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Introduction

The Broadband Barometer

Pacific Internet is pleased to present the Pacific Internet Broadband Barometer 2006, the sixth such report. The primary purpose of The Barometer is to report on the adoption and use of Internet technologies in Australia’s small and medium businesses (SMBs).

Since launching in 2003, the Pacific Internet Broadband Barometer has been widely used and referenced by a range of decision-makers and analysts in business, government and the media. It is an invaluable tool for understanding how SMBs are adopting and using Information and Communication Technology (ICT).

This is the last issue of Pacific Internet Broadband Barometer in its current form. From 2007 Pacific Internet will issue an updated annual research report, to be called the Pacific Internet IP Index. This will include information relating to the Asia Pacific region.

About this report

In common with previous years, the report scope has evolved to encompass new elements as the market changes. In addition to the key findings about adoption of access technologies, this year's report covers issues like VoIP, the impact of security threats and viruses, and the uptake of various technologies by SMBs.

This year's data is based on a survey of 514 SMBs by research firm GfK which was responsible for project management of the research study.

The research scope has been refined to include only businesses employing between 5 and 199 staff, therefore providing sharper focus on operating businesses. Interviews were conducted from 30 August to 14 September 2006 (refer page 24 for more about Methodology).

About GfK

GfK Marketing Services Australia (GfK) specialises in researching and reporting on the market for Consumer Technology, IT products, Telecommunications, Office Communications, Electronic Entertainment, Household Electrical Appliances and Photographic Equipment.

GfK provides essential market data to over 200 organisations in Australia and New Zealand. Its client-base covers many of the leading manufacturers, vendors and distributors within their respective industries, plus the majority of the region's key retailers and resellers. In addition to comprehensive retail market tracking data GfK also delivers custom research to major clients aiming to better understand consumer behaviours.

GfK Australia is part of the Retail and Technology Division of the GfK Group, one of the largest market research organisations worldwide.

For more information on GfK visit www.gfk.com.au.
SMB Internet Technology Trends

- Australian SMBs are doing more with their ICT infrastructure – they are deploying ICT tools for large proportions of their staff, and connecting these tools to the wider world via internet access technologies (98% of SMBs contacted have an Internet connection).

- Broadband is becoming a commoditised technology (92% of Internet-connected SMBs use broadband – up from 79% in 2005). This in turn has enabled SMBs to take advantage of external capabilities - e.g. 56% of SMBs use managed backup, and 42% have externally hosted applications.

- As SMBs leverage new technologies (like VPN, VoIP, wireless etc.) they have learnt that together with the benefits come challenges and threats.

- A key theme running through this survey is the sense of vulnerability many SMBs perceive about their ICT installations. They fear viruses (36% rate this their biggest concern), and they fear for the security of organisational data and financial transactions (33%).

- Most SMBs are reacting to that sense of vulnerability by deploying protective technologies - e.g. firewalls (used by 92% of SMBs), virus protection (94%), and managed backup.

- However, even the comprehensive deployment of virus protection has not stopped 29% of SMBs (equivalent to 70,570 SMBs) suffering some downtime due to virus or malicious events during the past 12 months. Small businesses need to find ways to more successfully safeguard their critical businesses infrastructure.

- The downtime for these 70,600 businesses ranged from just an hour to more than a week. Fully 3% of respondents (7,300) state they have suffered a minimum of one week's downtime.

- Assuming the 70,600 businesses were unproductive when their ICT systems were down this represents total lost revenues of around $76m (based on ABS income data for SMBs). Such loss of income can be crippling to a small business. Looking at this another way, the $76m is equivalent to 271 SMBs going out of business for a year.

- Relatively small numbers of SMBs mention firm plans to deploy new technologies in 2007. Many have implemented new technologies in the preceding year, and there is a sense that they are now in consolidation mode. However, 12% of SMBs state they will implement VoIP in the next 12 months, and 5% will implement video-conferencing.

- The expected VoIP avalanche is gathering momentum. VoIP is already used by 19% of SMBs (a large increase compared to 1% in 2005). Based on conservative calculations, the report estimates around $600m-worth of annual voice revenue was lost to VoIP from traditional telcos in the last year.

- Many SMBs are in the dark about VoIP technologies and the potential benefits. If these SMBs become educated and switched on to VoIP, market growth could accelerate resulting in very large potential losses to traditional telcos.

- Wireless is gaining traction for the remote access workforce as SMBs appreciate the flexibility offered by wireless technology. SMB leaders should be planning for organisations structures that support and manage an increasingly mobile workforce.
Australia’s SMB Landscape

The Australian Bureau of Statistics (ABS) defines small and medium businesses as having between 5 and 199 employees. That is the definition used for this report, although the report goes a little further by sub-segmenting the medium businesses (see right of pyramid).

There are 3,015,318 businesses in Australia. The vast majority of these (2,178,240, or 72.24%) do not employ anyone and are excluded from this study. A further 565,775 (18.76%) employ 1 to 4 staff – they also are excluded, as are the 4,918 large businesses (200-plus employees). All agriculture and energy businesses (23,042) are excluded because they’re not representative, leaving 243,343 SMBs, which are the focus of this study.

For reference:
* 8161.0.55.001, Australian Bureau of Statistics, Business Register, as at June 2004 – Published 7 Oct 2005
# 8127.0, Australian Bureau of Statistics, Characteristics of Small Business, as at June 2004 – Published 28 Apr 2005
@ Unpublished SMB size data sourced from Australian Bureau of Statistics, Business Demographics Unit, Oct 2005

Additional reading: 8162.0, Australian Bureau of Statistics, A Statistical View of Counts of Businesses in Australia. Published 7 Oct 2005
The Internet is almost universal among SMBs (5 - 199 employees). 98% of the SMBs have Internet access, and 92% of these have broadband Internet access. Therefore 90% of Australian SMBs (5 - 199 employees) have broadband Internet access as their primary Internet connection.

The last 12 months have produced rapid growth in wireless - doubling to a 12% share from 6% just a year ago. xDSL connections (ADSL, ADSL 2, SHDSL, SDSL etc.) have continued to grow and are up from 62% in 2005 to 71%.

By contrast, dial-up access has declined markedly - just 6% of businesses are now using dial-up compared to 20% a year ago. A further year may herald the death of dial-up connections (as the primary connection) in all but a few Australian SMBs.

SMBs (5 - 199 employees) are also moving away from cable modem connections, down from 11% in 2005 to 5% in 2006.
The smaller the business the more likely it is to use wireless and dial-up. Smaller businesses (i.e. under 50 employees) are less likely to use xDSL as the most important connection to the Internet than their larger counterparts.

When analysed by business size there are minor rather than major differences in how businesses connect to the Internet.

Metro businesses moving to broadband are more likely to choose wireless access (14%) than their non-metro counterparts (9%). This is hardly surprising since there is less wireless infrastructure outside the metropolitan centres.

Non-metro businesses (64%) are therefore a little more likely than metro ones (55%) to use xDSL.
Narrowband is practically dead in SMBs - only 8% have connection speeds of 64Kbps or less, while three quarters of businesses connect at speeds of 512kbps or above.

However, one-half of respondents have speeds between 512 kbps to 1.5 Mbps, suggesting they do not have the necessary bandwidth to move to the next level of internet applications usage.

The vast majority of Internet plans marketed in Australia feature connection speeds of 1.5mbps or less.

Australian SMBs operate at a comparative disadvantage to some of our Asian competitors who have access to much faster Internet connection speeds. This may be a potential barrier to innovation and competitiveness.
The survey shows a higher proportion of businesses using almost all of the technologies compared to a year ago. This is evidence of the increasing comfort levels SMBs have with technology. As an example, email is now ubiquitous in Australian SMBs, demonstrating the extent to which they have both deployed and become dependant on information and communications technologies.

Other highlights include:

- SMBs are primarily concerned about security & integrity of data, resulting in security applications being widely used
- the use of spam & virus protection has increased from 73% of respondents in 2005 to 94% now
- firewall use (92%) is also up compared to a year ago (65%) emphasizing that SMBs take security seriously enough to act.
- the beginning of the VoIP avalanche is apparent, with almost one-fifth of businesses already using some form of VoIP – up considerably from 1% a year ago.
- a further 12% of businesses have firm plans (not vague intentions) to deploy VoIP in 12 months
- other technologies with rapid growth in deployment compared to 2005 results are managed backup, LAN, and VPN.
### Technology Adoption

**Use of Internet technologies Small businesses (5-19 employees)**

<table>
<thead>
<tr>
<th>Application</th>
<th>% of Respondents, n = 297</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>100%</td>
</tr>
<tr>
<td>SPAM &amp; Virus protection</td>
<td>92%</td>
</tr>
<tr>
<td>Firewall / security</td>
<td>90%</td>
</tr>
<tr>
<td>LAN (local area network)</td>
<td>73%</td>
</tr>
<tr>
<td>Managed backup / recovery services</td>
<td>55%</td>
</tr>
<tr>
<td>Content filtering</td>
<td>37%</td>
</tr>
<tr>
<td>Externally hosted applications</td>
<td>41%</td>
</tr>
<tr>
<td>Teleworking / remote access</td>
<td>25%</td>
</tr>
<tr>
<td>VPN / Private Network / WAN</td>
<td>24%</td>
</tr>
<tr>
<td>VoIP/IP telephony / Skype</td>
<td>19%</td>
</tr>
<tr>
<td>Video conferencing / web collaboration</td>
<td>8%</td>
</tr>
</tbody>
</table>

The proportion of Small businesses that use the various applications is not hugely dissimilar to that for all respondents.

However, the following differences are apparent:
- Firewalls are more likely to be software based, purchased from a retailer.
- Managed back up/recovery services are prevalent but less sophisticated than for larger businesses.
- LANs are less likely to be installed at Small businesses.
- Content filtering is less widely used than in other businesses.
- Teleworking is not so prevalent.

Businesses in this category tend to be single site operations, consequently there is less need for technologies such as VPN/Private Network and WAN.
Technology Adoption

Use of Internet technologies Small Medium businesses (20-49 employees)

Small Medium businesses have a very similar applications usage profile to other business in the study.

However the major differences for businesses in this category compared to small businesses are as follows:
- greater likelihood to use externally hosted applications
- teleworking/remote access technologies are more widely used
- VPN/Private Networks/WAN more likely to be deployed than in Small businesses (5-19 employees) due to the likelihood of more than one site of operation.

More than one fifth of businesses in this category are utilising VoIP/IP Telephony/Skype in order to reduce telecommunication costs. Most probably this is between operating sites.
Medium businesses diverge quite noticeably in their rate of applications usage compared to the businesses with less than 50 employees.

Highlights for businesses in this category:
- medium businesses have 100% deployment of SPAM & virus protection (compared to 94% overall).
- businesses of this size generally use LANs more (94% compared to 78% overall)
- VPN/Private Network/WANs are very prominent (55% compared to 32% overall)
- they are more likely to use managed backup / recovery services
- these businesses are less likely to use externally hosted applications than smaller businesses

In line with businesses with under 50 employees, VoIP/IP Telephony/Skype has become a significant business application.
As expected, businesses in this category are the heaviest users of Internet technologies. In addition the use of the technology is more sophisticated.

The key findings in this category are:
- universal deployment of basic technologies such as email, SPAM & Virus, firewall. 95% use LAN
- greater sophistication in the use of hardware firewalls and managed back up/recovery services compared to more rudimentary deployments by smaller businesses
- teleworking / remote access applications are much more widely used (58% compared to 33% overall)
- interestingly, VoIP/IP Telephony/Skype has a lower adoption rate than smaller businesses. This is probably due to the perceived risks of this evolving technology.

Larger Medium businesses seek the enterprise grade applications of the major corporations. The high broadband penetration rate, faster connection speeds and availability of new Internet technologies have allowed this category faster adoption particularly in the last 12 months.
The VoIP avalanche has begun and will gather pace. In the past year the use of VoIP in SMBs in Australia has increased from 1% of businesses to 19%, while a further 12% say they have firm plans to introduce VoIP in the next 12 months.

The move to VoIP is already inflicting revenue pain on traditional telcos. Based on conservative calculations the report estimates around $600m-worth of annual voice revenue is already lost to VoIP from traditional telcos. Expect this pain to increase sharply in the next 12 months.

At present, over three-quarters of the SMBs using VoIP are doing so with entry level tools. One-half use some “free” variant, whether it be Skype, Yahoo etc, and one-fifth are using a phone and adaptor connected to their Internet gateway.

Some SMBs have moved to the next level by integrating VoIP into their KTS/PBX telephone switches. A few early adopters have implemented IP Telephony using specialised equipment form vendors like Cisco, Nortel and NEC etc.
The principal reason that most SMBs have not yet implemented VoIP is they claim not to have heard of it. Fully 35% say this is the case, and another 7% say they’ve heard of VoIP but don’t understand how it applies to their business. This scenario suggests the VoIP market has significant room for growth once the industry fully embarks on a market education process.

Some of the issues that might have been expected to loom larger as concerns about VoIP, such as call quality (only 3% mentioned this) or the impact of change on the business, do not rate as important issues.

The 13% of SMBs who say they’ve considered VoIP but don’t really see any benefits shows that VoIP may not be for everyone. This is particularly the case for Larger Medium businesses.
Security of SMB Data

Extent of virus protection

- SMBs continue to fear viruses and threats to data security—despite almost all businesses taking protective measures
- A minimum of 96% of all businesses have implemented virus protection for servers, PCs, and laptops
- The growth of the “mobility workforce” is creating challenges as well as opportunities—over one-fifth of PDAs do not have virus protection, possibly a significant factor in the company security breaches that SMBs describe elsewhere in this report
- In businesses with less than 20 employees, 5% of laptop PCs are not protected

Since fears remain, SMBs are obviously not completely confident in the protective measures they have taken, and are aware of the increasing number of threats that affect inadequately protected Internet connections.

With the growth in installed infrastructure, and increased telecommunications, Australian SMBs are now more dependant on ICT, and more vulnerable to threats to their businesses. The increasing sophistication of attacks adds to this threat. Even though many SMBs claim to have virus protection installed on most of their devices, points of vulnerability remain.

SMBs of all sizes, but especially the smaller ones have not comprehensively put protection in place for PDAs. 5% of laptops at SMBs with 5 – 19 employees are not protected, as are 3% of laptops at SMBs with 20-49 employees.
Impact of Virus / Malicious Events

Downtime resulting from virus / malicious events

- 71% of SMBs have not experienced downtime due to virus or malicious events in the past 12 months.
- 29% (equivalent to 70,060 businesses) have suffered some downtime in the past 12 months due to virus or other malicious events.
- 3% (7,300 businesses) have suffered downtime of one week or more.
- The cost of downtime to SMBs over the past 12 months is likely to be around $76m based on conservative calculations – equivalent to 271 SMBs going out of business for a year.

The positive news that 71% of SMBs have not experienced downtime due to virus or malicious events in the past 12 months is somewhat dampened by news of the 29% of SMBs who’ve had downtime.

The potential loss for Australian SMBs is significant. Based on ABS’ average income figures for small businesses, the report estimates downtime impacted SMB income to the tune of $76m in the past 12 months. That may not appear a large figure, but downtime affecting loss of income can be crippling to a small business. Losing the average SMB income of $5,585 per week could mean the postponement or cancellation of critical business activity due to lack of available cash.

The level of downtime reported is despite a minimum of 94% of (non-PDA) devices being virus protected (It is possible that the comprehensive virus protection deployed is as a result of SMBs taking action consequent to experiencing a downtime situation).

The result demonstrates how difficult it is to be completely secure from threats. It also suggests that small businesses may not be using security technology in optimal fashion. Many buy security from retail outlets and self-install – perhaps not always effectively. They also may not download the latest updates/patches.

1. ABS report 1321.0 Small Business in Australia, 2001
Overall, 92% of businesses are using firewalls.

Of the Firewall/security applications in use (some companies use more than one) 46% are software firewalls, and around one-third (35%) are hardware firewalls. One-fifth are provided through their ISP connection.

In general, smaller businesses (50 employees or less) are twice as likely to use ISPs to provide their firewall compared to bigger businesses – predominantly due to the lack of skilled internal technicians. The larger businesses (50 employees and above) are a lot more likely to have installed hardware firewalls.

Despite the high incidence of firewall use, 29% of businesses still experienced downtime due to viruses or malicious events in the past 12 months. SMBs in Australia need to look at proactive measures to improve their defences against Internet-based threats.
33% of SMBs use teleworking/remote access technologies.

Wireless has become the leading option for teleworking/remote access for employees who work away from the office. Companies with 20-49 and 50-99 employees most favour wireless for remote access (44% use it).

xDSL and dial-up are used for remote access in similar proportions (around one-fifth of companies use each).

Dial-up is most commonly used for remote access in businesses with 5-19 employees.

Together with the growth in wireless as an Internet access methodology, a picture emerges of wireless as a key enabling technology for SMBs.

Wireless is an attractive technology for SMBs as it opens up the possibility of new working arrangements. SMBs can have skilled employees and/or contractors contribute to the business without having to be at the business premises. It also allows SMBs to encourage client-facing staff to spend more time at their client’s premises while still having real-time access to company data.
Two thirds of businesses say their biggest concern about the Internet is around security and related issues.

Australian SMBs worry most about threats to commercial data and operations – over two-thirds of businesses (69%) cite computer viruses and/or security of organisational data as an issue that keeps them awake at night.

ISP performance and reliability is also a key concern for almost 15% of businesses, whilst SPAM concerns 7%.

Issues related to money (cost of access, excess charges, obtaining value for money) are, comparatively, not really a concern at all. Inappropriate material is more of a worry for the largest businesses (11% of 100-199 businesses).
More than half of businesses (52%) use an outsourced supplier/consultant/systems integrator to provide IT support.

ISPs provide support to just 5% of businesses, and exclusively to the smallest two size segments.

In over one-third of cases an in-house person provides IT support.

The larger the business the more likely it is to have its own support capability, and the less likely it is to use external support. There is quite a disparity between the smallest businesses (where 27% have an internal IT support person) and the largest businesses where 63% have internal IT support.

Fully 7% of Small businesses and 4% of Small Medium businesses don't have any support.
Type of Internet Plan

Is it a business or residential Internet plan?

- Product designed for businesses / small businesses: 85%
- Product designed for the residential market: 9%
- Don't know: 6%

Almost all SMBs already have Internet access plans designed specifically for businesses, suggesting they clearly see value in such products compared to residential plans.

Why opt for business over residential plan?

- Need for business grade Internet access or support: 33%
- Need to run business applications over the internet: 21%
- It costs less: 12%
- Little/no difference between business and residential Internet access: 10%
- Don't know: 4%
- Others: 20%

The main reason SMBs opt for Business plans is they see a need for a higher level of ISP service and support. The high proportion of “Others” is largely due to a lot of responses whose general theme was: “because we are a business”.

Pacific Internet Broadband Barometer October 2006 © Pacific Internet (Australia) Pty Ltd, Compiled by GfK Marketing Services
When choosing an ISP, SMBs are focused on two key criteria – a reliable, quality network, and low cost.

A reliable, quality network is by far the most important criterion – cited by over half the respondents. This criterion is consistently rated as most important irrespective of size of business.

Low cost is the second most important factor, although that declines a little in importance for larger businesses.

Speed of connection is the key selection criteria for 9% of businesses, and is quite a lot more important for larger business (over 50 employees) compared to small ones (5-19 employees).
Satisfaction with the ISPs performance on the key criteria

SMBs generally are satisfied with their ISP’s performance on the criterion they rate most important in ISP selection - 82% of SMBs say they are satisfied (a rating of 4 or 5).

Overall, businesses are either very satisfied (39%) or satisfied (43%).

The criterion with the largest dissatisfaction is speed of connection – 15% rated this either 1 or 2 on the satisfaction scale. The widespread introduction of ADSL2+ and bDSL should impact on this response in the future.

Businesses were somewhat equivocal about customer service/support, with 29% saying they were neither satisfied nor dissatisfied. ISPs could win favour by focusing more effort on this.
Methodology

Fieldwork
The information reported in this paper is sourced directly from small and medium businesses (SMBs) employing 5 – 199 persons in Australia. GfK’s telephone research team contacted 525 SMBs (sourced from Dun & Bradstreet’s list rental database) in the first 2 weeks of September 2006 to ask about their Internet access technologies and related ICT issues. The individual interviewed was the person responsible for purchasing Internet access services. Of the 525 companies contacted, 514 have access to the Internet, and they are the focus of this study. The interviews were typically between 20 to 30 minutes in duration.

Sample
The sample of 514 was based on the numbers and sizes of businesses described by the ABS Australian Business Register and related information from ABS (some published, some unpublished). The 514 businesses sampled represent the 243,343 businesses in the entire Australian SMB sector (excluding 23,042 agricultural and energy businesses that are removed as being unrepresentative of typical businesses in the SMB sector).

The sample composition has representative proportions of businesses for each size segment, although the larger businesses are slightly over-represented to ensure sufficient responses for a reliable indication of what is happening in these segments. Businesses were also sampled in approximate proportions to their geographic location (by state), and whether they were located in metropolitan or non-metropolitan areas.

The sampling error is +/- 4.3% at a confidence interval of 95%. When the data is analysed by sub segments this error will increase a little.
About us

About Pacific Internet

Pacific Internet is a leading Australian business Internet Communications Service Provider (ICSP) committed to delivering value and high quality solutions to customers.

We are part of Pacific Internet Limited (NASDAQ: PCNTF), the largest telco-independent ICSP in the Asia Pacific region by geographic reach, with operations in Australia, Singapore, Hong Kong, the Philippines, India, Thailand and Malaysia, servicing over 408,000 customers.

Our customers trust us with the secure delivery and up-keep of their network and connections. Our services include: Broadband DSL, fixed line telephony, private networks, leased lines, ISDN, web-hosting, colocation and dial-up. Our range of value-added services, including managed security, network monitoring and roaming solutions, assist businesses in the complex, always connected world of today. Free protection from spam and viruses is also offered so our customers have an enjoyable and safe internet experience.

Pacific Internet won an award for ‘Competition and Growth–SME’ at SPAN’s 2006 Telecommunications Achievement Awards. The company was also acknowledged for ‘Providing Leadership in Industry Growth’ at the 2004 awards. In 2004 and 2005 Pacific Internet was recognised as the national and the Victorian winner in the category of Medium Business at the Australian Service Excellence Awards. Pacific Internet accepted an award titled ‘Best Broadband Solution in the Hunter Valley’ at the Australian Telecommunications Users Group (ATUG) Awards Hunter Valley – 2005. At the same event in 2004 Pacific Internet won the ‘Excellence in Telecommunications in the Hunter Valley’ award.

For further information visit: www.pacific.net.au

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