ubiquitous 5G networks. It may even be challenging for all three mobile networks to deploy current technologies ubiquitously, given the high cost of rural infrastructure. In this context, it would seem efficient for market participants to roam or share infrastructure and/or spectrum, rather than deploying three sets of mobile towers across the country.

Another challenge for the mobile market is that the Radiocommunications Act is silent on competition aspects relating to spectrum assignment. Instead, spectrum allocation is covered under the generic competition regime in the Commerce Act.

Over the last two decades the most significant government spectrum assignments have been for broadcasting and mobile telecommunications. As part of the initial assignments for 3G spectrum, government's objective was to promote competition in downstream markets. At the time, there was concern that the competition tests in the Commerce Act were insufficient to deal with the emerging 3G market. To address this, the Government introduced spectrum ownership caps.

Since the 3G auction, Government objectives for mobile telecommunications spectrum assignments have evolved to include caps, implementation requirements and, in the latest 4G spectrum auction, social objectives (the provision of cellular coverage to rural areas).

However, the acquisition of spectrum also remains subject to the Commerce Act, which has had the effect of creating uncertainty for participants in spectrum assignment. The Government may be seeking to achieve both competition and social objectives in making spectrum assignment decisions, but the Commission would consider the assignment of spectrum on competition grounds alone (applying the legal tests under the Commerce Act alone).

Later, at 5.2, we consider ways to address this uncertainty through inclusion of the initial assignment by the Crown of radio spectrum alongside other economic regulation of communications.

Questions

3. Have we identified the main challenges facing communications regulation as we move beyond 2020?

3.7. The regulatory framework needs updating

Above, we outlined our main concerns with the current regime. It was designed for an earlier era, and it may be out of step with the competitive market and policy goals of a post-2020 world.

In **Appendix B**, we provide a more complete summary of our analysis of the Telecommunications Act, and assess certain provisions against section 157AA. We suggest that submitters read **Appendix B** in conjunction with this chapter and provide views on the preliminary analysis.

The key aspect of the current Act which might require change is the access and pricing regime for fixed line networks. The shape of competition for fixed line telecommunications has changed with structural separation, and the copper pricing process has generated unpredictability.

There are a variety of other reforms to the Act which could make it more effective in promoting competition, supporting innovation and investment, and providing a flexible, predictable environment to benefit access seekers, access providers and end-users.

These proposals are discussed in the following chapters.

4. Pricing for fixed line access services

This chapter outlines what we are trying to achieve through price regulation, examines the case for shifting to a utility-style of regulation for fixed access services, and outlines possible approaches to the post-2020 regulatory treatment of UFB and copper access services.

Earlier, we came to the conclusion that an access and pricing regime will still be needed for fixed line communications networks. That is, we are not considering removing access and pricing regulation for communications networks and relying on generic competition law. We also identified that the access regime needs reform if we are to better meet the outcomes of section 175AA of the Act.

In this chapter we examine:

- the policy objectives for wholesale price-setting for fixed line access services;
- the main alternative form for the economic regulation of fixed line communications services, utility-style regulation, and contrast it with the access regime currently in place under the Act;
- whether retaining the status quo would meet our objectives; and
- what wholesale price regulation should look like post-2020, for:
    - UFB access services; and
    - copper access services.

4.1. Policy objectives for the price regulation of fixed line access services

In addition to the regulatory principles outlined in the previous chapter and the matters outlined in section 157AA, our key policy goals in relation to pricing decisions are:

- that the regulatory framework should be predictable and provide network owners with clear incentives to innovate and invest; and
- that network owners should be limited in their ability to extract excessive profits.

We set out below some initial policy positions to help guide consideration of pricing methodologies.

4.1.1. There will be a need for continued investment in service quality

As consumer expectations change, the demand for high quality, high speed products will continue to grow. An important goal of the regulatory regime should be incentivising and facilitating the network owner to invest in delivering higher quality and innovative services over time.

There are signs that the existing regime may not be managing this feature well. For example, the case of Chorus' proposed 'Boost' products in 2014 demonstrated there was considerable uncertainty in the industry as to how the quality dimensions of regulated products should be managed by the regulator.[58] There was debate as to whether the regulated UBA product has:

- static quality settings (for example, 32Kbps throughput) which can quickly become outmoded (and are in theory vulnerable to gaming from the access provider); or
- open-ended quality settings, allowing consumers to benefit from ongoing performance improvement, but setting no clear boundaries on regulatory obligations, thus reducing the incentives for the access provider to innovate.

There may be some middle ground between the two positions. It is likely the Commission's upcoming review of regulated broadband non-price terms under section 30R of the Telecommunications Act will provide useful guidance on how to achieve continued investments in service quality.

We are particularly interested in your views as to how the regulatory framework might be able to encourage service innovation on UFB networks. The regulatory framework should enable UFB suppliers to achieve a fair return on their investments. It should also facilitate the delivery of affordable services that will meet growing end-user expectations for high-quality and bandwidth-intensive services.

4.1.2. Geographic averaging

In our view, having geographically-averaged[59] wholesale prices across the country continues to be desirable. Having the same price for the same service means that, for example, rural users are not disadvantaged and that obligations imposed through the TSO can continue to be sustained.[60] However, we note that under any cost-oriented regulatory regime involving different suppliers (for example, Chorus and LFCs) it would be challenging to achieve total geographic consistency in pricing.

[58] In 2014, the Commerce Commission began an investigation into Chorus' proposal to offer two higher quality commercial UBA services and to impose a throughput limitation on existing regulated services. Following Chorus' announcement it had put its proposals on hold, the Commission decided to take no further action and so a finding was not reached on the matter.

[59] We are referring here to having consistent prices charged by an individual operator within its network coverage area for a given service.

[60] The 2011 structural separation of Telecom marked a shift to geographically-averaged UCLL prices, largely on the basis that it would maintain consistent pricing throughout the value chain and enable a nationally-priced retail voice service to be met.

4.1.3. Unbundling of UFB networks

After December 2019, Chorus and LFCs are required to unbundle their Gigabit Passive Optical Network (GPON) services so that RSPs can purchase dark fibre services on *point-to-multipoint* parts of the network. Dark fibre services are already available on the *point-to-point* parts of the UFB network. However, the commercial value of fibre unbundling after 2020 may be reduced by two factors:

- fibre cabinets serve relatively few customers and it may not be economic to unbundle in these circumstances; and
- layer 2 UFB wholesale products offer significantly more scope and capacity for service innovation than the copper equivalent, which may reduce demand for unbundling.

Despite the challenges described above, the Government considers fibre unbundling can provide RSPs with opportunities to innovate and can create pressure for the network owners to respond by investing in service quality. We are open however to stakeholder comments about alternative ways of maintaining incentives for fixed line network owners to improve their products, as well as views on whether developments in technology (for example, wavelength unbundling) may provide for less costly or intrusive forms of unbundling.

4.1.4. Pricing frameworks for UFB and copper access services

The Government expects that, within UFB coverage areas, UFB will eventually replace the copper network. It is therefore essential that regulatory settings do not send conflicting signals or create competing objectives. For example:

- a pricing framework that incentivises further large-scale investment in copper networks within UFB coverage areas would be inefficient and is unlikely to be in the long-term interests of end-users; however, regulatory settings will need to incentivise investment and maintenance of the copper network in areas where there is no UFB alternative; and
- the relative price of copper services should not inefficiently provide incentives to RSPs or network owners to delay migration to UFB services.

The right price settings for copper and fibre pricing will enable the achievement of the Government's policy goals for UFB and continued investment in rural infrastructure, while also allowing the natural development of the market as end-users in UFB areas choose to transition from copper. Any decision on changes to the access and pricing regime will be based on a holistic view of the interdependencies between UFB and copper networks.

There may be a case for a shift to technology-neutral service descriptions

From the perspective of end-users, many of whom are likely to be technology agnostic as long as they are receiving a quality service, UFB and copper networks can be seen as a single access network. From a practical perspective, Chorus' assets are part of a network infrastructure where the two technologies have shared costs (for example, ducts, lead-ins and exchanges) and common costs (for example, corporate overheads).

One way to manage interdependencies between the networks and support an efficient and fair transition from copper to fibre might be to reframe the descriptions of regulated services under the access regime (for example, the description of regulated UBA and UCLL services in the Telecommunications Act, which are specific to the copper network) to be more technology neutral. Under this system, Chorus and the LFCs could be required to provide a regulated service that met certain standards, regardless of whether that service was delivered over copper or fibre. In practice this might mean that the price for some basic services (for example, the 30/10 product or a voice-only product) would be set by reference to the functionality of the service rather than the technology over which they are delivered.

This approach would align with the principles of proportionality, flexibility, and technology neutrality. It would address the natural monopoly characteristics of the fixed line network in general, while allowing for flexibility in areas where Chorus is the common network owner.

We would welcome views on the practicality of this approach, including the implications this might have for end-users, competition, and future investment incentives, including in LFC areas.

Questions

4. Do you agree with our policy objectives for the price regulation of fixed line infrastructure?

5. Is it feasible to move to technology neutral service descriptions? How would this work in practice?

4.2. An alternative form of economic regulation: utility-style regulation

The Telecommunications Act provides a framework whereby the Commission can require an access provider to allow other parties to access its networks and services, including doing so at prices determined by the Commission. The framework is centred upon promoting competition for the long-term benefit of end-users and prices are typically set at a level that is designed to send efficient build/buy signals to access seekers (i.e. access seekers will invest in 'building' if they can do so more efficiently than 'buying' access to the end-user).

The main alternative approach to price-setting is that which is used to regulate traditional utilities. We refer to this as 'utility-style' regulation. The Government is interested in whether a utility-style price-setting system for fixed line services, an example of which is in Part 4 of the Commerce Act, would be more consistent with section 157AA of the Telecommunications Act.[61]

What is utility-style regulation?

'Utility-style' regulation is traditionally applied to utilities such as electricity, gas, major airports and water, where there is little or no competition and little or no scope for a substantial increase in competition.

Utility-style regulation is usually only applied to vertically separated monopolies where the monopolist has no incentive to discriminate between access seekers and for this reason these regimes normally focus only on price setting (and some quality aspects). Because of vertical separation, the main problem for utilities has been pricing and service quality rather than mandating timely access to bottleneck assets.

Utility-style regulation usually focuses on the following features of interest in the current context:[62]

- price–quality control: control of revenues and the quality of services, which tends to focus on the overall revenues of the regulated business rather than individual service pricing;
- regulated revenues are usually set using a Building Block Model (BBM) methodology, in which the value of the underlying assets is often locked in and the regulator sets a maximum allowable revenue that the regulated entity is permitted to generate from those assets (although such an approach is not prescribed by Part 4); and
- a process for the regulator to develop and implement 'input methodologies', which are the methodologies for determining the various inputs into the calculation of regulated prices (generating greater predictability).

Various forms of utility-style regulation under Part 4 of the Commerce Act have been applied to electricity lines, gas pipelines, and specified airport services in New Zealand. Part 4 can be applied to any identified good or service in a currently unregulated industry that meets the statutory criteria.

[61] In addition, as part of the Review, section 157AA(2)(b) requires the Minister to consider whether alternative regulatory frameworks including (without limitation) generic price control would be a preferable and more effective means of achieving the specified outcomes. In New Zealand, generic price control is managed through 'utility-style' regulation in Part 4 of the Commerce Act.

[62] In Part 4 of the Commerce Act there are three forms of regulation: information disclosure, price-quality control (using a Default/Customised Price-Quality Path or an Individual Price-Quality Path) and negotiate/arbitrate. In this discussion we are focussing on price-quality control. The Telecommunications Act is technically based on a negotiate/arbitrate model, but the ability of the Commission to issue Standard Terms Determinations (STDs) that bind the industry has meant this aspect has fallen away in practice. We discuss the role of information disclosure later in this chapter.

The discussion below on the key advantages and disadvantages of utility-style regulation is limited to the fixed line network. In mobile markets, there is already infrastructure competition between the three mobile network operators. A utility-style approach is not appropriate in markets where infrastructure competition remains likely.

If a utility-style approach was favoured, this could be managed through the regulation of fixed line communications services directly under Part 4 of the Commerce Act. Alternatively, aspects of Part 4 or utility-style regulation could be recreated in the Telecommunications Act. This is discussed at **Appendix C**.

4.2.1. Advantages of a utility-style regulatory approach

The main argument in favour of a shift to a utility-style regulatory approach for fixed line services is that the UFB and copper network providers increasingly resemble utilities (in particular electricity lines businesses): they are structurally separated, wholesale-only,[63] and offer a limited set of services in markets with limited competition.

The UFB network has natural monopoly characteristics and is unlikely to be replicated in full, which is a defining feature of the businesses to which utility-style regulation is applied.

There are also aspects of utility-style regulation under Part 4 that may have increased relevance for fixed line telecommunications services in New Zealand. The 'price-quality path' used in Part 4 utility regulation could support the availability of high-quality infrastructure, and incentivise continued network investment after the conclusion of the UFB rollout. Part 4 utility-style regulation also includes mechanisms for developing 'input methodologies' that generate greater certainty of the key inputs to future regulatory pricing decisions.

A utility-style framework is likely to be more widely understood, including by investors in common capital markets, than a bespoke framework for communications as we have at present.

4.2.2. Disadvantages of a utility-style approach

Despite the similarities mentioned above, there remain some key differences between fixed line communications providers and those businesses currently subject to utility-style regulation. The main difference is that communications providers' services are more complex and dynamic than traditional utility services, and the competition issues for communications services are broader in scope than for traditional utilities.

Simply applying Part 4 directly to fixed line services may not provide a comprehensive solution for telecommunications regulation. If a utility-style regime was adopted then there may still be a need for some additional elements, like requirements for timely access and the regulatory regime for mobile services. This could be overcome by retaining these provisions in the Telecommunications Act.

[63] This is an enduring legislative obligation (sections 69O, 69R and 69S of the Telecommunications Act).

Secondly, traditional utilities face no competition, whereas in the case of fixed line communications services there are some pockets of competition. There is not likely to be enough competition to constrain pricing in fixed line markets, as discussed earlier, but there is more than zero competition.[64]

Our view is that utility-style regulation may be appropriate for fixed line communications services. However, the case for any shift to utility-style regulation will also depend on other considerations relating more specifically to pricing, which are examined in more detail below.

Questions

6. Do you consider utility-style regulation may now be more appropriate for fixed line communications services? If so, what elements would be most effective?

4.3. Pricing for UFB access services

This section outlines the Government's initial view that:

- maintaining the status quo for UFB services post-2020 would not be the most effective means to achieve our outcomes when assessed against section 157AA of the Telecommunications Act;
- the Government's preference is for a Building Block Model (BBM) to apply when setting regulated prices for UFB services; and
- this model may either apply directly from January 2020 or operate as a backstop model, whose implementation is triggered by a Commerce Commission recommendation.

[64] For example, in LFC areas there is competition with Chorus' copper network, the Vodafone HFC network competes with copper and fibre in parts of Wellington and Christchurch, while in the future unbundling may lead to layer 2 competition on the UFB networks. As discussed earlier, we expect mobile services will continue to gain popularity but will not compete with fixed line services in their core business of broadband provision for most users.

A summary of the possible approaches to UFB pricing discussed in this chapter is in *Figure 14* below:

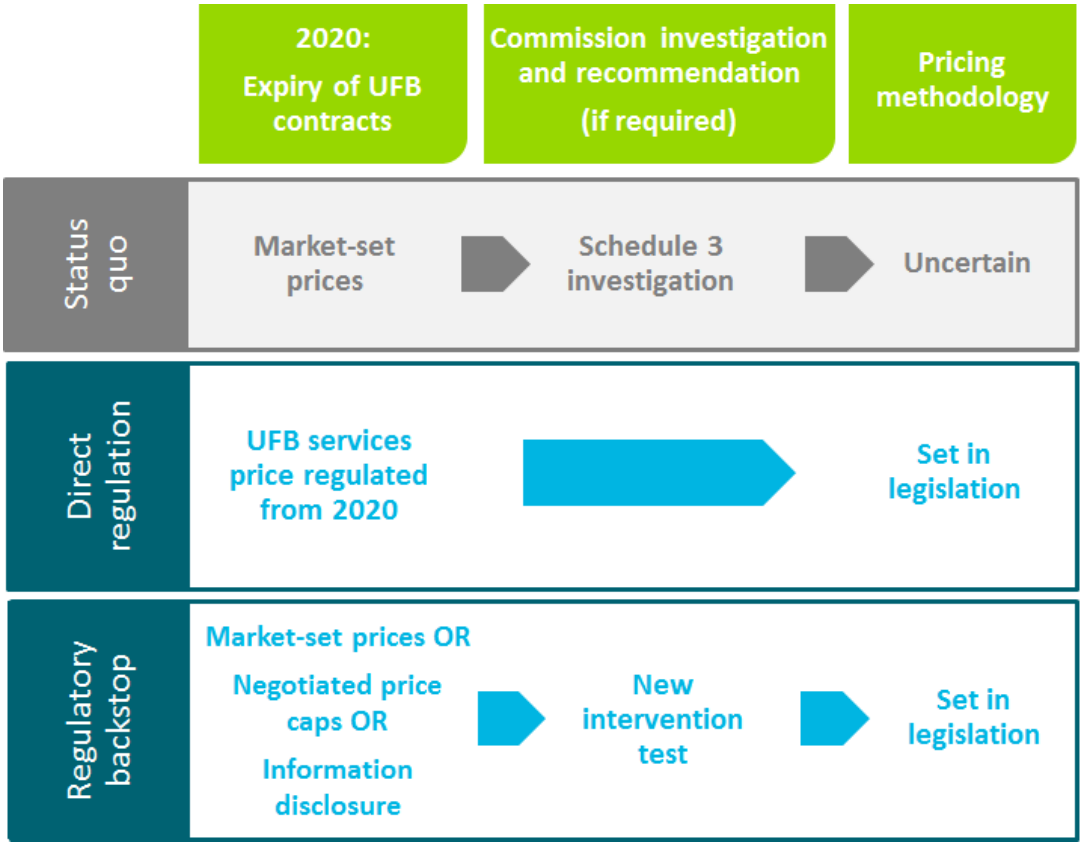

Figure 14: Summary of possible approaches to UFB pricing

4.3.1. The status quo

The current wholesale price caps for core UFB services are set by contract between the UFB partners and Crown Fibre Holdings (CFH) and will expire on 31 December 2019. Under the status quo, wholesale prices beyond this date will be set on commercial terms, with the Commerce Commission able to investigate the case for introducing regulation at any time.[65]

The Government's view is the status quo will not meet policy objectives and will not be consistent with section 157AA(a). As we approach 2020, the status quo does not provide the certainty needed to encourage investment and support innovation, and promote the long-term benefits of end-users.

On one hand, a case might be made that the most prudent approach would be to maintain the status quo. In particular:

- it is possible that after 2020 market-set prices for UFB would be set at levels that did not give rise to concern:

[65] Non-price terms of supply would continue to be defined by the wholesale services agreements developed by UFB partners (and any eventual regulatory standards) and would be subject to open access undertakings enforced by the Commission.

- given the large-scale investments they have recently made, UFB suppliers should have strong incentives to price their services at levels to encourage end-user uptake; and
- UFB suppliers will face a degree of price competition from other fibre networks, regulated copper services, HFC, and to a limited extent from mobile and wireless services; and

- if concerns did arise about the pricing of UFB services then the Commission would have sufficient powers under the Act to investigate grounds for regulation and to recommend appropriate pricing methodologies under Schedule 3.

However, it has become clearer that the UFB infrastructure is likely to have natural monopoly characteristics. At 2.4, we expressed the view that Chorus (and to a lesser extent, LFCs) are unlikely to face significant competitive pressure that could constrain pricing post-2020. UFB services are very likely to be subject to price regulation at some point. This becomes more likely as end-users migrate to fibre and the legacy copper infrastructure in UFB areas is less able to meet the needs of end-users.

The prospect of the future regulation of UFB services calls into question the value of deferring consideration of the most appropriate regulatory framework and pricing model.

When the Commission does commence an investigation into regulating UFB services the exact pricing methodology for those services would not be known until the Commission makes its final recommendation – this may take years, if past history is a guide, and inject considerable uncertainty into the market, with adverse consequences for network owners, RSPs and consumers.

With this in mind, the status quo:

- would prolong uncertainty about the future regulatory treatment and pricing of UFB assets. Uncertainty as to the regulatory settings that will eventually apply to UFB services could result in UFB suppliers delaying post-2020 investments until such time as they are satisfied they will receive a reasonable rate of return on their future investments; and

- may not provide sufficient time for the Commission, even if it was minded to intervene, to complete a Schedule 3 investigation into whether or not UFB services should be regulated and then to set price and non-price terms in a timely manner.[66] The resulting period of market-based pricing could see prices for UFB services being set at levels that:
  - potentially subjected end-users to price shocks following the expiry of UFB pricing agreements; and

[66] Past experience indicates a Schedule 3 investigation and consideration by the Minister might take at least 18-24 months; an STD to set an initial price might take another 9–18 months; plus there may be a period of notice prior to the prices coming into effect.

- limited opportunities for RSPs to cost-effectively unbundle the UFB networks.[67]

The Government's view is that it should specify the pricing methodology that would eventually apply to regulated UFB services.

Access seekers, network owners and end-users will all benefit from a regulatory framework that provides more certainty about how prices for UFB services will be set after 2020.

As is discussed below, simply specifying the pricing methodology that will eventually apply to regulated UFB services does not necessarily mean UFB services will be regulated immediately from 2020.

4.3.2. Possible pricing methodologies for UFB services: TSLRIC versus BBM

The two most relevant cost-oriented pricing methodologies are the Total Service Long Run Incremental Cost (TSLRIC) methodology and the 'building block methodology' (BBM).[68] BBM tends to be used in utility-style regulation (for example, for electricity lines under Part 4 of the Commerce Act), and is used for both copper and fibre services in Australia. The TSLRIC methodology is currently used to set regulated prices for copper services in New Zealand.

What's the difference between BBM and TSLRIC?

At a simple level, both TSLRIC and BBM set a value for a regulated asset base (RAB) and provide a mechanism for recovering that value through wholesale prices. A key difference between these two approaches is how the underlying assets are valued and re-valued during the price-setting process.

Under TSLRIC the underlying network assets are valued (and periodically re-valued) based on what it would cost if they were to be replaced with a 'modern equivalent asset'. Costs are set independently of the actual costs being incurred by the regulated entity and are intended to result in prices consistent with those that would be present if there was effective competition. In a fully competitive market a network owner would be unable to recover any of their historic costs that exceeded the cost of building a new network – if they attempted to charge higher wholesale prices, an access seeker would theoretically enter the market to build their own infrastructure (the build/buy decision), which in turn would force the network owner's prices back towards replacement cost.

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[67] Although UFB suppliers are required to unbundle their networks post-2020, in the absence of price regulation UFB suppliers may have incentives to set prices for layer 1 services at levels that limit the utility of unbundling for RSPs.

[68] The Government has considered alternative pricing methodologies but has concluded that, for the purposes of section 157AA of the Telecommunications Act, BBM and TSLRIC are the two main options for the possible regulatory pricing of UFB services. This does not exclude the possibility of a hybrid-type approach, as discussed below.

With BBM, there is no single accepted approach as to how the underlying RAB should initially be valued.[69] However, unlike TSLRIC, this initial valuation is typically not wholly revisited again, as the initial RAB is rolled forward from one regulatory period to another after being updated to reflect actual new capital expenditure and depreciation. As outlined in *Figure 15*, under BBM a maximum allowable revenue is set for the regulated entity, which should be sufficient to cover all of its efficiently incurred costs (or 'building blocks') without putting the entity in a position to earn excessive profits.

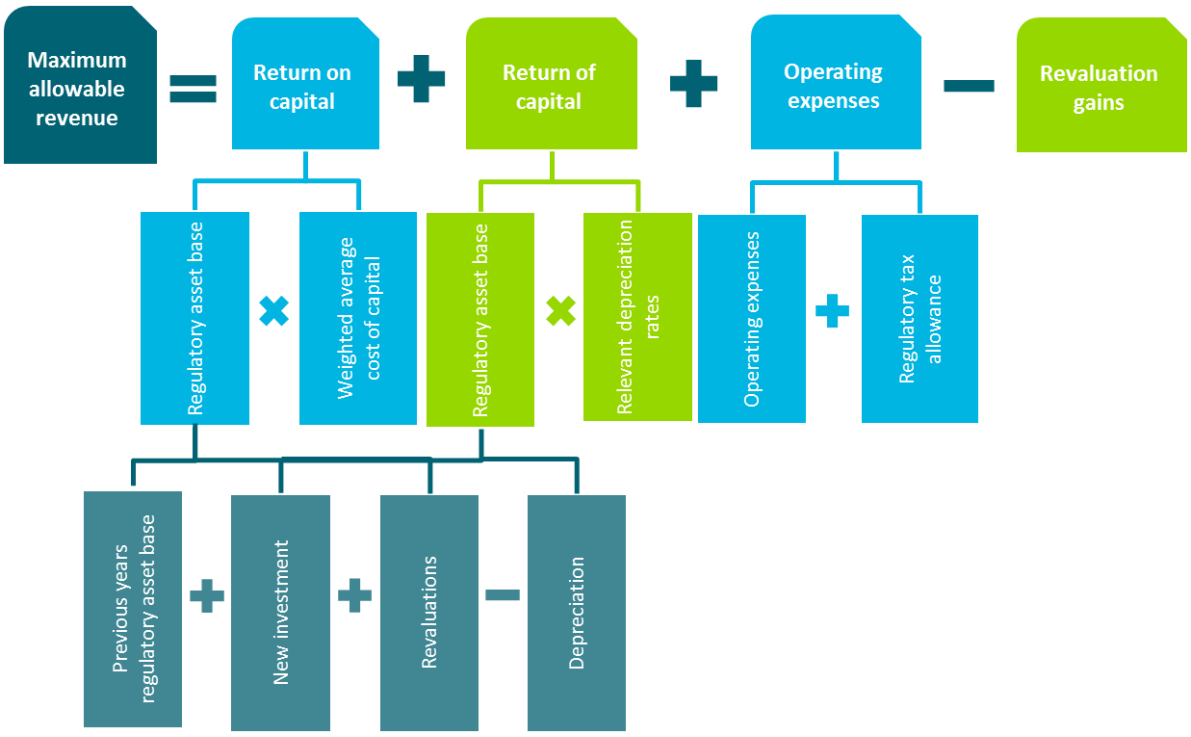

Figure 15: An example of the 'building blocks' making up the building block methodology

In this chapter we are considering a BBM model that is oriented to allowing a regulated entity to recover its efficiently incurred costs in building and operating its UFB network (and having the characteristics outlined below in *Figure 16*). Given there is recent (and ongoing) investment being made in UFB (supported by an information disclosure regime), there is a strong case that any initial UFB RAB valuation should reflect efficient capital expenditures actually incurred.

We acknowledge our summary above oversimplifies the way these two methodologies are used by regulators and that there can be significant overlap in the characteristics of these models, depending on how they are implemented. However, for clarity of discussion, throughout this chapter, we compare two broad approaches to price settings as set out in *Figure 16* below.

[69] As is examined in Appendix C, the initial valuation could theoretically lie anywhere on a continuum from scrap value to optimised replacement costs (which would mirror a valuation under TSLRIC).

Component	TSLRIC *(as implemented for copper prices in New Zealand)*	Alternative UFB model *(BBM)*
Regulatory purpose	Access prices mirror what would occur in a competitive market: - MEA (modern equivalent asset) re-valuations send efficient build/buy signals to access seekers; and - enables recovery of efficient long-run costs.	Access prices more closely align to the efficient actual costs faced by the access provider at the time those investments were made: - promotes stability/certainty; and - access provider can recover their efficiently incurred costs and investments.
Initial calculation of RAB	Forward-looking costs.	Efficiently incurred actual costs.
Updating of RAB when prices reset	Potentially the entire RAB value is reset each time prices are set, with the MEA updated. New prices are not necessarily influenced by previous pricing or actual expenditure (revaluation can lead to windfall gains and losses).	RAB is periodically updated to reflect prudent and efficient *actual* capex and depreciation.
Treatment of future opex/capex	Forecasts of operating and capital expenditure are based on the costs a hypothetical efficient operator would face when maintaining an MEA. Allowable revenue is decoupled from actual expenditure that the access provider incurs.	Forecasts of operating and capital expenditure are based on what the access provider is expected to prudently incur maintaining their actual network.

Figure 16: Comparison of TSLRIC and BBM pricing methodologies

4.3.3. Preliminary view: BBM is the most appropriate methodology for UFB

The Government's preliminary view is that BBM (as described) is the most appropriate pricing methodology for any future economic regulation of UFB services.

BBM will promote the legitimate commercial interests of access providers and access seekers and should provide a suitable basis for robust retail competition over the UFB network. BBM will limit the ability of UFB suppliers to generate excess profits, while also providing the stability and incentives needed to encourage efficient investment post-2020.

The key benefits of applying BBM to UFB services are likely to include:

- BBM will generate more predictable outcomes than TSLRIC by avoiding constantly revisiting how the RAB is comprised and valued. Reduced volatility in access prices (and removing the prospect of windfall gains/losses from future revaluations) will improve investment and innovation incentives for both access providers and seekers;

- BBM allows access providers to recover their actual efficient costs, without generating excess profits;

- as a prudent and efficiently-made investment under a BBM framework will generate a reasonable rate of return, UFB suppliers will have incentives to invest in connecting new end-users to UFB and expanding their network footprints. This would not be the case under TSLRIC, which the Commission has observed, '… is not directly concerned with whether the incumbent under- or over-recovers';[70]

- the availability of verifiable information about the actual build costs associated with UFB provides a superior means of valuing the recently deployed infrastructure than the abstract TSLRIC exercise of continually valuing the network that a hypothetical efficient operator would deploy;

- given its application under Part 4 of the Commerce Act, BBM is more widely understood than TSLRIC and is likely, over time, to lead to a less contentious regulatory process; and

- finally, we observe that a key rationale under TSLRIC of providing efficient build/buy signals will soon become much less relevant. If one accepts there will not be a competitive bypass of UFB networks and that access seekers will only look to 'buy' wholesale access to UFB (rather than 'build') then the case for applying TSLRIC to UFB is considerably weakened.[71]

While there are some risks associated with applying BBM to UFB services, these look to be manageable:

- BBM prices are largely based on the *access provider's* actual prudent and efficient costs rather than the 'efficient cost' of providing a particular service. The model could therefore theoretically promote over-investment and allow the regulated entity to recoup inefficient operating costs. However, as occurs under Part 4, this can be addressed through the regulator's role in pre-approving efficient expenditure and investments;[72]

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[70] Commerce Commission, *Further draft pricing review determination for Chorus' unbundled copper local loop service*, 2 July 2015, page 54.

[71] In 2010 the Australian Competition and Consumer Commission (ACCC) observed that the access network displayed enduring monopoly characteristics and that access seekers were unlikely to build alternative networks. This finding contributed to the ACCC's decision to move away from using TSLRIC for pricing copper access services. See http://www.accc.gov.au/system/files/Draft%20report%20-%20Review%20of%201997%20telecommunications%20access%20pricing%20principles%20-%2017%20Sept%202010.pdf and https://www.accc.gov.au/system/files/Discussion%20paper%20-%20FADs%20for%20fixed%20line%20services%20-%20public%20version.pdf.

[72] In other words, the regulator could apply an ex-ante prudency/efficiency review to determine forecast capex and opex. We note there is ex-ante, and some ex-post, scrutiny of particular major capex investments by Transpower.

- a RAB valuation under BBM can be unaffected if a new technology emerges that is significantly cheaper to roll out, which may mean prices would be higher than what would occur under TSLRIC. However, if that were the case we would expect that competition from that new technology should emerge and the case for regulation would likely be weaker; and

- finally, we observe that BBM often requires a higher level of intrusion by the regulator into the business affairs of the regulated entities (with accompanying compliance costs) than does TSLRIC.

As we observe in **Appendix C**, the ability of BBM to secure key policy outcomes will hinge on several important implementation questions, including how prices for individual services are set and how BBM can be used to promote continued investment in service quality.

Questions

7. Would maintaining the status quo for UFB services be effective post-2020?

8. If the Government was to specify the pricing methodology that would eventually apply to UFB services, what methodology would be preferable?

4.4. Direct regulation of UFB access services versus a regulatory backstop

The Government has not reached a view on *when* price regulation of UFB services should occur. There are two main options being considered: the Government could legislate to make certain UFB services subject to BBM price regulation from 1 January 2020 (direct regulation), or it could make the implementation of any BBM price regulation dependent on a Commission recommendation that price regulation has become necessary (a regulatory backstop).

4.4.1. Option one: Direct regulation of UFB access services

Under this option, the Government would pass legislation deeming certain UFB services to be designated services, with the Commission then to determine the wholesale price and non-price terms that would apply from 1 January 2020.

While this would be a departure from the standard approach of waiting for the Commission to carry out an investigation and make a recommendation itself, this could be justifiable given the unique circumstances surrounding the end of the UFB contracts in 2019, the likely market power of the UFB networks, and the industry-wide desire for certainty and predictability.[73] A comparable precedent would be the decision in 2006 to use legislation to subject UCLL and UBA services to regulation.

Under this option, industry participants would lose some of the advantages of participating in the Commission's formalised procedures, although there would still be scope for the Commission to consult on matters such as service descriptions and the application of the pricing methodology.

The scope of UFB regulation

If the Government were to move to direct regulation of UFB services, decisions would need to be made on the scope of any regulation, including:

- the UFB suppliers that should be subject to regulation (there may be different competition concerns in areas where Chorus owns both the copper and fibre access service compared to where LFCs are competing with Chorus); and

- the UFB services that should be subject to regulation, including existing and new layer 2 services and layer 1 services (including physical and/or virtual unbundling).

Following submissions to this document, if the Government decides to adopt the 'direct regulation' approach, then a targeted consultation will be undertaken on options for addressing concerns in individual markets. If the Government favours introducing a 'regulatory backstop' for UFB services, the decisions on scope could be devolved to any subsequent Commission investigation.

4.4.2. Option two: A regulatory backstop

Under this option, the Government would pass legislation to establish a pricing methodology, but UFB services would only become price regulated following a Commission investigation and recommendation that pricing regulation was necessary.

Leaving the Commission to formally investigate concerns about competition and market power in UFB markets would minimise some of the risks associated with the Government directly regulating UFB. Even if regulation does not occur immediately, having a transparent and predictable regulatory framework specified in advance would provide certainty for industry and investors.

[73] We note Chorus' submission to MBIE in 2013 urged the application of a BBM model following the conclusion of its contract with CFH in 2019. See http://www.mbie.govt.nz/info-services/sectors-industries/technology-communications/communications/regulating-the-telecommunications-sector/documents-image-library/review-of-the-telecommunications-act-2001-2013-first-phase/chorus.pdf.

However, this approach may just be introducing unnecessary procedural hurdles and delay, as the industry would be required to go through two substantive regulatory processes following the conclusion of this Review: first to determine the need for (and scope of) any regulation and then, if necessary, to set individual prices (including the possibility of setting prior Input Methodologies). There is the possibility under this approach that industry and end-users could be subject to price-shocks following the expiry of the UFB contracts in December 2019.

A tailored test for intervention

If the Government were to introduce BBM as a regulatory backstop, then there would arguably be little value in the Commerce Commission undertaking a resource-intensive Schedule 3 investigation into whether UFB services should be regulated. The Commission could instead be asked to apply an alternative and simpler test for whether UFB services should be regulated. For example, the application of any new pricing regime could be triggered by a Commission conclusion that the interests of end-users would be best served by the regulation of UFB services, or something similar to the process and reporting requirements for specified airport services in section 56G of the Commerce Act.[74]

Transitional measures for pricing of UFB services

The objective for introducing transitional measures would be to facilitate a low-cost and largely market-driven approach to setting UFB prices during the period prior to any Commission decision under the 'regulatory backstop' model.

A tailored information disclosure regime

Under this option, UFB suppliers would be free to continue to set prices pending any Commission recommendation to regulate, but would be required to publish detailed information about their costs and pricing.

This approach would be similar to the requirement for major international airports under Part 4 of the Commerce Act to disclose information on their financial performance and the methodologies they use in setting prices. If the industry has a prior understanding of the pricing methodology and prices that would result if the regulator eventually steps in, then negotiated outcomes are much more likely to succeed (creating a situation akin to a negotiate/arbitrate regime).

[74] Section 56G of the Commerce Act states that as soon as practicable after a supplier sets a new price for a specified airport service, the Commission must review the disclosed information; consult; and report to Ministers as to how effectively information disclosure regulation is promoting the purpose in section 52A. A similar reporting process could be devised for UFB, with the Commission advising whether UFB markets should be regulated and what sort of regulation (within the predefined framework) should be applied.

However we note UFB suppliers are already subject to robust information disclosure requirements,[75] so we would welcome views on what additional information they could usefully provide to the regulator and the market and how information disclosure might be more tightly linked to BBM.

Negotiated UFB pricing agreements

Under this option the Government might agree new price caps with UFB suppliers that would apply for a transitional period, until the Commission enacted BBM for those UFB services. However, the Government's past involvement in negotiating UFB price caps was an integral part of its UFB investment and it is reluctant to have an ongoing role in directly setting prices outside of such investments.

This option would be relatively quick to implement, would reduce some of the risks associated with any premature regulation of a new market and would provide a 'price ceiling' that would protect end-users from the possibility of any price shocks post-2020 while not foreclosing the possibility of cost-based regulation under BBM in the future.

Questions

9. What is your view on UFB access services being regulated immediately from 1 January 2020, compared to a backstop regime whose application would be triggered by a Commerce Commission recommendation?

10. If the Government were to legislate for the price regulation of UFB services from 1 January 2020, do you have any initial thoughts on the scope of such regulation? Should a different approach be taken in LFC areas?

11. If the Government were to introduce a backstop regime for UFB services, do you have any initial thoughts on:

a. tailoring the traditional Schedule 3 investigation into whether UFB services should be regulated?

b. the need for transitional measures that might apply prior to the possible price regulation of UFB services?

[75] See for example s156AV of the Act. We note that, to date, summaries of this information have not been published to market participants. We also note Chorus has expressed concern that the current information disclosure regime requires it to make a judgment on cost-allocation between its copper and fibre assets, without knowing the future pricing regime that will apply. See https://www.chorus.co.nz/file/48854/Chorus-submission-on-the-Telecommunications-Act-review---FINAL.pdf.

4.5. Pricing for copper access services

Chorus owns the near-ubiquitous copper network in New Zealand and faces limited competition from other fixed line services. The copper network still has natural monopoly characteristics and the Government's view is that access and pricing regulation will still be required post-2020. However, we note there may be a case for deregulation of copper services in areas where a suitable fibre replacement is available. This is discussed at 4.1.4 and 6.2.1.

4.5.1. Will the current copper pricing framework be suitable post-2020?

The two key wholesale copper services are UCLL and UBA, with prices for many other copper services largely flowing from the price of those two services. Both services are priced on a forward-looking cost basis. The Commission is currently completing full TSLRIC modelling, which will replace prices previously set through international benchmarking.

We consider that the original rationale for applying TSLRIC to copper services is less relevant post-2020 and that its continued application might not necessarily lead to long-term stability or promote the interests of end-users.

The case for retaining TSLRIC for copper access services

A large part of the recent regulatory uncertainty discussed at 3.5 was a result of the benchmarking processes for UCLL and UBA. With the Commission due to complete its first full TSLRIC modelling later this year, a case could be made that it is time to allow this regulatory scheme to fully 'bed in'. Over time, the TSLRIC process should become more predictable and arguably the Government should refrain from changing the pricing principle so soon after such a significant modelling exercise.

TSLRIC also has its advantages, which include:

- it is a methodology that should generate efficient levels of infrastructure investment. Access seekers will only build new networks when they can do so at a lower cost than what a hypothetical network owner would deploy;
- it should ensure the access provider has strong incentives to generate efficiencies as inefficient costs cannot be passed onto their customers;
- by valuing sunk assets on a replacement basis, it should provide the access provider with sufficient revenue for ongoing efficient network investment; and
- by valuing sunk assets on a forward-looking basis and utilising modern technology, TSLRIC also sets efficient entry and exit incentives.

The case for moving away from TSLRIC for copper access services

Many of the well documented issues with TSLRIC have been canvassed above in our discussion on UFB. They are summarised below with particular consideration of copper services:

- as post-2020 regulatory objectives will have shifted away from encouraging access seekers to invest in new networks, the case for valuing sunk assets at replacement cost is weakened;

- the abstract nature of TSLRIC modelling generates significant practical challenges, is inherently contentious, and requires considerable industry resources to be applied each regulatory period;
- TSLRIC prices may bear little relation to actual investments made in New Zealand and the historic recovery of sunk assets (including with respect to past depreciation and recently made investments); and
- TSLRIC does not provide long-term certainty on future prices, as wholesale prices will increase or decrease as technology costs change and the nature of the MEA evolves, despite the fact the underlying network is actually a sunk cost.

The case for continued application of TSLRIC to copper services is further weakened in a scenario where BBM is applied to UFB services. There would be increased administrative complexity and costs from applying two different pricing frameworks to Chorus' assets. Importantly, a scenario where BBM was applied to UFB services and TSLRIC to copper services could send conflicting signals to the market:

- using BBM for UFB implicitly accepts that the fixed line network has enduring natural monopoly characteristics and it is now less relevant to send efficient build/buy signals to access seekers, whereas the continued valuation of the copper network using TSLRIC would be designed to ensure efficient levels of infrastructure competition;
- there is a risk that the stability that BBM would provide for the industry for UFB services would be undermined by inherent uncertainty from continued application of TSLRIC for copper services (particularly with regard to possible future changes in the MEA); and
- Chorus may over-recover under a scenario where BBM is applied to UFB services and TSLRIC to copper services. UFB prices would enable it to recover any actual fibre investments that it made, while copper prices would enable Chorus to recover the costs of a nationwide replacement network (with fibre also being predominantly used as the MEA).

Considerations for moving to BBM for copper access services

The Government notes that it has not yet reached a view on whether the pricing methodology for copper services should be changed after 2020.

If the Government were to change the pricing methodology for copper access services to BBM after 2020, an initial valuation of the underlying copper RAB would be locked in and adjusted up or down over time based on depreciation and the actual capital expenditure that Chorus makes in the copper network.

The advantages of applying BBM to copper services would include:

- applying BBM to copper services better reflects a post-2020 environment where access seekers are unlikely to look to invest in new fixed access networks (i.e. post-2020 the need to value a sunk copper network based on replacement costs will be weakened);

- BBM provides the sector with more certainty about future prices by not continually revaluing the underlying asset base;

- BBM would ensure Chorus can recover only their actual efficient costs and earn a reasonable return on actual investments (without generating excess profits);

- BBM can be more clearly tied to investment/innovation incentives than TSLRIC. For example, under BBM Chorus might be encouraged to make investments to improve rural copper broadband in the knowledge it is able to earn a reasonable return on such efficient investments (whereas under TSLRIC Chorus would only earn a return on the investments a hypothetical efficient operator might have made); and

- BBM is more conceptually straightforward (once the initial RAB is set) and should, over time, reduce contentious regulatory debates and the regulatory burden on industry.

Should UFB services be priced on a BBM basis as recommended above, then adopting a consistent methodology for copper would also send appropriate pricing signals to the industry and could be used to maintain a link between the pricing of access to the two technologies (including the prospect of technology neutral service descriptions).

However, there would be risks in moving to BBM for pricing copper services. As BBM prices do not necessarily reflect the 'efficient cost' of providing a particular service, there may be a risk that Chorus will have weakened incentives to operate efficiently. Having said that, we note that the experience of the Commission in using BBM under Part 4 of the Commerce Act has demonstrated that the application of BBM can be done in a way that mitigates the risks of inefficiencies.[76]

Finally, we note that moving from TSLRIC to BBM for copper services could create disruption and regulatory uncertainty. For clarity, we note that we are not proposing any immediate changes to the pricing process. The current copper pricing process would still stand, and any change would be implemented post-2020.

Stability and predictability, including avoiding price shocks for end-users, industry, and investors, are key concerns for the Government, and the Government is mindful of making further change in this area when there has been so much time and resource invested in the current process.

If change were made, we recognise the need for a pragmatic and considered approach to any transition to a new pricing methodology. As outlined in **Appendix C** (implementation matters) there may, for example, be a case for 'rolling over' or 'anchoring' some current copper prices if we transition to a new model.

[76] Section 52A of the Commerce Act explicitly states that a purpose of Part 4 is that suppliers of a regulated good/service should 'have incentives to improve efficiency'.

Questions

12. Is there a case for change to the regulated copper access services pricing methodology? If so, what pricing methodology should apply post-2020?

13. If a BBM pricing methodology were put in place for UFB services, how would that impact the choice of a copper pricing regime? Should consistency be an important consideration?

4.6. Implementation issues for moving to BBM for UFB and/or copper services

If the Government decides to move forward with shifting to BBM for UFB and/or copper access services, we will consult further on implementation issues.

While using legislation to specify pricing methodologies can provide regulatory certainty and stability to the industry, we are conscious of the risk of being too prescriptive and limiting the flexibility of the Commission to respond to future regulatory challenges. We are particularly interested in views as to how we might best strike the balance between setting out desired policy outcomes and pricing rules in legislation and devolving such matters to the Commission.

The following implementation issues for moving to BBM for UFB and/or copper services are examined in **Appendix C**:

- legislative structure (i.e. the Telecommunications Act or Part 4 of the Commerce Act);
- the scope and valuation of the RAB(s), including:
    - number of RABs;
    - initial RAB valuation(s);
    - the treatment of Government support for UFB networks.
- setting prices for individual services;
- the use of undertakings; and
- transitional arrangements.

Questions

14. If BBM were introduced for UFB and/or copper services, should this be done under Part 4 of the Commerce Act or through a similar model under the Telecommunications Act? What would be the costs and benefits of each option?

15. **What is the right balance between providing predictability through legislated pricing requirements and ensuring the Commission has flexibility to respond to a changing environment? How might this be achieved?**

16. **Please comment on the implementation issues we have identified for moving to BBM for UFB and/or copper access services, including identifying any other material issues that you think would need to be addressed.**

5. Mobile competition and radio spectrum

Mobile services are now essential to the way New Zealanders live and do business. Proportionate regulation of mobile services and effective allocation of radio spectrum will be important to make sure competition in the mobile sector remains strong.

Above, we focused on economic regulation for fixed line networks. In the mobile market, the competitive environment is very different.

While mobile markets have high barriers to entry, they do not have the natural monopoly characteristics of fixed networks. There is already infrastructure competition between the three mobile network operators. The potential competition problems in this market and our response are necessarily different to those for fixed line services.

In mobile markets, our goal is to see competition and investment drive increased coverage across New Zealand, including in rural areas, and the delivery of affordable, high-quality, and innovative service offerings.

So far, competition supported by regulation has seen significant investment in the three mobile networks. Regulation of mobile termination, co-location and national roaming have all supported increasing competition in the market, and the Government has actively promoted competition during spectrum allocations.

There is still scope for improvement in increasing competition in our mobile markets, for example through encouraging greater infrastructure sharing to support efficient national coverage, and by implementing new tools for the allocation of spectrum. This chapter seeks your views on these options.

5.1. Existing mobile regulated services

5.1.1. Mobile termination access service

The only mobile access service subject to wholesale price regulation at present is the 'mobile termination access service' (MTAS), which includes the termination of fixed and mobile voice calls and SMS. This service may become less relevant over time in the packet-centric mobile network, with voice and messaging transmitted as data. MTAS are regulated through benchmarking under the initial pricing principle, with the final pricing principle (if needed) being TSLRIC or 'bill and keep'[77] (as determined by the Commission).

We are not aware of any concerns about the ability of the existing framework to effectively deal with the regulation of MTAS. Prices set under the existing benchmarking have not been challenged by access seekers or providers wanting to move to a Final Pricing Principle (FPP) process under the TSLRIC model, and our initial assessment is that the Commission has existing powers that are satisfactory to deal with any issues that arise.

We do not see a sufficient case to make changes to the pricing methodology or access regime for MTAS or regulated mobile services generally. As discussed in the previous chapter, the mobile market remains vertically integrated and so any shift to a utility-style model of regulation would be inappropriate.

5.1.2. Specified services: national roaming services and co-location

There are two mobile services that are subject to non-price regulation: national roaming services and co-location. As 'specified' services, these services effectively operate as a 'backstop' to commercial negotiations: access providers are required to offer the service on regulated non-price terms but are free to set the prices for providing that access.

These services are particularly important to 2degrees (which roams on Vodafone's network in areas where it does not have coverage) and may become more important as it rolls out 4G.

While mobile competition continues to develop, including with a new fixed line offering from 2degrees, there are concerns about continued market concentration (particularly in the business market). Given the importance of offering national mobile coverage, New Zealand's vulnerable state of mobile competition could be quite rapidly affected by a failure of commercially negotiated roaming agreements.

[77] 'Bill and keep' is an interconnection pricing arrangement where the originating network keeps whatever amount it charges the caller for making calls, and the terminating network delivers the call to the destination party on its network. Bill and keep is only suitable for network interconnection services with two-way traffic flows, and is not appropriate for pricing of access to wholesale infrastructure.

If commercial arrangements failed to an extent that regulatory intervention was warranted, our initial view is that the Commission has adequate powers to investigate whether these services should be subject to price regulation as 'designated' (i.e. price regulated) services.

However, should 2degrees (or another potential new entrant) be unable to negotiate a satisfactory roaming agreement, then it would take a considerable period of time before any regulated solution could come to bear. With the requirement for a Schedule 3 investigation,[78] Ministerial consideration and then a standard terms determination to set pricing, mobile services may be another market where a more streamlined process for regulatory intervention as discussed at 4.4 would be beneficial.

There may also be a case for a stronger focus on deregulation (discussed at 6.4) if conditions allow in this rapidly changing market.

5.1.3. Infrastructure sharing

Government policy settings have supported infrastructure competition in mobile markets over the past decade, and we still support this goal. Infrastructure competition is an important factor in mobile markets.

2degrees now covers 88 per cent of New Zealanders through its own infrastructure, and Spark and Vodafone's networks reach around 97 per cent. The gains from further build out may however diminish from this point, when the cost of rural infrastructure becomes much more significant.

As well, as mobile technology develops, the investment cycles in mobile networks appear to be getting shorter, with shorter periods for gaining returns on these investments. It may be challenging for the three mobile network owners to all deploy ubiquitous 5G networks post-2020. It may even be challenging for all three mobile networks to deploy current technologies ubiquitously, given the high cost of rural infrastructure.

In rural New Zealand, there is a point where infrastructure competition between three networks becomes inefficient and achieving service coverage for end-users may be more important than promoting infrastructure competition. At this point the sharing of mobile infrastructure might be able to achieve greater coverage on a per-dollar basis, while still enabling end-users to have a choice of operators for mobile services.

To date there has been limited mobile infrastructure sharing in New Zealand, despite regulation of co-location. There may be a case for a different approach to infrastructure sharing on the RBI towers in particular, which have been funded through industry. This has been considered as part of the RBI process, and the optimal model for sharing RBI funded infrastructure will be addressed as part of the forthcoming 'RBI2' process.

[78] A Schedule 3 investigation under the Telecommunications Act would be required in order to change the national roaming service from 'specified' to 'designated' (see Part 2 of Schedule 3).

Outside the RBI programme, the absence of price regulation for co-location and national roaming may be creating incentives for infrastructure duplication, for example, if commercial co-location and roaming prices are too expensive.

We are interested in views on the value of encouraging infrastructure sharing; and if greater infrastructure sharing could be incentivised, including through the regulatory regime.

5.1.4. Mobile virtual network operators

One issue that has been brought to our attention is the low number of mobile virtual network operators (MVNOs) operating in New Zealand. It would be unrealistic to expect New Zealand markets to sustain the deployment of a fourth or fifth mobile network, meaning those providers looking to offer a national mobile service as part of their portfolio of products are dependent on one of the three existing mobile networks allowing them to resell a mobile service. Industry participants have commented to the Government that after investing considerable sums in their mobile networks, the three mobile operators appear to have little incentive to offer their competitors access to their networks in a way (or at a price) that would allow them to compete effectively.

However, we note that there is some activity in the MVNO space in New Zealand, with CallPlus offering a mobile service over Spark's network and more recently the launch of Bluesky's MVNO on the Spark network.

MVNOs have played an important role overseas – both as a means to offer a 'portfolio product' that allows a provider to sell a broader service set or bundle to end-users and as a means by which operators can be credible in other markets (for example, selling bundled fixed line broadband and mobile services). With a clear trend towards fixed/mobile bundling, it may be that the inability to provide a reasonable mobile retail offering could limit competition in fixed markets.

There have been recent global developments in multi-national MVNO and mobile virtual network enabler (MVNE) models. Hutchison Whampoa has recently launched its own MVNE platform (Hue)[79] as a single point of entry for MVNOs to access Hutchison Whampoa's networks across Europe and Asia. In the United States, Google has announced it will be launching 'Google Fi', an MVNO service that provides mobile voice and broadband services seamlessly over both cellular and WiFi networks.

The emergence of MVNOs – either locally or driven by international players – may promote competition and investment in both mobile and fixed markets. Our preliminary view, however, is that, to the extent that there may be an issue with the lack of a thriving MVNO market, the Commission has the ability and the tools to respond appropriately. The Commission could initiate a Schedule 3 investigation into the origination of mobile calling and, if necessary, set terms and prices at levels that would allow for more competitive MVNO offerings.

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[79] *Hue launches global end-to-end enabler of virtual mobile networks* http://www.hutchison-whampoa.com/en/media/press_each.php?id=2750.

Questions

17. Is the current regulatory framework for mobile services effective? Will it continue to support both coverage and competition objectives in the future?

18. If changes are needed to regulation of mobile services, what should we consider? For example, is it worth actively promoting infrastructure sharing?

5.2. Radio spectrum

Radio spectrum is a limited resource and a key input for mobile telecommunications services, as well as other communications services. Effective access and use of radio spectrum is vital for meeting our policy objectives for competition and coverage in mobile markets.

The Radiocommunications Act establishes a framework for the creation of rights to use radio spectrum, but is silent on competition aspects relating to spectrum assignment. Current government policy is therefore to set assignment parameters for spectrum as part of the sale of spectrum rights. These assignment parameters are used to support the Government's competition and social objectives (like coverage in rural areas) for spectrum and the mobile telecommunications market.

Given the increasing importance of spectrum as an input into communications services, we are considering whether the current arrangements for allocation of spectrum are effective. These issues have already been canvassed as part of the *Review of the Radiocommunications Act*.[80]

Below, we summarise our key concerns and options for reform.

5.2.1. Spectrum assignment

Currently, assignment parameters are applied by the Government as spectrum owner, rather than in a regulatory capacity. As such there are no regulatory constraints on the nature and scope of assignment parameters. This supports flexibility and allows the Government to respond to changes in the market and technology.

On the other hand, this process creates uncertainty for participants. There is limited transparency and accountability in setting government objectives, and as spectrum assignment falls under the general competition aspects of the Commerce Act, there is an additional overlay of consideration by the Commerce Commission. The Government may be seeking to achieve both competition and social objectives in making spectrum assignment decisions, but the Commission would consider the assignment of spectrum on competition grounds alone (applying the legal tests under the Commerce Act alone).

[80] The 2014 discussion document is available at http://www.rsm.govt.nz/projects-auctions/current-projects/review-of-the-radiocommunications-act-1989.

Spectrum assignments by default create new or substantially extend existing markets. There remains a question of whether the Commerce Act is able to adequately address competition in new or emerging markets. The substantial lessening of competition test in the Commerce Act is difficult to apply in these circumstances. This, together with potential inconsistencies between the application of the Commerce Act's competition test and the Government's broader objectives for spectrum assignment, is a concern.

Predictability in the regulatory setting for spectrum assignment could be increased by implementing one or more of the following options:

- Changing the sequencing for consideration of the competition aspects of spectrum assignment. This could be achieved by:
    - providing for the Commission to give advice to the Government on the competition settings for an assignment (for example, prior to an assignment process starting, as is the practice in Australia); or
    - providing for the Commission to make a determination on the competition setting that binds the Government prior to an assignment process.
- Providing greater transparency and accountability with respect to government decision making in setting the objectives for a particular spectrum assignment. This could be achieved by:
    - setting overarching objectives for spectrum assignment in legislation or regulation, or
    - providing for the Government to consult on its objectives for a particular spectrum assignment.
- Removing the overlap between the Government and the Commission in setting competition parameters for a spectrum assignment. This could be achieved by either:
    - relying solely on existing processes in the Commerce Act to manage the competition aspects of spectrum assignments, or
    - excluding spectrum assignment by the Government from the provisions of the Commerce Act.

There may be a case for changing the sequencing for consideration of the competition aspects of spectrum assignment, for example, by requiring the Commission to provide advice or a determination on spectrum caps prior to an assignment process.

Advice from the Commission as the specialist competition regulator may be beneficial when the Government considers spectrum assignments. The Government could then make decisions weighing the independent advice on competition against its other objectives. This may become a significant issue where spectrum could be used for purposes with marginal economic benefit, but significant social benefits.

5.2.2. Regulatory tools and enforcement

The lack of current regulatory tools to enforce spectrum caps and other assignment objectives has resulted in the Government using deeds and contracts.

Enforcement of assignment parameters is a contractual matter between the Government and the assignee. Penalties and damages are built into the assignment deeds and contracts. These provisions are generally limited and require enforcement through the Courts. Some contracts include rights to spectrum being conditional on compliance with certain assignment conditions, or a power of attorney for the Government to reclaim spectrum if a breach were to occur. These latter methods allow very limited ability for a graduated response reflective of the scale of non-compliance by an assignee. In this regard the current deeds and contracts are a blunt instrument to enforce the Government's objectives for spectrum.

A more graduated approach could be achieved by providing for financial and other penalties for breach of assignment conditions in legislation. It would be unusual to include penalties for contractual breaches in legislation, requiring the current contracts to be replaced by an undertakings regime or similar. These undertakings could include actions relating to both competition and social objectives.

Whether such an undertaking regime would 'fit' in the Radiocommunications Act is arguable given the strong market led philosophy underpinning that Act. If the scope of the Telecommunications Act were broadened beyond telecommunications to encompass all forms of communications, as discussed at 3.1.1, then an undertakings regime could fit within that Act.[81]

5.2.3. Regulator

The appropriate regulator to monitor and enforce undertakings should also be considered. The Ministry of Business, Innovation and Employment manages other parts of the spectrum regulatory regime but it may be more appropriate to have an independent agency, such as the Commerce Commission, handling monitoring and enforcement of spectrum undertakings.

Questions

19. What are your views on the options for reform in spectrum allocation?

- **a. How could the overlap between spectrum assignment by government and consideration under the Commerce Act be managed?**
- **b. Should there be any requirements on government to consult or establish objectives for spectrum assignments in legislation?**

[81] Another location for such a regime would be the Commerce Act, but this may be problematic because the likely future assignment terms will include social as well as competition aspects.

20. Is an undertakings regime needed to set and enforce spectrum assignment terms and conditions? Where would this sit within the existing legislative framework?

21. Should the Ministry of Business, Innovation and Employment or an independent agency monitor and enforce assignment conditions?

6. The regulatory toolkit

In this chapter, we look at options for updating the Telecommunications Act to better suit the new environment.

In earlier chapters, we discussed potential reforms to the regulatory regime for the fixed line and mobile sector. In this chapter we address a number of other potential changes to the Telecommunications Act – our 'regulatory toolkit'. We also look at two specific case studies (net neutrality and copper-to-fibre migration) where the current regime may not have the right tools to address emerging issues as we approach 2020. A summary of our assessment of components of the Act, including those that are working well, is at **Appendix B**.

We welcome views on these options and on any other features that should be addressed as part of the Review.

6.1. Regulatory purpose

As our competitive markets change, we need to ensure the goals of the regulatory regime are still fit for purpose. At 3.4, we discussed the changes in the communications market which may impact on our goals for regulation.

6.1.1. Purpose statement

The most important way to give legislative guidance on the desired outcomes from a regulatory regime is in the purpose statement for the regime. The purpose of the current telecommunications access regime is set out in section 18 of the Act and is designed to:

> *'…promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services…'.*

Our current view is that the section 18 purpose statement is unlikely to be suitable for a post-2020 environment in its current form. Structural separation has created a fundamentally different environment.

Promoting competition will remain a key focus for the communications regulatory regime. However, the current purpose statement assumes that competition is achievable in all regulated markets and should be our primary goal across all markets. It creates a risk that the Commission will focus on the promotion of competition in markets where its interventions will have no or little impact on competition, rather than directly addressing the long-term interests of end-users. For example, all access seekers will face the same price for UBA, and setting the UBA price high or low will not change the competitive dynamic among access seekers, or between the access seekers and Chorus. However, the absolute level of broadband prices will have an impact on end-users.

To address this change in the environment, we propose the following change in the purpose statement:

> *'…to promote competition, or outcomes consistent with outcomes in competitive markets, for the long-term benefit of end-users...'*

This phrase is adapted from the words in the purpose statement of Part 4 of the Commerce Act and is intended to reflect that fixed line telecommunications markets increasingly resemble traditional utility monopolies where infrastructure competition is unlikely.

The Telecommunications Act generally assumes that growth, innovation and efficient investment are outcomes that will result if the overarching objective of promoting competition is met.

Section 18(2A) of the Act clarifies that consideration should be given to incentives to innovate in the context of assessing the test of competition for the long-term benefit of end-users, but does not give this consideration the same weighting as promoting competition.

It will remain important to provide incentives to invest, and we are considering giving this goal more prominence in our regulatory system.

Given that it is not realistic to promote competition in all parts of the market, and therefore to expect investment and innovation to flow from competition, there is now a case for including a clear second part to the purpose statement:

> *'…to promote growth, innovation and investment in communications markets for the long-term benefit of end-users.'*

This would encourage the regulator to explicitly test whether particular regulatory interventions would achieve these outcomes. The regulator would have to ensure those outcomes would result directly from its regulatory intervention or decision, as opposed to relying on them resulting from the primary goal of promoting competition.

If a change to the purpose statement is considered, we also welcome your views on whether a set of sub points providing more detail on the desired outcomes (as is the case in Part 4 of the Commerce Act) would add to understanding by regulators and industry as to how the purpose statement should operate.

Questions

22. Is there a need to update the current purpose statement in the Telecommunications Act for the communications access regime? What are your views on the suggested changes?

6.2. Flexibility and technology neutrality

Regulation should support quality and affordable services for the end-user, without being inappropriately bound to a certain technology.

6.2.1. Case study: Copper to fibre migration

With the rollout of UFB, Chorus will soon be operating copper and fibre networks in a large part of the country. Uptake on the UFB network is increasing, as consumers upgrade to higher-speed, higher-capacity services. The Government's policy is for consumers to lead the transition away from copper services towards fibre. This is consistent with the principle of flexibility including technology neutrality.[82]

Eventually, this consumer-led transition will mean it becomes less efficient for Chorus to maintain its copper network and may lead to a 'tipping point' when Chorus decides it is no longer economic for it to operate its copper infrastructure in areas where UFB has been deployed.[83] Some industry estimates place this point between five and ten years' time.

However, there are some barriers to Chorus withdrawing copper services or networks in areas where suitable UFB services are available.[84]

This case study looks at how we strike a balance between removing unnecessary regulatory barriers which bind Chorus to an older technology, while still meeting our policy goals by ensuring consumer and wider public interests are taken into account during any withdrawal of copper services.

Minimising barriers

The key barrier to Chorus's ability to stop offering copper services is a regulatory one – the primary wholesale copper services (UCLL, UBA) that underlie the vast majority of copper broadband services in New Zealand are currently 'designated' services under the Act and subject to the Commission's Standard Terms Determinations. On current wording, these services must continue to be provided by Chorus on the request of RSPs.

These regulatory requirements were designed to enable access to basic telecommunications services. At the time, the copper network was the only fixed line network available to most end-users.

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[82] In other words, the regulatory regime should not actively promote one technology (copper) over another (fibre), or put barriers up to consumers choosing a particular technology.

[83] Ofcom in the UK has noted the "parallel running of the new networks and the legacy network would not be economic … the period over which two networks are run in parallel and uneconomically, should be minimised." (Ofcom, '*Delivering Super-fast Broadband in the UK: Promoting Investment and Competition'* Policy Statement, 3 May 2009). The ACCC has also noted "Duplication of infrastructure is inefficient where the same service(s) could be provided at a significantly lower average cost by a single network…. avoiding inefficient duplication of infrastructure results in lower average costs for servicing network customers therefore promoting improvements in allocative and productive efficiency." (ACCC, '*Determination: Applications for Authorisation lodged by NBN Co Limited*" (No. C2012/47), 19 July 2012).

[84] This discussion only relates to areas where UFB is available to end-users. In places where there is no alternative fixed network available of an equal or higher standard of service quality, the copper network is expected to continue operating.

Now that fibre services are fast becoming available – and will reach 80 per cent of New Zealanders – we should avoid being inadvertantly 'locked in' to particular technology choices. Where UFB services are available in the same area at a comparable price, it could now be appropriate to allow the withdrawal or switch-off of copper services.[85]

We are interested in views on the prospect of removing regulatory obligations on Chorus to continue to provide copper access services. This could involve deregulation of copper services where UFB services are available or changing the way services are described in Schedule 1 of the Act (for example, using technology neutral service descriptions and/or clarifying that Chorus can choose to cease offering copper services under certain circumstances).

Another consideration that needs to be taken into account before copper can be withdrawn from an area is whether certain services can be successfully delivered over fibre. Traditionally, services such as monitored fire and building alarms and lift phones operated over the copper network. If these services were not easily available over fibre then this would create a barrier to uptake of fibre and the withdrawal of copper services. However, we are aware that there are already fibre or wireless replacement products for these services available. By the time copper withdrawal becomes likely, this may not be a major problem, but some consideration will be needed to avoid creating unnecessary risks for businesses and consumers.

Finally, given that end-users will drive the migration, a third potential barrier is the future cost of fibre compared to copper services. Wholesale prices might also provide inefficient incentives for Chorus (and RSPs) to delay migration from the legacy copper infrastructure. In any new price setting system, we should avoid creating disincentives for moving from copper to fibre.

Is the TSO a barrier?

The Telecommunications Service Obligation (TSO) for local residential telephone services is a regulatory obligation on Spark and Chorus to provide a price-capped, standalone voice service with uncapped local calling. It is a historic obligation ensuring all end-users can receive a basic voice service for a fixed price each month.

Spark has recently launched a voice service on the UFB network. This is available as a standalone voice service (a phone service that is not bundled with a broadband service), and can therefore be used to meet Spark's TSO obligations.

The Government does not consider the local service TSO regime is a barrier to Chorus withdrawing copper, so long as Spark continues to be able to meet its obligations over fibre (or alternative networks).

[85] Service withdrawal would involve Chorus choosing to cease making copper services available to new end-users, while switch-off of copper services would involve withdrawing copper services from all end-users.

Ensuring a smooth transition away from copper

When it does happen, the process for withdrawal or switch-off of copper services in UFB areas will need to meet the interests of end-users and the broader public.

A good transition should be simple, predictable, fair and efficient for all stakeholders – consumers, but also telecommunications suppliers, and providers of other services that use fixed line networks, such as monitored alarms. End-users should retain the ability to choose the services that best meet their needs (including basic phone and/or internet services), RSPs should be treated consistently in migration and disconnection arrangements with wholesalers, and there should be minimal risk of disruption.

There are market incentives to ensure that the transition is done well. However, the Government is interested in views on whether anything else may be required to facilitate an appropriate transition when copper services are withdrawn from whole areas.

Our initial view is that Chorus should only be able to withdraw copper access services if some measures are met to enable a smooth transition for end-users. Such measures might include, for example, only being able to withdraw copper once UFB uptake in an area has passed a certain threshold (similar to the digital television switchover); requiring Chorus to provide a minimum period of notice to RSPs[86] and consumers; and ensuring the availability of a basic UFB package (which might be a voice-only service) at the same wholesale price as the equivalent copper service.

We are interested in your views on the conditions under which Chorus should be able to cease offering copper services. We are also seeking views on how these migration conditions should be given legal force (for example, in legislation, through the service description for copper and UFB access services, or through a requirement for Chorus to submit binding undertakings).

Questions

23. Are there any other barriers to withdrawal or switch-off of copper services which are not addressed here? For example, are there any services based on the legacy copper network for which a replacement product is required, and is not available in New Zealand?

24. In your view, should Chorus have to meet any requirements to protect consumers prior to withdrawing copper services or switching off the copper network within the UFB footprint?

a. What requirements should be met?

b. How should these requirements be given legal effect?

[86] For example, the Standard Terms Determination for Unbundled Copper Low Frequency Services currently requires access seekers to be given 18 months' notice of the removal of feeder lines, and of cabinetisation. We note that in Australia, Telstra switches off copper services no less than 18 months after national broadband network services become available in an area.

6.3. Regulatory tools

The range of regulatory tools currently available in the Telecommunications Act is focused on wholesale regulation of communications services, with some very limited regulation of retail services (for example, the TSO). We are seeking views on whether these tools remain appropriate, and if there is a need for new or different powers for the Commission to account for the developments in the market – and those that will occur in the future.

6.3.1. Industry codes and dispute resolution

The Act provides a process for developing codes of practice relating to the provision of regulated services by access providers. Such codes can be developed by the New Zealand Telecommunications Forum (TCF) or the Commission, and are approved and enforced by the Commission. There is currently only one such industry code in operation – the Customer Transfer Code. However, the framework does not provide for codes that apply to non-regulated services or entities.

Codes for non-regulated services or entities are developed by the TCF under a self-regulatory system (for example the Broadband Product Disclosure Code and the Emergency Services Calling Code). Non-TCF members are not required to comply with these TCF codes, although in some cases they can voluntarily sign up. In addition, TCF self-regulatory codes are only mandatory for TCF members if all members vote in favour. If not, then these codes are voluntary and only binding on TCF members that choose to sign up to them.

Related to this, the current framework does not provide for a mandatory end-user complaints system. The Telecommunications Dispute Resolution Scheme (TDRS) is a standalone industry-operated regime linked to the TCF's Customer Complaints Code. A number of existing RSPs are not members of either the TCF or the TDRS, and hence are not bound by it.

We have received feedback that the lack of a mandatory code system is a concern for some stakeholders.

The retail telecommunications sector in New Zealand has very low barriers to entry and participation. The addition of a mandatory code or licencing scheme could act as a simple, proportionate and timely regulatory tool, but it could also impose a regulatory and financial burden on industry participants.

We are interested in views on whether there is a need for a system with legislative backing that can be applied to all industry participants, irrespective of TCF membership, and how this would be managed.

Questions

25. Is there a need for a mandatory codes system for providers of telecommunications services in New Zealand? How would this work in practice?

6.3.2. Case study: Net neutrality

Online video streaming services require high-bandwidth, asymmetrical data use. The rise in availability and use of video streaming services is a clear example of how a change in the use of the internet can impact on network investment and financial models, and challenge our regulatory tools.

What is net neutrality?

At its simplest, net neutrality is the principle that all internet traffic should be treated equally by RSPs and network operators. An RSP or network operator should deliver the traffic requested by its customer, making no attempt to prioritise or filter the traffic.

However, most commentators agree that certain departures from this principle are necessary (for example, traffic prioritisation of VOIP services, or filtering such as the Department of Internal Affairs' Digital Child Exploitation Filtering System).

Proponents of net neutrality argue that the principle is necessary to ensure that the internet remains an open and free technology, and that internet users stay in control of what they access. They would say that emerging innovators and content developers would be particularly disadvantaged if they had to pay a fee to network operators in order to be on a level playing field with their competitors.

Opponents of a strict net neutrality approach argue that a requirement to treat all internet traffic equally ignores the reality of running a network and the needs of the market. Some also argue that RSPs should have the ability to provide services differentiated on performance and price and that this enhances consumer choice.

The default public internet model is that services are provided to customers (consumers, businesses and content providers) on a 'best efforts' basis with no service guarantees for any particular user, traffic type, application or service. There are no 'slow lanes' or 'fast lanes' in this model – all traffic competes on an equal basis for a network's resources on a first-come, first-served basis.

This approach has generally worked well, but shifting usage patterns have increased the likelihood of network congestion. CISCO's Visual Networking Index states that internet video traffic was 64 per cent of global consumer internet traffic in 2014.[87] This is consistent with New Zealand's experience – Vodafone has said that video streaming now makes up 60 per cent of its broadband traffic.[88] By 2019, CISCO expects video to be 80 per cent of all consumer traffic – and peak hour internet traffic is growing more rapidly than average internet traffic.

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[87] CISCO visual networking index, forecast and methodology 2014-2019, at: http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf.

[88] *Rise in video streaming creates surge in home broadband traffic.* NZHerald.co.nz, 13 May 2015. http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11447564.

As traffic moves across the internet, it moves through a number of networks. RSPs have interconnection and peering agreements in place between themselves that specify how the parties involved are compensated for carrying this traffic. When many end-users of an RSP are using high-bandwidth services at the same time (for example, at peak evening times for video streaming), this may use all the capacity the RSP has purchased under its interconnection or peering agreements, or end up costing the RSP more money in transit costs. In response, an RSP can seek to purchase more capacity, or it may seek to prioritise and/or deprioritise different types of traffic to manage capacity. There is a risk that an RSP can use this position as a 'gatekeeper' to disadvantage competitors or to extract revenue from a position of market power. There is also simply a risk that consumers without access to a 'fast lane' will find their internet access degraded.

There have been cases overseas where a commercial response to network congestion has been seen as undermining the general principle of net neutrality. For example:

- in the United States, Comcast and Verizon are reported to have required payment from Netflix to ensure faster passage of their traffic to its subscribers; and
- in France, Free (France's second largest internet service provider) installed an ad blocking feature on its network, which is said to have affected all of Google's ad servers. Press reports suggest that the block was motivated to pressure Google into compensating Free for traffic generated by YouTube. Free had apparently earlier throttled YouTube traffic for Free's end-users.

In response, some legislatures (in particular, the United States and the European Union) have proposed legislation or regulation to establish a set of rules for how RSPs, internet service providers and network operators manage their traffic.[89] In essence, these rules seek to ensure those providers are acting in a manner that is consistent with the principle of net neutrality.

Both the United States and European Union net neutrality rules include a ban on blocking, throttling, or paid prioritisation of traffic, while allowing some level of traffic management. Both systems provide for an exception to these rules for the provision of 'specialised services', broadly defined as services that require a high-speed connection that is in some way distinct from a regular internet service, such as internet phone services or remote health monitoring. Under the United States rules, 'zero-rating' of content (defined below) is not allowed, however the European Union does allow this practice.

[89] InternetNZ's *Network Neutrality Discussion Paper* (June 2015) provides a comparison of the net neutrality rules and approaches across of a number of jurisdictions. See https://internetnz.nz/blog/net-neutrality.

The United States rules establish a set of norms regarding the standards of behaviour that are expected from broadband providers, including:

- providers should not unreasonably interfere with or disadvantage consumers or edge providers[90]; and
- information about network management practices, performance, and commercial terms for broadband services should be made publicly available.

The rules also provide the Federal Communications Commission (FCC) with the ability to consider claims involving Internet Protocol (IP) interconnection (the arrangements for transmitting data across multiple networks). The European Union rules set the expectation that every European must be able to have access to the open internet and all content and service providers must be able to provide their services via a high-quality 'open internet'.

Both the United States and European Union rules establish a set of expectations for how service providers and network operators can manage their networks and interact with content providers in the context of net neutrality. Responses to the rules have been mixed; some industry members consider these rules unduly restrict the activities of service providers, while others have noted concern about the breadth of exceptions for specialised services.

Is there a problem in New Zealand?

Traffic shaping first emerged in New Zealand when peer-to-peer application use increased in the late 2000s, and from time to time RSPs have allowed consumers to have access to particular websites or services without eating into their data caps (sometimes referred to as 'zero-rating'). This could be construed as prioritisation. However, for the average end-user in New Zealand, net neutrality and traffic management have not yet been a cause for concern. Nor have content providers raised concerns about being made to pay premiums to get a decent quality of service from RSPs.

With the introduction of fibre-based broadband, and an increase in the amount of video content readily available online, more New Zealanders are able to use high-bandwidth services. This may lead to some of the congestion issues seen in other jurisdictions. There has already been public commentary suggesting there was some increase in traffic and subsequent decrease in performance on New Zealand networks when Netflix entered the local market earlier this year.

As large players such as Netflix enter the New Zealand content market, the ability to secure a deal for prioritising traffic may also create a barrier to the entry for smaller content delivery businesses.

[90] An edge provider is the term used by the Federal Communications Commission (FCC) to define a content supplier. The specific definition used by the FCC is "Any individual or entity that provides any content, application, or service over the Internet, and any individual or entity that provides a device used for accessing any content, application, or service over the Internet".

In New Zealand there are no specific restrictions on the ability of RSPs to prioritise and deprioritise traffic, offer unlimited data to particular websites, or block traffic. If RSPs chose to engage in this behaviour, the effect of that behaviour would be considered in the context of existing competition law (including exercising market power) and/or the functions of the Telecommunications Commissioner (who has the role and powers relating to monitoring competition, and monitoring the performance and development of telecommunications markets).[91]

We are interested in views on whether clear rules, such as those introduced by the United States and European Union, would be useful to provide guidance to service providers and network operators in the New Zealand market.

The Broadband Product Disclosure Code, a mandatory Code of Practice for TCF members (which includes New Zealand's largest RSPs) requires the disclosure of circumstances in which traffic management may apply and the effect this may have on end-users.

The Government is interested in views on whether the Commission's powers under the Act, in combination with the Broadband Product Disclosure Code, would be sufficient to detect and address any net neutrality issues emerging in New Zealand – or whether other tools, like a code, are required.

Questions

26. Do you think there are current net neutrality issues in New Zealand?

27. Do you think the regulatory regime is capable of addressing net neutrality issues if they arise in New Zealand? If not, what approach should we consider?

- **a. Are there elements of the rules and expectations introduced in the European Union and United States that would be useful to have in the New Zealand regime?**

28. What do you consider is acceptable traffic management and what is not acceptable? Please provide specific and realistic examples. For example, should telecommunications providers:

- **a. be able to block or deprioritise lawful content, applications, or services?**
- **b. be able to enter into commercial agreements with content providers to prioritise certain traffic?**
- **c. be able to prioritise certain types of traffic when their network is congested (such as voice traffic or emergency services calls)?**

[91] In 2014, the Commerce Commission began an investigation into Chorus' proposal to offer two higher-quality commercial UBA services and to impose a throughput limitation or differentiated throughput on regulated services. Following Chorus' announcement it had put its proposals on hold, the Commission decided to take no further action and so a finding was not reached on the matter.

29. Are there other net neutrality matters you consider should be considered in a regulatory context (for example, peering or certain content distribution practices)?

6.4. Proportionality and deregulation

6.4.1. Deregulation

At present, the Telecommunications Act requires the Commission to consider whether there are reasonable grounds for commencing an investigation into whether a regulated service should be deregulated, at intervals of not more than five years after a service becomes regulated. The Commission does not need to actually carry out an investigation; it only needs to consider whether there are grounds for an investigation. Only the Commission can initiate this process.

In the fast-moving communications sector, it is important to have the flexibility to deregulate where competitive conditions change. The current provision may not go far enough to encourage deregulation where market conditions permit. Instead, the Commission could be required to conduct an investigation, or the onus could be on the Commission to prove there is still a need for regulation at a point in time (say, five years after introduction and at five year intervals). A 'sunset clause' similar to this was in place before the 2006 changes to the Act, and could be reintroduced.

6.4.2. Price-only regulation

One issue worthy of consideration is the concept of price-only regulation. For example, the price of a service may be regulated but non-price terms could be deregulated and left to private agreement.

Price-only regulation could be included as a third option for regulation of communications services (along with 'specified' services for non-price terms, and 'designated' services for both price and non-price terms).

This would allow the Commission the flexibility to recommend regulation on price terms only where appropriate.

6.4.3. Flexibility to adopt a one- or two-stage pricing process

There is a need to reconsider whether the two-stage pricing process initially involving benchmarking should be continued for all regulated services. The Act currently requires an Initial Pricing Principle and a Final Pricing Principle which creates a two-stage process by default for all regulated services.

As discussed earlier, the length of the re-benchmarking processes for UCLL and UBA calls into question whether benchmarking really is a quick and low-cost way of setting an initial price (as was the original intent).

The Government is interested in views on whether the Act could be made more flexible by building in the option to have a one or a two-stage pricing process: for example, for services where there are unlikely to be a reasonable number of overseas comparators to support benchmarking, a single-stage pricing process could be adopted.

6.4.4. Housekeeping in the Telecommunications Act

There are certain provisions in the Telecommunications Act that are now out of date or do not appear to have been used in recent years, raising the question of whether they should be removed as part of legislative 'housekeeping'.

For example:

- the information disclosure provisions still remaining in Part 2B have never been used by the Commission;
- the statutory authorisations (relating to the Commerce Act) for the original UFB and RBI programmes in Part 4AA are now expired and of no further use; and
- residual terms determinations provisions in subpart 1 of Part 2 have never been used.

We are interested in views on whether these provisions could be removed, and any other provisions that should be removed.

Questions

30. Do you have any suggestions for encouraging deregulation as part of the regulatory process?

31. Do you support the Commerce Commission having the flexibility to:

a. implement price-only regulation?

b. adopt either a one- or two-stage pricing process?

6.5. Consumer issues

6.5.1. Telecommunications Service Obligation

The Telecommunications Service Obligation (TSO) for local residential telephone services is a regulatory obligation on Spark and Chorus to ensure the availability of a price-capped, standalone voice service with uncapped local calling. It is a historic obligation ensuring all end-users within the copper network footprint in 2001 can receive a basic voice service for a fixed monthly price.

The recently completed local service TSO review did not result in any fundamental changes to the local service TSO regime. The Government considers that the TSO is still an important protection for some consumers. The Government has discussed possible modifications to the TSO Deeds to achieve greater technological neutrality with Spark and Chorus. No specific changes have been proposed at this point.

It has been suggested that a minimum level of broadband capability could be achieved by introducing a broadband TSO service. However, the TSO construct requires private firms to commit to delivering these outcomes, and it is unlikely they would do so without seeking additional funding. The Government's preference is for open access broadband capability to be rolled out through initiatives like the RBI, which will result in improvements to the availability and affordability of broadband services.

6.5.2. Consumer advocate

At present there is no organisation with a statutory role to advocate solely on behalf of the interests of end-users of communications services. In our early engagement, some stakeholders have suggested that a consumer advocate with a formal statutory role would be beneficial.

We note, however, that there are a number of organisations that engage with the communications sector from a user perspective – for example, the Telecommunications Users Association of New Zealand (TUANZ), InternetNZ, and Consumer NZ. The Commission also has an important role in achieving outcomes for the long-term benefit of end-users.

The Government is interested in views on whether there is a need to address this situation or whether existing arrangements are sufficiently representing end-user interests.

The Government notes it is not considering funding such an advocate, so any funding would need to come from membership or the industry.

Questions

32. Do you have any comments on the current arrangements for consumer representation?

6.6. Predictability

6.6.1. Backdating

One area where the access regime does not appear to be conducive to section 157AA of the Telecommunications Act is the uncertainty around whether prices set under a final pricing principle (FPP) should be backdated to replace the previous initial pricing principle (IPP) prices. A decision on backdating could result in substantial sums of money being retrospectively owed between access seekers and access providers.

The Commission's position is that it has discretion under the Telecommunications Act as to whether FPP prices should be backdated. In July 2015, it indicated that its revised majority view was that backdating in this particular instance would not promote competition for the long-term benefit of end-users. However, this decision is not final and the Commission are still seeking submissions on whether the final prices should be backdated.

Given the UCLL and UBA FPP processes have taken over two years, this has meant industry participants have had to make significant provision for the 'worst case' outcome if the decision on backdating goes against them. Some access seekers have claimed uncertainty about backdating has directly resulted in them increasing their retail prices just in case they are required to retrospectively compensate Chorus.[92]

The Government will not be making any decision on whether backdating should or should not apply to current FPP processes. However, to limit future regulatory uncertainty, there may well be a strong case for amending the Act to clarify upfront whether backdating of prices should or should not occur in the future. We would welcome views on this issue.

Questions

33. In your view, is there justification for the Government to make it clear in legislation whether or not backdating will occur?

6.7. Transparency and accountability

6.7.1. Independent regulatory decision maker

The independent regulatory decision maker under the Telecommunications Act is the specialist Telecommunications Commissioner within the Commission. An independent regulatory decision maker is considered international best practice, and the Government does not propose any changes to the Commission's role as an independent regulator.

From an institutional design point of view it may be appropriate to consider whether the Telecommunications Commissioner role should continue to be distinct from the roles of the other Commissioners, or whether communications issues should be dealt with by generalist Commissioners.

It may also be appropriate to consider whether the requirement for all major regulatory decisions to be made by the Telecommunications Commissioner and at least two other Commissioners, as currently required by section 10 of the Act, should be retained or not.

Finally, another potential change is to rename the Telecommunications Commissioner as the 'Communications Commissioner', recognising the converged nature of the sector. This would align with a converged approach to the regulatory framework discussed at 3.1.1.

[92] *Spark plans to raises prices*. Radionz.co.nz, 10 December 2014. http://www.radionz.co.nz/news/business/261414/spark-plans-to-raises-prices; *Vodafone raises prices.* Stuff.co.nz, 6 January 2015. http://www.stuff.co.nz/business/industries/64686832/Vodafone-raises-prices.

6.7.2. Merits review

One mechanism that is commonly used in other jurisdictions to hold the regulator to account for its decisions is a merits review. This is the ability for an interested party to appeal the substance of the decision made by the regulator, as opposed to the process followed by the regulator or the legality of the regulator's decision via judicial review.

The Telecommunications Act does not provide for appeals of the merits of regulatory decisions. Judicial review is available, and for some decisions under the Act, there is a right to appeal on points of law. A merits review could introduce a higher degree of scrutiny and accountability on the substance of Commerce Commission decisions, and is often associated with aspects of the utility-style regulatory approach. However, merits review processes are often lengthy, costly and uncertain, and there are questions as to the specialist skills required by the Court or expert appeal body, creating a trade-off between the regulatory principles of accountability and certainty.

There may be a case for introducing merits review of input methodologies, if the Government does decide to move to a BBM for fixed line services. This is the case in Part 4 of the Commerce Act. We are interested in views on the workability of this.

Questions

34. In your view, is there still a need for a separate Telecommunications Commissioner (rather than using the general Commissioners)?

35. Would the increased accountability created by a merits review process outweigh the risk of increased uncertainty and length added into regulatory processes?

6.8. Stability and predictability

The main sources of unpredictability in the current regime are the uncertainty around future fibre pricing, and the copper pricing processes. In the previous chapter, we propose increasing certainty in the regime through more stable and predictable pricing methodologies and processes for UFB and/or copper access services. Some other considerations are below.

6.8.1. Review

While reviews of regulatory regimes inherently introduce uncertainty, where a review is clearly signposted in advance this greatly assists in reducing that uncertainty. Moreover, in a fast-changing sector that is difficult to predict, it is important that there is a fixed mechanism for review in order to ensure the regulatory regime remains fit for purpose. The Government is interested in your views on when and how a review of the regulatory regime should be built into the regulatory framework.

6.8.2. Transition

Under section 157AA of the Telecommunications Act, the Review must consider the current regulatory framework against other options to determine if it remains the most effective framework. Our view is that it is not. We consider that there is a significant risk of instability and uncertainty in the current framework as we move beyond 2020, and so we recommend change from the status quo.

It is possible that a change to the regulatory framework could risk a new period of instability and uncertainty. This would need to be managed carefully and pragmatically through transitional arrangements, to reduce the risk of negative impacts on end-users and industry.

We are interested in your views on appropriate transitional provisions.

Questions

36. Do you have any suggestions for the most effective way to transition to a new regulatory framework, and to ensure any updated framework remains fit for purpose over time?

6.9. Regulatory coherence and consistency

At 3.1.1, we presented an option to create a more consistent and coherent 'Communications Act' by incorporating economic regulation across the communications sector, rather than being limited to historic industry silos. In Chapter 6, we discussed proposed changes to radio spectrum allocation, which could sit in that Act. Below, we look at the historic exemption for broadcasting networks in the Telecommunications Act.

6.9.1. Broadcasting networks

The Telecommunications Act is the primary legislation for the sector-specific economic regulation of communications services. However, broadcasting networks and services are specifically excluded from that Act[93] – an increasingly arbitrary distinction, given the convergence of broadcasting and telecommunications infrastructure.

There appears to be little policy justification for retaining this exclusion in its current form, particularly as broadcasting services are increasingly consumed as telecommunications services. Technology has advanced to the point where high-quality video content can be delivered over broadband networks, and broadcasting content is now digital.

[93] Section 5 of the Telecommunications Act explicitly excludes broadcasting services from coverage under the Act (except in relation to subpart 2 of Part 4, which relates to maintenance of networks).

We propose amending the exclusion of broadcasting services by re-wording the exception so that:

- broadcasting transmission networks and infrastructure will come within the scope of the Telecommunications Act; but

- any content transmitted over those or any other telecommunications network will remain excluded from the scope of the Telecommunications Act.

One possible method of implementing this policy change is to give the Commerce Commission the scope to recommend regulation of the 'physical' and 'logical' layers of transmission networks, and not to any higher layer including content over which editorial control is exercised.[94] We are interested in views on how this could best be implemented.

Questions

37. Do you have any comments on the potential removal of the 'broadcasting exclusion' in the Telecommunications Act?

6.10. International coordination and trans-Tasman harmonisation

It is important that the domestic communications regulatory framework is consistent with New Zealand's international obligations. In addition, New Zealand relies on international standards and coordination with international telecommunications organisations to ensure that our regulatory system supports the development of local industry. In considering regulatory framework options, the Government will take into account our international obligations under multilateral agreements[95] and bilateral trade agreements.

Regulatory consistency with Australia is an ongoing focus for New Zealand government policy. Our two countries have a long history of working together through the Australia New Zealand Closer Economic Relations Trade Agreement, which has involved successive rounds of integration of the Australia and New Zealand economies.

Consultation to date has not found significant concern with the current differences in the trans-Tasman regulatory frameworks. We welcome input on any opportunities for harmonisation which may be worth closer examination.

We are also interested in your views on whether there are any significant barriers to trans-Tasman trade in communications services that should be further investigated and potentially addressed, or if there are any elements of the Australian system (such as special access undertakings, discussed in **Appendix C**) that should be adopted in New Zealand.

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[94] European Commission Directive 2002/21.

[95] For example, New Zealand has commitments regarding trade in telecommunications services under the General Agreement on Trade in Services and the ASEAN-Australia-New Zealand Free Trade Agreement.

Questions

38. Are you aware of any barriers to trans-Tasman trade in communications markets that the Government should address, or areas where closer harmonisation with Australia would be beneficial?

39. Please outline any other modifications you propose should be made to the regulatory framework, explaining how these would align with section 157AA(a) of the Telecommunications Act.

7. Submissions process

You are invited to make a written submission on the issues raised in this discussion document. The closing date for submissions is **5pm, Tuesday 27 October 2015**.

Specific questions are listed at the end of relevant sections, and the full set of questions is listed below. The Government welcomes comment on some or all of the questions raised, as well as broader comment on the issues.

Where possible, you should provide specific examples and evidence to support your views. If these examples are commercially sensitive, we encourage you to provide two versions of your submission: a full version and a publishable version (see below).

Sending your submission

Comments should be submitted in writing (preferably by email or online submission) no later than 5pm on Tuesday 27 October 2015, as follows:

Email (preferably as a PDF or Microsoft Word document): telcoreview@mbie.govt.nz

Online: www.mbie.govt.nz/telcoreview

Post:
Telecommunications Review Team
Communications Policy
Ministry of Business, Innovation & Employment
PO Box 1473
Wellington 6140
New Zealand

Delivery address: Main reception, 15 Stout Street, Wellington 6011

If you post your submission, please also send it electronically if possible.

Publication of submissions

Except for material that may be defamatory, the Ministry of Business, Innovation and Employment (the Ministry) will post all written submissions at www.mbie.govt.nz/telcoreview. The Ministry will consider you to have consented to publication by making a submission, unless you clearly specify otherwise in your submission. If sensitive material in your submission cannot be published, please provide two versions of your submission – a full version (with that material clearly identified) and a publishable version with redactions.

Submissions are also subject to the Official Information Act 1982 (the OIA). If you have any objection to the release of any information in your submission, please set this out clearly with your submission. In particular, identify which part(s) you consider should be withheld, and explain the reason(s) why you consider we should withhold the information by reference to section 9 of the OIA. The Ministry will take such reasons into account when responding to requests under the OIA.

The Privacy Act 1993 establishes certain principles with respect to the collection, use and disclosure by various agencies, including the Ministry, of information relating to individuals and access by individuals to information relating to them, held by such agencies. Any personal information you supply to the Ministry in the course of making a submission will be used by the Ministry only in conjunction with consideration of matters covered by this document. Please clearly indicate in your submission if you do not wish your name to be included in any summary the Ministry may prepare for public release on submissions received.

Summary of questions

Chapter 1: Goals for this Review

1. Do you have any comments on the Government's:
    a. long-term vision for communications markets; and
    b. regulatory principles?

Chapter 3: Is the regulatory framework fit for purpose? Six key problem areas

2. What is your view on creating an overarching 'Communications Act' to consolidate economic regulation across the communications sector?
3. Have we identified the main challenges facing communications regulation as we move beyond 2020?

Chapter 4: Pricing for fixed line access services

4. Do you agree with our policy objectives for the price regulation of fixed line infrastructure?
5. Is it feasible to move to technology neutral service descriptions? How would this work in practice?
6. Do you consider utility-style regulation may now be more appropriate for fixed line communications services? If so, what elements would be most effective?
7. Would maintaining the status quo for UFB services be effective post-2020?
8. If the Government was to specify the pricing methodology that would eventually apply to UFB services, what methodology would be preferable?
9. What is your view on UFB access services being regulated immediately from 1 January 2020, compared to a backstop regime whose application would be triggered by a Commerce Commission recommendation?
10. If the Government were to legislate for the price regulation of UFB services from 1 January 2020, do you have any initial thoughts on the scope of such regulation? Should a different approach be taken in LFC areas?
11. If the Government were to introduce a backstop regime for UFB services, do you have any initial thoughts on:
    a. tailoring the traditional Schedule 3 investigation into whether UFB services should be regulated?
    b. the need for transitional measures that might apply prior to the possible price regulation of UFB services?
12. Is there a case for change to the regulated copper access services pricing methodology? If so, what pricing methodology should apply post-2020?
13. If a BBM pricing methodology were put in place for UFB services, how would that impact the choice of a copper pricing regime? Should consistency be an important consideration?

14. If BBM were introduced for UFB and/or copper services, should this be done under Part 4 of the Commerce Act or through a similar model under the Telecommunications Act? What would be the costs and benefits of each option?
15. What is the right balance between providing predictability through legislated pricing requirements and ensuring the Commission has flexibility to respond to a changing environment? How might this be achieved?
16. Please comment on the implementation issues we have identified for moving to BBM for UFB and/or copper access services, including identifying any other material issues that you think would need to be addressed.

Chapter 5: Mobile competition and radio spectrum

17. Is the current regulatory framework for mobile services effective? Will it continue to support both coverage and competition objectives in the future?
18. If changes are needed to regulation of mobile services, what should we consider? For example, is it worth actively promoting infrastructure sharing?
19. What are your views on the options for reform in spectrum allocation?
    a. How could the overlap between spectrum assignment by government and consideration under the Commerce Act be managed?
    b. Should there be any requirements on government to consult or establish objectives for spectrum assignments in legislation?
20. Is an undertakings regime needed to set and enforce spectrum assignment terms and conditions? Where would this sit within the existing legislative framework?
21. Should the Ministry of Business, Innovation and Employment or an independent agency monitor and enforce assignment conditions?

Chapter 6: The regulatory toolkit

22. Is there a need to update the current purpose statement in the Telecommunications Act for the communications access regime? What are your views on the suggested changes?
23. Are there any other barriers to withdrawal or switch-off of copper services which are not addressed here? For example, are there any services based on the legacy copper network for which a replacement product is required, and is not available in New Zealand?
24. In your view, should Chorus have to meet any requirements to protect consumers prior to withdrawing copper services or switching off the copper network within the UFB footprint?
    a. What requirements should be met?
    b. How should these requirements be given legal effect?
25. Is there a need for a mandatory codes system for providers of telecommunications services in New Zealand? How would this work in practice?
26. Do you think there are current net neutrality issues in New Zealand?

27. Do you think the regulatory regime is capable of addressing net neutrality issues if they arise in New Zealand? If not, what approach should we consider?
    a. Are there elements of the rules and expectations introduced in the European Union and United States that would be useful to have in the New Zealand regime?
28. What do you consider is acceptable traffic management and what is not acceptable? Please provide specific and realistic examples. For example, should telecommunications providers:
    a. be able to block or deprioritise lawful content, applications, or services?
    b. be able to enter into commercial agreements with content providers to prioritise certain traffic?
    c. be able to prioritise certain types of traffic when their network is congested (such as voice traffic or emergency services calls)?
29. Are there other net neutrality matters you consider should be considered in a regulatory context (for example, peering or certain content distribution practices)?
30. Do you have any suggestions for encouraging deregulation as part of the regulatory process?
31. Do you support the Commerce Commission having the flexibility to:
    a. implement price-only regulation?
    b. adopt either a one- or two-stage pricing process?
32. Do you have any comments on the current arrangements for consumer representation?
33. In your view, is there justification for the Government to make it clear in legislation whether or not backdating will occur?
34. In your view, is there still a need for a separate Telecommunications Commissioner (rather than using the general Commissioners)?
35. Would the increased accountability created by a merits review process outweigh the risk of increased uncertainty and length added into regulatory processes?
36. Do you have any suggestions for the most effective way to transition to a new regulatory framework, and to ensure any updated framework remains fit for purpose over time?
37. Do you have any comments on the potential removal of the 'broadcasting exclusion' in the Telecommunications Act?
38. Are you aware of any barriers to trans-Tasman trade in communications markets that the Government should address, or areas where closer harmonisation with Australia would be beneficial?
39. Please outline any other modifications you propose should be made to the regulatory framework, explaining how these would align with section 157AA(a) of the Telecommunications Act.

Acronyms and glossary

Summary of acronyms

ACCC	Australian Competition and Consumer Commission
Act	The Telecommunications Act 2001
BBM	Building block model
CFH	Crown Fibre Holdings
CIR	Committed information rate
Commerce Act	The Commerce Act 1986
Commission	New Zealand Commerce Commission
DAC	Depreciated actual costs
DSL	Digital subscriber line
DSLAM	Digital subscriber line access multiplexer
FCC	Federal Communications Commission
FPP	Final pricing principle
GB	Gigabyte
Gbps	Gigabits per second
GSM	Global System for Mobile Communications
GPON	Gigabit Passive Optical Network
HFC	Hybrid fibre-coaxial
IPP	Initial pricing principle
ICT	Information communication technology
IP	Internet protocol
LFC	Local Fibre Company
LTE	Long Term Evolution
MBIE	Ministry of Business, Innovation and Employment

MCH	Ministry for Culture and Heritage
Mbps	Megabits per second
MEA	Modern equivalent asset
MTAS	Mobile Termination Access Service
MVNE	Mobile virtual network enabler
MVNO	Mobile virtual network operator
OECD	Organisation for Economic Co-operation and Development
OTT	Over-the-top services
PSTN	Public switched telephone network
RAB	Regulated asset base
RBI	Rural broadband initiative
RSP	Retail service provider
SAU	Special access undertaking
STD	Standard terms determination
TCF	New Zealand Telecommunications Forum
TDL	Telecommunications Development Levy
TDRS	Telecommunications Dispute Resolution Scheme
Telecommunications Act	The Telecommunications Act 2001
TSLRIC	Total service long-run incremental cost model
TSO	Telecommunications Service Obligation
UBA	Unbundled Bitstream Access service
UCLFS	Unbundled Copper Low Frequency service
UCLL	Unbundled Copper Local Loop service
UFB	The ultra-fast broadband initiative
VDSL	Very high bit rate digital subscriber line
VOIP	Voice over internet protocol

Glossary of terms

4G:	The fourth generation of mobile technology. The term '4G' is commonly used interchangeably with 'Long Term Evolution' or 'LTE'.
5G:	The fifth generation of mobile technology, being the next major phase of mobile telecommunications technology standards. 5G is expected to deliver faster download and upload rates than 4G.
700MHz spectrum:	Refers to a band of the radio spectrum, previously used for analogue TV transmission. Since the move by broadcasters to use other spectrum for digital transmission, the 700 MHz spectrum is now used for 4G connectivity.
Access regime:	A set of rules that requires a regulated network provider to allow RSPs or access seekers to access its network to receive regulated services, at a price that may or may not be determined by the regulator. In markets with natural monopoly characteristics, access regimes can facilitate access by third parties to compete in dependent markets.
Backhaul:	In a telecommunications network, backhaul is the capacity between the core backbone network and the local 'edge' networks.
Broadband:	Broadband is a very general term that refers to the wide bandwidth, or high capacity of a connection.
Building Block Model:	The building block model (BBM) is a methodology for determining regulated prices where the allowed revenue of the regulated firm is equal to the sum of underlying components or 'building blocks' consisting of the return on capital, return of capital (or depreciation), operating expenditure, and various other components such as taxes and incentive mechanisms. The initial asset valuation is carried out (based on either forward-looking or actual costs) and is then updated based on actual prudent capex and depreciation.
Cabinet:	Roadside infrastructure that provides the connection point between individual end-user telecommunications connections (for example, the connections of all residents in a subdivision or set of streets) and the nearest exchange (which serves a wider area).
Communications:	The broad sector which includes telecommunications network providers, retail service providers, broadcasters (whether over television, radio or internet), content aggregators and providers, and internet services companies.

Convergence:	Historically, different networks were needed to deliver different services (such as voice, data and broadcasting). Modern internet protocol networks are capable of delivering a wide range of services, and the evolution of markets to take advantage of this is termed 'convergence'.
Copper:	The original telephone network is a copper network. It allows electrical currents to flow, and was designed exclusively for telephony, but is now also used for internet services. The copper network will eventually be replaced by a new fibre network.
Dark fibre:	Passive fibre optic network infrastructure, which is sold without any optical or electronic signalling. The customer (usually a Retail Service Provider) is responsible for adding the transmission system at both ends. Also referred to as layer 1 or 'unlit' fibre services.
Designated services:	Services regulated on a price basis under the Telecommunications Act (see also specified services).
Depreciation:	Depreciation is a term used in accounting and economics. It is the way in which the reduction in value of an asset over time is recognised.
Dial-up:	A way of accessing the internet through the telephone network. Dial-up access is very low speed and is not always available.
Digital subscriber line:	Digital Subscriber Line (DSL) is a set of technologies used to transfer digital signals over standard copper-based telephone lines. Asymmetric Digital Subscriber Line (ADSL) and Very-high-bit-rate Digital Subscriber Line (VDSL) technologies are commonly used for broadband services in New Zealand.
Digital subscriber line access multiplexer:	A digital subscriber line access multiplexer (DSLAM) is a network device located in an exchange or cabinet that routes incoming DSL connections to the Internet. A "multiplexer" combines multiple signals into one, a DSLAM combines a number of DSL connections into one aggregate Internet connection.
Economic regulation	In the communications context, we use this phrase to refer to regulation adopting cost-based measures to control monopoly pricing, to ensure services are of a suitable quality and to ensure access is provided to regulated infrastructure on a timely basis.
End-user:	A telecommunications service end-user is a person (or business) who is the ultimate recipient of a telecommunications service (for example, the person using a broadband internet connection), or a service that relies on a telecommunications service (for example, the user of a monitored health alarm).

Exchange:	An exchange is a central building which connects all the end-users' connections within a geographic area to the wider national telecommunications network.
Fibre or fibre optic:	An optical fibre is a very thin strand of glass that is used to transport information via a beam of light.
Fibre-to-the-Home:	A network where the optical fibre is run all the way to the house (as opposed to being run to a cabinet) is called a fibre-to-the-home (FTTH) or fibre-to-the-premise (FTTP) network.
Fixed line voice:	Voice service (telephony) provided over fixed lines (as opposed to mobile networks).
Fletcher Inquiry:	The *Ministerial Inquiry into Telecommunications* which released a final report in 2000 and resulted in the introduction of the Telecommunications Act 2001.
Ladder of investment:	The 'ladder of investment' theory proposed that a portfolio of copper wholesale services provided at different layers of the network would lower the cost of entry and encourage infrastructure competition. New entrants could 'climb the ladder' by moving from offering resale services, to providing bitstream services, and then offering services using unbundled copper loops.
Local Fibre Companies:	Companies formed with the Government's partners in the UFB initiative (other than Chorus) to deliver wholesale fibre services in certain areas: Northpower Limited, Ultrafast Fibre Limited and Enable Services Limited.
Low frequency service:	On a copper pair, low frequency refers to the frequencies that allow the transmission of voice. Broadband is carried over much higher frequencies.
Mobile termination rate:	The rate that a mobile service provider charges another mobile service provider or a fixed line service provider to terminate a call or text message originating in the other network. For example, a Spark customer rings a Vodafone customer. Vodafone will charge Spark for carrying the call through Vodafone's network and connecting the call to its customer. This charge is for mobile termination, and the rate is the amount the terminating network is permitted to charge.

Mobile virtual network operator:	A mobile virtual network operator (MVNO) is a mobile service provider that does not have its own network infrastructure or radio spectrum licenses, but rather uses an existing mobile network operator's infrastructure and spectrum. An MVNO provides services by purchasing a wholesale 'full service' mobile offering. The service provider then utilises an existing mobile network to deliver a full suite of mobile services to end-users, with their own branding, billing, and so on.
Modern equivalent asset:	The network asset that would be built by a hypothetical efficient operator today. A modern equivalent asset (MEA) is used as a basis for asset valuations under the TSLRIC price-setting methodology. For example, a network operator would be unlikely to build a new copper network today, and so replacement costs for the copper network may be based on a fibre-to-the-premises network.
Naked broadband:	A broadband service where a traditional voice service is not also provided over the same line.
nbn:	The company building and operating Australia's national broadband network.
Net neutrality principle:	The general principle that all internet traffic should be treated the same.
Node:	A node is a connection point, redistribution point, or endpoint in a network. In a fixed telecommunications network, a node can be a telephone exchange, a roadside cabinet, or a computer providing some intelligent network service.
Open access:	An 'open access' network is one where the access provider offers wholesale access to network infrastructure or services on non-discriminatory terms.
Over-the-top services:	Over-the-top (OTT) services are offered to consumers over broadband networks, often replacing services traditionally offered by telecommunications providers, leaving RSPs and mobile network operators only the role of transporting IP packets. Examples are Skype, Netflix, and messaging services such as Whatsapp.
Part 4:	Part 4 of the Commerce Act 1986, under which the Commerce Commission has a role regulating the price and quality of goods of services in markets where there is little or no competition and little prospect of future competition.

Regulatory framework:	The regulatory framework is the system of laws, regulations, rules, procedures and organisations within which the regulation of communications services takes place. Components include the access regime (and any associated price control), the regulatory decision maker, rules and procedures for decision making, requirements that regulated entities must comply with, and other matters.
Specified services:	Services regulated on a non-price basis under the Telecommunications Act. For example, access providers are required to offer a national roaming service but are free to set prices commercially. See also designated services.
Structural separation:	The 2011 structural separation of Telecom Corporation of New Zealand Limited into two separate entities, Chorus Limited (wholesale only infrastructure provider) and Telecom New Zealand, now Spark New Zealand Limited (a retail service provider).
Telecommunications:	Access networks for broadband and telephone services, and the associated sector. Telecommunications is a subset of the broader communications sector.
Telecommunications Service Obligations:	The telecommunications service obligations (TSO) are a set of obligations established under the Telecommunications Act to ensure certain telecommunications services are available and affordable. There are two current TSO services: the Deaf Relay Service, and a Local Service Obligation regarding the provision of residential telephone services.
Total Service Long-Run Incremental Cost:	Total Service Long-Run Incremental Cost (TSLRIC) is a methodology for determining regulated prices, where the allowed prices for a regulated firm's individual services are equal to the incremental cost of providing the given services. The asset base is periodically revalued based on forward-looking replacement cost (see modern equivalent asset).
Traditional voice service:	Voice services provided over traditional telephony networks (telephone exchanges and copper networks).
UBA:	Unbundled Bitstream Access (UBA) is a DSL-enabled service that enables access to, and interconnection with, part of Chorus' fixed Public Data Network. It provides RSPs with a managed bitstream service from an exchange to an end-user, so that the companies do not need to manage their own copper network equipment.

UCLL:	Unbundled Copper Local Loop (UCLL) is a layer 1 unbundled copper local loop service. It enables access to, and interconnection with, Chorus' copper local loop network. The access seeker can combine the UCLL Service with network transport services and service level functionality to deliver services to end-users.
Unbundle/Unbundling:	Unbundling allows an RSP to gain access to the UFB or copper network and install its own equipment at the exchange or cabinet, so that the RSP can offer its own broadband service as opposed to using a wholesale service provided by Chorus or the LFC. Developments in technology will potentially provide new forms of unbundling which are not necessarily reliant on physically installing equipment.
Utility-style regulation:	Regulatory regimes traditionally developed for utilities such as electricity, gas and water. These regimes usually offer tiers of possible regulation, starting with information disclosure requirements, and then more intrusive forms of regulation such as price-quality control and/or arbitrate/negotiate regulation. Price control is usually set using a Building Block Model and tends to focus on the overall revenues of the regulated business rather than individual service pricing.
Voice over Internet Protocol:	Voice over Internet Protocol (VoIP) is a service provided over a data network using internet protocol. This could be an 'over-the-top' service, but it could also be a managed service, for example, voice services provided over the UFB network by RSPs in New Zealand.

Appendix A: Legislative requirements for this Review

Section 157AA of the Telecommunications Act sets out the legislative requirements for the Review, as follows.

157AA Minister must review regulatory framework

(1) The Minister must, not later than 30 September 2016, commence a review of the policy framework for regulating telecommunications services in New Zealand, taking account of the market structure and technology developments and competitive conditions in the telecommunications industry at the time of the review, including the impact of fibre, copper, wireless, and other telecommunications network investment.

(2) The review must—

(a) consider whether the existing regulatory framework under the Telecommunications Act 2001 is the most effective means to—

(i) promote competition for the long-term benefit of end-users; and

(ii) promote the legitimate commercial interests of access providers and access seekers; and

(iii) encourage efficient investment for the long-term benefit of end-users, by—

(A) providing investors with an expectation of a reasonable return on their investment; and

(B) providing sufficient regulatory stability, transparency, and certainty to enable businesses to make long-term investments; and

(iv) support innovation in telecommunications markets, or deregulation where sufficient competition exists; and

(b) assess whether alternative regulatory frameworks, including (without limitation) generic price control, would be a preferable and more effective means of achieving these outcomes.

(3) In carrying out the review, the Minister must—

(a) consult with interested parties, including the Commission, industry participants, consumers, and Māori; and

(b) take into account—

(i) the extent of network coverage of services provided on fibre, copper, wireless, and other telecommunications networks; and

(ii) the level of investment in fibre, copper, wireless, and other telecommunications networks, and the ability of access providers to recover that investment within a reasonable period; and

(iii) the ability of access providers to achieve, within a reasonable period, reasonable rates of return on their investment in telecommunications networks that adequately reflect the risks assumed by those access providers when the relevant investments were made; and

(iv) the level of competition in relevant telecommunications markets; and

(v) the effects of the regulatory framework under this Act on investment in fibre, copper, wireless, and other telecommunications networks, and on outcomes for end-users; and

(vi) the sustainability of the regulatory framework under this Act, given developments in technology and convergence of traditional telecommunications markets; and

(vii) the importance of any regulatory intervention being proportionate, having regard to the problems being addressed, the size of the relevant market, and the number and size of the potentially regulated entities; and

(viii) developments in wireless solutions and whether they should be part of any telecommunications regulation; and

(ix) experience in comparable jurisdictions and economic relations with Australia, weighed against what is appropriate for New Zealand conditions and the make-up and history of New Zealand's telecommunications markets; and

(x) any other matters that the Minister considers relevant.

(4) The Minister must use his or her best endeavours to ensure that the review is completed no later than 31 March 2019.

Appendix B: Analysis of existing telecommunications regulatory framework

The following table contains a summary and preliminary analysis of whether the existing telecommunications regulatory framework is effectively achieving the outcomes in section 157AA(2)(a) of the Telecommunications Act 2001 (the Telecommunications Act), including discussion of problem areas and issues for resolution. We are particularly interested in views on this preliminary analysis and any other views on the performance of the existing regulatory framework.

Regulatory framework element	Preliminary analysis of the Telecommunications Act against s157AA(2)(a) outcomes
Regulatory decision maker, regulatory toolkit, regulatory accountability	
Independent regulatory decision maker	The regulatory decision maker under the Act is the Telecommunications Commissioner within the Commission. It is considered international best practice for the regulatory decision-making function to sit within an independent entity. The institutional basis for the Telecommunications Commissioner is currently distinct from that of the other Commerce Commissioners. While this has been appropriate in the past, there are questions whether this distinct position reduces potential for information sharing, knowledge transfer and capability development in the area. From an institutional design point of view it may now be appropriate to consider whether the institutional basis for the Telecommunications Commissioner role should be made more consistent with the other Commissioners. For example, a more consistent approach may be for the Telecommunications Commissioner to have the same legal and institutional basis as the other Commissioners. The Commissioners tend to specialise in particular areas (or Divisions) in any case. However, the role of Telecommunications Commissioner requires some specialist technical capability, and capability to administer the other forms of regulation in the regime (for example the administration of the Telecommunications Development Levy). It may also be appropriate to consider whether the requirement for all major regulatory decisions to be made by the Telecommunications Commissioner and at least two other Commissioners, as currently required by section 10 of the Act,

	should be retained or not. Another option could be to establish a dedicated communications regulator with broader objectives; however, the Government does not favour this approach[96]. **The Government does not propose any change to the independent nature of the regulator. It is an effective and best-practice institutional basis to achieve regulatory transparency, accountability and stability.** **We are interested in your views on whether the Telecommunications Commissioner role should have the same legal and institutional basis as the other Commissioners. Another potential change is to rename the Telecommunications Commissioner as the 'Communications Commissioner', recognising the converged nature of the communications sector.**
Accountability (merits review)	One tool that is commonly used in other jurisdictions (and in New Zealand under Part 4 of the Commerce Act in some circumstances) in this regard is merits review. **The Government does not have an initial view on introducing merits review. We welcome your comments.**
Regulatory tools	The range of regulatory tools currently available in the Act is focused on wholesale regulation of communications services, and the Commission has the power to monitor competition in telecommunications markets and the performance and development of telecommunications markets. **These tools seem to be working effectively. We welcome views on whether there is a need for new or different powers for the Commission to account for the developments in the market (and those that will occur in the future).**
Part 1 – Interpretation	
Broadcasting exception	The explicit carve-out for broadcasting networks in section 5 of the Act (definition of 'telecommunication service') is increasingly arbitrary and out of step in the converged environment. **The Government is considering amending this exception as discussed earlier in this paper.**

[96] We do not favour this approach due to (a) the high cost involved, (b) the uncertainty generated by such a change; and (c) there not being sufficient concerns or reasons to move away from the current model where the Commission is the independent regulator.

Part 2 – Regulatory access regime	
Purpose statement	The purpose of the access regime is set out in section 18 of the Telecommunications Act. It is focused on the promotion of competition for the long-term benefit of end-users. **The Government is considering whether a change to the purpose statement in section 18 would be more consistent with section 157AA. The suggested two-pronged statement is:** • **to promote competition, or outcomes consistent with outcomes in competitive markets, for the long-term benefit of end-users' and** • **to promote growth, innovation and investment in communications markets for the long-term benefit of end-users.** **We are seeking your input on this structure of dual objectives, as well as the specific wording, and whether they should be incorporated as changes to the purpose statement. We are also seeking views on whether any further matters need to be specified in the revised purpose statement in order to make it clearer what the Government is aiming for.**
Access regime	Access regulation in the communications sector has succeeded in supporting the growth of competition. Standard Terms Determinations (STDs) promote competition by ensuring a standard reference offer is available to all access seekers, minimising the risk of discrimination and avoiding the need for individual agreements to be negotiated. The STD development process (carried out by the Commission) has averaged about 15 months. While the access regime in general has been successful, we have a number of concerns about specific aspects of the regime which do not support the outcomes in section 157AA. **The Government's view is that there is still a need for economic regulation of communications networks for the long-term benefit of end-users.** **However, the Government's preliminary view is that the access regime as it stands is not the most effective means of achieving the outcomes in 157AA, and could be reformed to better achieve those outcomes.** Specific concerns and potential reforms are discussed below.
Access regime – pricing process	There has been uncertainty generated by the operation of the regulatory regime. Lengthy benchmarking and pricing review processes have raised the greatest concerns. They have also been costly for industry and end-users. In particular, the length of the re-benchmarking processes for UCLL and UBA calls into question whether

	benchmarking really is a quick and low-cost way of setting an initial price (as was the original intent). **There may be a case for providing flexibility for the Commission to undertake a one-stage pricing process, if a two-stage process would not be effective (for example, if there are not sufficient comparators).** The Commission's position is that it has discretion under the Act as to whether FPP prices should be backdated. In July 2015, it indicated that its revised majority view was that backdating would not promote competition for the long-term benefit of end-users. However, this decision is not final and the Commission is still seeking submissions on whether the final prices should be backdated. This uncertainty negatively impacts investment. **To limit future regulatory uncertainty, there is a strong case for amending the Act to clarify whether backdating of prices should or should not occur in the future.**
Access regime – pricing methodology	Now that we are halfway into the UFB rollout, and as we approach 2020, the Government believes there is a need to resolve uncertainty generated by the fact that it is unknown what pricing methodology might be applied if and when the Commission investigates and recommends regulation of UFB services in the future. In addition, given the instability and uncertainty experienced to date with the current copper pricing process, maintaining the status quo by retaining the TSLRIC pricing principle specified in the Act for copper may not be the best way to achieve the outcomes in section 157AA. **The Government's view is there is a case for taking steps now to provide more certainty about how UFB services will be priced, by specifying the regulated pricing methodology. This methodology could be deemed into regulation post-2020 for UFB services (with the Commission applying the methodology to determine price caps from 1 January 2020), or remain as a regulatory backstop should the Commission see a need to intervene at a later date.** **There is a strong case for implementing the 'building block methodology' (BBM – used in utility-style regulation and for telecommunications in Australia), rather than the TSLRIC methodology (which is used for copper services in New Zealand) for future regulation of UFB.** **The Government's view is that, if UFB services are priced on a BBM basis, there may be a case for moving to BBM for copper as well. However, no decisions have been made on this issue.**
Access regime – regulated services	As the market develops there may be a need for a third kind of regulation – price-only regulation. Price-only regulation could be included as a third alternative for regulation of services under the regulatory framework, allowing the Commission to choose to regulate on price terms only where appropriate.

	We are interested in views on whether a third option of price-only regulation would be workable and what sort of services it might apply to.
Part 2A – Non-discrimination, equivalence and open access obligations	
Non-discrimination, equivalence and open access obligations	The regulatory framework includes provision for an open-access deed of undertaking from Chorus relating to its copper network, containing non-discrimination and equivalence obligations. This appears to be working well. This part of the Act also has provisions for the structural separation of Telecom. Many of the structural separation provisions are transitional and have served their purpose. However, some remain relevant such as the 'sharing arrangement' rules in Subpart 2 of Part 2A. These appear to have been achieving their purpose, but may not be required in the long-term. **We are interested in views on whether the copper deed provisions, and the structural separation provisions, are effective and which of these may no longer be necessary.**
Part 2B – Information disclosure	
Information disclosure	The regulatory regime requires all regulated entities to provide information prescribed by the Commission. Some of these requirements impose costs onto regulated entities[97], and it is not clear that the information is being actively used for a valuable purpose. **The Government's preliminary view is the information disclosure requirements in Part 2B should be retained, however we are interested in your views on this.**
Part 3 – Universal service provisions	
Telecommunications service obligations	Universal service is a long-standing concept in telecommunications. Part 3 of the Act provides for the Telecommunications Service Obligation (TSO) regime. The Telecommunications Service Obligation (TSO) for local residential telephone services is a regulatory obligation on Spark and Chorus to provide a price-capped, standalone voice service with uncapped local calling. It ensures all end-users within the copper network footprint in 2001 can receive a basic voice service for a fixed monthly price. The Minister for Communications reviewed the local service TSO regime in 2013 separately pursuant to section 101A of the

[97] We note that section 69Z requires the Commission's requests to be reasonable having regard to the time required to prepare the information.

	Telecommunications Act. This review did not result in any fundamental changes to the local service TSO regime. The TSO regime remains an important backstop to support the interests of end-users. The Government has discussed possible modifications to the TSO Deeds to achieve greater technological neutrality with Spark and Chorus. No specific changes have been agreed or proposed. **The Government does not propose any fundamental changes to the TSO regime.**
Part 4 – Operational regulatory provisions, UFB and RBI, and enforcement	
Operational regulatory provisions	There are a number of operational regulatory provisions in the current framework, relating to matters such as 'network operator' status (and associated rights to access road reserves), maintenance of networks and access to multi-unit complexes. These provisions have operational value and assist with providing regulatory stability and certainty to enable businesses to make long-term investments. The multi-unit complexes and land access regimes are being addressed separately to this Review. A discussion paper was released in June 2015 and is available at http://www.mbie.govt.nz/info-services/sectors-industries/technology-communications/communications/broadband-mobile-initiatives/telecommunications-infrastructure-deployment/land-access-for-telecommunications-consultation.
Part 4AA – Services provided using networks developed with Crown funding: Undertakings regime	
Open access provisions relating to UFB and RBI	The regulatory framework includes provision for open access deeds of undertaking from Chorus and LFCs relating to UFB and RBI services, containing non-discrimination and equivalence obligations. The UFB and RBI undertakings appear to be operating successfully. **We are interested in views on whether the UFB and RBI deed provisions are effective.**
Unbundling	Unbundling has achieved some success in New Zealand in driving lower prices and promoting product innovation. **The Government's current position on unbundling remains unchanged, and Chorus and LFCs will be obliged to offer unbundling post-2020. We are open however to your comments about the value of fibre unbundling.**
Enforcement provisions	Any regulatory framework requires enforcement provisions in order to have effect. The Government is not aware of any concerns with the enforcement provisions in the current framework.

Part 5 – Review	
Mechanism for review of the regulatory framework, and transitional issues	**The Government is interested in your views on when and how a future review of the regulatory regime should be built into the regulatory framework.** If there is any change to the regulatory framework, consideration needs to be given to how a transition would be managed to best maintain stability within the industry and for end-users. **The Government is interested in views on appropriate transitional provisions.**
Schedule 1 – Regulated service descriptions and specific pricing methodologies	
Regulated services	Schedule 1 of the Telecommunications Act sets out detailed descriptions of regulated services, and the methodologies for pricing of those services by the regulator (for designated services). The current descriptions are very prescriptive, and focus on technology rather than the end-user. **The Government is interested in views on whether service descriptions could be made more technology neutral.** Regulated mobile services have been successful in enabling the entry of a third network operator in the New Zealand market. This has delivered on competition for the long-term benefit of end-users, with more choice and lower prices. However, the competition that has developed in mobile markets still appears vulnerable. **We are interested in views on whether changes to regulated services in mobile markets could support competition for the long-term benefit of end-users.** Multi-network services have played an important role in the regulatory regime – for example, number portability is an essential service removing a barrier to end-users switching retail providers. This is likely to need to be retained as a backstop, even though it has not been re-litigated. We also note that number portability appears to be well settled, as compared with other services such as UBA and UCLL where regulatory proceedings are ongoing.
Schedule 2 – Regulatory codes provisions	
Industry codes	The regulatory framework does not provide for codes that apply to non-regulated services or entities. Codes for these services and entities are developed by the TCF, but these are not mandatory for all industry participants. **We are interested in views on whether there is a need for a codes and/or consumer complaints system with legislative**

	backing that can be applied to all industry participants and how this would be managed. At present there is no organisation with a statutory role to advocate solely on behalf of the interests of end-users of communications services. **The Government welcomes views on whether there is a need for a specific consumer advocate role in the regulatory framework; however we note Government is not considering funding such an advocate.**
Schedule 3 – Imposed and removing regulation; the Telecommunications Development Levy	
Process for altering Schedule 1	In the fast-moving communications sector, it is important to have the flexibility to deregulate where competitive conditions change. The current provision may not go far enough to encourage deregulation where market conditions permit. **We are seeking views on how the Act could more strongly encourage deregulation where appropriate conditions exist.** As an alternative to a full Schedule 3 investigation, a bespoke, simpler, and more rapid intervention test could be devised for determining whether UFB services (or other suitable services) should be regulated. **We are seeking views on whether there is a need for a more timely and predictable process than the existing Schedule 3 investigation process, and what this might look like.**
Undertakings	We are interested in the concept of a Special Access Undertaking (SAU) – for example, an undertaking could be used to set prices for certain services within a revenue cap, in some pricing models. This would differ from the Schedule 3A process: an SAU is itself a form of regulation, and generally cannot be overturned in favour of traditional regulation once it is in force. **The Government is interested in views on whether provision could be made for 'special access undertakings' (SAUs) as used in the Australian telecommunications regime.**
Telecommunications Development Levy	The regulatory framework provides a mechanism for collecting and using industry levies, for example, the Telecommunications Development Levy (TDL). There has been considerable industry debate about this system. **No significant policy change to the TDL regime is being considered at this point. We are however open to suggestions for improving the processes supporting the TDL, including how to ensure the application of the levy across the sector is equitable given convergence trends.**

Appendix C: Implementation of price-setting reforms

If the Government decides to move forward with shifting to BBM for UFB and/or copper access services, we will conduct more detailed consultation on implementation issues. We are seeking your feedback on the following initial issues to help inform policy development – including the extent to which it is appropriate to deal with these issues through legislation or devolve their resolution to Commerce Commission processes.

Legislative structure

If we are seeking to price fixed line services (UFB and/or copper access services) on a BBM basis, then the Government will need to decide whether fixed line services should be regulated under Part 4 of the Commerce Act or whether a BBM framework is incorporated into the Telecommunications Act.

Part 4 of the Commerce Act has a high threshold for imposing regulation.[98] However, in our view, there is a case for UFB and copper networks being considered as having enduring natural monopoly characteristics.[99] There is a very low likelihood of a substantial increase in competition to Chorus in most of the fixed line market, although we note pockets of competition in LFC and HFC areas.

Incorporating fixed line communications into Part 4 would have the advantage of providing a degree of consistency with the treatment of other regulated network industries, including potentially the application of Court precedent on Part 4. Part 4 is becoming increasingly well understood and building on the experience with the specific operation of Part 4, for example, in electricity lines regulation, may be more useful than trying to replicate the model in the Telecommunications Act.

However, although the Commission has applied BBM under Part 4 to a number of industries, BBM is not prescribed (or even mentioned) under Part 4. Making fixed line services subject to price control under Part 4 would therefore leave the Commission to develop and apply a pricing methodology that it considered to be consistent with the statutory scheme (as it does for other utilities). Alternatively, the government could insert a new subpart into Part 4 defining BBM as the methodology to be applied to certain fixed line services (which might also include some of the other implementation issues examined below).

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[98] Section 52 states "This Part [4] provides for the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition".

[99] We are aware of the debates about the operational meaning of 'natural monopoly' in Australia in the context of the National Access Regime. In this context we regard a natural monopoly market as one where total foreseeable market demand for the infrastructure service over the relevant time period could be met at least cost by one network.

As noted in the document, Part 4 of the Commerce Act may not provide all the elements necessary for the regulation of the communications sector. There would still need to be a separate access regime remaining in the Act for other regulated services such as mobile termination, so the overall regulation of communications services would sit across two pieces of legislation. We consider two pieces of legislation could be managed (this is already the situation in relation to electricity lines regulation), but we are interested in views on this construct, especially in the context of a converged approach to communications regulation discussed at 3.1.1.

The alternative is a utility-style regulatory framework; some provisions of Part 4 of the Commerce Act, such as those relating to input methodologies; or a BBM pricing methodology could be mirrored within the Telecommunications Act. Under these approaches, all economic regulation for all communications services would sit within the Telecommunications Act.[100]

These two options are shown in *Figure 17* below.

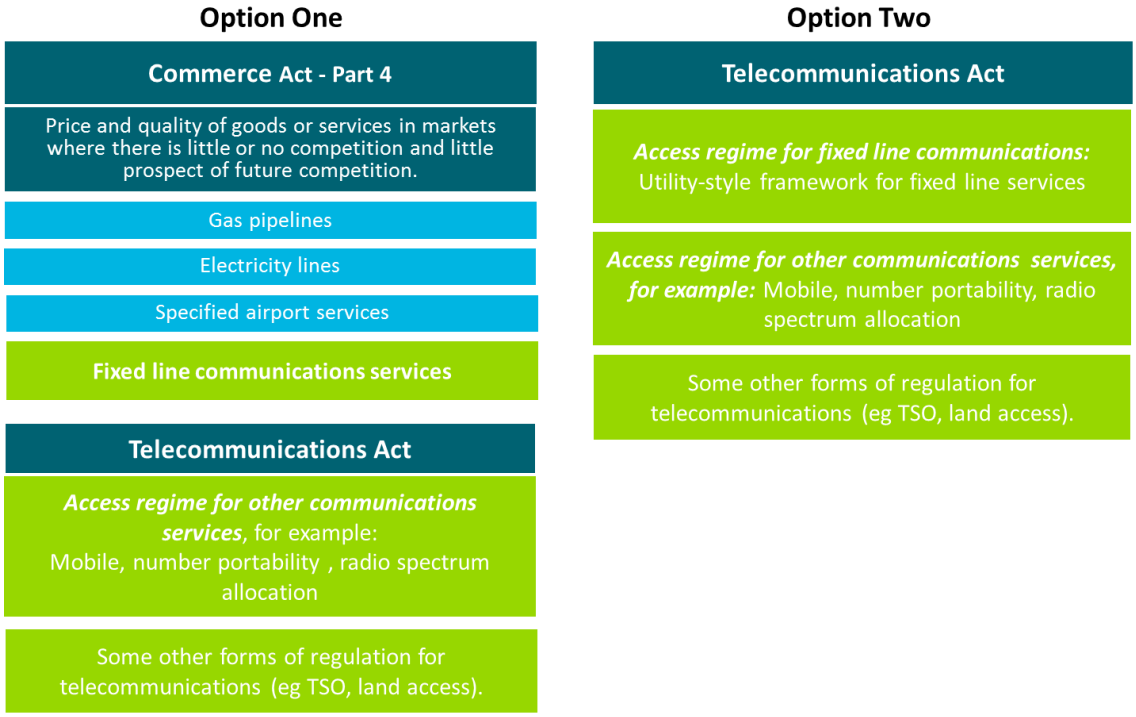

Figure 17: Options for legislative structure of a utility-style regulatory regime

The Government has not reached a view on whether fixed line communications should sit in Part 4. We are seeking submissions on the general desirability of implementing a utility-style regulatory framework for fixed line communications, any particular features from utility-style regulatory frameworks that would suit fixed line communications, and the appropriate legislative structure.

[100] As noted earlier, in this discussion we refer to the current Act, and changes to a potentially updated Act. However, if the converged approach to communications regulation discussed at 3.1.1 were implemented, the name and scope of the Telecommunications Act may change.

Key BBM parameters and implementation issues

There are a number of important implementation decisions that would need to be made as part of a shift to BBM. Their resolution could either be devolved entirely to the Commission or the Government could look to provide the market with certainty by addressing them through the legislative framework establishing BBM.

The scope and valuation of the regulatory asset base

The number of RABs

If BBM was to be adopted for both UFB and copper access services, then a decision will need to be made on how many RABs there should be. For example, if both UFB and copper access services move to BBM, it may be desirable to have a single RAB across all of Chorus' access assets (regardless of technology), to have a RAB each for Chorus' copper and UFB assets, or to even have a RAB for each of Chorus' active and passive copper and UFB assets (i.e. four RABs).

Such decisions would need to be informed by considerations that include the impact on investment incentives, the ability to appropriately make cost-allocation decisions on shared assets (for example, ducts, exchanges), the complexity of the arrangements, the impact on end-users, and the durability of the RAB structure during periods of customer migration. For example, if both UFB and copper access services move to BBM it is unlikely that the Government would support an outcome whereby a rapidly shrinking number of copper customers were left to bear the full costs associated with a copper RAB, or where early UFB adopters were paying for the full costs associated with rolling out communal UFB infrastructure that may not yet be fully utilised.

Similarly, should LFCs be subject to a BBM regime then a decision will need to be made on whether to have a single RAB or whether there should be separate RABs for passive and active UFB assets.

The initial RAB valuation under BBM

There is no single accepted approach for how the initial RAB should be valued under BBM.[101]

[101] In developing input methodologies under Part 4 of the Commerce Act, the Commission decided when setting the initial RAB value to use existing regulatory valuations disclosed under the regulatory regimes in place prior to the new Part 4 coming into effect (some of which were based on earlier replacement valuations). The ACCC noted that its initial RAB valuation for Telstra's copper network could theoretically be anywhere on a continuum from scrap value up to optimised replacement cost (which would mirror a valuation under TSLRIC). The ACCC chose to value the RAB at depreciated actual costs (DAC), reflecting the historic costs of the network to Telstra less actual recovered costs (depreciation). During the initial valuation of Telstra's RAB the ACCC also adjusted the RAB valuation to ensure the stability of wholesale prices while transitioning to the new pricing regime.

Given UFB is a recent (and ongoing) infrastructure investment, there is a strong case for actual efficient capital expenditures being used as the basis for the initial UFB RAB valuation. The Commission would then need to determine the extent to which capital expenditure on UFB was efficiently incurred and the extent to which shared costs between UFB and copper services (for example, the value of ducts) are allocated between prices for UFB and copper services (if necessary).

If a change were made for copper, then consideration would also need to be given as to how copper access assets might initially be valued under BBM and how to take account of past asset recovery (including under the current TSLRIC arrangements). One option to minimise disruption would be to use the final valuation of Chorus' access assets generated under the UCLL and UBA TSLRIC modelling as an input into the opening RAB valuation. We would welcome comments on this matter, including the extent to which it might be appropriate for the initial RAB valuation to account for redundant assets (including from migration to UFB), historic depreciation and past recovery of those assets.[102]

Treatment of Government support for UFB networks

All UFB suppliers received financial support from the Government to assist with their network deployment. These contributions have been effective in bringing forward network investment that otherwise would not have occurred within the timeframe desired by the Government.

There will inevitably be questions during future regulatory processes as to how those Government contributions should be treated by the Commission, with the issue potentially arising in the initial valuation of the RAB, when setting the relevant Weighted Average Cost of Capital for UFB suppliers, and when determining the depreciation profile for UFB assets. A failure of the regulatory regime to account for these contributions may enable suppliers to over-recover their own investments.

Setting prices for individual services

BBM determines the maximum allowable revenue for suppliers, but a subsequent step is then needed to determine the prices for individual services that suppliers can charge in order to generate that revenue. Determining how individual prices are set is likely to be more complex than the process undertaken for Part 4 regulated sectors (for example, electricity lines) given the multitude of services (voice and tiered broadband services) that can utilise the underlying regulatory asset base.

It is important that any price setting encourages UFB suppliers to continue to connect new users (layer 1), rewards UFB suppliers for innovating in delivering new and improved layer 2 bitstream services, and also facilitates opportunities for layer 1 unbundling by competitors (assuming this obligation is retained).

Stability and predictability are key concerns for the Government. Avoiding price shocks to protect end-users and industry would be an important consideration for any UFB pricing regime.

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[102] For example, as the Commission's TSLRIC process modelled a national network serving all fixed line connections in New Zealand (i.e. including non-Chorus connections) some form of adjustment would likely be needed to ensure any initial RAB valuation only reflected Chorus' in-use assets. Similarly, if one accepts the rationale for applying TSLRIC to copper assets is weakened post-2020 then there may be a case for making further adjustments..

The Government is seeking initial views on options for setting individual prices under BBM ahead of further consideration and consultation. Some initial options include:

1. a revenue-cap approach: suppliers have complete discretion in how they price individual services in order to generate their maximum allowable revenue (constrained only by their BBM revenue cap). However, such an approach may not address the incentives of suppliers to discriminate against layer 2 competitors;
2. a price-cap approach (suppliers are not only constrained by their maximum allowable revenue, but are also subject to price caps for individual services), where either:
    a. individual wholesale prices reflect cost-recovery of the assets used in delivering the service (which may in effect entail an increasing number of RABs, administrative complexity, and may not provide sufficient incentives to introduce new services); or
    b. suppliers submit undertakings to the Commission on how they will price and develop new services (see below); or
3. the Commission is tasked with implementing the BBM methodology in a manner that best promotes the long-term interests of end-users and has discretion as to how individual prices are then set.

As part of this process, we would welcome initial views on the extent to which the price-setting methodology should explicitly be required to promote unbundling.

We would also welcome views as to how prices for copper access services should be set under a BBM model, if this change were to be made, including consideration of prices based on cost-recovery, BBM prices being loosely anchored to the prices generated under TSLRIC and the potential use of long-term price undertakings being submitted to the regulator for approval.

The use of undertakings or long-term commitments

Although Australia uses BBM for national broadband network pricing, it used the mechanism of a Special Access Undertaking (SAU) to give effect to this when setting prices for individual services. An SAU is a long-term agreement on regulatory arrangements whereby the access provider has an opportunity to develop price and non-price terms and to submit these to the ACCC for their approval. In the case of the national broadband network the term of the SAU is 27 years, with prices revisited every three to five years (from 2023).

The regulator retains reserve powers during the period of the SAU, including setting prices for new products, rebalancing of prices across all services (subject to revenue neutrality), and determining the regulatory cost base. New Zealand has an undertakings regime that can be used in lieu of regulation, but does not have a system for fully incorporating long-term undertakings as part of the price and non-price setting process.[103]

Under the terms of the SAU, nbn has a degree of pricing freedom when introducing a new wholesale service, but, once that service has been introduced, its price cannot be increased by more than CPI -1.5%. This means that prices will decrease in real terms over time. This pricing mechanism means that the only way nbn will be able to generate its maximum allowable revenue is to either increase demand for its existing services or to continually innovate and introduce new services.

Allowing regulated suppliers to submit proposed prices to the Commission for approval (while still being subject to a revenue cap) may be an appropriate means of providing a degree of pricing flexibility while reducing regulatory compliance costs. Under this option the Commission would still need to subject the proposed pricing to some form of scrutiny to ensure it was in the best interests of end-users.

Transitional arrangements

We will also need to consider how the regulatory framework should manage the transition to the new regulatory environment, particularly where there is the prospect of sudden and material changes to the prices for products already in the market.

We would welcome the thoughts of stakeholders on what issues might arise during the transition to a BBM regime and how they might be appropriately managed. In particular, we are interested in whether there might be a case for having some entry-level 'anchor products' (whose prices are pegged at historic levels) or glide paths to new prices.

[103] As noted earlier, the Telecommunications Act contains a process for the provision by an access provider of an undertaking in lieu of regulation, in Schedule 3A, but this differs from what is proposed here; a Special Access Undertaking is itself a form of regulation and cannot be overturned in favour of other forms of regulation once it is in force.