



Study of mobile telecommunications markets in NZ

Submission | Commerce Commission

26 October 2018

Public Version

Contents

Executive Summary	1
Introduction	4
1. Current market outcomes.....	5
Assessing competition and market outcomes	5
Price, quality and innovation.....	6
Data the paper seeks further information on	7
2. Looking forward	13
5G network deployment.....	15
Emerging trends	17
Promoting 5G deployment	23
3. Industry structure	24
MVNOs.....	24
The nature of competition in future structure.....	27
New infrastructure-based providers	29
4. Consumer engagement and satisfaction with mobile services.....	30
The Commission approach to identifying market concerns	30
Ability to compare mobile offers and act on those comparisons.....	31
Spark's consumer satisfaction initiatives.....	34
Price Comparison websites	35
Attachment: residual questions not addressed in the body of our submission	38

Executive Summary

Mobile services play a critical role today in New Zealanders everyday lives and in New Zealand's economy. And as New Zealanders' lives and New Zealand businesses become increasingly mobile they will play an even more important role tomorrow. If we are to achieve the social and economic growth objectives we have set for our country, that will require that we continue to be served by world-class mobile services at world-class prices.

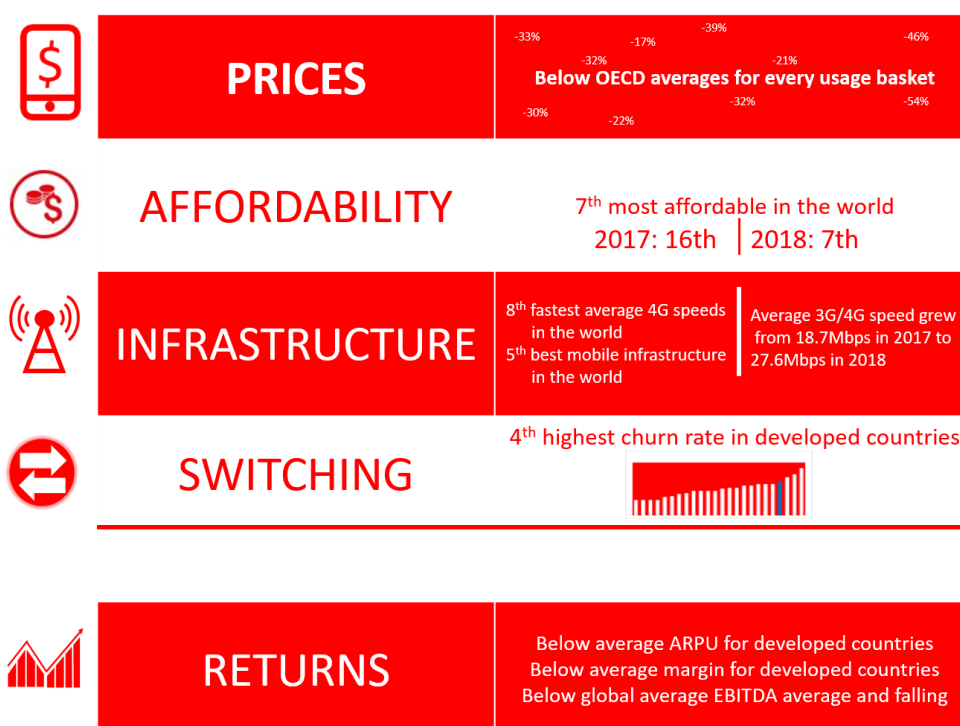
We have a competitive mobile market today

Today, we can confidently say that New Zealand's mobile networks, mobile services and mobile prices are world-class. We are ranked 2nd in the GSMA's Global Mobile Connectivity Index, which covers 163 countries and scores each countries' mobile connectivity across 35 different indicators. In this index New Zealand ranks 5th in the world for infrastructure, 5th in the world for content and services, and 7th in the world for affordability.

We have three nationwide 4G mobile networks – the same number as the United States¹ - that are delivering network performance that is above OECD averages and pricing that is both below OECD averages and falling faster than the OECD average.

At the same time, New Zealand's mobile network operators are earning Average Revenue Per User (**ARPU**) and margins that are below international averages.

The only logical explanation for above average network performance and infrastructure and below average prices and returns is competition. New Zealand's mobile markets are intensely competitive, and this competition is delivering fantastic outcomes for end-users. And this is further illustrated by New Zealand having one of the highest switching rates in the developed world.



Sources: GSMA State of Mobile Internet Connectivity 2018, NERA analysis of Merrill Lynch Global Wireless Matrix 2018, GSMA Intelligence, Teligen, OpenSignal State of Mobile Networks Reports

¹ Following the announcement of the Sprint-T-Mobile merger

And if our retail markets are already delivering competitive outcomes to end-users, then any regulatory intervention into wholesale markets can only deliver net costs to end-users.

We see competition in mobile markets intensifying in the future

And looking forward, all of the signs are that mobile markets will get more competitive as the breadth of mobile services and available revenue pools expands.

Ours is a sector that can and does change fundamentally and on short notice. As of today, for example, New Zealand has 6 different IOT networks where, several years ago, we had none. The coming years promises to be an exciting time to be both a mobile customer, and an equally exciting time to be a mobile network operator.

Technology developments such as the emergence of eSIMs will disrupt existing distribution channels and potentially bring “weightless” global MVNOs into our markets.

5G and IOT technology has the potential to disrupt and transform multiple industries and sectors, and to bring fundamental change to network design and ownership models - with smaller mobile networks that do not require contiguous or national coverage entirely plausible, some of which may be industry or customer-specific.

But 5G also requires significant investment, with large 5G investment decisions already starting to be made by mobile network operators now. Stable and predictable regulatory settings will be critical if New Zealand is to remain at the forefront of 5G developments. We encourage the Commission to pursue its market study rigorously but rapidly so that these investment decisions can be made with confidence.

We think it is appropriate to conclude that the New Zealand mobile market is currently performing well, suggesting that there are no *current* barriers to competition delivering benefits to consumers. Equally, we think it is too early to conclude whether there are any *potential* barriers to competition in the future.

We acknowledge that New Zealand has a smaller number of MVNOs than some other countries, but we do not believe that evidences a competition problem. On a global basis, New Zealand is not an outlier on MVNOs at all. And just as importantly, the market for MVNO services remains highly competitive – moreso now with the completion of 2 degrees’ nationwide buildout - and continues to see entry from new MVNO entrants.

Consumer engagement and satisfaction

Despite what are world-class price and performance outcomes, we acknowledge that consumer satisfaction with, and perception of, mobile service providers is lower than any of us would like. We are putting enormous effort into addressing both of these measures, and making our services simpler, customer engagement channels more effective and available, and our bills and usage easier to understand and track.

In particular, we are making significant changes to our services and our customer service channels and tools:

- We no longer offer term contracts. That means customers won’t need to be worried about being locked in, or about early termination fees.
- We offer interest-free terms for handsets on all of plans – prepaid and postpaid – and have removed early termination fees from these as well. That means if customers choose to leave Spark before their payment plan is complete they can simply pay the remaining amount owed without any additional penalties or the need to pay back any discounts they may have already received.

- We offer rollover data to ensure customers get to use the data they pay for.
- We have an extremely successful app – MySpark – that lets customers track their usage by the hour, week or month, and we are continually delivering new options and capabilities to give customers even greater power over their services.

This is not a case of a market choosing to ignore demand signals or wilfully degrading customers' service levels. All operators are investing significant capital to improve customer service because competition requires that we do so.

Introduction

1. Thank you for the opportunity to comment on the Commission's *Study of mobile telecommunications markets in New Zealand* issues paper (**issues paper**).
2. We make our submissions below under four key themes:
 - a. New Zealand mobile markets are being well served by three mobile network operators (**MNOs**) and a number of mobile virtual network operators (**MVNOs**) and our performance compares well to our global peers;
 - b. Robust competition has resulted in:
 - i. significant decreases in prices at multiple levels. At the top end of the scale the price drop from ~\$129 to ~\$79 (in the past year) for unlimited data was significant and generated high demand for high data plans within a short period. At the budget conscious end there are a range of options for consumers from \$6-\$9 bundles of voice, text and data, a growing number of share plans which enable families to share an allocation of data and voice calls, and rollover data to ensure customers get to use the data they pay for;
 - ii. Increasing voice, text, and data inclusions, often at the same price;
 - iii. Continued product and plan innovation and investment in customer-facing channels;
 - iv. Very low switching barriers; and
 - v. Substantial investment in mobile networks to increase capacity, coverage, speed and reach.
 - c. There are no material barriers to entry (or exit) for retail service providers seeking to provide mobile services as MVNOs. An analysis of the data indicates that the number of MVNOs in New Zealand does not indicate evidence of a competition concern in New Zealand but rather that the role of MVNOs in New Zealand and other countries have played a different role. Further, technology disruption and disintermediation is increasing and seems likely to intensify competition in mobile markets in the future ; and
 - d. Investment in infrastructure, services and innovation is high with MNOs investing in the infrastructure to deliver the next generation of mobile solutions well ahead of certainty over the available spectrum, device ecosystems, use cases and demand.
3. This submission is in four parts:
 - a. Section 1 sets out our views on the outcomes delivered by the current market structure – competitive conditions, output, price and quality for end users;
 - b. Section 2 outlines how the market is evolving - increasing demand for current and new services, operator investment plans and the emerging market trends – and the role bundling and e-SIMs might play in that market;
 - c. Section 3 sets out our views on the specific structure questions posed by the Commission, the place MVNOs have in the market and entry conditions for network operators;
 - d. Section 4 addresses consumer engagement and satisfaction with mobile services.

4. We have also asked NERA to:
 - a. Assess the current state of competition in the New Zealand market. The NERA report *Competition in the New Zealand Mobile Market* assesses the market across a range of market indicators and measures; and
 - b. Consider the nature of MVNOs in the New Zealand market and whether this can raise policy issues. Considered in NERA's *Competitive effects of MVNOs and assessment of regulated MVNO access* report.
5. The NERA reports are attached.
6. Short responses to residual issues paper questions not covered in the body of our submission are appended.

1. Current market outcomes

7. Ultimately, authorities should be interested in whether the market is delivering outcomes for consumers and the economy over time.

Assessing competition and market outcomes

8. This study has come at a time when general market study powers are attracting public and private sector attention. The Commerce Amendment Bill passed its third reading on 24 October and is expected to receive Royal Assent soon. It will give the Commission the power to undertake "competition studies" into particular markets that may be functioning sub-optimally
9. Competition studies can have far reaching consequences and by their nature increase uncertainty in the affected markets for at least the period of the study. But they can also deliver significant value through the longitudinal data they provide over time which can enable insights into the long-term performance of the market and facilitate more informed long-term regulatory decision-making.
10. The market study presents an opportunity for the Commission to demonstrate its understanding of both the uncertainty and the value associated with these processes. We encourage the Commission to continue to exercise its powers with due care in prescribing the scope of the market study, adopting a rigorous analytical and policy approach, and ensuring any recommendations are consistent with a predictable principles-based regulatory policy, i.e. target market failure, proportionately, and are supported by robust cost/benefit assessments.

Initial focus must remain on assessing market performance

11. We agree with the Commission's initial focus on ascertaining and assessing current and likely future market conditions. The ultimate purpose of a market study is to consider whether competition problems exist in a market and, if there are, identify possible initiatives to address identified concerns. But any market study must be careful not to leap straight to considering possible regulatory remedies before that competition assessment is complete. The Government summarises this as:²

[...] a study into any factors that may affect competition for the supply or acquisition of goods or services. A market study provides a means of identifying what is going on in a market and why. Unlike a competition enforcement investigation, it is not the actions of a specific company that are the focus of a market study, but the structure and behaviour of the market itself. Market studies can allow the identification of factors that are preventing,

² Source <https://www.mbie.govt.nz/info-services/business/competition-policy/targeted-review-of-the-commerce-act/commerce-amendment-bill>

restricting or distorting competition, efficiency, and reducing consumer welfare in that market. [MBIE]

12. This is consistent with OECD guidance³ on market studies undertaken by competition authorities such as the Commission, which highlights the importance of assessing whether there are, in fact, any competition problems before considering remedies. The OECD guidance outlines the range of remedies that can be applied to address competition problems – and problem identification is a key initial step.
13. The focus of this study should be on the outcomes currently being delivered by mobile markets for consumers and this should start at retail, i.e. where the products and services are available for consumption by consumers.
14. Publicly available data already shows that retail mobile markets are performing well.⁴ It is hard to envisage there being a basis for the Commission to undertake a competition study (of the sort provided for in the Commerce Amendment Act) in mobile markets as the pre-conditions for such a study, evidenced by a market that is functioning sub-optimally, do not appear to be present.
15. Any analysis of the upstream level of the market should be subsidiary to a finding of poor performing retail markets. Without evidence of poor performing retail markets as the starting point an analysis of upstream market performance, with a view to imposing potential wholesale remedies, cannot be justified. Because if retail mobile markets are delivering competitive outcomes then any regulatory intervention in a wholesale mobile market would be likely to result in net costs.

Price, quality and innovation

16. The NERA competition report attached reviews the market and supports the outcomes noted by the Commission through its monitoring activities. In particular, the report highlights that the New Zealand market is delivering good outcomes to consumers across a range of measures:
 - a. **Low prices:** New Zealand mobile prices are below the OECD average for all baskets measured by Teligon, and prices are declining at a faster rate than the OECD average;
 - b. **High quality:** The coverage and quality of New Zealand's mobile networks compares favorably to other countries. Spark has improved mobile service quality despite dramatic increases in traffic over its network.⁵ Mobile download speeds in New Zealand are close to the highest in the OECD;
 - c. **Significant demand growth and investment:** New Zealand mobile subscriptions, call minutes and particularly data traffic have increased over time faster than population and GDP growth;
 - d. **A highly competitive market:** The New Zealand market HHI sits below that of Australia, the United States and the United Kingdom. And New Zealand mobile churn rates are high compared to the average of other developed countries;
 - e. **Below average returns for operators:** New Zealand MNO profitability (as measured by EBITDA) is lower than the average of other developed countries. Despite claims to the contrary, mobile ARPU does not appear to have been rising in New Zealand and is also below international averages.

³ <http://www.oecd.org/daf/competition/market-studies-guide-for-competition-authorities.htm>

⁴ For example, the IDC 2018 NZ Telecommunications Market Report assesses activity in the New Zealand market.

⁵ We do not have specific quality data for Vodafone or 2degrees.

17. At the same time as demand and output in increasing, prices are falling and we're seeing investment and innovation that will continue to meet this growing demand. These results are consistent with the Commission's own data and ongoing sector monitoring – and lead us to conclude that the market is competitive and delivering competitive outcomes for end-users.

Data the paper seeks further information on

18. While the issues paper paints a picture of a well-functioning market delivering competitive outcomes to consumers and the economy, it seeks further information on specific measures: New Zealand market outcomes compared to those in Australia, ARPU trends, and the potential impact of bundling.

The NZ market compares well to other markets

19. Commission monitoring reports show that our prices benchmark well against the OECD dataset - we are significantly below the OECD average for every basket measured by the OECD. This is a doubly impressive finding given New Zealand's unique topology, geography and consenting frameworks, which result in an environment where we have higher costs than many other countries. In a 2014 public report for Spark, for example, NZIER estimated that it costs 17% more on average per person to achieve 97% mobile network coverage in New Zealand than it does to achieve the same coverage in the United Kingdom.
20. Despite finding that New Zealand prices compare favourably with OECD averages for all baskets, the issue paper identifies that one country in particular – Australia – appears to have cheaper prices for some large data plans than New Zealand and asks why that may be the case.

The Commission should look to a range of measures and markets.

21. As set out in the NERA report, we believe the Commission should be cautious focusing on a single indicator or benchmark comparison at a single point in time – as there can be many reasons that indicators or markets differ, including from time to time. We expect dynamic markets to evolve differently – reflecting the particular market context and time – and see as efficient.
22. A focus on a single measure can provide a misleading picture and can distort competition and the market as participants optimise for a particular measure. If the Commission, for example, were to suggest that mobile market participants should optimise pricing to match the prices observed in Australia today for large data plans, for example, this would likely distort and affect the prices that users of lower data capped plans would pay.
23. Accordingly, we believe it is preferable to consider market outcomes across a broad range of measures and countries, and over time. The purpose is not to make markets the same or replicate a specific outcome, but to get an understanding of whether the market is working for the NZ circumstances. As set out in its report, the functioning of a market occurs over multiple dimensions and it is the overall performance that counts. Rather than focus on specific price points or plans, we believe the Commission should consider a broad range of market indicators.
24. Taken as a whole, the New Zealand compares well to Australia across a range of dimensions. When we compare the New Zealand and Australian markets to international benchmarks, they are both clearly highly performing markets albeit with differences:
 - a. **Retail prices:** while Australian advertised high-usage plans are somewhat cheaper than the corresponding plans in New Zealand, the Commission's data (Table 5) shows that entry-level plans are more expensive in Australia than the

corresponding plans here. In any case, both markets have lower benchmark prices than the OECD average;

- b. **Consumer bills:** New Zealand ARPU is lower than Australia, while both compare well internationally for low prices;
- c. **Service innovation:** Both markets are dynamic with a range of plans on offer. Plan data bundle sizes have grown over time, but the markets appear to be taking slightly different approaches to larger data plans. The New Zealand market is moving towards no-contract unlimited and shared plans, the Australian to fixed-term contracts for large bucket plans;
- d. **Network performance and quality:** New Zealand has wider coverage with all providers, Telstra is the only Australian provider with comparable coverage to New Zealand operators. Both markets are growing rapidly and operators are investing to meet this demand;
- e. **Market concentration:** With the merger of TPG and Vodafone Australia, New Zealand has the same number of mobile network operators as Australia despite New Zealand having a population approximately 1/5th the size of Australia's. As a result, New Zealand has lower HHI than Australia, and both are close to the OECD average;
- f. **Profitably and investment:** New Zealand has lower EBITDA. Operators in both committed to rolling out 5G, albeit Australian market slightly ahead due to earlier certainty of spectrum availability.

25. To be clear, both markets are high performing markets – consumers are seeing falling prices, increasing output and innovation. They benchmark well against comparable countries.

26. However, each is evolving differently depending on the market context, with different pricing relativities within advertised prices. New Zealand has lower relative entry level prices, while Australia has relatively cheaper large data cap plans. Within that difference it is unclear whether, on the whole, consumers as a group are better off under one of these pricing relativities than the other, and it is not clear to us that is appropriate, or even possible, for the Commission to make that determination in this process.

Australian advertised plans

27. As an example, when we consider the specific segment of the market identified by the Commission for closer consideration (larger data plans), we observe that:

- a. **Plans are promotional only:** there appears to be a heavy focusing on acquiring or upselling customers in the Australian market onto higher data capped plans. Each of the three MNOs currently has large data capped plans available at prices below those available in New Zealand, but these plans are characterised either as “promotional” offers available for a limited time only, or by smaller “standard” data inclusions, with large amounts of “bonus” data available for a limited time;
- b. **Minimum 12-month contract terms:** these plans are also only available to customers on a 12-month term contract with early termination fees - a contractual structure that New Zealand mobile network operators have shifted away from following feedback from consumers and the Commission. Prices for month-by-month plans are considerably higher;

For example, Vodafone Australia offers a plan with 4GB of data on a no-contract basis for AUD\$45 a month, and a plan with 15GB of data + 25GB of promotional

“bonus” data on a 12 month contract for the same price. Optus offers a plan with 3GB of data on a no-contract basis for AUD\$45, a plan with 6GB of data for the same price on a 12 month contract, and a “promotional plan” with 50GB of data on a 12 month basis;

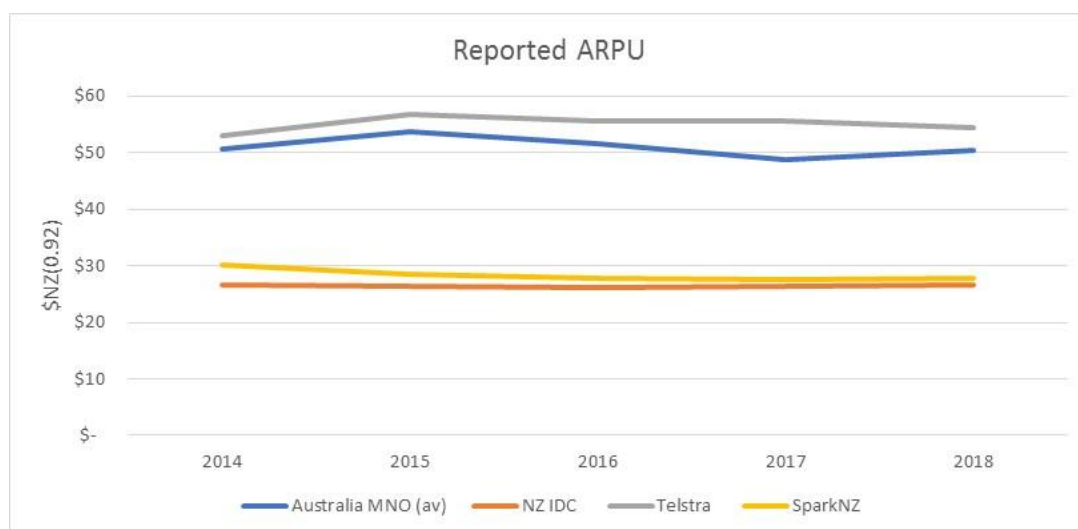
- c. **Data does not rollover:** whereas all Spark data allowances on mobile plans permit rollover of unused data into future months, these larger data capped Australian plans do not permit any rollover of that data.

28. Further, at this stage it is unclear whether consumer behaviour has changed at a similar rate to the data caps within the plans.⁶ The AFR reports, for example, that data usage has increased at a slower rate than data plan caps (resulting in a reduction in average use of data in a bundle). Reported ARPUs continue to decline but not at the same rate as buckets have been expanding. Therefore, it remains unclear how the headline large data plans might be reflected in actual usage in the market.

29. This comparison illustrates the difficulty in comparing specific published tariffs on their own, which tell us little about effective prices, output and value to consumers, and even less about what price relativities between markets should be. How does one compare the value of no monthly contract term and no early termination fees to the value of promotional data inclusions on a 12-month plan? We posit that you can't: rather the Commission should consider whether, taken as a whole, retail outcomes in New Zealand are competitive and - if they are - then it should rely on competition in our market to ensure that end-users needs and preferences will be met efficiently by that competition.

30. For example, as a cross check, comparing overall reported Australian and New Zealand ARPUs, a measure of what all consumers on average pay in practice for mobile services, New Zealand prices compare well, and overall, New Zealand consumers have lower costs relative to Australian consumers.⁷

Figure 1: Australian and NZ operator reported ARPU



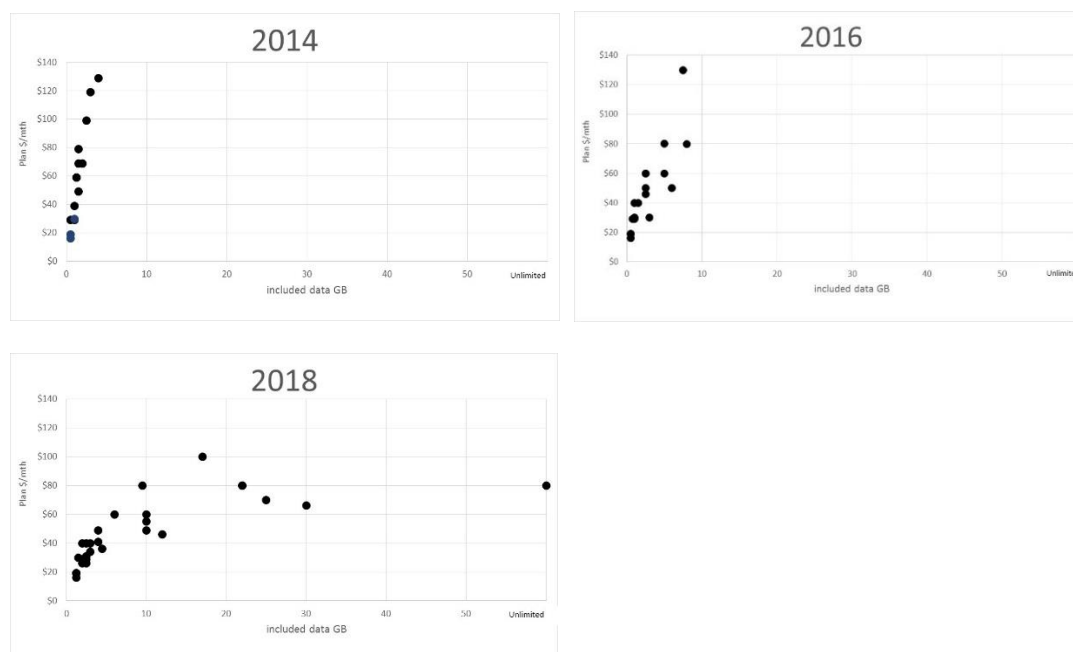
31. We are also seeing the New Zealand market develop over time, with innovation seeing larger plans available to consumers. IDC reports that, over the past year, the average data inclusions have doubled in the New Zealand market, and more large data plans are being offered.

⁶ <https://www.afr.com/technology/telstra-optus-and-vodafone-face-revenue-hit-from-generous-data-plans-before-5g-20180419-h0yzxf>

⁷ Data from operator financial reporting.

32. The dynamic nature of the market can be seen in the development of data offerings over time. Figure 2 shows the range of prices and data caps available over time – between 2014 and 2018 data caps on the largest bundle increased eight-fold and unlimited plans have been launched. Accordingly, differences between markets can be due to the rates over which market evolve.

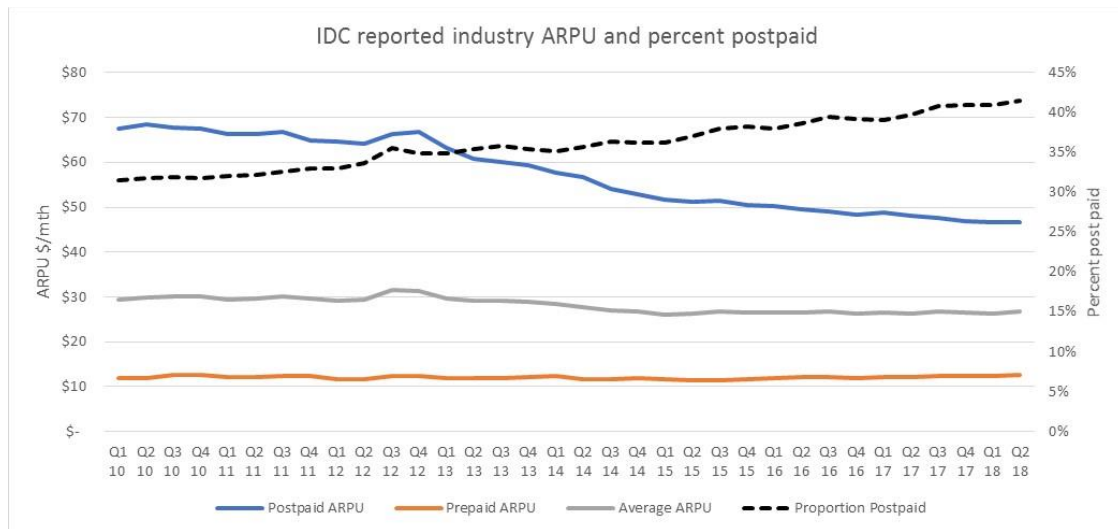
Figure 2: NZ data cap and price over time



ARPU

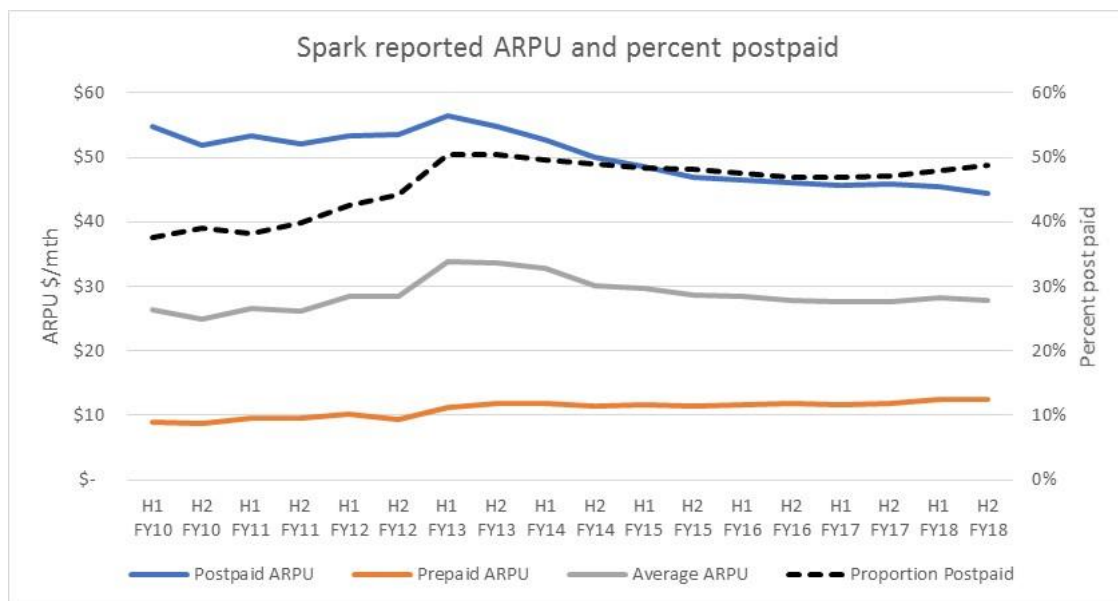
33. The issues paper further references - at chapter 4 - Trustpower submissions that New Zealand ARPUs have increased over time, contrary to most other countries. Trustpower suggests this might indicate a competition concern.
34. As we explain above, we don't few support a focus on a single measure – comparing market outcomes across countries is difficult as the environment and context differs. Further, we also note that increasing ARPUs do not necessary indicate a concern. Increasing ARPU can reflect that end users are demanding more and receiving more value – a positive market indicator.
35. In New Zealand's case, though, the Commission and industry reporting indicates that ARPUs are not currently increasing as Trustpower submits. IDC reports New Zealand industry volumes and revenues, and these indicate that overall ARPU has remained static over time in nominal terms, reflecting ongoing reduction in prices in real prices and significant decline when increasing usage is taken in to account. This is despite a significant increase in the proportion of higher value post-paid plans over the same time. IDC attributes the small 2013 increase to data anomalies caused by closure of the CDMA network.

Figure 3: IDC reported revenue per user



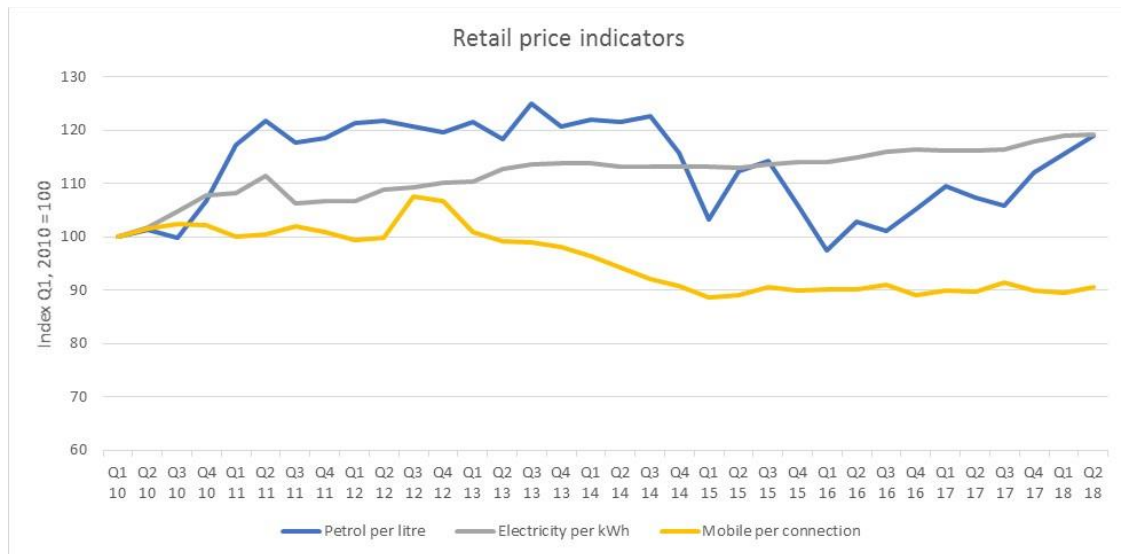
36. The IDC report is largely consistent with Spark financial reporting. The ongoing same price reductions are mitigated, to an extent, by customers migrating from lower-value prepaid to higher-value post-paid plans. The 2012/13 period was distorted by CDMA closure and transition to XT.

Figure 4: Spark reported ARPU



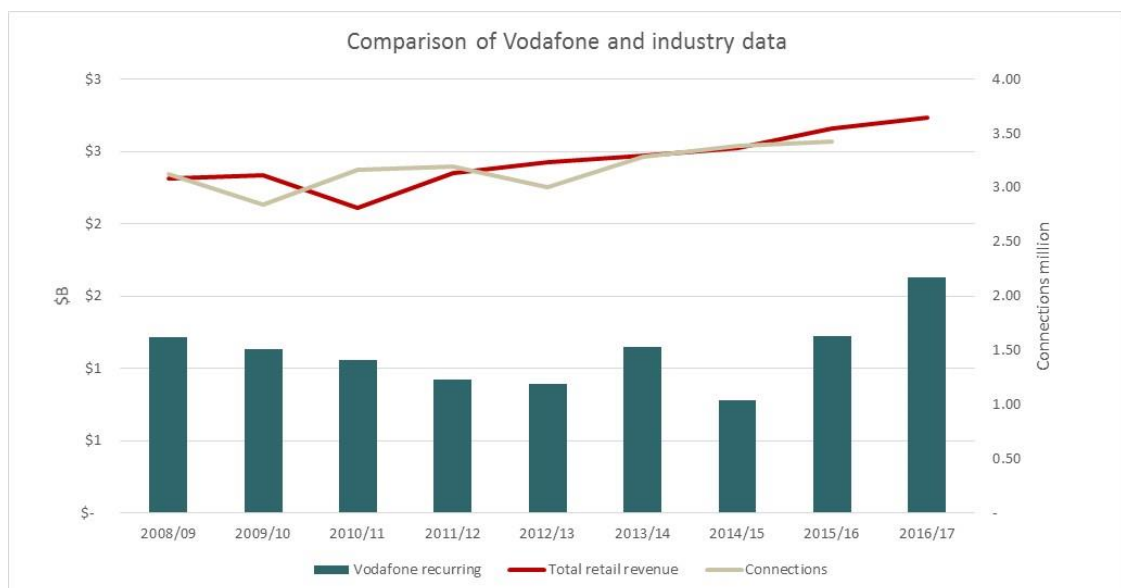
37. In other words, consumers are paying less in real terms for mobile services than they were in 2010, while consuming significantly more. These consumer outcomes compare favourably to other sectors in the economy where consumers face year on year price increases. For example, as a simple illustration of price change, over the same period as the average price for a mobile connection fell by around 10%, MBIE reports that residential electricity and petrol prices have increased by around 20%.

Figure 5: Mobile, petrol and electricity prices since 2010



- 38. The Trustpower submission is based on a companion Analysys-Mason report which, on the face of it, relies on GSMA external data sources. As NERA note, there are significant problems with the Analysys-Mason data which implies implausible Vodafone NZ revenue volatility.
- 39. A simple sanity check of the underlying data, as NERA has undertaken, would have indicated Vodafone revenue falling and increasing by over 30% in a short period, suggesting that the data is unreliable and warrants further investigation.⁸ Further, if the Trustpower report accurately reflected the NZ market we'd expect to see similar volatility in Commission reported mobile market revenues and connection volumes. The Commission market monitoring report is based on data sourced directly from operators and indicates moderately increasing revenue and connection volumes.

Figure 6: Vodafone and market monitoring reported revenues



- 40. In practice, IDC data and service provider financial reporting are the most reliable indicator of what consumers are actually paying over time. This tells us that consumers are paying less in

⁸ Compares Vodafone GSMA reported revenue to Commission monitoring report revenue and volumes to check plausibility.

real terms, and that this in a market with significant demand growth and investment requirements.

Bundling

41. Finally, the issues paper further considers the implications of bundling of communications services on competition.
42. It is true that we are seeing increased bundling of communications and other services in the New Zealand market, for example, fixed broadband is increasingly being bundled with content services, household appliances, electricity, and gas. To varying degrees, all fixed line broadband providers have bundled and standalone offers in the market. Spark offers broadband bundles with discounted Netflix, Lightbox and FanPass, and also standalone plans. But the large majority of that bundling does not include mobile services.
43. Bundling of mobile services with other communications services is not a significant feature of the mobile market. For example, we have offered for some time a “bundle up” discount to customers on select mobile plans who also have a broadband connection with Spark on the same bill. But only a small proportion of customers elect to bundle their mobile and fixed line services in this way. Around []SPKCI

Figure 7: Spark bundle up discount applied and reported volumes

[]SPKCI

44. The low incidence of bundling reflects, in part, consumers’ discrete purchasing decisions. Consumers typically purchase mobile services as individuals whereas broadband is more readily associated with a household. While we continue to test in the market, generally, we are not seeing a strong customer preference for bundles. Looking forward, we expect the number of bundle up discounts to fall over time as customers migrate to our new Unplan broadband plan which doesn’t offer a bundle discount.
45. In contrast, electricity generators and retailers are increasingly bundling electricity and communications services and offering these services with extended term contracts. Trustpower promotes bundling as a means of reducing customer switching and reports that around 25% of customers are taking an electricity and broadband bundle. Trustpower reports electricity only churn falls by about 50%, from around 15% to 10% per annum, when bundled with a broadband service.⁹ []SPKCI
46. It is unclear whether bundling of mobile services may be a concern in the future. But bundling can only be a concern where the bundle includes an element with market power and there isn’t effective competition for the bundle, i.e. a fixed/mobile bundle may compete against a fixed/electricity bundle. If anything, communications markets are expected to be more competitive over time, leading us to conclude that bundling of mobile services is unlikely at this time to represent a potential competition problem.

2. Looking forward

47. The future of the mobile sector looks bright. Technology advances mean communications services are evolving from facilitating communication between people, to connecting devices. Governments are actively promoting investment in communications infrastructure as this is seen as critical to achieving digital economy policy objectives. The Australian Bureau of

⁹ Trustpower Q22018 operating report <https://www.trustpower.co.nz/company-and-investor-information/reports>

Communications and Arts Research recently estimated the benefits of 5G to Australia's GDP at up to \$2,000 per person, or between \$32 billion and \$50 billion, by 2030.¹⁰

48. Mobile platforms are a key part of an economy's digital infrastructure. The eco-system that provides this infrastructure – i.e. the technologies, devices and services – is increasingly mobile. Many traditional fixed services such as voice calling are now predominantly served over mobile platforms:
- a. We now carry more calls over mobile networks than the fixed network. In 2015 the number of mobile call minutes surpassed the fixed network calls. We now recommend that consumers use their mobile phone as their primary means of contacting emergency services;
 - b. Consumers are increasingly using the mobile network for fixed broadband services, and to watch entertainment on the go. We serve over 125,000 fixed broadband customers using our mobile network and Commerce Commission reporting shows 28,000TB growth in data usage in the 2017 year alone.
49. We expect to see more services looking to mobile platforms – Ovum has estimated that by 2025 around 57% of wireless media revenues will be directly to mobile devices enabled by 5G networks.¹¹ Currently deployed IOT networks also rely on wireless networks, these networks are expected to grow with the increase in smart infrastructure.
50. Mobile operators currently see these trends occurring as strong demand growth for existing services and demand for new services. Statistics NZ released its 2018 internet survey on 8 October and this shows that monthly mobile data use has increased by 7,000 terabytes over the past two years.¹²
51. 5G technologies discussed in the issues paper, and below, were designed to cater for the needs of a digital economy. 5G technologies can cost effectively support very high data speeds and demand, necessary to meet exploding data demand from existing services, and new use cases. These new services might require, for example, the ability to support large volumes of low power device sensors, or latency-sensitive health services. All mobile operators have indicated that they intend to deploy 5G networks to meet these needs.
52. The New Zealand market is well placed to meet this demand. The GSMA 2018 mobile readiness index puts New Zealand at the forefront of mobile connectivity. The GSMA Mobile Connectivity Index measures the performance of 163 countries against four key enablers of mobile internet connectivity – infrastructure, affordability, consumer readiness and content and services. We are ranked 2nd in the GSMA's Global Mobile Connectivity Index, which covers 163 countries and scores each countries' mobile connectivity across 35 different indicators. In this index New Zealand ranks 5th in the world for infrastructure, 5th in the world for content and services, and 7th in the world for affordability.¹³

¹⁰ See <https://www.communications.gov.au/departmental-news/impacts-5g-productivity-and-economic-growth> and commentary <https://www.telstra.com.au/aboutus/media/media-releases/5G-50-billion-opportunity-for-the-Australian-economy>

¹¹ <https://newsroom.intel.com/wp-content/uploads/sites/11/2018/10/ovum%E2%80%93intel%E2%80%935g%E2%80%93ebook.pdf>

¹² <https://www.stats.govt.nz/information-releases/internet-service-provider-survey-2018>

¹³ <https://www.gsma.com/mobilefordevelopment/programme/connected-society/state-of-mobile-internet-connectivity-2018/> <https://www.mobileconnectivityindex.com/>

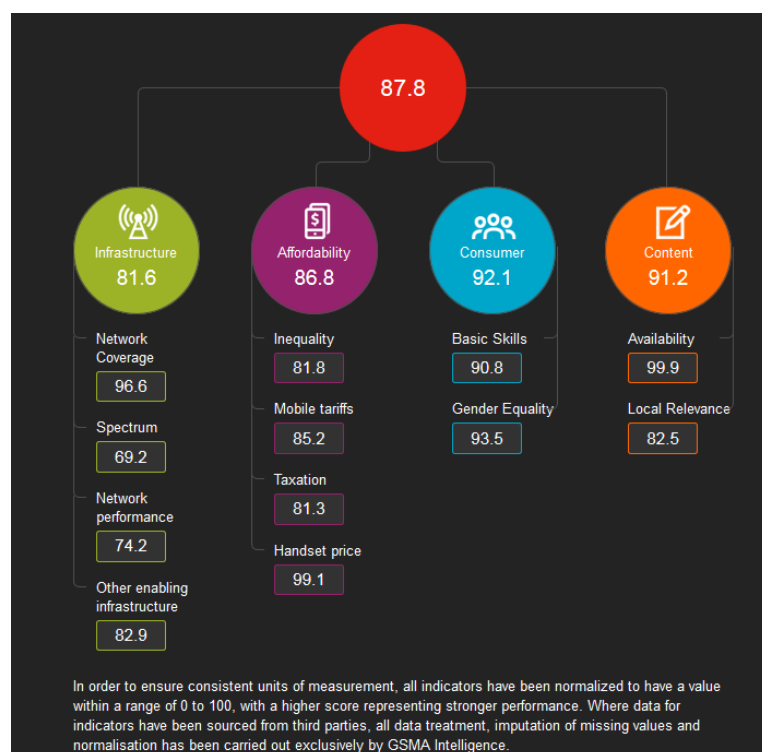
Figure 8: GSMA mobile connectivity index top performers

Mobile Connectivity Index: top 10 performers – globally and by region

GLOBAL	AMERICAS	ASIA-PACIFIC	EUROPE	MENA	SUB-SAHARAN AFRICA
Australia	Canada	Australia	Iceland	Israel	Mauritius
New Zealand	US	New Zealand	Norway	Qatar	South Africa
Iceland	Bahamas	Singapore	Denmark	UAE	Cabo Verde
Singapore	Uruguay	South Korea	Sweden	Bahrain	Ghana
Norway	Chile	Hong Kong	Finland	Saudi Arabia	Botswana
Denmark	Barbados	Japan	UK	Kuwait	Kenya
Sweden	Mexico	China	Netherlands	Oman	Angola
Canada	Argentina	Thailand	Switzerland	Turkey	Gabon
Finland	Peru	Malaysia	Ireland	Lebanon	Nigeria
UK	Ecuador	Philippines	Austria	Jordan	Côte d'Ivoire

53. The index captures a range of measures - New Zealand ranks highly in all measures and is considered a leading economy.

Figure 9: GSMA mobile connectivity index top performers



5G network deployment

54. All New Zealand operators have announced an intention to build 5G networks. This follows a number of trials from overseas operators and vendors, and operator commitments to deploy 5G technologies. Global Suppliers Association (**GSA**) reports that, as at July 2018, 154 operators have demonstrated, trialled or tested 5G deployments in 66 countries.¹⁴ The GSA

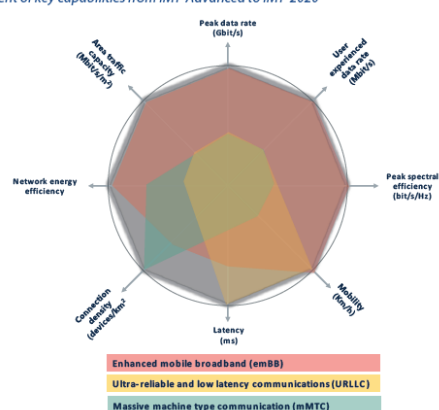
¹⁴ GSA Global 5G Status – Snapshot July 2018.

has further identified 66 operators in 37 countries who have announced intentions of making 5G available to customers, ten launches are planned to take place by the end of 2018.

5G technologies and deployment plans are starting to mature

55. With vendors providing more detail around technology roadmaps and early operator deployments, we are starting to see more certainty around the technology capabilities and efficient migration to new platforms. The technologies are able to support multiple use cases, and investment and deployments can be phased over time:
- a. While a larger range of services will be available to industry partners and consumers, not all services will require the full level of bandwidth or latency that 5G will facilitate. Each of the three main families of usage scenarios (i.e. eMBB, URLLC, mMTC) are expected to have differing needs in terms of these technical capabilities, as shown in the figure below.

Figure 6: Enhancement of key capabilities from IMT-Advanced to IMT-2020



Source: Recommendation ITU-R M.2083-0

Supporting different use cases implies different design and characteristics – these are made possible on the same infrastructure through network slicing. However, not all use cases must be built at the same time.

- b. 5G is expected to be deployed initially as an evolution to the existing network, building on existing 4G technologies and cell networks; and
 - c. 5G is seen as the key means of efficiently meeting increasing data demand and supporting digital economies.
56. What this means is that, in practice, operators face a series of 5G investment decisions that can be aligned with emerging use cases and demand relevant for their market. We intend to deploy 5G technologies, initially, as an upgrade to the existing network and technologies. This is a common path taken by operators internationally, and likely approach by all New Zealand operators. [JSPKCI Accordingly, operators are generally starting with enhanced mobile broadband, and then will add functionality later as demand permits. The evolution to 5G will comprise a series of investment choices based on emerging demand for new services.
57. Generally, efficiently meeting rocketing data demand will justify initial deployments. Vendors and operators are increasingly looking to new technologies to meet increasing demand at an affordable cost.¹⁵ We are further starting to see new use cases solidify, for example one

¹⁵ For example, see ITU workshop presentation <https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2018/5GHungary/S2%20Sylvania%20Apicella%20Possible%205G%20deployment%20for%20Europe%20Rev.A%20External.pdf> and Ericsson 5G Readiness Survey 2017 <https://www.ericsson.com/en/networks/trending/insights-and-reports/5g-readiness-survey-2017>

emerging new service case is “always-on” business connectivity as a “new” use case – providing access to corporate data from anywhere. Virtual reality is also being talked about.

58. However, significant uncertainty remains as to the timing and location of demand for these new services, future commercial models, demand, and even the network ownership structures. The future business models will not be determined solely by telco operators, but by businesses, consumers, governments and industries. Decisions made by the New Zealand Transport Agency and Ministry of Transport, for example, are far more likely to be determinative of what form of network connectivity is used to support an autonomous vehicle and vehicular-related infrastructure network, and what the ownership structure of that network will be.

Sparks' 5G deployment

59. We plan to deploy a 5G network and have made significant progress to doing this:
- a. In March, we conducted NZs first live 5G tests in Wellington and in Auckland;
 - b. We are well-advanced in planning for a 5G deployment, including mapping expected future cell network densities to identify locations of new in-fill cellsites, some of which we are already building. We are investing to densify the network, initially for 4.5G to meet growth, []SPKCI; and
 - c. []SPKCI
60. Like all operators, we face a further series of investment choices relating to enhancing the core network and new services. These decisions will be based on when and how demand emerges, and emerging business models that will support that investment. []SPKCI

Emerging trends

61. The issues paper seeks comment on key trends relating to 5G deployment and emerging market structure.

Spectrum

62. As noted in the paper, new spectrum will be required over time in order to meet 5G capacity and service requirements. These will need to be a mix of low, medium and high frequency bands, and large contiguous holdings in the mid and high bands.

Access to low, mid and high bands

63. The different bands have different characteristics:
- a. Low frequency spectrum, below, 1000MHz is used to provide wide area coverage, especially in rural areas and to fill in between sites otherwise using higher frequencies;
 - b. Mid frequency from 1GHz to 6GHz is intended to be used for mobile capacity in towns and cities; and
 - c. High “mmWave” frequency spectrum in bands above about 24GHz is used for targeted capacity, particularly to fixed devices, and potentially for wider urban capacity if issues such as the cost of backhaul can be resolved.
64. Therefore, operators will require spectrum in lower, mid and high frequency bands for 5G deployment depending on the anticipated service requirements. For example, an IOT network requires less throughput but high coverage potential and these needs can best be served with lower frequencies.

- 65. Mid frequencies can provide a good balance between high capacity and reasonable coverage and are necessary to meet capacity growth and as the control plane for high capacity services.
- 66. The mid and high frequencies are complementary in that mmWave will be used to complement mid frequencies by adding very large amounts of capacity in tightly-confined coverage spots.

Large holdings within band are required to meet 5G use cases and definitions

- 67. Further, large contiguous bandwidths are required to support anticipated 5G use cases. In simplified terms, the more spectrum a network can use the faster the data speeds on that network will be.
- 68. Key 5G use cases require fast speeds and low latencies for very large amounts of data traffic and, accordingly, international standards bodies are signalling that carrier bandwidths of 100MHz in the C band and 800MHz in the mmWave bands should be targeted - the latter achieved by carrier aggregation (CA) of multiple lower bandwidth carriers. For example, ITU-R M 2410 provides guidance on minimum bandwidths – 800MHz bandwidth is needed to meet the spectrum efficiency figures given in M 2410.
- 69. And national spectrum authorities are auctioning or allocating spectrum blocks in line with these targets. Finland, for example, recently allocated 130MHz to its three mobile network operators. These carriers need to be contiguous at 3.5GHz to deliver 5G service requirements. Carrier aggregation is possible in mmWave, however, it is not possible to aggregate across bands. Further, the GSA notes that large channel bandwidths will reduce terminal front end complexity and power consumption compared to multiple carrier aggregations.¹⁶

70. []SPKCI

71. []SPKCI

C band- Urban Micro

17			

]SPKCI

mmWave band- Urban Micro¹⁸

]SPKCI

¹⁶ See <https://gsacom.com/paper/future-imt-3300-4200-mhz-frequency-range/>

¹⁷ []SPKCI

¹⁸ []SPKCI

mmWave band – indoor

19			

]SPKCI

- 72. MNOs can respond to less spectrum to some extent by increasing the density of sites. However, it is not possible to provide anticipated peak cell edge speeds without large carriers.
- 73. Densification is only a partial solution - it provides a wider geographic spread of capacity, but sites are in their current locations because that is where the demand is. Increasing capacity in places that are nearby may not help to relieve capacity constraints on existing sites.
- 74. Holding back or inefficiently allocating spectrum will increase industry costs – i.e. by limiting the ability to meet demand for some use cases, driving inefficient architecture decisions and potentially limiting the number of viable future networks - it is not “free” to hold back spectrum. This is often reflected in policy where authorities commit to efficient spectrum allocation methodologies rather than other objectives such as revenue generation.

Spectrum allocation in New Zealand

- 75. A number of economies are in the process of making more spectrum available for 5G deployments. For example, the FCC plan could see up to 844MHz of mid band spectrum available for 5G deployments.²⁰
- 76. Internationally, the initial focus has been on the planning of “pioneer” C band and mmWave bands. A number of jurisdictions have already released spectrum in these bands. However, demand continues to grow and authorities plan to release more spectrum. For example, the FCC initiated in August 18 a notice of inquiry with a view to making the 3.7GHz to 4.2GHz range available to MBB and the 6GHz range for unlicensed use.²¹ This range has not been allocated for mobile broadband purposes in the New Zealand region. The GSA 5G spectrum update outlines the wide range of bands being considered (of allocated) for 5G deployment.²² While current uses in a market must be recognised, our expectation is that additional spectrum will be made available to the New Zealand market over time.

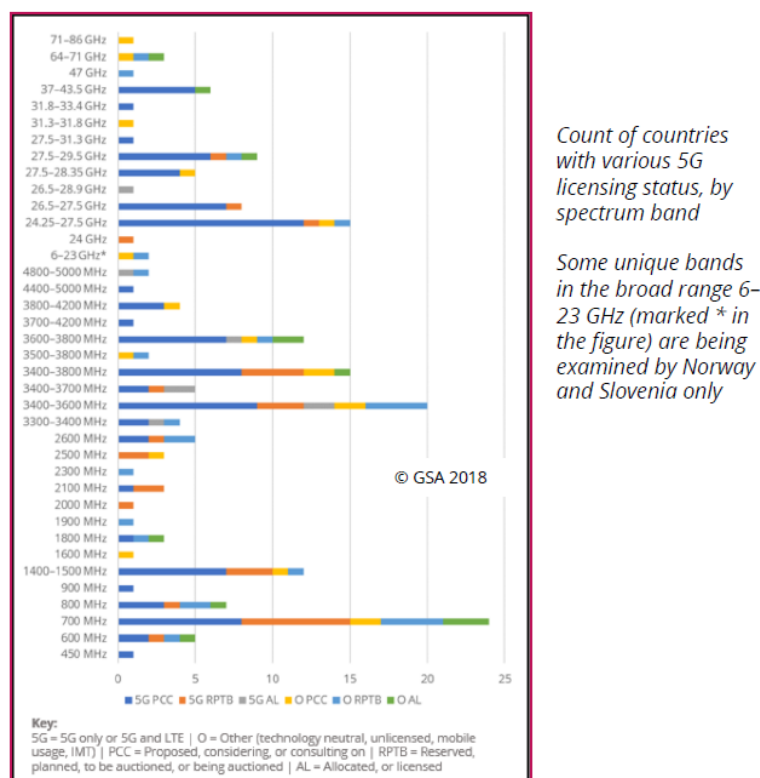
¹⁹ []SPKCI

²⁰ <https://www.fcc.gov/5G>

²¹ The 3.7

²² Source GSA Spectrum for 5G – Snapshot at <https://gsacom.com/>

Figure 10: GSMA mobile connectivity index top performers



77. The New Zealand approach is to follow international standards and the approach in major markets. Our market is too small to drive standards or technology availability and this way we see modern technologies quickly available to the New Zealand market.
78. The Government has proposed that the C band (3400 to 3800MHz) is top priority for 5G implementation, with mmWave band (24-29GHz) a high priority to be considered next. We support the Government approach – it should maximise the available spectrum for 5G deployment. Looking further ahead, we expect to see additional low frequency spectrum (600MHz and 1500MHz) released for 5G use. T-Mobile in the USA is expected to offer services using the 600MHz band from 2019.
79. We're not expecting it to occur here, but holding back spectrum would be a significant concern:
 - a. Drives inefficient architectures and ultimately costs that will be passed on to consumers;
 - b. Will likely drive restrict competitive activity and potentially result in market consolidation where not all operators can secure sufficient spectrum for 5G speeds/services;
 - c. Will hold back industry output. This has consequences for competition to, say, fixed operators.
80. Australia will auction its 3.5GHz band next month. And if New Zealand doesn't make key spectrum policy decisions quickly, we will start to fall behind other countries in the race to deploy 5G.

Access to supporting infrastructure

81. As noted in the paper, operators will need access to supporting infrastructure – the key inputs being cell structures and fibre connections.

Infrastructure sharing

82. The issues paper asks whether infrastructure sharing will be necessary for 5G deployment. There is already extensive infrastructure sharing in the New Zealand market. Operators now routinely share cell site towers, transport links and active sites through the RBI1 programme. The degree of sharing available to the industry has expanded significantly through the RBI2 programme with RCG.
83. There are strong incentives for operators to share infrastructure where it makes sense, i.e. to reduce deployment costs. For example, we are currently investing over \$20M with a number of partners to deploy a shared new fibre route in to Taranaki. We also see infrastructure sharing occurring through purchasing from third parties which should provide sharing efficiencies, i.e. all operators acquire DFAS from Chorus and LFCs.
84. While we believe that sharing will continue, we don't know how much additional infrastructure sharing there will be with 5G beyond the current level of sharing. Much will depend on when and where use cases emerge that require much denser cell networks to support very large mmWave spectrum carriers. The need for infrastructure sharing in that scenario will depend on the technologies deployed, demand for particular use cases, and the quantum of new revenue available to mobile network operators from those new opportunities. Further, how New Zealand's national environmental standards for cell site deployment evolve to reflect smaller cell site form factors and denser cell networks will also be important.
85. In most scenarios we expect sharing to be used for rural deployment of materially denser cell networks, building on the model we have today through RCG. The variety of use cases and deployments, however, suggests that sharing will likely be more varied than seen today, for example:
- a. A rural connectivity group style model – i.e. collaboration between telcos, industry partners and Government – as we have today for lowest density areas;
 - b. Sharing of infrastructure to incrementally add to the existing network as we have today – for example in dense urban areas where consenting requirements or property scarcity makes acquisition of in-fill sites difficult; and
 - c. Council and utility partnerships, e.g. for “smart city” solutions where required. Lines business' or Councils' civil infrastructure may well prove to be ideal for co-siting of new, smaller 5G sites.
86. We are confident that mobile operators have an incentive to share wherever possible to reduce costs and to expand the variety and reach of available services. Where operators see the opportunity to efficiently share, the regulatory environment can readily facilitate that today and we expect the same to be true in the future.

Fibre linking

87. The paper also asks about fibre linking for cell sites. Deploying a 5G network implies additional cell sites and these are expected to be connected by a denser fibre network – this has been a concern for regulators overseas. Ofcom has opened up ducts reducing access prices significantly to specifically promote more backhaul competition. Further, BEREC recently summarised NRA policy concerns and approach to ensuring mobile provider access to backhaul fibre.²³

²³ its October 2017 study https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/7311-berec-report-on-the-convergence-of-fixed-and-mobile-networks.]

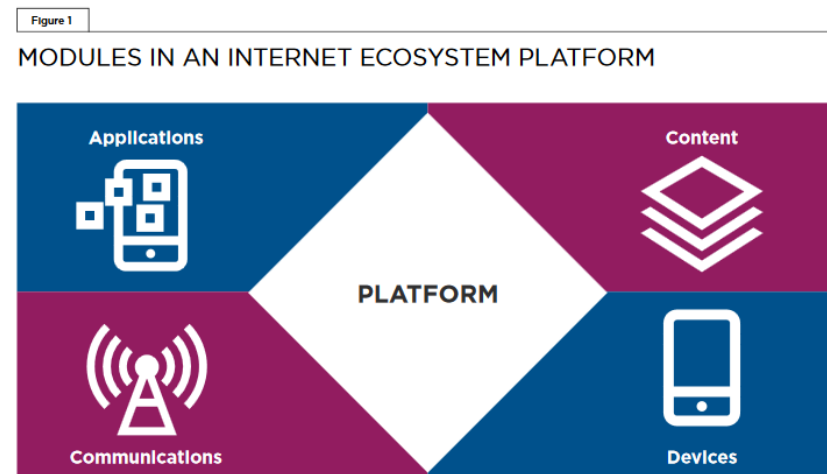
88. New Zealand operators will likewise require access to fibre links to meet increasing mobile demand, and in a number of cases this may be Chorus and LFC fibre accesses. At this stage, it is unclear whether this will be an issue that requires specific Commission consideration.
89. We expect that mobile operators will compete for a subset of fibre provider customers, much as occurs today for consumers served by poorly performing copper accesses or voice services which are better served by wireless services. We can envisage scenarios where Chorus and LFCs might have an incentive and ability to:
- a. Inefficiently withhold access to fibre inputs to delay or distort 5G deployment; and
 - b. Seek to expand their market power into mobile markets, distorting outcomes in these markets.
90. However, at this stage it is unclear whether either of these scenarios is likely. Chorus proposes to consider a front haul specific access for mobile sites service from March 2019.
91. Today, DFAS is currently the primary mobile site linking service and this will remain a price capped service on the Chorus and LFC networks. While the services are currently being developed by fibre providers, we expect that only unbundled fibre services that are a technically viable input for cell site linking will comply with Fibre Deed and Telecommunications Act obligations. The Commission has oversight of proposed fibre services through EOI/non-discrimination requirements in the Telecommunications Act and general Commerce Act obligations.
92. Outside UFB areas, the Commission has an ongoing telecommunications backhaul services market study – this study remains important for provision of network capacity in the regions.

Network slicing

93. A key 5G function is network slicing. Network slicing involves managing performance from the customer (device) to application or content, and integrating this connectivity with other network-provided functions such as compute or storage as required. The power of this functionality is that it enables the network to support multiple performance aspects and use cases.
94. The digital ecosystem is different with network slicing. As NERA note in its report on regulation in new digital markets²⁴, the digital ecosystem is made up of complementary technologies assembled into platforms that perform useful functions.

²⁴ https://www.gsma.com/publicpolicy/wp-content/uploads/2016/09/GSMA2016_Report_NewRegulatoryFrameworkForTheDigitalEcosystem_English.pdf

Figure 11: elements of service



95. Network slicing enables differentiated services - the network can simultaneously support devices or applications that require different qualities of service. For example, an emergency services application may have specific network reliability requirements and priority in case of an emergency.
96. The expanded range of services will require different business models and we're seeing these starting to emerge. For example, IOT arrangements are based on the network operator providing connectivity to the device or application provider, who then interfaces directly with end users.
97. [] **SPKCI** we're likely to see more of these sorts of wholesale arrangements in the future. For example, partnerships will local authorities relating to smart city initiatives or transport authorities for smart transport.
98. We are moving from a structure where (largely) homogenous capacity is provided to consumers and wholesale partners, to one where differentiated quality of service is available to partners and consumer groups. The differentiated performance is made possible by network slicing, and the expanded range of services comes with an equally expanded range of commercial/access models to monetise these capabilities. These future partner groups include "verticals" such as local authorities and sector groups, and could include today's IOT service providers, and dominant application and device providers

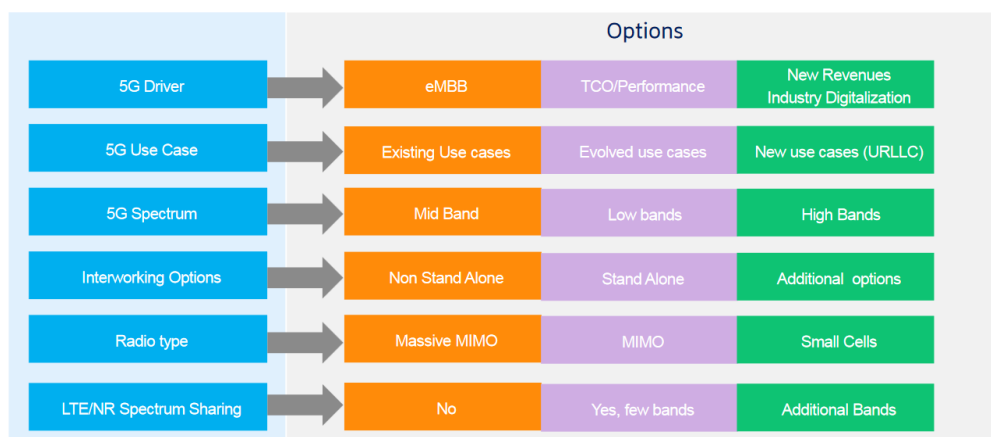
Promoting 5G deployment

99. New Zealand is in the enviable position of having market growth and innovation, and market participants willing to invest to make it happen.
100. The 5G transition requires a number of decisions relating to spectrum, services to be supported, network architecture and investment.²⁵ These are decisions that can only be efficiently made by operators in the market, in the context of available spectrum and regulatory certainty.

²⁵ See Ericsson ITU presentation <https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2018/5GHungary/S2%20Sylvana%20Apicella%20Possible%205G%20Deployment%20for%20Europe%20Rev.A%20External.pdf>

Figure 12: 5G options²⁶

5G Options



101. We can have confidence that competing infrastructure providers are best placed to deliver the future. All the evidence we have suggests that, subject to the availability of spectrum, 5G capabilities will be available to the NZ market on a par with overseas markets. And we firmly believe that competing infrastructure providers is the best way to ensure efficient investment decisions are made over time.

102. The Commission can play its part by reducing uncertainty, through an early finalisation of the market study. It should avoid engaging on future scenarios that are inherently speculative.

3. Industry structure

MVNOs

103. In Chapter 5 of the issues paper, the Commission examines the conditions for entry and expansion in the supply of mobile services in New Zealand as either an MVNO or an MNO. The Commission notes statements from submitters that suggest that:

- a. the number of MVNOs in New Zealand is low relative to other countries; and
- b. this represents a "market failure".

104. The Commission also notes, though, that New Zealand now has three nationwide mobile network operators that are able to supply, and compete in the market for, MVNO services.

105. The existence of three nationwide mobile networks of the scale of those built by Spark, Vodafone and 2 degrees - each made up of well over 1000 sites in urban, suburban and rural environments - is in itself a strong sign of the healthy nature of mobile markets in New Zealand. Indeed, we are not aware of any other infrastructure industry in New Zealand that has three networks with the level of coverage Spark, Vodafone and 2 degrees have invested in to date.

106. Ours is a country with challenging topology and geography for infrastructure networks, and a small population and market. A number of much larger countries than New Zealand, with larger populations, higher GDP and/or much higher population densities are also served by three nationwide mobile networks. Germany, the United States (following the announced merger of T-Mobile and Sprint), Australia, South Korea, Belgium, Croatia, Czech Republic, Ireland, Norway, Portugal, Serbia, Switzerland to name a few. We view the existence of three

²⁶ From Ericsson ITU presentation

nationwide mobile networks in New Zealand as a strong sign that entry and expansion conditions are consistent with those of a competitive and well-functioning market.

MVNOs: there is no evidence of a competition problem or that end-users are missing out

107. While New Zealand is commonly said to have less MVNOs than some other markets, there is no evidence this is the result of a competition problem, or that New Zealand end-users are missing out on competition benefits as a result. And on a global basis, New Zealand's MVNO position is not at all unusual, with New Zealand sitting towards the top end of countries by number of MVNO.

108. New Zealand's three mobile network operators today support 6 current or in-train "traditional" MVNO partners ("traditional" meaning partners focussed exclusively or predominantly on providing nationwide mobile telephony, text and data services):

- a. Vocus, which has three separate MVNO sub-brands:
 - i. Vocus Business (formerly CallPlus) (MNO: Spark)
 - ii. Slingshot (MNO: Spark);
 - iii. Orcon (MNO: Spark);
- b. Megatel (MNO: Spark);
- c. Dimension Data (MNO: Spark);
- d. The Warehouse (MNO: 2 degrees);
- e. Kogan (MNO: Vodafone); and
- f. []SPKCI

109. We estimate the four MVNOs currently in operation together serve over []SPKCI customers, and we expect that []SPKCI.

110. Spark also previously provided "traditional" MVNO services to:

- a. Digital Island - a successful postpaid MVNO which built up a customer base of []SPKCI business and enterprise customers and was subsequently the target of, we understand, competing acquisitive bids from []SPKCI and Spark. Digital Island has proven that it is entirely possible to create a successful MVNO business in New Zealand;
- b. []SPKCI

111. But Spark's mobile wholesale business is broader than simply "traditional" MVNO services. We currently serve []SPKCI further wholesale customers who use our mobile networks to deliver specialised data services to niche markets. These services include:

- a. Connectivity solutions for connected cars;
- b. Fleet tracking services;
- c. Electricity network monitoring services;
- d. Traffic light phasing solutions;
- e. Digital road signage;

- f. Travel SIMs;
- g. Fixed line failover routers; and
- h. IOT services.

112. These customers currently purchase over []SPKCI connections from Spark and offer a useful insight into the broader future shape of the MVNO market. Because while, as we discuss below, the retail market for traditional mobile telephony, text and mobile data services is maturing and presents fewer opportunities than in the past for MVNOs to find niche markets to serve that MNOs do not already target today, the opposite is true for IOT or M2M services.

Competition for MVNO customers continues to be strong

113. Further, Spark's experience is that competition today for credible MVNO customers is strong. Spark considers []SPKCI

114. []SPKCI

115. We consider this to be a highly competitive result that reflects the value we see []SPKCI adding as an MVNO partner helping to drive market share and traffic onto our network.

116. []SPKCI

117. In addition to this activity, Spark has had preliminary discussions about MVNO services with a number of prospective customers in the past two years. In particular, we have had discussions with []SPKCI individual organisations as well as []SPKCI. In almost all cases the interested parties are predominantly residential fixed-line broadband service providers seeking to protect or enhance their existing fixed line broadband customer bases through bundling of fixed and mobile services.

118. The fact we have so much MVNO interest from fixed-line providers is encouraging, but the fact that only some of these parties commit to procuring MVNO services is not surprising to us:

- a. **Bundling of mobile and fixed services is not something New Zealanders have engaged with in great numbers:** as Spark itself has learned, most New Zealand consumers are not presently interested in bundling mobile and fixed line broadband services. Whereas fixed line broadband services are typically purchased by a household, mobile services are typically purchased by an individual and New Zealanders typically continue to choose to keep those transactions separate. We know from our experience, and []SPKCI that only a minority of fixed-line customers are attracted to bundles of fixed and mobile services. If a fixed-line provider has a large customer base (as []SPKCI, and []SPKCI do for example) a minority of customers also purchasing mobile services may result in a sustainable MVNO business. But if the fixed-line provider's customer base is not large, they may only be able to attract a very small number of mobile customers unless they are able to develop a unique selling proposition that results in much greater conversion than Spark, Vodafone, 2 degrees[]SPKCI has managed to achieve;
- b. **Mobile requires a distribution channel that fixed-line service providers do not typically have:** A small number of mobile customers is a problem because the support costs and support model for mobile services today are very different to those required for fixed services. In particular, few fixed line broadband providers in New Zealand have any physical distribution network or channels to sell and support mobile services through or contact centres or retail staff trained in mobile

services or devices, which means offering and supporting mobile services can be difficult and costly for those providers; and

- c. **Limited prospect for compelling cross-subsidies:** Further, because retail margins for fixed-line broadband services are already very low, there is limited prospect for these providers to provide heavily-discounted mobile services through cross-subsidies from their fixed-line broadband services;

119. That is not to say that this situation will prove to be enduring. The mobile market is inherently a technology market and as such is fast-paced and subject to rapid disruption on short notice. As we discuss further below, the introduction of eSIMs offers a number of parties a digital solution to the distribution challenge described above. eSIMs may well transform devices - smartphones, iPads, wearables - into digital distribution channels for mobile providers that lack physical stores or pre-existing relationships with retail channels.

120. In our view, this reality is entirely consistent with an effectively competitive market. Ours is a small market to support three nationwide MNOs, and this has forced New Zealand MNOs to be rigorous in identifying and competing for all customer segments - including those that have traditionally been the target for MVNOs overseas. The continued interest by parties in establishing an MVNO suggests, in light of entry conditions that may not support efficient entry and expansion occurring, is a dynamic entirely consistent with effective competition. As with any competitive market, though, entry and expansion conditions are always changing and may well undergo radical change as technology disrupts existing market structures.

121. We acknowledge that there are markets in other jurisdictions that support more than six MVNOs, and that have seen MVNOs achieve greater market shares than those in New Zealand have. But we do not believe that this fact by itself says anything about the health of New Zealand's mobile markets or evidences a competition problem or market failure that would warrant regulatory intervention.

122. There are many markets globally with less MVNOs. And there are many markets in New Zealand with less than the ten, soon to be twelve, retail brands currently operating in mobile markets and there are many infrastructure markets with less than three nationwide infrastructure competitors. If these numbers of competitors in a market were used to define market failure then there would be a very large number of regulated markets in New Zealand.

123. Rather, we believe the Commission's task in its market study is to step back and determine whether the outcomes being delivered to end-users by New Zealand's mobile markets are consistent with what the Commission would expect from effective competition. As we explain in section 1 above we believe the market outcomes for end-users are excellent and consistent with vigorous competition.

The nature of competition in future structure

124. In its Issues Paper that Commission asks respondents for views on how they see wholesale competition evolving over the next 2-5 years. The answer to this question is, of course, "it depends" - 5 years is a very long time in any technology market, making the range of plausible scenarios large. We set out below Spark's current views on those plausible scenarios that we consider most demonstrative of this range. The breadth of outcomes that are plausible should, we believe, give the Commission pause when considering whether it should or usefully could introduce regulatory instruments - that are by definition relatively static - into this environment.

IOT and 5G networks will enable new wholesale MVNO services

125. In terms of the future state of the market, high growth in M2M and IOT services and the potential for global OTTs to play an increased role in mobile markets have the potential to

radically redefine competition in, and the structure of, mobile markets as an increasing number of industries and sectors adopt digital business models, and the range of services offered by MVNO grows.

126. 5G and IOT networks promise to disrupt multiple sectors and enable a range of efficiency-enhancing new digital business models and services. Connected cars, smart utilities and full traceability of agriculture and horticulture are some of the more commonly discussed use-cases for these networks. MNOs do not provide any of these services today at any scale, and it is not at all clear that MNOs will be the most efficient retailer of them - because by and large the value these services provide will come not from the connectivity but the data analytics that come from aggregating observations from multiple (tens, hundreds, thousands) sensors or devices and advising the end-customers (car manufacturers or transport network operators, utility operators or local Councils, farms in the examples provided above) how to achieve efficiencies in the operations of their businesses or assets.

127. Spark has invested in two separate IOT networks already, and is well-advanced in planning for a 5G network. We have established a data analytics advisory business. We hope to provide both 5G/IOT connectivity and data analytic advisory services and to bundle those services where we can. But we do not expect to be the dominant or even the largest provider of these services in any vertical industry or market. We will have done very well, for example, to supplant John Deere as the leading provider of tractor fleet diagnostic and programming data services. It is far more likely that we will be a wholesale connectivity provider to John Deere, or its New Zealand agent(s) or partner(s) - if, that is, we are their selected IOT network partner.

128. We are starting to see the first examples of this shift today, with [**JSPKCI** for example now purchasing wholesale data-only connections from Spark for connected car services.

eSIMs have the potential to enable radical change within mobile markets

129. Embedded SIMs (eSIMs) are remotely provisionable SIMs, embedded within a device, which allow a mobile device to be associated with the user of that device without having to physically insert a SIM card. eSIMs are currently only available in New Zealand in smart watches and wearables and iPads but are expected to increasingly become available in smartphones over the next 5 years.

130. Major global technology companies such as Apple and Alphabet are already experimenting with eSIMs and exploring their potential to facilitate their entry into a number of adjacent markets including mobile connectivity, mobile payments and direct to consumer mobile sales and services:

- a. Google has established itself as an MVNO on the Sprint, T-Mobile and US Cellular mobile networks in the United States, and now offers mobile services to consumers offering a "network of networks" that gives customers the best available network between those three networks and 2 million WiFi hotspots across the country;
- b. Apple has developed partnerships with some MNOs and MVNOs to provide connectivity on the iPad's "Apple SIM". This lets iPad users select from a range of plans on different mobile networks without visiting a store or purchasing a physical SIM card from any of them. It has also announced that the new iPhone range will include an eSIM functionality.

131. As eSIMs become more prevalent it is likely they will affect existing market structures in some way. Possibilities are:

- a. New retail models:

- i. MNOs may have to compete directly with global OTT MVNOs for the retail customer relationship. A number of those OTTs already have extensive direct purchasing relationships with New Zealanders, some of which intersect directly with New Zealanders' use of mobile services. For example, [**JSPKCI**. These OTTs may establish different retail value propositions, such as that offered in the US today by Google's Project Fi Plan (access to a network of networks that is able to switch customers dynamically onto the best network at any given time or location);
- ii. Alternatively, OTTs may instead choose to partner with one or more large international telecommunications providers, or "alliances" of telecommunications providers, in order to offer homogenised global services and benefits to customers; or
- iii. As discussed above, eSIMs may also disintermediate existing MNO distribution channels, and facilitate the provision of nationwide sales of mobile plans and services to any device from any service provider with an MVNO agreement and an agreement with OTTs to put their plans onto the OTT's data plan menu.

b. Similar retail models:

- i. eSIMs may also, of course, simply change customers' mobile buy and switch journeys by removing the need over time for physical SIMs that are registered to a particular mobile network, thereby lowering switching costs for customers and lower support costs for providers. Global OTTs or providers may not establish sustainable models for serving retail mobile customers in places such as New Zealand, and may be more attracted to higher growth markets than mobile connectivity markets. In this scenario we may well see further entry from additional (domestic) MVNOs, although we continue to expect they would need to be able to identify opportunities for sustained differentiation to be confident of doing so.

132. In each of scenario (a)(i) and (a)(ii) above, potential new entrants into New Zealand's mobile markets would likely be able to apply scale efficiencies (in addition to bundles with OTT apps and/or mobile devices) as a differentiator to existing mobile market participants - making those scenarios more market-impacting than (a)(iii) or (b)(i).

133. Equally, those same scenarios would have greater impact on the nature of wholesale MVNO services. If large MVNOs with global scale arrive, the wholesale market may, for example, shift towards selling very large and undifferentiated "tranches" of network capacity or data, network slices designed to provide specific performance characteristics that are unaffected by other network traffic, or even selling network capacity on a spot market.

New infrastructure-based providers

134. The issues paper asks about the likelihood of a fourth network provider. It notes the high entry costs for a new MNO and notes the high cost of deploying mobile networks in New Zealand, in particular in rural areas. However, while the cost of deploying contiguous coverage networks in New Zealand is very high, in the future networks will be more varied with a range of different coverage requirements.

135. We are seeing different network models appearing based on different business models. For example, in terms of IOT use cases and value alone, IDC identified nine key IoT use cases for New Zealand, estimated to be worth NZ\$2.2 billion net over ten years. There is significant

value in new markets, and providers are deploying networks to service these needs. IDC report that, in the last 12 months alone, the number of IOT networks deployed has grown from two nationwide Low-Power-WAN IoT networks to seven. These networks are being deployed using a variety of technologies and using licenced and unlicensed spectrum.

136. The issues paper focuses on entry conditions for a conventional network deployment. However, if a fourth mobile network is built, it won't necessarily be a conventional mobile network and these networks require a different set of entry conditions, for example:
- a. **Licensed and unlicensed spectrum available for new network models:** the spectrum ranges available for new networks will be wider and conventional competition considerations may not be relevant. For example, operators may use wi-fi or other shared bands, or conventional licensed bands for wireless broadband services. Therefore, operator approaches to spectrum will reflect a range of operator business and capacity requirements;
 - b. **New infrastructure sharing models:** mobile co-location and infrastructure sharing practices are now well established in the NZ market. Further, new operator business models and technologies will facilitate different sharing arrangements. For example, wireless internet providers already use school infrastructure to provide wireless services and Chorus is trialling use of its access infrastructure for wifi-delivered services; and
 - c. **Geographic coverage may vary:** a number of new use cases do not rely on national mobility or coverage. For example, an urban transport network or smart city initiative, or a network designed to provide fixed wireless services, will not have the same coverage requirements of a traditional mobile network.

137. Predicting how entry may occur in a sector as dynamic as the mobile sector is an impossible task. The more relevant question is whether there are barriers to such entry that require regulatory intervention. With a regulated roaming service that has never had to be used, a recent 3rd entrant that has grown rapidly, decreasing spectrum scarcity, and a decreasing requirement for both contiguous or nationwide coverage, we do not believe there are.

4. Consumer engagement and satisfaction with mobile services

138. The issues paper raises a number of discussion items in chapter 6 on consumer engagement and satisfaction with mobile services, and seeks views in particular on:
- a. the ability of consumers to assess alternative offers and to switch between service providers, a source of competitive pressure on suppliers of mobile services; and
 - b. consumer trust and satisfaction with mobile services.

The Commission approach to identifying market concerns

139. The issues paper considers possible initiatives to promote switching behaviour, including requiring mobile providers to provide "right-planning" information at the expiry of their contract term and requiring mobile providers to provide "data portability". As we discuss above in our submission, we do not believe the Commission should be considering possible regulatory interventions or remedies before it has assessed the state of competition in mobile markets and concluded whether there are in fact competition problems that may require regulatory remedies.

140. No New Zealand mobile network operator, for example, offers term contracts for mobile plans anymore, making the theoretical concerns discussed in the issues paper as potentially requiring regulated “right-planning” advice much less relevant to our market than to others.
141. Regulated or mandated consumer interventions are never costless. A number of those described in chapter 6 of the study would add considerable cost to telecommunication providers which must inevitably be weighed against the benefits they are likely to provide to the efficient operation of relevant markets. If the study does not provide evidence of enduring market failure, we think that good regulatory practice continues to require forbearance and restraint by the Commission.
142. Even if a market failure was identified, then the Commission should first consider whether initiatives such as consumer education and increased understanding would better address market concerns. Any interventions should as a rule be proportionate to the extent of any economic problem identified. Evidence-based intervention remains a relevant consideration to all such regulatory decisions.
143. Consumer satisfaction is a key focus for Spark and, although we still have plenty of room for improvement, we think the telecoms industry compares favourably with other industries in New Zealand.

Ability to compare mobile offers and act on those comparisons

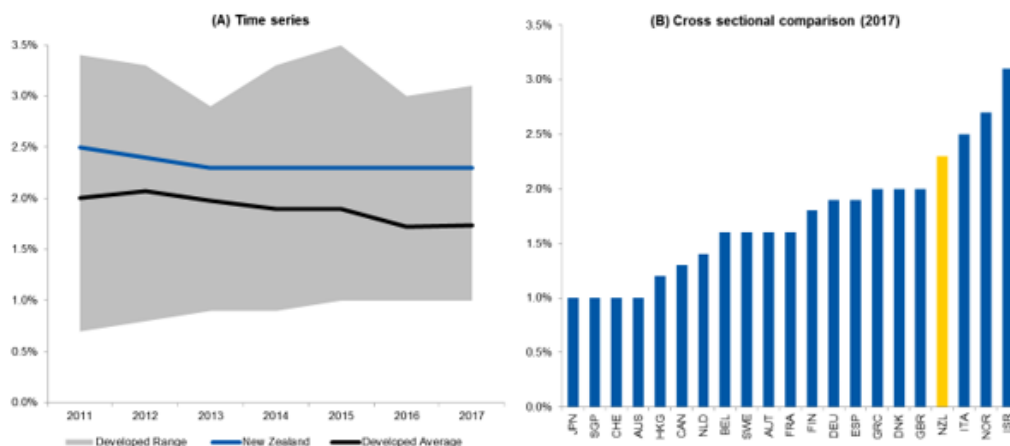
144. The issues paper identifies several factors which, if evident in the market, could be concerning. However, the factors explored in the paper are unlikely to be material in the New Zealand market and level of reported consumer switching indicates that consumers are readily able to switch providers.

Reported switching behaviour indicates mobile customers are prepared to change provider if they see a better offer

145. Contrary to the potential concern expressed in the issues paper, the level of reported switching in the New Zealand market suggests that consumers are informed and can easily switch between providers. NERA report that, based on Global Wireless Matrix data, New Zealand churn rates of around 25% per annum are the third highest amongst developed countries, and over 20% higher than the average. [**JSPKCI** This is a significant level of churn and strong evidence that customers are able to switch providers.

Figure 13: New Zealand churn rates²⁷

Figure 10
NZ churn rates vs developed countries in Merrill Lynch Global Wireless Matrix



Source: NERA analysis of Merrill Lynch Global Wireless Matrix 2018.

Note: Does not include 2degrees data as it did not disclose sufficient information to Merrill Lynch.
 The developed categorisation is determined by Merrill Lynch.

None of the concern switching barriers are a concern in the NZ market

146. Further, this result should be unsurprising as none of the potential information or switching barriers referred to in the issues paper are significant features of the NZ market:

General trend to simplify products

147. New Zealand operators have been simplifying plans over time, with most now mirroring the simplified structures used by Skinny that were reported by consumers as being significantly easier than others to compare (Consumer NZ survey from February 2018).

148. Simplified products have made it easier for consumers to understand and compare plans. We note the Consumer NZ report referred to in the paper dated from 2017 and pre-dated the growth of mobile plan simplification, including in respect of open-term contracts and interest free payment plans for devices. The recent February 2018 study by Consumer NZ shows the most common problem areas for customers. Switching was not even mentioned in this list.

149. The main differentiator between plans is now data allowance and most handsets have built in functions which allow users to see how much data they use over any period of time. Spark also makes this information readily available as part of the MySpark app which allows users to monitor their own usage on an hourly, daily or monthly basis.

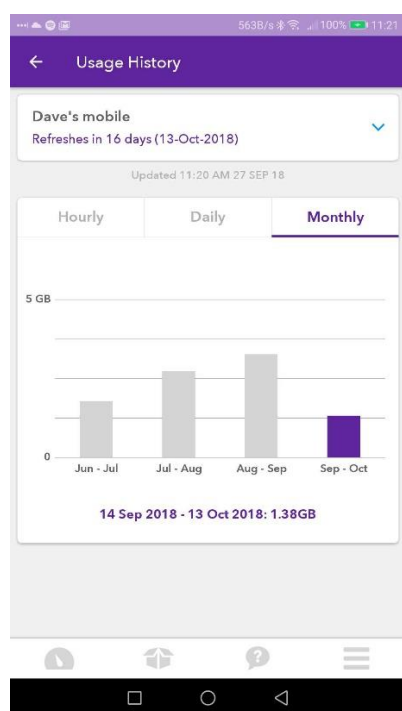
150. Consumers who favour certainty in regard to data charges can also now subscribe to an “unlimited” mobile plan where they won’t receive any data overage charges, although their maximum speed may be reduced after 22GB of usage. In] 2017 Spark’s price for this type of unlimited mobile plan dropped from \$129 per month to \$79 per month inclusive of access to value-added services such as Spotify Premium and Lightbox. []SPKCI

High consumer adoption of self service and provider apps

²⁷ Source, NERA Competition in the New Zealand Mobile Market

151. The New Zealand market has a high level of adoption of provider apps for managing services – and these apps give consumers ready access to detailed usage data.
152. Spark's data and automation deployments, and improvements to customer websites and apps, have reduced customer service calls by 24%²⁸. Our improved Spark App now have 840,000 unique users, a 15% increase on FY17. In the last financial year Spark launched four customer-facing virtual assistants of 'chatbots' which are resolving simple customer questions, and we've completed migration of 178,000 consumer and small business customers to new, simplified plans with self-service functionality. Our mySpark app or Skinny self-serve capability allow customers to manage their accounts (check their billing, add new data or calling options) and these give detailed information on monthly usage. Customers can easily transition to the best plan for them.

Figure 14: MySpark app



Term contracts and early termination fees are uncommon in the market

153. New Zealand mobile providers do not require lengthy term contracts. As at October 2018, no NZ operator was offering on account term plans on their websites. Pre-paid services also do not require a term commitment.
154. Spark now only sells open term consumer mobile plans (ie no minimum term contracts) for its pay monthly, prepay and sharing plans. These plans have no upfront fees and there are no penalties, such as early termination fees, for cancelling. Our mobile broadband plans are available in Open Term, 24 month-term or prepaid options.

Providers offer transparent handset funding and handset locking is rare

155. Spark's approach to handsets leaves the power with customers. Customers can purchase a mobile handset outright or on a 12 month or 24 months interest free payment plan. If the customer wishes to leave Spark before their payments plan is complete they can simply pay the remaining amount owed without any additional penalties or the need to pay back any discounts they may have already received.

²⁸ Spark New Zealand Annual Report 2018

156. Handset payments are delinked from monthly plans and even available on pre-pay options. Consumers pay the same price and have the same interest-free handset payment options for the handset whether they opt for prepay or post-pay on account plans. A customer that purchases a handset from Spark under a payment plan is not required to subscribe to mobile prepay or postpaid services from Spark for any period of time.
157. This approach removes the risks of over-recovery of phone payments by bundled plans as seen in the UK. Fixed term contracts which bundle handsets can leave customers paying a higher plan price at the end of their term until they take action²⁹.
158. Historically, Spark has only locked a small subset of its devices, all of which can be easily unlocked by taking the device to a Spark store. As noted in the discussion document, Spark makes a nominal charge for those who wish to unlock their device within 9 months of purchase, and we unlock the device for free after 9 months. In most cases network locking is applied to reflect the cost of significant handset subsidies provided to consumers to reduce any barriers to switching to or remaining on the Spark network.

Bundling

159. As above, mobile bundling with other communications services is not a material feature of the NZ market. This increases customers' ability to move around and we see this in the switching numbers.

Spark's consumer satisfaction initiatives

160. Nonetheless, we accept that we need to work hard on improving our service performance and service experience for customers.
161. Consumer satisfaction is a key focus for Spark and, although we recognise that there is always room to improve customer service outcomes, we think the New Zealand mobile telecommunications markets compare well with comparable product markets in New Zealand and telecommunications markets in other comparable jurisdictions.
162. Aggregated communications industry data shows that, although there are a number of areas where as a whole the industry could improve, the telecommunications industry rates relatively well in delivering good consumer outcomes when compared with other industries. This is especially the case for mobile services which receive significantly fewer complaints than fixed services.
163. Industry data from the 4 leading communications providers showed an average of 8.2 complaints were received per 100,000 mobile connections, compared to 48.6 complaints per 100,000 copper connections and 65.6 complaints per 100,000 fibre connections³⁰. This compares favourably with New Zealand banks (54 complaints by 100,000 connections) and power companies (84 complaints per 100,000 connections).
164. A number of telecommunications providers have provided their customers with access to efficient electronic self-help tools. Industry data has shown that consumer take-up of these tools is very high with the industry report showing that 93.9% of interactions with telecommunications companies are via electronic / digital channels, with the main forms of interaction being via text, mobile apps and websites provided by the retail service provider.

²⁹

[https://www.citizensadvice.org.uk/Global/CitizensAdvice/Consumer%20publications/Handset%20Report_%20Full%20draft%20\(1\).pdf](https://www.citizensadvice.org.uk/Global/CitizensAdvice/Consumer%20publications/Handset%20Report_%20Full%20draft%20(1).pdf)

³⁰ Industry figures were gathered from customer service data covering the periods September 2016 to March 2018

165. We are putting significant efforts into improving consumer satisfaction and these are bringing results. We seek feedback on interactions with customers through follow up surveys and our net provider score has improved from [] **JSPKCI** over the past 18 months and we are seeing steady improvement on favourability relating to key aspects of our interaction with our customers.

Price Comparison websites

166. Spark is of the view that consumers have very good access to information about price, service, products and features available in the market. As a company, we advertise our offers across a broad range of interactive, social and traditional media, and our contact centres are well known and provide a point for customer questions to be answered directly. Our retail stores are also a hub for face to face communication and explanations of how our offers, products, services and features work.

167. Spark has concerns, however, about some price comparison websites. People go to these services for what they perceive to be a clear, independent and unbiased comparison of services available in the market. We are concerned that the Digital Comparison Tools (DCTs) operating in New Zealand today do not meet this standard and can mislead customers.

168. For example, they are not always clear about how the order of their results are influenced by commercial arrangements and they often focus on headline prices (or short term offer headline prices) rather than giving the full price, or clearly showing the additional elements included in a particular offer.

169. The UK's Competition Market Authority report into DCTs from September 2017 identified four high-level principles for how DCTs should be have in order to support consumer trust and informed choice between DCTs and between supplier. It noted that DCTs should treat people fairly by being clear, accurate, responsible and easy to use. This is consistent with comment from Which? in the UK from 2012³¹.

170. The scale of the issues arising from unregulated DCTs was demonstrated by the need for Ofcom in the UK to run an accreditation scheme for price comparison websites since 2006 to provide assurance that the price comparison calculations of relevant services (e.g. fixed-line, mobile, broadband, television services) offered by accredited providers are accessible, accurate, transparent and comprehensive³².

171. The evidence may well find that a similar scheme should be adopted in New Zealand before any weight is to be given to data provided by DTCs. For example, when comparing the fastest fibre speeds using the service Glimp, as an example:

- a. The first service shown is for Orcon who have a headline price of \$49.98/month. The small print shows this is a six month half price offer and the usual price is \$99.95/month.
- b. All products offering the fastest fibre speed will be buying the same input but the speeds shown include 900/500, 900/95 and 950/400
- c. There are no mentions made on the Spark product pages for the included items such as Lightbox and half price Netflix.
- d. The Spark fibre max products shows as being available on aa 12 or 24 month basis when it is only available as an open term or 12 month contract.

³¹ <https://www.bbc.com/news/business-17492343>

³² <https://www.ofcom.org.uk/consultations-and-statements/category-2/price-calculator-accreditation>

e. There is no mention of our new 'unplan' broadband product.

Figure 15: Pricing results from Glimp comparison site

Filters

Landline Yes No
 Contract Yes No

Slowest (ADSL) Slow (VDSL)
 Fast (Fibre100) Fastest (Fibre+)

There are 17 plans for your search terms.

<p>Featured</p> <p>Offer expires in: 7 days More info</p> <p>orcon</p> <p>\$49.98/month</p> <p>SIX months HALF price. \$99.95/month for the remaining 6 months</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 12 Months</p> <p>Modem: Free Rental Setup Cost: Free Termination: \$250</p> <p>Sign Up Now</p>	<p>Featured</p> <p>Offer expires in: 7 days More info</p> <p>slingshot</p> <p>\$99.95/month</p> <p>Enjoy 3 months of FREE broadband!</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 12 Months</p> <p>Modem: Free Rental Setup Cost: Free Termination: \$250</p> <p>Sign Up Now</p>	<p>orcon</p> <p>\$99.95/month</p> <p>Google Wifi 3 pack rental</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 24 Months</p> <p>Modem: Free Rental Setup Cost: Free Termination: \$250</p> <p>Sign Up Now</p>	<p>slingshot</p> <p>\$99.95/month</p> <p>Enjoy 3 months of FREE broadband!</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 24 Months</p> <p>Modem: Free Rental Setup Cost: Free Termination: \$250</p> <p>Sign Up Now</p>
<p>MyRepublic</p> <p>\$99.99/month</p> <p>\$100 Visa Prezzy Card</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 12 Months</p> <p>Modem: Free Setup Cost: Free Termination: \$240</p> <p>Sign Up Now</p>	<p>vodafone</p> <p>\$99.99/month</p> <p>3 months free broadband!</p> <p>Data: Unlimited Speed: 200 / 20 Contract: 24 Months</p> <p>Modem: Free Setup Cost: Free Termination: \$299</p> <p>Sign Up Now</p>	<p>MyRepublic</p> <p>\$109.99/month</p> <p>\$200 off voucher for PlayStation4 500GB console</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 12 Months</p> <p>Modem: Free Setup Cost: Free Termination: \$240</p> <p>Sign Up Now</p>	<p>vodafone</p> <p>\$109.99/month</p> <p>3 months free broadband!</p> <p>Data: Unlimited Speed: 900 / 95 Contract: 24 Months</p> <p>Modem: Free Setup Cost: Free Termination: \$299</p> <p>Sign Up Now</p>
<p>2</p> <p>\$110/month</p> <p>Data: Unlimited Speed: 950 / 500 Contract: 12 Months</p> <p>Modem: \$15 Setup Cost: Free Termination: \$299</p> <p>Sign Up Now</p>	<p>NOW Phone & Broadband</p> <p>\$115/month</p> <p>Data: Unlimited Speed: 200 / 100 Contract: 12 Months</p> <p>Modem: BYO Setup Cost: Free Termination: \$199</p> <p>Sign Up Now</p>	<p>vodafone</p> <p>\$119.99/month</p> <p>3 months free broadband!</p> <p>Data: Unlimited Speed: 900 / 95 Contract: 12 Months</p> <p>Modem: Free Setup Cost: Free Termination: \$299</p> <p>Sign Up Now</p>	<p>Spark</p> <p>\$119.99/month</p> <p>Data: Unlimited Speed: 200 / 20 Contract: 12 Months</p> <p>Modem: Free Setup Cost: Free Termination: \$199</p> <p>Sign Up Now</p>

Here at gilm, we'll get you connected – our service makes the process faster, easier and cheaper! We're committed to helping you choose the right broadband plan by knowing exactly what's available in the market. Our wide range of broadband plans from trusted Internet providers in New Zealand cover the entire country, whether you're located in a bustling city centre or in quiet rural Aotearoa.

No matter what your unique Internet requirements are – whether that's ultra fast fibre broadband or an open term plan – we will show you the best broadband plan options available on the market. Our broadband comparison tool gives you tailored recommendations guaranteed to save you time, effort and money. Best of all – it's 100% free!

Easy-to-Use Broadband Comparison

Choosing the perfect broadband plan has never been easier with our easy-to-use filtering software. We understand that every family or household has different needs. You want to find the best plan that will get you exactly what you want – you don't want to pay for service you're not getting, or worse, pay for service you don't even need! Switching Internet providers will help you free up wasted costs, and get you the broadband plan that perfectly matches your lifestyle.

172. The level of reliance which consumers already seem to place on DCTs, the lack of transparency about their processes, and the inability to properly compare the quality of data in comparison sites in and of themselves, suggests that there may already be a need to set regulated requirements for their operation.

173. Where comparison sites rely on SamKnows performance data, the problem is potentially exacerbated as the shortcomings of reliance on a third party site will further increase problems with the accuracy of their comparison. Accreditation by the Commerce Commission could be a prerequisite for access to SamKnows fixed broadband speed measurement data and other data and regular monitoring by the Commission of the quality of the data used by DCTs would be equally important.

END

Attachment: residual questions not addressed in the body of our submission

Question	Comment
<p><i>Market shares</i></p> <p>Q1. How, and to what extent, do competitive conditions for mobile services vary by customer segment in New Zealand?</p> <p>Q2. In the on-account business segment, what evidence is there that the issues identified in our business study have changed since 2015? Specifically;</p> <p style="padding-left: 40px;">Q2.1 what are the most important features of a mobile service for business consumers?</p> <p style="padding-left: 40px;">Q2.2 how have business consumers perceptions towards 2degrees changed since 2015?</p>	<p>We see strong competition across all segments, and this is seen in the pricing behaviour and switching reports.</p> <p>We are not aware of any new issues to that considered in the Commission’s 2015 report. We are seeing all operators active in the business segment.</p>
<p><i>Usage trends</i></p> <p>Q7. How are mobile data usage trends expected to evolve in the next few years, and how might that affect suppliers of mobile services?</p> <p>Q8. How do you view mobile calling and messaging services evolving, given the emergence of OTT services?</p>	<p>The consensus of commentator forecasts is that there will be significant demand growth. This will be for existing and new use cases (which may have different performance characteristics) 5G technologies can more efficiently provide for this growth. Hence, the importance of getting sufficient spectrum out and deploy technologies.</p>
<p><i>Roaming, co-location and infrastructure sharing</i></p> <p>Q22. What evidence is there on whether or not national roaming and co-location regulation have promoted the efficient expansion of 3G and 4G coverage in New Zealand?</p> <p>Q23. What evidence is there that the other forms of infrastructure sharing such as provisions of RBI1 and the RCG, have been effective in allowing competing operators to expand their coverage?</p> <p>Q24. Have there been any problems in relation to the infrastructure sharing provisions of RBI1 that could inform infrastructure sharing arrangements in the future?</p>	<p>We’re not aware of any concerns. Infrastructure sharing is common in the sector, and mechanisms such as RCG are developing.</p>
<p><i>The ability of consumers to switch</i></p>	

Question	Comment
<p>Q27 What difficulties do consumers face in comparing retail offers for mobile services? How could consumers access better information about prices and plan packages, service levels and associated facilities like international roaming in order to identify the package that best suits their needs?</p> <p>Q28. Should mobile providers be required to provide consumers nearing the end of a fixed term with information on options that could better meet consumer needs?</p> <p>Q29. Should mobile providers be required to provide consumers with access to their data (usage, locations etc) in a format that facilitates comparison of services that best meet their needs?</p> <p>Q30. What barriers and costs do consumers face when switching and what improvements could be made to make switching easier?</p>	<p>Reported switching behaviour suggests that there are no competition concerns. Consumers have a great deal of information available to them via service provider apps, and this enables them to select a plan that best meets their needs. Further, term contracts are not common in the NZ market and consumers have a great deal of information via their apps.</p>
<p><i>Consumer satisfaction</i></p> <p>Q31. How would you describe the relationship between customer satisfaction and switching in New Zealand?</p> <p>Q32. To what extent have lower levels of customer satisfaction with Vodafone and Spark resulted in consumers switching to Skinny and 2degrees?</p>	<p>As set out in the body of our submission, we are working hard on consumer satisfaction, and consumers appear to be responding.</p>
<p>Q37. How and in what ways could the current regulation of mobile services deter some 5G investment?</p> <p>Q38. How well do regulated mobile services as currently framed in Schedule 1, both specified and designated (and associated STDs for designated services), support (a) efficient investment in 5G infrastructure (b) efficient sharing of 5G infrastructure? Are there any ways in which this could be improved?</p>	<p>The market is dynamic and the Commission should avoid distorting investment and the market through its regulatory activities.</p>
<p>Q39. What are the likely incentives for infrastructure owners to expand sharing arrangements and to provide access to their network infrastructure assets to third parties?</p>	<p>MNOs have all the incentives to share to reduce costs – and we are seeing this occurring today.</p>

Question	Comment
<p><i>Network slicing</i></p> <p>Q42. Is network slicing likely to increase the presence of non-traditional providers such as Apple and Google in mobile markets, and are these providers likely to be able to negotiate competitive wholesale access arrangements with MNOs?</p> <p>Q43. Given the non-traditional providers' economies of scale, what are the likely benefits and harms that may materialise for existing MNOs, potential MVNOs and consumers in New Zealand should a non-traditional provider enter the market?</p>	<p>Network slicing is about differentiated performance and, therefore, it will support non-traditional partners. We don't know what those arrangements will look like, but they will likely look different to current wholesale access arrangements reflecting the different characteristics of new bundles.</p> <p>Network slicing is beneficial in that it expands the range of network capabilities that can be delivered to customers as set out in the body of the submission.</p>
<p><i>Spectrum issues</i></p> <p>Q44. To what extent can MNOs compensate for a reduction in network quality from having less spectrum by building or acquiring access to more mobile sites?</p> <p>Q45. What restrictions, if any, ought to be placed on the forthcoming 5G spectrum allocation to best facilitate competition in 5G services?</p>	<p>As we set out in the submission, there is some potential to substitute a lower spectrum quantity with a more extensive network build. This substitution is not complete however as data rates by location matter to customers, not just aggregate network capacity. Build-network versus buy-spectrum produce different results by location.</p> <p>5G auction restrictions such as a use-it-or-lose-it hoarding restriction can create incentives on bidders to proceed with 5G network build soon after the auction concludes, rather than to speculate on the possibility of on-selling the spectrum for a profit later. The sooner 5G networks are built, the sooner customers can expect to start seeing the benefit of them.</p>
<p><i>e-SIM</i></p> <p>Q46. What impacts are e-SIMs likely to have on consumer switching costs?</p> <p>Q47. How will MNOs support the use of e-SIMs in mobile devices?</p>	<p>The evolution of SIM functionality can come in multiple forms: removable eUICC (embedded Universal Integrated Circuit Card); eUICC non-removeable (embedded SIM) which primarily delivers form-factor benefits such as size reduction or water-tightness; iUICC (integrated Universal Integrated Circuit Card) which is a physically a part of the system chip in a device; and Soft SIM refers to SIM functionality that is implemented entirely with software on a chip. All except the Soft SIM are still physical SIMs – it's just that they are embedded to varying degrees.</p> <p>The industry as a whole is still working through the support of e-SIMs. See the GSMA white paper on e-SIMs. https://www.gsma.com/esim/wp-content/uploads/2018/06/eSIM-Whitepaper-v4.11.pdf</p>