

26<sup>th</sup> September 2008

The Telecommunications Commissioner  
The Commerce Commission  
P O Box 2351  
Wellington

Attention : Ross Patterson

Dear Sir,

**RE: Submission – NGN Study**

WorldxChange has prepared this submission in response to the Commission's NGN Study Consultation Questionnaire dated June 23<sup>rd</sup> 2008.

We have briefly responded to all questions (except for the last one) from our perspective as a telco that is already operating a fully convergent Next Gen Network and also from our perspective as the Chair of the TCF IP Interconnect Technical Working Party.

**A. Retail and Wholesale Services**

- A.1. The wholesale commercial model needs to change to reflect that there is no difference in cost between terminating IP packets carrying internet data and terminating IP packets carrying VoIP traffic. In our view, the Coasian hybrid "Bill & Keep" model proposed by Telecom to the TCF and already operating bilaterally between some of the Tier II telcos should be adopted as the industry standard. This model would also reduce the occurrences of "gaming" termination revenues – a practice that is quite common in the current commercial/regulated TDM-based interconnect world.
- A.2. As above for Wholesale – Bill & Keep is the only sensible option across the board in the NGN world and by implementing it as an industry standard there is no requirement for regulatory intervention on interconnect pricing. The Bill & Keep model also completely divorces the relationship of interconnect carrier costs from the interconnect retail revenue which would then allow for more innovative retail services to be facilitated (ie monthly subscription-based voice and internet usage instead of paying per MB/GB or per minute).
- A.3. One of the most significant advantages of moving to an all-IP NGN world is the ability to create and sell innovative and feature-rich "bundles" of communications services to end-users. It is our view that each market player should be left to develop and release their own NGN-based products & services that are wholly dependant upon their own respective platform capabilities and business plans without regulatory intervention.
- A.4. Not at this stage due to the "goodwill" shown to date in the TCF IP Interconnect Working Parties but it may also be too early to tell.

- A.5. Announcing the regulatory strategy in advance would ensure stability and predictability of the regulatory environment.

If a defined strategy cannot be offered, confirmation of the principles of Regulation would be a help to ensure confidence amongst operators and potential investors:

Eg,

- A pre-cursor to competition is a level playing field.
- Competition is the best mechanism to promote innovation and efficiency
- Regulation will from a technology neutral stance. This allows operators on different platforms the same opportunity to compete for the same customers. This level playing field is important as the same set of rules must apply to all operators to ensure infrastructure competition.
- Regulation, if used, should be mainly focused at the wholesale level. This will assist (if required) in the creation of the level playing field. Once established, consumer competition at the retail level can occur. Specific retail or service based regulation should only be required if regulation at the wholesale level has not been sufficient to achieve the desired outcomes.

- A.6. Our view is that in an NGN environment you have to set a technical barrier to entry in order to ensure the quality and reliability of end-to-end IP-based services (ie voice). To achieve this, all current and future operators should be forced to get a “competency and compliance” certification that ensures their respective NGN networks and platforms are “telco-grade”. Those who wished to enter this market but failed to achieve this level of certification should be restricted to what types of telecommunications services that they could sell to end-users. In the case of VoIP, this should mean that these types of operators should not be allowed access to local and mobile number ranges and are instead restricted to specific number ranges that are easily identifiable so that the level of expectation and service does not mislead end-users. A certification process would also ensure the integrity of the Emergency Services system

## **B. Architecture**

- B.1. The creation of an Industry standard for technical interconnection, both at a network to network level (NGN to NGN) and also between NGN’s and access providers (NGN to NGAN).

This work on NGN to NGN standards is underway within the TCF and is expected to be completed in sufficient times as to not affect the rollout of NGN’s.

The work on connecting NGAN’s to NGN’s is in our view not as critical as the former. We believe the standards laid down in NGN to NGN interconnection will naturally flow down to form the basis of minimum standards for the connection of NGAN’s.

- B.2. Bill & Keep for all IP-based traffic that transits inter-carrier interconnects and the management of Number Resources would be the two main ones in our view.
- B.3. It is our belief that most (if not all) issues can be resolved through industry groups (primarily the TCF Working Parties). Where consensus is not reached, we may seek guidance from the regulator.
- B.4. A “big picture” approach needs to be adopted with the industry agreeing to Aggregated Interconnect capabilities – ie the ability to hand multiple traffic types and multiple NGAN Vlan’s over the same physical interconnect links. If this were to be adopted industry-wide along with the current Telecom IP Peering commercials (Bill & Keep), then almost all possible scenarios would be covered in our view.

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- B.5. See B.1.
- B.6. No. Once the standards for NGN to NGN interconnect are formalized and adopted, there should be no impact on the content, applications or services delivered – provided parties continue to meet the minimum standards laid down, and select appropriate classes of service for the delivery of their services.
- B.7. Today the various Standards bodies have developed their own standards for QoS Implementation. For example, the ITU-T has developed Y.1541 for wireline networks, the 3GPP forum have developed TS23.107. The ITU-R have also developed their own. These standards specify QoS implementations on specific network types, and not necessarily at the interface with other networks. Currently there is no alignment between these standards, and as such they could be deemed as “incompatible”. Work is currently underway in the various Standards Bodies to see how these may be aligned so as to provide standardized interworking, if at all.

Aside from these interworking issues, there is also the question of apportionment. By this we mean the “QoS budget” assigned to the end-to-end delivery of the service. This budget must be shared between all participants in the end-to-end delivery and the management of this is proving to be an extremely complex task. This “apportionment” issue is likely to have impacts on the abilities to provide, or participate in the provision of, SLA based services. This is because without an agreed method for interworking Resource Reservation between networks, a participating party may not know how much of that QoS budget has already been spent.

The TCF IP Interconnect Working Party is working to develop an Industry wide agreed Code of Practice for IP Interconnections that is intended to mitigate the effects described above.

- B.8. Open Access fibre networks fall into the NGAN bucket, and any technical issues that may arise should be dealt with under an agreed NGAN to NGN interconnect standard.

## **C. Transition**

- C.1. WxC see that the migration to IPv6 is essentially a service provider/industry issue, and see no specific role for the government in this process. The TCF IP Interconnect Working Party is considering the impact of IPv6 and the standards being written, (while not specifically addressing IPv6), do not preclude IPv6. The timing of a migration in our view will be largely consumer and application driven. Whilst the threat of allocatable IPv4 space running out looms, the regional internet registries are actively taking steps to preserve remaining, and recover unused IPv4 space. With these measures being taken, the forecast 2010 exhaustion date for v4 seems somewhat debatable. Through the use of tunneling methods such as Teredo and 6to4, IPv6 can be deployed on existing IPv4 networks alongside true “native IPv6”.
- C.2. We do not see a need to create a range specifically for nomadic services, or VoIP in general. The reality is, in the NGN world – all calls will be VoIP.

There may very well be however, a requirement to review the numbering plan to provide subscribers the ability to distinguish between possible differing “service quality” levels for calls. For example, where a subscriber purchases a voice service for use over an access product that does not meet the quality parameters proposed in the draft IP Interconnect Standard for Voice, the number allocated to that service must be from a Service category that signifies to end users that the service called from or to may be subject to perceived quality degradation. An example of this would be a voice service used on a best efforts

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internet service. Whilst for the most part calls may be acceptable, due to the nature of the access service there may be periods of time where degradation will occur. This possible approach will benefit end users and service providers alike.

- C.3. As long as sufficient notice has been given of any fundamental technical or environmental change that is likely to strand an asset then it is up to each industry player to assess the level of risk associated with their respective business plans. In our view, an acceptable notice period is 18-24 months.  
A service provider's decision to deploy assets for use with UCLL is a choice made by service providers after weighing up the possible benefits and risks. The cabinetisation plan has been widely signalled to the industry for quite some time now and it clearly illustrates timelines for when 3<sup>rd</sup> Party assets (if deployed) are likely to become stranded. You would expect these timelines to have been considered as part of the "acceptable risk" study prior to deployment and in our view, this clearly was not done by some parties.
- C.4. The TCF is currently developing a draft industry Code of Practice for the carriage of Emergency Service calls. This is being written with the future NGN environment in mind, although it is drafted in the "current" context. Going forward, WxC see that the factors involve in the successful provision of an Emergency Service calling environment over a full IP environment, extends further than just our industry. When the ICAP and the Emergency Service Providers/Responders migrate away from the current TDM environment, consultation across all parties will be required to ensure the ensuing service is one that the New Zealand public can have confidence in.

The subject of Location Information in an NGN environment is not a simple one. With the 60%+ of emergency service calls coming from mobile networks, added to the possible nomadic nature of the location of callers in an NGN world, the inherent "trustworthiness" of non-real time location information diminishes. The choice of access methods that will be available also compound this problem – eg, satellite, WiMAX etc. The ability to provide real time information carries significant additional cost for network operators, and unless there is a commercial justification for the deployment of the necessary technology, it is not likely to be deployed for the sole purpose of providing location information to emergency services.

We believe that once again, consultation between all involved parties to create methods to mitigating the effects the "non-fixed" world will have on the provision of effective emergency service responses is the best approach. This can be through the use of databases where the obligation is on the consumer to regularly confirm or update their current location (as was done in the US), an industry agreed geographic location standard that access providers and network operators use to identify the access nodes or network node closest to the call source.

The issue of mains powering is not an NGN issue, it exists today on the PSTN. This is a consumer "education" issue. It is being addressed in the draft Emergency Service Code, putting the requirement to inform consumers of the consequence of mains failure squarely on the Service Providers shoulders. WxC believe this is appropriate, and this is already part of the sales script used by our sales staff. We believe that this responsibility should also be placed upon the retail sector who sell such devices.

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**D. Environment**

D.1. Certainly competition in the access market is a good thing. The development of multiple access infrastructures can only serve to encourage competition and enhance consumer choice. Access however, is the means for customers to connect to an NGN, and therefore will not significantly impact the rollout of an NGN per se. We see the NGN and NGAN as two different entities.

D.2. Yes, this is a must. Open Access networks

D.3. The Regulator must have oversight of the market, and be ready to address any issues where market dominance may limit effective competition. Ex-Ante regulation must be limited during the transition to a full NGN environment. It would be undesirable to perpetuate any existing regulatory shortcomings into the new world. The regulators prime objectives must be to provide a stable environment which will facilitate effective competition and give incentives for private investment.

The evolution from traditional circuit based networks toward the NGN packet based IP environment, is best managed by the industry itself. The TCF is a prime candidate to facilitate this evolution process.

D.4. The “Ladder of Investment” model is primarily aimed at encouraging investment in access infrastructure by both the incumbent and it’s competitors. This model does not recognize the technology neutrality principle, which is fundamental in making NGN’s competitive. Instead, operators who have spent substantial amounts of money climbing the ladder, will have a vested interest in maintaining that particular technology. In addition to this, the number of alternative access methods available to service providers, is likely to serve to only promote a “row of ladders”, and really no great incentive to climb them, as a successful business may be run on the lower rungs of several of these ladders. It seems unlikely in our market that a new operator will eventually reach the top rung of the ladder, and operate purely over their own infrastructure. It is more likely that an operator will have feet on several rungs of the ladder.

D.5. No Comment

If the Commission requires any more detail about WorldxChange’s views on this subject then both Brett Thomson and myself are available to comment further.

Regards,

Paul Clarkin  
Director, Operations & Carrier  
**WorldxChange Communications Limited**