



25 January 2017

Michael Cosgrave
Executive General Manager
Infrastructure Regulation
Australian Competition and Consumer Commission
GPO Box 520
Melbourne VIC 3001

By email: michael.cosgrave@accc.gov.au

Copy to:

mobileroaminginquiry@accc.gov.au

Dear Mr Cosgrave,

Supplementary submission to mobile roaming declaration inquiry

This letter is a brief supplementary submission in response to some material presented by Vodafone to the current mobile roaming declaration inquiry. This supplementary submission includes:

- A second report prepared by Professor George Yarrow responding to the reports of Dr Ritzmann and Mr Feasey (**Annexure A**) – Professor Yarrow agrees with Dr Ritzmann and Mr Feasey that there is a linkage between coverage in regional and rural Australia and out-of-area users, but far from operating as an “infectious transmission mechanism” to disadvantage consumers, Professor Yarrow explains that it has resulted in more coverage and lower prices for regional and rural consumers than would be the case if the linkage was broken by regulated roaming;
- A report prepared by Professor Jonathan Pincus responding to the report prepared by the Centre for International Economics (the **CIE**) (**Annexure B**) – Professor Pincus identifies the significant conceptual and implementation errors with the CIE’s analysis. Vodafone depends on this analysis for its incorrect assertion that regulation of roaming would return to consumers the “price premium” Telstra is said to earn; and
- Telstra’s analysis and clarification of inaccurate representations made in Vodafone’s submission.

The vast majority of issues raised in submissions to the inquiry have been addressed in detail in Telstra’s original submission and responses to information requests from the ACCC and are not re-iterated here.

Nationally-consistent pricing delivers benefits for regional and rural customers

Vodafone’s submission draws upon the expert reports prepared by Dr Ritzmann and Mr Feasey to characterise uniform national pricing as an “infectious transmission mechanism”. This fundamentally misunderstands the economics of investing in regional and rural Australia and the benefits that uniform national pricing has delivered for regional and rural Australians.

Professor Yarrow starts from the same place as Dr Ritzmann and Mr Feasey:

“The most important [point of agreement between us], and hence the one I want to focus on, is simply that when an MNO extends its coverage, whether by introducing service into an area for the first time or by extending its deployment of the latest vintage of technology to the area, it materially affects demand for that MNO’s services in areas other than the newly-covered area itself.”

While Dr Ritzmann and Mr Feasey see this linkage between investments in regional and rural areas and out-of-area effects as allowing Telstra to leverage its alleged market power in regional and rural areas into more competitive metro areas, Professor Yarrow explains that the dynamic actually flows in the reverse direction. The willingness of consumers in metro areas to pay for better coverage ensures that the mobile network is expanded to regional and rural areas where it otherwise would not exist.

Professor Yarrow points out that businesses with substantial market power tend to achieve higher margins over costs by restricting supplies, including by under-investing in capacity relative to rivals. Competitive processes, by contrast, reward relative success, which in mobile telecommunications largely comes from investment in capacity and coverage over rivals. In Professor Yarrow’s view, this is exactly what is happening in the Australian mobile industry:

“Given that (a) VHA has invested less in coverage in rural and regional Australia than Telstra (and also Optus) and (b) incremental coverage has value to consumers, there is no indication of a failure of competition in the fact that Telstra has higher prices, higher margins and a higher market share than VHA.”

CIE’s analysis of Telstra’s “price premium” is flawed

The CIE report concluded that Telstra has a “price premium”, and attributed the ability to charge such a “premium” to Telstra’s market power. However, as outlined in detail in Professor Pincus’ report, not only has the CIE incorrectly calculated the “premium” but there is no statistical analysis in the CIE report to support the conclusion that Telstra has market power.

Professor Pincus found that:

- The CIE did not properly test the source of any “price premium”. There is nothing inherent in the model which means the Telstra premium is attributable to market power. The CIE ignored and failed to test other relevant variables such as quality of service, coverage and reliability which could explain the Telstra price premium. If its analysis looked at quality adjusted prices, the premium in the sense of an “unearned” rent may well have been zero with any higher price reflecting better quality.
- In any event, the “price premium” identified by the CIE was dramatically overstated (by more than two-thirds), including because the CIE focused on the difference between Telstra’s price and the average prices of Telstra’s competitors. If the comparison had been made between the pricing of individual competitors, it would be seen that there is a sliding scale of “premiums”, which is more consistent with differing customers’ perceptions of value between operators than Telstra’s market power. So, Optus earns a “premium” over Vodafone, while Vodafone in turn earns a “premium” over some of the cheaper priced MVNOs. The CIE’s analysis, in fact, shows Virgin has a price premium in post-paid mobile over all other competitors, including Telstra. The CIE’s assertion that price premium reflects market power is not credible in the face of the Virgin result.



Capital intensity is not an accurate indicator of the investment impact regulated mobile roaming would have on regional Australia

Vodafone has relied upon international examples of capital intensity as a benchmark for the investment impact regulated roaming would have in regional Australia. This is misleading and inaccurate for a number of reasons as set out in detail at **Annexure C**.

The position put forward by Vodafone that capital intensity grew in other jurisdictions after the introduction of regulated roaming does not acknowledge:

- The cyclical nature of capital intensity (2G to 3G to 4G), which means any growth in capital expenditure may be more accurately attributed to the heavy investment required to deliver customers a new generation of technology;
- That the network-wide aggregate capital intensity figures cited provide no evidence as to the impact of roaming on investment in regional and rural areas: i.e. investment could have been shifted to urban areas and away from regional and rural areas; and
- The limited extent of regulation in other jurisdictions, in particular the fact that access prices are not regulated, may account for the absence of any observed reductions in network-wide aggregated capital intensity.

Figures on Government funding directed towards Telstra's mobile network are inaccurate

Vodafone's submission purports to show Government funding directed towards Telstra's mobile network, however their figures include a number of inaccuracies:

- Vodafone has included funding that is not related to Telstra's mobile network such as Universal Service Obligation (**USO**) funding (which is for the supply of fixed telephony service) and funding for the rollout of optic fibre to state-owned schools; and
- Vodafone has also double counted some co-investment initiatives. For example the projects being undertaken in Tasmania as part of Round 1 of the Mobile Black Spot Programme and the USO funding for the years 2013 to 2016 are both counted twice.

The frequency of these kinds of errors erodes faith in the accuracy of other aspects of Vodafone's submission and we have been unable to verify many of the figures put forward.

If you would like to discuss these issues further, please contact Iain Little on 02 9866 0261 or ian.little@team.telstra.com.

Yours sincerely,

Jane van Beelen
Executive Director, Regulatory Affairs
Corporate Affairs
jane.vanbeelen@team.telstra.com

**Australian Competition and Consumer Commission
Domestic mobile roaming inquiry 2016**

Second Report of Professor George Yarrow

24 January 2017

Prepared for: Telstra Corporation Limited

Instructions and qualifications

1. I refer to my previous report dated 1 December 2016 (**First Report**). As with respect to that report, I am instructed by Gilbert + Tobin, the solicitors acting on behalf of Telstra Corporation Limited. I have been asked to prepare a report commenting on the reports of Dr Ritzmann and Mr Feasey, prepared on behalf of Vodafone Hutchison Australia. A copy of my letter of instructions is attached as Appendix 1 to this report.
2. I have read the Harmonised Expert Witness Code of Conduct (Annexure A to Federal Court of Australia Practice Note GPN-EXPT) and agree to be bound by it.
3. I have made all the inquiries which I believe are desirable and appropriate (save for any matters identified explicitly in the report), and no matters of significance which I regard as relevant have, to my knowledge, been withheld.
4. My qualifications and experience are outlined in the First Report.

Points of agreement

5. It is appropriate at the outset to note that each of the reports of Dr Ritzmann and Mr Feasey contains points with which I would agree, although the occurrences are significantly higher in the latter than in the former.
6. The most important of these points, and hence the one I want to focus on, is simply that when an MNO extends its coverage, whether by introducing service into an area for the first time or by extending its deployment of the latest vintage of technology to the area, it materially affects demand for that MNO's services in areas other than the newly-covered area itself. Specifically, it serves to increase the MNO's demand (at given prices) since the additional coverage enhances the value of its services to many 'out-of-area' consumers.
7. The arguments of both Dr Ritzmann and Mr Feasey recognise that this effect is quantitatively significant or substantial relative to the level of investment involved. If that were not the case, the out-of-area mischiefs they claim are caused by a 'monopoly' facilities provider in a rural or regional area would not be particularly material factors in a declaration decision, i.e. the various Dr Ritzmann and Mr Feasey arguments would quickly flounder in the face of any reasonable test for materiality.
8. I agree with these basic points because the evidence I have seen supports both the existence and materiality of the value-enhancing effect for out-of-area consumers that is attributable to incremental coverage in any one area. This implies that any modelling directed at assessing whether or not it is economic to build new facilities in an area should take the effect into account and that the modelling will be defective if it fails to do so.
9. At a more general level, I would say that there is greater overlap in the conceptualisation of the relevant factual context between my paper and Mr Feasey's than there is between my paper and Dr Ritzmann's. Mr Feasey affords more weight to dynamic issues than Dr Ritzmann, for example by more clearly distinguishing between coverage of 3G and 4G (and potentially also later generations of technologies) and giving more weight to dynamic aspects of the particular context, i.e.

mobile telephony. In contrast, Dr Ritzmann's analysis rests on a heavily static and more abstract conceptual framework. For reasons that I gave in my paper, dynamic factors can be expected to be much more salient to the LTIE than static factors.

10. Perhaps most significantly, Mr Feasey refers to the level of coverage offered to consumers by an MNO as an aspect of service 'quality' and speaks of it being a 'dimension of competition'. This was the approach taken in my own paper and the commonality has the side-effect of making it rather easier to explain where the differences between our conclusions come from.

Points of difference

11. My principal differences with Dr Ritzmann and Mr Feasey fall under three, inter-linked headings:
 - The neglect of features of the context that are highly salient for a declaration, coupled with the introduction of irrelevant features ('red herrings') into the assessment.
 - The structured reasoning that draws interpretations and conclusions from observations or, more often, the lack of such reasoning.
 - The level of practical difficulty involved in establishing a workably effective wholesale access regime in the event of declaration.
12. I will explain some of the major differences in later sub-sections, but let me start with one or two general points, the first of which goes to the first of the three bullet points
13. Dr Ritzmann and Mr Feasey focus on the linkages between investments in rural and regional areas and out-of-area effects only in relation to Telstra. However, the same linkages exist for Optus and VHA. When these companies invest in increased coverage in a rural or regional area it will have demand expanding effects for their out-of-area service offerings, which can be expected to increase out-of-area revenues and profits. For example, if VHA is disadvantaged by a coverage gap with Telstra or Optus, it can reduce that disadvantage by reducing the gap, i.e. by investing more in its own facilities. Both Dr Ritzmann and Mr Feasey are silent on this point, but it is central to any assessment of the effects of declaration.
14. In relation to the second, bulleted heading, Mr Feasey's and (to a much lesser extent) Dr Ritzmann's references to the 'competitive price' are worth noting. In practice, this is not something that can be pinned down *ex ante*, it is a price, or more usually a range of prices, that is 'discovered' by the process of competition, a process that itself would be economically redundant if we know what it would discover. A more interesting question to ask is: what sort of price structure would we expect to find in a competitive context characterised by product/service innovation, i.e. circumstances where rival businesses are seeking constantly to improve the quality of the product or service?
15. At the level of abstract theory, there are many possibilities, but a commonly recurring empirical pattern is for a market leader to emerge with a higher market share, higher prices, higher margins and, in the perception of consumers (which are the perceptions

that matter most for determining outcomes), a ‘higher quality product/service’. More generally price tends to be positively correlated with the ‘quality’ of the product or service offered.

16. Even if price outcomes could be forecast accurately, there could be no single, competitive price, because prices vary across products, and it simply a manifest error to point to the existence of a higher margin for one business (Telstra in the two reports) and to infer from this that its prices must be above the ‘competitive level’. What is of interest is whether the price *structure* reflects a pattern to be expected if financial rewards are positively correlated with performance in satisfying consumers.
17. That is how competitive processes work: they reward *relative* success, i.e. relative performance as assessed by consumers, and penalise *relative* failure. Businesses with substantial market power, on the other, hand tend to achieve higher margins over costs by *restricting supplies*, including by under-investing in capacity relative to rivals. Given that (a) VHA has invested less in coverage in rural and regional Australia than Telstra (and also Optus) and (b) incremental coverage has value to consumers, there is no indication of a failure of competition in the fact that Telstra has higher prices, higher margins and a higher market share than VHA.
18. My favourite case study underscoring these points is soluble (instant) coffee in the UK. The product was first introduced to the market by Nestlé under the brand name Nescafé. Following trade complaints in 1989, Nestlé’s ‘scale monopoly’ was investigated by the Monopolies and Mergers Commission (MMC). In the course of the investigation, one of the findings was a Nestlé rate of return on capital employed of 114%.¹ The resulting MMC report (1991) gave Nestlé a completely clean bill of health: it concluded that competition was effective – the company was just good at what it did.
19. There is an excellent short summary of the case in Maria Moschandreas, *Business Economics*, pp. 32-35, which I think would have resonances for the ACCC in its current assessment.² The relevant, underlying theorising goes back to a mini-classic economic paper by Professor Harold Demsetz, “Industry Structure, Market Rivalry and Public Policy”, which set out what is called the ‘differential efficiency’ or ‘competitive superiority’ hypothesis (see further at paragraph 56 and footnote 4).³

The concept of natural monopoly

20. Appropriately in light of the questions posed to him, Mr Feasey does not refer to the notion of natural monopoly at all. In contrast, it is the lead concept in Dr Ritzmann’s paper.

¹ This is on the high side by any standards! It was partly a result of accounting underestimation of the ‘economic’ capital employed, but corrections for these effects still left a rate of return in excess of 40%, well above any realistic estimate of the cost of capital.

² Sight of which can be obtained, via Google books, by searching for “Monopolies and Mergers Commission Soluble Coffee”.

³ In the *Journal of Law and Economics*, 1973.

21. Dr Ritzmann's analysis is straight from the textbooks. For example, it is static throughout and *assumes* the existence of a well-defined market. Even proceeding on this basis there are potential quibbles relating to some of the statements subsequently made, but they are not critical to the main point and therefore will be not be considered here.

Sources of revenues

22. The main point is simply that, in investing in infrastructure in a particular geographic area characterised by a low population density – call it area A – that has not previously been covered, an MNO (whether it is a first mover or a second, third, or fourth mover), has three principal, potential sources of incremental revenues that are consequential on such investment:
1. Retail customers primarily located in A.
 2. Wholesale customers.
 3. Retail customers primarily located outside A.
23. Revenues from the third source arise from higher prices, higher sales volumes, or both for services to consumers living outside area A. They reflect the existence of the (uncontentious) out-of-area demand expanding effects of incremental coverage of the area.
24. These revenues are important in determining the micro-structure of investment incentives. The questions facing an MNO are not just whether or not to increase coverage: there are also questions about which piece of territory to cover next in any business plan. Two areas A and B may be economically similar in terms of factors affecting revenue source (1) and affecting investment costs, but revenue source (3) may be very different between the two areas, for example because one contains a significant vacation destination or is located closer to a more densely-populated area giving rise to more in-and-out movement of end users. Thus, at any particular time, it might be profitable to cover one area but not the other.
25. Economic textbooks abstract from revenue sources (2) and (3): these are features of a specific economic context which do not merit space in teaching exercises that are focused on providing a more general grounding in concepts and principles. They cannot, however, be legitimately ignored by a regulator assessing a declaration decision in an economic context where they are salient considerations.
26. Among other things, revenue source (3) goes hand-in-hand with the notion that an investment decision with regard to facilities that would expand coverage are influenced by the state of competition across a much wider geographic area. This necessarily changes how a supervisory authority addresses the relevant issues, including in relation to market definition should the authority choose to engage in that exercise (which, as I explained in my report, I do not think is at all necessary for the ACCC to do in considering declaration).
27. As I read it, the first section Dr Ritzmann's report, which is concerned with an assessment of whether or not rural and regional Australia is likely to be an area

characterised by a multiplicity of ‘natural monopolies’, does ignore them. Dr Ritzmann’s spill-over effects, i.e. effects of incremental coverage on out-of-area ‘markets’, are not explicitly mentioned in section 3 of the paper (they come later, in section 4) and the sense of the argument is very much along classroom lines: roughly “here is a small market coupled with strong economies of scale in supply, so we can safely infer that there is a natural monopoly”. The existence of revenue source (3) is sufficient to undermine that line of reasoning.

28. Spill-over effects are not something to be added later, once a conclusion about natural monopoly has been reached: they are highly relevant in assessing the payoffs from new investment, including by new challengers, in a geographic area whose residents are served by one MNO. Thus, as Mr Feasey points out, the evidence suggests that many areas in rural and regional Australia would not be served at all, but for the spill-over effects (see paragraph 43 below). It is therefore strange to be worried about ‘natural monopoly’ in areas where coverage only exists in the first place in consequence of competition across a broader geographic area.
29. It is possible that the deficiency is remedied in the VHA model that Dr Ritzmann refers to and endorses. Not having had access to it, I cannot offer a firm view on that, but the issue is of such importance that I would have at least expected some discussion of it in the paper, whether or not the spreadsheet model actually encompasses revenue source (3). I suspect, however, that the model does not encompass the relevant demand-enhancing effects, for two reasons:
 - a. The cited implications of the modelling for the scope of coverage by both one MNO and, in particular, by two MNOs (‘duopoly’ areas) appear to be at variance with what is observed in practice. For example, Optus appears to have achieved a level of coverage that is inexplicable on the numbers presented, which strongly suggests that something has been missed.
 - b. The notion that the chosen areas are in some sense ‘representative’ of rural and regional Australia as a whole is problematic in the light of spill-over effects, since the value of the demand enhancement in any one area can be expected to be sensitive to the specifics of geographical location, not just to its population and its geographic size. Dr Ritzmann makes no mention of this point.
30. The ACCC has presumably been provided with the analysis and will therefore have access to the all-important assumptions. Diagnostic questions that could be asked include:
 - Are the additional revenue sources, particularly source (3) encompassed by the analysis?
 - If so, how large are the estimates of these revenues and how do they compare with the estimates for revenue source (1)?
 - Also if so, what precisely are the assumptions that have been made in attaching numbers to revenue source (3)?

The ubiquity of inter-area linkages

31. The third diagnostic question is particularly important, because it is to be expected that investment in incremental coverage will, as indicated above, give rise to these incremental revenues (relative to a *status quo* benchmark) for any MNO, irrespective of its overall market position and for any area of the country, irrespective of its population density, to or through which people from other areas might wish to travel. Geographic mobility of end users therefore appears to make the search for areas characterised by the existence of both (a) a single facilities provider and (b) significant market power look like a hunt for an elusive quarry.
32. As emphasised by both Dr Ritzmann and Mr Feasey, the higher coverage achieved by Telstra can be expected to boost its demand relative to that of its competitors, but the other side of the same coin is that VHA can expect that investments in incremental coverage of its own would create higher demand for its services from out-of-area customers, improving its market position vis-à-vis Telstra and Optus. At given prices, such a shift in the perceived, *relative* value/quality of its services can be expected to lead to some customers to switch to it from its rivals. Indeed, the resulting enhancement of revenues is presumably precisely why VHA is seeking a declaration decision.
33. Dr Ritzmann and Mr Feasey focus the arguments solely on Telstra, but they should have explicitly recognised and discussed the relevance of revenue source (3) to VHA (and Optus). Had they done so, they would have recognised that, like Telstra's incentives to invest in areas of rural and regional Australia, VHA's incentives to invest are enhanced by competitive factors to be found across a much wider geography.

Natural monopoly and market power

34. Dr Ritzmann seems to proceed on the basis of a presumption that the existence of a sole provider of a product or service to a particular sub-set of customers necessarily implies the existence of substantial market power, with the further (unassessed) implication that such power will be exploited to the detriment of the LTIE. In commenting, I would simply repeat the points in my report to the effect that this is not so.
35. The spill-over or out-of-area effects, which all three reports recognise, are directly relevant considerations in assessing market power. In reaching conclusions about the latter without taking account of spill-overs (which are only introduced later in his report), Dr Ritzmann has, in effect, ignored a factor that is highly relevant to the assessment of market power.

Bundling and leverage

36. The above remarks are also relevant to the issues of bundling raised by Dr Ritzmann and to leverage issues raised by both Dr Ritzmann and Mr Feasey.
37. In section 4, Dr Ritzmann's paper continues to rely on static, economic theorising, which again tends to give a sense of trying to squeeze a dynamic and evolving, observable factual context into a theoretical framework that is too small and limited to

fit (a metaphorical Cinderella's slipper). Parsimony can be a good thing in theoretical analysis, but only if it is not taken so far that it fails to provide an account of salient, observed realities.

38. From the outset, the whole issue of 'bundling' looks odd in a mobile telecoms context where "the ability to receive service in two or more locations" is inherent in the notion of the product itself. To call it "bundling" (see top of page 18) seems artificial to me.
39. It is also unclear what point is being made. It appears that it is an argument that things would work better if Telstra's charges were somehow spatially differentiated so as to much more closely reflect spatial variations in costs. That has immediately obvious disadvantages for at least some important sub-sets of consumers, e.g. potentially higher prices for those who reside or work in rural and regional Australia. I am left puzzled.
40. Even if the concept were somehow relevant to the issues at hand, it is equally unclear where the economics literature referred to be Dr Ritzmann takes us. As he explains: *"The economic literature supports the conclusion that bundling can have different effects, including anti-competitive effects. Bundling can, in some circumstances, have a pro-competitive effect, including where it can have the arguably pro-competitive effect of enabling providers to sort between different customer groups and to price discriminate between different customer groups and to price discriminate between them."* The only quibble with that statement is that the 'some' may give an impression that the relevant (pro-competitive) contexts are exceptional, rather than, as they are in reality, the norm. In my view, this observation does nothing to advance matters for the purposes at hand.
41. Turning to leverage, which is heavily emphasised by both Dr Ritzmann and Mr Feasey, the underlying argument seems to be that Telstra can charge higher prices in areas other than A by virtue of offering greater coverage than other MNOs (according to Mr Feasey, slightly greater than Optus and significantly greater than VHA) and that this means, in some sense or other, that there has been a softening of competition. In my view it is a mistake to jump from such an observation to such a conclusion, particularly given that this type of observation can be made very widely across competitive markets in which products of different qualities (i.e. of different values) are offered to consumers. If product 1 is of higher quality than product 2, there will typically be price points at which a lower price of 2 renders it 'competitive' with product 1. If the supplier of product 2 prices below the relevant point, it will tend to gain business, if it prices above the point it will tend to lose business. That is what price competition looks like in the presence of quality differentiation, as is made more obvious if the analysis of the rivalry/competition is framed in terms of 'quality adjusted prices'.
42. At this point it is relevant to note that Mr Feasey is much clearer about the underlying issues, as when he recognises not only that coverage is a dimension of quality of service offered, but also that it is a dimension of competition. What he fails to note, however, is that it is a fundamental characteristic of competition in any dimension that it rewards better performance (relative to rivals) in serving consumer interests.

43. By way of analogy, consider a vehicle manufacturer that, having made considerable expenditures on the effort, developed a car engine that is significantly more fuel efficient than those of its rivals. Some consumers will value this quality enhancement more than others: the value to those who travel more will benefit to a greater extent than those who travel less. The manufacturer will benefit commercially from higher sales volumes or higher prices or a combination of the two. It will likely place considerable stress in its marketing on this particular advantage of its products. None of these things would normally be interpreted as being anti-competitive, still less as establishing a case for mandating supply of its engine to its competitors at a regulated price.
44. Leveraging models also assume that there exists substantial market power in the first place in one or other product or service area. For reasons given, I very much doubt that such power exists and the argument looks very much like a notion that the tail can wag the dog. My own perception is that high levels of coverage in rural and regional Australia have been driven by the strength of retail competition, particularly competition in the coverage dimension, across the country as a whole, and note that this is consistent with Mr Feasey's remark on Telstra's coverage in low population density areas, on page 23 of his report, that: *"It is clear that most, if not all, of these investments would not be viable if assessed only on the basis of the benefits (and hence willingness to pay) of the 1-3% of the population who would directly benefit from the availability of mobile services in the areas where they live and work."*
45. I agree with that it is likely that a percentage of the population will be uneconomic to serve if assessed on the basis of the direct revenue they generate, and we therefore differ only in our analysis of competition. My view is simply that the strength of the incentives to push out coverage derives from the strength of competition in the coverage dimension across Australia as a whole. The relevant economic context is one in which commercial rewards are relatively highly geared to differences in coverage. Reducing this gearing, i.e. reducing the competitive pressure, which is what declaration would tend to do, can be expected to dampen investment incentives.

The effects of declaration

46. It is failure to appreciate this simple point about competitive incentives that most fundamentally undermines the accounts of the possible effects of declaration which are to be found in the Dr Ritzmann's and Mr Feasey's reports.
47. Mr Feasey is wrong to dismiss the ACCC's expressed concerns about the *possibility* that such an effect may turn out to have negative consequences for consumers. Like Dr Ritzmann he argues that the effects of declaration will be beneficial, although there is little logical structure to the arguments at this point in the paper and no substantiation of the claims.
48. It is possible that the conjectures of any favoured narrative could be right: for example, it is not always the case that a high gearing between financial rewards and relative success in meeting customer requirements – which is what is implied by the notion of strong competition – is in the best interests of consumers. In general, however, public policy works with a strong presumption that it usually is, based on

long historical experience encompassing a large range of different factual contexts. That is, before any detailed analysis is undertaken, it is normally presumed that damping or restricting competition will have a reasonably high probability of being contrary to the LTIE.

49. In my view, the expressed concern that Mr Feasey seeks to set aside reflects no more than the general position of all leading competition authorities, everywhere. The prior probability can, of course, be adjusted in the light of results of detailed analysis – there can be exceptions and exemptions – but simply pointing to other *possibilities* is a long mile short of substantiating the case for doing so, particularly in a context where, as discussed in my First Report, the threshold to be reached for a declaration decision to be warranted is a relatively high one.
50. Predicting the outcomes of any competitive process is an uncertain exercise at the best of times, but it is usually more straightforward to identify the types of pathways by which adverse effects of declaration on the LTIE could come about. Let me simply give four possibilities:
- Both Dr Ritzmann and Mr Feasey share view that additional coverage has significant effects on the profitability of an MNO. If coverage is equalised, the incentive effects of that commercial linkage are eroded. Since there is reduced payoff from investing to increase coverage, whether by providing service in an area for the first time or by introducing new technologies into that area, coverage will be lower in later periods than it would be in the absence of declaration. Quality of service would therefore be lower or, put another way, quality adjusted prices would rise.
 - Declaration would promote greater homogenisation of coverage among competitors which, like other types of homogeneity among businesses, may create conditions more conducive to tacit co-ordination in pricing.
 - Equalisation of coverage may, by impeding price differentiation based on quality differentiation, lead to higher average prices, even assuming an absence of tacit pricing co-ordination (that was the gist of all economic advice to Ofgem, confirmed by experience to have been sound advice, in the example I gave in my original paper).
 - Substituting market-determined outcomes with regulation is never costless. There are enforcement and compliance costs, as well as increased uncertainty surrounding payoffs from investment which can have negative effects on investment. Higher costs and damped investment incentives tend over time to feed into higher prices. It is always to be remembered that, in acting in a context where businesses are already subject to competitive pressures, a regulator is exercising monopoly power and increasing monopolistic influences in a market is only likely to be good for the LTIE when the problem to be tackled is both big enough and unambiguous enough to warrant the costs and risks involved.
51. Of these, I would rate the second as the most speculative and attach significantly greater likelihoods to the others.

Market shares and the ‘ladder of investment’

52. I note that Dr Ritzmann and Mr Feasey seek to discount the possibility of diminished investment incentives – the normal, expected, direct consequence of substituting service competition for facilities-based competition – by reference to the concept of the ‘ladder of investment’. The notion is that by legislating for regulated access, a new entrant can build market share that will be favourable to investment in facilities in the longer term, even though it may reduce investment incentives in the short term.
53. In support of this argument it is often argued that, in the shorter term, this will not only increase service competition, but also reduce costs by reducing duplication in facilities. In the telling of the story, it not always pointed out that nearly all, observable forms of competition entail duplication and that retail services competition is no exception. A quick examination of retail margins in competitive retail energy markets is sufficient to verify the last point.
54. The ‘ladder of investment’ is a possible narrative, but no more than that, and I can be brief on this point because, judging by their remarks, neither Dr Ritzmann nor Mr Feasey appear to have much enthusiasm for the argument. In Mr Feasey’s case, the publications cited at the end of his report suggest that his views on the matter are rather close to my own: highly sceptical.
55. The narrative has been popular in the politicised context of European telecoms regulation, but less so elsewhere – hence Mr Feasey’s slightly tongue in cheek comment that it is “much loved in Europe”. That remark is true, because as he has himself explained in other presentations and writing, it tells a story in which there is little or no trade-off between services-based competition and facilities-based competition.
56. It is one thing to substitute services-based competition for facilities-based competition in circumstances where markets are first being opened up, the latter form of competition is entirely absent, and there is uncertainty as to whether it will be feasible at all. We are now relatively remote from those circumstances, however, and interventions to tilt the balance toward services-based competition can very easily give rise to a form of ‘protectionism’ that serves to preserve business models and strategies – and, if they fail to adapt, whole businesses – that would be driven out by more effective competition.
57. As explained by Demsetz (see footnote 3) in a simpler theoretical setting, in competitive markets, market shares and market concentration evolve in ways that reflect comparative performance. Interventions that hinder that evolutionary process by favouring particular business strategies or business models, or by favouring particular market structures (e.g. more equal market shares), tend to have anti-competitive effects as soon as there is any established competition to distort or

restrict.⁴ Revenue source (3) indicates that, in Australian mobile telephony, the latter condition is satisfied.

58. I note that, in closing, Dr Ritzmann offers some apparent encouragement to the ACCC to take on the burdens that would be entailed by declaration⁵: *“I state clearly that the opinion expressed in this section, namely that mandated access can encourage the efficient use of and investment in infrastructure, is reliant on [my emphasis] an appropriate access pricing level and structure which preserves the desirable incentives (such as the incentives for the access provider to upgrade its network, ... extend its network, and invest in cost-saving technology) being determined. An experienced telecommunications regulator will commonly be in a good position to understand the various considerations relevant to setting an access price that preserves the desirable incentives on access seekers that result in efficient and desirable outcomes in the long-term interests of end-users.”*
59. Coverage investment incentives are currently strong precisely because of the financial rewards are highly geared to coverage, and the very same competition that creates the gearing implies that those who value coverage most make the largest contributions to recovering the costs of the investments. Declaration could be expected to weaken the relevant gearing and break the link between willingness to pay for increased coverage and actual payments to an MNO for such coverage (a link currently sustained by a self-sorting mechanism). Anyone responsible for determinations would therefore be faced with the task of having to discover incentive arrangements that repaired the damage, but trying to replicate a competitive discovery process is an exceptionally difficult thing to do with any precision or with any degree of confidence about the likely consequences.
60. Dr Ritzmann’s final sentence is closer to the mark, but I would add to it as follows: *Having understood these considerations, an experienced regulator will recognise the formidable difficulties involved: he/she will therefore likely also recognise that these difficulties should not easily be set aside on assumptions that they can be resolved later and that all will necessarily turn out well in the end.*

⁴ The flavour of Demsetz’s points can be obtained from his paper’s concluding paragraph: *“I have presented an explanation of industry structure and profitability based on competitive superiority. The problem faced by a de-concentration or anti-merger policy was posed on the basis of this explanation. Is there a problem that such a policy will produce more inefficiency than it eliminates? The data presented suggest that such a possibility should be taken seriously.”*

⁵ I cannot comment on Mr Feasey’s remarks on access pricing because they are redacted in the copy of his report with which I have been supplied.

Appendix 1

Partner Peter Waters
Contact Genevieve Rahman
T +61 2 9263 4194
grahman@gtlaw.com.au
Our ref 1030364



L 35, Tower Two, International Towers Sydney
200 Barangaroo Avenue,
Barangaroo NSW 2000 AUS
T +61 2 9263 4000 F +61 2 9263 4111
www.gtlaw.com.au

23 January 2017

By email

Professor George Yarrow
Chairman, Regulatory Policy Institute

Email: George.Yarrow@rpieurope.org

Confidential

Dear Professor Yarrow

Response to the Australian Competition and Consumer Commission regarding potential declaration of a wholesale domestic roaming service on behalf of Telstra Corporation Limited

1 Background

- 1.1 We refer to our letter dated 30 November 2016, engaging you on behalf of Telstra Corporation Limited (**Telstra**) to provide a report in relation to an inquiry commenced by the Australian Competition and Consumer Commission (**ACCC**) into whether to declare a wholesale domestic mobile roaming service (**ACCC Inquiry**).
- 1.2 As you are aware, the ACCC invited submissions to the Discussion Paper from mobile network operators. Submissions were provided by a number of operators, including Telstra and Vodafone Hutchison Australia Pty Ltd (**VHA**). VHA's submission was accompanied by a number of expert reports, including:
 - (a) the report of Dr Derek Ritzmann dated 1 December 2016; and
 - (b) the report of Mr Richard Feasey (undated).
- 1.3 We have been instructed to engage you, on behalf of Telstra, to prepare a supplementary report based on your expert opinion. As with respect to your previous engagement, your report is for use by Telstra in relation to the ACCC Inquiry. Telstra may seek to rely upon your report in any subsequent review of the ACCC's final decision. If that occurs, we will contact you.
- 1.4 By this letter, we set out our written instructions to you.

2 Scope of work

- 2.1 You are retained to provide an expert report which addresses the reports of Dr Derek Ritzmann and Mr Richard Feasey.

3 Guidelines for preparing your report

- 3.1 While you have not been engaged in respect of any legal proceedings, Telstra is seeking a robust and rigorous independent expert report. We request that you prepare your report in accordance with Federal Court of Australia *Harmonised Expert Witness Code of Conduct*. A copy of the Code of Conduct is enclosed at **Attachment A**.
- 3.2 In particular, in preparing your report, we ask that you please:
- (a) identify your relevant area of expertise and provide a curriculum vitae setting out the details of that expertise;
 - (b) only address matters that are within your expertise;
 - (c) where you have used factual or data inputs please identify those inputs and the sources;
 - (d) if you make assumptions, please identify them as such and confirm that they are in your opinion reasonable assumptions to make;
 - (e) if you undertake empirical work, please identify and explain the methods used by you in a manner that is accessible to a person not expert in your field;
 - (f) confirm that you have made all the inquiries that you believe are desirable and appropriate and that no matters of significance that you regard as relevant have, to your knowledge, been withheld from your report; and
 - (g) do not provide legal advocacy or argument and please do not use an argumentative tone.

4 Confidentiality and legal professional privilege

- 4.1 Presently, your report and all correspondence between us (excluding this letter) is subject to legal professional privilege. In addition, the information we have provided to you is commercially sensitive and confidential. For these reasons, we request you do not disclose or discuss your report, our correspondence or any information we provide to you with any third parties.

Yours faithfully
Gilbert + Tobin



Peter Waters
Partner
T +61 2 9263 4233
pwaters@gtlaw.com.au

Amy Campbell
Lawyer
T +61 2 9263 4155
acampbell@gtlaw.com.au

Attachment A

Harmonised Expert Witness Code of Conduct **(Annexure A to Federal Court of Australia Practice Note GPN-EXPT)**

APPLICATION OF CODE

1. This Code of Conduct applies to any expert witness engaged or appointed:
 - (a) to provide an expert's report for use as evidence in proceedings or proposed proceedings; or
 - (b) to give opinion evidence in proceedings or proposed proceedings.

GENERAL DUTIES TO THE COURT

2. An expert witness is not an advocate for a party and has a paramount duty, overriding any duty to the party to the proceedings or other person retaining the expert witness, to assist the Court impartially on matters relevant to the area of expertise of the witness.

CONTENT OF REPORT

3. Every report prepared by an expert witness for use in Court shall clearly state the opinion or opinions of the expert and shall state, specify or provide:
 - (a) the name and address of the expert;
 - (b) an acknowledgment that the expert has read this code and agrees to be bound by it;
 - (c) the qualifications of the expert to prepare the report;
 - (d) the assumptions and material facts on which each opinion expressed in the report is based [a letter of instructions may be annexed];
 - (e) the reasons for and any literature or other materials utilised in support of such opinion;
 - (f) (if applicable) that a particular question, issue or matter falls outside the expert's field of expertise;
 - (g) any examinations, tests or other investigations on which the expert has relied, identifying the person who carried them out and that person's qualifications;
 - (h) the extent to which any opinion which the expert has expressed involves the acceptance of another person's opinion, the identification of that other person and the opinion expressed by that other person;
 - (i) a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the Court;
 - (j) any qualifications on an opinion expressed in the report without which the report is or may be incomplete or inaccurate;
 - (k) whether any opinion expressed in the report is not a concluded opinion because of

insufficient research or insufficient data or for any other reason; and

- (l) where the report is lengthy or complex, a brief summary of the report at the beginning of the report.

SUPPLEMENTARY REPORT FOLLOWING CHANGE OF OPINION

- 4. Where an expert witness has provided to a party (or that party's legal representative) a report for use in Court, and the expert thereafter changes his or her opinion on a material matter, the expert shall forthwith provide to the party (or that party's legal representative) a supplementary report which shall state, specify or provide the information referred to in paragraphs (a), (d), (e), (g), (h), (i), (j), (k) and (l) of clause 3 of this code and, if applicable, paragraph (f) of that clause.
- 5. In any subsequent report (whether prepared in accordance with clause 4 or not) the expert may refer to material contained in the earlier report without repeating it.

DUTY TO COMPLY WITH THE COURT'S DIRECTIONS

- 6. If directed to do so by the Court, an expert witness shall:
 - (a) confer with any other expert witness;
 - (b) provide the Court with a joint-report specifying (as the case requires) matters agreed and matters not agreed and the reasons for the experts not agreeing; and
 - (c) abide in a timely way by any direction of the Court.

CONFERENCE OF EXPERTS

- 7. Each expert witness shall:
 - (a) exercise his or her independent judgment in relation to every conference in which the expert participates pursuant to a direction of the Court and in relation to each report thereafter provided, and shall not act on any instruction or request to withhold or avoid agreement; and
 - (b) endeavour to reach agreement with the other expert witness (or witnesses) on any issue in dispute between them, or failing agreement, endeavour to identify and clarify the basis of disagreement on the issues which are in dispute.

Annexure B

Comments on the CIE hedonic regressions

Report of JJ Pincus

24 January 2017

Prepared on behalf of Telstra Corporation Limited for the Australian Competition and Consumer Commission's inquiry in relation to domestic mobile roaming

1 Summary

- 1.1 The statistical results are interpreted by the CIE as showing that, compared with the 'average' non-Telstra price for each type of service, Telstra has a price premium.
- 1.2 However, the results cannot be used to justify any public policy response, whether specific or general. This is because the CIE's econometric model provides no evidence at all as to the sources or causes of price premia, and has flaws that leave serious questions as to the quantum of any premia.
- 1.3 Crucially, the CIE stated that there is an explanation for Telstra's premia—structural defects in the markets that have given rise to Telstra's having market power. However, this purported explanation is merely an assertion: the CIE has not tested for whether any price differences are due to market power or to other potential explanatory factors.
- 1.4 Inherent in the CIE's modelling methodology is that the price premia reflect consumers' willingness-to-pay for specified providers.
- 1.5 Thus, a clear alternative explanation to the CIE's explanation is that the premia are due to unmeasured, provider-wide quality differences as perceived by consumers.
- 1.6 To the extent that provider-wide quality differences do explain the price premia, they represent what would be expected in a competitive market as a reward for an operator investing in a quality differential over its competitors. This alternative explanation reduces or completely removes the justification for structural reform and, in particular, any reform based on claims about Telstra's market power. Indeed, reforms, by penalising quality, could do more harm than good.
- 1.7 There are also serious errors in conception and application with the CIE model that mean that the Telstra's price premia is significantly overstated. Chief amongst these errors is the comparison of Telstra's prices to the average of all other providers, obscuring that some non-Telstra providers (e.g. Optus) also earn a premium over other competitors. The CIE data shows that one of Telstra's competitors, Virgin Mobile, earns a premium over Telstra, which on CIE's thesis would suggest it has more market power than Telstra. A comparison of pricing between individual operators suggest a sliding scale of premia which is more consistent with the alternative explanation of differences in customer perceptions of value and quality.
- 1.8 It is also impossible to assess the significance and robustness of the CIE's estimates, because the Annex lacks all but one of the usual statistical test results.
- 1.9 In short, mainly due to omitted variables, the CIE has significantly over-estimated Telstra's price premia and, having not explained them,

unjustifiably interpreted their estimates of Telstra's price premia as indicators of Telstra's market power. The CIE's estimates of the cost to consumers therefore give no guide as whether there is a need for structural reform or to the likely gross benefits of any such structural reform.

2 Introduction and qualifications

- 2.1 I have been instructed by Gilbert + Tobin, on behalf of Telstra Corporation Limited, to provide a report setting out my expert opinion with respect to the report of the Centre for International Economics dated November 2016, prepared on behalf of Vodafone Hutchison Australia (**VHA**). A copy of my instructions is set out in full in Annex A.
- 2.2 I have read the Harmonised Expert Witness Code of Conduct (Annexure A to Federal Court of Australia Practice Note GPN-EXPT) and agree to be bound by it.
- 2.3 I have prepared my report for use in relation to the Australian Competition and Consumer Commission's inquiry into whether to declare a wholesale domestic mobile roaming service.
- 2.4 I am a Visiting Professor of Economics at Adelaide University, and an independent researcher and consultant, including to the Department of Communications, as member of the expert panel advising on the cost-benefit study of the NBN options. I hold a PhD in Economics from Stanford. I was previously Principal Adviser Research at the Productivity Commission (2002 - 2007), and Professor and Head of Economics, the University of Adelaide. The Economic Society of Australia awarded me its second-only Distinguished Public Policy Fellowship medal in 2015. A copy of my curriculum vitae is set out in full in Annex B.

3 Explain the variation in price premia

- 3.1 In the CIE's statistical exercise, the unit of observation was a telecommunications subscriber plan, with the data set, of plan costs and characteristics, derived from the websites of the providers. The hedonic regressions were designed to partition the cost to the subscriber of telecommunications plans into two components: that part which is due to the objective **characteristics** of the plans (like data allowance, included calls, handset type, and expiry duration); and that part which is statistically associated with the brand of the **provider** (Amaysim, Optus and so on). The second part is called by the CIE the 'price premium' for the particular provider in that market. However, the CIE confined their attention to the excess of Telstra's premium, over the weighted average of the non-Telstra price premia.
- 3.2 This is not an acceptable limitation. At issue is the interpretation of the price premia generally, and not only Telstra's. In particular, the CIE's calculations of the excess Telstra price premia entail the assumption that whatever caused the price premium derived by the individual non-Telstra

competitors also had the same effect on Telstra's price premium, and so only the excess premium matters. In contrast, the appropriate scientific procedure is set out to explain or understand the cross-provider variation in price premia, as the necessary basis of an explanation of Telstra's excess premia (i.e. by comparing the relationship between each individual competitor, including between the non-Telstra competitors). This, the CIE did not do.

- 3.3 For example, if Optus has a price premium over Vodafone, the researcher would want to know why that was the case; and that explanation, whatever it might be, would equally be a candidate for explaining why Telstra had a premium over Optus. It makes no methodological sense to ignore the differences across the estimated non-Telstra price premia and assume that it is only the difference between Telstra and the average of others that merits explanation.
- 3.4 Whether or not any quantitative analysis would prove capable of uncovering the strength of the relevant casual chains, it is clearly the case that the CIE's statistical analysis does not do the work that the CIE attributed to it.

The CIE interpretation: structural impediments

- 3.5 On grounds other than their statistical results, the CIE identified Telstra's excess premia as evidence of and measure of market power, attributed mostly to Telstra's history and to various other alleged advantages:

"Our 2015 work identified five main impediments to the functioning of telecommunications markets that have led to the market price premiums observed.

1 Telstra has historically received, and continues to receive, subsidies such as the Universal Service Obligation and NBN Co. agreement ...

—these subsidies have allowed Telstra to entrench its market dominance ...

2 Regulated transmission prices...

3 Disparity in spectrum holdings in regional areas...

4 Ownership and access to facilities (such as mobile base stations)...

5 Consumer decisions over telecommunications services show that consumers are slow to change..."(CIE 2016: 2, 3; emphasis added).

- 3.6 However, these statements are mere assertions: the probative weight of these factors is never actually tested in the CIE's analysis. Rather than being explanations, they are a partial list of 'candidate explanations': that is, of possible explanations that a statistical analysis would normally test. Moreover, they are a partial list, as they exclude other, more obvious, possible factors, especially provider-wide quality differences.

- 3.7 To illustrate the disconnect between statistical results and these claims about structural issues: if the CIE's estimates of the excess of Telstra's price premia had turned out to be half of what the CIE actually reported, or double, then the CIE's explanation of the price premia would not be affected: theirs is an imposed explanation, not one derived from their data analysis.
- 3.8 Specifically, the CIE claimed that their statistical analysis 'suggests that structural issues are limiting the ability for competition to drive down market prices' (CIE 2016: 1), and that the excess price premia can be taken as indicators of the extent of Telstra's market power.
- 3.9 I note that I have been instructed only to consider whether the CIE's analysis supports its conclusions. As such, I do not express a view in this report as to the past, present or future state of the telecommunications industry.

4 Optus and fixed line premia

- 4.1 To illustrate the defects in the CIE's approach and especially their attribution of Telstra's price premia to structural impediments to competition, consider their interpretation of the results for the fixed line market.
- 4.2 The CIE estimated the relevant Telstra excess premium as the \$17.60 difference between Telstra's and the average non-Telstra estimated price premia.
- 4.3 However, why does Optus have a price premium in the fixed line market that, at \$7.00, is almost thirty times the same non-Telstra average? As this and similar questions about non-Telstra providers are nowhere posed in the Annex, we have to infer that the CIE's structural explanation would be that Optus has benefitted from the history of Telstra, but to a smaller extent than has Telstra itself.
- 4.4 Therefore, in its effort to measure the extent of Telstra's market power, the CIE has overestimated the excess Telstra fixed line premium by 67 per cent, as the \$17.60 excess above the average, rather than the \$10.60 excess above Optus.
- 4.5 In addition, the Annex does not allude to the fact that Telstra's fixed line prices are uniform across the country, whereas other providers charge more to customers who are 'off network', than to those 'on network'.¹ By itself, the CIE's neglect of the geography of pricing provides sufficient

¹ For iiNet, with 14 per cent of the relevant market (CIE table 2.6), see <https://www.iinet.net.au/internet-products/broadband/adsl/offnet/>
<https://www.iinet.net.au/internet-products/broadband/adsl/>

reason to treat, with extreme caution, the CIE's estimates of the excessive cost to Telstra's regional customers.

- 4.6 We will now show that, under the alternative to the CIE's interpretation, the policy-relevant Telstra price premia (where premia refers to unearned rents) may well be zero.

5 Quality matters

- 5.1 What explains the cross-provider variation in price premia? Specifically, what elements of those explanations apply to Telstra, in opposition to or completing the CIE's untested structural explanation? Ultimately, the CIE Annex provides no reliable evidence about policy-relevant price premia, or even if they exist. Without a quantitative explanation of alleged price premia, any suggested policy response is a shot in the dark.
- 5.3 It is important to emphasise that the CIE's own modelling methodology offers a general explanation of the nature of the price premia: ***they represent the values that consumers place on differences between providers, differences that are not otherwise captured in their data set.*** These differences must include not only simple brand recognition, but also objective differences in quality.
- 5.4 The CIE's explicit assumption is that, from the consumer point of view, a plan is a plan is a plan, regardless of provider:
- "We have collected data on 628 different post-paid phone plans, 65 pre-paid plans and 273 fixed line plans in order to determine the extra amount consumers are willing to pay for each characteristic. For example, it [the hedonic regression] estimates the price consumers are willing to pay for an extra gigabyte of included data usage. Importantly, it estimates the extra price consumers are *willing to pay for an identical plan* from Telstra compared to one from Optus, Vodafone Hutchison Australia ('VHA') and other providers" (CIE 2016: 5, 6; emphasis added).
- 5.5 However, this statement implicitly assumes that an extra gigabyte from Telstra is the same as an extra gigabyte from other providers. Taken on its face, this assumption is as arbitrary as assuming that an extra kilometre flown on Qantas is the same as an extra kilometre flown on Jetstar.

Compared with the cheapest

- 5.6 I begin exploring the potential significance of differences in quality by tracing some of the unacceptable implications of the CIE's misleading assertion that their statistical analysis compared the prices of *identical* plans.
- 5.7 The CIE calculated the alleged excess expense of customers' adherence to the Telstra brand, against the alternative of choosing the 'average' plan. But the CIE's rationale of hedonic regressions, just quoted, is that the statistical analysis is comparing 'like with like', comparing plans with *identical* objective characteristics. If so, then the advice to consumers

should be to buy the cheapest, and certainly not to buy the ‘average’. For pre-paid mobile services, Amaysim has the lowest price premium; for fixed line, Westnet is cheapest. It would seem that every customer of every other provider is, by the CIE interpretation, wasting money: the cheapest *identical* plan is that offered by Amaysim or Westnet.² Reforms that led customers to abandon Vodafone for Amaysim would then, on the CIE’s logic, be as desirable as those which led customers to abandon Telstra for Vodafone.

- 5.8 However, consumers may very well believe that they would not obtain as good a service from a lower-priced than from a higher-priced provider. If the CIE infer from a plan-specific regression coefficient—for example, \$0.19 for an extra day on the expiry date in pre-paid plans—that, *for good reasons*, consumers value more of the attribute at that particular dollar amount, then why should we not draw the same inference about provider-specific differences in prices of ‘identical’ plans?³ The CIE have ignored the implication that, if quality varies across providers, telecommunication plans with identical characteristics do not provide identical services and so should not command identical prices.

Hedonic regressions, not exact matching

- 5.9 At this point, note that it would seem that the CIE have somewhat misrepresented the rationale of hedonic regressions. The most commonly used alternative technique to the hedonic regression is ‘*exact matching*’, which confines the comparisons to pairs of actual plans (or models or varieties) with exactly the same objective characteristics, that is, are identical. In contrast, the hedonic regression framework is designed to analyse all plans, identical or not: in fact, its main advantage is that it *allows comparisons among non-identical models, varieties or plans*.
- 5.10 However, the CIE stated that the hedonic regression ‘estimates the extra price consumers are *willing to pay for an identical plan* from Telstra compared to one from Optus, Vodafone Hutchison Australia (‘VHA’) and other providers’ (CIE 2016: 5 – 6). From this and passages referring to ‘same service’ and the like, it would seem that the CIE thought that they were using hedonic regressions to compare identical plans, whereas the technique compares all plans, identical or not.
- 5.11 Then, when using the hedonic regression with a provider dummy, they estimate a provider’s price premium is the result of comparing, for every conceivable plan in the range of plans, the ‘regression predicted’ prices of

² This advice ignores the error term and so is true on average. For pre-paid, Amaysim’s coefficient is negative, while Westnet is the omitted comparator, with an implicit coefficient of zero. For fixed line, Westnet has the lowest coefficient, of the eight reported—however, it is not clear which was the omitted provider.

³ ‘Another consequence of the equilibrium assumptions that we have made is that all models which are sold in a given period are equally desirable; i.e., they all yield equal utility per dollar spent’: Diewert, E., 2003, Hedonic Regressions: A Review of Some Unresolved Issues, available at: <http://www.nber.org/criw/papers/diewert.pdf>, accessed on 28 October 2016 at (31).

a provider, and the prices on the estimated ‘characteristics frontier’⁴. This does not require that there be any identical plans in the data set. (The CIE do not report the number of sets of plans with identical characteristics.)

6 Coverage

- 6.1 The CIE were clear that at least one quality variable does matter, which is coverage: ‘The premium for Telstra reflects both limited competition and differences in service coverage.’ The latter seems to refer to coverage *per se*, and not to the quality of services: ‘There are many areas where Telstra is the only service provider, particularly in regional areas’ (CIE 2016: 6). However, the CIE stated that Telstra has not used the USO and NBN subsidies (from government) ‘to provide lower prices for Australian consumers’ (2016: 1).
- 6.2 Thus, the CIE asserted that differential coverage leads to differential price premia, but only with reference to Telstra. The plans may be identical, but not so the services for which the consumers are paying.
- 6.3 In locations where only Telstra provides services, the price of non-Telstra services is effectively infinite. The CIE methodology cannot take appropriate account of this, which throws further doubt on their estimates of the excess cost of Telstra’s regional services.
- 6.4 For mobile services it is, in my opinion, reasonable to suppose that Telstra’s greater geographic coverage of Australia leads some customers to be willing to pay more than they would for similar or even identical plans from other providers with more limited coverage.
- 6.5 Data on coverage are available but the CIE did not attempt to quantify the consequences of coverage for price premia.
- 6.6 Nor did the CIE provide any analysis to show that differences in coverage were due to any of the CIE’s list of what I called ‘candidate explanations’ of Telstra’s price premia (3.5 and 3.6 above), including historical structural factors.

7 Data allowance

- 7.1 This section provides a striking example of what goes wrong when the CIE ignore quality differences.

⁴ Triplett (2004) Triplett, J. (2004), Handbook on Hedonic Indexes and Quality Adjustments in Price Indexes – Special Application to Information Technology Products, Organisation for Economic Cooperation and Development, Paris. <http://browse.oecdbookshop.org/oecd/pdfs/free/9306081e.pdf> at (192) argued that the hedonic regression ‘is, in economic theory, like a budget constraint. It is a constraint, or the boundary of a choice set, or the characteristics frontier...with respect to the quantities of characteristics that the consumer purchases and the prices that the consumer pays...’ The CIE’s motivation of weighting the observations is to arrive at an estimate that is ‘more representative of consumer preferences’, and is admitted rather crude (CIE 2016: 9). Statistically, weighting means having sub-sets of identical observations included in the data set, which, as Triplett (2004: 191) points out, reduces the variance in the observations and thus reduces the efficiency of the estimation of the ‘characteristics frontier’.

Virgin

- 7.2 For the post-paid mobile market, the hedonic regression was designed to partition the ‘price’ of a characteristic into the market’s willingness to pay for the characteristic itself, and the characteristic-specific premia commanded by the different providers. The results for data allowance are summarised in the CIE table 3.2.
- 7.3 Strikingly, there is no comment on Virgin having a higher premium than Telstra (\$4.26 and \$3.97). Virgin’s advantage is hard to explain by reference to its market power, or more generally as arising from structural defects in the market: presumably some significant explanatory variables are missing.

Data allowance: Telstra

- 7.4 Because the CIE’s rationale for hedonic regressions is that they capture consumer valuations of the explanatory variables employed in the regression (CIE 2016: 9), then it is arbitrary to use that rationale for some of those variables—those that are plan-specific—but not for those that are provider-specific.
- 7.5 In other words, if the logic of a hedonic regression is that it shows by how much consumers value (say) an additional GB of data, then equally, the provider-specific variable could be interpreted as reflecting how much they value service from Virgin compared to service from VHA.
- 7.6 Thus, the straightforward explanation of variation in data ‘prices’, which is consistent with the methodology of hedonic regressions, is that Virgin consumers have shown themselves willing to pay more to Virgin (\$4.26) than to Telstra (\$3.97) for post-paid mobile plans that are identical in the characteristics included in the regression, other than provider; likewise, Telstra customers value Telstra’s data allowances more than they value VHA’s (at \$2.58).⁵
- 7.7 So, if Telstra customers have good reasons to value Telstra’s services more highly, they would lose welfare if they switched to another, lower priced provider, as they could presumably do. Consumers should be willing, consciously and calculatingly, to pay a higher price for a particular provider’s plan, despite there being, from another provider, a lower-cost plan with the same listed characteristics.

⁵ The economic meaning of the differences between the ‘price’ paid per GB from Telstra and the ‘price’ paid per GB from Virgin and VHA is not obvious. This is because consumers cannot pick and choose elements of the various providers’ plans—say, VHA’s data allowance, Telstra’s contract length—and combine them into a plan preferable to any of the actual plans in the market. Instead, consumers choose a specific plan from a specific provider.

Quality problems for VHA

- 7.8 In this context, it should be noted that, a couple of years ago, the unreliability of VHA's network is said to have lost that company some two million subscribers; VHA then embarked on an extensive investment program in an effort to regain market share, that is, to induce more customers to subscribe to VHA mobile services and presumably, therefore, to enable VHA, if it so chose, to set higher prices than it otherwise would have commanded.
- 7.9 Nothing like these quality considerations informs the CIE's calculations and interpretations: if the regressions had been run on a data set of that earlier period, and they had shown a Telstra price premium over VHA, then presumably the CIE would have inferred that it was due to 'limited competition and differences in service coverage', and not to quality differences.
- 7.10 The implications for the CIE's econometrics can be illustrated: if quality of data service, say, were perfectly correlated with quantity, then the quality effect would be entirely picked up in the estimate of the price of data; however, absent that kind of (implausible) perfect correlation, some of the quality effect would be reflected in the provider dummy. Thus, if Telstra's services were generally of higher quality, then some (and maybe all) of the estimated Telstra price premium should be attributed to quality and not to market power springing from a lack of competition.

8 Tailoring offerings to market segments

- 8.1 Quality differences include network coverage, reliability, customer focus, complaints handling, convenience of storefronts, and quality of HELP desks; all of these may be proxied by investment in 'quality'. These quality differences arise because consumers are heterogeneous, and so providers 'target' different segments of the market, not only with a variety of plans, but also with different investments in service quality and reputation: the providers offer many different plans, which implies that they price discriminate on the characteristics of the demanders, including their different demands for quality of service.⁶
- 8.2 Consider consumers who, for business reasons, are willing to pay more for a larger data allowance, but who also are willing to pay more for a very reliable service.⁷ The providers will respond by offering plans with high data allowances, but these 'high quality' customers will tend to gravitate towards providers with good reputation and commitment to

⁶ 'We say the firm *indirectly* price discriminates if the marginal price varies across consumer types at their chosen consumption levels... A firm can typically extract greater consumer surplus by varying the marginal price and screening consumers according to their revealed consumptions. This use of nonlinear pricing as a sorting mechanism is typically referred to as *second-degree* price discrimination' (Stole 2003: 4).
<http://web.mit.edu/14.271/www/hio-pdic.pdf>

⁷ Although the CIE mentioned that they considered a model variation with 'non-linear value of data', the results are not reported (2016: 21).

high reliability, who would then be able to charge a higher price than would those with less reliable networks. Those higher prices would, at least in part, reflect the greater costs of serving that type of customer. Faced with such a market outcome, the CIE would incorrectly attribute the price difference to market power, rather than to service differentiation.

- 8.3 More generally, consumers with less concern about reliability, will tend to select a lower priced plan even if one less reliable; those with higher concerns will tend to select plans from providers with higher reliability, even if they are more expensive; similarly, for other aspects of quality.
- 8.4 The argument just made has significant implications for the CIE's hedonic regressions, because it implies a high degree of correlation between the provider dummy and data allowance. Presumably, this is why, for post-paid mobile, the CIE changed its specification: instead of using a provider dummy to shift the constant term, the CIE created a series of 'interaction' variables by multiplying the provider dummy by the plan's data allowance (and similarly for some of characteristics of plans).

9 Included content

- 9.1 The CIE made auxiliary 'back-of-the envelope' estimates of the values of included content to telecom consumers. These were then subtracted from the price premia that had been estimated through the hedonic regressions.
- 9.2 However, the correct procedure would be, before running the regression, to subtract the value of content from the dependent variable, plan cost. Moreover, if it is acceptable to use the cost to the provider as the basis of estimating the consumer valuation of included content, then it seems acceptable to use a similar basis for estimates of the value of the quality factors.
- 9.3 The estimates of price premia are very sensitive to these auxiliary estimates: the value of content led to an almost 40 per cent reduction in Telstra's price premium for handset-inclusive and for SIM-only plans (charts 3.4 and 3.5; p. 30). Thus, if the auxiliary estimates were understated significantly, as well they may be, then the price premia are significantly overstated.⁸

⁸ The CIE's less preferred method for auxiliary estimates assumes that if, for example, 5 per cent of the US or Australian population directly subscribe to access the content, at a cost of \$12/monthly, then 5 per cent of Telstra mobile customers have the same value, of \$12/month; and the other 95 per cent have a zero value. However, the auxiliary estimate would triple if, on average, the other 95 per cent value it at a mere \$1.20/month.

10 Absence of a counter-argument

- 10.1 It may be argued that the proponents of the CIE's interpretation can accept the claim that some of Telstra's excess price premia, maybe all, can in theory be explained by differences in the quantity of quality assets, but nonetheless argue that those very differences in quality are themselves merely or mostly a consequence of past public policy concerning the structure of the markets and the industry.
- 10.2 However, the CIE report provides no evidence of either necessary element:
- (a) The extent to which the price premia that the CIE found are determined by the quantity of quality assets.
 - (b) The extent to which variation in the quantity of quality assets can be explained by the structural history of the markets and, especially, the policy history.
- 10.3 Clearly, such an analysis would need to be undertaken before any policy inferences could be drawn from the CIE's analysis.

11 Methodological errors

- 11.1 In addition to the matters described above, it is not possible to have any confidence in the CIE's report because the CIE failed to apply the necessary rigours to its methodology. In particular:
- (a) the Annex to the CIE's report does not offer access to the data set it used, and there is therefore no evidence of its reliability (or otherwise);
 - (b) the report does not make reference to the usual battery of statistical tests that would be required to give confidence in the CIE's results: for example, of how well their statistical model matches up with their data (R^2 ; F test); of how sensitive their estimates of price premia are to plausible changes in the statistical model (non-linear alternatives; transformations of variables, like the logarithm of price, not price itself); and
 - (c) most importantly, the CIE did not test whether their 'price premia' are better understood or explained as consumer payments for objective characteristics (including coverage or reliability) that apply to all of a provider's plans in a market. By choosing a 'parsimonious' approach to modelling and not reporting on alternatives (CIE 2016: 19), the CIE were driven to an unsatisfactory 'explanation' of Telstra's price premia—market power—that has no support from their statistical analysis and, thus, cannot justify any policy recommendation.

12 Conclusion

- 12.1 Having provided no explanation of the variation in the price premia of the providers, the CIE have no justification for declaring all or even any of the Telstra price premia as evidence of and measure of market power, or of the excess cost to consumers.
- 12.2 The CIE asserted that, by comparing otherwise 'identical' plans, their statistical analysis has separated the price of a telecommunication plan into two parts, first, that which is explained by reference to the characteristics specified in the plan (like data allowance), multiplied by the inferred 'price' of that characteristic; and second, that part which is explained by the identity of the provider. The latter is called the price premium. The excess of Telstra's price premia, over the 'average' of the other providers, was attributed by the CIE to structural impediments to competition, arising out of the history of the industry. This use of the average implies that the structural explanation applies to the price premia of every provider, but that some have been able to take more advantage of the impediments than others.
- 12.3 Therefore, even granting its structural explanation, the CIE has misinterpreted the quantitative results. In particular, the correct comparison is between Telstra's premium and next highest. For the fixed line market, this comparison implies that the CIE overstated, by 67 percent, Telstra's price premium, relevant for a discussion of market power; however, for the pre-paid mobile market, Telstra did not have the highest price premium, which makes nonsense of the CIE's argument.
- 12.4 More damagingly, the CIE has neglected to consider the role of quality in these markets. The unreliability of VHA's network some time ago caused VHA customers to switch to other providers, and led the company to invest heavily in improvements so as to win them back. Customers rationally pay more to a provider of higher quality, so apparently identical plans sell for different prices for reasons of quality that, instead of being the result of structural impediments to competition, are more often the outcome of competition being at work.
- 12.5 In more technical terms, explanatory variables, those involving quality, have been omitted from regressions; thus, the estimates of Telstra's market power are biased upwards, when there is a positive relationship between the error in the regression, and the omitted variables. Alternatively, there are systematic errors in the measurement of the dependent variable, in that it should be the quality-adjusted price of the plan, not the published price; similarly, this error in the dependent variable leads of overestimation of the price premia of the providers with superior quality.
- 12.6 Note that this criticism would be cogent even if there were no or too few provider-specific quality variables available that would be suitable for

including in statistical analyses. At best, the CIE's claims are not proven; at worst, their own evidence invalidates them.

Annex A

Partner Peter Waters
Contact Genevieve Rahman
T +61 2 9263 4194
grahman@gtlaw.com.au
Our ref 1030364



L 35, Tower Two, International Towers Sydney
200 Barangaroo Avenue,
Barangaroo NSW 2000 AUS
T +61 2 9263 4000 F +61 2 9263 4111
www.gtlaw.com.au

23 January 2017

By email

Professor Jonathan Pincus

Email: jjpincus@gmail.com

Confidential

Dear Professor Pincus

Response to the Australian Competition and Consumer Commission regarding potential declaration of a wholesale domestic roaming service on behalf of Telstra Corporation Limited

1 Background

- 1.1 We act for Telstra Corporation Limited (**Telstra**).
- 1.2 On 5 September 2016, the Australian Competition and Consumer Commission (**ACCC**) commenced an inquiry into whether to declare a wholesale domestic mobile roaming service (**ACCC Inquiry**). As part of that inquiry, on 26 October 2016, the ACCC released a Discussion Paper seeking views on a range of issues it considers relevant to whether such a declaration should be made.
- 1.3 The ACCC invited submissions to the Discussion Paper from mobile network operators. Submissions were provided by a number of operators, including Telstra and Vodafone Hutchison Australia Pty Ltd (**VHA**). VHA's submission was accompanied by a number of expert reports, including a report from the Centre for International Economics (**CIE**) dated November 2016 (**CIE Report**).
- 1.4 We have been instructed to engage you, on behalf of Telstra, to prepare a report based on your expert opinion, for use by Telstra in relation to the ACCC Inquiry. Telstra may seek to rely upon your report in any subsequent review of the ACCC's final decision. If that occurs, we will contact you.
- 1.5 By this letter, we set out our written instructions to you.

2 Scope of work

- 2.1 You are retained to provide an expert report which comments on whether the CIE's conclusions are supported by the CIE's analysis, as set out in the CIE Report.

3 Guidelines for preparing your report

- 3.1 While you have not been engaged in respect of any legal proceedings, Telstra is seeking a robust and rigorous independent expert report. We request that you prepare your report in accordance with Federal Court of Australia *Harmonised Expert Witness Code of Conduct*. A copy of the Code of Conduct is enclosed at **Attachment A**.
- 3.2 In particular, in preparing your report, we ask that you please:
- (a) identify your relevant area of expertise and provide a curriculum vitae setting out the details of that expertise;
 - (b) only address matters that are within your expertise;
 - (c) where you have used factual or data inputs please identify those inputs and the sources;
 - (d) if you make assumptions, please identify them as such and confirm that they are in your opinion reasonable assumptions to make;
 - (e) if you undertake empirical work, please identify and explain the methods used by you in a manner that is accessible to a person not expert in your field;
 - (f) confirm that you have made all the inquiries that you believe are desirable and appropriate and that no matters of significance that you regard as relevant have, to your knowledge, been withheld from your report; and
 - (g) do not provide legal advocacy or argument and please do not use an argumentative tone.

4 Confidentiality and legal professional privilege

- 4.1 Presently, your report and all correspondence between us (excluding this letter) is subject to legal professional privilege. In addition, the information we have provided to you is commercially sensitive and confidential. For these reasons, we request you do not disclose or discuss your report, our correspondence or any information we provide to you with any third parties.

Yours faithfully
Gilbert + Tobin



Peter Waters
Partner
T +61 2 9263 4233
pwaters@gtlaw.com.au

Amy Campbell
Lawyer
T +61 2 9263 4155
acampbell@gtlaw.com.au

Attachment A

Harmonised Expert Witness Code of Conduct **(Annexure A to Federal Court of Australia Practice Note GPN-EXPT)**

APPLICATION OF CODE

1. This Code of Conduct applies to any expert witness engaged or appointed:
 - (a) to provide an expert's report for use as evidence in proceedings or proposed proceedings; or
 - (b) to give opinion evidence in proceedings or proposed proceedings.

GENERAL DUTIES TO THE COURT

2. An expert witness is not an advocate for a party and has a paramount duty, overriding any duty to the party to the proceedings or other person retaining the expert witness, to assist the Court impartially on matters relevant to the area of expertise of the witness.

CONTENT OF REPORT

3. Every report prepared by an expert witness for use in Court shall clearly state the opinion or opinions of the expert and shall state, specify or provide:
 - (a) the name and address of the expert;
 - (b) an acknowledgment that the expert has read this code and agrees to be bound by it;
 - (c) the qualifications of the expert to prepare the report;
 - (d) the assumptions and material facts on which each opinion expressed in the report is based [a letter of instructions may be annexed];
 - (e) the reasons for and any literature or other materials utilised in support of such opinion;
 - (f) (if applicable) that a particular question, issue or matter falls outside the expert's field of expertise;
 - (g) any examinations, tests or other investigations on which the expert has relied, identifying the person who carried them out and that person's qualifications;
 - (h) the extent to which any opinion which the expert has expressed involves the acceptance of another person's opinion, the identification of that other person and the opinion expressed by that other person;
 - (i) a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the Court;
 - (j) any qualifications on an opinion expressed in the report without which the report is or may be incomplete or inaccurate;
 - (k) whether any opinion expressed in the report is not a concluded opinion because of

insufficient research or insufficient data or for any other reason; and

- (l) where the report is lengthy or complex, a brief summary of the report at the beginning of the report.

SUPPLEMENTARY REPORT FOLLOWING CHANGE OF OPINION

- 4. Where an expert witness has provided to a party (or that party's legal representative) a report for use in Court, and the expert thereafter changes his or her opinion on a material matter, the expert shall forthwith provide to the party (or that party's legal representative) a supplementary report which shall state, specify or provide the information referred to in paragraphs (a), (d), (e), (g), (h), (i), (j), (k) and (l) of clause 3 of this code and, if applicable, paragraph (f) of that clause.
- 5. In any subsequent report (whether prepared in accordance with clause 4 or not) the expert may refer to material contained in the earlier report without repeating it.

DUTY TO COMPLY WITH THE COURT'S DIRECTIONS

- 6. If directed to do so by the Court, an expert witness shall:
 - (a) confer with any other expert witness;
 - (b) provide the Court with a joint-report specifying (as the case requires) matters agreed and matters not agreed and the reasons for the experts not agreeing; and
 - (c) abide in a timely way by any direction of the Court.

CONFERENCE OF EXPERTS

- 7. Each expert witness shall:
 - (a) exercise his or her independent judgment in relation to every conference in which the expert participates pursuant to a direction of the Court and in relation to each report thereafter provided, and shall not act on any instruction or request to withhold or avoid agreement; and
 - (b) endeavour to reach agreement with the other expert witness (or witnesses) on any issue in dispute between them, or failing agreement, endeavour to identify and clarify the basis of disagreement on the issues which are in dispute.

Capital intensity does not inform the mandated roaming debate

Vodafone presents capital intensity figures for New Zealand, the United States and Canada to support its argument that mandated roaming has not had detrimental impacts on investment, but rather investment has been encouraged. Vodafone's analysis makes no attempt to 'unpack' the capital intensity figures to understand customer outcomes, such as coverage and investment in regional areas, and conveniently ignores the form of mandated roaming implemented in each jurisdiction (which will determine how investment is impacted).

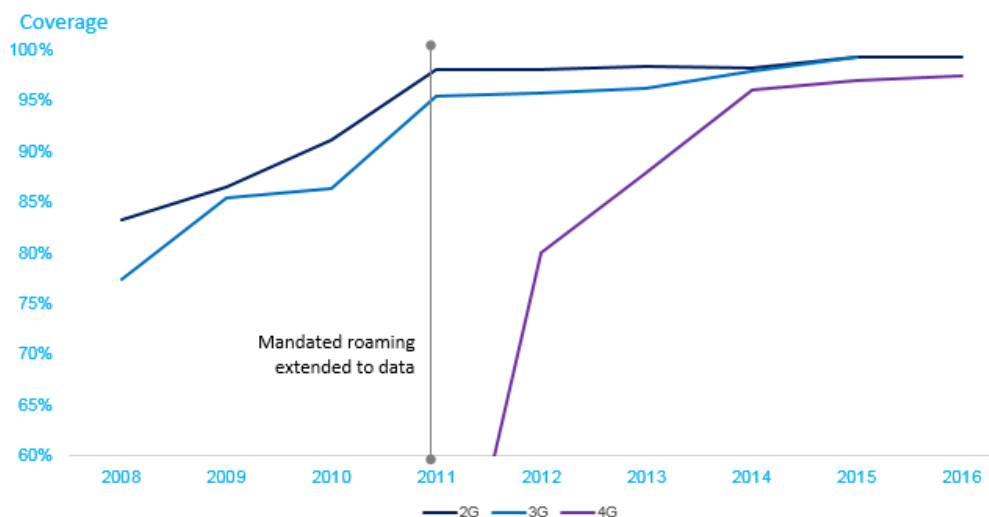
1.1. Capital intensity says nothing about investment in regional areas where roaming occurs

Vodafone argues that mandated roaming would benefit regional and rural customers by increasing competition and providing incentives to expand coverage. However, capital intensity tells us nothing about where investment is occurring (or the extent of coverage) because it aggregates investment network-wide.

The overseas capital intensity data presented by Vodafone tells quite a different story:

- Vodafone states increasing capital intensity figures in the United States is indicative of likely investment effects in Australia and that smaller operators will have greater incentives to invest.
 - However, Telstra notes the increase in capital intensity is more closely associated with technology upgrades to 4G than expansions to the coverage footprint (figure 1). Given the timing of this investment, some would have been *pre-planned* before the extension of mandated roaming in 2011;

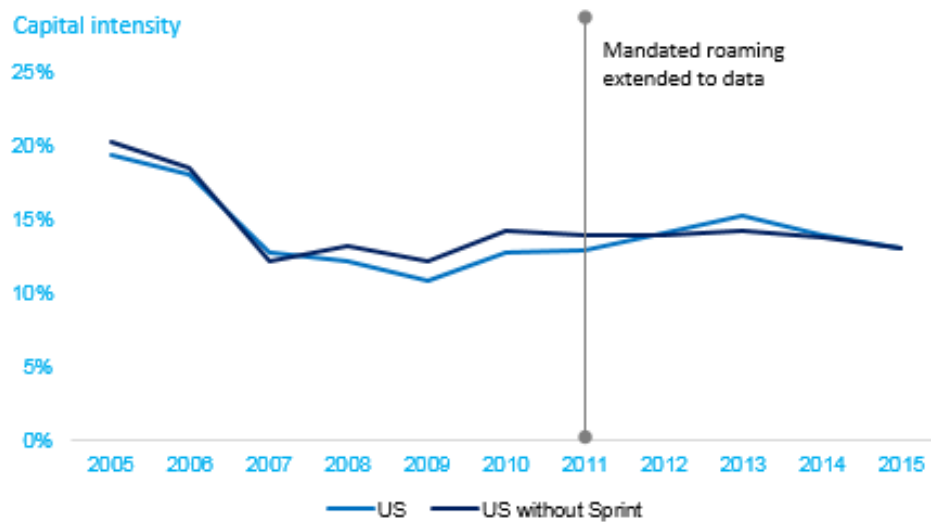
Figure 1: US coverage by technology¹



- the increase is amplified because Sprint went through a period of unusually low capital expenditure from 2008 to 2011. As shown in figure 2, the increase in capital intensity is marginal when data for Sprint is excluded.

¹ Source: Telstra analysis of FCC's *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless*, 2008 – 2016. Note: Coverage percentile is of most extensive footprint for each technology in the relevant year.

Figure 2: US capital intensity – with and without Sprint²



- Vodafone cites Spark's higher capital intensity (17 per cent³) in New Zealand from 2008 to 2016.
 - However *coverage* has consistently been higher in Australia. For example, Telstra launched its 4G network in 2011 and increased coverage to 98 per cent in 2016⁴, Spark's 4G network (launched in 2014) currently has only 90 per cent population coverage.⁵
 - The timeframe cited by Vodafone ignores significant investment by Australian MNOs in their 3G networks, e.g. Telstra's capital intensity (based on fully allocated costs) over 2006 and 2007 averaged 28 per cent, reflecting this period of high capital investment.⁶

Data which compares customer outcomes between urban and regional/rural areas provides a better guide as to the impact of roaming than nationally aggregated capital intensity data. In France, service quality (measured by percentage of perfect phone calls and download speeds) in rural areas remains below that of more densely populated regions, and is improving at a slower rate (table 1).

This suggests a relative underinvestment in rural areas where roaming was utilised between the MNOs. As Telstra noted in its main submission, ARCEP has required the early termination of roaming agreements given investment concerns.⁷ These concerns have arisen in spite of roaming rates being commercially negotiated.⁸

It is also worth reiterating that customer outcomes in Australia are world-leading in terms of value for money, mobile network performance and coverage. For example, population coverage outcomes are superior to those

² Source: FCC's *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless*, 15th and 19th Reports; Verizon, AT&T, T-Mobile and Sprint Annual Reports 2005 – 2015.

³ Vodafone does not source the figures presented for New Zealand, Australia or Telstra, and Telstra has not been able to replicate them using data from MNO's annual reports.

⁴ See Telstra 2012 and 2016 Annual Reports.

⁵ Spark 2016, *Annual Report 2016*, p. 40.

⁶ Capital expenditure sourced from internal Telstra data; revenue sourced from Telstra 2007, *2007 Annual Report*, p. 9.

⁷ Telstra 2016, *Response to the ACCC's Discussion Paper on the declaration of a wholesale domestic mobile roaming service*, p. 93.

⁸ ARCEP 2016, *Mobile connectivity in the regions: ARCEP publishes its updated scorecard on operators' compliance with mobile network rollout obligations in sparsely populated areas*.

countries cited by Vodafone which have implemented mandated roaming, namely New Zealand, the United States and Canada.

Table 1: French service quality metrics – geographic comparison⁹

Region	% perfect mobile phone calls		Download speeds (Mbps)	
	2015	2016	2015	2016
Rural	84	86	6	6
Intermediate	93	96	12	18
Dense	94	97	22	30

1.2. International experience with roaming regulation is unique to each jurisdiction

Whether mandated roaming impacts investment will depend on how it is implemented. The Vodafone submission does not make this assessment. In the case of New Zealand, the United States and Canada, any impact of mandated roaming on investment has been mitigated because:

- New Zealand: while roaming is regulated, price is left to commercial negotiation, and as noted in the Vodafone submission, Spark and Vodafone NZ cannot request the regulated roaming service.
- United States: while roaming is regulated, price is left to commercial negotiation.
- Canada: while the regulator sets roaming rates, this only applies to smaller regional wireless carriers rather than Canada's three major carriers, i.e. roaming is only available to smaller wireless operators.

In each case, the form of mandated roaming may account for the absence of observed reductions in network-wide aggregated capital intensity, to the extent roaming is a driver of this metric (see below).

⁹ Source: ARCEP, *Observatoire sur la couverture et la qualité des services mobiles*, July 2016 and July 2015.