



Committee Secretary
House of Representatives Standing Committee on
Infrastructure and Communications
PO Box 6021
Parliament House
CANBERRA ACT 2600
AUSTRALIA

Dear Committee Secretary,

I want to make the following submission to the "*Inquiry into the role and potential of the National Broadband Network*". I ask that you please accept this submission to the inquiry. I am currently a student in Year 11 at The University of Canberra Senior Secondary College - Lake Ginninderra, and have an interest in this matter as I am studying Networking technologies at the College.

Thank You.

This submission will examine these terms of reference:

- Achieving health outcomes (b)
- Improving the educational resources and training available for teachers and students (c)
- Facilitating community and social benefits (h)

The health outcomes that can be achieved are many. Specialist diagnoses can be done at a distance, saving patients, especially very fragile patients, difficult and wearing travel time. This can be done - for example - through local health facilities which, while lacking certain personnel, may have the ability to connect with facilities elsewhere. A small rural community may have the necessary equipment and a number of staff who are trained in the use of the equipment but cannot make a diagnosis from the resulting data. Currently this data is sent off to doctors elsewhere who can make a diagnosis, but there is a substantial delay which inconveniences the patient and can lead to a diagnosis too late. The NBN could mean real-time communication between the hospital staff in rural communities and those doctors who can make a diagnosis. This would improve health care responses in rural communities by a substantial amount.

The NBN also paves the way for future technology we have yet to conceive of. The wonderful thing about new technology is that its possibilities for the future can never be fully predicted and it will undoubtedly be used in fantastic ways we never imagined. It is likely that in the future, it may be possible for individuals to possess diagnostic tools in their own home so they can simply upload the information from these tools to doctors and receive an evaluation and suggested treatment plan without having to leave their homes. This is useful for people who are unable to get to a doctor, but it also means that patients would be no longer crowding into waiting rooms and surrounding themselves with other sick people, thus helping to eliminate the spread of flus and other contagions. Even before this technology is available the NBN can be used in the field of medicine by allowing people to make medical appointments over the internet. This all falls under the category of telemedicine.

It's not just patients that will benefit from the NBN. Doctors can use it to attend medical conventions remotely. They can even use it to check up on patients, particularly those with chronic or ongoing conditions.

Through a combination of high-speed internet, and medicine taking advantage of the internet age, there is real life-saving potential. Websites could be created with free, quick and simple video courses on first aid. This kind of information needs to be made readily available to the public. Further information could be given to assist people who have a long-term medical condition and are required to know all that they can about it to self-manage their health and wellbeing. People with food allergies, diabetes, arthritis, cancer, new and expectant mothers, etc., would benefit greatly from easy-to-access medical information right in their homes, particularly in the form of videos which, thanks to the NBN, can load almost instantaneously. Benefits from the NBN are starting to flow now as it is rolled out in Tasmania.

“A key benefit of these faster upload speeds is that they better support new and emerging applications such as high-definition IP video conferencing,” (ARN)

The NBN can improve education by assisting in the studies of remote students. Currently there are students attending university over the internet, so why not utilise the NBN and take this a step further? Virtual universities will exist only on the internet and allow students from all over the world to attend. Lectures can be given in the form of a video presentation that is available from these online universities.

School students are more and more frequently being given homework assignments with the assumption that they have internet access of a reasonable speed so that they can do effective internet research, but not all students have internet like this, if any. This makes the assignments difficult for them, but it is also difficult for the schools to compensate for students like this. The NBN means that students will have fast internet and thus school and teachers can set assignments with this in mind, making for faster, more up-to-date education.

“With the rollout of high-speed broadband as part of the National Broadband Network, the ability to improve content production quality will only increase. Bandwidth requirements always grow to fill the available capacity.” (Smith)

Already schools are utilising the technology of the internet, making assignment sheets and other school documents available on their school websites and other education sites. It is starting to be expected that students will receive and submit homework over the internet. For better education, students should have access to this kind of help and schools should be able to know that their students are able to access it.

The most significant aspect of the NBN, with regards to how it can benefit the community, is real-time information transfer. Things like live stream of video data. Crime Stoppers is already asking for people to report suspicious things. This can be done in real time with a phone call, but imagine how it can be improved by the NBN. If someone sees a robbery in progress they can film it with their mobile phone and be uploading it to the internet as it's happening. This has enormous potential. As an example, think of situations such as are occurring in countries such as Sudan and the Middle East at the moment, where local governments may be attempting to limit the spread of information about potential human rights violations; appropriate responses are better formulated if we have access to speedy, real-time data.

Being able to share news live is important for things like crisis communication. Take earthquakes for example: imagine if some of the earliest people who were hit by an earthquake could warn people who are further away that they could be affected next. Victims of the earthquake in New Zealand at the moment (where roads, shopping, power, water, sewerage and other services are either limited or interrupted) are helping each other out by using Twitter to network with nearby people in order to trade supplies, information and services, rather than waiting for the state emergency services to get to them. Faster connection speeds help individuals to be more independent and therefore feel less helpless.

The NBN really opens up the use of technologies like Skype. People could then easily be able to check on friends, relatives and elders to make sure they're alright. This may make it feasible for some older people to remain independent for longer, reducing the cost-burden of aged care and improving quality of life.

The internet is an incredibly powerful technology that is shaping our lives and our future. It is only right that we improve that technology whenever possible.

In summary:

“The internet equipment company, Cisco, predicts that internet traffic will triple by 2014 to 64 exabytes per month ...” (Kohler)

This means that the NBN project is an exciting and timely development which will be up to handling this predicted increase, both expediting existing internet usage and providing essential scaffolding to make possible all those applications which have yet to be imagined and realised.

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