

The Australian Industry Group

# The Business End of Broadband

What business users want from high-speed broadband



OCTOBER 2013



Principal contact person for the report:

Kate Pounder

Principal Adviser – Technology and Public Policy

The Australian Industry Group

Direct Tel: 03 9867 0258

[kate.pounder@aigroup.asn.au](mailto:kate.pounder@aigroup.asn.au)

©THE AUSTRALIAN INDUSTRY GROUP, 2013

The copyright in this work is owned by the publisher,

The Australian Industry Group, 51 Walker Street,

North Sydney NSW 2060. All rights reserved.

No part of this work covered by copyright may be reproduced or copied in any form or by any means (graphic, electronic or mechanical) without the written permission of the publisher.

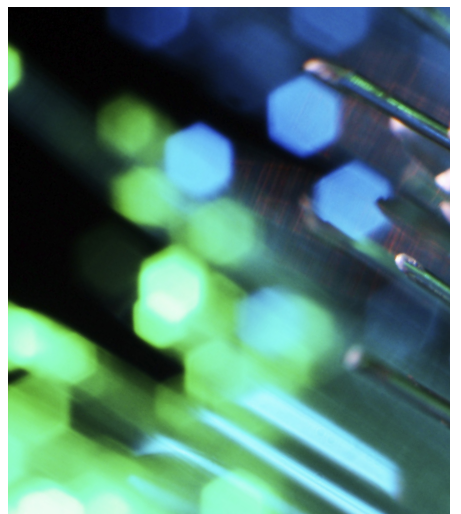
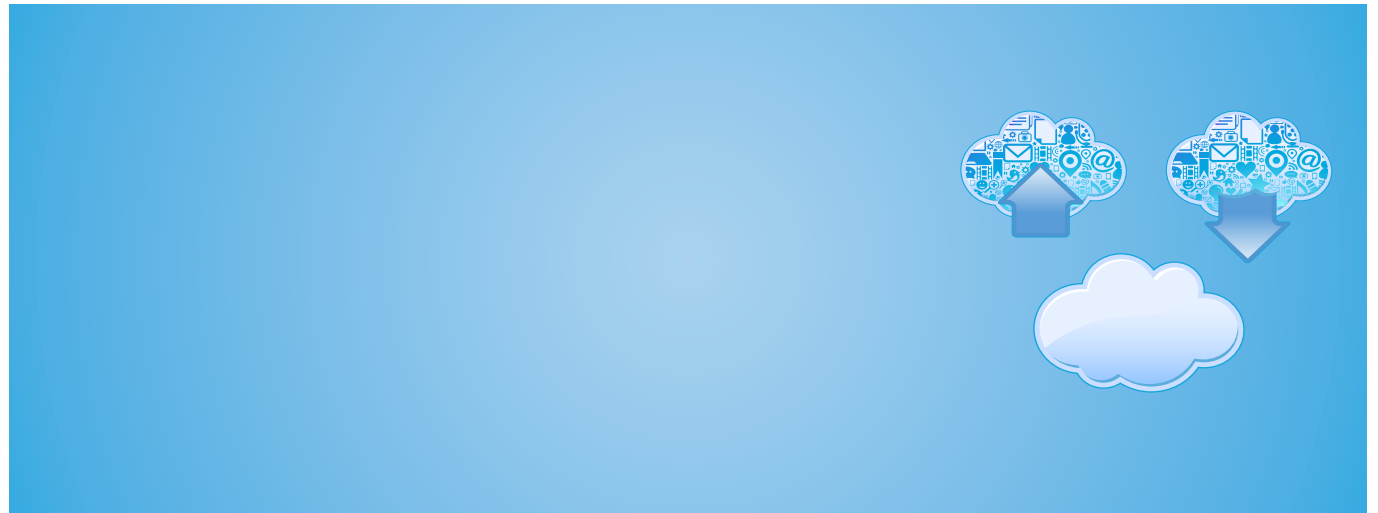
ISBN 978-1-921768-31-6

The Australian Industry Group

# **The Business End of Broadband**

What business users want from high-speed broadband

OCTOBER 2013



## TABLE OF CONTENTS

### CONTENTS

Key messages.....	iv
Executive summary.....	1
Findings.....	3
Recommendations.....	4
Survey findings .....	5
Current situation in Australia .....	5
Policy plans for high-speed broadband rollout .....	6
Importance of high-speed broadband to the business .....	7
Satisfaction with existing infrastructure .....	9
Most important features in high-speed broadband service .....	12
Current business use of the internet.....	14
What do businesses anticipate doing with the NBN? .....	15
Implications for network design and business packages .....	17
Broadband readiness.....	19
When do businesses plan to prepare? .....	22
Conclusion .....	23

## KEY MESSAGES



Broadband policy has been hotly debated in Australia for close to a decade.

The start of construction on the National Broadband Network (NBN) appeared to settle the debate, but the election of a Coalition Government in September 2013 with an alternative plan may lead to an eleventh hour change to the model.

The Coalition Government is initiating a series of reviews to inform its decisions about revising the NBN model, including a review of NBN Co's business strategy and a review of underserved

areas that should be prioritised in the rollout timetable.

At such a pivotal point in time, it is vital that the needs of all users of the network are considered. While the benefits of the NBN to households, health and education providers have been strongly promoted, less attention has been paid to the needs of, and opportunities for, business users.

This report redresses this imbalance by providing insights into business users' priorities for high-speed broadband services and their assessments of what high-speed broadband means for their business.

This dimension is important both for the business community itself and because business take up of opportunities will be a key avenue through which broader community-wide benefits will be transmitted.

Right now most businesses regard broadband as important to them over the next two to three years – but most have not yet begun to plan for the NBN, largely because they think business will not be a priority in the rollout and the NBN will not be available in their area in the short to medium term.

The needs of business users should be front and centre in the NBN reviews and any revisions to the model. This should include prioritising underserved business districts in outer metropolitan and regional areas in reviewing the rollout timetable, ensuring suitable product packages for business users are available in the shift from a predominantly fibre to the premises (FTTP) to a fibre to the node (FTTN) model and targeted support to build businesses' digital capabilities to ensure businesses realise the opportunities that high-speed broadband presents.

Once the reviews are completed, any revisions to the rollout timetable and to the services and pricing available to businesses need to be quickly settled and communicated to businesses so that they can plan to take full advantage of the NBN.

Australia is rapidly getting to the business end of the broadband debate. The decisions made about the NBN over the next year will lock in place the model for this essential piece of infrastructure for decades to come. We need to ensure these decisions serve the best interests of all the network's users now and into the future.

A handwritten signature in black ink that reads "Innes Willox". The signature is written in a cursive style and is positioned above a horizontal line.

**Innes Willox**

Chief Executive  
Australian Industry Group

## EXECUTIVE SUMMARY

The Coalition Government has announced a series of reviews of the NBN. The crux of the reviews is a choice between the existing NBN model, which allows for an FTTP rollout to 93% of premises ensuring superior upload and download speeds and network performance but with a comparatively slower and more expensive roll out, and the Coalition's alternative model, which would give NBN Co greater capacity to use alternative technologies such as FTTN and very high bit-rate digital subscriber line (VDSL) which have comparatively lower network performance, but would allow a faster rollout and potentially lower access costs for users, and which would be upgraded over time.

This report assesses business users' attitudes on a range of issues that are material to the reviews of the NBN. It is based on a survey of 170 business users from key industries such as manufacturing, services, construction and mining.

Our research finds that 75 per cent of businesses see high-speed broadband as important to their business over the next two to three years. However, the majority have not begun to prepare for the NBN. This is largely due to perceptions that the NBN will not be available to the business in the short to medium term and a perception that businesses are not a priority in the rollout.

Not all business users feel that the rollout of the network is urgent, as around 60 per cent are satisfied with their current infrastructure. Yet for the minority who are dissatisfied – more likely to be small to medium businesses or businesses in outer metropolitan or regional areas – the need for better infrastructure is acute.

Businesses prize the quality and reliability of a high-speed broadband service above access and connection costs, upload and download speeds and the timeframe for the rollout.

They envisage using high-speed broadband to better support business applications like cloud computing and videoconferencing, improve collaboration within their business and with suppliers and partners, and to allow large files to be sent, shared and received.

The value that business users place on the quality of the service, combined with the types of applications they are likely to use, has implications for the network design and types of services which should be considered in the reviews.

Business applications increasingly rely on being able to send potentially large amounts of critical data in real-time. For these applications, download and upload speeds, the delay in receiving information ('latency') and the extent to which adding more users reduces the bandwidth available to all ('contention ratios') will be important to the network's ability to support common business uses and satisfy quality and reliability concerns.

Responses to our survey on current use of the Internet by small to medium enterprises (SMEs) show that they continue to lag large businesses in the use of mainstream business applications like cloud computing, remote back-ups and video conferencing suggesting considerable room for further growth. It is likely that as the use of these applications grows, so will demand for bandwidth (both download and upload speeds) and the quality and reliability of connections.

Should the reviews confirm a switch to a predominantly FTTN model, the ability to access an FTTP extension on an individual premise or area wide basis is likely to be of interest to many business users over time, and it is important that more detail is made available about the nature, availability and pricing of these options.

However, there are many different views among businesses about the relative merits of the different NBN models and also differing needs amongst business users as not all businesses want or need an FTTP service at the present time.

A significant minority of businesses is skeptical about the benefits of high-speed broadband to their business. A quarter of respondents to Ai Group's survey either rated it as not at all important to their business over the next two to three years or indicated that they did not know. A further 16 per cent of respondents considered that there was nothing they could do over high-speed broadband that they could not do over their current network. Nearly a third of businesses reported that they did not envisage preparing for the NBN rollout at all.

Generating confidence in the business community about the timing of the rollout and the opportunities that access to the NBN will present to their business is essential so that more businesses begin to plan for it and take advantage of it as it rolls out. Without this work, Australia is unlikely to realise the productivity and innovation benefits that high-speed broadband allows.

Should the reviews confirm a change in the model it is important that basic information for businesses, such as the rollout timetable and the details and benefits of business product packages, are clearly communicated as uncertainty or confusion within the business community is likely to further delay investment and planning decisions.



## FINDINGS

### Importance of high-speed broadband to business

- Seventy-five per cent of businesses rate high-speed broadband as having some importance to their business in the next two to three years, including 25 per cent who see it as essential.
- However, 21 per cent of respondents rate it as unimportant to their business while 4 per cent do not know.

### Satisfaction with existing telecommunications infrastructure

- Sixty-two per cent of businesses rate their existing telecommunications infrastructure as adequate.
- However, a significant proportion of businesses are dissatisfied, with 38 per cent rating it as inadequate to some degree. Comments provided by survey respondents indicate that frustration is most acute in outer metropolitan and regional areas.
- Businesses are also frustrated by a perception that the rollout of the NBN has focused on residential users, when many businesses needed improved service as a priority.

### Most important features in a high-speed broadband service

- For businesses overall, the quality and reliability of high-speed broadband services is the most important feature of the service, cited by over 40 per cent of respondents.
- It is followed by connection costs and access pricing (30 per cent), upload and download speeds (15 per cent) and the timeframe in which services roll out (11 per cent).

### How will businesses use high-speed broadband?

- The most anticipated use for high-speed broadband is better support for business applications and services such as videoconferencing and cloud computing, with 30 per cent of businesses nominating this as their top use.
- Collaboration is the second most cited use, with 14 per cent of businesses citing internal collaboration and 11 per cent citing external collaboration with suppliers, partners or customers as their top use for high-speed broadband. The ability to send and receive large files was the third most popular use, rated by 14 per cent of respondents.
- However, 16 per cent of businesses do not anticipate doing anything over a high-speed broadband service that they are not currently able to do.

### How prepared are businesses for high-speed broadband?

- Fifty-nine per cent of respondents to Ai Group's broadband survey have not begun to prepare for the NBN rollout. Of those that had begun to prepare, the most common step was investment in new technologies or services (17 per cent), followed by commencement of research (12 per cent), development of a

digital strategy for the business (6 per cent), allocation of responsible staff (2 per cent) and allocation of a budget (2 per cent).

- Manufacturing companies are the least likely to have prepared for the NBN with 68 per cent reporting they had taken no steps, followed by mining companies (60 per cent) and construction companies (45 per cent). The services sector was the most prepared, with only 39 per cent of companies reporting that they had taken no steps to prepare.
- The majority of businesses that plan to prepare for the NBN rollout anticipate doing so within one to three years (28 per cent). However, 30 per cent have no intention of preparing at all.

## RECOMMENDATIONS

Ai Group recommends that the reviews of the NBN model:

1. Give greater priority to rolling out infrastructure to poorly served businesses and industrial estates in outer suburban and regional areas.
2. Take into account the needs of different user groups, including business users. This should include the different technical requirements and service levels they may require from a high-speed broadband service.

Following the completion of the reviews, we recommend:

1. Ensuring a cost-effective mechanism for business users to obtain an FTTP service to their premise or area and the release of key details about accessing the service such as availability, the mechanism for provisioning services and pricing.
2. Outlining the types of enterprise product packages on offer to businesses and the impact of a revised model on the small, medium and large enterprise products currently offered or under development by NBN Co.
3. Clearly communicating any timetable revisions to the business community to ensure businesses are aware of when services will become available in their area.
4. Identifying how a revised model will allow for an upgrade path to FTTP services in the longer term.
5. Continuing to provide targeted support to build businesses' digital capabilities, where there is evidence that gaps exist, through initiatives like the Digital Business programs.

## SURVEY FINDINGS

The results in this report are based on a survey of 170 businesses across Australia conducted between June and July 2013. The purpose of the survey was to gauge businesses' attitudes to high-speed broadband, their priorities for high-speed broadband services, and to establish if and how they planned to take advantage of it.

### CURRENT SITUATION IN AUSTRALIA

Broadband is ubiquitous amongst Australian businesses as at least 97 per cent have a broadband connection. High-speed broadband connections are much less common, however, with only 3 per cent of business and government using high-speed broadband connections in June 2012.<sup>1</sup>

**Table 1, Percentage of business and government users with broadband connections, 2013**

Number of business and government subscribers	Jun 2008	Dec 2008	Jun 2009	Dec 2009	Jun 2010	Dec 2010	Jun 2011	Dec 2011	Jun 2012	Dec 2012
<b>Dial-up</b>										
Less than 256kbps	4%	3%	3%	2%	2%	2%	1%	1%	1%	1%
<b>Broadband</b>										
256kbps to less than 1.5Mbps	4%	4%	3%	3%	3%	2%	1%	1%	1%	0%
1.5Mbps to less than 8Mbps	4%	7%	8%	10%	11%	11%	11%	16%	16%	NA
8Mbps to less than 24Mbps	1%	2%	2%	2%	4%	7%	6%	3%	3%	9%
24Mbps or greater	0%	1%	0%	0%	0%	100%	1%	3%	3%	NA

Source: ABS

While the percentage of businesses with high-speed broadband connections has grown rapidly in the past eighteen months, the vast majority of business users still connect via ADSL (72 per cent). This is followed by mobile wireless, fixed wireless and cable connections. The least common connection type is fibre to the premises (FTTP), used by just 1.7 per cent of businesses.

**Table 2, Type of business broadband connection, 2013**

Type of connection	Total (%)
Digital Subscriber Line (DSL)	72.2
Fibre to the Premises (FTTP)	1.7
Cable	6.7
Fixed Wireless	8.2
Mobile Wireless	9.1
Satellite	2.1
Other broadband connections	0.1

Source: ABS

<sup>1</sup> This report defines a high-speed broadband service as one where the download transmission speed is normally more than 25 megabits unless otherwise stated.

The level of fibre penetration in Australia is still relatively low by OECD standards, where the average penetration is approximately 15%.

**Table 3: Fibre as a percentage of broadband penetration in OECD countries, 2012**

	Country	Fibre as a percentage of total penetration		Country	Fibre as a percentage of total penetration
1	Japan	66.72%	18	Poland	3.35%
2	Korea	61.17%	19	Luxembourg	3.33%
3	Sweden	33.72%	20	Spain	2.97%
4	Estonia	32.19%	21	Finland	2.50%
5	Slovak Republic	31.23%	22	Italy	2.14%
6	Norway	22.80%	23	Canada	1.71%
7	Iceland	20.17%	24	<b>Australia</b>	<b>1.59%</b>
8	Slovenia	17.82%	25	France	1.32%
9	Denmark	17.21%	26	Austria	1.27%
10	Czech Republic	15.55%	27	Germany	0.75%
11	Portugal	15.17%	28	Chile	0.74%
12	Hungary	14.71%	29	New Zealand	0.65%
13	Turkey	8.21%	30	Ireland	0.51%
14	United States	7.36%	31	Greece	0.10%
15	Switzerland	6.68%	32	Belgium	0.07%
16	Netherlands	5.97%	33	Mexico	0.00%
17	United Kingdom	5.00%	34	Israel	0.00%

Source: OECD

Broadband connection speeds in Australia are higher than the global average, but lag the top performing companies. The exception is the percentage of connections with speeds over 10 Mbps, where Australia underperforms the global average.

**Table 4: Broadband Connection Speeds, 2013**

Q1 2013	Australia	Global Average	Range of top ten ranked countries
Average broadband connection speed	4.7 Mbps	3.1 Mbps	8 - 14 Mbps
Average peak connection speed	26.3 Mbps	18.4 Mbps	38 - 63 Mbps
Percentage of connections with speeds over 10 Mbps	4.8%	13%	21% - 50%

Source: Akamai State of the Internet Report, Q1 2013

#### POLICY PLANS FOR HIGH-SPEED BROADBAND ROLLOUT

Both major Federal political parties support the construction of a high-speed broadband network. However, there are significant differences in their approach regarding the rollout timeframe, project cost and speed and performance of the network.

The former Rudd Government announced a \$43 billion NBN in April 2009, and it is now being built. Under this model, the NBN would provide 93% of homes and businesses in

Australia with an FTTP connection. Four per cent of premises would be covered by a fixed wireless network and three per cent would receive broadband via satellite.<sup>2</sup>

The Federal Coalition was elected in September 2013 with an alternative broadband policy. The Coalition Government's policy proposes to retain NBN Co and many of the key elements of the existing NBN model. However, in established brownfields areas the Coalition plans to switch to an FTTN rollout rather than an FTTP rollout. An FTTN network extends the optic fibre network from a local telephone exchange to a street cabinet or node. Existing copper telephone lines connect the street cabinet to individual buildings, although these lines may be upgraded as part of the rollout, improving the speed and quality of the service.

The Coalition Government's proposed model would also make use of Telstra's existing hybrid fibre co-axial cable (HFC) network, which was built to deliver pay television services, as either a temporary or permanent part of the NBN infrastructure. This network passes around 30 per cent of premises, largely in metropolitan areas in Sydney, Melbourne and Brisbane, although not all premises passed are serviceable. Greenfields sites will still get FTTP services under the Coalition model and the fixed wireless and satellite components of the NBN rollout will also continue.

The Coalition Government will initiate a series of reviews to inform its decisions about whether and how to change the NBN model, including a review of NBN Co's business strategy and a review of underserved areas that should be prioritised in the rollout timetable.

#### IMPORTANCE OF HIGH-SPEED BROADBAND TO THE BUSINESS

As the rollout of the NBN has commenced, Ai Group has increasingly been asked by policy-makers and companies in the communications industry what business users think about the NBN, how they plan to use it, and whether they are preparing for it. These questions are also material to the reviews of the NBN, so to assist in answering them we undertook a survey of our members.

We began by asking respondents to rate the importance of high-speed broadband to their business over the next two to three years.

Overall, 75 per cent of businesses rated high-speed broadband as having some level of importance to their business, including 25 per cent who rate it as essential.

While a clear majority of businesses see it as important, high-speed broadband is not uniformly embraced by businesses, with 21 per cent of respondents rating it as unimportant to their business and 4 per cent who do not know.

This diversity of opinions was echoed in comments made by survey respondents:

*We are reliant on our internet connections and think that this will become an even higher priority in the future as we change the way we operate to keep up to date with new ways of connecting with our customers.*

*We know that the higher the speed and the more extensive the availability the more efficient and the more innovative we will become.*

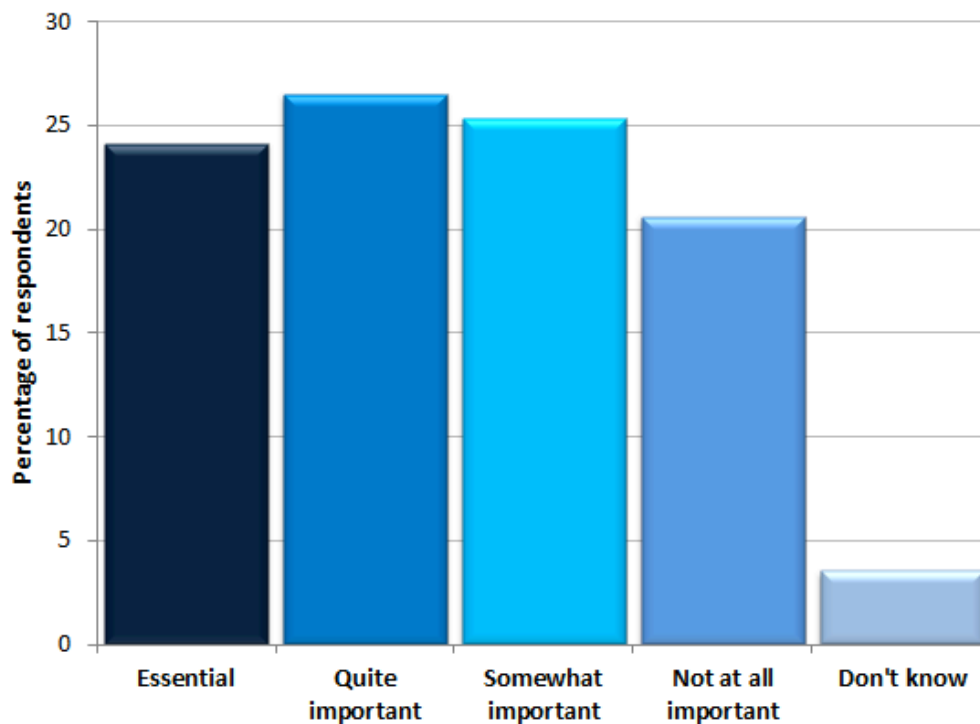
*Our internet speeds can be a bit slow, but doesn't impede our business functions, so cannot see any particular advantages for us at this stage.*

---

<sup>2</sup> A fixed wireless network works like a mobile telephone service in that signals are transmitted wirelessly from an antenna positioned on a business or residence to a nearby tower. Unlike a mobile service, however, a fixed wireless service is designed so that access is only possible within a set range of the antenna, which ensures that a minimum level of service can be guaranteed.

*Totally irrelevant to business needs.*

**Chart 1: Importance of high-speed broadband to the business over next 2-3 years, 2013**



Source: Ai Group

Attitudes to the importance of high-speed broadband varied by company size, with 93 per cent of large businesses rating it as important compared with 78 per cent of small businesses and 70 per cent of medium-sized businesses.

**Table 5: Importance of high speed-broadband to business over next 2-3 years by company size, 2013**

	Small	Medium	Large
Important	78	70	93
Not Important	19	28	0
Don't Know	3	3	7

Source: Ai Group

The industry sector of respondents also affected attitudes, with 72 per cent of manufacturing companies rating high-speed broadband as having some importance to their business over the next two to three years, compared with 87 per cent of service sector firms, 75 per cent of construction companies and 83 per cent of mining companies.

A starker contrast emerged amongst sectors that rated high-speed broadband as essential. While 33 per cent of service sector companies, 42 per cent of construction companies and 33 per cent of mining companies rated it as essential, just 18 per cent of manufacturing firms did so.

**Table 6, Importance of high-speed broadband to business over next 2-3 years by industry sector, 2013**

	Manufacturing	Services	Consutruction	Mining
Essential	18	33	42	33
Quite important	26	24	25	33
Somewhat important	28	30	8	17
Not at all important	25	9	25	17
Don't know	3	3	0	0
Total	100	100	100	100

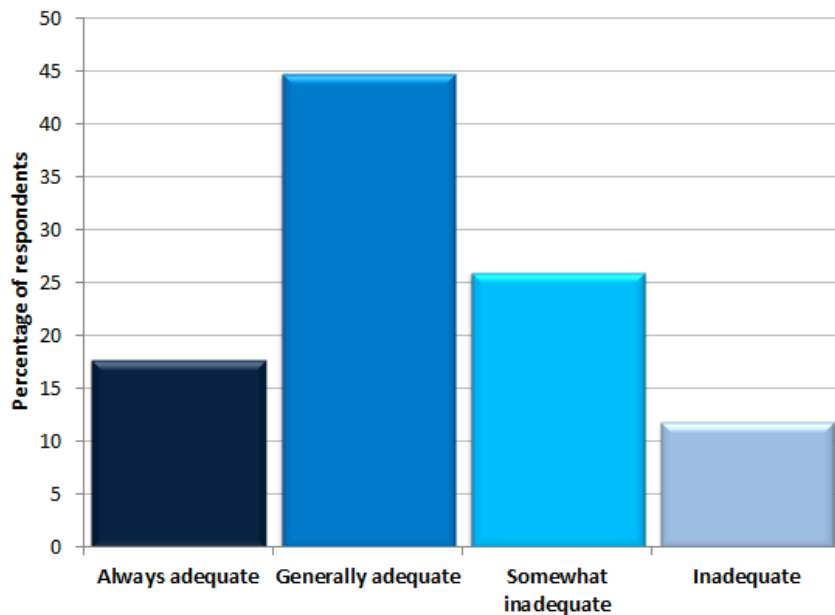
Source: Ai Group

**SATISFACTION WITH EXISTING INFRASTRUCTURE**

The survey also asked businesses to rate their satisfaction with their existing telecommunications infrastructure at the main site of their business. Overall, businesses were more likely to be satisfied than dissatisfied, with 63 per cent of businesses rating infrastructure as adequate.

However, a significant proportion of businesses are dissatisfied with current infrastructure, with 38 per cent rating it as inadequate to some degree.

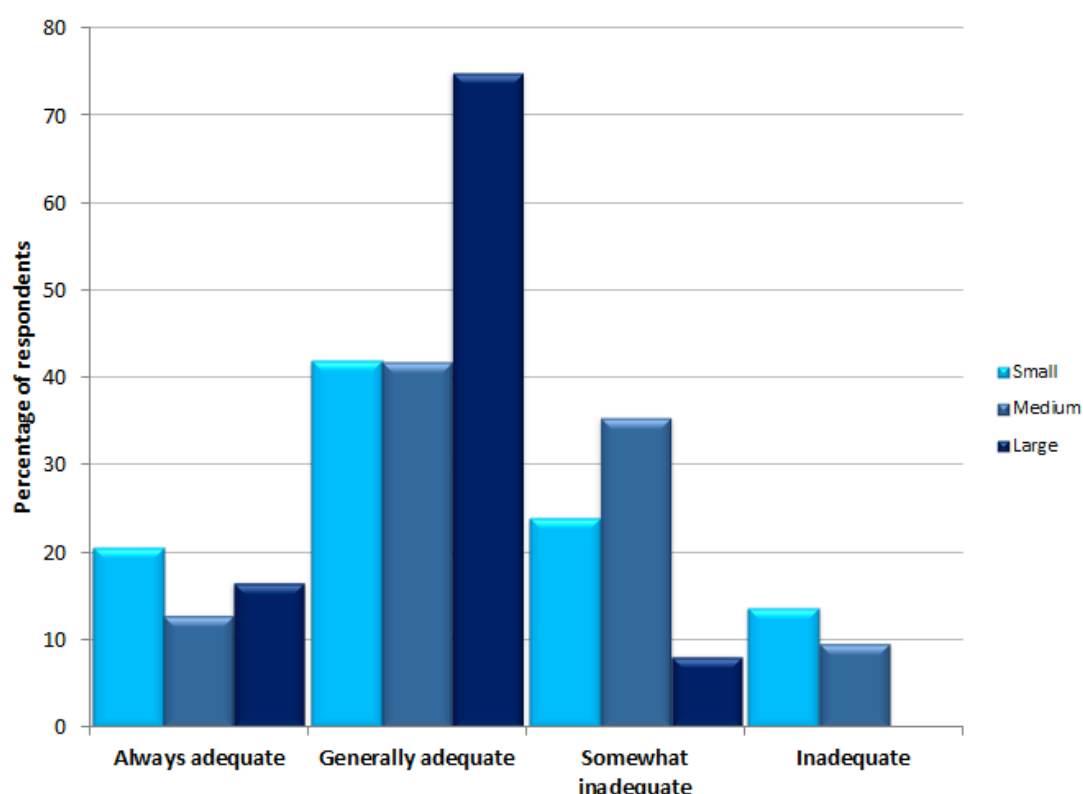
**Chart 2: Adequacy of existing telecommunications infrastructure, 2013**



Source: Ai Group

Satisfaction varied significantly by company size, with 82 per cent of large businesses expressing satisfaction compared to 63 per cent of small businesses and 55 per cent of medium-sized businesses.

**Chart 3: Adequacy of existing infrastructure by company size, 2013**



Source: Ai Group

The different levels of satisfaction may reflect different capacities to pay for dedicated, business grade services. While only 1.7 per cent of Australian businesses have a fibre to the premises connection, 25.5 per cent of large businesses do so.

**Table 7: Main type of broadband connection used, 2013**

	0-4 persons (%)	5-19 persons (%)	20-199 persons (%)	200 or more persons	Total (%)
Digital Subscriber Line (DSL)	68.8	77.8	77.7	57.2	72.2
Fibre to the Premises (FTTP)	1.0	1.6	5.5	25.5	1.7
Cable	7.9	4.2	6.0	12.3	6.7
Fixed Wireless	8.9	7.3	7.3	2.6	8.2
Mobile Wireless	11.0	7.4	2.0	0.7	9.1
Satellite	2.4	1.7	1.5	0.2	2.1
Other broadband connections				1.5	0.1

Source: ABS

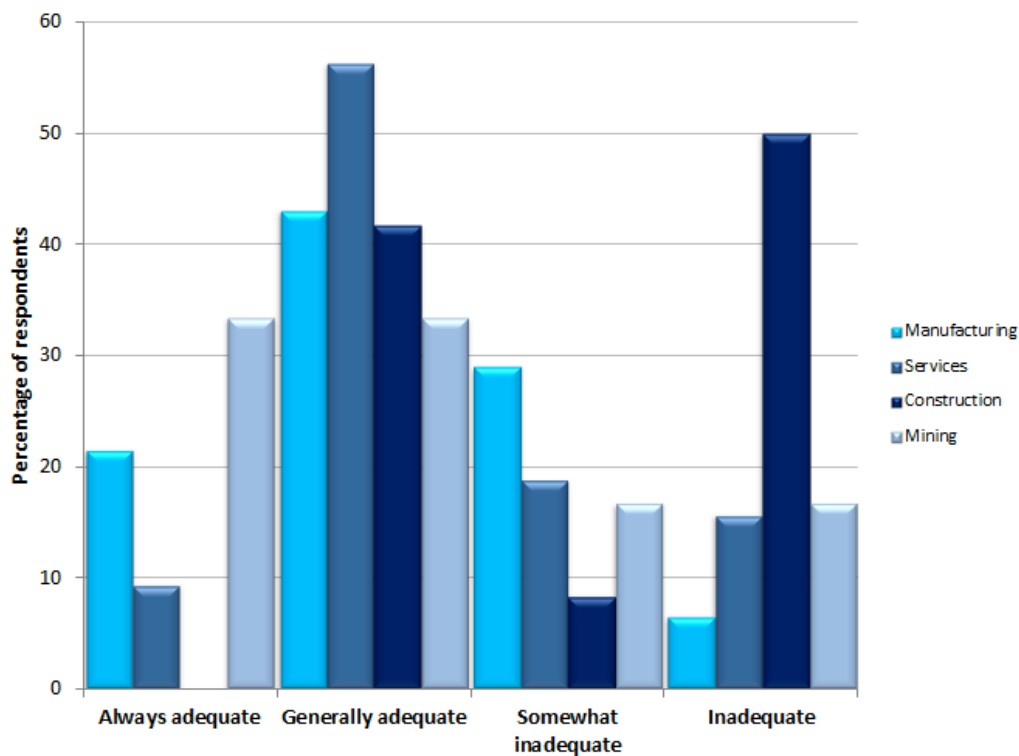
There were also different levels of satisfaction between industry sectors, perhaps reflecting varied geographic location and ability to invest in dedicated infrastructure.

Less than half of respondents from the manufacturing (43 per cent) and construction sectors (42 per cent) rated current telecommunications as adequate, compared with 65 per cent of services companies and 66 per cent of mining companies. Dissatisfaction was



most palpable among construction sector respondents, with 50 per cent of respondents rating infrastructure as inadequate rather than somewhat inadequate.

**Chart 4: Adequacy of existing infrastructure by sector, 2013**



Source: Ai Group

Comments provided by survey respondents indicated that frustration with existing infrastructure was most acute in outer metropolitan and regional areas.

*We are one hour from Newcastle but have very unreliable internet at the moment. We are unable to communicate via video chat. We are unable to get account management software that can run on multiple computers due to our poor internet access. We have to be in the office at ungodly hours in order to be able to download bigger files. In a business world growing more dependent on internet access we are being held back.*

*The exchange (Wangi Wangi) we run off is disgraceful and is constantly having issues and lengthy dropouts. Sometimes up to 3 weeks in this industrial estate! Impossible to run a business and we are not even on the roll out plan for the next 5 years!*

*We are in a regional area that lacks any form of Internet infrastructure. We are currently paying \$3500 per month for a pathetic service that drops out frequently and [telecommunications company] have been no support. There also is no strategy that we have been able to identify regarding the Broadband rollout. We are deferring employing staff due to the lack of infrastructure in Morpeth and the local area.*

*We are just outside Ipswich right next to the Defence base and we can't even get reliable ADSL.... We are currently investing in a wireless link to enable a 6Mb/6Mb (upload/download) broadband connection as the NBN has no plans at all to cover us...I've applied for a NBN network extension but it is too cost prohibitive for us to take. Our wireless link will only be acceptable for the next four years at current growth rates. Fibre is the answer for our business according to [telecommunications company] Consultants & Network Engineers, Ipswich City Council's Digital Enterprise specialist and our IT management company. The main priority is the bandwidth speed.*

*We have poor copper connections in this area (Girraween has many Telstra pits that flood) and cannot foresee reliable network if not fibre.*

*We are in a Regional area (Hunter Valley) which is poorly supported by Broadband.*

Some businesses were also frustrated by a perception that the rollout of the NBN had focused on residential users, when many businesses needed improved services as a priority.

*The policy is about Mums & Dads not businesses. Our business is in an industrial estate but most homes in our city will be connected before we are. We have just signed a 3 year contract for a 20Mbps service with another supplier because we don't believe that we will see the NBN here for 5 years. Businesses should be first because we employ the mums and dads who without a job won't be able to afford the NBN connection.*

*It is very unsatisfactory that we will not receive broadband for 2-3 years when we are located in a rapidly emerging industrial area in Campbellfield when broadband is available at our remote East Gippsland property with a population of less than 5.*

#### MOST IMPORTANT FEATURES IN HIGH-SPEED BROADBAND SERVICE

Designing a model for rolling out a high-speed broadband network involves a series of trade-offs between the timeframe for the rollout, the network's capabilities, the cost of the build and the cost to users of accessing it. Much of the debate about the model has centred on how much priority should be accorded to these different features.

To assess the extent to which these features were valued by business users, Ai Group's broadband survey asked businesses to rate the most important feature in a high-speed broadband service. Their responses were:

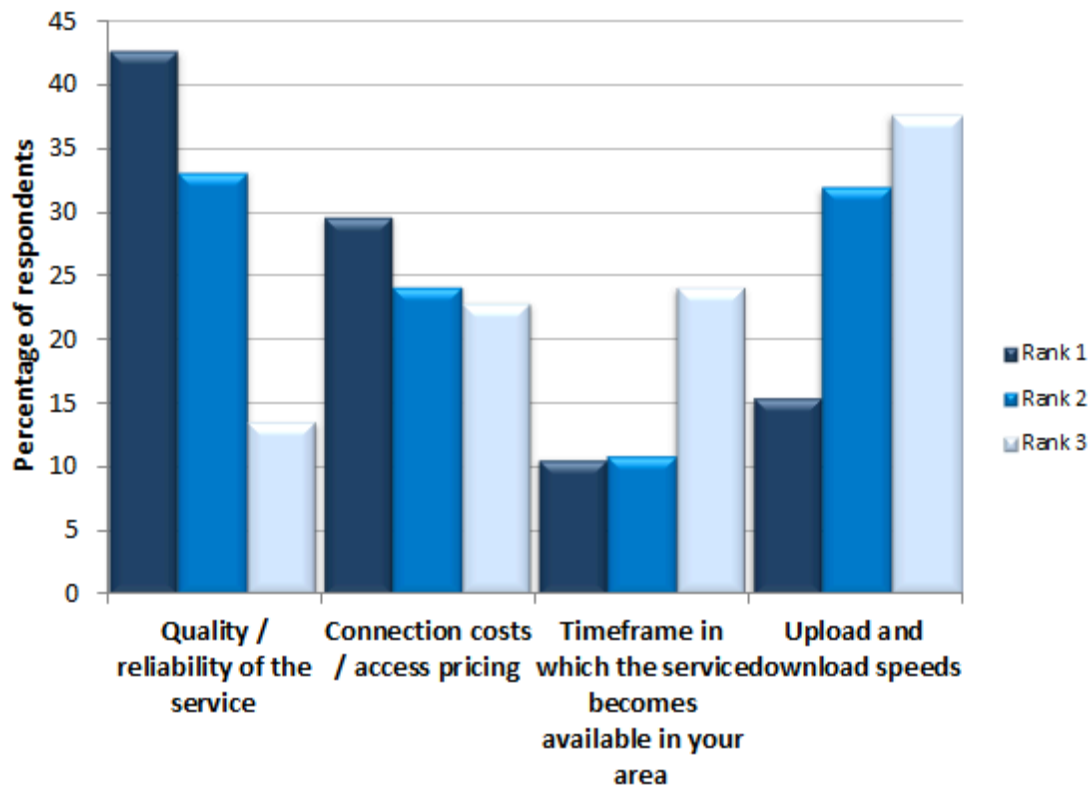
1. The quality and reliability of the service (43 per cent)
2. Connection costs / access pricing (30 per cent)
3. Upload and download speeds (15 per cent)
4. Timeframe in which the service becomes available in your area (11 per cent)

The quality and reliability of the service was the standout feature for most businesses. Unlike most responses to this survey, it was the most important priority across different sized businesses, with the majority of small (42 per cent), medium (55 cent) and large businesses (33 per cent) ranking it as the most important feature in a high-speed broadband service.

While small and medium businesses gave equal importance (29 per cent) to connection costs and access pricing as their second highest priority in a high-speed broadband service, large businesses (27 per cent) gave equal second priority to upload and download speeds and the timeframe in which the service would become available in their area.

The only difference in top priorities emerged by industry sector. Most manufacturing respondents (43 per cent), service sector respondents (45 per cent) and mining companies (50 per cent) rated the quality and reliability of the service as the most important feature, while most construction companies prioritised connection costs and access pricing (42 per cent).

**Chart 5: Most important features in a high-speed broadband service, 2013**



Source: Ai Group

Both 33 per cent of manufacturing and mining companies rated connection costs and access prices as their second highest priority, followed by upload and download speeds (13 per cent of manufacturers and 15 per cent of mining companies). The timeframe in which the service rolled out was the second highest priority for service sector firms (21 per cent) with equal priority then given to upload and download speeds and connection costs and access pricing (15 per cent). Construction businesses rated the quality and reliability of the service as their second highest priority (33 per cent)

The variety of views amongst business users was also evident from comments made by survey respondents.

*If we needed more speed we just need to choose to pay for it. All users should pay full value for what they utilise.*

*Do not make it too expensive to SMEs!*

*Would prefer to wait longer for better infrastructure over lower quality installed faster*

*The rollout is occurring so slowly, that it is currently totally meaningless for our geographic area. The fact the rollout is being undertaken with a large degree of spatial dislocation, means the government is creating a class system of internet access, with many businesses potentially disadvantaged by the slow roll out to their geography compared to that of their competitors.*

*Would prefer reasonable speed internet sooner rather than a rolled gold solution later.*

Business users were particularly split on whether greater upload and download speeds were needed.

*On line/Cloud service delivery is already the core focus of our service delivery to customers. We have invested heavily in hardware and bespoke software to facilitate this important aspect of our business. Affordable access to a fast broadband service would improve the customer experience and allow us to expand our business model beyond the current constraints.*

*The existing copper wire that is adequate for us is approximately 5mb. Double that would be useful 10mb/sec. Beyond that, not much use in the foreseeable future.*

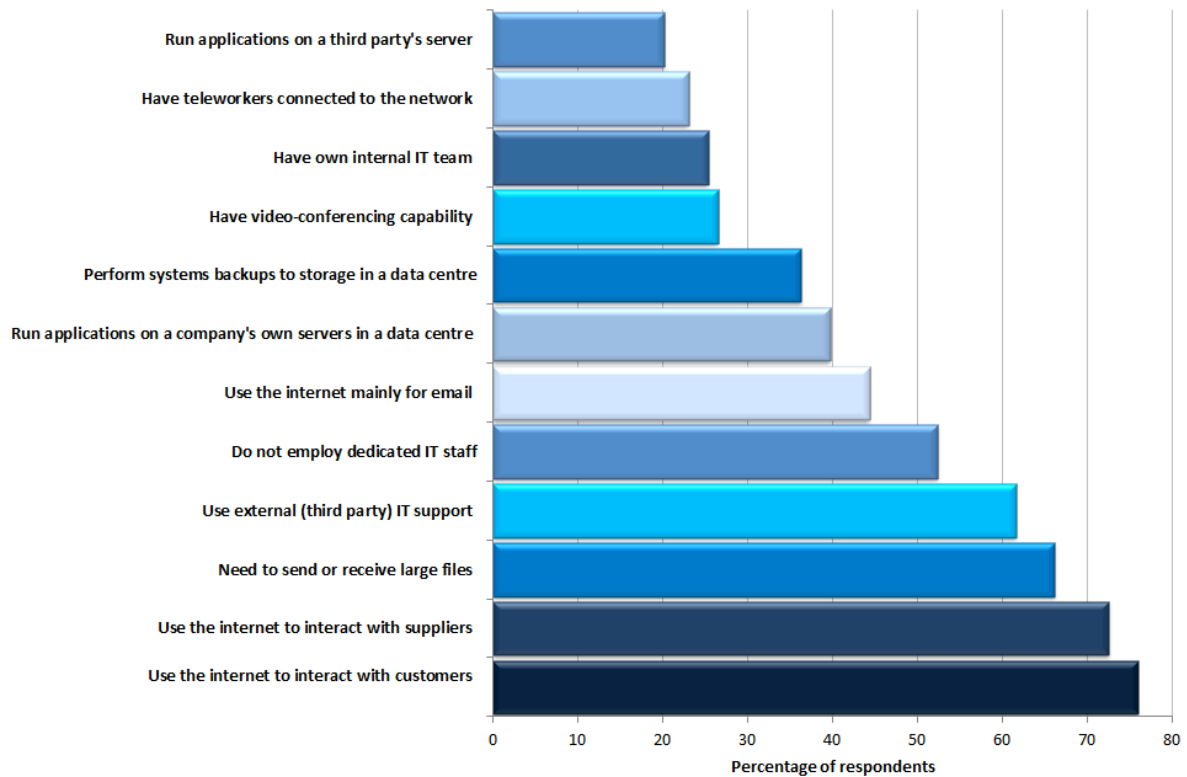
*We used to pay an extra \$1200 pm for optical fibre to our building, but as soon as we linked overseas, we were at the same speed as everyone else, so we saved the money and went back to a microwave link. (admittedly, cloud computing is not an option for us due to cyber security requirements and use of very specialised CAD software packages.)...The current debate seems ill-informed. 100Mbps gives approximately 25 simultaneous TV signals or 10 HD TV signals - is this really necessary?*

*Our current download speed is about 4MB/s. For cloud computing I believe we would need over 10 MB/s. The high speed broadband will in fact offer an order of magnitude greater than this, which seems to be excessive.*

#### CURRENT BUSINESS USE OF THE INTERNET

To develop a picture of how businesses planned to use the NBN, we first asked respondents to our broadband survey to describe their current use of the Internet and resourcing of IT within their business.

**Chart 6: Current business use of the Internet, 2013**



Source: Ai Group

The responses showed that the most common applications for businesses are interacting with customers and suppliers, sending and receiving large files, and emailing.

Some business applications were much more likely to be used by large companies than small or medium businesses. Seventy-three per cent of large companies had videoconferencing capabilities, compared with just 20 per cent of small businesses and 34 per cent of medium sized companies. Similarly, small and medium businesses were much less likely to report running applications on a third party's server (16 per cent of small businesses and 22 per cent of medium businesses compared with 53 per cent of large businesses) or performing backups to storage in a data centre (32 per cent of small businesses and 44 per cent of medium businesses compared with 60 per cent of large businesses).

These responses suggest that there is still considerable room for growth in the SME market, particularly for business applications like cloud computing, remote back-ups and video conferencing. It is likely that as the use of these applications grows, so will demand for bandwidth (both download and upload speeds) and the quality and reliability of connections.

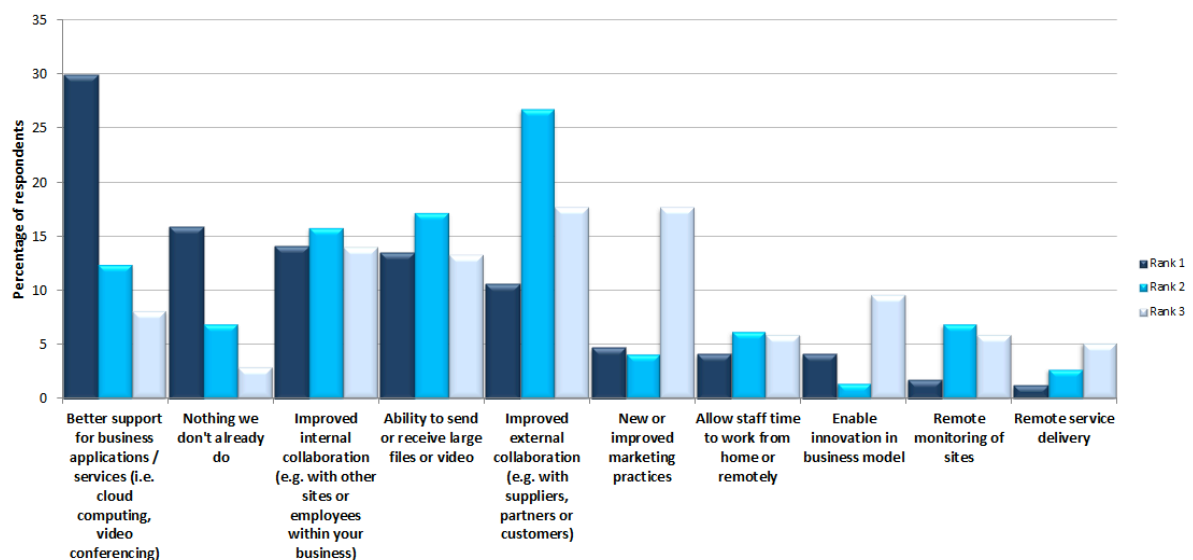
#### WHAT DO BUSINESSES ANTICIPATE DOING WITH THE NBN?

The most anticipated use for high-speed broadband by businesses is better support for business applications and services such as videoconferencing and cloud computing, with 30 per cent of businesses nominating it as their top use.

Collaboration was the second most cited use, with 14 per cent of businesses citing internal collaboration and 11 per cent citing external collaboration with suppliers, partners or customers as their top use for high-speed broadband. These uses also attracted high scores for the second most popular use. The ability to send and receive large files was the third most popular use, cited by 14 per cent of respondents.

However, there is still an element of indifference towards high-speed broadband by sections of the business community, with 16 per cent of businesses stating that they did not anticipate doing anything over a high-speed broadband service that they were not currently able to do.

**Chart 7: What do businesses anticipate using high-speed broadband for?**



Source: Ai Group

These findings are consistent with earlier research undertaken by Ai Group for the *Ready or Not? Technology investment and productivity in Australian businesses* report published in June 2013. In focus groups convened for that project, the main benefit businesses saw from the rollout of high-speed broadband was increased collaboration.

*How we engage with that supply chain and to what level will be...greatly enhanced through the rollout of the network...just the difference between going and having a teleconference versus a video conference – that kind of dialogue and extra feedback, it just will help that rapport and...design reviews*

*We use fairly low end systems to communicate around the country to other offices and I'm hoping that the NBN will...allow us to just use the infrastructure that's generally there without having specialised fibre...to improve our communications and...transfers.*

Businesses in the focus groups also cited the need for better infrastructure to support cloud computing applications, send large design files and for remote monitoring and control of machinery.

*If we're going to use... cloud based services in delivering the latest incarnations of those technologies and to be on the front edge of what's happening, we're going to need the infrastructure to support it.*

*I need the connectivity to [remotely connect to machinery] from wherever I am so when a problem occurs, I can tap into the machine and find out exactly what's wrong.... I don't want to be sat watching a machine 24/7.... I need... that real-time speed so I can speak to other engineers and work through the problem, rather than leave it to be a catastrophic failure and take us offline.*

*We're limited to the capacity of our current system to upload a 3D file and give a customer a quote.... it's going to be a major help... to get a quote out.*

Some reticence about the importance of high-speed was also apparent in these focus groups with participants noting the importance of connectivity varied by industry and occupation.

*For X per cent of the population being highly connected all day during their job is critical, but there's probably quite a few million of the workforce out there where it means nothing.*

A high-speed broadband network will be in place for decades during which time there will be considerable changes in the types of applications available to businesses and their business needs.

Businesses may not always be in a position to foresee or articulate these future needs. Some of the more innovative uses predicted for the NBN, such as remote service delivery or machine to machine (M2M) communication, scored very low response rates from businesses to our survey suggesting they are not anticipating these applications at the present.

Yet according to Cisco's latest Virtual Networking Index (VNI), published in May 2013, M2M connections are predicted to grow three-fold from two billion in 2012 to six billion by 2017 with global M2M IP traffic forecast to grow 20-fold in the same timeframe from 0.5% of global IP traffic to 3% of global IP traffic. Cisco predicts that applications such as video surveillance, smart meters, asset or package tracking and digital health monitors will drive this growth.

More broadly, the 2013 VNI predicted the compound average growth rate (CAGR) of global business Internet traffic will be 21% between 2012 and 2017 alone. The CAGR for business mobile traffic will be 59%. The proliferation of mobile and wireless devices is likely to increase demand on businesses' fixed broadband bandwidth as these

connections support the local WiFi networks that these devices often use within a building.

Planning for the network needs to ensure that the network will be able to cater for these future business needs as they evolve.

#### IMPLICATIONS FOR NETWORK DESIGN AND BUSINESS PACKAGES

Moving to a predominantly FTTN model will have a range of impacts on the services available to business users. It will change the technical capabilities of the NBN, the cost to businesses of accessing it, and the types of plans that can be offered to businesses over it.

A switch to an FTTN model, and in some cases HFC services, will impact upload and download speeds, the symmetry of the service (the equivalence between upload speeds and download speeds), the contention ratio (the number of users sharing bandwidth for the service) and network latency (the length of the delay in receiving data over the network). It may also impact whether service providers offer a service level agreement (SLA) for the service. These characteristics may be different on the HFC and FTTN networks, and the technical features and pricing of individual or area wide FTTP extension services will differ again to the FTTN and HFC offerings.

NBN Co is progressively releasing enhanced business service wholesale products for small, medium and larger enterprises. These assume an FTTP connection and therefore may be affected by changes to the model.

Pricing may also be affected as the Coalition has committed to try and lower access prices, including by amending a legal requirement for NBN Co to offer a national uniform wholesale price to turn it into a cap. NBN Co is in the late stages of negotiating a Special Access Undertaking with the Australian Competition and Consumer Commission (ACCC) specifying terms and conditions for its fibre, fixed wireless and satellite services. This is due to be finalised shortly.

It is critical that the needs of business users are taken into account in the reviews of the model and any decisions to revise it. Applications like cloud computing, videoconferencing and sharing large design files rely on being able to send potentially large amounts of critical data in real-time. Technical characteristics like upload and download speeds, latency and contention ratios will impact on the quality and reliability of the service, which is the top priority for businesses. FTTP services perform better in each of these categories compared with HFC and FTTN solutions, although the extent of the difference depends on the technical parameters of the service offering and the type of plan users choose. As Optus has explained in reference to its HFC network:

*The HFC Network is not suitable for the supply of business services because it is not capable of meeting business customers' typical requirements with regard to quality of service, including features such as availability, symmetric capacity and diversity....since the HFC Network is a shared network, capacity is affected by congestion levels and particular speeds cannot be guaranteed. This feature of the HFC Network also creates difficulties which limit the ability of wholesale customers to control the quality of service they provide to their customers (a typical requirement of wholesale customers)*<sup>3</sup>

This is not to say that a switch to a predominantly FTTN model precludes the provision of services that are suited to business needs. The business broadband plans offered by BT in the United Kingdom provide an indication of the type of offerings that may be

---

<sup>3</sup> Optus submission to the ACCC in support of the application for authorization of the Optus / NBN Co deal. , p. 7

available under the Coalition’s model as BT’s strategy is similar to that proposed by the Coalition. It shows how different technologies are the basis of a series of plans that differentiate on reliability, speed and price.

**Table 8: Comparison of BT business broadband plans**

	<b>BT Business Broadband</b>	<b>BT Infinity for business</b>	<b>BT ethernet in the first mile</b>	<b>Btnet Leased Line</b>
Connection type	ADSL or ADSL2	FTTN	FTTN with ethernet in the last mile	FTTP
Maximum upload speed	Up to 1 mbps	Up to 19 Mbps	2Mbps - 10Mbps	Choice of 2Mbps to 10 Gbps
Maximum download speed	Up to 17 Mbps	Up to 76 Mbps	2Mbps - 10Mbps	Choice of 2Mbps to 10 Gbps
Shared / dedicated	Shared (contended)	Shared (contended)	Dedicated (uncontended)	Dedicated (uncontended)
Line technology	Asymmetrical	Asymmetrical	Symmetrical	Symmetrical
Usage limits	10 Gb or unlimited	100 Gb or unlimited	Unlimited	Unlimited
Resilience options	X	X	Failover, loadbalancing	Backup, failover, loadbalancing
Service level agreement	X	X	Y	Y
Starting price (exc VAT)	£11.00	£30.00 per month	£230.00 per month. However the price depends on the capacity of the leased line; the bandwidth at contract commencement; location from an exchange; and the length of the contract.	

Source: BT

It will be important for NBN Co and the Government to provide greater clarity on the details of the type and features of connections, business products and access prices available under a revised model. This will allow businesses to plan for the services that will best suit their business and service providers to determine what plans they will offer.

Businesses are not united in a preference for either the FTTP or FTTN model, as comments to Ai Group’s broadband survey show

*The Coalition's policy, while initially cheaper, will be more expensive in the long run due to the extra cost involved to allow for future technology upgrades. I believe that we (as a country) must go for the fastest and best technology now so as to be able to meet the demands of the business community and our national and international customers and competitors.*

*I favour connection to the node rather than every property. I prefer the Coalition plan as not every person or building will need or want NBN connection.*



The importance of collaboration and cloud based services to businesses means the ubiquity of the network and its reliability across locations will be a key factor for businesses. This was reflected in comments from survey respondents.

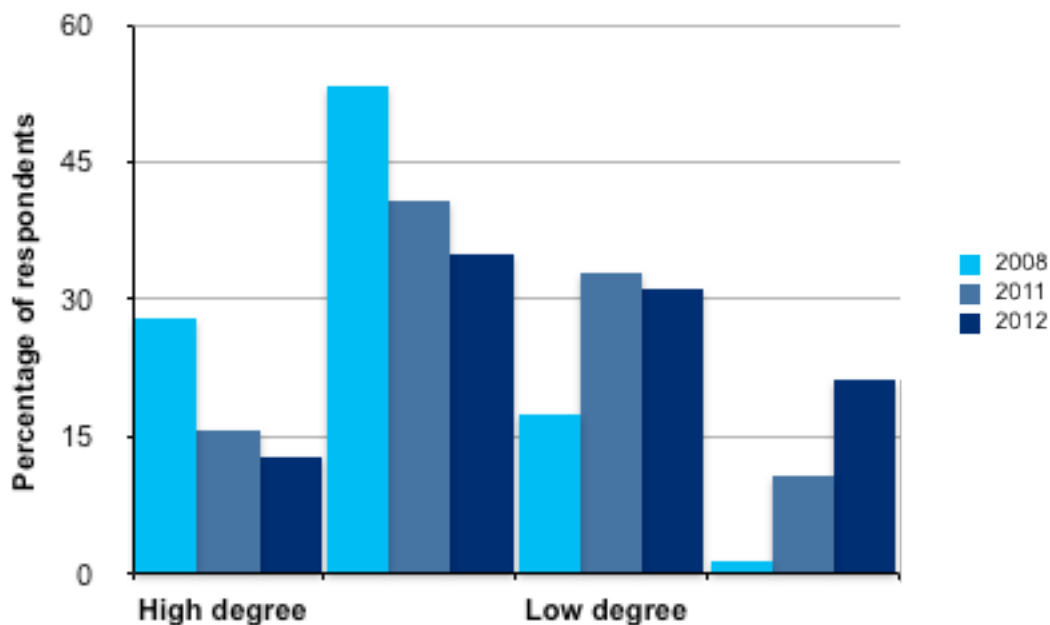
*Universal access by customers to high speed broadband, modern networks and the latest Internet technologies are all essential elements of our business strategy.*

This may present some challenges for businesses during the period of the rollout. For example, if businesses have sites at more than one location these locations are likely to get access to the network at different times because they will be at different points on the rollout timetable. Customers and suppliers will also be coming online at different times. Having multiple locations will also affect the cost of upgrading to an FTTP service if businesses wish to connect at multiple sites.

#### BROADBAND READINESS

In late 2012, Ai Group surveyed close to 350 CEOs in the Business Prospects Survey. CEOs were asked about the degree to which they believe they have the skills and capabilities to take advantage of high-speed broadband. The same question was asked as part of Ai Group's *Business Investment in New Technology* report in 2011, and in 2008 as part of the *High Speed to Broadband: Measuring industry demand for a world class service* report.<sup>4</sup>

**Chart 8: Business readiness for high-speed broadband<sup>5</sup>**



Source: Ai Group

Overall, businesses reported less confidence in their ability to take advantage of a national broadband network in 2012 compared with 2008 and 2011. Confidence varied significantly depending on company size. Over 70% of large companies had confidence that they had the capabilities to take advantage of high-speed broadband, compared with 41% of medium-sized businesses and 47% of small firms. Confidence also varied by

<sup>4</sup> Some caution needs to be applied in directly comparing the results from the three surveys as the respondents and sample size differed but the results are useful for assessing trends in business attitudes.

<sup>5</sup> Ai Group

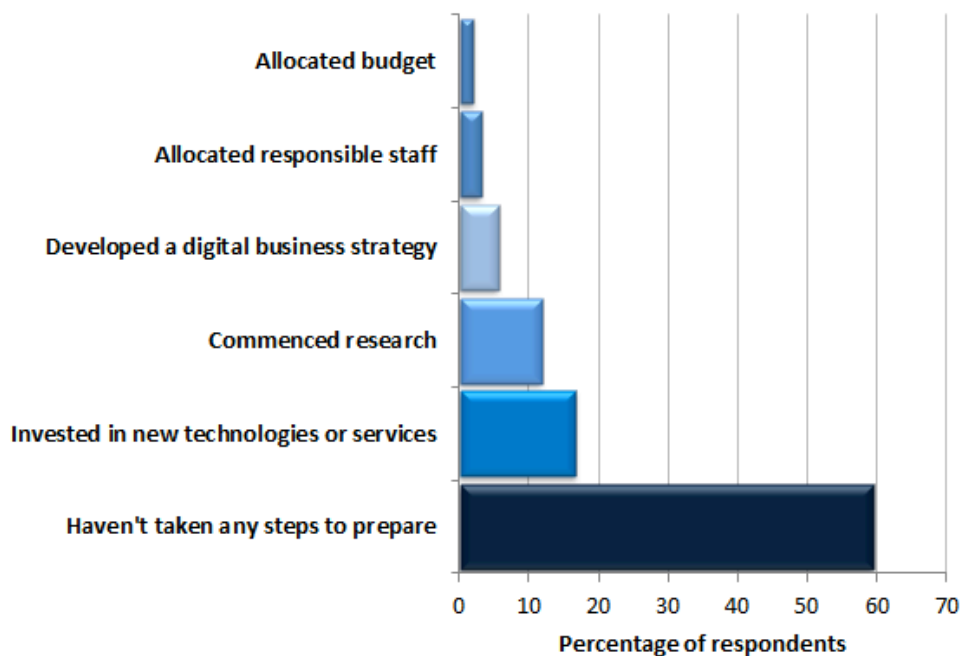
sector, with manufacturing companies least likely to express confidence and mining companies the most likely.

#### BUSINESS PREPARATION FOR HIGH-SPEED BROADBAND

Building on this research, we asked respondents to the 2013 Broadband Survey to tell us what steps they had taken to prepare for high-speed broadband. These results confirmed that many businesses are not yet taking action to prepare for it.

Fifty-nine per cent of respondents have not begun to prepare for the rollout. Of those that had, the most common step to prepare was investment in new technologies or services (17 per cent), followed by commencement of research (12 per cent), development of a digital strategy for the business (6 per cent), allocation of responsible staff (2 per cent) and allocation of a budget (2 per cent).

**Chart 9: Steps taken to prepare for high-speed broadband, 2013**



Source: Ai Group

The extent of preparation varied by businesses size, with 62 per cent of small businesses having taking no steps to prepare, compared with 54 per cent of medium sized businesses and 43 per cent of large businesses.

**Table 9: Business preparation for high-speed broadband by company size, 2013**

	Small	Medium	Large
Haven't taken any steps to prepare	62	54	43
Invested in new technologies or services	15	25	14
Commenced research	12	11	14
Developed a digital business strategy	5	4	14
Allocated responsible staff	1	7	14
Allocated budget	3	0	0
Other	3	0	0

Source: Ai Group

Manufacturing companies were the least likely to have prepared with 68 per cent reporting they had taken no steps, followed by mining companies (60 per cent) and construction companies (45 per cent). The services sector was the most prepared, with only 39 per cent of companies reporting that they had taken no steps to prepare.

**Table 10: Business preparation for high-speed broadband by industry sector, 2013**

	Manufacturing	Services	Construction	Mining
Haven't taken any steps to prepare	68	39	45	60
Invested in new technologies or services	11	30	27	0
Commenced research	12	12	9	0
Developed a digital business strategy	2	12	9	40
Allocated responsible staff	4	0	0	0
Allocated budget	2	0	9	0
Other	1	6	0	0

Source: Ai Group

Comments by respondents to the broadband survey suggest that many businesses have not begun to prepare because of the long rollout timeframe.

*We will not see commencement of NBN in any of the areas in Victoria and New South Wales where we have our offices situated for at least 3 years.*

*If it was to be available sooner in our area we would have a plan to use it more quickly.*

Some respondents told us that they were continuing to enter into multi-year contracts with other providers.

As yet the planned rollout of the broadband does not cover any of our sites so there is no use preparing. Also we have signed a 3 year contract with our current network provider.

These comments illustrate the importance of clearly communicating the rollout timetable to businesses as many will not begin to prepare unless they have a deadline for the availability of services for their business to plan around.

#### WHEN DO BUSINESSES PLAN TO PREPARE?

The majority of businesses that plan to prepare for the NBN rollout anticipate doing so within one to three years (28 per cent).

**Table 11: Business timeframe for preparing for NBN rollout**

	All businesses
Will not prepare	30
Already prepared or preparing	19
12 months	12
1-3 years	28
3-5 years	11
5-10 years	1

Source: Ai Group

Small businesses were the most likely to say that they would not prepare for high-speed broadband rollout at all (32 per cent) compared with 23 per cent of medium sized businesses and only 7 per cent of large businesses. Small businesses were also less likely to have started preparing.

**Table 12: Timeframe for NBN preparation by company size, 2013**

	Small	Medium	Large
Will not prepare	32	23	7
Already prepared or preparing	17	26	21
12 months	13	10	14
1-3 years	30	23	36
3-5 years	8	16	21
5-10 years	0	3	0

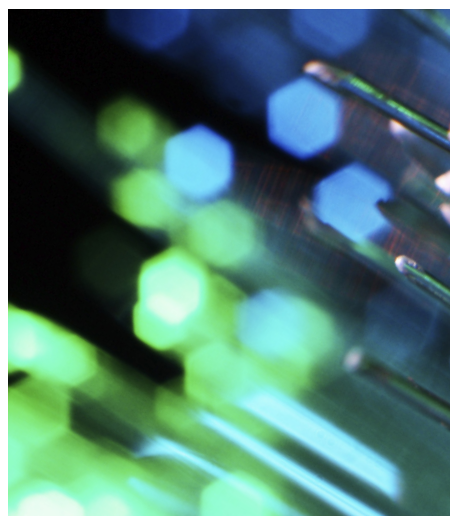
Source: Ai Group

## CONCLUSION

A high-speed ubiquitous broadband network is an essential foundation for Australia's future economic development. After a decade of debate, we are now at the business end of decisions that will determine the shape of a network that Australian businesses and households will be using for decades to come.

We need to ensure that these decisions serve the best interests of the network's users, including businesses, now and into the future.

Generating confidence in the business community about the timing of the rollout and the opportunities that access to the NBN will present to their business is also essential so that more businesses begin to plan for its availability. Without this work, Australia is unlikely to take full advantage of the productivity and innovation benefits that high-speed broadband allows.





## Ai GROUP OFFICES

**Ai GROUP METROPOLITAN OFFICES:** **SYDNEY** 51 Walker Street North Sydney NSW 2060 PO Box 289 North Sydney NSW 2059 Tel 02 9466 5566 Fax 02 9466 5599 **CANBERRA** 44 Sydney Avenue Forrest ACT 2603 PO Box 4986 Kingston ACT 2604 Tel 02 6233 0700 Fax 02 6233 0799 **MELBOURNE** 20 Queens Road Melbourne VIC 3004 PO Box 7622 Melbourne VIC 8004 Tel 03 9867 0111 Fax 03 9867 0199 **BRISBANE** 202 Boundary Street Spring Hill QLD 4004 PO Box 128 Spring Hill QLD 4004 Tel 07 3244 1777 Fax 07 3244 1799 **ADELAIDE** 45 Greenhill Road, Wayville SA 5034 Tel 08 08 8394 0000 Fax 08 08 8394 0099 **REGIONAL OFFICES:** **ALBURY/WODONGA** 560 David Street Albury NSW 2640 PO Box 1183 Albury NSW 2640 Tel 02 6021 5722 Fax 02 6021 5117 **BALLARAT** 1021 Sturt Street Ballarat VIC 3350 PO Box 640 Ballarat VIC 3353 Tel 03 5331 7688 Fax 03 5332 3858 **BENDIGO** 87 Wills Street Bendigo VIC 3550 Tel 035443 4810 Fax 03 5444 5940 **NEWCASTLE** Suite 1 "Nautilus" 265 Wharf Road Newcastle 2300 PO Box 811 Newcastle NSW 2300 Tel: 02 4925 8300 Fax: 02 4929 3429 **WOLLONGONG** Level 1 166 Keira Street Wollongong NSW 2500 PO Box 891 Wollongong East NSW 2520 Tel 02 4228 7266 Fax 02 4228 1898 **AFFILIATE: PERTH** Chamber of Commerce & Industry Western Australia 180 Hay Street East Perth WA 6004 PO Box 6209 East Perth WA 6892 Tel 08 9365 7555 Fax 08 9365 7550 [www.aigroup.com.au](http://www.aigroup.com.au)