

# Submission in response to the Commerce Commission's Mobile Market Study

PUBLIC VERSION

## Competition at a turning point

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## Executive summary

### Mobile competition at a turning point

The New Zealand mobile market is competitive, comparing well to international peers, despite population density and topography challenges.

The impact of third operator 2degrees has been significant. Since 2degrees' entry and expansion, strong competition has delivered benefits to prepay, postpay and business customers and ongoing investment is delivering sustainable consumer benefits and innovation.

This mobile market review by the Commerce Commission comes at a turning point for 2degrees, which is now a robust and experienced provider with the scale, capability and incentives to do even more.

As we've said from the outset, there is a lot to be proud of:

- **Prices are well below the OECD average.** Call rates have plummeted from 89c per minute, with the creation of bundles delivering unlimited calling and texting from as low as \$30 a month. The Commission's analysis shows prices below the OECD average for all mobile services presented, by between 22% and 67% including large data bundled services.
- **Innovation and non-price benefits continue to change the market.** Product features such as Carryover Data have made mobile usage fair and Data Clock has changed the way customers go online. New Zealanders can call Australia within their New Zealand pack and Wi-Fi calling is improving service quality and increasing consumer access, including overseas.
- **Three player infrastructure competition is delivering the latest technology.** Networks have evolved from 2G and 3G to 4G, 4.5G, M2M and IoT. 5G is coming and the three operators are making rational infrastructure sharing decisions, as evidenced by the RCG network.
- **Wholesale competition is set to flourish.** With 2degrees' national mobile network at scale (c.98% own-network coverage including over 96% LTE coverage, and growing), it is now able to pursue a range of wholesale opportunities that will enable new retail competitors and choice for consumers.

### 2degrees and the future of competition

The fundamental changes of the last decade are important to note as we consider how competition will develop in the future. In 2009, 2degrees entered a closed market, with two different technology networks and high consumer prices. New Zealand is now an open market, with competitive pricing via three same-technology networks.

When it launched in August 2009, 2degrees quickly acquired one million prepay customers, before growing the higher ARPU postpaid and then business markets. While the rate of subscriber growth has since steadied, the company's underlying financial health has improved: it now funds its operations from cash flow, is profitable and recently announced an expansion of its bank financing arrangements.

Now that 2degrees' network covers nearly all of New Zealand's population, the structure of the New Zealand mobile market is set for increased retail and wholesale competition. Achieving a comparable footprint to its competitors means New Zealand now has three truly national network operators. This creates enduring competitive tension because 2degrees, as the newest entrant, is strongly incentivised to continue growing to deliver a return on past investment - and fund upcoming 5G deployment.

Mobile choice can be expected to intensify at the retail level, with three mobile network operators that drive each other to continually deploy the latest technology. We expect this will lead to more retail options for New Zealand consumers, including as 2degrees seeks to increase market share by enabling wholesale MVNOs, and incumbent operators are compelled to respond.



## Bigger in business

2degrees is also expanding further into the business market. The Commission's 2015 review of business mobile market competition identified particular challenges, which 2degrees is now able to overcome. With its national network largely deployed, 2degrees now uses national roaming for less than 1.5% of its traffic. The important 10-year milestone the Commission identified in its report will also be passed next year, and the company has reorganised its workforce and is developing business capabilities to further serve business customers.

2degrees already serves substantial business customers. These include large corporates, universities, ports, multiple District Health Boards, Local Government and significant central Government agencies, including the Ministry for Primary Industries (MPI). 2degrees has also been selected as a connectivity provider to the Government under the Telecommunications as a Services Common Capability Agreement (TaaS).

While these are important milestones, we expect growth in the business market to take time as 2degrees develops its reputation with the business community. 2degrees' experience in serving large, complex national organisations such as MPI is not widely known.

We do not consider there are regulatory issues to address in the business market and support ongoing monitoring by the Commission, rather than further regulatory intervention.

## MVNOs and increased consumer choice

Mobile Virtual Network Operators (MVNOs) are an important source of new revenue for 2degrees. The company has already helped establish the country's largest MVNO, Warehouse Mobile, delivering a truly differentiated product and pricing.

2degrees has also engaged with numerous operators that have expressed interest in launching an MVNO service. The company has invested in a Mobile Virtual Enabler (MVNE) platform and created an MVNO service model that enables a new operator to develop its own differentiated product without 2degrees controlling the form or price of its retail offer, how it sells its product or delivers customer support.

While MVNO growth to date has been limited by the cost of coverage (national roaming), now that 2degrees has a national network comparable to incumbent competitors', we expect the market will experience a positive competitive dynamic. With lower market share, but a need to grow so it can recover its investment and fund 5G, 2degrees will complement its retail activity with MVNOs. International experience shows that as MVNOs win customers from other networks, those networks respond with improved offers and host their own MVNOs.

As prices are already competitive in New Zealand, and the commercial opportunity for niche operators is more limited compared to larger markets, we expect new MVNOs to provide a greater choice for consumers. However, as we have seen overseas, the Commission should not expect this to correlate to lower prices.

2degrees is happy to share its MVNO experience to date in confidence with the Commission. There are lessons from its commercial discussions on why some MVNO access seekers in New Zealand have not been as successful, and why there are providers that can succeed.

## Regulatory settings are right

The regulatory settings that enabled 2degrees' entry remain fit for purpose. Any new network operator has access to advantages 2degrees did not enjoy at launch. In addition to regulated mobile number portability and colocation (which now occurs on a commercial basis where practical), new entrants now have National Environmental Standards for network deployment, and importantly, a choice of three same-technology providers for national roaming (as well as MVNO access).



Given improved market conditions, including industry competitiveness since 2degrees' entry, we welcome investors taking risks if they wish. We also support continued specified regulation of colocation and roaming as 2degrees had, but we do not support the amendment of these regulated services.

At this stage of 2degrees' rollout, a review of the national roaming service, including access terms or designation, is more likely to harm than promote competition, given its impact on existing competition and investment, and the emerging wholesale markets.

Policy-makers should also avoid well-intended actions that encourage unsustainable investment. Significant ongoing investment lies ahead. Our experience from being in the market for nearly 10 years is that this is a long-term game. Since 2012, there has been a growing international trend of four-to-three mergers in countries with larger scale and more favourable economics than New Zealand, indicating that fourth operator national mobile networks are not sustainable.<sup>1</sup> The introduction of a fourth national network provider in New Zealand could undermine a competitive marketplace by creating an environment in which two challengers weaken each other while leaving the established carriers relatively unharmed.<sup>2</sup>

### Regulatory certainty impacts investment

At a time when 2degrees is becoming an increasingly competitive force and beginning to drive competition in the wholesale market, any uncertainty as a result of this review is unhelpful to investors. Regulatory changes should be considered in the following context:

- Despite delivering well-recognised consumer benefits, after nine years in the market and an investment of more than **[C-I-C]**, 2degrees has yet to recover its investment. It cannot stand still and must invest further in product and network deployments, including wholesale. The regulatory environment should support this infrastructure investment, which the Government and Commerce Commission encouraged.
- Regulatory uncertainty can impact the ability to secure funds for much-needed capacity and increase the cost of capital. There are step-changes in product and technology investments ahead, and while we appreciate this review is not designed to create regulatory uncertainty, in practice, it does so.
- **[C-I-C]**
- Future decisions by the Government and Commission need to be careful not to weaken the third network operator. Risk can be reduced by quickly identifying whether or not there are genuine consumer issues and ensuring any proposed regulatory intervention is in the long-term interests of consumers.

These comments continue 2degrees' ongoing call for certainty for our investors as it continues to invest in infrastructure that more than 1.3 million Kiwis use every day.

Given the considerable risks, regulatory uncertainty poses to progress in the market, forbearance of further regulatory intervention and monitoring the progress of competition is the right approach.

### Infrastructure sharing is underway

While we do not support additional regulation, there will be opportunity for infrastructure sharing of 5G networks and 2degrees supports this where practical for 3G, 4G and 5G services. The viability and form of 5G infrastructure sharing in different geographic locations is yet to be determined. However, our expectation is that this will largely follow 4G:

<sup>1</sup> For example, in 2013 Hutchison and Orange merged in Austria reducing the number of national operators from four to three; in 2014 O2 and E-Plus merged in Germany reducing the number of national operators from four to three; in 2014 Hutchison and Telefonica merged in Ireland reducing the number of national operators from four to three; in 2018 TPG and Vodafone Hutchison Australia announced an intended merger which, if approved by the ACCC, will reduce the number of national operators from four to three.

<sup>2</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.



- Infrastructure competition at the centre, recognising the impracticalities and constraints that would result from co-location and RAN sharing in high traffic/capacity demand areas.
- Passive infrastructure sharing/co-location in areas with moderate to low traffic/capacity demand.
- Active infrastructure sharing in areas of low traffic density, with access to the RCG shared towers in areas in where infrastructure competition is deemed uneconomic and that require grants/Government funding (RBI2 areas). Given the significant challenges involved in 5G active infrastructure sharing for existing networks and customers, this must be left to commercial arrangements.

### Relevant service monitoring

The Commission will be required to conduct retail service quality (RSQ) monitoring following changes to the Telecommunications Act, which we expect will be adopted this year. 2degrees supports RSQ monitoring but wants to make sure this is carried out in a manner that avoids unintended impacts on the market and avoids unnecessary – but potentially significant – costs.

In particular, as a growing mobile operator 2degrees is keen to ensure:

- Competition and innovation are not harmed.
- A reasonable and practical approach is adopted.
- The Commission takes care to represent findings and comparisons across industries fairly and in context. The number of customer complaints in the telecommunications sector is low relative to the number of connections, despite multiple consumer touch points and service complexity compared to other industries. Mobile complaints are particularly low, at just 8.2 complaints per 100,000 connections.

We are keen to work with the Commission to help it understand the market and develop reasonable and relevant measures to address any concerns that it has.

### Backhaul impacts mobile and 5G fixed wireless competition

Chorus and the LFCs have a lot of regional monopoly fibre, which is needed to link mobile and fixed wireless cell sites. The cost of these links directly impacts the prices consumers pay and will become increasingly important as operators' networks densify with 4G and then 5G rollouts.

If this fibre is delivered at a reasonable rate, and fibre monopoly owners do not provide themselves backhaul at a lower price than they do to competing networks, this will support competitive 5G networks. However, these are monopoly services (unlike mobile network services) and we already have some concerns with the provision of this fibre by certain providers. It will be important to ensure the Commission maintains suitable regulated oversight of these services. At a minimum, this includes being subject to the non-discrimination obligations and the Commission being able to step in if issues emerge (for example as for competitive mobile services that are subject to Schedule 3 of the Telecommunications Act).

### Spectrum is not an experiment

Although commercial issues are for operators to manage, Government decides on the availability of a crucial input: radio spectrum. Spectrum impacts network capacity, performance and the costs consumers pay.

2degrees has significantly less mobile spectrum than other national mobile operators: 18.5% of key mobile spectrum compared to approximately 40% for Spark and 30% for Vodafone.<sup>3</sup> Although this has

<sup>3</sup> Blue Reach/Cayman have 11%. This excludes 3.5GHz (which other operators hold until November 2022), mmWave and non-IMT spectrum (which other operators have also acquired). Including these bands further reduces 2degrees' relative holdings.

not resulted in substantial competitive consequences to date, massive consumer data growth and carriers' ability to aggregate spectrum over 5G means it will be a significant factor.

Removing the currently used spectrum will increase 2degrees' costs and harm competition. In contrast, if today's spectrum – and that to be allocated for 5G - was more evenly allocated, the government would sustain the competitive consumer benefits brought by 2degrees. Balancing spectrum would enable 2degrees to use its national network to drive further price competition, innovation and service quality as data demand increases.

The Commission and Government should avoid an unfortunate experiment by setting aside spectrum for a fourth entrant when mobile operators are consolidating in countries with larger economies.

A key question for Government when allocating spectrum is whether to:

- Rebalance the holdings of three national network operators, ensuring all future mobile spectrum is allocated evenly, so future costs are lower and end users have more cost-effective access to new services; or
- Dilute existing providers' access to future spectrum so a new provider can attempt to deliver better consumer outcomes in a price-competitive market where margins are falling, network build is costly and significant ongoing investment will be required.

To improve future competition the Commission should:

- Support optimal, equal 100MHz allocations of 3.5GHz spectrum to each of the MNOs, enabling long-term competitive delivery of better quality services. Diluting spectrum increases costs and is counterproductive to maintaining highly ranked mobile network quality statistics.
- Prioritise a reduction in the spectrum disparities between Vodafone, Spark and 2degrees and not free up spectrum for a new, unsustainable player.
  - Ensure 2degrees' 1800MHz or 2100MHz holdings are not reduced. This would have a disproportionate impact on 2degrees' network performance, capacity and costs to serve customers.
  - Given existing disparities, ensure 2degrees receives at least the same amount of 5G spectrum as other national operators.
- Support appropriate reserve pricing, payment terms that support investment in network deployment for consumers;
- Ensure MBIE puts in place measures to prevent speculative operators making a profit at the expense of consumers, including enforceable implementation undertakings and limitations on on-selling.
- Consider the previously mentioned dynamic tension between the three MNOs now that 2degrees has achieved comparable coverage and the consumer benefits that will be delivered from a vibrant wholesale market.

Some have suggested set-asides for "open access" spectrum to support regional areas and/or wholesale competition. Although the fixed market requires open access to a monopoly fixed network, the mobile market is served by three same-technology national mobile networks, making an additional open access provider redundant. The RCG may be a single network in remote areas, but open access obligations are already included. Another open access network would undermine this Government investment.

### Bring down build costs

The ability to efficiently deploy infrastructure impacts the timing of consumer access to new technologies. Although infrastructure sharing between telecommunications operators now occurs largely on a commercial basis, this is not the case for non-telecommunications infrastructure. To encourage infrastructure sharing, the Commission could recommend Government consider:

- **Encouraging the ability to co-locate or co-site on non-telecommunication infrastructure:** Co-siting on buildings, utilities, certain local Government infrastructure/facilities, rail corridors and the like will be particularly important in densely built locations where there will be substantially more data traffic. Current sites (such as street light poles) may not be sufficient to address capacity needs. This could be achieved, for example, by extending provisions such as those that already apply to the road reserve).
- **Planning for wireless telecommunications infrastructure:** Local councils could be encouraged or required to consider future telecommunications equipment and relevant locations in their planning processes (for example, for new subdivisions).
- **Supporting changes to the Resource Management Act/National Environmental Standards/Planning Processes to accommodate 5G.** This includes:
  - Updating the National Environmental Standards, which are currently not fit-for-purpose for 5G infrastructure. For example, to ensure that the NES provides for different sized and shaped antennas required for 5G (for example massive MIMO antennas);
  - Recognising that future infrastructure sharing will require taller towers, which has consequences for the existing requirements of the Resource Management Act.



## Response to Issues Paper Questions

### Market shares

#### Q1. How, and to what extent, do competitive conditions for mobile services vary by customer segment in New Zealand?

Since 2degrees' entry and expansion, strong competition has developed across the prepay, postpay and business market segments. Increased competition is not only measured by 2degrees' (or any other operators') market share, but also by the competitive impact on pricing, constant innovation and investment across all operator offerings. Since 2degrees' entry, we have, and continue to see:

- **Strong price competition with lower prices per minute/MB and increased value:**  
2degrees halved the cost of prepay on entry and prices have continued to fall. The Reserve Bank has even referred to this as the '2degrees effect'. Prices have gone from near the highest in the OECD to being well below the OECD average, including for each of low, medium and very high data bundle users. 2degrees – and consumers – are constantly reacting to price changes and new products.
- **High innovation:**  
Operators are constantly trying to innovate to both attract and maintain consumers. Over this time, 2degrees innovations have included the introduction of the prepay combo, CarryOver Data, Family Share plans and Data Share plans, included Australian calls and texts, Data Clock, Unlimited Data and Wi-Fi calling.
- **Strong investment:**  
Significant market pressure between infrastructure-based competitors is resulting in increased investment, not only in the network and new technologies but also in services and products, as well as customer service quality.
- **Porting:**  
As a result of this competition, we see churn porting data evidencing consumers' switching behaviour when they consider better offerings are available from competitors.
- **Margin pressure:**  
Margins are being squeezed despite requirements for substantial ongoing investment in existing networks, as well as significant future investments, including for 5G, still to come.

In its Issues Paper, the Commission has noted a slow down in the growth of 2degrees market share. Importantly, while 2degrees is still growing its market shares – as should be expected – our exceptional growth rate has reduced as a result of the increased competition now in the market. Other national mobile operators reacted competitively to 2degrees', meaning that the New Zealand market is now characterised by competition and is performing very well.

2degrees' current smaller market share in business should not be taken as indicating a lack of competition.<sup>4</sup> As 2degrees nears its network build completion, it must invest considerable time and effort into building trust in its network within the business community. The reality is there is now stiff

<sup>4</sup> Commerce Commission *Study of mobile telecommunications markets in New Zealand*, 31 August 2018. In addition, we note that ARPUs should not be taken as indicating a lack of competition. We agree with the Commission that rising industry ARPUs do not necessarily mean that prices have increased given consumers are getting increased value. Nonetheless, we also note our analysis of industry ARPUs suggests that despite increased value being offered, blended industry ARPUs are not increasing. [C-I-C]





competition across the prepay, postpay and business markets, as we continue to work hard to increase revenue and market share.

We are not suggesting that competition has developed with the same ease or in the same way across all market segments. There are differences between the switching barriers that exist in each of the prepay, postpay and business markets. As a new entrant, 2degrees' strategy started by focusing on the consumer market. Having established itself in that area, it is now expanding into the business sector. This strategy is considered and rational:

- 2degrees entered into the prepay market where, while ARPUs were lower, the lack of fixed contracts meant that barriers to switching were less substantial, and customers valued price over ubiquitous coverage (which 2degrees did not have at that time).
- 2degrees then entered the postpay market, where at the time, fixed-term contracts with handset subsidies made customers more 'sticky', reducing the size of the actionable market and making it harder for 2degrees to gain customers:
  - 2degrees has since innovated to reduce these barriers (with other operators following in most cases). A prime example is the introduction of Mobile Repayment Options (MRO) and Open Term plans. As a result, Pay Monthly plans are no longer in the form of fixed-term contracts and the seeming ad hoc 'handset subsidies' has been removed from phone plans, making handset costs and plan charges transparent. Customers can now choose the device and plan that best meets their needs, and, subject to the repayment of outstanding amounts for any handset customers chose to use, they are now free to change provider at the end of every month.<sup>5</sup>
  - With this and other innovations like uncapped Carryover, Data Clock, 'Pool Plans' and Wi-Fi calling, along with competitive pricing and great service quality, 2degrees has significantly grown its share of the pay monthly market.
- 2degrees is now expanding into the business market, which as expected, has higher barriers to switching than the consumer segment. While 2degrees have won significant business customers, increasing our market share requires a large, ongoing investment. Market share will take longer to grow than in the consumer market due to longer sales cycles and the time it takes to build credibility, trust and reputation within the wider business community. While our market share in business is limited at present, our experience suggests we have already had an impact in driving competition in this market segment. (We discuss switching barriers in the business market in further detail in our response to Q2).

Consumer and business markets have developed as 2degrees has gained credibility with consumers. As a result of this competitive threat, Spark and Vodafone have to continually respond to maintain or grow their market shares.

We are also starting to see the same competitive response in the wholesale market for MVNOs, a market which 2degrees is now positioned to actively pursue. **[C-I-C]**

**Q2. In the on account business segment, what evidence is there that the issues identified in our business study have changed since 2015? Specifically;**

**Q2.1 what are the most important features of a mobile service for business consumers?**

The key features of a mobile service for business customers include:

<sup>5</sup> This payment relates to the cost of the handset and is not an ETC. Importantly, customers do not have to purchase a phone with us to get a discount on their plan. Our range of MRO terms has been driven by customer demand, not to prevent switching.



- Coverage;
- Reliability of service;
- The ability to address multiple user needs; and
- Wider ranges of products and services, including Value Add Services (for example, fixed PABX, WAN, LAN, network security products, cloud-based services, content, advanced reporting, M2M and/or OTT services).

Now that 2degrees has built out network coverage and increased service reliability, it is investing in new business services and building its reputation in the business market.

The business community is more risk-averse when it comes to communications services, as compared to consumers. This is understandable. Often, in comparison to other overheads, communications costs are not significant, but the costs of a bad choice or of a problematic transition can be substantial in terms of direct costs and the business impact. Because business customers usually have multiple users and communications services, the switching process can be costly in terms of time and resource. 2degrees has invested heavily to deliver effective transitional services to assist in removing this barrier, however, the perceived risks associated with changing providers can outweigh the perceived value offered by an alternative operator.

While price is, of course, a key factor of any business decision, our experience is that there is now very aggressive price competition, and customers who go to market are regularly receiving multiple bids for their business. As a result, cost has become less of a differentiator than innovation and value-add services. **[C-I-C]**

In practice, while many small business needs can be addressed by standardised plans, medium enterprises and almost all Corporate/Government customers have complex needs, requiring customised solutions, which often require us to invest in capacity in advance of customer uptake. The increased complexity and demand for customisation makes the process of winning and supporting these larger business customers very different from the consumer segment.

An additional barrier is that most business customers are satisfied with their current provider and consider the mobile market to be competitive (this is consistent with the findings of the Commission's 2015 Business Mobile Market Study).<sup>6</sup>

## Q2.2 how have business consumer perceptions towards 2degrees changed since 2015?

2degrees is now acquiring some substantial business customers. These include large corporates, universities, ports, multiple District Health Boards, Local Government and significant central Government agencies, including the Ministry for Primary Industries. 2degrees has also been selected as a connectivity provider to the Government under the Telecommunications as a Services Common Capability Agreement (TaaS).

However, we recognise that the coverage, reliability and confidence issues identified in the 2015 Business Mobile Market Study are still the main barrier to 2degrees' expansion in the business market. While a lot has changed in terms of our investment, we are still perceived as the younger, lower value operator by significant parts of the business community.

<sup>6</sup> The 2015 Business Mobile Market Study found only 5% of respondents were not satisfied and 44% of respondents considered mobile providers as the most competitive service providers, behind only power companies (47%), and ahead of insurers, fixed-line providers, and banks.



This perception is changing, and should substantially diminish over the next 1-3 years as a result of the following:

- **Actual coverage now far exceeds perceived coverage:**

Substantial network rollout has occurred over the 2015 to 2018 period. 2degrees is just completing its national network footprint rollout. We now have c.98% population coverage and over 96% coverage for 4G/LTE. 2degrees is continuing further 4G rollouts during 2018 and 2019. As consumers' understanding of our actual network coverage grows, we expect to see improved confidence in 2degrees' business services.

- **10 years old next year:**

In the second half of 2019, 2degrees will have been in the market for 10 years. As the Commission identified, and consistent with our own internal analysis, many business customers consider 10 years to be the period of time it takes to establish a track record. **[C-I-C]**

- **New and Updated 2degrees Business Products & Services:**

Reflecting the demands of business, including the demand for Value Add Services, 2degrees is investing in developing a broader range of products and services that will meet business needs. **[C-I-C]** While we have invested in building our capability in the past, notably with our purchase of Snap in March 2015, we need to - and are - investing further in competitive products and services to be able to compete effectively in the business market.

- **New Business Strategy:**

In August 2018 2degrees reorganised to create a Chief Business Officer (CBO) role and a new business team, tasked with identifying business needs, improving 2degrees' business capabilities and growing business market share.

In this context, 2degrees supports the Commission's ongoing monitoring of the business market. However, 2degrees does not seek further regulatory intervention to grow our business market share at this time. We consider that the regulatory changes of the past have successfully facilitated competition in the business and consumer mobile markets. Instead, we ask that the Commission and Government ensure we are able to sustain competition by:

- Reducing regulatory and investor uncertainty;
- Being mindful not to perpetuate the misperception that 2degrees is a lower value network and unable to offer comparable services (for example, by monitoring 5G rollout rather than customer service capability);
- Ensuring any new entrant is not provided with more favourable access terms than those provided to 2degrees, which is just completing heavy investment in network rollout **[C-I-C]**;
- Rebalancing 2degrees' spectrum holdings, which are already well below those of other competing national operators. 2degrees should not lose any 1800/2100MHz spectrum holdings and needs to acquire the same amount of 5G spectrum as other national operators. The Commission should support this to promote competition for the long-term benefit of end-users.
- Sustained competition within the business market requires a strong, credible national operator to compete against the incumbents, but regulatory actions inconsistent with the above could make the market unsustainable in the long-term, leading to consumer harm. 2degrees is making relevant business market investments now but needs time to execute its strategy.

We consider that, along with the MVNO access market, it is appropriate for the Commission to forbear from regulatory intervention in the knowledge that 2degrees has invested heavily in these markets and is strongly incentivised to compete for market share.

### Bundling of Mobile Services

**Q3. How, and to what extent, have consumers benefited from bundling of mobile services (the discount vs the increased complexity of switching provider)?**

**Q4. What are the constraints on non-MNO fixed line broadband providers' ability to compete by supplying their own bundles, such as bundling of fixed line broadband and electricity by Trustpower and Vocus?**

We do not believe that fixed operators require a mobile service to compete in the broadband market. While consumers can choose to bundle their mobile and fixed products with 2degrees, most do not:

- The vast majority of 2degrees' mobile customers **[C-I-C]** have not bundled their mobile and fixed services with us;
- Our experience is that a substantial number of consumers want “best of breed”, i.e. they prefer to pick the provider which they believe offers the best service in any particular market, and this is valued over the potential savings and the convenience associated with bundling;
- Bundling of other services and products such as content (for example, music or video) or TVs is more important to many consumers today;
- Non-MNO providers are already successfully competing against 2degrees' fixed broadband product offers in a variety of ways, including via bundling non-telecommunications services such as electricity. For example, Vocus' fixed broadband market share is substantially higher than that of 2degrees<sup>7</sup>;
- The number portability system in place means that switching providers is simple and fast regardless of whether a customer has bundled services with their existing provider: As with mobile porting, a customer with bundled services does not have to contact their existing (losing) operator in order to switch. Nor does the customer have to switch all their services, because the gaining operator can switch individual services.

In addition, as we discuss in our response to Q12, 2degrees is actively seeking to enable other providers to bundle mobile services via MVNO partnerships. However, if operators choose to take up this option, entering the mobile market as an MVNO should be expected to require that MVNO operator's commitment and significant investment in a new mobile business (for example, investing in customer care etc.). An MVNO access agreement is not the same as simply purchasing a product off Chorus for resale. With innovative, differentiated competitive offerings from multiple providers, simply reselling a mobile product, which is undifferentiated from products offered by an existing mobile provider, while lacking comparable service quality or expert mobile knowledge, is unlikely to be an attractive proposition to consumers. (We discuss the development of the MVNO access market in our response to Q12 to Q21).

While we do not consider a mobile offer is required to compete in fixed broadband, a separate potential bundling concern may arise in the future if important monopoly content was locked to a single provider – whether a fixed and/or mobile operator. This potential concern was highlighted in relation to the attempted Sky/Vodafone merger that the Commission ultimately decided in 2017. We consider the Commission should remain abreast of the role of key content in the wider telecommunication industry.

<sup>7</sup> In 2017 Vocus' estimated broadband retailer market share by connections was 13% versus 4% for 2degrees: Commerce Commission, 2017 Annual Telecommunications Monitoring Report, 20 December 2017.



## Pricing

### Q5. What are the reasons for high retail prices for higher volume bundles of mobile services in New Zealand compared to other countries?

New Zealand's small population and more challenging topography for rolling out wireless services compared to most of the OECD, makes New Zealand more expensive to serve per capita.

In this context, New Zealand's OECD benchmark performance represents a result New Zealand can be proud of. We would not expect, for example, New Zealand to be less costly to serve than the likes of Australia and many other Western European countries even without taking account of important differences in consumer usage and plan inclusions.

Even so, since 2degrees' entry, New Zealand has gone from ranking near the bottom of the OECD to well above average. The Commission's own OECD benchmarking table shows that New Zealand prices are lower than the OECD average for all mobile services, by at least 22% and up to 67%, including for higher volume bundles of mobile services.

Of course, as the Commission has acknowledged, differences in inclusions, mean the OECD and Commission benchmarking is not comparing 'apples with apples'. While benchmarking is useful at a high level, as is the case with comparison websites, ranking mobile plans is often over-simplistic and misleading. It appears that 2degrees' offers have not been included in the OECD benchmark results. In addition, the Australian plans that the Commission has referred to have several important differences to those offered by 2degrees. For example, the Australian plans are fixed-term contracts that have expensive early termination charges,<sup>8</sup> they have different carry-over offers, international bundles and promotional rates. The different consumer usage patterns also need to be taken into account.<sup>9</sup>

2degrees' rates are lower than that stated and substantially lower than in the benchmarking table:

- 2degrees currently offers \$55 for 10GB (with double data, i.e. 20GB, for the first 3 months);
- 2degrees' \$129 unlimited GB mobile plan (which is not throttled), is a relevant comparison, and depending on usage, is considerably cheaper than other OECD and Australian offerings. **[C-I-C]**
- There are different consumer use patterns and offerings between the New Zealand and other markets. The OECD benchmarking table attempts to draw comparisons between plans which are aimed at different consumer demands. For example, the baskets selected by the OECD, range from a 2GB to 20GB bundle, while 2degrees offers 3G, 10G, 15G, 25G and unlimited data bundles.

### Q6. What are the reasons for high retail prices for standalone mobile data services in New Zealand compared to other countries?

The Commission has not updated its standalone mobile data analysis since 2016, although we acknowledge that standalone mobile data services have not been a focus for the New Zealand market to date due to different consumer usage patterns. There is a very low demand for data only services in New Zealand at present. This is because:

- With extensive fixed services, including the UFB rollout, for the most part laptops and dongles at home and work use the fixed network via Wi-Fi and these devices are generally 'portable' rather than 'mobile', i.e. are not usually used 'on the go' and therefore often do not require portable standalone mobile data plans.

<sup>8</sup> For example, 50% of the contract price multiplied by the number of months left or a start of contract ETC of \$534.

<sup>9</sup> Commerce Commission *Study of mobile telecommunications markets in New Zealand*, 31 August 2018, paragraph 93 refers to data being taken from the two largest MNO in each country only.



- The majority of 2degrees' customers who use data only devices, buy a post-paid mobile plan for their primary device (usually a mobile phone) and then share the data from that plan, via 2degrees' "Shared Data" service, with a secondary 'data only' device, like an iPad or tablet.

The reduced demand for standalone mobile data packages reduces the revenue and therefore the contribution to network investment enabled through these services. At the same time, the standalone mobile data packages that are demanded pose a higher risk to network capacity and performance than handsets because they tend to be used in a similar way to fixed wireless products, but with high data demand in an unanticipated location, meaning that the operator is unable to plan for likely network impact.<sup>10</sup>

The Commission needs to consider New Zealand consumer demand/usage, population density, network coverage, as well as the impact of these factors on network quality, and the necessary network investment when it compares prices to those in countries with very different usage patterns and population densities.

While the prices of standalone mobile data products have improved significantly since the time the Commission's 2016 benchmarks were quoted (for example consumers can now get 250% of the 2016 data for only 70% of 2016 price), we anticipate continuing improvement as data-only demand increases (facilitating network investment, with new technologies and with increased spectrum availability e.g. 5G).

## Usage Trends

### Q7. How are mobile data usage trends expected to evolve in the next few years, and how might that affect suppliers of mobile services?

2degrees is seeing exponential growth in mobile data consumption on its network. Consistent with international trends, this is forecast to continue, driven by strong demand for new and high data use applications by consumers. **[C-I-C]**

This makes addressing 2degrees' spectrum disparity especially important. While 2degrees has had sufficient spectrum to compete effectively so far, its ability to innovate and stay competitive will be constrained in the future unless it holds an amount of spectrum similar to that controlled by Spark and Vodafone. To enable it to best promote competition, it needs to benefit from the same economies as other national mobile network operators.

Increased data demand has a significant impact on network capacity, which requires substantial investment to address, including new spectrum and sites. When data use increases, without a corresponding increase in revenue, this should be expected to put pressure on operator margins and investment.

A deficit in spectrum cannot be fully compensated for by additional towers: less spectrum equates to lower network performance and higher costs (we discuss why this is so in our response to Q44). It is therefore not in the long-term interests of end-users for the Government or the Commission to support exacerbating the existing spectrum disparities.

<sup>10</sup> This has been demonstrated by offerings of fixed wireless services to certain locations only, and the desire for additional separate spectrum for fixed wireless services, to protect against poor quality services for mobile customers. **[C-I-C]**



**Q8. How do you view mobile calling and messaging services evolving, given the emergence of OTT services?**

Globally and in New Zealand, SMS, and to a lesser extent voice traffic, has been in decline as OTT services have become increasingly popular. In the future, we anticipate seeing all mobile phone calling and message services shift to a data service.

Such services, in whatever form (OTT/Voice-over-LTE, next-generation voice and messaging platforms etc) will need to evolve to offer increased utility value to consumers (for example, offer consumers the ability to see others' presence, send group messages, see when a message has been read, etc).

Use of OTT services more generally, which is much wider than just calling and messaging services, will require increasingly large data packages over time. This will put more pressure on operators in terms of mobile network capacity and investment, requiring more spectrum and network investment (at the same time as creating downward pressure on revenue).

As stated previously, given this trend, it is important that the regulatory framework supports the necessary investment by ensuring optimal allocations of spectrum to national mobile operators, enabling operators to reduce network costs and better serve consumers.

**Retail Service Quality<sup>11</sup>**

**Q9. Do you agree that we have identified the relevant measures of mobile service quality?**

**Q10. What further measures and evidence may be relevant for monitoring retail service quality**

Mobile service quality is made up of a number of factors, including the high-level aspects identified by the Commission (network coverage, availability of services, mobile broadband speeds and customer service). The Commission will be required to conduct retail service quality (RSQ) monitoring following changes to the Telecommunications Act, which we expect will be adopted in Q4 2018. The Telecommunications (New Regulatory Framework) Amendment Bill defines retail service quality (for both fixed and mobile services) as the quality of retail service provided to an end-user of the service, including in relation to customer service and fault service levels; installation issues; contract issues; product disclosure, billing, the switching process and related information, service performance, speed and availability.

2degrees supports RSQ monitoring but wants to make sure this is carried out in a manner that avoids unintended impacts on the market and avoids unnecessary – but potentially significant – costs. We are keen to work with the Commission to help it understand the market, existing systems and develop reasonable and relevant measures to address any concerns.

In particular, as a growing challenger mobile operator 2degrees is keen to ensure:

- Competition and innovation are not harmed:
  - Any monitoring system should allow for consumer choice and associated product differentiation and should not discourage innovation and competition. For example, an online service may be appropriate for users who are price-focussed, but consumers who use higher value services are likely to have different (and higher) expectations regarding customer experience.

<sup>11</sup> Entitled 'Investment' by the Commission.



- Retail service quality is an area in which operators actively compete. Monitoring and reporting on retail service quality risks standardising an area in which 2degrees is currently motivated to innovate as a method of differentiation.
- The Commission should ensure that it adopts a sensible and fair approach to monitoring, comparing 'apples with apples', fairly monitoring speed, performance and service availability in a wireless environment, especially if individual operator performance is published. Existing operators do not all collect the same information in the same way or form.<sup>12</sup>
- The Commission must not distort competition through its reporting, for example by highlighting metrics which may not be relevant to the customer experience. Different consumers value different things and a one-size-fits-all approach is not helpful. For many customers, at least in the short term, we expect the benefits delivered by 4.5G and 4.9G will be indistinguishable from 5G. **[C-I-C]**
- A reasonable and practical approach is adopted, recognising that:
  - Mobile networks are technically different from fixed networks: they make a greater use of shared resources and are more traffic-sensitive, making wireless service monitoring far more complicated. Mobile service quality will be influenced by the device used, use application, geographical factors, buildings, number of concurrent users, proximity to cell sites, weather etc, much of which are not in an operator's control.
  - Additional monitoring will have significant compliance costs and will detract our people from working on delivering services to consumers. Monitoring should be focussed on information useful to the Commission/consumers, where benefits outweigh the costs, rather than adopt a costly 'catch-all' approach. The scope of monitoring should also be reviewed regularly to ensure that the Commission's metrics remain relevant and up to date.
  - Some of the metrics the Commission may be interested in are not currently recorded, making the provision of historical data difficult or impossible. This may necessitate new systems of data collection being put in place, which may require some time to implement.
- The Commission takes care to represent findings and comparisons across industries fairly:
  - The number of customer complaints in the telecommunications sector is low by number of connections, despite multiple consumer touch points and service complexity compared with other industries.
  - Mobile complaints are particularly low, at only 8.2 complaints per 100,000 connections. The Commission's Consumer Issues Report has not presented complaints data in this context and we consider also providing a per connection figure in parallel with total complaint numbers would be more informative for consumers.

We look forward to working with the Commission on identifying and adopting fair, comparable metrics that focus on useful measures for consumers, whilst avoiding unintended consequences for both operators and consumers.

**Q11. What are the competition incentives and constraints in New Zealand for improving customer service quality?**

We are constantly seeking to improve customer service quality because of the strong competitive incentive to do so - this is key to both maintaining and growing our customer base. 2degrees differentiates by providing a great customer experience and constantly investing in service improvement. **[C-I-C]**

<sup>12</sup> This has been an issue in the provision of data for past monitoring processes. In addition, 2degrees has recently contributed RSQ data to an industry report. **[C-I-C]**





This emphasis has been key to acquiring 1.3 million mobile subscribers in less than 9 years (one of the fastest growing third mobile entrants worldwide), and our track record of very strong customer satisfaction results with both high industry NPS scores and multiple customer awards, (for example, winning the Canstar award for most satisfied customers for mobile plan providers for the fourth year in a row).

With 1.3 million subscribers there will be issues from time to time, but these are not due to lack of regulatory oversight. [C-I-C]

In our experience, the key constraints for improving customer service quality include:

- **Capital and resource constraints:** This includes capex for site build, upgrades and new customer care systems/functions and opex pressures in a competitive market. [C-I-C]
- **Spectrum:** 2degrees' much smaller relative share of spectrum impacts capacity and cost (and thus the quality of service over time), for example, our ability to provide for greater data bundles and product availability.
- **Wide customer mix:** To be a full-service provider 2degrees services cater to a wide customer mix, not just customers that can self-serve online. We provide a range of parallel options for customers, e.g. digital, call centre and in-store facilities.

#### MVNO based entry

**Q.12 Do you agree we have described the key factors relevant to wholesale competition both currently and into the immediate future? Are there any other factors likely to influence wholesale competition for mobile services, going forward?**

2degrees has been seeking MVNO opportunities for the past five years, engaging with numerous operators that have expressed interest in launching a service as set out in confidential Appendix A.

In addition, over that time, it has assisted The Warehouse Group to launch Warehouse Mobile, which has grown to become New Zealand's largest MVNO to date, offering the choice of differentiated mobile products and pricing to consumers.

MVNOs will be a valuable source of future revenue for 2degrees, with growth in this segment to date limited due to:

- **Cost of coverage:** 2degrees has had limited ability to price competitively on a wholesale basis due to concerns regarding the underlying costs in national roaming areas before we built out our network. As the Commission's Issues Paper acknowledges, following a substantial build programme during 2015 – 2018, 2degrees' national network is now in line with that of other MNOs. This means that 2degrees is now able to compete more aggressively for wholesale opportunities.
- **Size of niche opportunities:**<sup>13</sup> 2degrees has approached overseas MVNOs that have successful niche plays in larger markets [C-I-C]. Having investigated the New Zealand market, they have decided not to enter given the size of the market opportunity here does not warrant the investment required.
- **Investment commitment:** A prospective MVNO player must invest in the launch of what is effectively a new mobile business. Successful overseas MVNOs point to the importance of a well thought out business case and the importance of launching and promoting a differentiated product. Some of the companies seeking an MVNO from 2degrees have focused largely on pricing and the expected margin they can achieve by replicating existing retail offers. Unlike in fixed, where RSPs

<sup>13</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.



purchase similar products from monopoly providers. The mobile market is characterised by innovative, differentiated products, which need to be invested in overtime to stay relevant.

- 2degrees has invested in a Mobile Virtual Enabler (MVNE) platform and created an MVNO service model that enables a new operator to develop its own differentiated product without 2degrees controlling the form or price of its retail offer, how it sells its product or delivers customer support.
- **[C-I-C]**
- We understand Trustpower has also received a competing MVNO offer from Spark. While a decision is expected imminently, as at the date of this submission 2degrees understands Trustpower is considering whether it will launch an MVNO with 2degrees or Spark. 2degrees has made a significant investment in this opportunity and if unsuccessful, will not recover a large amount of its investment. If 2degrees is selected, this 'deep MVNO' means Trustpower will be able to launch its own truly differentiated product in 2019. 2degrees has no visibility of the pricing or product mix Trustpower has developed.
- 2degrees has also invested in other MVNO models. **[C-I-C]**

Regardless of the type of MVNO (thick or thin), clearly any efficient MVNO access arrangements must cover costs. 2degrees' investment in MVNOs is a significant and resource cost commitment.

**Q.13 Please describe how you see wholesale competition evolving over the next 2-5 years.**

The completion of 2degrees' national network is expected to enable it to bid more competitively for wholesale contracts. When pricing MVNOs, 2degrees offers a national service, including coverage in areas where it purchases national roaming services. In the past, the blended rates it offers on voice, SMS and data would have been higher due to the costs and risks associated with national roaming, but these have improved over the last two years as the reliance on national roaming has reduced. Now, in 2018, national roaming accounts for a very small amount of network traffic.

The significant investment in its network requires 2degrees to grow its revenues and deliver improved returns.<sup>14</sup> Wholesalers represent an opportunity to improve the volume of traffic on the 2degrees network, minus retail costs. Although incumbent operators with greater market share may have previously regarded MVNOs as a threat to their existing customer base, 2degrees' lower market share means MVNOs are a source of incremental growth.

In addition, 2degrees must grow revenues to fund the cost of new spectrum and network deployment. Having invested in an MVNE (Mobile Virtual Enabler) platform, 2degrees has the ability to enable multiple MVNO operators, including those that do not currently own telecommunications architecture or sell telecommunications services.

2degrees' recent achievement of comparable network coverage means the mobile network duopoly is over. The presence of three national network operators creates a 'prisoner's dilemma'.<sup>15</sup> Previously, two operators with relatively equal market share had little incentive to host an MVNO, but the presence of a growth-oriented third network operator will change behaviour.

We expect New Zealand's wholesale market to follow overseas trends, whereby the third operator pursues growth via MVNOs, which results in subscribers moving away from the incumbent operators' networks. This will prompt a competitive response from incumbents, who will host their own MVNOs to draw end users back to their networks resulting in an increasing range of retail options over the existing three networks. We are already seeing the early signs of competition for MVNO business.

The pace of MVNO entry and growth of the segment over the next five years will also depend on whether MVNOs both adopt effective market entry strategies and effectively execute these. As demonstrated

<sup>14</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.

<sup>15</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.



overseas, successful MVNOs have a strongly differentiated value proposition that is targeted at a sufficiently sized market segment. To build a sustainable business, we consider MVNOs will need to operate as true mobile businesses, continuing to adapt products to changing market needs.

However, given New Zealand's already competitive mobile pricing, we should not expect an increase in MVNO numbers to necessarily equate to lower prices. When comparing the cost of comparable plans, for example, Germany (with 93 MVNOs), Switzerland (13 MVNOs) and Norway (41 MVNOs) have higher prices than New Zealand does today.<sup>16</sup>

Nor should expectations be raised that greater MVNO penetration will improve customer satisfaction, with the Net Promoter Score (NPS) for countries with 35 to 93 MVNOs varying significantly.<sup>17</sup>

It will, however, provide increased choice for consumers. Notably, a number of today's successful overseas MVNOs are low-cost online-only operators with a compelling product offering or those from adjacent industries that can leverage their brand and distribution. These may emerge in New Zealand. 2degrees cautions against assessing MVNO success in terms of the number fixed broadband operators that launch MVNOs as part of their bundle. As set out in our response to Q4, we agree with the Commission's view that evidence suggests their growth does not require a bundled mobile offer.

In our view, the key risks to improved wholesale competition are poor Government decisions on spectrum renewal and allocation, and any increased regulatory uncertainty as a result of extended Commission reviews/wholesale mobile access regulation. Spectrum decisions determine the underlying network capacity available to operators such as 2degrees. Although wholesale customers will be satisfied that the 2degrees has the reach to support their end customers, they will also want to be sure it will have the capacity to meet their needs as the network serves more customers using more data than ever before.

In addition, given 2degrees' position as the later entrant, it is seeking to grow MVNO competition using the network it is currently completing.<sup>18</sup> Regulation of MVNO access, when there are three potential Access Providers, would be unnecessary and unhelpful in promoting wholesale mobile competition.

#### **Q.14 Why do MVNOs account for a small share of subscribers and revenue in New Zealand?**

As set out in our response to Q12, there are several factors that the Commission must consider: the cost of coverage, size of niche opportunities and investment commitment of MVNO operators.

In addition, as set out in our response to Q1, New Zealand has strong existing competition in mobile, with competitive pricing, innovative products and margins being squeezed. This means there is less commercial opportunity for MVNO providers. For example, price changes since 2degrees' retail launch in 2009 have been so significant that, for many consumers the price is no longer a significant factor when choosing a mobile provider. In addition, price-sensitive customers are well served by the prepaid market competition stimulated by 2degrees.

#### **Q.15 How have the competitive conditions changed in the wholesale mobile services market? What impact has 2degrees had on the wholesale mobile market in recent years?**

Despite some pricing challenges as it has deployed its national network, 2degrees has enabled the country's largest MVNO, Warehouse Mobile, and stimulated wholesale competition by bidding for

<sup>16</sup> Comparative prices taken from leading MNOs for prepaid plans that include unlimited calls, unlimited text, 4-8GB included – data indexed to 5GB. Prices converted from local currency to USD. Source: NZ Commerce Commission, GSMA, Telegeography, MVNO directory, various industry reports, MNO websites, xe.com, Strategy& analysis.

<sup>17</sup> Source: McKinsey – Virtually mobile: What drives MVNO success (2014). Caggemini Consulting – Unlocking Customer Satisfaction: Why Digital Holds the Key for Telcos (2016).

<sup>18</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.



multiple MVNO opportunities. Confidential Appendix A summarises 2degrees' MVNO engagements to date. **[C-I-C]** Kogan Mobile – has announced plans to enter the market shortly on the Vodafone network.<sup>19</sup>

**[C-I-C]**

In its Mobile Market Study Scope submission of November 2017, Vocus states that “MNOs tightly control the MVNO’s capability and structure of their service”. However, **[C-I-C]**

With the ability to price more competitively, 2degrees expects its wholesale construct will mean it can secure more MVNO business.

**Q.16 Has 2degrees’ completion of deployment of its national network changed, or is likely to change, the competitive environment for wholesale mobile service going forward? If so, please describe.**

Yes, as outlined in our responses to Q13 and Q14 above.

**Q.17 Are MVNOs able to negotiate competitive wholesale access arrangements with MNOs? What are the key constraints facing MVNOs in New Zealand, and how do they differ from other countries?**

As outlined above, the competition challenges faced by MVNOs negotiating commercial agreements will be largely addressed by 2degrees’ ability to compete more aggressively following its national network deployment.<sup>20</sup>

Although a more competitive 2degrees will stimulate improved wholesale competition from Spark and Vodafone, there will still be factors in New Zealand that will continue to make it challenging for MVNOs:

- New Zealand has high market penetration (close to 120%), which limits the number and size of ‘underserved’ niche market segments that successful overseas MVNOs serve. **[C-I-C]**
- With New Zealand mobile prices already lower than OECD averages and strong price competition between MNOs, there are not the margins or price sensitive target market opportunities for MVNOs as there are elsewhere.

Although 2degrees has strong incentives to develop the New Zealand MVNO market, these factors mean it, and the Commission must tailor its expectations as to how big the New Zealand MVNO opportunity will be.

**Q.18 Where MVNOs have entered the market and expanded in other countries, to what extent has such entry been the result of commercial agreements, or based on regulated MVNO access or other conditions imposed by regulatory or competition authorities (such as conditions of mergers and/or obligations on spectrum licenses?)**

Globally, there is very little MVNO specific regulation. There may be a variety of network access, pricing and licensing terms imposed by regulators to facilitate competition, but there is no evidence of a

<sup>19</sup> The Commission has also noted that MyRepublic is planning on a launch in the next 12 months. **[C-I-C]**

<sup>20</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.



common-standard for regulatory settings to enable MVNOs. Nor is there a correlation between the presence of regulation and MVNO market share or improved consumer pricing.

In the UK, often cited for its best practice approach to regulation, Virgin Mobile entered the mobile market without seeking or requiring regulatory intervention. With multiple MNOs to choose from, the smaller MNOs had an incentive to increase market share through wholesale. T-Mobile sought market share and welcomed Virgin Mobile as a partner in joint venture. Today, Virgin Mobile subscribers make up more than 26% of T-Mobile's customer base.

The foundations for MVNO competition in the UK are now evident in New Zealand, with three comparable networks creating a 'prisoner's dilemma' given the operator with the lowest market share must continue to grow.

New Zealand already has key regulatory settings such as mobile number portability, which allows ease of switching between operators. Regulation of MVNO access is not warranted given prices here are already competitive, and nor can regulation address the niche-market limitations associated with a market of New Zealand's size. With 2degrees seeking to compete for MVNO custom, regulated MVNO access is more likely to harm than promote competition in wholesale and retail mobile markets.

**Q.19 To what extent has the emergence of MVNOs overseas resulted in improved outcomes for consumers in those countries? What effect has MVNO entry had in other countries on pricing, choice and investment?**

Evidence shows the emergence of MVNOs overseas has resulted in mixed outcomes for consumers. We discuss consumer outcomes in terms of pricing, choice and investment below.

### Pricing

In our response to Q13 2degrees noted the absence of a correlation between the number of MVNOs and the prices end users pay. For example, we can make an international comparison of the price a country's leading MNO charges for a prepaid plan with unlimited calls & texts, plus 5GB:

- In Germany, with 93 MVNOs serving 40% of the market, the price is USD\$28.77. New Zealand, with three MVNOs that have 1% market share, has a price of USD\$28.51.
- While there are countries with more MVNOs than New Zealand that have a lower price for the same package, there is no discernable trend. Austria has 18 MVNOs and a price of USD \$21.87, yet neighbouring Switzerland has 13 MVNOs and a price of USD\$48.70.

The more relevant question is whether the market is competitive and whether existing players – MNO or MVNO – have been able to deliver competition that has benefitted consumers. The substantial reduction in prices since the entry of 2degrees and continued evidence of price and non-price competition indicates this is the case in New Zealand.

Some operators have suggested reductions in ARPU would be a benefit delivered by increased numbers of MVNOs in New Zealand. When examining the impact of higher MVNO penetration on price, we compared the MVNO penetration rate per country to ARPU erosion between 2003 and 2017<sup>21</sup>. However, ARPU declines were not correlated to the strength of MVNOs in the market and there was no evidence that the number of MVNOs in a market drives greater ARPU erosion. Of course, as noted in our response to Q1, ARPU changes can also reflect increased value contained in a customer's service.

Given the price competitiveness of the New Zealand mobile market and the higher costs of operation here, 2degrees cautions against policy change aimed at reducing retail pricing without taking into account value. Mobile operators have added significant value to the mobile bundle since 2009, resulting

<sup>21</sup> Merrill Lynch Wireless Matrix Reports, 2010-2018, Strategy & Analysis.



in massive increases in customer utility. Reducing revenues needed to fund upcoming investment in 5G is likely to be counterproductive.

**Choice:**

The link between the number of MVNOs in a market and customer satisfaction is slight but weak. A proxy for the impact on choice is Net Promoter Score (NPS), which asks how likely customers are to recommend their mobile network provider to a friend or colleague.

Germany has 93 MVNOs with an industry average NPS of +3 and the United States' has 80 MVNOs with an industry average NPS of +14, although Sweden's 41 MVNOs resulted in -6 and Spain's 35 MVNOs -8. In New Zealand, NPS is **[C-I-C]** implying there are other factors at play when it comes to customer satisfaction than the number of retail operators in a market.

**Investment:**

Two major drivers result in MVNOs increasing investment by MNOs, but neither is especially relevant in New Zealand.

- *Lifting the mobile penetration rate* – principally in parts of Africa and large Asian markets where subscribers do not have mobile service. New Zealand has 120% mobile market penetration.
- *Catering to population density* – MVNOs may contribute to new revenues that aid delivery of service to lowly populated areas. New Zealand's three mobile networks already all have high population coverage and are working with government via the RCG initiative to address this issue in New Zealand. **[C-I-C]**

More importantly for New Zealand, MVNO entry can actually undermine investment by MNOs.<sup>22</sup> At a time when MNOs are looking at significant investments in 5G, investment should be encouraged, not discouraged.

**Q.20 What are the risks that fixed line only broadband providers could be foreclosed by providers of mobile and fixed line broadband bundles and what are the potential consequences of that for competition?**

The Commission notes correctly that non-MNO operators do not need mobile in a bundle to grow their businesses. As set out in our response to Q4, while consumers can choose to bundle their mobile and fixed products with 2degrees, most do not. In addition, non-MNO providers are successfully competing against 2degrees' fixed broadband product offers in a variety of ways, including via bundling non-telecommunications services such as electricity. For example, Vocus claims its mobile offer is constrained by MNOs, but Vocus' fixed broadband market share is substantially higher than that of 2degrees. Trustpower does not have a mobile offer and yet Trustpower's fixed-line broadband market share is similar to 2degrees'.<sup>23</sup>

<sup>22</sup> This has been recognised by both regulators and operators overseas. For example, in 2015 the Canadian Radio-television and Telecommunications Commission (CRTC) determined it would not be appropriate to regulate for mandated MVNO access given it would "significantly undermine" the investments that had been made by incumbent MNOs. Further, in 2017, the CRTC refused to amend this determination to allow permanent network access via wholesale roaming as it considered this would undermine its decision not to mandate MVNO access.

<sup>23</sup> In 2017 Vocus' estimated broadband retailer market share by connections was 13% versus 4% for 2degrees. Trustpower's market share was estimated at 5%. (Commerce Commission *Annual Telecommunications Monitoring Report*, 20 December 2017).



## MNO based entry

### Q21. To what extent, and in what ways, do the current spectrum holdings constrain competition in the supply of retail or wholesale mobile services in New Zealand?

2degrees has significantly less mobile spectrum than other national mobile operators: 18.5% of key mobile spectrum (IMT) compared to approximately 40% for Spark and 30% for Vodafone.<sup>24</sup>

While 2degrees is able to compete, having less relative spectrum:

- Limits the network capacity available for both existing services and to launch new services;
- Increases the costs of serving customers, which limits the ability to grow beyond a certain point, in turn reducing funding available to develop other customer services;
- Reduces network rollout options **[C-I-C]**; and
- Creates uncertainty for potential wholesale MVNO customers.<sup>25</sup>
- **[C-I-C]**
- 2degrees holds a range of spectrum until March 2021, which we expect to be renewed. 2degrees will be seeking more spectrum for future capacity demand at forthcoming allocations. The 1800/2100MHz renewals and future 5G allocations are an opportunity to address the disadvantage 2degrees has as it enters a period of increasing consumer demand for data. Retaining its 1800MHz spectrum and redistributing the 2100MHz spectrum equally between national operators (currently Vodafone has 2x25MHz, while Spark and 2degrees have 2x15MHz each) would improve long-term competitive outcomes.
- The 3.5GHz spectrum should also be distributed equally: ideally allocating a more efficient 3x100MHz which it appears to be available now, or at a minimum of 2x80MHz each if only 280MHz is available (as per MBIE's initial indication).<sup>26</sup>

Similar levels of deployment with less spectrum result in less capacity. For example, with 700MHz spectrum for essentially the same cost, Spark's 2x20MHz means it can roll out double the capacity of 2degrees, which has only 2x10MHz. To achieve similar service 2degrees has to aggregate more bands, which costs substantially more. **[C-I-C]**

There are important competition implications for Government and/or the Commission in reducing operators' and especially 2degrees' existing and potential future spectrum holdings. The Commission must recognise that:

- Less spectrum will increase costs for mobile services industry-wide.<sup>27</sup> But because it has less spectrum to begin with, what may appear to be an equal reduction of all operators' holdings has a disproportionately heavy impact on 2degrees' network performance, capacity and costs to serve customers.
- **[C-I-C]**
- When 2degrees entered the market, the resulting competition stimulated industry-wide investment. That dynamic will not repeat because market penetration is c.120%, prices are now very competitive and margins much lower. Existing operators face challenges when investing in 5G, with uncertainty

<sup>24</sup> Blue Reach/Cayman have 11%. This excludes 3.5GHz (which other operators hold until November 2022), mmWave and non-IMT spectrum (which other operators have also acquired). Including these bands further reduces 2degrees' relative holdings.

<sup>25</sup> MVNOs are concerned about the quality of the network their end users will experience and seek assurance about the ability for their carrier network to deliver services today and tomorrow as part of due diligence into a potential MVNO. **[C-I-C]**

<sup>26</sup> This could also be, 2x90MHz for each operator.

<sup>27</sup> Covec report prepared for 2degrees, Mobile Market Development in New Zealand, 24 October 2018.



as to how this investment will be monetised. A new entry in a country the size of New Zealand already served by three national networks is ultimately likely to harm investment and competition.

**[C-I-C]**

- Internationally, in markets with much greater population and lower deployment costs, we are seeing 4 to 3 market consolidation. In Australia, the recently announced fourth entrant, TPG, is now seeking to merge with Vodafone, stating: *“one of the key motivations for the merger... is to finally bring together a third competitor with sufficient scale [and] ability not only to make inroads into customer share and revenue share but bring the EBITDA and free cash flow that allows sustainable innovations, sustainable investment across both fixed and mobile in order to truly drive the market forward.”*<sup>28</sup>
- Mobile revenues are flat, and profitability is constrained, with many growth opportunities captured by OTT players that do not contribute to network operating costs. Yet mobile network operators are being required to invest in the next wave of technologies: 5G. When operators are faced with this investment, encouraging additional infrastructure competition needs to be carefully considered.
- In contrast to the fixed market, where an open access provider is required to deliver fibre monopoly assets, the regulatory framework has successfully encouraged the presence of three national mobile networks, including operators that need to serve those customers, making the need for a new open access network unnecessary and likely to harm investment and competition.

While it is up to an investor to determine the merits of a business case, this shouldn't be reliant on obtaining unrealistic access terms, and below competitive rates, to other players' networks. Section 18 of the Telecommunications Act is about the *long-term* benefit to consumers.

To meet this purpose, the Commission must consider not only potential new entrants but also the possible impacts on existing competition, including 2degrees. This includes whether it considers 2degrees has enough spectrum to continue to maintain a competitive dynamic with the larger mobile operators into the future as data demand increases, and not supporting allocating national spectrum to a fourth entrant if it considers this unsustainable over the medium to long-term. Allocation to an unsustainable additional operator would support underutilisation of spectrum, higher long-term mobile costs, lower investment and competition. It could also potentially reward a speculator.<sup>29</sup>

- Having put in place a regulatory framework to facilitate wireless infrastructure competition and encourage 2degrees to build out a national network footprint, the Commission should not jeopardise 2degrees' ability to further stimulate competition in the wholesale market (as well as the retail market). We consider enabling 2degrees to grow the MVNO market a much better and more sustainable outcome for New Zealand and one that would avoid significant competitive harm.
- For this reason, and as set out in our response to Q44, 2degrees advocates reducing spectrum discrepancies between the three national operators. This will provide 2degrees more spectrum to continue to effectively compete in retail and drive emerging wholesale competition. The Commission should support 2degrees acquiring the same amount of spectrum and not reducing its 1800MHz holdings, the acquisition of which the Commission regarded as procompetitive when it considered whether the Vodafone/TelstraClear merger should go ahead.

<sup>28</sup> Dan Lloyd, Vodafone Australia Chief Strategy Officer, CommsDay Congress in Melbourne, October 2018.

<sup>29</sup> For example, 2x35MHz of 2600MHz has remained almost unused for nearly a decade. **[C-I-C]** Similar outcomes where spectrum is in the hands of a speculator only damages the market.





## Roaming, co-location, and infrastructure sharing

### Q22. What evidence is there on whether or not national roaming, co-location regulation have promoted the efficient expansion of 3G and 4G coverage in New Zealand?

National roaming and co-location regulations have promoted the expansion of 3G and 4G coverage in New Zealand by providing an important backstop to commercial negotiations as 2degrees made steady progress in the rollout of national infrastructure.

Co-location has reduced site costs as we have built out in rural areas. National roaming provided for extensive temporary coverage, which we could use while building our own network infrastructure. We now use roaming for less than 1.5% of our traffic.

Ultimately, these regulated 'specified' services have facilitated national mobile infrastructure competition, bringing substantial efficiencies and benefits to New Zealanders:

- The 2degrees network has expanded from a 2G network with 47% population coverage at launch in 2009 to a 3G and 4G network with around 98% population coverage today, and with further substantial investment planned in competitive products and network deployment;
- Over this time, competition from 2degrees has brought prices down at a national level, while increasing competitive innovation and investment;
- Having invested heavily in own network coverage, infrastructure competition from 2degrees is enabling it to continue to drive innovation including the launch of new higher data bundles, new MVNO propositions, as well as credibly expand into the business market. We are also launching new products (with higher data bundles) and expanding into the MVNO and business markets.

As such, 2degrees supports these services remaining 'specified' services under the Telecommunications Act 2001. However, given the commercial incentives that have emerged and current market conditions, there is not a case to amend or designate either of these services at present:

- Co-location now regularly occurs on a commercial basis and 2degrees actively seeks co-location opportunities on its infrastructure where possible;
- 2degrees has a commercial arrangement for the very small amount of national roaming that remains. While there were issues in the past [C-I-C] the current terms are as the Commission sees fit.
- 2degrees' choice of national roaming partner was limited to a single operator due to technology constraints that existed at 2degrees' launch. If any new entrant was to emerge, it would have the same benefit as we did of the specified backstop but would be in a much stronger position having a choice of three same-technology operators with which to commercially negotiate national roaming.

As the Commission notes, keeping national roaming as a specified rather than designated service mitigates some of the risk that roaming will distort investment incentives.<sup>30</sup> In addition, the Commission cannot be blind to the fact that, at this stage of 2degrees' rollout, a review of the national roaming service, including access terms or designation, will have an impact on existing competition and investment. [C-I-C]

Further, the Commission considered it inappropriate to designate these services when mobile prices were some of the highest in the OECD and 2degrees only had the choice of a single operator for national roaming. It would be difficult to justify a decision to increase regulation when New Zealand now has

<sup>30</sup> Commerce Commission *Study of mobile telecommunication markets in New Zealand*, 31 August 2018.



three potential suppliers of wholesale services serving markets that compare well internationally – with prices well below OECD averages despite New Zealand’s challenging topography and small population.

**Q23. What evidence is there that the infrastructure sharing such as provisions of RBI1 and the RCG, have been effective in allowing competing operators to expand their coverage?**

2degrees supports infrastructure sharing provisions in lower capacity demand areas as a means of allowing competing operators to expand coverage. It supports co-location in areas of private investment (which regularly occurs on a commercial basis). The importance of co-location increases as the network expands to lower population density areas, which have less traffic.

While 2degrees supports co-location, it did not support the RBI1 regime. Although well-intentioned, it allowed Vodafone (and Spark) to use grant-funding to expand a competitive advantage in mobile at a time when 2degrees was still building out its network to the starting point of RBI1. Issues exist to this day, whereby more expensive mast upgrades can be required to access an RBI1 mast.

RBI1 was primarily aimed at addressing rural broadband (both fixed and fixed wireless services). Although Vodafone was selected to provide a rural fixed wireless service it had low take-up of this service. 2degrees saw that multiple issues with the fixed wireless product that went largely unaddressed.<sup>31</sup> At the same time, Vodafone continued to upgrade its coverage based on its mobile network demand, receiving grant funding for RBI1 towers. Although Spark was able to co-locate on these towers, co-location for 2degrees (as a later entrant) could be substantially more expensive: any later entrant had to pay for required extensions of the tower to fit their antennas, despite earlier operators’ tower space being fully funded. In some other cases, 2degrees only received the ‘worst’ positions on the tower, i.e. those that provided lesser coverage.

2degrees considers future awards of Government funding for initiatives in areas deemed uneconomic (such as for RBI1 and RBI2) must adopt a model that treats national operators equally. As such, 2degrees supports the RCG model for future rural areas requiring grant funding. Unlike under the RBI1 model, RCG towers will have all three mobile operators on them at the same cost and for the same price, as well as providing open access to other providers.

As set out in our response to Q33, we are not suggesting a sharing model will work everywhere. That ignores the complexities of the infrastructure sharing model and the key differences between urban and rural geographies. Importantly:

- Infrastructure sharing is a better use of resource and grant funding for areas where capacity demand is low, ensuring rural customers benefit from the national offerings enabled by infrastructure competition in economic areas.
- However, the infrastructure sharing model does not make sense for higher capacity urban areas. The same ‘saving’ does not apply in more built up areas where capacity needs to be added for each operator, and where the added complexities of sharing (including upgrades, etc) can far outweigh the costs.

**Q24. Have there been any problems in relation to the infrastructure sharing provisions of RBI1 that could inform infrastructure sharing arrangements in the future?**

As set out in our response to Q23 there were issues in relation to the RBI infrastructure sharing provisions. This included terms that competitively disadvantaged the third entrant (including either the

<sup>31</sup> For example, the RBI1 product was not user-friendly, included substandard speeds, very low data caps and unattractive pricing. There was very low take-up, and in our view, it was not marketed as a competitive product would have been.



'worst' position on the tower, with reduced coverage implications or having to pay for mast extensions to place equipment on the tower when the 'first-on' operators did not incur these costs.

As per our response to Q22, we do not support a review of these terms. With changes in competitive dynamics and commercial supply, any benefit from amending co-location now will be marginal at best (and in the case of roaming, harmful).

### Mobile interconnection services

**Q25. What are your views on the current regulation of mobile interconnection services?**

**Q26. Does the current regulated MTAS, including the pricing principles, remain appropriate?**

2degrees does not consider mobile interconnection services to be a priority issue for the Commission at this stage.

Mobile termination was an important access service in the past, and 2degrees supports maintaining MTAS as a designated service under the Telecommunications Act 2001. This provides a regulatory backstop, acts as a check on dominant operators and supports certainty and stability at a time of significant industry change (both regulatory and commercial).

However, 2degrees does not support a review of the MTAS STD at this time. As the world moves to Voice over LTE, OTT applications and data, MTAS is becoming less relevant. A regulatory investigation into this is likely to represent addressing 'yesterday's problem'.

### The ability of consumers to switch

**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?**

As identified by the Commission, the majority of consumers find it easy to compare mobile plans. This is despite the complexity of mobile services compared with other industries, and the wide variety of consumer needs – for example, different preferences for pay monthly or pre-pay plans, data requirements, levels of flexibility and engagement as well as travelling overseas.

2degrees wants its customers to be able to confidently identify and select the package that best meets their needs. Details of 2degrees' price and plan packages, and international roaming rates easily searchable by country are readily available on our website. 2degrees also provide tips to existing customers to help customers manage their services and keep costs down. These are particularly useful when customers deviate from their usual service (for example, when travelling).<sup>32</sup>

Given the diverse nature of consumer needs<sup>33</sup>, there is a necessary tension between:

<sup>32</sup> For example, tips on how to avoid unwanted bills e.g. turning apps off, credit limits, spend control, information on how much data different applications use and how to look at usage history. While this question is focussed on comparing plans, we note that more often we encounter issues where customers have deviated from their usual mobile service needs without considering the relevant information available. For example, travelling to a different international destination and not considering how this would impact mobile services rates. Rates are available online, via our call centre and in-store before travelling. In addition, customers are advised of rates by text when travelling and our website provides information on how to minimise and track data usage as well as an 'average usage' table so that customers have a benchmark as to how much data different applications use.

<sup>33</sup> We do not know specific customer needs, including due to data privacy obligations.



- Making information available that is detailed enough to be useful to the majority of customers while not being so detailed as to include irrelevant information, and also ensuring that customers with specific individual needs are able to access information that is relevant to them; and
- Providing innovative products that give customers a wide range of choice, enabling them to select the plan that best suits their needs, and keeping products simple and comparable to competitors' products. Operators must balance these factors as part of the competitive process.

The competitive nature of the market means there are many innovations across plans (by individual operators as well as between operators). While these innovations make simple price/performance comparisons over-simplistic (and thus they can be misleading), they are developed to attract customers as part of a competitive market, not to make it harder to compare products. For example:

- The inclusion and amount of Carryover data (while others have now followed 2degrees in providing carryover, we are still the only operators to offer this uncapped);
- Data sharing plans;
- The availability of 'Data Clock';
- 2degrees' Wi-Fi calling – available both in New Zealand (for example at the bach) and internationally (which reduces international roaming costs).

It is not clear that regulatory intervention is warranted to improve consumer comparisons at this stage. In particular:

- The size of the problem is unclear. In February 2017, Consumer NZ reported that 60% of telecommunication consumers found it easy to navigate the mobile market. That does not mean the remaining 40% found it too difficult and that this required regulatory intervention.
- Our observation is that not all customers need or want to actively engage with mobile market comparisons. Further, non-engagement can be an indicator of customer satisfaction.
- There are significant commercial incentives to engage consumers. 2degrees is strongly motivated to ensure existing and potential customers understand the different value of our propositions and will lose customers if we do not achieve this.
- There are also significant issues and risks with solutions such as comparison websites, including:
  - They undermine innovation and competition by encouraging standardisation in key parameters measured.
  - Without constant monitoring and updating they quickly become out-of-date – especially if they do not take into account short-term offers that may be to a customer's advantage;
  - They easily become misleading and inaccurate, including because:
    - In trying to make standard comparisons, they don't take into account innovations and differences between customers in how particular service attributes are valued;
    - They report on parameters that are not relevant to all consumers and can create bias. For example, this could leave the impression that a carrier is substandard due to performance on an aspect irrelevant to a particular consumer. A future example of this could be comparing 5G coverage, when a customers' service may relate to sufficient network capacity (regardless of technology).
  - For these reasons, while we understand market-led comparisons websites (which already exist) can be well-meaning, we do not support Government/regulator-sanction of comparison sites and think they can cause competitive harm.



**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?**

It is important the Commission understands the dynamics of the mobile market and whether there is an issue in the New Zealand market before jumping to potential solutions that may undermine competitive dynamics. While Ofcom has proposed an end-of-contract solution in the UK regulating mobile (or more generally telecommunications) providers to contact consumers near the end of a fixed term does not have merit in the New Zealand market:

- As set out in our response to Q11 great service quality is a competitive differentiator and 2degrees is constantly investing in promoting its products to potential new customers as well as keeping our existing customers informed of new promotions and products;
- In New Zealand, the consumer market has shifted to 'open term' plans. This means operators no longer offer fixed terms to consumers.<sup>34</sup> Any operator can contact a consumer at any stage, not near just the 'end' of a Mobile Repayment Option (MRO) agreement;
- Where fixed contracts do exist, for example in the business market, end of contract communication is an area in which firms actively compete for business. All operators can already make sure consumers are on the right plan if they choose, while other operators (including 2degrees) can and do seek to proactively contact potential customers with alternative offers. A mandated regime could have the perverse effect of reducing competition and innovation as other operators have less opportunity to win potential customers, who sign on to a new plan when contacted by their current provider, without considering alternatives.

**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?**

2degrees supports consumers' rights to have access to and control over their data. Reflecting this:

- 2degrees customers can already access their data across multiple portals and are able to access that information to assess alternative plans;
- Real-time usage can be seen on the 2degrees app or downloaded online;
- A monthly usage summary is included with all post-paid bills; and
- Customers are also able to request their mobile data, SMS and calling usage, including relevant location data by directly contacting 2degrees on a case-by-case basis.

In this context, we do not consider that a lack of transparency on usage is an issue that requires further regulatory intervention.

It is important that the Commission understands that providing consumers with data on 'usage, locations, etc' that is formatted for the purpose of comparing services raises significant concerns in the mobile telecommunications context, including:

- **The potential for disproportionately high compliance costs:**  
The data generated by a mobile network is complex and vast. Unlike other industries such as insurance or banking, mobile consumers typically engage with their provider hundreds of times a day as they text, call and use mobile data, from multiple locations. Customer usage data can come from multiple sources and is not in a format that would assist consumers to compare mobile services from different providers. It would take a significant amount of resource and add significant cost for

<sup>34</sup> Those customers that do choose to pay for their mobile over time rather than upfront, can do so, interest-free under our MRO plans. This does not impact the plan price and there are no obligations once the device being used is paid for. If a customer wants to switch to another provider, they can.



networks to have to format usage data uniformly for all customers, ultimately impacting consumer prices.

The costs of providing *formatted* usage data could well outweigh any perceived benefits. Before any regulation is imposed, the Government or Commission would need to have a clear understanding of the issues that require addressing, their severity, and whether there are better, more proportionate or less invasive solutions.

- **Privacy Issues & Operator Obligations:**

Unlike other industries, telecommunications providers often have relationships with multiple customers under a single account. For example, family members or partners on a share plan, a group of flatmates with a single broadband account, or business customers who provide their employees with mobile phones and plans. These complexities could lead to significant privacy issues should customers have the right to request data, including location data, relating to other individuals on their account.

These and other issues would need to be considered in far more detail before any such regulatory intervention is adopted.

**Q30. What barriers and costs do consumers face when switching and what improvements could be made to make switching easier?**

As the Commission will know, 2degrees has long been a supporter of consumers' ability to switch between providers and removing unnecessary barriers to such switching. We consider regulatory changes and competition that has emerged in the market now mean that anti-competitive switching barriers have largely been addressed. In particular, the following have significantly reduced switching costs:

- **The introduction of Mobile Number Portability:**

Introduced in 2007, number porting is available to consumers at no cost and requires minimal input from consumers. Porting is usually completed within a couple of hours, and in almost all cases within one business working day;

- **Reduction in handset locking:**

Handset locking is increasingly rare, with no charge to unlock on 2degrees (and no charge after 9 months for Vodafone and Spark);

- **New mobile repayment options:**

2degrees and other market players have now introduced MRO options instead of fixed-term plans with handset subsidies. This means reduced barriers for not just prepay but postpay subscribers as well.

At least 1.3 million consumers have switched to a 2degrees mobile service and we compete daily to manage churn. Since 2007, porting statistics show more than 3.4 million fixed and mobile consumers have switched providers,<sup>35</sup> indicating that switching is easy.<sup>36</sup>

Ultimately, before any regulatory intervention is contemplated, the Commission should first establish the issue. For example, are there any dissatisfied customers who would like to switch but are deterred from doing so? And if so, what is the nature and extent of those barriers?

<sup>35</sup> TCF, Briefing to the Incoming Minister of Broadcasting, Communications and Digital Media, October 2018.

<sup>36</sup> Of course, porting data on its own should not be seen as a future goal from which to measure switching. Increased consumer service quality should be expected to reduce churn, whilst benefiting consumers.



Our response to Q46 outlines how the development of e-SIMs could give rise to short-term switching barriers.

### Customer Satisfaction

#### Q31. How would you describe the relationship between customer satisfaction and switching in New Zealand?

As should be expected, customers that are happy are less likely to switch, and conversely, customer dissatisfaction leads to customer switching.

As set out in our response to Q11, 2degrees recognises that customer satisfaction is essential to maintain and grow its customer base. It is a core focus of our business and an area in which we seek to differentiate ourselves and compete. This is reflected in 2degrees' customer satisfaction measures such as Net Promoter Scores (NPS), which are high relative to the industry; our multiple Canstar consumer awards<sup>37</sup>, and the fact that Consumer NZ found 61% of 2degrees customers are "very satisfied", (noting this figure does not include customers who identify as being "satisfied").

2degrees also performs strongly in the business sector in terms of customer satisfaction, despite having a more limited share of the business market as compared to other providers. As noted in our response to Q2, we consider our smaller market share is largely due to 2degrees' stage of entry and the particular barriers which exist in the business market. In practice, customer perceptions regarding coverage, reliability and tenure. 2degrees expects these barriers to diminish substantially over the next 1-3 years, with the completion of its network footprint, new business structure and as it approaches its 10-year anniversary.

#### Q32. To what extent have lower levels of customer satisfaction with Vodafone and Spark resulted in customers switching to Skinny and 2degrees?

Lower levels of customer satisfaction with other operators, including Vodafone and Spark, have resulted in switching to 2degrees. Even where dissatisfaction is not listed as the primary reason for switching, it is often noted as a strong motivator. However, our experience is also that:

- Often customers are satisfied with their existing mobile service provider and so have no desire to switch provider;
- In the business market, other reasons that prevented switching to 2degrees in the short term (See our response to Q2).

### Infrastructure sharing

#### Q33. How important is infrastructure sharing likely to be to facilitate the widespread and timely deployment of 5G services — urban and rural — in New Zealand by improving the economics of a 5G deployment?

It is still early days in terms of 5G strategy and rollout plans. There is a lot of hype around the cost of deploying 5G, particularly in relation to the anticipated increase in network densification. However, as with 4G, 5G will require operators to build significantly more sites over time. A mix of macro, micro and small cell/pico sites will be needed. 2degrees has already started the densification process.

<sup>37</sup> <https://www.canstarblue.co.nz/phone-internet/mobile-phone-plan-providers/>



2degrees support infrastructure sharing where practical for 3G, 4G and 5G services. The viability and form of 5G infrastructure sharing in different geographic locations is yet to be determined. However, our expectation is that this will largely follow 4G:

- Infrastructure competition at the centre, recognising the impracticalities and constraints that would result from co-location and RAN sharing in high traffic/capacity demand areas<sup>38</sup>;
- Passive infrastructure sharing/co-location in areas with moderate to low traffic and capacity demand;
- Active infrastructure sharing in areas of low traffic density, with access to the Rural Connectivity Group shared towers in areas in which infrastructure competition is deemed uneconomic and which are in need of grants/Government funding (RBI2 areas).
  - As set out in our response to Q22, we support maintaining co-location and national roaming as specified (rather than designated) services under the Telecommunications Act. Our primary concerns around infrastructure sharing for 5G do not relate to sharing between MNOs (which we think will be less of an issue as there are commercial incentives to do this), rather, we are concerned with the following:
- Co-location and co-siting with non-telco providers (including local Government);
- Ensuring the Resource Management Act/National Environmental Standards are fit-for-purpose for 5G (that they accommodate larger antenna sizes etc); and
- The provision of fibre backhaul for 5G mobile and fixed wireless services by regional fibre monopolies (both Chorus and the LFCs).

Addressing these issues rather than increasing regulatory uncertainty for investors (for example through co-location/national roaming reviews), at this early stage of 5G deployment will have a much greater impact on future 5G network investments and competition for the long-term benefits for end users.<sup>39</sup> Regulation of infrastructure sharing between mobile operators is unnecessary as there are already commercial incentives to do so and it is now occurring on a commercial basis.

We discuss passive and active mobile infrastructure sharing and fibre backhaul sharing issues in more detail below.

### Passive mobile infrastructure sharing

2degrees strongly supports 'passive' infrastructure sharing across all technologies, be they 3G, 4G, 5G or beyond.<sup>40</sup> It is important infrastructure sharing in both urban and rural areas is provided for to improve the economics of 5G deployment. However:

- **Co-location now occurs on a commercial basis:**

Mobile operators are incentivised to co-locate where that makes economic sense. 2degrees, as the later network, has co-located on a large number of towers, which has increased as we have extended our coverage to lower population density areas. While there were some issues in the past, and we still refer to the co-location STD at times, there has been a significant change in market dynamics in recent years and there is no longer evidence operators are unwilling to co-locate where practical:

- We co-locate on more than 250 towers owned by competitor telecommunications operators;

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<sup>38</sup> As at present, this does not prevent infrastructure sharing on a case-by-case commercial basis if practical (for example, in stadiums).

<sup>39</sup> [C-I-C]

<sup>40</sup> Passive sharing refers to sharing of space or physical supporting infrastructure that does not require active operational co-ordination between network operators. For example, site and mast sharing.





- 2degrees has actively promoted co-location on its towers (for revenue) however to date there has been very low take-up;
- We have also been seeking to co-build sites with other MNOs in urban and rural areas.<sup>41</sup>
- **Infrastructure sharing, such as co-location, between telecommunications operators, is often not practical in urban areas, due to engineering requirements and community impact considerations:**

While co-location on macro sites is important, it is less practical for smaller sites including AAUs. Our experience from 4G densification is that in many cases, while co-location may appear to be an optimal solution, due to the size and strength of the towers required for co-location, both the community and the operators ultimately prefer a solution that requires multiple smaller (but less intrusive) towers. In addition, much of the urban densification for both 4G and 5G will occur on street light poles, which are not strong enough to support antennas from multiple operators.

- **The ability to co-locate or co-site on non-telecommunication infrastructure will be much more important than co-location between MNOs:**

Co-siting on buildings, utilities, local Government infrastructure/facilities etc will be particularly important in densely built locations (e.g. cities and suburban hubs) where there will be substantially more data traffic and street light poles may not be sufficient to address capacity needs.

- **Supporting 5G infrastructure sharing will require changes to the Resource Management Act/National Environmental Standards/Planning Processes. This includes:**

- Updating the National Environmental Standards (NES), which are currently not fit-for-purpose for 5G infrastructure. For example, to ensure that the NES provides for the different sized and shaped antennas required for 5G (for example massive MIMO antennas);
- Recognising that in the future if the Government wants infrastructure sharing, this will require taller towers, which will have consequences for the Resource Management Act. The current RMA regime imposes size limitations on operator RAN equipment. As a result, MNOs must build a greater number of smaller cells in order to remain compliant.

If the Government wishes to encourage infrastructure sharing, we consider it could usefully focus on encouraging use of suitable locations where infrastructure sharing is viable, for example in rail corridors, reserves and certain Government-owned land (for example, by extending provisions such as those that already apply to the road reserve).

Local councils could also be encouraged or required to consider future telecommunications equipment and relevant locations in their planning processes (for example, for new subdivisions and by ensuring that any new street light poles are strong enough to support 5G equipment rather than putting in place poles knowing they will need to be swapped out<sup>42</sup>).

### Active infrastructure sharing

2degrees supports active infrastructure sharing across all technologies where sensible. However, active infrastructure sharing for 5G carries significant risks to networks and customers. For example, the shared 5G network needs to co-exist with current 3G and 4G networks, which raises significant technical risks that cannot be solved through regulatory means.

We consider active infrastructure sharing of private networks to support 5G deployments should be left to commercial arrangements, especially given 5G technology is still being developed. Any regulatory

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<sup>41</sup> However, it is important to note that infrastructure sharing between operators is often not practical in urban areas. Street poles will facilitate a large amount of the densification which will occur in urban areas for 4G and 5G, but existing poles do not support antennas from multiple operators. Building new shared towers to support equipment from multiple operators requires significantly larger towers.

<sup>42</sup> At present telecommunications operators must replace existing light-poles as they roll out due to strength requirements. It could be inefficient for new light-poles to require replacement shortly after being built.



intervention now is likely to both present significant implementation challenges and slow down the introduction of 5G technology.

Active sharing makes more sense in low traffic areas, which typically have low population density such as rural New Zealand. 2degrees' support for this type of sharing can be seen in its push for more active sharing within the RBI2 programme, and ultimately the RCG joint venture.

However, referencing lessons from the RBI2, we do not support forced active sharing of private infrastructure in areas of higher traffic density. While it may sound good to have active sharing in urban areas to allow smaller cells, the perceived benefits do not bear out:

- Additional cells are for capacity – so as traffic increases, a new cell (even by a RAN-share) needs to be built.
- Given the significant additional complexities of infrastructure sharing (for example upgrades due to one operator, unequal shares, growth, lack of equipment to support three operators, spectrum, etc.) it is far more practical for operators to have separate cells. Three cells by three operators will support the same traffic as three cells for a single shared operator (provided there is similar spectrum).

This was one of the significant learnings gained by operators involved in 3G network sharing internationally.

#### **Fibre backhaul (ICABS and DFAS): Infrastructure sharing of fibre monopoly inputs.**

Chorus and the LFCs have a lot of regional monopoly fibre backhaul and access services that are key inputs to wireless (both mobile and FWA) services.

As 4G and 5G progress, networks are becoming increasingly densified. Each cell site requires a fibre connection to a mobile operator aggregation point. This is usually provided by Chorus or the LFCs (depending on region) given New Zealand's large UFB coverage footprint (that will reach 87%). In practice, this is provided via DFAS and ICAB services back to a Central Office or Point of Interconnection where 2degrees is co-located. Over time, the cost of fibre backhaul will have a significant impact on the cost and speed of 5G deployment.

Provided Chorus and the LFCs provide this fibre backhaul at a reasonable rate, 2degrees expects to be able to deploy a competitive 5G network. However, these are monopoly services (unlike mobile network services) and we are already concerned with current prices,<sup>43</sup> so it will be important that there is suitable regulated oversight.

As previously set out to the Commission and MBIE, 2degrees is concerned that DFAS and ICABS – monopoly fibre services in many areas of New Zealand - are satisfactorily addressed in the amendment to the Telecommunications Act. At a minimum, this includes being subject to the non-discrimination obligations and regulatory oversight by the Commission, such that it can step in if issues emerge (for example as for services subject to Schedule 3 of the Act). Chorus shouldn't, for example, be able to roll out its own small cell 5G infrastructure, pricing fibre backhaul to itself cheaper than to competing networks.

In addition, we note DFAS prices are currently treated as a fibre to the premise (FTTP) connection, however, in many cases mobile cell sites are located in the roadside reserve in a similar position to Fibre-To-The-Cabinet (FTTC) locations. This will be increasingly the case with 4G and 5G densification. Given most of the cost of connecting an FTTP is not incurred for an FTTC, the cost of such connections should be significantly lower than for FTTP, and more in line with the cost for connections to Chorus cabinets.<sup>44</sup>

<sup>43</sup> For example, the Chorus DFAS price of \$355 per month, which is substantially more than equivalent LFC services.

<sup>44</sup> In this regard, we expect the post 2020 fibre unbundling process to set an appropriate FTTC price.

**Q34. If 5G fixed wireless becomes a substantial substitute for fibre to the home, what is the right approach to setting the price of backhaul from mobile towers and from the additional cell sites?**

5G fixed wireless will be a partial substitute for fibre to the home in the future, however we see a continued substantial role for fibre to the home. While mobile usage is growing, the inherent capacity limits due to limits on the amount of spectrum and site density, and the presence of a fibre to the home access network, mean mobile networks should not become a substantial substitute for fibre for most users provided Chorus and the LFCs innovate over time and continue to provide a quality product, at a reasonable price.

The price for fibre backhaul to fixed wireless and mobile towers will be increasingly important over time and should be the same as the price for equivalent UFB fibre backhaul. Fixed wireless and mobile wireless services are provided over the same backhaul network as for UFB and should not be discriminated between.

Non-discrimination was a key principle in setting up the fibre monopolies and the Commission should be very concerned if a monopoly fibre operator wants to provide itself preferential access to its monopoly products and argues this is appropriate.

**Q.35 What are the most likely forms, benefits, risks and costs of infrastructure sharing for 5G in New Zealand? Please provide reasons covering both cost and competitive effects.**

Please see our response to Q33.

**Q36. What aspects of infrastructure sharing are most likely to facilitate the entry of a fourth MNO, or expansion of existing MNOs once 5G has been rolled out?**

As set out in our response to Q21, we question whether facilitating a fourth MNO is in the long-term interests of telecommunications users given the impact on existing competition, investment and costs and considering the increasing trend of consolidation in countries with much larger populations than New Zealand.<sup>45</sup> We do, however, support the continued regulatory framework where co-location and national roaming are available as a regulated 'specified' service for both existing and potential MNOs.

2degrees rolled out a national network infrastructure with these regulations in place and found them to be a helpful backstop to our commercial negotiations. Any new entrant will also have an increased choice of national roaming provider. In addition, co-location on a commercial basis is now welcomed where practicable.

However, we do not support any amendment of these services which would provide an advantage to a new entrant over an existing operator. There are now three potential providers and if a new network business case is sustainable, it will not be reliant on amending regulation of these services. Rather, the investigation of these services at this stage of 2degrees' rollout, and as it invests in wholesale competition and prepares for investments in 5G, is more likely to harm, rather than improve, competition and investment.

As set out in Q23, 2degrees supports infrastructure sharing where practical. We are also very supportive of growing MVNO competition using the network that we are currently completing, but we do not consider regulation of MVNO access is necessary or helpful in promoting wholesale mobile competition.

<sup>45</sup> For example, in 2013 Hutchison and Orange merged in Austria reducing the number of national operators from four to three; in 2014, O2 and E-Plus merged in Germany reducing the number of national operators from four to three; in 2014, Hutchison and Telefonica merged in Ireland reducing the number of national operators from four to three; in 2018, TPG and Vodafone Hutchison Australia announced an intended merger which, if approved by the ACCC will reduce the number of national operators from four to three.



**Q37. How and in what ways could the current regulation of mobile services deter some 5G investment?**

There is already significant uncertainty related to 5G investment and this will only be increased by any regulatory uncertainty. As set out in Q33, ensuring the Commission does not further increase regulatory uncertainty for our investors at this stage of 5G deployment is important. We would welcome early decisions regarding any areas the Commission considers are unlikely to warrant further investigation at this time. As noted in Q22 and Q23 above, this includes co-location and national roaming, which are already occurring on a commercial basis. Further investigation of these areas at this stage of 2degrees' rollout and wholesale investment, is likely to harm, rather than improve, competition and investment.

As set out in our response to Q22 and Q33 our primary concerns around 5G deployment include:

- Access to co-location and co-siting with non-telco providers (for example, Local Government);
- Ensuring the Resource Management Act/National Environmental Standards are fit-for-purpose for 5G (for example, by ensuring that they accommodate larger antenna sizes etc.);
- Appropriate regulatory oversight of the provision of fibre backhaul for 5G mobile and fixed wireless services by regional fibre monopolies (both Chorus and the LFCs); and
- Access to spectrum, including maintaining existing spectrum and acquiring the same amount of 5G spectrum as other national operators, particularly given expected future data demand and 2degrees' current spectrum holdings (smaller than those held by other New Zealand operators). Payment of spectrum by instalment is also a helpful measure to align costs with revenues.

**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?**

As set out in our response to Q22, 2degrees supports maintaining the existing co-location and national roaming specified services. At this stage, we do not support either amending or designation of either of these services. Such changes could create significant uncertainty for investors and operators planning for major mobile network investments. This would not promote the long-term benefit of telecommunications end-users.

**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?**

As set out in Q23, 2degrees is a supporter of infrastructure sharing where this makes sense. 2degrees has been proactive in seeking out other operators who may wish to co-locate on our towers, although to date has had low take-up of this service. 2degrees is incentivised to offer co-location to both share costs and earn additional revenue.

2degrees has also been proactive in seeking active infrastructure sharing in areas with low traffic density. This has led to the RCG joint venture, which offers an open access service. In addition, we note that 2degrees has the commercial incentive to undertake active infrastructure sharing on a commercial basis if this is practical and it helps improve its ongoing operating costs while recognising that in reality, this involves significant complexities and cost.



**Q40. What are your views on the viability of three or more separate 5G networks, and what alternative models do you consider as potentially viable?**

5G networks are extensions to existing 3G and 4G mobile networks. 5G deployment planning is still underway, but each operator will roll out 5G based on their commercial drivers, existing network capabilities and customer demand.

2degrees considers that three 5G capable networks making use of sensible infrastructure sharing will be viable, provided there is reasonable non-discriminatory access to monopoly fibre backhaul inputs, each national network has the same amount of 5G spectrum and there is regulatory certainty supporting 5G investment.

This would allow for the benefits of infrastructure competition. However as set out in our response to Q21, we do not consider building a new fourth network in addition to the existing three is a sensible option for New Zealand given population and topography and considering international consolidation of mobile infrastructure providers in larger countries. In our view, New Zealand would be better served if the Commission allowed 2degrees to grow wholesale mobile market competition, using its national infrastructure that the Government and Commission encouraged 2degrees to roll out. **[C-I-C]**

**Q41. How important is access to the infrastructure established by the Rural Connectivity Group to rollout 5G services to rural areas and is their Deed of Open Access Undertakings adequate to facilitate the rollout of improved mobiles services in rural areas?**

As a member of the RCG, 2degrees expects to use this infrastructure to deploy 5G in the future.

**Network slicing**

**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?**

**Q43. Given the non-traditional providers' economies of scale what are the likely benefits and harms that may materialise for both existing MNOs and consumers in New Zealand should a non-traditional provider enter the market?**

While we consider network slicing will bring some benefits in the future, the technology of network slicing, as well as the 5G devices that will use it, is still in the very early stages. There are too many technical and commercial unknowns to provide an informed response to how the commercials will develop. We expect operators to be driven by competition to provide network slicing where there is demand. Issues to be considered could include the impact of network slicing on network performance, investment costs and recoupment, and the potential market power of providers.

**Spectrum issues**

**Q44 A. 100MHz blocks of 3.5GHz best serve New Zealand (Commission Query)**

The Commission has asked why MNOs support 100MHz spectrum allocation for 3.5Ghz. This is because 100MHz blocks are the most efficient allocation of this frequency band. This allows better products and services for consumers at a lower cost. With MBIE's latest 3.5GHz bandwidth indications, (increased from 280MHz) 100MHz allocation to the three MNOs is possible in New Zealand and it should take this opportunity.



While we are aware some allocations are or are currently proposed to be, less than this (for example in Australia, in different circumstances<sup>46</sup>), lower bandwidth necessarily means lower speeds and higher costs for the same investment. 60MHz allocations are less efficient than 80MHz allocations, which are less efficient than 100MHz allocations.

Taking into account the likely use and sustainability, and impact on investment and competition of reducing mobile operator spectrum holdings<sup>47</sup>, we are unclear why the Commission would support such lowering of 5G spectrum quality and increased costs by supporting the reduction of bandwidth available.

While we support competition, ultimately, we question whether imposing increased costs on the existing mobile operators seeking to invest in 5G, innovate new products and services and grow wholesale competition, is for the long-term benefit of end-users:

- It is unclear why establishing a new network would be a better outcome for New Zealand instead of allowing 2degrees to stimulate further competition through wholesaling on its existing network, improving scale and reducing rollout costs for 5G.
- The Commission has previously acknowledged 5G investment may be challenging, yet such an action would make this investment more difficult.

As set out in our submission to RSM, 2degrees supports a wide bandwidth that allows 100MHz blocks to all national operators, as the most efficient allocation, with the remainder of the band for necessary guard bands and smaller or regional players wanting to use 3.5GHz (we do not envisage this would not be unallocated).<sup>48</sup>

However, it is also important with 2degrees' already lower spectrum holdings, that 2degrees acquire at least the same amount of spectrum as Vodafone and Spark. This means either a higher cap for 2degrees or a full 100MHz for all operators if 300MHz is available, or 80MHz for all operators if there is less than 300MHz available.<sup>49</sup> 2degrees holding 80MHz and others holding 100MHz would over time perpetuate the cost disadvantages 2degrees is already faced with and undermine long-term competition. 2degrees does not consider it would win a bidding war against the larger MNOS in the event that there is a second auction phase, as occurred with the 700MHz. This means that they would have an advantage over time, further exacerbated as other bands they hold more of also become 5G capable.

**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?**

The Commission appears to be asking whether MNOs can simply build additional sites rather than have more spectrum.

- Firstly, in the 2G and 3G world building additional sites to compensate for less spectrum was more viable. However, in the LTE and 5G world where operators are able to aggregate spectrum and make use of the total spectrum, building more sites only partially compensates for a lack of spectrum. The operator with more spectrum will be able to offer better network quality and customer experience.
- Secondly, reduced spectrum increases the costs of deployment, and ultimately the prices of services available to consumers and amount of funds available to invest in the network, service quality and capability. More sites need to be built to mitigate the capacity issue. This involves, time, costs and significant resources identifying, getting and building out sites (including additional antenna, equipment, mast strengthening, RMA issues etc). This increases the incremental cost per MHz significantly. For example, with Spark's 2x20MHz of 700MHz spectrum versus 2x10MHz for

<sup>46</sup> Including a greater population from which to recover revenue to fund site density.

<sup>47</sup> [C-I-C]

<sup>48</sup> We also note some of this spectrum is currently being used by other operators.

<sup>49</sup> At the time, MBIE RSM was considering only a 280MHz allocation. We understand this may be extended, which we support.



2degrees, Spark is able to roll out double the capacity that 2degrees can for only a small fraction more cost.

This is why 2degrees, which already has less spectrum and thus greater capacity constraints, is seeking a rebalance of spectrum holdings between the national MNOs, including at least the same 5G spectrum allocation as Vodafone and Spark. With 2degrees' current spectrum disadvantage across 700MHz, 900MHz, 2100MHz 2300MHz and 2600MHz, the renewal of 1800MHz and 2100MHz spectrum should not take away any of spectrum 2degrees currently has between the three national operators. Rather, the Commission should support the Government using this as an opportunity to rebalance the 1800MHz and 2100MHz spectrum holdings.

**Q45. What restrictions, if any, ought to be placed on the forthcoming 5G spectrum allocation to best facilitate competition in 5G services?**

As set out in 2degrees' submission to RSM, 2degrees supports an auction with appropriate competition checks such as acquisition limits, appropriate reserve pricing and enforceable implementation obligations:

- **Acquisition limits:**

As noted above, 2degrees does not consider New Zealanders would benefit from further increases in spectrum disparity between 2degrees and the other national wireless operators. Spectrum advantage translates to a lower cost structure, due to the high cost of building sites and associated resource management and planning costs, and service differentiation. This means that 2degrees should acquire at least parity with the other national operators, ideally each with 100MHz, but at a minimum equal allocations of 80MHz (if 300MHz is not available). Under this scenario, 2degrees would still have substantially less spectrum in total.<sup>50</sup>

Over time, 2degrees support an overall cap of 35% being applied to total (not band-specific) spectrum holdings (including each of sub 6GHz and mmWave spectrum). Unlike previous spectrum caps that have applied, this cap would apply for an extended term. Over time we do not consider any particular operator should hold more than 35% of the IMT spectrum, consistent with international developments. The Government should also enforce spectrum caps. When Craig Wireless bought Woosh Wireless the combined entity breached the 40MHz spectrum cap in the 2300MHz and 2600MHz bands, however, the Government did not enforce the acquisition limit. Craig Wireless subsequently sold the 2300MHz spectrum at a substantial profit.

- **Pricing:**

The need to set an appropriate reserve price is also critical: as demonstrated by the 700MHz auction, this impacts the effectiveness of the acquisition limits and can have a lasting impact on industry structure.

- **Enforceable implementation obligations:**

It is important to ensure an operator cannot speculate on this valuable 5G spectrum or deploy it inefficiently for non-5G technologies. We support:

- *Site-based rather than population-based deployment obligations:* we agree with MBIE that 3.5GHz rollout is likely to be primarily in areas of higher population density initially, given the spectrum propagation characteristics, which are quite different from the 700MHz band. This

<sup>50</sup> 2degrees also do not support the challenger national mobile operator being squeezed out by a fixed monopoly with deeper pockets, nor do we think it is appropriate from a competition perspective for a fixed monopoly provider to be enabled to enter contestable fixed and wireless markets. As multiple parties have pointed out in relation to the Telecommunications (New Regulatory Framework) Amendment Bill, it would also be entirely inappropriate, and defeat the purpose of separation, for a fixed monopoly provider to be enabled to enter contestable fixed and wireless markets. In particular, given Chorus' market power, this would cause long-term damage to wholesale fixed and multiple national wireless markets, including mobile, fixed wireless and IoT markets. It is important Government and officials recognise the important role of the line-of-business restrictions of the Telecommunications Act in supporting ongoing innovation and competition in markets that are contestable.



would also be more easily measurable and independently verified without the need for expensive tools.

- *Limitations on on-selling:* This is to mitigate against speculative behaviour and/or rewarding spectrum under-utilisation. New Zealand has had too many examples of speculative bidding for spectrum and eventual concentration among a few holders and/or limited rollout of services. Given New Zealand competition laws do not effectively limit such spectrum concentration, it is incumbent on MBIE to impose conditions that restrict such speculative behaviour at the start. For example, if implementation obligations on spectrum cannot be met for extenuating circumstances then the spectrum could revert to the Crown for reallocation and not be sold for profit. **[C-I-C]**

### **Set-asides for open access infrastructure would undermine Government investment in the regional areas and wholesale mobile market competition**

Some parties have suggested “set-asides” of spectrum for open access. It is important the Government and Commission understand why – unlike in fixed – this does not make sense in wireless for operators, Government or consumers, even in regional areas.

Unlike in the fixed market, where open access regulation was put in place to address monopoly service provision, there are now three competing national mobile networks offering wireless services. 2degrees is just completing its national rollout and is seeking to grow its wholesale business, which has been encouraged by Government. **[C-I-C]**

There is also no case for creating separate open access wireless infrastructure specifically for rural areas, and corresponding spectrum set-asides, as some parties (with a clear self-interest) have proposed. The Government has just invested in the Rural Broadband Initiative 2 with the RCG, to deliver wireless services to rural communities that were deemed uneconomic otherwise. This is also subject to open access requirements. An additional provider to these non-economic areas would clearly undermine the economics of both the Government investment and investment the members of the RCG are contributing (a further \$75m capex and substantial ongoing capex), making marginal areas even more so for all providers. This would not be good for regional New Zealand.

2degrees does, however, support accommodating the existing separate regional provider spectrum allocations. Given the different geographies, we consider there is an opportunity to more efficiently consolidate operators within the existing 3.5GHz and alternative bands (including potentially 3.7 to 3.8GHz, 3.403 to 3.410GHz, the 2.6GHz TDD band). However, any regional sharing requirements should not harm competition by disadvantaging certain national operators over others.

## **e-SIM**

### **Q46. What impacts are e-SIMs likely to have on consumer switching costs?**

Ultimately the impact of e-SIMs on consumer switching costs will depend on how the technology evolves, including the devices in which they are embedded.

While the e-SIM is still a developing technology, we are seeing three primary use cases emerge:

- **Mobile phones**
- **Secondary devices/wearable tech** (4G enabled smartwatches, iPads and tablets)
- **IoT devices**

There will be differences in the activation process for each case. We are currently working with vendors on e-SIM capability for these use cases.





At present, embedded e-SIMs are emerging from leading device vendors such as Apple and Samsung. Some products that use e-SIMs (for example, smart watches) will only work on a specific mobile network, and only once the operator has worked with the relevant vendor, investing time and resource into ensuring the necessary interoperability. As such, e-SIMs may increase consumer switching costs in the short term, as a result of vendor requirements and associated interoperability issues. Over time, we expect technology will address any such interoperability issues and allow consumers to easily switch between operators.

Of course, consumers can already switch mobile phone providers using SIM cards, but in the medium, to long-term, we expect modest cost savings to result as the need to distribute physical SIM cards diminishes over time.

Activation of IoT devices is quite different from that of phones and we expect will require the end device to manage the switching process autonomously. The potential benefits of e-SIMs are especially important for IoT applications given the long-term nature of these assets, which means that switching with physical SIM cards is often not feasible.

#### Q47. How will MNOs support the use of e-SIMs in mobile devices?

Competition will drive MNO investment in e-SIM capability because consumers will value e-SIM enabled services and equipment. 2degrees, Vodafone and Spark have all publicly indicated they are already planning to bring e-SIM capability to the market. We anticipate the following consumer benefits and use cases:

- The ability to have a work-related and personal number on the same device. While dual-SIM devices already allow this, e-SIMs will make it easier to set up the second number either on a traditional SIM or an e-SIM.
- New Zealand overseas travellers will be able to select a local mobile provider on their arrival using their existing device without having to remove their New Zealand activated SIM. 2degrees recently launched Wi-Fi calling to allow overseas travellers to call local New Zealand numbers via a Wi-Fi connection. We see e-SIM as being a similarly useful technology that will help reduce international roaming charges.
- **[C-I-C]**
- There is not a one-stop step to allow e-SIMs: at present operators must work separately with e-SIM providers, for example, Apple, Samsung and others, as well as infrastructure providers. E-SIM provisioning will require significant changes to legacy processes and systems, which have been built around physical SIM cards.
- The costs involved in the implementation of e-SIMs across networks is not yet known at this point but is likely to be complex and require significant resource.



Appendix A: Commercial interactions regarding MVNOs

[C-I-C]