He Tūāpapa ki te Ora
Infrastructure for a Better Future

Submission | Infrastructure Commission

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Contents

Executive Summary

Thank you for the opportunity to provide feedback on the Infrastructure Commission's (**the Commission**) proposed approach to developing a 30-year infrastructure strategy for Aotearoa New Zealand (**the discussion paper**).

We support the Commission's focus on ensuring the system within which infrastructure is provided – including frameworks and incentives – can be expected to deliver outcomes for New Zealanders. This is particularly the case for the telecommunications sector where infrastructure is predominantly provided privately in markets, rather than by local or central government authorities.

The Commission should be confident in the mobile sector delivering the infrastructure New Zealand needs. The current predominantly privately provided and market driven sector is delivering excellent economic and wellbeing results for New Zealanders. Our sector already makes a significant contribution to economic and wellbeing outcomes – last year the sector invested around $250 million in radio access networks, contributed over $3 billion to the economy, and provided connectivity for many communities that would otherwise be excluded – and looking forward we are well placed to deploy new 5G technologies. New Zealand is ranked third in the world by the GSMA in terms of our readiness to deploy and adopt new mobile technologies and our sector is poised for widespread deployment of these new technologies.

We believe that the Commission's primary role in our predominantly private and market led sector should be to ensure that regulatory systems are working to promote the provision of mobile infrastructure at the right time and quality and to ensure effective integration with other infrastructure providers and public partners is encouraged.

In which case, we recommend that the Commission prioritise:

- Building its understanding of our sector, particularly the characteristics of 5G technologies and investment, reporting systems and network resilience. For example, 5G requires a series of complex investment decisions that the current industry structure is best placed to make.

- Contributing to the updated Government Digital Strategy. In terms of our sector, we believe a focus on the governance of digital inclusion initiatives and decision making and the promotion of digital business models will deliver significant benefits.

- Solving for rural communities that currently have limited access. We expect that 5G will be deployed on all existing towers with the same - or better - coverage as current services. Further, officials are currently working to make a low frequency band (600MHz) available for mobile services, and this is ideal for rural deployment. Nonetheless, additional coverage will require continuation of the existing private/public partnership through CIP.

- As it proposes, promoting a planning system and consenting processes that are more enabling of infrastructure and establish a fit-for-purpose infrastructure are needed. In doing this, the Commission could ensure reforms recognise the interdependent nature of infrastructure ensuring the private providers of infrastructure are recognised in an integrated system.

Introduction

1. Thank you for the opportunity to provide feedback on the Infrastructure Commission's (**the Commission**) proposed approach to developing a 30-year infrastructure strategy for Aotearoa New Zealand (**the discussion paper**).

2. The Infrastructure Strategy will help to create an infrastructure system that gets the best results for all New Zealanders both now and well into the future.

3. We support the Commission's focus on ensuring the system within which infrastructure is provided – including frameworks and incentives – can be expected to deliver outcomes for New Zealanders. This is particularly the case for the telecommunications sector where infrastructure is predominantly provided privately in markets, rather than by local or central government authorities.

4. The telecommunications sector is predominantly privately provided and is delivering excellent economic and wellbeing results for New Zealanders. Nonetheless, we believe the Commission has a role in ensuring the system within which investment is made continues to deliver desirable outcomes.

5. The consultation paper usefully highlights the infrastructure challenges we face, and the particular issues faced by the telecommunications infrastructure providers.

Mobile and wireless infrastructure

6. The mobile and wireless services we provide are a key part of our national infrastructure.

Mobile communications make a significant contribution to the economy, wellbeing and environment

7. Mobile communications have developed into an essential function, supporting New Zealanders in all aspects of their lives.

8. As noted in the state of play, the influence of the sector and its infrastructure is significant across the four dimensions of wellbeing: Economic, Social, Cultural, and Environmental[1]. Mobile and wireless infrastructure is critically important for the economy and peoples' wellbeing. And our services allow consumers to contact friends and family, conduct business, be entertained, and engage with Government, medical, educational, and emergency services. Similarly, our sector will be a critical driver of productivity growth across the New Zealand economy in the near and long term.

9. As the state of play highlights, the sector is well placed to provide services to New Zealanders. While Infrastructure overall (comprising transport, rail, air, shipping, electricity, and water) has a concerning 46th global ranking, New Zealand's separate ICT infrastructure sector (comprising fixed, mobile and internet) has a global ranking of 21, putting us ahead of the high-income group average and countries we compare ourselves to such as the US, UK and Australia.

10. Mobile infrastructure already makes a significant contribution to the economy and connectedness. Deloitte Access Economics estimated that the Australian mobile industry

[1] State of Play: Telecommunications at page 4

contributes $22.9 billion to the economy and, with the mobile contribution to productivity, is expected to be worth over $65 billion to the Australian economy by 2023[2].

11. This would suggest a contribution of $3.4 billion to the New Zealand economy and almost $10 billion by 2023. Deloitte further estimated that three intelligent transport systems alone that are enabled by mobile networks could add $2 billion dollars a year of turnover to the domestic market and nearly $760 million a year of turnover for exports[3]. While we are a smaller economy and there are differences, it is safe to assume that New Zealand's mobile industry already makes a significant contribution to economic growth.

12. And there is increasing evidence that our services are contributing to protecting our environment. An FCC working paper found evidence that increased rural broadband access increased crop yields by 3.6% and reduced farm costs by 2.4%, mainly through "precision agriculture" that facilitated less water, fertilizer, pesticides and fuel[4]. This economic analysis supports industry estimates, that technological innovation made possible by precision agriculture and the deployment of broadband, can lower farm expenses on seed, fertilizer and pesticides by an average of 15 percent, and raised crop yields by an average of 13 percent[5].

13. Precision agriculture is enabled by broadband and low speed sensors using mobile technology available to us today.

14. We see the benefits of mobile infrastructure and services in our everyday lives. The mobile system, with telecommunications, enables communities to connect in many different ways, and services and business models that were unknown 20 years ago, i.e., ride-share services, social media and self-service apps that customers love.

15. Mobile infrastructure brings significant inclusiveness benefits:

    a. Mobile networks support fixed broadband services that make provision of access to otherwise excluded communities economic.

       Enabling operators to provide broadband services to rural communities, with more widespread coverage, cheaper and with significantly improved performance over legacy copper services. The MNOs and Government partnership has allowed us to take these benefits further.

    b. Voice calls are predominantly carried over mobile platforms – the mobile phone is now the main way that many otherwise excluded communities stay in touch.

       Mobile voice and text services are significantly cheaper than standalone cable-based landline, with significant public safety benefits. For example, networks are designed so that 111 calls can be connected to emergency services through any other operator if the home network cannot be reached, the GPS location of the handset is available to emergency services in an emergency, and the networks carry important civil defence notifications.

    c. 4G broadband plans are an affordable and simple to access option for otherwise excluded communities. New Zealand cabled fixed broadband prices are high relative to comparable countries and, while prices in overseas comparable markets

[2] https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-mobile-nation-2019-080419.pdf
[3] https://www.businessnz.org.nz/resources/reports-and-publications/2018/businessnz-its-report/Deloitte-Access-Economics-ITS-Final-Report-24-January-2018.pdf
[4] https://docs.fcc.gov/public/attachments/DOC-368773A1.pdf
[5] Referenced at page 8 of the FCC study

continue to fall, the current regulatory framework and recent Commerce Commission draft decision anticipates escalating cable broadband prices for the foreseeable future.

We offer uncapped wireless broadband for as little as $50, less than the Chorus wholesale price for the entry level fibre access portion of the service alone at $54.22. Wireless broadband provides an affordable option for many kiwis.

16. There will be an increasing reliance on wireless and mobile connectedness as infrastructure and the economy is digitised. As the Commission notes, wireless connectivity will be critical for making the best use of - and upgrading (digitising) – much of our dependent infrastructure sectors.

The mobile system is well placed to meet future demand

17. As it stands, we are seeing a high performing sector that is poised to continue meeting the needs of New Zealanders:

    a. Our prices benchmark well against comparable economies.

    b. Quality is good with significant investment being made to meet demand.

    c. A resilient sector that stood up well to the challenges of Covid. We saw significant increases in demand and were able to rapidly deploy thousands of broadband connections at short notice to our business and residential customers, and for the education.

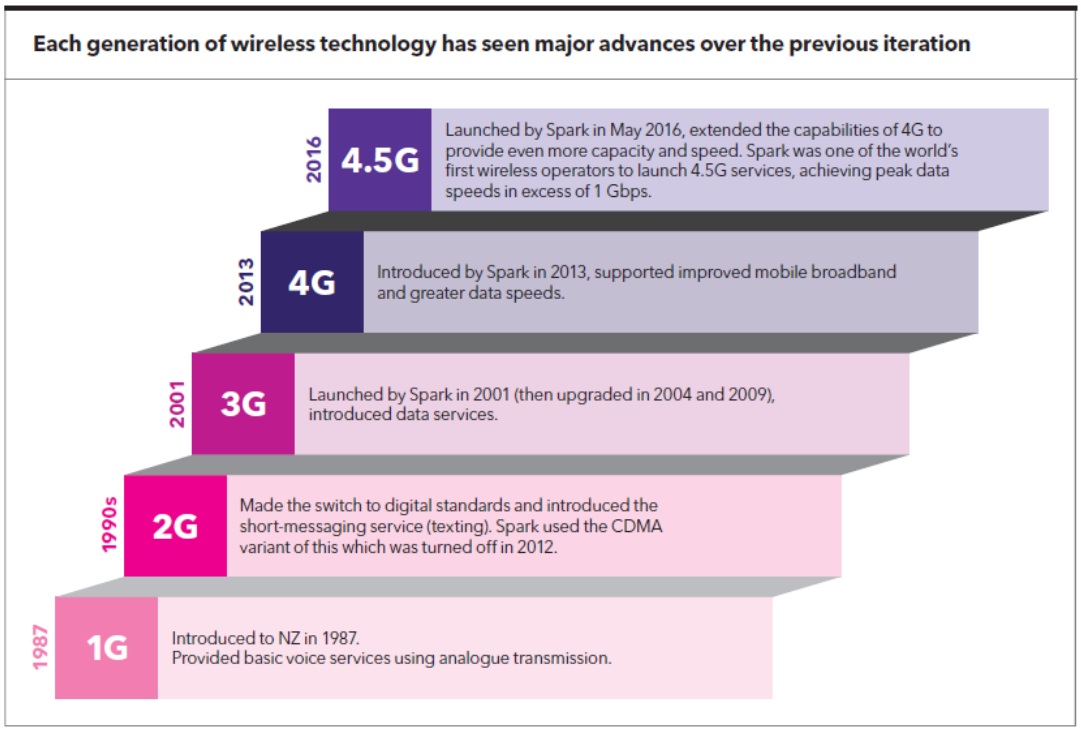
    d. We are seeing significant ongoing investment to meet demand and innovate. Competing mobile operators continue to invest in capacity to meet rocketing end-user demand.

    e. We are seeing innovation. Networks have already been upgraded from 2G to 3G to 4G, with new services such as mobile data, IOT, and a 5G technology roll out has begun.

18. Contrary to other systems, the mobile sector is not “plagued by years of under-investment [that] means there is a substantial backlog, and costs are growing”.

19. We are well placed going forward. We can already support current demand and technologies, internet of things (**IoT**) networks are already widely deployed and service performance is more than capable of meeting current demands. This is a dynamic sector and operators have already deployed multiple generations of mobile technologies.

Figure 1: generations of wireless technologies[6]



20. Nonetheless, the next big technology step in our sector is the deployment of mobile 5G networks. While current applications are supported by current 4G networks, the 5G technology standard was specifically developed to meet the needs of a connected economy.

21. The Commission notes that technology will also dramatically alter how we design, build and use infrastructure in the future. We do not know all the ways telecommunications infrastructure will contribute to this future, but even at this stage we know it will be important. Smart infrastructure to enable pricing to improve use of infrastructure, and monitoring and reporting on the status of infrastructure will require information about assets and asset use, and pricing instruments (such as smart meters). This will all be enabled by wireless connectivity.

22. While these use cases are supported with our current networks, looking forward the 5G technology standard has been specifically designed for connected infrastructure. The technology standard supports functionality such as very low power sensors with long life batteries (10 years minimum) intended for low touch sensors and designing for customised network performance through "network slicing" allowing us to replicate private network functionality.

23. The sector is poised to make the transition to 5G technologies. The GSMA Global Mobile Readiness report ranks New Zealand as a leader economy that is number 3 in the world for mobile readiness[7]. The GSMA index measures an economies infrastructure, affordability, consumer readiness and content and service available to estimate its readiness for future mobile adoption and use.

24. All New Zealand mobile network operators have announced plans to deploy 5G networks. We've already turned on 5G Mobile in downtown Auckland and Takapuna, Te Awamutu, New Plymouth, Palmerston North, Christchurch CBD, Hamilton, Clyde, Alexandra, and Dunedin, and

[6] From Spark briefing paper, The evolution towards a revolution, August 2018. https://www.sparknz.co.nz/news/Spark-outlines-5G-network-intentions/
[7] https://www.mobileconnectivityindex.com/

will be announcing more locations soon. Vodafone has deployed 5G to main centres and recently announced that it would be accelerating its deployment programme[8]. 2Degrees has reached agreement with a major international technology provider and plans to launch its 5G network by the end of the year.[9] These investments represent a significant private sector commitment to New Zealand's future.

25. Many supporting elements of the system are already there. For example,

    a. Major providers and investors are positioned to invest to deploy this technology.

    b. MBIE officials are working to make the "pioneer" 5G spectrum bands available to network operators. These bands are supported by major economies and include 3.5GHz, mmWave and 600MHz bands, and

    c. A stable regulatory framework is emerging based on ring-fenced monopoly fibre providers that have the potential to distort markets, flexibility to share infrastructure where this makes sense, and the recent Commission study into our sector that promotes a more predictable regulatory environment.

26. Nonetheless, as discussed in the draft strategy, we agree there are wider system changes that can facilitate future investment and take up of our services, such as improving planning processes and promoting digital adoption and inclusion.

Recommended Commission next steps

27. The Commission identifies a number of issues across the paper and supporting state of play paper. We encourage the Commission to engage on these issues as it can help in the solution, ensuring the importance and implication for infrastructure is recognised in decisions.

28. At this stage, we encourage the Commission to:

Build the Commission's understanding of the mobile-wireless sector

29. The Commission noted in its state of play discussion document that it would build its understanding of our sector. The Commission anticipates updating its States of Play reports over time as its understanding grows and different elements come in to focus.

30. We encourage the Commission to do this and are keen to work with Commission staff to build understanding of mobile and wireless sector outcomes and the technology context. There are significant transitions occurring in our sector and these rely on a stable system within which we can operate and invest in networks. In particular, building an understanding of:

5G technologies and investment drivers as these relate to the market based system

31. There are important technical characteristics of 5G networks and investment that provide context for understanding the system within which 5G investment will be made.

32. For example, 5G is a technology equipment standard that has been designed to meet various user needs – "or use cases" - ranging from low bandwidth IOT sensors through to high bandwidth media services. While 5G relates to a family of technologies and services, it has incorrectly been conflated with a single type of deployment (very high frequency micro cells, one

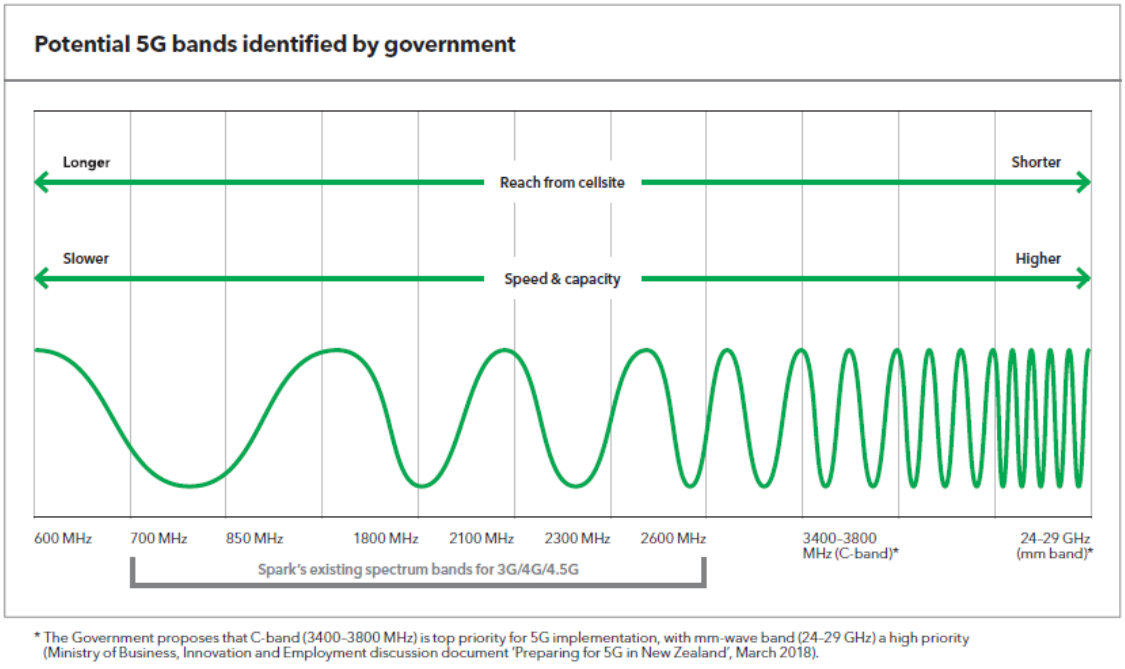
[8] https://www.vodafone.co.nz/5g/
[9] https://www.2degrees.nz/media-releases/2degrees-selects-ericsson-as-partner-for-5g-network-launch-in-2021/

component of the 5G architecture that will be deployed over time) or as a direct replacement for fibre services.

33. The 5G technology standard brings significant benefits by allowing operators to use currently underused higher radio frequencies for greater capacity and the technology has powerful new capabilities. For example, the common network will support a wide range of services (from IoT to mobile broadband), "active" antenna that provide even more capacity benefits, network slicing and new end-user equipment such as the 10-year battery life sensors discussed above.

34. This means the networks and spectrum requirements are different than their predecessors. Any operator intending to support a 5G network will need access to a range of spectrum frequencies – low frequencies more suitable for rural capacity and coverage, mid frequencies for widespread high-speed services, and high mmWave frequencies for very high demand hotspots such as CBDs and campuses) – and large contiguous frequency bandwidths in higher frequencies. Large bandwidths are necessary to deliver some of the ITU use cases which specify very large peak speeds (100s to 1,000's of MHz not 10s of MHz).

Figure 1: generations of wireless technologies[10]



* The Government proposes that C-band (3400-3800 MHz) is top priority for 5G implementation, with mm-wave band (24-29 GHz) a high priority (Ministry of Business, Innovation and Employment discussion document 'Preparing for 5G in New Zealand', March 2018).

35. The mobile industry is a technology driven sector and mobile network operators (**MNOs**) are continually investing to deploy the latest technologies and transition their networks. MNOs have already deployed 2G, 3G and 4G technologies, are starting to deploy 5G, and international authorities are already starting to define 6G.

36. Accordingly, it is unsurprising that the Commerce Commission reports MNO investment in mobile access networks of over $200m every year, $249m last year alone reflecting the start of 5G deployments[11]. We also believe the bulk of the $450m per annum industry investment in core networks and IT is to support new mobile services.

[10] From Spark briefing paper, The evolution towards a revolution, August 2018. https://www.sparknz.co.nz/news/Spark-outlines-5G-network-intentions/

[11] Commerce Commission market monitoring report at page 23 https://comcom.govt.nz/__data/assets/pdf_file/0030/247377/2020-Annual-Telecommunications-Monitoring-Report-Revised-version-16-March-2021.pdf

37. 5G deployment will continue this pattern in that MNOs will face a series of sequential investment decisions, for example, deploying 5G equipment in the radio access network, upgrading the core for a standalone network to support network slicing and other functionality, shifting core functions closer to the edge of the network to improve performance, and deploying very high frequency access nodes to high demand areas. In other words, we face a series of complex investment decisions, and the Commission should be comfortable that the system best promotes efficient investment decisions, i.e., investment is made at a the time and quantity that meets demand.

38. We believe the current predominantly private and competitive market approach is best placed to drive and solve for industry investment. We are not alone, all OECD countries have adopted a similar competitive private model for deploying 5G infrastructure[12].

Ensuring current reporting of system outcomes meets the Commission's needs

39. The discussion paper notes that there is little public information available relating to the state of mobile and the Commission wishes to engage further on this.

40. We support the Commission getting to the bottom of sector performance through reporting of outcomes, particularly as the Commission can only assess this through looking at the outcomes of the market and private system rather than through the consideration of direct public investments, business cases and project reviews. There is already a lot of information produced relating to our sector:

    a. The industry already provides a significant quantity of information relating to our network to the Commerce Commission for sector monitoring, and OECD and ITU purposes. The Commission also draws on OECD benchmarking.

    b. The national broadband coverage portal, and publicly release information relating to network coverage and investment outcomes.

    c. The TCF reports.

    d. Various measurement companies such Samknows and Opensignal also monitor and report network outcomes, benchmarking across operators and economies.

    e. The Commerce Commission recently completed a "deep dive" study into the mobile sector.

41. However, we agree that it is important that the Commission has access to information that allows it to monitor whether it is getting the infrastructure outcomes it is expecting to see.

42. We appreciate that the current reporting structure may not make infrastructure and system health transparent for the Commission purposes. We also operate in a competitive sector and – accordingly - some information is unlikely to be publicly available unless specifically required by an authority and presented in a way that minimises the competitive detriment.

43. Nonetheless, we are supportive of industry reporting to meet the Commission needs and keen to engage further on its requirements.

[12] We are aware of only one economy in the world that has departed from a competitive 5G infrastructure model, this is Malaysia that has investment concerns relating to its specific context.

Building the understanding of performance and resilience

44. We also appreciate that there needs to be greater understanding of industry service performance and resilience, particularly as mobile and wireless infrastructure increases in importance for overall infrastructure outcomes.

45. This requires an understanding of how resilience is seen by end users. For example, the state of sector report references changes in download speed as a key covid success indicator[13]. We agree the industry performed well through Covid, being able to quickly respond to unexpected changes in customer connection and demand. However, while reduction in access speed is an indicator of excess network capacity being consumed, it is a poor indicator of end user experience and resilience.

46. All mass market broadband access platforms deployed in NZ, including UFB fibre, are based on shared bandwidth in the radio spectrum, fibre access cables or backhaul and are susceptible to reduced speeds at peak times. While fibre access networks are lightly loaded, they will likely show a similar pattern over time. This is common to telecommunications networks and technology and application developers design platforms that are resilient to different speeds, and customers will generally not notice any difference.

47. Therefore, other performance indicators that consider the full service - i.e., home WiFi is a significant contributor to end user experience – and attributes important for customer uses are likely to be better indicators of industry or infrastructure health. For example, minimum access speed is the key metric relevant for customers wishing to watch streaming video services. There are initiatives underway by the industry to build this picture[14] and the Commission should engage on the outcomes of these initiatives.

Updating of the Government digital strategy for social inclusion and a digital economy

48. The Commission further supports the updating of the digital strategy, providing an overarching framework to guide both tactical implementation step changes in the short to medium term, and strategic visions in the longer horizon[15].

49. While we believe that the Commission's primary role is ensuring that the system is in place to support the digital strategy – i.e., the market appears well place to actually deliver required processing power and connectivity, infrastructure and global digital connectivity at the right quantity and time – we agree the Commission can add to resolving issues such as the role of government in digital infrastructure requirements and promoting equitable access to digital services.

50. We believe there are priorities that the Commission could add value by engaging further in:

Ensuring the focus remains on effective digital inclusion initiatives

51. The Commission identifies that social exclusion is a concern. We agree – this should be a Commission priority.

52. We believe it is important that all New Zealanders have the opportunity to participate in a digital society. There are currently an estimated 200,000+ Kiwi homes who do not have access to broadband at home. This means many Kiwis cannot easily do things online that they need to

[13] Paper at 4.4
[14] For example, the Commerce Commission has a performance monitoring initiative through Samknows
[15] Discussion paper at 5.2

participate & contribute to society - like homework, banking, booking doctors' appointments or looking for work.

53. It will take many groups working together to address the barriers to digital inclusion – including Government, industry, and community groups. We are the largest social broadband provider in the country, and through the Spark Foundation we work with many groups to deliver our not-for-profit Skinny Jump service to communities, and to address barriers to digital inclusion.

54. A number of Community organisations, iwi, hapū, businesses, libraries, philanthropic organisations, charities, and local and central government are already working to promote digital inclusion. However, one-off solutions are emerging in the absence of an updated Government Digital Strategy that are driven by an agencies' unique opportunity – i.e., providing connectivity to specific community houses - or technology preferences. Until we have a scalable and funded national model for identifying and reaching digitally excluded households - and for delivering digital devices and quality broadband services to them - our successes will be less than we aspire to.

55. We believe the Commission could make a difference here, working with Government on the strategy and particularly investment decision making governance and process.

Demand side initiatives

56. We have great telecommunications infrastructure, but to gain the full benefits of that infrastructure our customers need to adopt services and adapt their businesses. The Commission notes that it intends to engage in the strategy for digitising Government agencies, but the promotion of digital business should also be a priority.

57. At this stage, the Government is promoting digital services for small business through the Digital Boost training and skills initiatives. We support this model, but our scan of international policies that have been successful in driving higher adoption of digital tools and services suggests subsidisation of subscription to a a digital starter package will be needed to deliver a step-change in adoption. Accordingly, we believe this scheme should be expanded.

Solving the rural challenge

58. The Commission identifies a particular telecommunications issue is ensuring that people who live remotely can access services. The Commission outlines why deploying infrastructure in rural is challenging[16], concluding that accelerated investment in 5G, rural broadband and the Mobile Black Spots programme is needed to achieve equity of access to digital services.

59. At this stage, there is nothing to suggest that operators 5G deployments will not be sufficient or timely to meet customer needs. Once long-term tenure for mid band frequencies is resolved (current rights expire at the end of 2022) we expect that MNOs will deploy 5G widely. In any case, deployment and coverage obligations are common in spectrum allocation auctions and we believe this likely be the case for 5G suitable spectrum[17].

60. We expect that 5G technologies will be deployed over time to all existing cell sites and, accordingly, 5G will be available wherever there is existing coverage. There are already enablers in place to make this happen, MNOs will deploy commercially in most areas and the established CIP/ RCG partnership model is available for hard-to-reach areas.

[16] Discussion paper at page 89

[17] For example, at the time MNOs acquired 4G spectrum, the management rights came with expansive deployment obligations.

61. Nonetheless, we agree that there is likely a residual for which fully commercial deployments are not possible and a public/private partnership can fill this gap. The Government has a role in securing these outcomes:

    a. Continuing work to make the 600MHz band available for mobile services - this band is ideal for rural services. MBIE (Radio Spectrum Management) is already working to clear existing services from the 600MHz band so that it may be used for rural services.

    b. Ensuring that funding is available for CIP to engage further with RCG in deploying new technologies and capacity to existing sites, and identifying additional coverage opportunities.

Resiliency

62. MNOs have made significant improvements in the resiliency of their services over time, we have a number of resilient data centres for core functions and diverse transport routes into most regions. As the Lifeline Council Report concludes, there is a high level of resiliency built into our sector.

63. Nonetheless, we are aware of the residual regions with single route connectivity and are working to solve for these areas over time.

64. Some public investment is being made, but this tends to be on a project-by-project basis. For example, the Government is funding a new west coast fibre cable that provides additional security to the region and Chorus has put a proposal to the Commerce Commission to invest to dual-homing some UFB fibre areas (the cost will be built into the regulatory asset base and recovered from all fibre consumers).

65. However, on the face of it, current initiatives are not aligned with any overarching view on resiliency that considers inter-dependencies between different infrastructure. For example, efficient investment in this area would require an analysis along the lines of that recommended by the OECD[18].

66. The Commission could promote efficient governance and investment in this area.

Developing a planning system that is more enabling for infrastructure

67. The Commission notes that there are significant opportunities to improve the consenting process through the Resource Management Act reform to lower infrastructure costs and enable the achievement of government objectives[19]. Many of the Government's objectives will be achieved through infrastructure that enables better environmental and social outcomes. A planning system that is more enabling of infrastructure and establishes a fit-for-purpose infrastructure consenting process is needed.

68. The Commission notes that work is already underway to reform of the resource management system and – while some progress has been made - further progress is needed. A more comprehensive approach to stepping outside the current Resource Management Act planning paradigm and fully considering the need to reset the existing environmental planning regime will help drive the social and environmental outcomes New Zealand targets.

69. We agree. The mobile sector can play a big part in providing services, and supporting other infrastructure providers, that contribute to resolving the Governments infrastructure and

[18] https://www.oecd.org/gov/risk/good-governance-for-critical-infrastructure-resilience-02f0e5a0-en.htm
[19] Discussion paper at 122

wellbeing objectives. However, the reform initiatives are focused on positive outcomes for public-provided infrastructure and funding, yet private infrastructure providers have an equally importance role in the system. For example, telecommunications and electricity networks providers have an important role in the delivery of integrated infrastructure for new urban communities and greenfield developments. These private providers should be equally encouraged to participate in the reform programme.

70. The Commission has an important role in promoting an integrated infrastructure approach – i.e., ensuring interdependent infrastructure requirements and providers are fully engaged in the process – and a more responsive planning system.

71. We have participated in the TCF submission and support their recommendations. In particular, how the Commission might promote a more responsive planning system by:

    a. Ensuring all interdependent infrastructure is recognised in corridor protections. While telecommunications services are essential for end-users and interdependent infrastructure providers, current processes do not promote an approach that looks across all services. For example, we have multiple designated corridors across the country, each devoted a single infrastructure either rail, road or the national grid rather than all supporting infrastructure.

    b. Balancing the needs of critical infrastructure, protection corridors and sensitive areas. It is increasingly difficult to build and upgrade infrastructure networks when applying processes that seek to recognise and protect sensitive cultural areas and environments.

    c. Ensuring security and resilience of critical infrastructure. However, to achieve this, telecommunications need to be recognised in legislative instruments.

    d. Ensuring equitable funding and financing. Public funding through CIP is available for services to existing households, yet there is no mechanism to provide for new dwellings.

    e. Enabling a responsive planning system and develop a planning system that is more enabling for infrastructure. Current national environmental standards have been critical for reducing the cost to roll out mobile infrastructure, and a new process should seek to maintain a national view.

72. The Commission should engage further with the TCF on its proposals.

[End]