

© *Telecommunications and Information Highways***Regional - Internet - Asia Pacific - 2006****1. SYNOPSIS**

The number of Internet users has more than doubled since the year 2000, and now, in 2006, it is available to over one billion people worldwide. Asia-Pacific is the world's largest regional Internet market, measured by users. Internet development in Asia alone has been dominated for a long time by Japan, Hong Kong, South Korea, Singapore and Taiwan. China has joined this group. The developing economies of the region have had considerably slower growth, having had to deal with high access costs, poor infrastructure and the slow pace of deregulation. This in turn has limited the potential for achieving the social and economic benefits of a country being online. This report provides an overview and statistics on the Internet market for the Asia-Pacific region, including Asia, Australia, New Zealand and the South Pacific.

2. GLOBAL OVERVIEW

With the Internet available to over one billion people worldwide, future growth is expected from countries with large populations. The Internet is still growing at a good rate, but the growth rate is declining. This will not increase again until broadband is further developed, and its price reduces. Interestingly, most of the slowdown has been in the US, where penetration has reached around 70% and future growth is limited. With only a small proportion of the world population having access to the Internet, there is plenty of room for expansion, and much of this growth will occur using wireless applications to access the Internet. Email is still by far the major end-use.

Regionally in 2006, the majority of Internet users were located in Asia, followed by Europe and North America.

Table 1 - Regional Internet users, growth and penetration – March 2006

Regions	Internet Users (million)	Usage Growth 2000-2005	Penetration	% World Users
Africa	24	423.9%	2.6%	2.3%
Asia	364	218.7%	9.9%	35.6%
Europe	292	177.5%	36.1%	28.5%
Middle East	18	454.2%	9.6%	1.8%
North America	227	110.3%	68.6%	22.2%
Latin America/ Caribbean	80	342.5%	14.4%	7.8%
Oceania / Australia	18	134.6%	52.6%	1.7%
WORLD TOTAL	1,023	183.4%	15.7%	100.0%

(Source: BuddeComm based on internetworldstats.com, 2006)

3. ASIA

3.1 MARKET OVERVIEW

Asia is the world's leading regional Internet market in terms of subscribers. With an estimated 375 million Internet users by June 2006 - a population penetration of just over 10% - Asia has been increasing its lead over Europe (292 million) and North America (227 million), as expansion in the latter two regions slows. Internet growth in Asia continues to be dominated by the developed economies of the region – Japan, Hong Kong, South Korea, Singapore and Taiwan. This group has been joined by China, which was claiming 111 million Internet users by end-2005 and a penetration approaching 9%. In the developing economies of Asia, Internet use was still only moving forward at a steady pace due to a range of constraints which include the high cost of access, poor telecommunications infrastructure and the slow rate of deregulation. Nevertheless, even in the developing economies of the region, the promise of the economic returns generated by the Internet has been compelling both government and the private sector towards modernisation.

After the developed Asian economies led an initial high growth period, Asia has continued to advance, but at a somewhat slower pace, with an annual growth rate in Internet users of around 20% coming into 2006. Of critical importance, the emphasis has shifted to increasing speed and sophistication of the access provision. The region has moved rapidly ahead in the application of high-speed broadband Internet access, increasingly the preferred mode worldwide. South Korea has been leading the world in its commercial application of broadband technologies (See separate report: [South Korea - Broadband Market - Overview & Statistics](#)), with a number of other Asian markets also being innovative in the marketplace.

For more general information on the Internet market in Asia, see separate report: [Asia - Broadband - Market Overview](#).

3.1.1 Statistical overview

Asia has seen a continuing growth surge in Internet services. In early 2003, Japan ranked as the second largest Internet market in the world after the US, with a penetration rate of over 45% by year-end. This represented around 57 million Internet users. By end-2005, Japan was claiming around 81 million users (although some sources reported higher figures depending on how the country's large mobile Internet subscriber base was counted). But the title of the biggest Internet market in Asia had passed to China which had chalked up 94 million users by end-2004 and moved on to 111 million by end-2005. The top three ranked countries in Asia – South Korea, Japan and China – accounted for almost two thirds of the region's Internet subscribers with South Korea leading in terms of penetration (68% by end-2005), just ahead of Taiwan (65%). Significantly, by early 2006, 80 million users in Japan were accessing the Internet via mobile phones, the highest total in the world for this type of access.

Whilst Japan and South Korea were vying for the position of Asia's largest Internet economy, China was the fastest growing Internet market in Asia. The number of Internet users in China had increased from around 9 million in 1999 to a massive 111 million by end-2005. A survey published by NetValue, found that in China, the major

cities of Beijing, Shanghai, Guangzhou and Shenzhen had an overall 17.9% of households wired for Internet access. The report noted that 73.5% of the Internet wired households in China had connected to the Internet within the previous 12 months, suggesting that usage was quickly taking off.

With the exception of Japan and its remarkable Internet-enabled i-Mode mobile phones, Internet access in Asia continues to be predominantly by PC. This, of course, had started to change as Third Generation (3G) technologies started to be rolled out in some of the bigger markets and were already becoming more affordable.

Market analyst Nielsen NetRatings reported that Asian nations make up four of the world's top ten Internet-intensive markets, measured by households being able to access Internet. According to the survey, South Korea had the highest Internet penetration in the world on this basis, with 54.7% of households being able to access the Internet, just ahead of Sweden with 54.5% and the USA on 54.1%. The survey of 29 markets worldwide placed Singapore in fourth position with 53.3%, followed closely by Hong Kong (51.0%) and Taiwan in eighth place (49.0%). Nielsen NetRatings also reported that children aged 17 or under have emerged as a substantial proportion of the web population in Asia and were growing in both numbers and usage. In South Korea school-aged children made up 33% of the Internet user population. Singapore and Taiwan also showed a high proportion of children as users, 26% of the total web population in both markets, followed by Hong Kong with 21%.

Asia has also made dramatic strides in improving the security of Internet transactions, an important prerequisite to the development of e-commerce. This has been important because there had been widespread reluctance to embrace commercial activity online due predominantly to the deep concerns about security.

Table 2 – Asia - Internet user growth – 1999 - 2006

Year	Users (millions)
1999	47.4
2000	78.0
2001	150.7
2002	211.4
2003	243.4
2004	295.0
2005	350.0
2006 (June)	375.0

(Source: BuddeComm based on industry data)

Note: Users are those accessing the Internet from their school, university, work account as well as from their individual household or business accounts. Subscribers are the number of individual paid Internet access accounts. For example, a work account is just one subscription but can have many users within that one subscription.

Table 3 – Top 10 Asian countries by Internet user penetration – December 2005

Rank	Country	Users (millions)	Penetration
1	South Korea	33.0	68.1%

2	Taiwan	15.3	65.1%
3	Japan*	81.0	63.0%
4	Hong Kong SAR	4.3	60.0%
5	Singapore	2.5	58.0%
6	Macau SAR	0.3	55.0%
7	Malaysia	11.7	44.9%
8	Thailand	12.5	19.3%
9	Brunei	0.5	13.3%
10	Vietnam	9.6	11.5%

(Source: BuddeComm based on various industry sources)

Note: *This figure is also reported higher in some instances due to the large component of mobile Internet subscribers in Japan.

Note 2: China is 11th ranked with 111 million users/8.5% penetration

Table 4 – Internet and broadband subscribers for selected Asian markets – December 2005

Country	Total Internet subscribers	Broadband subscribers	Broadband subscribers as % of total Internet subscribers
China	76,000,000	37,500,000	49.3%
Hong Kong SAR	2,600,000	1,600,000	61.5%
India	6,700,000	900,000	13.4%
Indonesia	1,500,000	165,000	11.0%
Japan	41,000,000	22,370,000	54.6%
Macau SAR	88,500	68,000	76.8%
Malaysia	3,690,000	575,000	13.4%
Philippines	1,500,000	100,000	6.7%
Singapore	1,620,000	639,000	35.2%
South Korea	12,500,000	12,200,000	97.6%
Taiwan	7,270,000	4,345,000	59.8%
Thailand	4,300,000	300,000	7.0%
Vietnam	3,196,000	207,000	6.5%

(Source: BuddeComm based on various industry sources)

As Table 3 above highlights, not unexpectedly, Internet usage is strongest in the developed economies. Asia's developed nations accounted for most of the region's users, a fact that can be explained in terms of their more advanced telecommunications infrastructure, their more liberal regulatory environment, and, of course, their wealthier economies.

Poverty is the main factor holding back Internet growth in Asia's developing economies. Malaysia, with its relatively progressive economy but uncertain regulatory environment, leads the region's 'second tier' nations in Internet penetration and was starting to close the gap to the regional leaders. Vietnam had a relatively low Internet penetration of 6.4% in 2004, but 2005 saw the country start to make its presence felt with an almost doubling of the number of users in just 12 months. Laos (1.0%) and Cambodia (0.5%) were busy lifting themselves off the bottom of the table, but Myanmar, Tajikistan and Turkmenistan were all languishing at less than 0.2% penetration.

Despite uneven Internet growth in the region, most governments are aware of the Internet's economic value in today's globalised business environment and Internet usage continues to increase. There have been some pockets of resistance, however. North Korea, the centrally administrated and most isolated economy in the world, remained the only country yet to adopt the Internet for public usage. Myanmar, ruled as it is by a military dictatorship, had been managing to effectively block Internet growth (at great cost to its economic development), but there were signs that this position was softening.

It was estimated in 2002 that Internet users from that part of the world speaking Asian languages accounted for 25.8% percent of the total world online population. This was equivalent to 146.2 million Internet users. Chinese was the number one language in the Asian-speaking zone. Around 55.5 million Chinese speakers were using the Internet at the time of this particular survey, compared to 52.1 million Japanese speakers and 25.2 million Korean speakers.

The United Nations Commission for Trade and Development (UNCTAD), quoting figures from the International Telecommunications Union (ITU), suggested in 2002 that at the prevailing growth rates around 18% of all purchasing by companies and individuals could be done online by 2006.

3.2 CULTURAL AND REGULATORY ISSUES

If any single issue characterised the Asia Internet market, it has been the cultural resistance to the Internet phenomenon. Whilst initially very strong, this resistance seems to have diminished considerably over the last few years. However, it still exists, especially in terms of the take up of Internet applications. There has been a widespread embracing of Internet right across the region and, although not totally consistent, a significant rise in Internet penetration rates. Even socialist Vietnam has, somewhat grudgingly at times, opened its doors to the Internet and to related foreign investment. Although some Asian nations are clearly ambivalent about Internet, only North Korea and Myanmar remained totally resolute in their resistance.

The steady increase in local language content, especially Chinese, has contributed to the Internet's growing popularity in the region. And the increasing availability of high-speed Internet access technologies such as Digital Subscriber Line (DSL), cable modems and satellite delivered access (Local Multipoint Distribution Systems – LMDS) is driving Internet Service Providers (ISPs) and Internet Content Providers (ICPs) to provide more local content to satisfy demand.

There has been a clear shift in Asia's Internet regulatory landscape towards liberalisation. The developed economies are completely liberalised and the developing economies, with a few exceptions, are gradually following suit. In Singapore, there was a deal of hesitancy initially, but the Internet market has been opened up with no limit placed on the number of ISPs. The government also removed the limits on foreign ownership in September 1999.

Pockets of resistance remain. In Thailand, the regulations requiring all ISPs to share 25% of their revenues with the government has finally been coming under scrutiny and changes are expected; Indonesia's timetable for liberalisation has been slowed by the government's desire to protect its telecom monopolies, but again change is happening; Pakistan's attempts to deregulate the telecom sector have been delayed; and Indian ISPs have also had to share their revenues with the government, although there has been a shift in this regard.

In the all-important Chinese market, the resistance to the Internet softened noticeably as the country prepared for entry into the World Trade Organisation (WTO). Following China's admission to WTO membership in late 2001, foreign companies were meant to be able to own 25% of ISPs in Beijing, Shanghai and Guangzhou. Permissible foreign equity was scheduled to be increased to 49% by 2007.

Serious issues of censorship and government control of content continued to be of major concern in China, although some of this was directed at pornography. In October 2005, Chinese authorities arrested more than a hundred people in a crackdown on Internet 'obscenity', according to press reports. The Ministry of Public Security (MPS) was quoted as saying that 'this behaviour has severely polluted the Internet environment, done harm to juvenile's physical and mental health and caused strong public anger'. At the same time, though, the government shut down three popular Internet web sites as part of a fresh drive to keep out content seen as anti-government and having the potential to incite unrest. Then, in November 2005, the government launched a monitoring system to step up surveillance of illegal websites. The General Administration of Press and Publication (GAPP) has been given the task of monitoring and identifying undesirable websites. It was noted that, although the campaigns mainly targeted sites that contain sex and violence, those with sensitive religious and political content were also often banned. The government had announced revised Internet regulations, which required ISPs to re-register their news sites and police them for content that could 'endanger state security' and 'social order'.

The inflow of foreign investment, foreign management and competitive technology into China should lead to a drop in Internet service charges and improved customer rights. Deregulation has the potential to make China the world's most rewarding market. Nevertheless, it will be interesting to see how the government continues to grapple with the cultural and political aspects of Internet.

3.2.1 Public Internet access

A major problem in the Asian region is development of Internet in the developing economies. With Internet linked inextricably to the development of economies, it is of concern that the average Internet penetration in many of these countries was still less than 2%. A major challenge for these countries is to overcome the restrictions on access imposed by the relatively high cost of computers and the various forms of Internet access. There is also the fundamental problem of limited infrastructure. The development of opportunities for public Internet access is therefore of major importance to the expansion of Internet in the region. Shared facilities such as Internet

cafes and Internet facilities in educational institutions are playing a significant role in allowing greater access to the Internet in developing countries.

It is estimated that over 15% of users in China access the Internet from Internet cafes, compared with just 2% in Singapore where incomes are higher and home access is much more prevalent. In South Korea, in an interesting departure from the norm, over 43% of users reportedly access the Internet from Internet cafes. And in India the corresponding figure is an amazing 60%.

Apart from the Internet cafes, various other forms of public access facilities are being developed across the region. In Indonesia, a form of Internet café called a Warnet started to proliferate and has been a major feature of the way many Indonesians accessed the Internet. There were about 2,500 of these around the country in 2001, according to the ITU, and it was estimated that almost half of Indonesia's Internet users at the time accessed the Internet at a Warnet.

3.3 INTERNET ADVERTISING

The bursting of the dotcom bubble, followed by the uncertainty that resulted from the global economic slowdown, saw the online advertising market in Asia suffer. There were massive reductions in corporate advertising budgets, including online advertising. Whilst the rapid adoption of Internet in Asia is still expected to fuel growth in Internet advertising, it will need more time to build up momentum again. Other factors which have inhibited growth in the Internet advertising market to date include low PC penetration and a lack of credible, consistent data on traffic volumes on websites. The most popular form of online advertisement in Asia has been the banner ad, but the click-through rate for these remained at less than 3%.

Despite positive spending projections, e-advertising has remained a relatively unproven and distrusted concept in the Asian advertising community. IT companies, telecom providers, financial institutions and various dotcoms were the leading business categories among those supporting the online advertising market.

Local websites have tended to be more popular than international sites in Asian countries, with the majority of the ten most popular websites in each market being local. One exception was Yahoo!.

3.4 ASIAN DOMAIN NAME DISPUTE-RESOLUTION CENTRE

In a significant move, Asia's first official body for resolving domain name disputes was launched in February 2002. Set up and jointly run by the China International Economic and Trade Arbitration Commission in Beijing and the Hong Kong International Arbitration Centre in Hong Kong, it was titled the Asian Domain Name Dispute-Resolution Centre (ADNDRC).

The centre was the fourth in the world authorised by the Internet Corporation for Assigned Names and Numbers (ICANN), the international body responsible for Internet domain names, to settle domain-name disputes for top-level codes. The other

centres – two in the US and one in Geneva – have previously handled about 7,000 disputes. The new centre expected to deal with between 20 and 200 cases a month.

Prior to the creation of ADNDRC, domain name disputes in China had to be resolved in court, with multinationals Pepsi-Cola and Nike both having won cases in a Beijing court and being awarded token amounts to cover legal costs. Of course, the courts remained an option for those seeking to resolve disputes.

3.5 INTERNET ACCESS AND INFRASTRUCTURE

The surging demand for Internet access in Asia has continued to expose the inadequacies of the region's infrastructure. Whilst existing infrastructure remains incapable of properly supporting Internet demand, the situation has nonetheless improved. The growing demand for various forms of broadband Internet access has placed new and especially strong pressure on infrastructure.

3.5.1 Internet bandwidth

Table 5 – International Internet bandwidth – 2000 - 2005

Year*	Bandwidth (Gb/s)	Annual growth
2000	23.0	n/a
2001	51.0	122%
2002	78.6	54%
2003	100.7	28%
2004	141.0	39%
2005(e)	190.0	36%

(Source: BuddeComm based on industry data)

Notes: *Mid-year

From 1999 to 2000, Internet bandwidth connecting Asian countries grew faster than any other region-to-region route in the world, including Internet bandwidth connected to the US. This meant that 13.5% of Asia's international Internet capacity was intra-regional, up from 6.2% the previous year. The Asian Internet has been steadily becoming less and less US-centric and regional interconnection was clearly on the increase. Asia's top Internet hub, however, remained in the US (San Francisco), accounting for 30% of the region's international Internet connections.

Two major incidents in 2001 highlighted Internet in Asia's heavy dependence on the undersea links to the US. The incidents both involved cut submarine cables that ended up causing serious disruptions to the region's Internet connections and drew attention to the potential vulnerability of the Internet service. In February 2001, the China-US cable was cut, probably by a fishing boat, off Shandong, drastically reducing bandwidth to the US. Then, in September, both the SEA-ME-WE 3 and the US-China cables were cut near Shantou on the south-east China coast. The break severed the Hong Kong-Shantou link and also links connecting Taiwan, Japan and the US, again disrupting Internet traffic across the Pacific.

3.5.2 Internet data centres

In November 2002, it was reported that fast-growing Internet usage was pushing demand for data centres as more companies began to outsource their data management function. Singapore was then the largest data site in the region, but was being challenged by Malaysia.

Internet data centres in Asia have been estimated to have attracted US\$3 billion in revenues in 2005, up from US\$700m in 2000. A growing need for outsourcing and utility services has continued to provide opportunities for new players, with demand coming mainly from the communications, financial and manufacturing sectors.

In April 2004, market analysts, the Probe Group, reported that hosting revenues in the Asia-Pacific region were likely to exceed US\$6.6 billion by 2007. The push to outsource data centre tasks was due to slow economic conditions, according to the company. The report highlighted the fact that organisations derive the most benefit from freeing up their staff to focus on major network issues, for example security, by passing routine network functions to a third party. As a result, the managed services sector had become a key area for telecom operators to generate revenues. Service providers in Asia were observed to be moving away from shared hosting. As markets mature, particularly in Japan, South Korea and Hong Kong, providers have been focusing on managed services that bring higher margins. Japan was the largest Asian market for hosting, with a share of 30%. The Probe Group study predicted that China would overtake Japan to claim the top spot by 2007.

3.5.3 TV access

Given that the majority of television households in the world are in Asia, serious consideration needs to be given to how Asia might respond to the option of Internet access by TV. Some forecasts suggest that the Asian market would reach 28.2 million TV access households by 2008 and Asia would have displaced Europe by then as the world leader in TV access to the Internet.

3.6 ISP MARKET

Leveraging off their control of infrastructure and their significant fixed line customer bases, incumbent telcos have been dominating the ISP market in Asia. ISP subsidiaries of the state-owned or formerly state-owned telecom monopoly in most countries have grabbed a huge slice of the Internet access market. The largest ISPs in China, Indonesia, Malaysia, Taiwan, Thailand and Vietnam belong to either of these two categories. The incumbent carrier has a clear advantage in controlling the country's telecom infrastructure. The existence of a protectionist regulatory environment in much of Asia has tilted the playing field even further in the incumbent's favour. In countries like Thailand, for example, the situation becomes compelling when ISPs are forced to share their revenues with the government.

This domination by national carriers of the local access Internet market has been continuing. Indonesia's leading ISP, IndosatNet, had control of over 25% of the market. IndosatNet is a subsidiary of state-owned PT Indonesia Satellite Corp, which controls international call services. TMNet, the ISP of Telekom Malaysia (the state-owned carrier) claimed over 50% of the Malaysian ISP market. In Taiwan, the ISP subsidiary of state-controlled Chunghwa Telecom HiNet has been dominating the market, claiming over 40% market share.

As privately-owned ISPs have discovered in Thailand, the road to survival is to offer better customer service, faster access (xDigital Subscriber Line – xDSL, cable modem), new value-added services (Internet Protocol – IP telephony) and lower access rates. By contrast, the ISPs of the incumbents have consistently demonstrated shortcomings in marketing and customer care, and are generally less flexible in adapting to market changes.

Whether privately-owned ISPs in Asia can overcome the weight of the incumbent's advantages continues to be an open question, but the evidence of history is on the side of the private operators. In the almost completely liberalised Internet markets of South Korea, Singapore, Japan and Hong Kong, the ISPs of the incumbents have been steadily losing market share because of their inability to address their shortcomings. Another factor has been the opportunities offered by the application of broadband wireless access as this technology allows the ISP to by-pass the incumbent's copper network.

3.7 ASP MARKET

The Application Service Provider (ASP) market remains an unpredictable segment of the Internet market in Asia. An ASP offers the option of providing an e-business application to an organisation rather than the organisation having to license the e-business application and then deploying it across the enterprise. The option is particularly attractive for the small or medium enterprise, providing benefits in the form of accelerated time to implement the solution, lower costs, a shared infrastructure and specialised staff and administrative services available at low cost.

In view of the benefits, it is surprising that the penetration of ASPs is so low in Asia. Apart from concerns over security of data and reliability of service, the big issue appears to be that of integration. There is no 'one size fits all' solution available, hence the typical need to build these mechanisms uniquely for each interested customer. This in turn adds to the operating cost and affects the operating margin of the ASP.

Two broad categories of solutions have been emerging. The first is the Enterprise Application Integration (EAI) product option where applications can be partitioned, mapping support for processes to systems will be provided and architecture frameworks used to implement the mapping and processing. Prominent product vendors include Tibco, Crossworlds and WEBmethods.

The second is the service option with several ASP aggregators emerging to foster collaboration among ASPs with complementary services. Infrastructure management

and service level definition and compliance are sometimes complex to implement in these environments. Jamcracker is probably the most prominent such aggregator.

There is likely to be increased penetration of object interaction protocols. These will permit a higher degree of application interoperability thereby simplifying the integration issue. Although EAI products are available and in vogue, the acceptance will accelerate considerably once the offerings from the mainstream vendors, including Oracle and Microsoft, are more functional and reliable.

3.8 INTRANETS AND EXTRANETS

While the industry may suggest that intranets are one of the next boom-markets, reality is that this development has initially nothing to do with technology. Most organisations first need to develop an in-house information sharing policy and strategy. It is impossible to dump all internal information on an Intranet website and make the content available to all. It takes between one and a half to two years to develop such a strategy before an Intranet can be properly set up.

Intranets have proven to be very successful in smaller business, where the organisation lines are less complex. Among the larger companies, financial institutions are leading the market. The ease of use of Intranet technology and its potential for information sharing and collaboration makes it extremely popular with financial services organisations.

Growth in Intranets has been slower in Asia than in other parts of the world.

Extended Internet networks, linking organisations with partners, suppliers, customers and staff are called Extranets. By-passing the traditional leased lines and Virtual Private Network (VPN) services, these services deliver the communications products at a fraction of the cost.

Among the first to develop Extranets in Asia were:

- **SITA (now Equant)** – the largest private data network in the world, was the first to launch an Extranet service. Relevant to its business interests, it introduced AeroNet for the airline industry, linking 500 cities around the globe;
- **MFS** – the innovative Internet carrier, launched its US Extranet service, which has been made available in several cities in Europe and the Asia Pacific region.

For detailed information about individual Internet and IP telephony markets in the region, see separate reports: [Asia](#).

Note: all \$ are US\$ unless otherwise stated

4. AUSTRALIA

4.1 MARKET OVERVIEW

The Internet market started off as a homegrown market. Belatedly the traditional telcos realised its importance. They, together with a few others, now make up the tier-1 market. Only the top five players have a nationwide Internet access network. There are a large number of very small Internet service providers, whose profitability once surpassed the giants. Consolidation in the sector has occurred to some degree, though flattening growth in dial-up access, and increasing moves towards broadband, with new triple play models, including IPTV and VoIP which requires QoS.

4.2 STATISTICAL MARKET OVERVIEW

4.2.1 Business and residential subscribers

According to the ABS, at the end of March 2005, total Internet subscribers in Australia numbered 5.98 million. While this was an increase of 239,000 (4%) from the end of September 2004, growth had slowed following a 10% increase recorded for the six months to the end of September 2004.

The increase in overall subscribers was again driven by growth (39%) in non dial-up subscribers from 1.3 million at the end of September 2004 to 1.8 million at the end of March 2005. Non dial-up subscribers represented 30% of total Internet subscribers in Australia at the end of March 2005 compared with almost 23% at the end of September 2004.

Growth in total subscriber numbers between March 2004 and March 2005 was 15%, whereas non dial-up subscriber numbers grew by 109% in the same period.

Most of the growth for non dial-up was in the household subscriber sector with an increase of 42% in household non dial-up subscribers from the number recorded at the end of September 2004. The number of household non dial-up subscribers at the end of March 2005 was almost 1.4 million or over 77% of total non dial-up subscribers.

The number of dial-up subscribers recorded at the end of March 2005 fell by almost 6% to 4.2 million. This resumed a downward trend established since the collection of the subscriber type series commenced in March 2003, despite a small increase of 2% recorded at the end of September 2004, when dial-up subscribers totalled 4.4 million.

Table 6 tracks the commercial users of online services and residential and business users with paid subscriptions to an online service. Regular users include people that use e-mail only but exclude people who use e-mail or Internet application less than once a month.

Note: Users are those accessing the Internet from their school, university, work account as well as from their individual household or business accounts. Subscribers are the number of individual paid Internet access account, eg a work account is just one subscription but can have many users within that one subscription.

Please note that at the time of publication in August 2006, the ABS had not published 2006 Internet usage statistics.

Table 6 – Australia - Internet households and business subscribers (ABS and BuddeComm estimates) – 1985 - 2005

Year/month	Business users	Internet households	Total
1985	-	-	2,500
1990	-	-	36,000
1995	-	-	250,000
1996	262,000	238,000	500,000
1997	650,000	350,000	1,000,000
1998	1,000,000	80,000	1,080,000
1999	1,500,000	400,000	1,900,000
2000/09	432,000	3,417,000	3,849,000
2000/12	512,000	3,410,000	3,922,000
2001/03	482,000	3,486,000	3,968,000
2001/06	508,000	3,673,000	4,181,000
2001/09	544,000	3,729,000	4,273,000
2002/03	505,000	3,724,000	4,229,000
2002/09	650,000	3,904,000	4,554,000
2003/03	659,000	4,417,000	5,076,000
2003/09	696,000	4,516,000	5,212,000
2004/03	740,000	4,480,000	5,220,000
2004/09	846,000	4,895,000	5,741,000
2005/03	845,000	5,135,000	5,980,000

(Source: BuddeComm based on ABS data for years 2000 onwards, Paul Budde Communication for pre 2000 years)

Note: It is estimated that 15% of the above listed subscribers (business and residential) are multiple subscriptions.

The large growth (51%) in non dial-up subscribers from 861,000 at the end of March 2004 to 1.3 million at the end of September 2004 stimulated the increase in overall subscriber numbers. Non dial-up subscribers represented almost 23% of total Internet subscribers in Australia at the end of September 2004.

Table 7 – Australia - dial-up and non-dial-up Internet subscribers – 2003 - 2005

Year/month	Dial-up	Non dial-up	Total
2003/03	4,607,000	470,000	5,077,000
2003/09	4,522,000	690,000	5,212,000
2004/03	4,359,000	861,000	5,220,000
2004/09	4,441,000	1,300,000	5,741,000
2005/03	4,177,000	1,802,000	5,980,000

(Source: BuddeComm based on ABS data)

Towards the end of the forecasted periods below most households and business in Australia will be connected to broadband based Internet system. The fixed subscriber number does include the so called fixed wireless systems. However, the table below does not include wireless mobility services based on personal hand held devices.

Table 8 – Australia - total fixed Internet subscriber forecasts – 2010; 2015

Year	Subscribers
2010	7.5 million
2015	8.2 million

(Source: BuddeComm)

4.2.2 Geographical data

Table 9 provides ABS Internet subscriber statistics segmented by state.

Table 9 – Australia - Internet subscribers per state – 2002 - 2005

Region	09/2002	09/2003	09/2004	03/2005
NSW	1,583,000	1,828,000	1,935,000	2,023,000
Victoria	1,180,000	1,394,000	1,565,000	1,589,000
Queensland	822,000	923,000	1,026,000	1,065,000
Western Australia	411,000	472,000	519,000	606,000
South Australia	328,000	343,000	413,000	416,000
Tasmania	98,000	107,000	111,000	112,000
ACT	95,000	110,000	140,000	127,000
Northern Territory	37,000	35,000	32,000	43,000
Total	4,554,000	5,212,000	5,741,000	5,980,000

(Source: Paul Budde Communications based on ABS data)

4.2.3 Data downloaded

Data downloaded by subscribers during the March quarter 2005 increased significantly by 28% compared with the September quarter 2004.

Table 10 – Australia - data downloaded by households, business and government – 2000 - 2005

Year/month	Business & government	Households	Total
2000/09	457	595	1,052
2000/12	467	583	1,050
2001/03	428	611	1,040
2001/06	557	648	1,204
2001/09	506	780	1,286
2002/03	528	1,303	1,831
2002/09	740	2,172	2,931
2003/03	782	2,264	3,046
2003/09	1,347	3,317	4,665
2004/03	1,431	4,978	6,409
2004/09	2,560	8,444	11,004
2005/03	3,559	10,565	14,124

(Source: Paul Budde Communication based on ABS data)

Note: Refers to total downloaded during the quarter for both dial-up and non-dial-up.

Non dial-up subscribers accounted for 87% of the total data downloaded, reflecting the much faster download speeds available with non dial-up technology.

Table 11 – Australia - data downloaded by dial-up and non-dial up – 2003 - 2005

Year/month	Dial-up	Non dial-up	Total
2003/09	1,520	3,145	4,665
2004/03	1,594	4,815	6,409
2004/09	1,718	9,287	11,005
2005/03	1,870	12,254	14,124

(Source: Paul Budde Communication based on ABS data)

Key findings from ACMA report titled “Consumer Benefits Resulting from Australia’s Telecommunications Sector” which was published in late 2005 were as follows:

- Australian Internet users doubled the volume of data downloaded per subscriber from 2.91 GB in 2003/04 to 5.81 GB in 2004/05.
- Internet data volumes increased by 159% in 2004/05.
- Residential subscribers almost doubled the per capita volume of data downloaded from 2.7 GB to 5.3 GB in 2004/05.
- Business subscribers more than doubled their volume of data downloaded from 4.0 to 8.6 GB during 2004/05.

4.2.4 Internet access technologies

Table 12 – Australia - subscribers per Internet access technology – March 2005

Technology	Subscribers (1000’s)	Percentage of subscribers
Analogue	4,110	69%
ISDN (Digital)	67	1%
Total dial-up	4,177	70%
Analogue	11	21%
DSL	1,256	-
ISDN (Digital)	11	
Cable/Satellite	483	8%
Fixed Wireless	31	1%
Mobile Wireless	7	-
Other	3	-
Total non dial-up	1,802	30%
Total	5,980	100%

(Source: ABS report “Internet Activity, 8153.0”)

4.2.5 Broadband prices

An ACMA survey revealed that broadband services revenue expanded by 67% in 2004/05. Cable and ADSL broadband sales revenue increased significantly during 2004/05 whereas narrowband revenue remained relatively steady.

Revenue growth was significantly smaller than subscriber growth, indicative of the substantial broadband price reductions observed in the market. Average annual revenue per subscriber decreased by 24% during 2004/05.

Average revenue per subscriber declined significantly for all technology types in 2004/05 by:

- \$8 per annum to \$233 per narrowband subscriber;
- \$203 per annum to \$481 per ADSL subscriber;
- \$98 per annum to \$554 per cable subscriber;
- \$179 per annum to \$870 per satellite subscriber.

The increased affordability of internet services in 2004–05 was reflected by substantial price reductions as can be seen in the following table.

Table 13 – Australia - price reduction in Internet services by access type – 2004 to 2005

Access type	Percentage price reduction per Gigabyte
ADSL	54%
Cable	49%
Satellite	31%
Dialup	19%

(Source: Telecommunications carriers' responses to the ACA data request for 2004-05)
(Note: Data is for 12 months to 31 March 2005)

A key factor behind growth in subscriber numbers was new entry-level wholesale and retail ADSL prices in 2004. The result has been significant price competition in the broadband internet market in 2004-05. Subscriber growth in broadband services can also be attributed to increasing ADSL broadband availability.

4.3 BUSINESS USE OF INTERNET

4.3.1 Business use of technology

Results below are taken from the 2004-05 report titled 'Business Use of Information Technology' (BUIIT) from the Australian Bureau of Statistics (ABS). The report covers the period between June 2004 and June 2005.

Table 14 – Australia - percentage of business usage of technology – 1994; 1998; 2000 - 2005

Year	Have a PC	Have Internet	Have a Website
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		access	
1994	49%	n/a	n/a
1998	63%	29%	6%
2000	76%	56%	16%
2001	84%	69%	22%
2002	84%	71%	24%
2003	84%	71%	24%
2004	85%	74%	25%
2005	89%	77%	27%

(Source: ABS)

4.3.2 Computer and Internet usage

The data found that a strong relationship continued to exist between the employment size of a business and the likelihood that the business is using IT. As employment size increases, the proportion of Australians with computer and Internet usage also was found to increase.

Table 15 – Australia - percentage computer and Internet use by employment size – 2003 - 2005

Employment size	Businesses with computer use		Businesses with Internet use	
	2003-2004	2004-2005	2003-2004	2004-2005
0-4 persons	80%	85%	67%	71%
5-19 persons	94%	95%	85%	86%
20-99 persons	98%	97%	94%	92%
100 or more persons	100%	100%	99%	99%

(Source: ABS report "Business Use of Information Technology, 8129.0")

4.3.3 Purchasing over the Internet

The survey also measured the number of Australian businesses using the Internet or Web to place and/or receive orders, with or without online payments.

Table 16 – Australia - percentage purchasing over the Internet – 2001 - 2005

Year ends June	2001	2002	2003	2004	2005
Placed orders via the Internet or Web	20%	25%	28%	31%	43%
Received orders via the Internet or Web	9%	6%	12%	12%	16%
Internet Income (\$ billions)	9%	11	24	33	n/a

(Source: ABS)

For more information, see separate report: [Australia - Industry - International Benchmarking](#).

4.4 HOUSEHOLD USE OF INTERNET

4.4.1 Computer and Internet access amongst Australian households

The percentage of Australian households with access to a computer at home increased from 44% in 1998 to 67% in 2004-05 according to the Australian Bureau of Statistics (ABS) report titled "Household Use of Internet Technology, 8146.0, 2004-05".

The ABS report found that during 2004-05, the percentage of households with home computer access was significantly higher for households with children under 15 years of age.

Households in metropolitan areas continued to have higher computer access, but the gap between metropolitan areas and ex-metropolitan areas has narrowed since significantly since 1998.

Table 17 – Australia - proportion of households with access to a computer at home – 1998 - 2005

	1998	1999	2000	2001	2002	2003	2004-05*
Capital City	48%	51%	55%	62%	65%	69%	69%
Rest of state	38%	40%	48%	52%	54%	61%	63%
Households without children under 15	36%	39%	44%	51%	53%	58%	60%
Households with children under 15	63%	65%	71%	77%	79%	85%	84%
Total	44%	47%	53%	58%	61%	66%	67%

(Source: Paul Budde Communication based on ABS data)

(*results which were compiled from data collected in the Multi-Purpose Household Survey (MPHS) that was conducted from August 2004 to June 2005)

Table 18 – Australia - number of households with access to a computer at home – 1998 - 2005

Location	1998	1999	2000	2001	2002	2003	2004-05
	millions						
Capital city	2.13	2.30	2.54	2.93	3.09	3.35	3.45
Rest of state	0.96	1.04	1.26	1.38	1.46	1.69	1.81
Total	3.08	3.34	3.80	4.30	4.56	5.04	5.27

(Source: Paul Budde Communication based on ABS data)

The percentage of Australian households with access to the Internet at home has increased significantly over the past 7 years, rising from 16% in 1998 to 56% in 2004-05.

Table 19 – Australia - proportion of households with home Internet access – 1998 - 2005

	1998	1999	2000	2001	2002	2003	2004-05

Capital City	19%	25%	36%	47%	50%	56%	59%
Rest of state	10%	15%	26%	34%	39%	47%	51%
Households without children under 15	14%	18%	28%	37%	40%	47%	49%
Households with children under 15	20%	29%	43%	54%	59%	68%	72%
Total	16%	22%	32%	42%	46%	53%	56%

(Source: Paul Budde Communication based on ABS data)

Table 20 – Australia - number of households with home Internet access – 1998 - 2005

Location	1998	1999	2000	2001	2002	2003	2004-05
	millions						
Capital City	0.83	1.15	1.67	2.21	2.40	2.74	2.94
Rest of state	0.26	0.39	0.68	0.91	1.05	1.30	1.45
Total	1.10	1.54	2.34	3.11	3.45	4.04	4.39

(Source: Paul Budde Communication based on ABS data)

4.4.2 Goods or services purchased via the Internet

In 2004-05, 4.7 million or 31% of Australian adults aged 18 years or over purchased or ordered goods or services via the Internet for private use.

Table 21 – Persons purchasing or ordering goods or services via the Internet – 1999 - 2005

Age group	1999	2000	2001	2002	2004-05
	Percentage of usage				
18-24	5%	8%	11%	16%	35%
25-34	9%	10%	17%	24%	44%
35-44	5%	9%	16%	20%	40%
45-54	5%	8%	13%	16%	37%
55-64	2%	4%	7%	10%	22%
65+	1%	1%	-	2%	5%
Total	5%	7%	11%	15%	31%

(Source: ABS report "Household use of Information Technology 8146.0, 2004-05")

During 2004-05 travel, accommodation or tickets of any kind was the most common product group purchased or ordered via the Internet with 77% of persons who ordered goods or services via the Internet purchasing or ordering these products.

Table 22 – Persons purchasing or ordering goods or services via the Internet – 2004 - 2005

Category of goods	Percentage of
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	respondents
Food, groceries or alcohol	9%
CDs, music, DVDs, videos, books or magazines	33%
Clothes, sporting equipment or toys	20%
Travel accommodation or tickets	77%
Other	15%

(Source: ABS report "Household use of Information Technology 8146.0, 2004-05")

4.5 E-GOVERNMENT SURVEY

A study by Accenture released in April 2005 found that Australia was ranked equal 5th in the world for the maturity of e-government services and government customer services in a 22 country survey.

The survey looked at four key aspects of service delivery: a citizen centered perspective, cohesive multi-channel services, fluid cross-government services, and proactive communications and education.

Canada ranked 1st with a score of 68% for service maturity, followed by the US on 62% and Denmark and Singapore which tied at 56%. Australia's 55% saw it tied for 5th place with France and Japan. All countries in its sample actually recorded lower scores in 2005 than in 2004. Australia ranked equal 3rd in 2004.

Australia's ranking was hindered by a below-average ranking on the adoption of e-government at cross-government level.

For more information on e-commerce in business market, see separate report: [Australia – Broadband – Business Market](#).

Note: all \$ are AUD\$ unless otherwise stated

5. NEW ZEALAND

5.1 MARKET OVERVIEW

The New Zealand market remains dominated by Telecom's Xtra and TelstraClear (with clear.net and paradise.net). Between them they occupied approximately 70% of the market in early 2006. The next tier of providers includes ihug and CallPlus, with the remainder of the market consisting of small resellers of Telecom's dial-up services. New and existing subscribers began to move from dial-up to broadband as broadband prices started to become more competitive in 2005 and this trend has continued into 2006. The ISP market is expected to further consolidate beyond 2006, as more ISPs will financially struggle to survive.

5.2 ISP MARKET OVERVIEW – 2005

New Zealand's ISP market is expected to further consolidate beyond 2005, as more ISPs will financially struggle to survive. Telecom's competitive squeeze, in particular its stranglehold on the broadband market will result in further consolidation of the ISP market throughout 2006. This trend was already evident during 2005. Fewer and fewer 2nd tier ISPs will be able to offer a full range of ISP services with full, direct access to Telecom's fixed data network. The number is expected to drop to around 50-70 in 2006. The market in 2005 was being wrongly held up by an unrealistic perception that the situation may improve with regulatory intervention and that the government would not permit the market to collapse.

The ISP market began a period of rationalisation from 2000, which saw a number of smaller ISPs closing down or acquired by larger players.

The market remains dominated by Telecom's Xtra and TelstraClear (with clear.net and paradise.net). Between them they occupied approximately 70% of the market in late 2005. The next tier of providers includes ihug and CallPlus, with the remainder of the market consisting of small resellers of Telecom's dial-up services.

During 2005 the number of dial-up subscribers started to decline as customers migrated to broadband in more substantial numbers. This was spurred on in late 2004 as broadband prices fell to more competitive levels. This transition will continue into 2006 and 2007 and will contribute to further consolidation in the market as ISP margins from broadband services are less than those for dial-up services.

5.2.1 New Zealand ISPs unite

In August 2005 a group of 22 ISPs banded together to call for improved competition in New Zealand's Internet market. These ISPs have joined the ISP Association of New Zealand, which intends to campaign for improvements to the wholesale terms provided by Telecom. They are also lobbying for faster upload and download speeds and retail parity for provisioning and service levels.

5.3 INTERNET AND BROADBAND MARKET SURVEY

The following table was extracted from a survey by Roy Morgan conducted between April 2001 and December 2005 on Internet, broadband, pay TV, mobile and fixed line penetration of households in New Zealand. The survey was released in May 2006.

Table 23 – New Zealand and Australia – Internet, broadband pay TV, mobile and fixed line penetration

Percentage of people	2001*	2004**	2005**
	Year ends March	Year ends Dec	
Connected to broadband	2%	9%	20%
Pay TV connection	n/a	n/a	48%

Internet connection (Broadband, ISDN or dial-up)	58%	n/a	76%
Mobile phone	64%	n/a	78%
Telephone connected at home***	n/a	n/a	96%

(Source: Paul Budde Communication based on Roy Morgan International Survey of 70,200 people aged 14 and over)

(*Year ends March)

(**Year ends Dec)

(***Phone line is used for private purposes, not a business phone connection.)

In comparison, Paul Budde Communication estimated that at December 2005 in New Zealand the:

- retail broadband subscriber penetration rate was around 9%.
- mobile subscriber penetration rate was 90%.
- pay TV penetration was around 40%

5.4 MARKET STATISTICS

Table 24 – New Zealand - number of ISPs – 1995 - 2006

Year	Number of ISPs
1995	30
1996	50
1997	75
1998	105
1999	145
2000	140
2001	125
2002	95
2003	85
2004	80
2005 (e)	75
2006 (e)	60

(Source: Paul Budde Communication)

In mid 2006, of the 60 estimated ISPs in the New Zealand market, 25 of these were independent of Telecom.

In Table 259 ISP revenues are predicted to increase during 2006. Despite the fact that revenue from dialup customers is decreasing due to migration to broadband services, ISPs are gaining new revenue streams from broadband services.

Table 25 – New Zealand - ISP revenues – 1998 - 2006

Year	Revenue (\$ million)
1998	160
1999	240
2000	250
2001	265
2002	275

2003	295
2004	300
2005 (e)	310
2006 (e)	315

(Source Paul Budde Communication, estimates)

Table 26 – New Zealand - ISP revenues – 2002 - 2007

Year	Revenue (\$ million)*
2002	350
2003	375
2004	400
2005 (e)	435
2006 (e)	480
2007 (e)	535

(Source Paul Budde Communication, estimates)

Table 27 – New Zealand - dialup Internet subscribers for total market – 2002 - 2007

Year	Subscribers
2002	763,000
2003	858,000
2004	926,000
2005	835,000
2006 (e)	742,000
2007 (e)	641,000

(Source: Paul Budde Communication)

Table 28 – New Zealand - dialup Internet subscribers per major ISP – 2002 - 2005

Company	ISP	2002	2003	2004	2005 (e)
Telecom	Xtra	380,000	430,000	436,000	374,000
TelstraClear	clear.net paradise.net	215,000	244,000	280,000	235,000
Ihug	ihug	60,000	65,000	70,000	70,000
CallPlus	Slingshot CallPlus	40,000	40,000	50,000	60,000
Orcon	Orcon Internet	20,000	25,000	30,000	35,000
ICONZ Internet Solutions	ICONZ	15,000	18,000	20,000	20,000
Quicksilver Internet	Quicksilver	9,000	10,500	12,000	15,000
Maxnet	Maxnet	7,000	7,400	7,700	8,000
Other ISPs		17,000	18,000	20,000	18,000
Total		763,000	857,900	925,700	835,000

(Source: Paul Budde Communication based on industry data)

Note:*Paul Budde estimates only.

Table 29 – Telecom’s Xtra dialup Internet subscribers – 1997 - 2005

Year	Subscribers
1997	30,000
1998	120,000
1999	235,000
2000	320,000
2001	390,000
2002	425,000
2003	430,000
2004	436,000
2005	374,000

(Source: Paul Budde Communication)

Table 30 – New Zealand - Internet statistics (users & penetration) – 2004

Internet statistic	2004
Internet users	3,200,000
Internet user penetration	80%
Host computers	588,000

(Source: Paul Budde Communication based ITU and industry data)

Table 31 – New Zealand - dialup Internet subscribers per major ISP (historical) – 1998 - 2001

ISP	1998	1999	2000	2001
Xtra	137,000	235,000	320,000	390,000
Clear.net	70,000	100,000	115,000	120,000
Ihug	35,000	55,000	78,000	82,000
Paradise	16,000	25,000	30,000	40,000
Voyager	25,000	27,000	40,000	35,000
Asia Online	6,000	20,000	25,000	10,000
Others	20,000	20,000	20,000	26,000
Total	309,000	482,000	630,000	703,000

(Source: Paul Budde Communication based on industry data)

Note: Users are those accessing the Internet from their school, university, work account as well as from their individual household or business accounts. Subscribers are the number of individual paid Internet access account, eg a work account is just one subscription but can have many users within that one subscription.

For the 2005 financial year, outside of the major telcos Telecom and TelstraClear, the ISPs can be divided into the following groups in terms of revenues:

- Ihug, Callplus/Slingshot: (\$35M - \$60M)
- ICONZ, Orcon, Woosh (\$10M - \$15M);
- Maxnet, Quik, Compass (excluding their card business) and Quicksilver(\$5M - \$10M);
- A pool of regional ISPs including Snap, Actrix (\$2M - \$4M);

- Finally around 10 or so 2nd and 3rd tier ISPs with revenues from \$0.5M - \$2M plus emerging tolls companies such as World Exchange.

During the 2005 financial year all of the ISPs have leapt in revenue this year as they have migrated to UBS services; however a large slice of this revenue was a transfer of revenue from Telecom to the ISPs. Previously Telecom used to charge most Jetstream customers directly and ISPs only incurred a portion of DSL charges themselves.

5.5 REVIVAL OF THE ISP MARKET

Companies who understand the importance of the Internet economy include some of the leading ISPs in the country, such as ihug, Call Plus, Orcon and Maxnet.

These companies are trying to get out the 'box' they are squeezed into at the moment – which contains, on the one hand, a regulatory regime that doesn't allow them to participate in the Internet economy and, on the other, the 800-pound gorilla that wants to grab this market for itself.

If New Zealand wishes to participate in some of the exciting developments that are currently taking place in the rest of the world it will have to facilitate new developments such as triple play, IPTV and VoIP.

There is no incentive for Telecom to move at any great speed in these new directions as it is going to mean cannibalising its traditional services, something it will only do if it's forced to, either through (preferable) competition or regulations.

The key to these developments is, once again, LLU. Only when wholesale players have the opportunity to develop their own new and innovative products will they be able to build these new models.

As long as they are required to resell Telecom services through UBS or even 'naked DSL' they won't be able to move in this direction. Look at the current Telecom-sponsored ads from the second-tier players. Their products are all built on the one-size-fits-all Telecom UBS products – all their advertisements promote exactly the same vanilla products, no innovation.

ihug's speed-independent broadband service is certainly different, and this is creating a shockwave though the industry, but, there again, ihug has little room to manoeuvre. Like everybody else it is unable to build VoIP or IPTV products into its broadband offerings.

In order to maintain its current momentum ihug desperately needs more sustainable wholesale margins. If this does not happen there will be a mass exodus of ISPs from the market, which would be yet another blow to competition.

The current half-baked bundled products these second-tier players are now able to deliver are nothing like the new products and services we are seeing elsewhere in the world – not because the New Zealand ISPs don't know any better – no, because

Telecom, with the support of the government, is preventing them from moving into these new markets.

But these developments are unstoppable and they will eventually arrive in New Zealand. Once that happens we will see new companies entering the market and others becoming more prominent, especially the ones mentioned above. But, at the same time, this will also lead to further consolidation.

Those focussed on their customers will become the most successful players. Good niche market players in New Zealand will be able to build up interesting businesses for themselves. Maxnet is a good example here.

Another company worthy of special mention is Orcon, the most successful UBS wholesaler in the country, conveniently filling the position left vacant by TelstraClear. It is very likely that the smaller ISPs will have to buy from wholesale companies such as Orcon in order to remain viable.

Companies like Orcon could also become key VoIP and new media wholesalers once the environment in New Zealand becomes more attractive for such services. However, I am a bit puzzled by their current foray into the highly competitive residential end-user market. I sense the possibility that they might lose the focus on their successful wholesale operation.

This will help other players who are also going to move into this wholesale space. The first Australian companies have already moved into this market, but, due to failed government policies, New Zealand companies have been unable to build up expertise in these markets at home. They now find themselves on the back foot, in competition with companies from countries that have more forward-looking policies.

TelstraClear has been a significant loser in this market in 2005; because of its repositioning it has been operating in limbo for quite some time. During this period they have seen their Internet dial-up market eroded by competing second-tier players, who used the opportunity to convert TelstraClear dial-up Internet customers to their own new broadband services.

An interesting side effect of Telecom's high end user charges is that some ISPs are able to fund expensive fibre and wireless network roll-outs that wouldn't happen in other countries. Even if they undercut Telecom on monthly charges and subsidise CPE and installation, they still get good returns within six months.

However, this is a very risky strategy, as New Zealand prices will soon have to fall in line with international charges and those building new infrastructure need to be very much aware of this. In the past we have seen Woosh complaining when broadband prices were lowered by Telecom.

Paul Budde, December 2005

5.6 INTERNET AUCTIONING – LATEST DEVELOPMENTS (TRADE ME)

In March 2006, Fairfax New Zealand completed purchased Wellington based Internet auction site, Trade Me, for \$700 million. Trade Me is New Zealand's most popular website, and had 1.2 million members in early 2006. In 2006 there was between 30,000 and 50,000 people on Trade Me at any time, 50,000 new members per month, and more than 600,000 items for sale at any time.

As part of the deal, an additional \$50 million is to be paid if the company meets certain earnings targets over the next two years to 2008. Trade Me's current founder and chief executive Sam Morgan will continue to run the business.

Trade Me will continue to operate as a standalone business, and its advisory board would be made up of current Trade Me directors and Fairfax executives. The content of the site is expected to remain largely the same.

5.7 E-COMMERCE AND E-GOVERNMENT

5.7.1 Stimulating e-business in the small business sector

In April 2005 the New Zealand Government approved a \$500,000 investment to support a pilot e-commerce Accelerator Project with the aim of getting more small businesses into online marketing and exporting. The government is part funding an e-commerce research project to be managed by the E-Regions Trust. The project aims to enhance the ability of small businesses to use digital technology and e-commerce to sell their products and services overseas. The Accelerator Project is scheduled to run from April to October 2005.

The pilot will assist 30 small businesses who will receive a Website, technical support, high-speed Internet service, sales and marketing advice, e-commerce training and mentoring in order to develop international trade of their goods.

Central Online Management and Export Trade (COMET) aims to get 2,000 New Zealand businesses using e-commerce to sell internationally. The government has entered into a partnership with E-Regions, Telecom, New Zealand Post, Otago University, Ucol and e-commerce specialist e-Media to deliver the COMET Accelerator Project.

The project will initially identify businesses that are makers of high quality consumer items, but have low or no e-commerce and export capacity, and set them up to being skilled users of e-commerce tools, business supports and broadband in order to enter the online international trade network. The objective of the project is to develop a blueprint for small and medium enterprises to use e-commerce to access global markets.

New Zealand's e-transformation has become something of a silent revolution. By 2005 the frenzy of two or three years prior, when 'e' had to go with everything, has now changed to electronic commerce being regarded as simply a fact of business life. New Zealand businesses are using the technology available to them to steadily get on with saving money and reaching customers. However, a problem exists in the speed at

which the country as a whole is embracing technological advancements. There is a significant proportion of the economy still only taking its first steps into e-commerce.

In 2005 three developments were promoting electronic business:

- The gradual rollout of broadband services. Telecom finally began introducing JetStream capabilities across its network, and a number of new and alternative high-speed networks such as wireless broadband are emerging;
- The rising uptake of mobile data solutions from Telecom and Vodafone;
- Government legislation and initiatives. Project Probe has been bringing broadband services to regional New Zealand, and regulatory reviews of interconnection, Local Loop Unbundling (LLU) and the Kiwi Share could potentially open up the telecommunications sector to greater competition.

5.7.2 New Zealand's e-government strategy is on target - November 2004

The State Service Commission's e-government unit has completed a review of progress made by the e-government strategy that had commenced three years ago.

The review aims to pinpoint how far government agencies have come in achieving the strategy targets. It includes an analysis of the government departments' use of the Internet and networks. One of these targets is that by 2007, networks and Internet technologies will be integral to the delivery of government information, services and processes to New Zealanders.

The report says that Internet and inter-agency networks are increasingly used to automate information exchange between government departments. Information sharing initiatives such as the e-government interoperability framework were found to be well underway, thus providing further integrated online services.

The Commission states that the number of electronic data-sharing agreements permitted by the Privacy Commissioner had grown from 20 in 1995 to 70 in June 2004 – this upward trend is expected to continue. However the digital divide was found clearly evident in New Zealand with lower socio-economic areas being found to have less access to Internet facilities. Labour force status and geographic location of households were found to play an important role in determining Internet access.

Note: all \$ are NZ\$ unless otherwise stated.

6. SOUTH PACIFIC ISLANDS

6.1 MARKET OVERVIEW

Internet access first became available in Fiji in 1995. Since then it has been generally slow to penetrate the region mainly due to the size of the economies, and the wide areas to be covered. By 2005 dial-up Internet access was available throughout the region with some islands also having broadband access. Most PICs still rely on woefully slow dial-up services via the PSTN. Internet penetration ranges from more than 65% in Niue (where access is free) to around 1% in the Solomon Islands.

Most of these countries have international links ranging from 64Kb/s to 6Mb/s to USA, Hong Kong, Australia or New Zealand via satellite. It estimated that in 2005, less than-one third of Pacific islanders had regular access to the Internet – primarily through workplaces, cybercafes or educational institutions. Low PC penetration and the high cost of connectivity are both responsible for low Internet usage in homes.

The majority of carriers offer Internet services and Virtual Private Networks (VPNs) over leased lines of varying bandwidth to business users. Both Fiji and Guam have submarine cable links, while the remaining islands rely on satellite.

Internet services are firmly established in a few of these island nations but progress in most others is slow, mainly due to the lack of proper and affordable networks. Only seven countries in the region offer Internet users a choice of ISPs: America Samoa and Tonga each have two, Guam, New Caledonia and PNG have five each, and Northern Marianas have four. Users in all other countries are served by monopoly ISPs and this does not stimulate either competitive prices (dial-up rates can be as high as US\$10 per hour) or innovative new services, including e-commerce. Also, homes with a telephone connection are still in the minority.

The lack of access to telephone systems, bandwidth and international connectivity is a major constraint to the developing use of the Internet. This issue has been recognised by all the heads of South Pacific governments which are starting to address it.

Telecentres and cybercafes provide the opportunity to use e-mail to keep in touch with family members overseas. Most PICs have set up cybercafes in their main centres, but these are still predominantly used by tourists.

Institutional use of the Internet is slowly catching up with the rest of the world, exemplified by official agency Websites offering reports and information, a growing online presence for banks and tourism operators, limited online retail activity, and distance education offered through the University of the South Pacific since 1996. Nevertheless, it is not uncommon for government departments to lack access to basic e-mail, and to continue to rely exclusively on fax and phone services.

6.1.1 Internet statistics

Table 32 – Internet users and penetration (selected countries) – 2004; 2005

Country	Internet users	Penetration
Niue	1,000	65%
Guam	79,000	47%
New Caledonia	70,000	32%
French Polynesia (e)	75,000	28%
Micronesia	12,000	11%
Tuvalu	875	9%
Fiji (e)	68,000	8%
Samoa	6,500	4%

Tonga	<i>4,000</i>	<i>4%</i>
Vanuatu	<i>8,000</i>	<i>4%</i>
PNG (e)	190,000	3%
Marshall Islands	<i>2,000</i>	<i>2%</i>
Solomon Islands	<i>8,400</i>	<i>2%</i>

(Source Paul Budde Communication based on ITU and industry data)

Note: Numbers in italics represent 2004 figures

Note: Internet users are those accessing the Internet from school, university, or work, as well as from individual household or business accounts. Hence, the number of Internet users is always greater than the number of subscribers. Internet subscribers are individuals who pay for Internet access accounts. For example, a work account is just one subscription but can have many users within that one subscription.

Table 33 – International bandwidth (selected countries) – 2003

Country	Total Mb/s
Micronesia	7
Fiji	12
French Polynesia	24
New Caledonia (2004)	40
Samoa	3
Vanuatu	3

(Source Paul Budde Communication based on ITU and industry data)

6.2 PACIFIC ISLANDS CHAPTER OF THE INTERNET SOCIETY (PICISOC)

The PICISOC [www.spc.int/picisoc] serves the interests of the global Internet community through its presence in the Pacific Islands. It focuses on local issues and developments, and as an impartial advisor to governments and the public on matters of significant interest to Pacific Island people.

6.3 EFFORTS TO BRIDGE THE DIGITAL DIVIDE

6.3.1 Tele-education (USPNet)

The USP Communications Network (USPNet) was established in 2000 to link the University of the South Pacific (USP) to all its centres. It is composed of permanent full duplex 64Kb/s links to the centres of Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu.

Additionally there are four 128Kb/s channels which allow the transmission of video. It can be four simultaneous broadcasts or two videoconferences. This network allows tele-education at all levels with all the students in the Pacific. However the system is reserved by agreement with the countries and the telecommunication industry to the exclusive use of USP.

6.3.2 Community telecentres

The establishment of multipurpose community telecentres has been identified as a top regional priority. A partnership approach led by the ITU proposes to plan, establish and operate multi-purpose community telecentres on remote islands and in under-served urban areas. Operational telecentres in each of the participating countries would offer services determined by the local communities, and set up to operate on a self-sustaining basis; requiring planning and business expertise. This initiative will allow access to Internet information in rural areas, establishment of e-mail centres, and access to education links throughout the Pacific islands. By 2005 some progress has been made in the establishment of telecentres with several islands having facilities in place.

6.3.3 People First Network (PFnet) rural connectivity project

PFnet is a rural connectivity project, which aims to promote and facilitate equitable and sustainable rural development and peace building by enabling better information sharing and knowledge building among and across communities forming the Solomon Islands. This involves the creation of some 25 rural e-mail stations (telecentres) in all nine provinces, run in the manner of telegraph offices by rural development volunteers.

PFnet is using digital short-wave to create one of the world's furthest flung wireless Internet services, all on the most basic of funding. The system seeks to improve connectivity while dramatically reducing the prices of communication, making it affordable for low-income users and sustainable over time. PFnet has set up a High Frequency (HF) radio e-mail network, a central Internet cafe in the capital Honiara as the revenue-earning base, and a development Web portal, People First Network.

To date, the project has supported rural networking for health clinics, an indigenous business development service, and the reinforcement of traditional agriculture. In 2002 PFnet conducted trials with the USP to offer formal education over its e-mail system.

PFnet is a project of Rural Development Volunteers Association (RDVA), a not-for-profit organisation established by the Ministry of Provincial Government and Rural Development. It has received funding and technical support from the UNDP and the United Nations Office for Project Services (UNOPS), and local missions of Britain, Japan and the Republic of China. In October 2003 NZAID approved a funding package for PFnet amounting to approximately NZ\$170,000.

For more information, see separate report: [Solomon Islands - Telecoms Market Overview & Statistics](#).

6.3.4 Pacific Islands Telecommunications Association (PITA)

Fiji-based PITA's activities include acting as a forum for regional cooperation of telcos and also as a provider of training. Main issues on its roadmap for 2005 and beyond include satellite communications, disaster communications and recovery,

inter-island quality of voice terminations, regulation, lightning protection, legal issues and interconnection. In mid-2005 PITA had 90 members – 41 from Pacific Island nations and 49 associate members.

In a meeting in Fiji in April 2005 the association signed MOUs with the ITU and Asia Pacific Telecommunity. In the meeting it also discussed a special program for least developed countries, Samoa and Solomon Islands. The program would involve special skills training.

PITA has pursued a number of initiatives including the PITAnet Project – a regional satellite Internet network that serves the business and residential communities in the region. There is joint cooperation among PITA members and resources are pooled. Countries share downlink capacity and establish separate uplinks. A MoU was signed between some member countries and it is implemented using the Intelsat satellite.

6.3.5 Telehealth projects

Telemedicine and telehealth are emerging as important medical and health applications of ICTs. The Fiji School of Medicine has launched a telehealth Website that offers remote consultation and diagnosis, community health information, and continuing professional education to doctors, nurses, and patients anywhere in the Pacific. Store-and-forward technologies are used to transfer narrative information via Web pages and e-mail, with the capacity to send high-quality still images such as electrocardiograms etc as attachments.

In 2002 Samoa joined up with the Northern Mariana's, Guam, Palau, Hawaii and American Samoa in a telehealth network. A teleconferencing system is used to communicate using images and speech. This system aims to enhance the work of professionals involved in the supply of quality health services.

Note: all \$ are US\$ unless otherwise stated

7. RELATED REPORTS

For information on the broadband Internet market in the Asian region, see separate reports:

- [Asia - Broadband - Market Overview](#)
- [Asia - Broadband – Digital Subscriber Line \(DSL\) Services;](#)
- [Asia - Broadband - Fibre to the Home \(FttH\);](#)
- [Asia - Broadband - Development of Power Line Services.](#)

For related information for Australia, see separate reports:

- [Australia - ISP Market - Statistical Overview;](#)
- [Australia - Telco services market - Revenue Overview - 2000 - 2008;](#)
- [Australia – Carriers and SPs – Industry – Market Share Analysis;](#)
- [Australia – Mobile – Revenue, Demographics, Equipment.](#)
- [Global - Business Users - B2B Market Statistics;](#)

For related information for New Zealand, see separate reports:

- [New Zealand - Broadband - Statistics, Overview & Providers](#);
- [New Zealand - Telecommunications - Key Statistics](#).

For telecommunications markets in individual island groups within the South Pacific region, see:

[South Pacific Islands](#)

For information relating to:

- Telecommunications markets in individual countries, see: [Geographic Region and Country](#) reports;
- Company details, see [Company Profiles](#);
- Worldwide activities in the telecommunications industry, see: [Global Overviews](#);
- Technical information relating to the telecommunications industry, see: [Telecommunications Technology Library](#).

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