

Submission to the Telecommunications Review
Team (Communications Policy), Ministry of
Business, Innovation & Employment

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Re: Telecommunications Act Review: Post-2020
Regulatory Framework for Fixed Line Services

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Preamble

We are grateful for the opportunity to make a submission on the *Telecommunications Act Review: Post-2020 Regulatory Framework for Fixed Line Services*.

The authors are academics with specific research, teaching and consulting expertise in telecommunications economics, regulation, competition and technology policy. Both are Board Members of the International Telecommunications Society¹. Our research scope covers information and communications technology and media markets in New Zealand and internationally². Neither is currently acting in any capacity for any participant in the New Zealand information and communications technology or media markets. Our interest in submitting is predicated solely upon intellectual inquiry and academic responsibility to perform the role of critic and conscience of society³, as have been similar submissions made to regulatory and policy authorities in Europe, the United States, South Africa and New Zealand.

Our submission is based upon the approach to regulation in New Zealand telecommunications markets articulated in Bronwyn Howell's submission (with Dave Heatley) in 2010 on the regulatory implications of structural separation⁴. That is:

- the appropriate object of regulatory interest should in the first instance be clearly-defined markets, rather than the specifically-identified firms supplying services in them;
- regulation of wholesale markets for products and services cannot be undertaken in isolation from understanding the effects in the retail markets in which end-consumers actually purchase services; and
- to the extent that convergence and technological innovation have resulted in a number of technologies competing effectively for customers with different demands and preferences, regulatory intervention should be technology-neutral.

¹ <http://www.itsworld.org/>

² Curriculae vitarum, including full publication records, are available on request.

³ As per Section 162 (v) of New Zealand's Education Act 1989. <http://www.universitiesnz.ac.nz/nz-university-system>

⁴ Heatley, D., & Howell, B. (2010). *Submission on Regulatory Implications of Structural Separation*. Wellington, New Zealand: New Zealand Institute for the Study of Competition and Regulation. <http://www.mbie.govt.nz/info-services/sectors-industries/technology-communications/communications/previous-reviews-and-consultations/telecom-separation/documents-image-library/telecom-separation/submissions/telecom-structural-separation-submission-heatley-howell.pdf>

First, we commend the proposal to deregulate the provision of copper services in those areas where UFB fibre is deployed. This accords with Heatley and Howell's (2010) (hereinafter "HH") recommendation that if the government's objective in subsidising fibre deployment was the stimulation of infrastructure competition, then that state would be reached in a given location as soon as fibre services were available, making residual regulation of copper networks not just redundant, but counter-productive. Indeed, deregulating copper earlier would have reduced significant sector uncertainty arising from repricing ULL and Bitstream access as required by the Telecommunications Act amendments that ensued from that review, and likely have led to an earlier uptake of fibre connections than has been observed⁵. It is better that such deregulation be done late than not at all.

Second, we note that, contrary to the recommendations of HH, the proposed regulatory regime is still predicated upon the regulation of firms and not markets. Neither is it technologically neutral. This is confusing, and will inevitably lead to opportunities for regulatory arbitrage based upon different firm identities and technologies that will not necessarily be in the long-term interests of consumers. Whilst the presence of a single UFB fibre provider is considered sufficient to deregulate copper in UFB areas, the presence of non-UFB fibre connections (and indeed CATV and wireless networks capable of delivering services of equivalent quality to the 'reference products') is not considered sufficient to allow for current and future deregulation of fibre services in the geographic locations where such infrastructure competition exists. This is puzzling, since the presence of competition from copper is offered as the countervailing power that justifies the lesser standard of disclosure being applied to LFC providers – that is, those areas where Chorus is not the fibre operator (Regulatory Impact Statement, pp45-6). It is our view that the same relief from regulation be offered in respect of fibre in those areas where competition from any other networks is likely to impose a constraint upon the prices Chorus could charge. However, for this to be given effect, the New Zealand regulatory regime needs to be recast in terms of specific markets, and independent of the identities of the firms that hold (or could in the future come to hold) a dominant position. This is essential to avoid having to rewrite the governing legislation in the event that a firm currently holding a dominant position ceases to be dominant, or that the patterns of technological substitution that ensue vary from those upon which the regulation was predicated.

⁵ For a discussion, see Howell, B. (2014), *Separation Anxieties: Structural Separation and Technological Diffusion in Nascent Fibre Networks*. Paper presented at the Telecommunications Policy Research Conference, Arlington, Virginia, September 2014, https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2418599

Third, despite the reliance upon infrastructure competition prevailing in LFC areas, implicit throughout the Discussion Paper and Regulatory Impact Statement are the assumptions that both fibre – and Chorus UFC fibre connections in particular – exhibit natural monopoly characteristics and that fibre will inevitably dominate all other technologies in last-mile internet access. We are not satisfied that either of these assumptions is inviolable. Forward-looking regulation should be robust to potential challenges to these assumptions over the lifetime of the regime. We do not consider that the proposed arrangements take account of very real changes in the technological environment that have either already occurred or can be expected to occur prior to 2024.

- a) Fibre is not a monopoly – natural or otherwise – to the extent that it is deployed alongside legacy copper. It is destined to become a monopoly only when Chorus will find it more profitable to operate only one network, and Chorus retires copper in some locations. Technological innovation is allowing ever-higher speeds to be offered over copper connections (or, indeed, wireless connections), meaning that it is not at all clear that fibre will become unconditionally dominant. This is especially relevant given that for most users their internet experience is governed primarily not by the headline speed at which it is possible for their data to travel over the ‘last mile’, but the effects of congestion in the ‘middle mile’, where traffic from multiple origins competes for sometimes-constrained resources. While common ownership and proposed regulation may provide strong incentives for Chorus to decommission copper as soon as possible, leading to the fibre monopoly upon which these proposed regulations are predicated, the long-term interests of consumers might be as well – or even better – served by preserving infrastructure competition for longer. The one option under which it might have been possible to maintain vibrant infrastructure competition by keeping both networks operating – horizontal separation of the ownership of fibre and copper throughout the country - is now unlikely, as all of (apparent) government policy, industry structure (as determined by the letting of the UFB contracts) and this proposed regulation are predicated upon a rapid decommissioning of copper (at least in Chorus areas, if not LFC areas).
- b) Given these assumptions, the location least likely to exhibit natural monopoly cost structures (densely-populated Auckland) is exposed to arguably the earliest copper decommissioning in order to reduce Chorus costs. It is most unlikely that Chorus would be willing to sell its copper network as a going concern to a competitor under the proposed arrangements, even though this might be in the best long-term interests of consumers (trading the costs of maintaining a regulatory regime against the

benefits arising from real infrastructure competition). On the other hand, in less-densely-populated areas where it is not the UFB provider, Chorus is incentivised to keep copper active, when it would likely be more efficient to have only one network (e.g. small towns like Hawera). Indeed, a case may exist for Chorus to strategically price in these regions in order to increase the copper market share and foreclose the fibre competitor, thereby stranding its assets. This is more likely to be feasible when a substantial proportion of the network has been closed in other areas, as the constraint imposed by geographic averaging of copper prices is then less likely to be an effective constraint on strategic (predatory) pricing.

- c) Furthermore, even if it is cost-effective to have only one fixed-line last-mile network, nascent mobile and notably fixed wireless technologies are also becoming more capable. In a large number of other countries – e.g. Finland⁶, Australia and the United States - a large number of households (notably those with more modest internet demands, or easily-accessible alternatives such as public wi-fi hotspots) are opting to become ‘wireless only’. In New Zealand, Spark already sells high-speed wireless home broadband plans that compete with both copper and fibre connections⁷. These are offered to “New Zealanders living in cities and towns who are frustrated with slow or unreliable copper broadband” and target “low to moderate data users, giving them fast, reliable and affordable broadband”⁸. The potential for these sorts of wireless plans to increase in both capacity and cost-effectiveness compared to fibre appears to invalidate the assumption of fibre being a natural monopoly, at least from the consumer perspective.
- d) Hence, we contend that the reasons offered in the Regulatory Impact Statement for utilities-style revenue-cap price-quality regulation being inappropriate for the copper network because it faces competition from fibre are equally inappropriate for regulation of the fibre network because it already faces competition from fixed and wireless services in at least some areas, and this form of competition is only likely to intensify as new wireless networks become more widely deployed.

We now move to considering the specific questions asked in the Review document.

⁶ in Finland, 28% of households use mobile broadband as only internet access technology (2015), in a country with the same population density as New Zealand.
<https://www.viestintavirasto.fi/en/statisticsandreports/reviewsandarticles/2016/broadbandpenetrationandpricinginfinlandrankrelativelywellonaglobalscale.html>

⁷ <https://www.spark.co.nz/shop/internet/wirelessbroadband/#address-lookup>

⁸ <https://billbennett.co.nz/2016/04/05/spark-fixed-wireless-broadband/>

Answers to Questions

1. *What are your views on the proposal to deregulate copper services in areas where UFB or other fibre services are available? What do you see as the benefits and risks?*

- We agree that deregulating copper services in areas where UFB and other fibre services are available is appropriate. However, we contend that it is also appropriate to deregulate fibre services – or at least place all of them under the same reporting regime as that proposed for LFCs who are presumed to be constrained by competition from copper services – in all areas where infrastructure competition exists. Price-quality regulation as outlined in the Review could be an appropriate provision to move to in the event that any network operator – regardless of the technology deployed – no longer faces infrastructure competition.
- The main risk of failing to deregulate in any area where infrastructure competition exists is that the regulations will inevitably distort the incentives provided to the competing firms regarding the timing and nature of investments made as costs and technologies dynamically change.
- A second risk is that considerable time and resources will be dedicated to regulatory activity that is not necessary where there is actual competition. Further, the information collected to assess industry performance will be biased towards the governance of a market with a single monopoly firm (i.e. one firm's assets and revenues) and not necessarily that which fosters the governance of an oligopoly market with infrastructure competition (e.g. data about the behaviour and performance of competitors to the regulated firm).
- It is our view that the same relief from regulation be offered in respect of fibre in those areas where competition from any other networks is likely to impose a constraint upon the prices Chorus could charge.

2. *What are your views on the proposal to continue regulation of copper services outside areas where UFB or other fibre services are available?*

- To the extent that it is not likely that infrastructure competition from fibre will emerge in these areas, ongoing regulation of copper appears reasonable. However, a caveat to this would apply in the event that more-capable wireless services became available, are deployed and provide real competition to currently-deployed copper. Once again, this could be addressed better with regulations based upon market

definitions and not the identity of specific firms and technologies. Thus, if a change in the balance of market power emerged in a given locality (e.g. copper is withdrawn because wireless is more effective) it will not be necessary to alter the governing legislation.

3. *What risks do you see in these proposals? Please comment on any ways you think these risks could be mitigated.*

- As discussed in the preamble, the main risks come from the initial assumptions of inevitable and enduring natural monopoly in most parts of New Zealand's broadband markets. The success of the preferred price-cap regulation for fibre is critically dependent upon both the rapid decommissioning of copper and the failure of wireless services to provide effective checks on fixed line operators. If only one of these assumptions is violated, and fibre operators face real infrastructure competition, then price-cap regulation places the regulated firm at a significant disadvantage relative to its unregulated competitors.
- The risk is mitigated by reframing the regulatory regime in a technologically neutral manner, so that the UFB firms are all subject to the same regulations when facing effective infrastructure competition. It is noted, however, under the current Chorus ownership arrangements, it would not be possible to deregulate Chorus fibre in an area unless the copper assets in that area were divested. While there may not be a reasonable case for divesting the copper network rather than decommissioning it under the assumption that the fibre market was regulated, it may be more attractive for both Chorus and a possible purchaser for the network to be divested if neither is bound by stringent regulatory provisions and other circumstances support the case (e.g. new copper technology advances). Therefore, in the long run, regulation of the fibre market (after deregulation of copper) could discourage infrastructure competition and portend extensive regulatory intervention in future that might be necessary to dismantle a monopoly in fixed-line provision.
- The view of fixed broadband access as a single market that does not include wireless technologies is probably partly predicated on high data volume applications, the principal of which is streaming video (formerly known as television). This further confuses the market definition issue since by excluding even current wireless (LTE etc.) services, a conflation of the television and broadband markets is in fact implied. This risk can be mitigated by defining a market for, say, family use of a package of public services, e-mail and reading matter as well as some voice and video over IP. Currently, wireless access services this market. Again, this is consistent with defining

markets (using the customer element) as the object of regulation, and not specific firms or network technologies.

4. *Please comment on the proposal to remove the TSO obligations on Chorus and Spark New Zealand inside areas with UFB or other fibre available.*

- In our view, the primary purpose of the TSO since its inception has been to ensure that affordable services have been available in all parts of the country, with the further proviso that it is desirable for prices to be comparable in urban and rural locations. Since the inception of the Rural Broadband Initiative (RBI), separate subsidies have been in place to ensure that prices for services in the more costly-to-serve rural areas have not been substantially higher than those in urban areas. The main difference has been that that service quality in RBI areas has been lower than that in urban areas.
- To the extent that competition (or price caps) will determine both the price and quality of services in UFB areas, the provision of affordable services in these areas should not be in doubt.
- We also question the need for a low-end voice (“fibre anchor”) product on fibre connections, given the wide range of cheap voice-only plans offered by mobile operators. It is surely more efficient for consumers wanting only voice services not to incur the costs of laying fibre to the premises in the first place. Arguably, these consumers will only be using fibre because the connection costs are subsidised in the first place.
- As pointed out by HH, a TSO obligation on one operator is quite likely to lead to cherry-picking and if the obligation is removed for Chorus/Spark, a similar (“fibre anchor”) one should not be imposed for UFB.

5. *What risks do you see in this proposal? Please comment on any ways you think these risks could be mitigated.*

- The areas which are included in neither the UFB nor RBI rollout plan are of concern and deserve, we believe, careful consideration so as not to require future special regulatory intervention to ensure that these areas are not left behind and to avoid the complication of a geographical patchwork of regulatory regimes for the industry.

6. *Please comment on the proposed consumer protection requirements, including your views on how each requirement should be framed (for example, how much notice should Chorus provide before withdrawing copper service?)*

- It is only reasonable and in the interest of retaining a competitive resellers' market to ensure that resellers will be able to service their contractual obligations to subscribers. This implies that Chorus should not be allowed to withdraw copper service until all active resellers' contracts have run out. This consideration would imply that Chorus would probably not be able to withdraw copper service anywhere quickly.
- In the presence of competition, customers with a low willingness to pay for a broadband product will be served by the market. We therefore question the need for a "fibre anchor" broadband product on the UFB networks as a means of protecting end consumers – rather, its presence appears to more properly serve the interests of wholesale customers (resellers). Even if such a broadband product is price-regulated so as to occasion a subsidy by other users, the possibility of a "fibre anchor" product crowding out more suitable products is very real. Mobile broadband is a suitable alternative (where available). A subsidised UFB broadband product will deter investment in current and future wireless technologies.
- The "fibre anchor" broadband product is specified in terms of last-mile speeds and not data cap which is probably more important for very price-sensitive consumers. If it is retained, we recommend it be specified in a different way, e.g. a connection capable of delivering 2 GB per day and guaranteed minimum throughput to sustain a standard-definition video connection.
- We believe the requirement "services currently able to be provided over copper must be available over UFB" to be superfluous.
- Consistent with HH, we question the wisdom of imposing geographic averaging in the presence of actual or potential infrastructure competition. Inevitably, it risks inefficient entry in low-cost areas, and delays investment in more-efficient alternatives in high-cost areas. The latter of these effects may prove to be especially costly in delaying the development of infrastructure competition in areas falling outside both UFB and RBI criteria.

7. *Does the ability for end-users to switch to fibre services offer sufficient protection for consumers, in areas where copper is deregulated?*

- In the main, we believe this to be the case. Our concern is mainly with the longer term effect on competition of the proposals in the framework.

- Our view is also that wireless technologies already offer competition to wired broadband access and future 5G and peer-to-peer networking products are likely to be even more attractive in future in view of the economics of the last-mile.
- Actual average broadband data use is not as high as many think. In 2014⁹ the average use per person in Korea (by far the highest user – in Germany it was under 10 GB) was still under 50 GB per person. For a two-person household this volume can already be provided over LTE in NZ at price lower than that of a basic UFB product¹⁰.

⁹ <https://www.statista.com/statistics/374998/fixed-broadband-data-volume-per-capita/>

¹⁰ <https://www.spark.co.nz/shop/internet/plans-and-pricing/>