

**SIEMENS**



Andrew McGowan  
Inquiry Secretary, House of  
Representatives Standing  
Committee on Infrastructure  
and Communications  
ic.reps@aph.gov.au

23 February 2011

Dear Mr McGowan,

In response to your inquiry into the role and potential of the National Broadband Network; Siemens Ltd. would like to make the following submission through its Picture the Future: Australia 2030 research.

Siemens Ltd. commenced operations in Australia in 1872 and in New Zealand in 1876. Siemens is now recognised as one of the most reliable and trusted brands in the region. With well established businesses in both Australia and New Zealand, Siemens is a diversified technology based solutions provider specialising in the areas of water, energy, environment, healthcare, productivity, mobility, safety and security. At the end of fiscal 2010 (September 2010), Siemens in Australia and New Zealand achieved AUD 2.2 billion in sales with 2800 employees.

The Siemens Picture the Future research program explores the current global megatrends and how they affect us locally along with the issues they create. Siemens then addresses this challenges by looking at what current technological solutions offer. From this, Siemens presents a clear plan on how Australians can achieve water availability, sustainable energy, preventative healthcare and global competitiveness through productivity by 2030. The result? A 2030 technology blueprint to a brighter, more positive future, told through a mix of scenarios, case studies, technology profiles and key facts.

Starting in May 2009, Picture the Future has since grown to a team of 17 specialist researchers, who have read over 400 papers and associated documents, met 88 validation partners, over 300 people from external parties and have interviewed over 70 R&D experts from around the world.

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Source: CEDA The Big Issue survey results 2009

With our results in water and energy having been completed and released in March 2010, the Picture the Future team is now focussing their research on the areas of Productivity and Healthcare. Siemens Ltd. would like to make comment on the National Broadband network from a productivity perspective and how it relates to the terms of reference specified. It should be noted that Siemens has no position on the current debate surrounding the NBN; rather we support a high-speed digital network that will provide Australia with a capacity to implement the technology solution that provides the applications required to create a positive future for Australia and that is best practice in the world.

Strong productivity growth is essential for Australia's long term economic prosperity. However, despite coming out of the Global Financial Crisis relatively unscathed, our productivity has seen declines of 1.2 % since 2003-2004 due in part to a number of issues. In order to properly address these issues; Australia requires behavioural, technological and legislative changes across all levels of society. From a technological standpoint, Siemens supports a digital network to bridge the distances of this vast country.

The National Broadband Network (NBN) as a high-speed digital network can have several positive impacts on Australia's productivity levels if utilised effectively. Siemens has identified that the NBN has the potential to act as a key enabler to four main pillars of productivity in Australia.

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By actively engaging these four pillars through information and communications based technology like a digital network, Australia can greatly impact points e) to g) in the terms of reference for the better. In order to do this however, Australia must utilise the NBN in a way that:

- Adopts automation and digitalisation within industry to improve quality, flexibility and agility and increase labour productivity.
- Integrates freight, transport and communication networks to minimise costs and maximise output from existing and future infrastructure.
- Embraces the latest information and communications technologies to enable digital productivity solutions

The benefits in productivity from the above points can already be seen today. An example of a real world situation where automation and digitalisation is dramatically increasing productivity can be seen in a case study on specialist Siemens software manufactured for the Red Bull Racing team. Teams like Red Bull constantly scout for new technologies or innovations to improve their cars. With all the different possible modifications that can be made to the sophisticated subsystems within a Formula One car, Red Bull were confronted with the problem of how to find the best combinations for the best scenarios. Originally, designers were required to painstakingly produce completely closed, solid models of the car variations before they could be tested on the wind tunnel. This became a problem because Red Bull wanted to test many different variations on the car, but were bottlenecked by the model design.

Siemens provided a solution for Red Bull by creating the NX software system based on parametric modelling. With this automated and digitalised approach, Red Bull could now produce solid models with key parameters that were very easily changeable. This allowed them to see hundreds of different model combinations and greatly improving their productivity. The NBN could eventually help productivity enhancing software like the NX application transmit complex models and calculations in real time to and from different locations.

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With such approaches, by 2020, the NBN would be able to change the way that innovation, the environment, freight and logistics and industry looks and operates as outlined below:

- Industry would be able to use a high bandwidth digital network to help what were once real world engineering and testing tasks move towards being completed in the digital world. Furthermore it would enable virtual collaborative design to gain popularity and effectiveness.
- The NBN could also act as a key proponent in driving innovation in Australia. SMEs could be supported by connecting them to a virtual open innovation cloud. As a high bandwidth digital network, the NBN could simplify and speed up our ability to collaborate and share ideas; propelling Australia to become a globally recognised hub for innovation.
- The NBN has the potential to play a part in driving the optimisation of our logistics networks by enabling advanced road traffic management systems which can distinguish and manage freight and passenger flow separately. A high bandwidth digital network could enable real time train scheduling to increase reliability and quantity of throughput on all rail networks.
- A high speed digital network like the NBN can also have positive impacts on the environment and sustainability. The NBN has the opportunity to connect energy efficient production processes to smart management systems. An increase in teleworking and video conferencing would result in a reduction of the carbon footprint of workers through minimising daily commuting. Furthermore a high bandwidth digital network would also enable an intelligent energy grid. Smart grids will make it possible for consumers and energy suppliers alike to intelligently manage and monitor energy usage. This will also enable information on usage, pricing, customers and infrastructure status to be quickly and effectively communicated to energy operators.



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Through our research in Picture the Future Healthcare, Siemens is to recognise the strong potential between terms of reference b), h) and the NBN. In 2020, we see the bottlenecks currently inhibiting high data traffic flow in healthcare will be freed up through a high bandwidth digital network.

Information will move towards real time availability. E-health and databases will provide a more accurate diagnosis for personally tailored treatments and sharing of experiences from across the country for best patient care. An example of this would be patient information being quickly communicated between clinics in different locations whilst patients themselves will be able to access their own health information through personally controlled Electronic Health Records. Australians living in rural locations will gain unprecedented access to health information and advice portals as well as enabling other technologies such as home monitoring.

Siemens Ltd through it's Picture the Future: Australia 2030 research see the vast opportunities for a high speed network. The NBN can have major impacts on healthcare, innovation, the environment, freight and logistics and industry in Australia. Siemens also sees the NBN playing an increasingly larger role in energy and water applications (eg: Smart grids). The potential and opportunities of a high bandwidth digital network like the NBN are numerous and are limited only by our own imagination and innovation. Siemens Ltd. look forward to seeing the ongoing developments to this project.

Kind Regards,

Cameron Marcuccio

Project Leader- Picture the Future  
Siemens Ltd.