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28 March 2008

Jane Hewitt,
Commerce Commission,
PO Box 2351,
Wellington 6011,
NEW ZEALAND.

Dear Ms Hewitt,

RE: Proposed study into New Generation Network Issues

Milner Consulting Limited welcomes the opportunity to comment on the Commerce Commission's proposed study into Next Generation Network issues. It is great to see the Commerce Commission using its new powers to undertake a more strategic approach to the issues impacting the emergence of such an important development in the evolution of the telecommunications industry. I would encourage this approach being taken to address other significant developments within the industry.

The objective of the study to improve the understanding of key technological developments that will emerge during the next 5 years, and their impact on the commercial and competitive environment for telecommunication services is to be commended. The introduction of Next Generation Networks represents a significant transformation for the industry and so requires new thinking about how best to ensure an on-going competitive market, while ensuring adequate investment in new capability to enable all New Zealanders to benefit from world best practice technological developments.

The issues identified for the industry and consumer's as result of this transformation within the industry are all very real and need to be managed with great care going forward. We are moving from a highly refined and well understood environment into one in which

the rules are still being defined and although the potential for exciting new innovative services abound, there is also potential for significant downside risk. It is important for New Zealanders to capture the full benefits of this transformation, without incurring significant pain in the process.

In fact, it would be very easy through this transition for the currently well ordered telecommunications industry in New Zealand to fall into disrepute. Throughout the transition, it is essential that basic telecommunication services, such as voice telephony are maintained to a standard to which we have all become accustomed, while at the same time encouraging much increased consumer choice in terms of variety and quality of services at prices that match consumer expectations. It is the combination of service variety, performance and price that I would like to address in the remainder of this brief comment on the proposed study terms of reference.

The Next Generation Network concept has been developed across the globe in an effort to enable the telecommunications industry to better offer a wide variety of new and improved services to consumers at lower cost. The Next Generation Networks are specifically designed to enable this outcome to be achieved. However, in doing so, there is a need to ensure that both the ubiquity and quality of services offered satisfies consumer expectations, so that they are willing to pay a reasonable price for the outcome delivered. Otherwise the industry will decline through lack of investment, and everyone will lose.

Taking up the first point concerning ubiquity of services, assuming a consumer is willing to pay an appropriate price for access to a service, it should be possible for that consumer to get access to the service. This concept requires that applications be available independent of the Next Generation Network to which the consumers are connected. This then leads to the need for three issues to be addressed for consumers:

- The ability to readily subscribe to applications and services supported on any NGN,
- The ability to connect to applications supported on one NGN even when you are connected to a different NGN,
- The ability for Application Service Providers to access any NGN on fair and reasonable commercial terms.

These three issues need to be addressed in combination for the benefit of all consumers.

The first issue drives the need for "open access" at the consumer to network interface, so that the physical connection to your premise

does not dictate the NGN to which you are connected. This issue has been one of the focus's of the recent Operational Separation Undertakings for Telecom. However, the simultaneous implementation of cabinet based DSLAMs and Fibre to the Premise in the future, will continue to put pressure on the need to drive an open access model going forward. Further work will be required in the future to ensure that the open access principles are maintained in these emerging environments. This is likely to put considerable pressure on the development of much more capable bit-stream access services (E-UBA type enhancements), suitable for the support of rich multi-media services, with appropriate performance for each service. The need for these new bit-stream services and their basic characteristics needs to be a focus of the NGN study.

The second issue encompasses the concept of interconnection and in particular IP interconnection. Again the Operational Separation Undertakings provide some steps on the path towards transparent IP interconnection between NGNs. However, on its own, the Operational Separation Undertakings in this regard will not fully address all aspects of IP interconnection and in particular, all of the higher layer issues associated with seamless application based interconnection. The means by which applications operate in a totally transparent manner across NGN domains, from both a technology and commercial perspective will need to be the focus of work under the NGN study. This activity will need to complement that which has been set in train through the Operational Separation Undertakings.

Finally the third issue addresses the need for "open access" at the network to applications interface. This interface has received little attention to date, but in the end, for the consumer of the future, it will be the most important issue to be addressed. If consumers are to have access to the greatest possible array of services and applications across an NGN or multiple NGNs, then it will be essential for the Application Service Providers (hopefully a very large number of them) to interconnect with any NGN in such a manner that:

- Their applications are delivered to consumers with the best possible performance that customers are willing to pay for and
- The ease with which this is achieved from both a technical and commercial perspective is simple and fair to all parties.

Issues of technical interoperability, non-discrimination, fair and reasonable pricing, sharing of rewards, ease of operation, simplicity of contracts, etc, will all be issues that need to be explored in this regard.

The next issue that I want to address is that relating to price and performance. The NGN concept enables many applications to be supported by a single network. However, at one extreme of its implementation, it could just end up replicating the Internet as we know it today, which would add little or no value. In the Internet model, any service or application can be accessed by consumers, but always at the lowest common denominator of performance – “best efforts”. For many applications this may be entirely satisfactory. In fact, if the price is right, then this may be all that is required for most applications. On the other hand there are some applications where there is an expectation that specific quality characteristics will be delivered as part of the customer’s expectations. This leads to the need for differentiated Service Level Agreements (SLAs) to be supported by Service Providers for their customers.

This issue applies for example to voice telephony using the current PSTN, where it is expected that better than 99 times out of 100 when you make a telephone call to another number anywhere in the world, the call will:

- Be successfully made and
- If the terminating party answers, the interactive speech quality will always be intelligible and enable easy communication and
- The probability of the communication being overheard by an unauthorized party is very low.

It is essential that this capability is maintained at an appropriate price, when telephony is implemented on NGNs. At the same time, it should also be expected that voice communication of a lower quality (such as that offered by Skype over the Internet) can also be provided at a lower price and potentially voice communication (in stereo or surround sound say) could also be provided at a higher price.

This concept of price related to performance as reflected in SLAs is a critical attribute of NGNs and needs to be considered very carefully as part of any study of the issues related to NGNs. It would be very easy to put mechanisms in place from a commercial or regulatory perspective which could remove the ability of NGNs to deliver differentiated quality at differentiated price. The NGN study needs to address this attribute of the NGN and determine means to ensure that it can be delivered at reasonable price and in a non-discriminatory manner. It would also be useful to explore the concept of what is meant by an SLA from both a customer and Service Provider perspective.

All of the above issues need to be put in the context of global standards. It is essential that the regulatory conversation in New Zealand recognizes the evolution of international standards relating to NGNs. New Zealand needs to align with international standards to ensure that Service Providers can best leverage off global economies of scale. In this regard, it would be beneficial for the NGN conversation not to be overly constrained at the outset. There are a number of developments in international bodies that will impact on NGN architectures and services. Some of the standards groups that need to be referenced include:

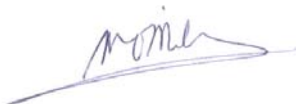
- ITU
- IETF
- FMC
- Web Services 2.0
- Service provider initiatives such as BT's Telco 2.0
- IPsphere's work on pan-provider services.

The Commerce Commission should consider the various options being considered by these international groups as part of its study.

Finally, it is noted that the proposal document mentions "In addition, there may be other interested stakeholders who are not involved in Telecom initiated consultations and TCF processes." This is very true and Milner Consulting would strongly support a consultation process that is as inclusive as possible of interested parties, especially those that can bring new and different perspectives to the table. It will likely be that other industry stakeholders have their own insight into what is happening with NGN's globally, with different (and no doubt at times complimentary) perspectives available.

I hope the above comments are helpful in refining the Terms of Reference for this study. If Milner Consulting Limited can provide any further assistance in the execution of this process, we would be delighted to do so.

Yours sincerely,



Dr Murray Milner
Principal Consultant,
Milner Consulting Limited