Communication: What Australia Needs

Please use the glossary at the end of this document to help understand the jargon.

The core problems with communication today consist of, in order of importance, affordability, reliability, latency, bandwidth and comparable access for rural users.

Affordability is the key problem with communication. The majority of people only need the minimum capabilities of technology. Many can be very productive with text messaging (SMS, Email, *IM*), requiring only small amounts of *latency* tolerant communication bandwidth. People with such requirements cannot pay a single low communication fee, and are forced into multiple connections with high costing minimum fee access. For example, a simple prepaid mobile phone ($15 / month) and cheap internet ($15) per month, or a single $30 minimum HSPDA mobile internet plan (using voip) is a typical minimum of communication connectivity. So $30 a month for basic communication which satisfies mobile access is an obvious problem.

Reliability of communications is paramount for businesses, but is found lacking. Both businesses and domestic users of communications technologies struggle to stay connected, mobile calls drop out and domestic internet connections are continually accumulating "down time". Businesses rely on stable communications channels to carry out business (Eg. B2B communication through a supply chain) but pay a premium to have communication access which is more reliable. Reliability may even be considered an equal or greater problem than affordability!

Latency not bandwidth continues to restrict "internet innovation". Online collaborative gaming and VoIP are just two technologies which need favourable latency between two end points. The online gaming experience is minimised with jerky responses and delayed action due to poor latency. Gamers with cable internet connections often have better latency and therefore an advantage. Game developers struggle to optimise network communication and innovation to workaround the problem. VoIP's uptake is still growing as businesses seek the benefits of cheaper calls and computer system integration. However, call quality is lost, admittedly, not just due to latency but also congestion, quality of service and reliability.

Bandwidth is important, but only to an extent. Email, instant messaging, TXT messaging, internet browsing, document transfers, internet optimised pictures, B2B transactions and voice calls all use very little bandwidth (the largest VoIP uses 32kb per second per call), and these applications account for 99% of productive activities. This leaves only video conferencing, large file transfers, standard video streaming and high resolution picture transfers which only key industries use and require greater bandwidth (Eg. Graphic design for high resolution picture transfers). But even still the bandwidth for a video conference call, video streaming and picture transfers are already more than catered for with ADSL2, Cable and Next G data connections. Oh and 4 x quality of video in HD video, does not bring about 4 x the

profit or productivity, although if you use ADSL2, Cable or Next G, you can stream HD video. Problems with such fast internet connectivity bring us back to the highest rated problem, affordability.

Rural users of communication do not receive comparable access to suburban users. Comparable access here means, in order of relevance, comparable affordability, reliability, latency, bandwidth and availability. All users, world wide have access to satellite internet and telephony, but it is primarily more expensive, depending on the provider, is not very reliable, is almost useless due to high latency and has poor bandwidth. In Australia, there is wide availability of Telstra's Next G network. It is both widely available, very good in bandwidth (21Mbps) and has acceptable latency and reliability. The key problem is affordability, with costs > $100 per month for less than 1GB of data. Finally, rural customers can be pay for a land line to be installed, I don't think I even have to mention the costs!

So as you can see affordability is the major problem affecting communication today. Popular sentiment against measures such as internet bandwidth and availability are not relevant as there is good coverage and speed with existing technologies. A deeper understanding of the real issues facing communication will empower you to critisise proposals such as the NBN. When affordability is the key issue, why pay $43b for yet another network with high subscription fees?

Glossary

Term	Definition
Jargon	Words used only by particular groups or industries (ie. Information Technology)
Latency	The amount of time it takes for a message to travel between two points. *Things that influence latency are, routing, congestion, the speed of light – it takes ~3.3microseconds to send* data 1 km (Seconds, milliseconds, microseconds).
IM	Instant messaging. MSN, Skype Chat, Yahoo IM are all forms of instant messaging
HSPDA	The current prevalent mobile data technology. Is considered 3.5G.
B2B	Business to business. Contracts and partnerships required goods, money, skills and information to be exchanged.
VoIP	Voice over IP. Relates to using the internet to make phone calls.
Congestion	When the communication channel is busy, due to other data using the same channel. Causes are often insufficient bandwidth, or inappropriate scheduling of channel access
Quality of Service	The ability to guarantee an application the required communication conditions. Eg. VoIP needs to be able to send small frequent packets of data with very low latency. Other data can be delayed when VoIP packets are not waiting to be transmitted.

Please let us know if there were any other terms you did not understand – we will be happy to refine the document for easier reading.