



Internet New Zealand (Inc)

Submission to the Commerce Commission on
Next Generation Networks Discussion Paper

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Public Version

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1. Introduction

- 1.1 The mission of InternetNZ, the Internet Society of New Zealand Inc, is to protect and promote the Internet for New Zealand. We advocate the ongoing development of an open and uncaptureable Internet, available to all New Zealanders. The Society is non-partisan and is an advocate for Internet, and related telecommunications, public and technical policy issues on behalf of the Internet Community in New Zealand - both users and the Industry as a whole.
- 1.2 InternetNZ welcomes the Discussion Paper as a useful contribution to the discussion in the industry about the implications of NGN development. While broadening the focus slightly, it does not dilute its focus on the key issues.
- 1.3 InternetNZ made substantive and detailed submissions on the Commission's study in October 2008, and this paper picks up some of those suggestions. Because of this and the proximity to the Commission's Conference, this submission is briefer.
- 1.4 We will address selected questions below. As the Commission is aware, we are providing a separate paper on IP Interconnection for use by the TCF and others, including the Commission.

2. Responses to Questions

1. What are your views on the approach to development of the market framework and industry consultation that should be considered in New Zealand?

- 2.1 InternetNZ reiterates previous views that a transparent, whole-value-chain approach to developing the market and the industry should be preferred. While the TCF provides a useful forum for resolving technical and business process issues, a broader forum that covers the whole value chain should be developed, along the lines of the UK's Broadband Stakeholders Group, to ensure that the interests of the industry as a whole and those other industries that depend on it are taken into account.
- 2.2 An important point to reiterate is the need for the Commission to send clear regulatory signals in this study. That must remain a priority outcome from this Study: without it, the New Zealand market will continue to lag in both competitive and investment terms.

2. Do these core principles provide a useful underpinning for considering NGN issues, or whether they should be modified or supplemented?

- 2.3 The principles, as set out on page 10 of the Paper, are said to be "principles to take into account for the transition to next generation services." InternetNZ assumes this is a question as to whether the principles set out provide a good framework for guiding the Commission's approach to dealing with the NGN transition. The Commission is a regulator, and while this study is aimed at building a consensus on a range of levels, the primary role should not be neglected.
- 2.4 The overarching principle the Commission should have is the same as Ofcom articulated in its paper about superfast broadband rollout in the UK: "to create a framework that strikes a balance between securing investment and promoting competition in telecoms for the benefit

of citizens and consumers.”¹ This competition is to be encouraged at the deepest level where it remains sustainable in the network.

- 2.5 The five principles Ofcom detailed that supported this overarching objective were contestability, maximising potential for innovation, equivalence, reflecting risk in returns, and regulatory certainty.
- 2.6 The principles the Commission sets out (competition should be preserved and enhanced, incentives to invest should be preserved, industry self-regulation should be encouraged, regulation should only be used to constrain market power, regulation should be scaled back as competition develops) are aimed at the same broad objective in our view.
- 2.7 That said, InternetNZ would welcome a clearer statement that equivalence should be part of the NGN framework. It is implicit in the other principles but it should be made explicit and foundational to the new networks, so as to avoid a replication of the discrimination problems that were evident in the New Zealand market until the operational separation of Telecom was put in place by the 2008 Undertakings.
- 2.8 Further, the Commission should be careful in adopting a principle of de-regulation as competition develops. A sound regulatory framework that deals with discrimination and significant market power issues is likely to be the precursor to sustainable competition at the wholesale and retail level. Competition at that level of the market could easily be ended by inappropriate deregulatory initiatives further upstream.
- 2.9 The common position developing internationally is that strong regulatory frameworks to deal with bottlenecks in access to facilities that are not economically replicable are going to be an enduring feature particularly of NGAN. Only the emergence of competing networks would allow for deregulation and the chances of such infrastructure competition in New Zealand, given the geography of the country and the size of the market, appears low.
- 2.10 In addition, a possible presumption of deregulation could negatively affect investment decisions, by introducing a degree of regulatory uncertainty. The Commission would perhaps better serve the industry by having a broad position that regulation will only be implemented where required, as in the fourth principle, but not necessarily introducing the complication presented by the fifth principle.
- 2.11 Alternatively if the signal sent by this principle is felt important, the Commission could clarify it by stressing that it applies where competition is sustainable **in a given market**. In that case a deregulatory presumption makes sense, and could not be misunderstood as being a general deregulatory presumption across different markets, with the attendant problems this would raise.
- 2.12 Finally, Ofcom’s principle supporting the maximum possible potential for innovation may be worth repeating. There may be aspects of the NGN rollout independent of competition and dealing with SMP that could be done in ways that harm or enhance the capacity of the industry to innovate, and the Commission should do what it can to maximise the prospect of better services and more choice for consumers.

¹ Ofcom: “Delivering super-fast broadband in the UK: setting the right policy framework”, September 2008, p.11

3. Are there additional elements that have to be taken into account when defining NGN? If so, what are the additional elements, why should they be taken into account and what impact do they have?

2.13 InternetNZ welcomes the Commission's more comprehensive and multi-faceted overview of what is encompassed within NGN, as set out in Section 2 of the Discussion Paper. This builds on the brief, but useful, ITU definition of NGN.

4. What do you think IMS fulfils? Is it necessary, or are there other ways of fulfilling its function? What are the implications of this layer for the future of NGNs?

2.14 InternetNZ has no particular views on whether the IMS architectural framework, or any other framework and protocol, should be adopted. The essential outcome is the ability of the transport and service layers to be controlled separately, taking into account that there will of necessity be some interaction between the two.

5. Where and how should the balance between coverage and speed be struck?

2.15 This question will ultimately be settled by the market's desire to invest given the regulatory framework, and the willingness of government or other non-market actors to invest public funds to change the investment incentives faced by access providers.

2.16 InternetNZ's advocacy has characterised "ending the bandwidth constraint" as an important objective, and the Society supports NGN rollout on that basis as a step towards the objective. InternetNZ thinks that such unconstrained coverage should be widely available and has therefore supported public investment to ensure that rollout of high-speed infrastructure extends beyond what commercial providers would do on their own.

6. Is industry consultation necessary on network design for NGN?

2.17 Yes, it is. Some such consultation is already under way in a range of forums, be it through the TCF for service development, or Telecom's own industry consultation programme. This Study by the Commission is another forum and the Commission has referenced some of the work InternetNZ has done in this space.

2.18 A more important question is whether the current mechanisms are adequate. InternetNZ suggests there is value in a Broadband Stakeholders Group equivalent to bring together the access providers and those whose services and products will be used over the network, thereby increasing information to potential investors in networks. This is more important than it was earlier in the Commission's study due to the decision by the Government to cease funding the nascent Digital Development Council and Forum, which could have played a role of this sort.

2.19 Further, we reiterate to the Commission the need to carefully monitor industry consultation, especially where it is managed by the incumbent access provider. The perception of a conflicted or unfair consultation process must be avoided.

2.20 Finally, we note the risk of consultation overload, which can easily be used by well resourced providers to game the position against smaller stakeholders. The Commission is aware of situations already where it has been necessary to unravel unsatisfactory resolution of issues

at industry level (such as in the TCF). Smaller industry players already dedicate much time to consultation and other industry forums. However, that does not and cannot match the input from larger providers, and this produces distorted outcomes. This is one reason why we recommend an initiative along the lines of the Broadband Stakeholders Group.

- 2.21 Any new initiatives need to be properly resourced and add real value to the development of the NGN to be worthwhile and to secure the required engagement from the industry.

7

- I. ***How does the deployment of NGN change bottleneck characteristics?***
- II. ***Is access to the infrastructure still an issue? If not, what other elements could become important?***

- 2.22 In brief, the main change to bottleneck characteristics in the NGN is the lesser likelihood that infrastructure competition will develop in the access network. This is because of the wider dispersal of aggregation points: unlike under LLU where competing providers could invest at the exchange and address a viable market with direct access to customers, a cabinetised NGN or an FTTH NGN scenario multiplies the investment required for broadbased infrastructure competition.

- 2.23 The response required is one that acknowledges that infrastructure competition is less likely than in the current network, and one that provides adequate wholesale services to allow for retail competition. These wholesale services need to be active services at the lowest relevant layer in the network stack, giving access seekers the widest possible ability to develop their own innovative services over the infrastructure.

- 2.24 In other words, access to infrastructure does remain an issue as the NGN contains bottlenecks just as the current access network does. The regulatory response is critical in maintaining the prospect of true retail competition and differentiation.

- 2.25 Further detail on this point is contained in our earlier submissions.

8. Part of the BIF is targeted at deploying open access urban fibre networks and the Government has indicated that it will set aside \$1.5 billion for open access FTTH rollout that will reach 75% of the population. What is your understanding about what is meant by open access?

- 2.26 Open access is a term with contested meaning. InternetNZ's developing view is that in an NGN environment, "open access" means an obligation on an access provider (any access provider that has SMP, regardless of funding source) to provide transmission capacity in the access network to all access seekers, including their own wholesale or retail divisions, on equivalent price and non-price terms and conditions.

- 2.27 Provision of access to passive infrastructure should be an additional requirement where such networks are publicly funded, again on equivalent terms, to allow for any infrastructure investment that is possible.

- 2.28 InternetNZ is continuing to work on open access issues and more information is available for the Commission if requested.

9. What are the areas that are not likely to be commercially funded?

2.29 This question cannot be answered without knowing the details of forthcoming government announcements regarding its proposed \$1.5bn investment, as this will inevitably have effects on the investment decisions of commercial providers. InternetNZ will offer comments on the new policy when it has had the chance to analyse it.

10.

I. What do you believe is needed to drive broadband penetration and speed in the future in New Zealand?

II. Do you agree that cost savings are one of the core drivers for NGN deployment in New Zealand?

III. How will competition enable innovation?

2.30 Driving broadband penetration and speed will require supply and demand-side initiatives: demand-side to expose needs that would encourage commercial providers to invest, and supply side subsidy (as Government has already promised and is about to propose) to expand coverage and speed up the rollout of the infrastructure beyond what commercial drivers would dictate. The Digital Strategy of 2008 made useful steps in both regards. Further steps can also be taken to ease supply side constraints, such as began with the national standard under the RMA for telecommunications facilities.

2.31 InternetNZ understands that cost savings are one of the drivers of investment in **core** NGN networks: a single platform delivering transport instead of multiple networks for multiple services provides economies in terms of facilities needed, technical expertise and so on.

2.32 In respect of **access** NGN networks, the cost implications are less clear: the main drivers are more likely the desire for incumbents to deliver better services to customers, or as part of a competitive response or government policy. Equipment providers would be better placed to answer the cost question for NGAN.

2.33 As to Q 10(iii) competition is to the long term benefit of end users. Competition is generally held, in market economies, to provide incentives for providers to develop new products, enhance existing services, and minimise costs of service. InternetNZ accepts this basic premise of a market economy.

2.34 **Particularly important is that we consider that there is inadequate focus on demand side initiatives**, compared to supply side initiatives. We would welcome an NGN Commission Report that recommended a heavy focus on developing demand side initiatives to more clearly answer the first part of this question.

11. Many are of the view that the pipes should be built first and services will then follow. Others believe that a lack of services and demand for broadband services are an issue. What is your view?

2.35 If there are no “pipes” then no services can be deployed.

2.36 Overseas examples of the services that develop when fibre is deployed offer New Zealand the chance to sideline this question: the development of services in other markets provides examples of the demand that will exist when infrastructure is deployed in New Zealand.

- 2.37 In other words, services already exist in other markets and would be available here but for the absence of adequate bandwidth. They will become available here, due to the nature of the Internet, as soon as access is possible – as soon as the pipes are built. Once the pipes are here, local developers can also build services aimed at the local market.
- 2.38 InternetNZ does support work on both the supply (pipes) and the demand (applications/aggregation) side of the market, as noted in the paragraphs responding to qu. 9 above. We repeat the importance of developing demand side initiatives.

12. Is content ownership or access to content a hindrance to the development of broadband in the New Zealand market?

- 2.39 Generally speaking there is a huge amount of free, legal content available on the Internet.
- 2.40 Multi-platform means of getting content (such as movies, TV, sports programmes, etc) to market is potentially pro-competitive. Therefore enhanced NGN and broadband (particularly if the faster speed third category used by the Commission is applied) is pro-competitive.
- 2.41 Unfortunately, however, arrangements between content providers, telecommunications providers, and others, can be counterproductive from a competition perspective. This is part of the increasingly significant problem, which strongly affects market dynamics and in turn broadband competition, of bundling services. In relation to content, exclusive supply of particular content (premium sport is a common example) to one telecommunications provider can be anti-competitive.
- 2.42 As bundling can be pro-competitive, deducing the competition effects can be complex. We submit that the study should develop and promote proactive means of minimising the downside issues in relation to bundling content and exclusive supply of content by one provider.
- 2.43 InternetNZ does note the use of the Internet to access illegal or objectionable content. This is an unavoidable consequence of the nature of the Internet.

13. How is the nature of New Zealand's subscription TV market likely to impact the development and take up of NGN in New Zealand?

- 2.44 InternetNZ has not focused on content issues in New Zealand, so the following remarks are offered as observation.
- 2.45 The specific features of New Zealand's content market (including satellite delivery of the dominant pay TV service) would seem likely to have an impact on broadband development. If the existing market for content was able to be serviced by broadband infrastructure, then the revenue available through bundling or resale of transport would improve the viability of broadband investments, and presumably more investment would occur. However, that is subject to the bundling and exclusive dealing concerns noted above.
- 2.46 As part of the review of broadcasting regulation this question is being addressed by MED and the MCH. The Commission should be part of this discussion. Competition aspects of content do need to be kept under review.

14. Is the service scenario approach seen as a useful one for the purpose of studying the New Zealand NGN market, and if so what would be the elements of practical and relevant scenarios?

2.47 Broadly speaking the scenarios do outline options that could develop over time. We agree they should be used. They will help, for example, in enabling identification of demand side initiatives. InternetNZ notes that the so-called fourth scenario is not actually a scenario: it is a factor that will affect the other three scenarios, given the government's commitment to making a large public investment in the broadband market.

15. What other implications for the value chain of traditional operators and suppliers can be expected when moving towards an all-IP environment?

2.48 In broad terms, the Commission's Paper canvasses the implications on the value chain well. There will be more service layer competition than in the old PSTN environment; on the other hand, there are opportunities for those who provide transport services to discriminate against or in favour of particular service providers in ways that the simpler architecture of a non-IP environment did not allow. The inherent ability to define quality of service – and to manage it – makes this possible.

16. What other effects on the competitive environment could be expected when rolling out next generation networks?

2.49 Again the paper canvasses this well, and the competitive effects of NGN rollout were extensively canvassed in InternetNZ's earlier submission to the Study. Very brief comments follow here.

2.50 As mentioned above and in those earlier submissions, there is a key effect that limits potential competition that is not mentioned in the slide on p. 24 of the Paper: that is that a cabinetised NGN, having a more disaggregated structure than the old PSTN, makes effective, broad-based infrastructure competition less likely. Where a provider could service thousands of customers from one exchange site, now they would have to deploy infrastructure in dozens of cabinets to service the same market. Complexity in unbundling fibre, depending on architecture and technology, means this may be an even bigger issue in FTTH scenarios.

2.51 The consequence is the effective re-establishment of the bottleneck that existed in the PSTN before local loop unbundling was put in place, and the need for both effective sub-loop unbundling in the case of cabinets, but more importantly the provision of active transmission services with service management left to the access seeker.

17. How do these effects influence the roll out of next generation networks and innovative services?

2.52 If appropriate regulatory action as discussed above is not taken, the rollout of innovative services will be retarded. If there is certainty on the part of the operator that they will retain control of an effective monopoly due to the bottleneck not being opened, they may invest more or more quickly than otherwise. They would only do so due to the higher return they could gain, which means consumers would be paying more than otherwise.

- 2.53 Competition is the best way to drive service innovation, better prices, etc. Taken as a whole, the effects outlined in the paper as well as that noted above all contribute to uncertainty and therefore risk, which is acknowledged as the biggest impediment to the roll out of NGN.

18. To what extent is symmetric speed or capacity necessary to provide future services to customers?

- 2.54 The Commission's own paper notes the importance of symmetrical services, which are required to enable consumers of bandwidth to become producers of their own content, instead of just consumers of it. That shift drives much of the innovation that NGNs make possible, and the social changes and benefits that can arise from it. Without symmetrical service, the NGN remains more similar to a faster version of the existing network which largely provides asymmetric services.

19. What are the most important and significant drivers of bandwidth demand?

- 2.55 Audio-visual content is the biggest driver of bandwidth demand at the current time, despite improvements in compression technologies. Because NGNs are still new, we cannot know what future killer applications will develop yjsy may be bandwidth intensive. Encouraging ongoing focus on demand side initiatives and developments would be an important part of the Commission's report in our view.

20. Is a differentiation of classes of services an appropriate approach for solving QoS degradation for end-to-end services?

21. What issues and effects could possibly arise due to a differentiation of services classes?

22. Will the approaches to pricing change for NGN, particularly where different classes of service are offered?

- 2.56 InternetNZ considers that categorising classes of service to differentiate QoS is essential.² This will enable users to get the user experience they seek. This differentiation of service, and consequent differentiation in price, is in the interests of end users. End users can choose to pay more to get, say, video conferencing, which requires higher QoS. Or they can choose to pay less for a particular service. This is about consumer choice and so it is welfare-enhancing.
- 2.57 The debate thus far about network neutrality has been unduly primitive in this respect. There is a clear role, and a clear benefit to end users, in having differentiated price and QoS options.
- 2.58 This price and QoS differentiation must however be distinguished from providers differentiating QoS with anti-competitive effect, which is what underpins the network neutrality concerns.
- 2.59 InternetNZ's guiding objective is apposite. Our objective is "high performance and unfettered access for all" so the Internet continues to operate in an open environment that it cannot be captured by any entity or individual for their own ends.

² For a useful summary of the relevant issues, see *The Future of IP Interconnection: Technical, Policy and Economic Aspects*, WIK-Consult's report to the EU; January 2008

2.60 Providers over time should enable cross-network consistency in QoS for a particular service class. This is technically possible. Regulators may need in due course to consider whether to intervene if the market does not produce this service.

2.61 We support the concept, outlined in the paper, of a focus on “Quality of Experience”, in addition to QoS metrics.

23. Beyond the costs for NGN core, access, CPE and drop lead, are there additional costing elements to be taken into account? If so, what is their likely impact?

24. Do you agree that in an NGN environment, a higher proportion of cost of the network is shared in common cost? What in your view is the best method for allocating costs, i.e., should it be based on volume, minutes or new drivers such as capacity?

2.62 NGN costs and wholesale pricing raise complex issues, many of which are beyond what can realistically be achieved in this NGN Study. They arise at different levels and in different ways as well (e.g. the service and the transport layers, the implications of two-sided markets, etc). Therefore our answer to these questions is brief.

2.63 In our initial submission, we firmly submitted that the Commission should look at addressing these issues sooner rather than later, in a regulatory context. We refer the Commission back to that submission for more detail.

2.64 Squarely chosen to be in scope for the current review, by the Commission, are regulatory options. The terms of reference include that the NGN study will “provide guidance as to where regulatory intervention is unlikely to be warranted, and circumstances where regulation may be considered”.

2.65 The discussion paper implies a concern about undue focus on regulatory options on the part of submitters. While this discussion paper notes the desire to provide a Commission report as a basis for industry resolution, we consider it is unrealistic to expect industry and other stakeholders to resolve many of the issues between themselves, let alone in the best interests of end-users. Without regulatory signals, the Commission’s report is, we consider, likely to be an interesting and useful read, but not greatly assist in achieving better outcomes.

2.66 It is already evident, as we noted in our earlier submissions, that some key issues, without regulatory intervention or strong regulatory signals, will not be resolved by industry adequately. Wholesale pricing and wholesale access terms are obvious examples. As the problems with Australia’s NBN show, delayed action by the regulator, or by Government, in relation to pricing principles, can cause serious problems. The comparison between Singapore and Australia is salutary.

2.67 In our earlier submission, we added the proposal that a Schedule 3 investigation is commenced sooner rather than later. That of course is a separate matter from the Study itself, although they can both run in parallel. However, looking at the NGN study as a standalone, regulatory issues, in the form of regulatory signals or the like, are appropriately in scope and should be a key focus of the report.

2.68 Dealing with specific questions, and focussing on the transport layer, we agree that there will be a substantially higher common cost contribution, and there must be a move away from traditional cost drivers such as minutes and distance. Calculation of wholesale pricing is

complex. Cost models can work (rather than the “value” model proposed on behalf of Telstra) with risk catered for in the WACC calculation. WACC is situation-specific. For example, one NGN investment may involve less risk than another (e.g. it replaces obsolete infrastructure) and therefore attract a lower WACC rate.

- 2.69 It will be particularly important for these issues to be confronted early in any FTTP programme, funded in part by Government, building in particular on the lessons from the Australian NBN.

25. What is your view on the benefits and constraints of PON (Passive Optical Network) and P2P (Point to Point)?

- 2.70 We have outlined our views in favour of P2P in our initial submissions. The relatively low cost differential between P2P and PON, and the competition-enhancing benefits of P2P, demonstrate a substantial net benefit in Government requiring P2P as part of funding an FTTP build.

26. Do you agree with the generic definition of the terms interconnection and access? If not, what would be the alternative definitions?

- 2.71 InternetNZ agrees with the use and definition of “interconnection” and “access” in this context.

27. Do you agree with the pricing concepts outlined for NGN? What other pricing mechanisms could be applied?

28. What additional factors have to be taken into account with regards to point of interconnection in an NGN environment and what is their effect?

- 2.72 InternetNZ assumes that this question is aimed at the section on “Impact on Interconnection and Access” on pages 27-29 of the discussion paper.

- 2.73 InternetNZ agrees with the summary. We will deal with these issues in more detail in our paper for the IP Interconnection working party, which will be copied to the Commission.

29. What are the implications for these issues in New Zealand? Are there specific regulatory issues anticipated?

- 2.74 Numbering issues should be covered. Public corridor rights of use should be dealt with. The Commission in preparing its draft Report should consider as widely as possible the other issues, and pay attention to any others that are raised in submissions or at the Conference. Sometimes regulatory responses are needed, sometimes other industry responses may be more suitable.

- 2.75 Emergency services issues are largely outside InternetNZ’s area of interest, and InternetNZ supports NetSafe as a way of addressing issues of protection of minors from inappropriate content.

30. What additional factors have to be taken into account and what is their effect?

2.76 No further issues arise at this time.

3. Conclusion

3.1 Thank you for the opportunity to make this submission. InternetNZ is always available to provide further responses or information, and looks forward to the forthcoming Conference.

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