



**REGULATORY AFFAIRS**

**Telecom New Zealand Ltd**

Level 2, North Tower, Telecom House  
68-86 Jervois Quay, PO Box 570, Wellington  
Telephone: (04) 498 9435  
Facsimile: (04) 473 2615  
Email: john.wesley-smith@telecom.co.nz

28 March 2008

Ross Patterson  
Telecommunications Commissioner  
44-52 The Terrace  
WELLINGTON

By email: jane.hewitt@comcom.govt.nz

Dear Ross

**Commission proposal to launch a study into Next Generation Network issues**

Thank you for the opportunity to comment on the draft terms of reference for the Commission's study into Next Generation Network (NGN) issues.

Telecom supports the Commission's decision to commence a proactive, forward-looking study into the potential impacts of the technology and market changes our industry is beginning to undergo as a result of the shift from a PSTN environment to an NGN environment. We see this as an opportune time for the Commission and the industry to begin to examine and discuss the implications of what has the potential to be a fundamental shift in technology and market structure for our industry, and to begin to provide better visibility to the industry of the likely policy approach to assessing appropriate regulatory responses to these market developments.

Telecom has been progressively investing in and deploying a next generation network, and next generation technologies, for some time now and we have a publicly committed path towards fully replacing our existing PSTN with NGN technology and services by the end of 2020 at the latest. Other service providers in New Zealand are similarly investing in, or have plans to invest in, next generation networks. This study will form an important base from which the Commission and the industry can develop and maintain an understanding of the potential consequences of this shift towards NGN technology and services.

As the Commission has noted, Telecom is itself already committed to developing a comprehensive NGN consultation programme, *Dialogue*, which will focus on the impact of Telecom's shift to NGN, but also touch on pan-industry NGN issues where appropriate. Within this programme is a substantial consultation on IP Interconnection and related issues. We have provided further information on these programmes below. We agree that wherever possible, these programmes and processes should be aligned with the Commission's study and timeline, and we would be happy to discuss appropriate protocols with the Commission and interested parties to ensure this alignment occurs.

Our brief comments on the Commission's paper are set out below. Please contact me if you have any questions regarding our comments.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'JWS', is positioned above the printed name.

**John Wesley-Smith**  
**Head of Regulatory Affairs**

## **Telecom comments on the Commission's NGN study proposal**

### **Scope of study**

As the Commission's paper recognises, the term "NGN" means different things to different people, and seeks comment from interested parties on what the appropriate scope of its NGN study should be. Our thoughts from a technology perspective of what an "NGN" is are set out below. With respect to the question of scope, we think that at least in the initial stages the Commission's study should start out with a broad scope focussed on identifying the likely competition, investment and market structure implications of the following recent and coming developments:

- increasing convergence of technologies and markets - in particular fixed and mobile markets and telecommunications and media markets, and the implications of the pace of this convergence;
- significant investments by a number of service providers, including Telecom, in IP-based "NGN core" networks, and the resulting implications for the likely evolution of the services these "NGN core" networks are capable of supporting, how interconnection of multiple IP-based services between these networks will evolve, and how this interconnection will affect or impact on existing interconnection arrangements;
- significant investments by Telecom and other service providers in substantial enhancements in the capabilities of the access networks connecting New Zealanders to NGN networks and the significant commercial risks associated with these investments; and
- Telecom's commitments in our Operational Separation Undertakings to apply the principles of equivalence and arms-length separation to all future access network and bitstream access services.

We do not consider the scope should extend to social policy consequences of these developments. Given the breadth of these issues though, we think a key early objective of the study should be to identify a sensible framework for this NGN study which the industry and the Commission can use to structure future discussions and consideration of NGN issues.

At a very high level, Ofcom has developed a framework which divides "NGN" into two separate components which can be viewed discreetly from a competition & regulation perspective. Ofcom terms these NGN (which it uses to refer to the backbone or core of IP-based networks and which covers interconnection between core networks) and NGA (or NGAN, which it uses to refer to the access component linking end-users to the core of the NGN).<sup>1</sup>

Telecom considers the Ofcom approach a useful one, in that it starts to break the term "NGN" into manageable components or areas, within which potential future competition, regulatory and policy issues can be identified and examined.

### **NGN and convergence**

The Commission has noted that the term 'next generation networks' means different things to different people, and that convergence of technologies and markets is generating a high degree of uncertainty around the development path for the industry. At a technology level, "NGN" is commonly characterised as:

---

<sup>1</sup> See for example, Ofcom's discussion documents "Regulatory challenges posed by next generation access networks", 23 November 2006, and "Future Broadband, policy approach to next generation access", 26 September 2007.

- A packet-based network (commonly using Ethernet and IP);
- which makes use of multiple broadband and quality of service-enabled transport technologies; and
- in which service-related functions are independent of underlying transport-related technologies.

Whilst the term is often used to refer only to fixed networks, in practice the same characteristics can be, and are, extended to “3G” mobile networks or equivalent wireless networks. The same principles apply to these networks, but with the addition of mobility management and some functions specific to wireless networks. The growing convergence at the technology, business operations and market levels between fixed and wireless networks means the Commission’s NGN study should extend to all NGNs irrespective of their underlying technology.

Convergence of technology and markets is not new, but is gathering pace and scope now as some key new technologies provide opportunities for both customers and industries to converge.

In Telecom, we have seen and are seeing convergence between fixed and mobile communications and between IT and communications. That convergence is occurring across three domains, each of which will be relevant to the Commission’s study:

1. Business operations – integrating the operation of what historically were separate organisational groups operating fixed, mobile and Internet access services and networks.
2. Services – in provision of services which combine elements of fixed, mobile, data connectivity, information access and entertainment services
3. Technology – through use of common technologies and systems across different services and networks

These different elements are related – common business operations are encouraged by use of common technologies across domains and services which span different technologies and markets; converged services are more readily realised when different domains share common technologies; use of common technologies is encouraged by economies of scope and scale across multiple services and markets.

Convergence is also driving fundamental changes in consumer demand<sup>2</sup>. Consumers have more control over the way they communicate and choice of provider. Likewise firms no longer operate solely in their historical markets. The demand and market issues need further consideration in the study.

### **Aims of study**

Telecom supports the objectives set out in the Commission’s paper, particularly the objectives of providing increased certainty to the industry and to end-users about the policy approach that will be applied to market developments driven by the shift to NGN.

As discussed above, we also support alignment of the various industry-driven NGN processes including Telecom’s NGN related consultation programmes. Further detail of Telecom’s NGN consultation programmes is provided below.

---

<sup>2</sup> Ofcom summarises convergence in its submission to the Convergence Think Tank February 2008. <http://www.ofcom.org.uk/media/speeches/2008/02/cttseminar1>.

## Interaction with other processes

The Commission notes the existence of related processes including those that arise from Telecom's Separation Undertakings:

1. Telecom's consultation with the industry on IP Interconnection, and
2. Telecom's consultation with the industry on NGN;

and comments that it expects "synergies to arise from sharing information, use of consultative forums for dual purposes, or from common membership of industry working parties". Telecom supports the Commission's approach in this respect.

### *IP Interconnection consultation*

As set out in Telecom's Separation Undertakings, Telecom is putting a project proposal to the TCF Board's 4 April meeting for the formation of a working party for IP Interconnection Consultation. The consultation is to deal with what is, in the Undertakings, termed "Service IP Interconnection". This is defined in general terms as the exchange of service level traffic between a Service Provider's NGN and Telecom's NGN for the purpose of ensuring service completion for IP-based services. At a minimum the consultation will cover the following matters:

- the approach to Service IP Interconnection between Service Provider's NGN networks and Telecom's NGN network for conversational IP voice services which originate in one party's network and terminate in another's, including the development of an IP Interconnection for Voice Service<sup>3</sup>;
- whether it is appropriate for additional elements of Service IP Interconnection for conversational IP voice services to be made a Relevant Wholesale Service under the Undertakings and, if so, how the Arm's Length Rules in the Undertakings should be applied to that additional Relevant Wholesale Service;
- the process for transitioning from service level Fixed PSTN interconnection for voice services to Service IP Interconnection for voice services including the possible use of interim service level Fixed PSTN to IP NGN interconnection arrangements;
- the introduction of Service IP Interconnection between Service Provider's NGN networks and Telecom's NGN network for the linking of End Users' virtual private networks including the development of an IP Interconnection for Virtual Private Networks Service<sup>4</sup>; and
- whether it is appropriate for additional elements of Service IP Interconnection for the linking of End Users' virtual private networks to be made a Relevant Wholesale Service and, if so, how the Arm's Length Rules should be applied to that additional Relevant Wholesale Service.

This consultation will take into account evolving international standards and international best practice on these matters.

---

<sup>3</sup> The "IP Interconnection for Voice Service" referred to here is that defined in the Undertakings as a Relevant Wholesale Service.

<sup>4</sup> The "IP Interconnection for Virtual Private Networks Service" referred to here is that defined in the Undertakings as a Relevant Wholesale Service.

The scope of the consultation regarding the interconnection services described above will, at a minimum, include:

- (a) service definitions;
- (b) commercial model;
- (c) technical standards;
- (d) operational standards; and
- (e) timetable for service introduction.

In its project proposal Telecom has recommended that the Commission be invited to participate in any manner it deems appropriate.

*NGN consultation – Dialogue*

Telecom's Separation Undertakings also require that before Separation Day we establish a comprehensive industry-wide NGN consultation programme. Telecom has branded this programme *Dialogue* and it was launched to the industry on 15 February. This continues Telecom's engagement with the industry, in various ways and using various forums, on NGN-related topics. We have previously had discussions with the industry about potential topics for this consultation programme to focus on, and about the appropriate forums for each topic. The results of these discussions will inform the consultation plan for the programme, which we expect to release shortly for comment from the industry.

Some of the topics which will be part of *Dialogue* are unlikely to present issues of industry structure, competition, and regulatory issues. Others (such as IP Interconnection, covered above) clearly do. As the scope and depth of the Commission's study is confirmed, we will seek to ensure that the necessary interdependencies are recognized in the implementation of the *Dialogue* programme.