

Pacific Internet Limited : seizing the future

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**PACIFIC INTERNET LIMITED :
SEIZING THE FUTURE**

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Olaf Rieck and Tom Gleave

Pacific Internet Limited (PacNet), Singapore's second oldest and second largest Internet Service Provider (ISP), signaled a new stage in its development when it appointed Tan Tong Hai as its new CEO in February 2001. In assuming the top position at the NASDAQ-listed company, Tan's mandate was to return PacNet to profitability. Although the six-year-old ISP had sustained losses in its initial years of operations, it had become profitable by 1998. As Internet usage began to explode around the world. This trend was short-lived however, as the number of rivals in the six Asian markets in which PacNet operated began to increase substantially, thus creating significant downward pressure on prices, particularly for residential access services.

After five months on the job, and no longer having to face the possibility that local rival, SingNet, would launch a takeover bid of PacNet, Tan could now focus on guiding the new-economy company through a classic old-economy problem. That is, he had to decide if PacNet should try to capture more of the Internet services-related value chain through vertical integration. If so, he also needed to identify the specific domains in which the company should compete. Concomitantly, Tan needed to determine what markets to prioritize in terms of the company's existing services, as well as any future services.

Ivey-Nanyang Case Writer Tom Gleave prepared this case under the supervision of Assistant Professor Olaf Reick. The case is based on public sources. As the case is not intended to illustrate either effective or ineffective practices or policies, the information presented reflects the authors' interpretation of events and serves merely to provide opportunities for class discussion.

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THE RAPID RISE OF THE INTERNET

The rapid rise of the Internet throughout the late 1990's could be traced to 1994, when California-based Netscape Communications released the first commercially available browser for navigating the World Wide Web (Web). Netscape allowed the public to use the browser for free, which resulted in its rapid adoption by Internet users around the world. Soon after, competitors like Yahoo! Inc. and Lycos Inc. released their own Web-based navigational guides, moves that provided an early glimpse of the intense competition that followed. In the ensuing years, an explosion of commercial activity was witnessed as tens of thousands of technology and software application providers, content developers and entrepreneurs raced to achieve first mover advantage in the burgeoning industry. This led to emergence of a wide variety of new business models that were centred around the Internet, such as those developed by business-to-consumer player Amazon.com and online auctioneer eBay. Encouraged by the seemingly enormous potential of the Internet, institutional and retail investors alike rushed in to support thousands of upstart "dot coms", a great many of which were "burning" more money than they were earning. During this time, the growth of Internet Service Providers (ISPs) also skyrocketed, particularly in countries where the telecommunications industry had been deregulated. Consequently, in such countries hordes of ISPs entered the market, many by simply setting up operations in their own homes, where they had installed several servers and leased lines to create their access service platforms.

Throughout the late 1990's, most ISPs relied on monthly subscription fees to sustain their operations. As consumer and corporate interest in the Internet began to accelerate, most operators envisioned that their revenue streams would become more advertising reliant. This sentiment was spurred on by many industry analysts who correlated higher "hit rates" and "page views" with greater advertising revenue generating opportunities. However, as the number of ISPs grew, so too did pressures on prices, which forced operators to slash their subscription and advertising rates in efforts to retain and attract revenue generating customers. At the same time, Internet users were becoming increasingly sophisticated. This meant that the ISPs needed to continuously develop enriching content and value-added services that could be easily accessed from their homepages, or else risk losses as users and advertisers migrated to more compelling venues. To this end, the ISPs widened the breath and depth of their offerings, often by striking agreements with

content providers in order to minimize costs. Value-added services such as search, e-mail, chat and instant messaging services also became typical features included in basic service packages. Eventually, many ISPs also began to offer cross-platform compatible venues so that customers could access the Internet using such devices as wireless-application protocol (WAP) enabled mobile phones and personal digital assistants (PDAs).

As competition intensified, further efforts at attracting subscribers were made, including the development of so-called "free surf" programs. This revenue model was based on the assumption that the ISPs would be able to attract critical masses of subscriber "eyeballs", which in turn would appeal to advertisers willing to buy advertising space on the ISPs' Website. In some cases, the ISPs were subsidiaries of telecommunications parent companies. Although the ISPs would forgo subscription revenues in offering their "free-surf" program, the parent telcos would often earn revenue for toll charges based on the number of minutes that the fixed telephone lines were engaged.

Despite the efforts made at attracting more "eyeballs", and hence more advertisers to their venues, most ISPs soon realized that the astronomical growth rates in online advertising predicted by many industry analysts were not going to materialize. This prompted the ISPs to pursue other revenue generating opportunities, such as the development of online shopping (or e-commerce) platforms, as well as an array of value-added services aimed at the corporate segment. The e-commerce platforms were designed to use the collaborative potential of the Internet to bring buyers, sellers and information together in virtual marketplaces. This implied a need to develop integrated business relationships and processes among relevant vendors and customers. Given the level of complexity involved, particularly with respect to cross-border transactions, third party service providers (such as finance and logistics companies) were used to facilitate the transactions. These third parties typically entered into revenue sharing agreements with the e-commerce platform developers.

By March 2000, the popularity of many 'dot com' companies started to quickly wane, as investors and customers became wary of the sustainability of their revenue models and value propositions. This culminated in a bursting of the so-called "Internet bubble" with many publicly traded information and technology related companies losing over 90 percent of their market value in the ensuing months.

This rapid decline in fortunes had caused a great deal of uncertainty in the market, despite the fact that Internet usage and online advertising continued to grow at impressive rates throughout the world, albeit at a more moderate pace than previously envisioned.

THE INTERNET IN ASIA

In Asia, a wide gap existed among the region's different countries in terms of their overall preparedness for embracing the Internet and conducting e-business, as highlighted by the results of a survey conducted by the Economist Intelligence Unit and its sister company, Pyramid Research. The survey found that Australia was the most "e-ready" country in Asia and the second most e-ready country in world, next to the US. Singapore was placed second in Asia and seventh in the world, as per **Table 1** below.¹

Six key factors were taken into account to determine the above rankings: infrastructure and connectivity; general business environment; e-commerce consumer and business adoption; legal and regulatory environment; e-service support services; and social and cultural factors (such as level of education, literacy and entrepreneurial spirit). Based on the results, each country was categorized as an e-business leader (a), e-business contender (b), e-business follower (c) or e-business laggard (d).

Singapore's favourable ranking could be attributed in large part to government efforts aimed at making the island-republic "digital ready". Some of these efforts included funding and support for so-called "technopreneurs" who were encouraged to develop

various types of e-commerce-related businesses. Public education campaigns had also been undertaken to help the citizenry understand and recognize the importance of being computer and Internet literate.² In addition, a high degree of private and public sector cooperation had been encouraged to ensure the development of leading-edge telecommunications and multimedia infrastructures. This included support for the rollout of a country-wide broadband network that was expected to provide high speed access to all homes and schools within the next few years.

Despite the wide-ranging disparities in incomes and overall e-readiness among different countries, the demographic profile among Internet users in Asia was relative similar, although usage behaviour could be noticeably different. (See **Exhibit 1** - Internet User Demographics and Usage Behaviours - Hong Kong and Singapore - March 2001 and **Exhibit 2** - Internet Usage Statistics - Singapore - July 2001.) As was the case in the rest of the world, e-commerce activity in Asia was dominated by business-to-business transactions, a trend that was expected to continue over the next several years. Japan was Asia's leading e-commerce nation, accounting for 60 to 70 per cent of all activity in the region. By contrast, Singapore's inherently small market meant that it would contribute only 1.4 percent to 2.4 per cent of all e-commerce activity in Asia over the next several years. (See **Exhibit 3** - Forecasted E-Commerce Activity In Asia.) Although original predictions regarding the growth of online advertising had been far too optimistic, the region nonetheless expected to witness substantial increases in online advertising, with total spending going from US\$225 million in 2001 to US\$700 million by 2004.³

TABLE 1

LEVEL OF E-READINESS IN ASIA [SCORE OUT OF 10]

Australia	8.29 a	Malaysia	4.83 c
Singapore	7.87 a	Philippines	3.98 c
Hong Kong	7.45 a	India	3.79 c
Taiwan	7.22 b	Thailand	3.75 c
Japan	7.18 b	Indonesia	3.16 d
South Korea	6.97 b	Vietnam	2.66 d

1 *eBusinessforum.com*, 10 May, 2001.

2 Singapore had about 3.2 million permanent residents: 77% were ethnic Chinese, 14 % Malay, 7.6% Indian and 1.4% others. About 800,000 foreigners also resided in the country, many of whom were low-skilled labourers. Source: CIA World Fact Book 2000

3 *IDC Asia*, Press Release, 2001, July 5.

THE ISP MARKET IN SINGAPORE

The Internet was introduced to the Lion City in 1985 when TechNet was established to provide the academic community at the National University of Singapore with Internet access services. In July 1994, Singapore Internet Limited (SingNet), a wholly-owned subsidiary of the dominant local telco, Singapore Telecommunications Limited (SingTel), became the country's first public provider of Internet services. SingNet held a monopoly until September 1995, at which time a license was granted to Pacific Internet Limited (PacNet) that allowed the company to take over TechNet and convert it to a public service. PacNet's major shareholder was SembCorp Ventures Pte. Ltd., a subsidiary of local conglomerate SembCorp Industries, which had strong ties to the Singapore government. In 1996, Cyberway was allowed to enter the market. This third ISP was a subsidiary of local conglomerate Keppel Telecommunications and Transportation Limited (KTT).

In October 1998, the Telecommunications Authority of Singapore (which was later renamed the Infocomm Development Authority - IDA) loosened restrictions governing Internet service provision in an attempt to inject greater competition into the market. The move prompted StarHub Communications to buy KTT's interest in Cyberway, with the ISP subsequently being rebranded as StarHub Internet. StarHub Communications was poised to become Singapore's third mobile telephone service operator (behind SingTel Mobile and M1), although it was not expected to formally commence its mobile service until April 2000. The fledgling company was founded by two of the world's largest telcos, Japan's Nippon Telegraph and Telephone and British Telecom, along with two local and high profile government linked companies, Singapore Technologies Telemedia Limited and Singapore Power.

Despite the IDA's initial efforts at liberalizing the local Internet market, equity limits preventing over 50 percent foreign ownership proved to be a disincentive to otherwise interested multinational players. This led the IDA to undertake further liberalization measures in 1999, which ultimately allowed foreign companies to maintain complete ownership of any ISP or Internet Exchange Service Provider (IXSP) established in Singapore. Due to these latter liberalization measures, KTT recognized that the market was about to heat up and therefore

decided to re-enter it, this time by teaming up with local newspaper monopolist Singapore Press Holdings to form Singapore's fourth ISP, DataOne Asia Pte. Limited. DataOne focused on targeting corporate customers by offering high speed Internet access, Web hosting, facilities network management and virtual private network services. One month later, UUNet, a division of US-based global telecommunications player, MCI WorldCom became Singapore's first foreign IXSP license holder. This gave UUNet the right to provide Internet connectivity to Singapore's four existing ISPs by aggregating and routing internationally destined traffic to various Internet hubs around the world. Therefore, the four locally based ISPs did not need to establish their own direct links abroad.⁴

In December 1999, StarHub Internet fired what was widely perceived as the first salvo in the war for residential subscribers by launching the country's first "free surf" program. The program offered dial-up customers free registration, no cost Internet access and no limits on available surfing hours, however the standard fixed line telephone charges (ultimately levied by SingTel) still applied. In addition, any assistance sought from StarHub Internet's helpdesk cost subscribers S\$0.30 per minute. Within one week, SingNet retaliated with a similar "free" service by targeting SingTel's 1.82 million fixed line subscribers. Each subscriber was provided with a password allowing free Internet access and e-mail accounts. Initially, standard toll charges applied. However, these were later eliminated. By contrast, PacNet avoided the free surf model and instead developed a customer rewards program that offered "Atoms" to visitors of its online shopping platform, PI-Mall. Visitors redeemed these "Atoms" by gaining discounts on goods and services available on sale from the 70 plus local vendors that participated in the online mall.

By 2000, the local Internet industry began to experience slower growth of home-based subscriptions, although this customer segment still provided the largest revenue stream to all three original ISPs. Dial-up connections remained the predominant access option, despite the emergence of broadband services coming from the three established players, as well as local cable television service provider, Singapore CableVision, which had launched its own broadband Internet service (SCV Maxonline) targeted exclusively at residential customers. Several factors were thought to be

⁴ By 2001, the IDA had granted 37 ISP and 18 IXSP licenses, however, only five players were active.

preventing higher take up rates of broadband services, including cost, the complexity associated with installing the required modems, as well as inconsistent access speeds.⁵ At the same time, however, the dedicated leased line segment continued to grow significantly, prompting all of the ISPs to switch their focus to the corporate market. This shift coincided with the ISPs developing various other Internet and network management related services, such as server co-location, website hosting and data management services.

Starhub Internet's free surf strategy proved a success, as its total subscriber base rose from less than 50,000 prior to the programme's launch to about 250,000 one year later. This growth was believed to have come from new Internet users attracted to the market, as well as from some erosion in PacNet's subscriber base, as SingNet's subscriber base remained relatively stable. By the end of 2000, StarHub had secured about 51,000 paying subscribers, while SingNet and PacNet had each captured roughly 329,000 and 212,000 paying customers respectively.⁶ (See **Exhibits 4A** and **4B** - Profiles of Key Competitors and **Exhibit 5** - Top Portals in Singapore - July 2001)

OTHER ISP MARKETS IN ASIA

Hong Kong

In Hong Kong, there were about 2.2 million Internet accounts held among China's Special Administrative

Region's (SAR's) population of 6.9 million. The ISP market was very competitive due to early deregulation of the sector. To date, over 200 licenses had been granted, yet less than a quarter had been actively utilized. This was, in part, because many players had closed down or were bought out by better-funded players who were able to endure an increasingly competitive price war. Dial-up access continued to dominate, although broadband usage continued to increase significantly, jumping from 20,000 accounts in 1999 to 319,000 by the end of 2000. Some industry analysts speculated that the roll-out of broadband services in Hong Kong would widen the gap between the larger and smaller ISPs, in turn creating greater vulnerability for the less financially sound players. This had led many ISPs to attempt diversifying their revenue streams through the provision of hosting, outsourcing and systems integration services and the like.

Netnavigator, a subsidiary of Pacific Century Cyberworks - Hong Kong Telecom (PCCW), was the earliest and most dominate player, with 28.4 percent market share. The incumbent was also Hong Kong's largest provider of wholesale and retail broadband services. This included the provision of some 60,000 accounts to HKNet, the SAR's third largest ISP, which resold the services to residential and corporate subscribers. Given a lack of internal capacity, PacNet also bought and resold PCCW broadband lines. **Table 2** below lists the major ISPs in the market :⁷

TABLE 2
MAJOR ISPS IN HONG KONG

ISP	Accounts	Share (%)
Netnavigator	626,000	28.4
City Telecom	367,250	16.7
HK Net	350,251	15.9
i-Cable	239,931	10.9
SmarTone – iSmart	213,000	9.7
Hutchison Global Crossing	165,270	7.5
<i>Pacific Internet</i>	57,329	2.6
Others	182,032	8.3
Total	2,201,063	100.0

5 Broadband access prices varied considerably depending on the level of usage hours and/or amount of data and files transferred. Initially, prices for all three players averaged about \$99 per month plus set up charges. After several months, the average price for a standard package declined to about \$66 per month. Discount packages based on reduced usage were also introduced for about \$39 per month. Access speeds often varied, particularly when delivered over cable television networks because television programs competed for capacity with Internet dataflow.

6 ISP Services: Singapore. Gartner-Dataquest, 2001, April 15.

7 ISP Services: Hong Kong, Gartner - Dataquest. 2001, July 30.

The Philippines

Internet penetration among the Philippines' 78 million citizens was below 1 percent due to the country's low level of wealth and the difficulties of establishing a communications infrastructure across its 7,000 islands. To date, 167 ISPs had been established, which cumulatively provided service to 360,000 Internet accounts. Dial-up access subscribers residing in the Metro Manila area (where the population exceeded 10 million) held the majority of these accounts. The biggest players were subsidiaries of local telecommunication companies that operated in a market protected from majority foreign ownership. Service often suffered from chronically poor connections, limited bandwidth and slow transmission speeds. The lack of a vibrant multinational corporate community in the Philippines meant that the corporate services segment was not as well developed as that of Singapore or Hong Kong. This, combined with the country's lack of economic development, resulted in a minimal amount of e-commerce activity. Consequently, many smaller players were in a financially precarious position, which portended substantial consolidation within the next one to two years.⁸

Australia

The ISP market in Australia was relatively mature compared to other country markets in Asia, with over 1,000 operators offering service to the country's 19 million citizens. To date, about 3.7 million people had become Internet users, most

of whom subscribed to dial-up access packages. Almost half of all dial-up accounts were held by the country's three largest ISPs, with none of the remaining operators having secured more than 5 percent share of the market, as per **Table 3** in the following page.⁹

The development of broadband access was initially slow due to high fees, however, market watchers expected significant growth in the near term. This was because Telstra, the country's major broadband wholesaler and retailer, was under investigation by the Competition and Consumer Commission for maintaining a protective pricing policy. The expected outcome from the investigation was that Telstra would be forced to drop its prices.

India

The Internet first became available to India's public in 1995, when state run Videsh Sanchar Nigam Ltd. (VSNL) began offering access services. VSNL held a monopoly until 1998, at which point the government began to loosen industry regulations, although majority foreign ownership was still prevented. Nonetheless, penetration rates remained very low due to the lack of wealth and poor communications infrastructure throughout the country. By 2000, the number of subscribers had reached 1.4 million, a sevenfold increase over the previous year. The significant increase was attributed to increased competition, as more than 70 ISPs had established operations. Three out of four account holders in India were businesses. The

TABLE 3

DIAL-UP MARKET SHARE (JULY 2000)

ISP	Accounts	Share (%)
Telestra BigPond	520,000	22.9
OzMail (owned by UUNET)	410,000	18.1
OptusNet	137,000	6.0
Total	1,067,000	47.0

⁸ ISP Services: Philippines, Gartner - Dataquest. 2001, May 23.

⁹ ISP Services: Australia, Gartner - Dataquest. 2001, February 20.

¹⁰ ISP Services: India, Gartner - Dataquest. 23 October, 2000

country's leading ISPs are profiled in **Table 4** below.¹⁰

Thailand

The uptake of Internet services in Thailand had been marginal for two reasons. First, the Asian financial crisis, which was triggered in Thailand in July 1997, had caused consumers and businesses to become much more parsimonious in the ensuing years. Second, the Communications Authority of Thailand (CAT) continued to hold a strong monopoly that restricted operators while ensuring that prices remained relatively high. These restrictions were viewed by some as formidable barriers that impeded the growth of the Internet in Thailand. For example, the CAT held a monopoly on leased lines, which remained some of the most expensive in the region despite a steady reduction in the cost of communications over the previous several years. In addition, the CAT had previously required all 18 of the country's ISPs to give up a 35 percent stake in their companies in exchange for access to international connections. The CAT did, however, indicate its willingness to sell these stakes back to the respective ISPs, although negotiations regarding the terms of sale had become protracted. The result of these factors was that less than two percent of Thailand's 61 million citizens had access to the Internet, while only 15 percent of the country's businesses had access. Of the 18 ISPs operating in the market, only three were believed to be profitable. These three were

also thought to have strong connections to the CAT. Future growth, particularly in the business segment, was expected to remain modest, as full liberalization in the market was not expected for several years. As Somkiat Tangkitvanich, Internet Economist at Bangkok-based Development Research Institute, suggested "e-commerce development is being held hostage by CAT bureaucrats... most Thai companies just can't afford to take their businesses on-line".¹¹

A CLOSER LOOK AT PACIFIC INTERNET

From its inception, PacNet's mission was to become the leading provider of Internet access and related services in Asia by developing operations managed by local staff and providing region-specific content and services. In keeping with this mission, the company gradually established operations in Hong Kong, the Philippines, Australia, India and Thailand, making it the most widespread Asian-based ISP.¹² The company's ability to expand was helped considerably by a successful initial public offering (IPO) of shares on the NASDAQ in February 1999, making PacNet the first Asian-based ISP to become publicly traded on a US board. At an opening price of US\$17, the company was able to raise US\$51 million for the 3 million shares issued. On the first day of trading, the price of the shares had jumped to US\$48, and by mid April 1999, had reached their historical high of US\$92. However, by July 2001, their value had plummeted below US\$2.50.

TABLE 4
MAJOR ISPS IN INDIA (JUNE 2000)

ISP	Accounts	Share (%)
Videsh Sanchar Nigam Ltd.	450,000	32.1
Satyam Infoway Ltd.	200,000	14.3
Caltiger.com	200,000	14.3
DishNet DSL Ltd.	180,000	12.8
Bharat Sanchar Nigam Ltd.	125,700	9.0
Bharti BT Internet (<i>SingNet related</i>)	90,000	6.4
Mahangar Telephone Nigam Ltd.	47,000	3.4
Others	107,300	7.7
Total	1,400,000	100.0

¹¹ E-commerce Emasculate. *Far Eastern Economic Review*. 2001, September 21.

Like most ISPs, PacNet began by focusing on the development of access and advertising based revenue streams. By June 1999, it had started to diversify its revenue base through the creation of PI Mall. The company believed that the online shopping platform offered significant value by allowing local merchants to profile 100 products for S\$80 per month instead of having to invest tens of thousands of dollars to become e-commerce ready.¹³ This initial foray into e-commerce was followed up in November 1999 with the establishment of PACfusion.com (PACfusion), a separate operating division dedicated solely to e-commerce related activities. PACfusion's development plans called for the establishment of separate subsidiaries in each of the following twelve vertical market segments: News, Leisure, Travel, Homes, Lifestyle, Convenience, Education, Content, Shipping, Good Deals, Money, and Jobs. The formation of these subsidiaries was expected to involve a combination of strategic partnerships, joint ventures and acquisitions. A strong commitment to the success of the PACfusion initiative was given, as evidenced by the Board of Directors' authorization to invest up to US\$54 million in developing the project. At the same time, management sought to attract an additional US\$100 million to help develop the portal. The ultimate aim was to spin off PACfusion as a separate publicly traded company after 18 to 24 months of operation, with the hope that it would achieve an IPO value between US\$1 billion to \$2 billion.

On December 6, 1999, three days after StarHub stunned the market with the launch of its "free-surf" plan, PacNet announced that it would lower its prices and accelerate its shift towards e-commerce generated revenues. As then CEO Nicholas Lee stated:

What we are doing is a paradigm shift. We are gunning for revenue-generating eyeballs, millions and millions of them. We have been making this transformation quietly but surely in the last few months. The [recent] launch of Pacfusion.com is just the tip of the iceberg.

In March 2000, PacNet acquired a facilities-based operator (FBO) license from the Info-

Communications Development Authority of Singapore (IDA). This gave the company the right to offer a variety of telecommunications services in Singapore, as well as purchase bandwidth and connectivity directly from international consortiums. This in turn had the potential to reduce operating costs. The acquisition of the license signaled PacNet's intention to develop international direct dial, IXSP, virtual private network, data network services and Internet-based voice services over the ensuing six to nine months. The license allowed these services to be provided through the existing public switched telephone network, a dedicated deployed network or through a combination of both. In explaining the move, Ko Kheng Hwa, PacNet's Chairman, remarked :¹⁴

Obtaining the FBO licence marks a new milestone in the expansion of Pacific Internet's business to encompass the provision of telecommunications services in support of our ISP and e-business operations. Furthermore, the FBO licence is part of our overall strategy to further diversify our revenue base towards opportunities in e-business and telecommunication services. Pacific Internet will therefore select telecommunications services that synergise with our growing Internet access and e-business services.

We have a strong edge over the competition. Pacific Internet is already a well-recognised brand and being a major ISP means that our cost of entry is low. With an anticipated investment of several million dollars, including equipment that complements our existing infrastructure, we will be able to deliver International Direct Dialing (IDD) services, entering a market that was worth SGD\$1.9 billion last year in Singapore.

Nicholas Lee added further insights into the company's plans:

In the medium term, we intend to provide broadband access services to clients, using wireless broadband

¹² PacNet's international operations were established as follows: Hong Kong, June 1996; the Philippines, June, 1997; Australia (May 1999); India (January 2000); and Thailand (June 2000).

¹³ In 1999, the average US\$ - S\$ exchange rate was about: US\$1.00 - S\$1.73.

¹⁴ Company press release

technologies such as Local Multipoint Distribution Services (LMDS). We are already in the midst of our LMDS trials, having been among one of three companies that was granted a licence from IDA last month to conduct it.¹⁵ In terms of mobile connectivity, Pacific Internet expects to also move aggressively into Wireless Application Protocol (WAP) applications and 3G (third generation) technologies that will combine both voice and data services.

March 2000 also marked the formal launch of the company's PACfusion.com portal in Singapore, some three months after the subsidiary was originally established. Two months later, PacNet acquired Safe and Mansfield Travel Group for US\$5million in an attempt to enhance the portal's array of products and services. The transaction gave PacNet control over Singapore's second largest corporate travel agency, which generated revenues of about US\$69 million. The aim of the deal was to incorporate the agency into one of PACfusion's key vertical segments, as well as transform it into Singapore's leading online purveyor of airline, hotel and travel ticketing and reservation services targeted at the corporate market.

In June 2000, PacNet announced its intention to invest US\$25 million to US\$35 million to further develop PACfusion. Some of this money was also earmarked for expanding existing ISP services in India, as well as launching new ISP services in China. Commenting on the company's development plans, Nicholas Lee stated:¹⁶

Our acquisition of Safe and Mansfield Travel Group earlier this year has caused us to accelerate our e-business investment plans, superseding our original forecasts...We've begun to create a constellation of unique B2B e-business portals [vertical portals] that brings traditional brick-and-mortar businesses to the Internet, with PACfusion serving as the intra-Asian gateway. This acquisition is a strategic milestone for PACfusion.

...We have the advantage of having a final-billing relationship with more than 300,000 subscribers in the Asian region, and the fact that the Pacific Internet brand is well-recognized for providing quality products and superior customer service. We expect a large proportion of our customers to opt for the convenience of e-commerce services provided by a company they know and trust.

...We're spending US\$5 to \$10 million to expand to 25 cities in India this year, which has a total market potential of 5 million Internet subscribers by the year 2003. With India, we hope to repeat our success in countries like the Philippines, where, in just two short years, we've become the leading ISP, beating other well-established competitors in the market.

...Our long term strategy has always been to become the one and only Asian ISP of choice, whilst providing our customers with true e-businesses and other value-added services...we have plans to enter into China by the end of the year, where we expect to spend another US\$5 to \$10 million. Our investment strategy will ensure that we are poised to take advantage of the huge pan-Asian consumer and corporate platform created by our rapid ISP expansion.

As part of its development efforts, PACfusion launched a Chinese version in Hong Kong in July 2000. At the time, PacNet indicated its intention to roll out localized versions of the portal in Australia, India and Thailand over the next several months. However, by August 2001, no other localized portals had been developed, nor had any roll-out or acquisition activity in China taken place.

In July 2000, PacNet announced details of two concurrent tests it had conducted in Singapore using LMDS technology. The objective of the tests was to

¹⁵ LMDS used ultra high frequency microwaves in the 25-31 GHz frequency range to send and receive high quality two-way broadband signals within a 1.5 km cell radius. Unlike wired broadband, LMDS only required the installation of base stations on the tops of buildings. It was considered a relatively fast way to deploy infrastructure at a low start-up cost compared to the installation of broadband wireline networks. In addition, LMDS could deliver in excess of 2Mbps more bandwidth than existing telephone copper wires. The point to multipoint feature of LMDS also allowed the distribution of high capacity digital voice, video and data services to multiple customers within a specified cell radius.

¹⁶ Company press release.

evaluate the feasibility of deploying the technology in Singapore, and included trials in the following service areas: broadband Internet access; video streaming; high speed digital data transmission; voice over Internet protocol; and conventional voice calls. While LMDS had been commercially deployed in other countries such as the United States, Singapore was believed to be the first country with a tropical climate where such trials had been conducted. Given that LMDS operated at extremely high frequency, inclement weather conditions (such as heavy rain) were thought to potentially impact the quality of service. Nonetheless, PacNet was pleased with the results of the trials, which indicated that the technology could meet high service standards demanded by customers.

Buoyed by declining international bandwidth costs and the increased availability of intensive bandwidth web-based applications, PacNet joined early mover SingNet in offering broadband services in Singapore in October 2000. Since it did not roll out any infrastructure of its own, PacNet leased the capacity from SingNet. Both layers used Asymmetric Digital Subscriber Line (ADSL) technologies to deliver up to 512 Kbps to home users and Digital Subscriber Line (DSL) technologies to deliver up to 1.5Mbps to corporate accounts. Soon after, StarHub Internet joined the fray and, as was the case with dial-up access services, Singapore's three leading ISPs began to engage in rigorous price competition over the ensuing months.

In January 2001, PacNet announced that it had entered into a strategic alliance with Mitsubishi Corporation, one of Japan's largest trading companies with operations spanning a wide range of industries. The agreement called for Mitsubishi to invest US\$3 million for an eight per cent share in the PACfusion subsidiary. The agreement was intended to allow PACfusion to grow its operations while leveraging Mitsubishi's wide industrial base and global reach. In addition, Pacific Internet and Mitsubishi Corporation were expected to undertake collaborative e-business projects involving e-commerce services and business-to-business (B2B) exchanges for commodities. Apart from its cash injection, Mitsubishi was expected to offer logistics, banking and insurance support services to the portal. Mitsubishi's motivation for entering into the alliance stemmed the hope that it would establish a greater on-line presence throughout Asia by virtue of Pacfusion.com's pan-Asian footprint.

A NEW BEGINNING?

On February 26, 2001, PacNet's CEO Lee resigned for "personal reasons". Nonetheless, the local press speculated that his resignation might have been associated with a lack of performance of the PACfusion subsidiary, as well as related conflicts over the company's future strategic direction. The press also noted that Lee's resignation came on the heels of the recent departures of several other key managers, including the former heads of marketing, engineering and networks, MIS and the company's General Manager.¹⁷

Lee's replacement was Tan Tong Hai, who assumed the titles of President and Chief Executive Officer. Tan brought 13 years of experience in the information technology, Internet and e-commerce industries to the position. Immediately prior to joining PacNet, Tan was the CEO of StarHub Internet, where he led the company's re-branding effort from its former owner, CyberWay. It was under Tan's direction that StarHub Internet was able to raise its profile in Singapore, starting with the implementation of its free surf program. Before joining StarHub Internet, Tan had worked in various capacities at IBM, including regional management responsibilities for its Internet and e-Commerce activities throughout Asia.

At the same time that PacNet announced Lee's resignation, the company also announced that it had opened a new 10,000 square foot Internet Data Centre (IDC) in Singapore. The new S\$5 million facility was 6,000 square feet larger than the company's existing facility, and was established in an attempt to diversify PacNet's revenue streams. To this end, PacNet expected the IDC to generate S\$6 million over the next two years. In developing the facility, the company hoped to leverage its legacy as an early provider of data hosting and related services, which it began offering in 1995. Since then, PacNet had rolled out 14 other IDCs across the region. Still, some industry analysts had warned that the IDC market was very competitive and rife with over-capacity across Asia. For example, in Singapore, it was believed that no more than 25 percent of the country's cumulative 800,000 available square footage of facility space was being utilized.¹⁸ This meant that other major IDC operators, including SingTel, Starhub, DataOne and UUNet, faced the same concerns. In Singapore alone, these companies operated 330,000, 100,000, 80,000 and

¹⁷ *Business Times*, 2001, February 28.

¹⁸ *Too Many Servers, Asiaweek*. 2001, April 20.

40,000 square feet of facility space respectively. PacNet hoped to differentiate itself from these competitors by offering a range of services, such as e-mail, corporate data storage and Internet security, not simply server co-location services.

In April 2001, StarHub Communications announced that it had entered into negotiations with Singapore Cablevision with a view to taking over the island's only cable television service provider. The deal was completed by June 2001, bringing with it 50,000 cable modem broadband subscribers. Mid-2001 also saw rumours resurface that local rival SingNet was once again interested in taking over PacNet. This was not the first time that such rumours had arisen. However, by late July 2001, SingTel announced that it would not acquire a stake in PacNet. Some local analysts and commentators speculated that this decision was taken because SingNet feared that it would not gain approval for such a deal from the IDA. With this issue permanently put to rest, PacNet's senior managers could focus their full attention on positioning the company for future growth and profitability.

In mid-August 2001, PacNet announced its operating results for the second quarter (period ending June 30, 2001), which showed that the company's revenues and EBITDA had grown significantly, although profitability remained elusive, as per **Table 5**.

In disclosing these results, the company also revealed that its total subscriber base across the six country markets in which it operated had grown from 340,000 in June 2000 to 387,000 one year later. The company cited growth in its broadband services as particularly encouraging, going from 4,400 subscribers in Quarter 1-2001 to almost 9,000 by the end of Quarter 2-2001, with uptake being strongest in Singapore, Hong Kong and Australia. Correspondingly, revenues from the corporate segment had increased by 27.8 percent during the period. The company also indicated some positive momentum from its PACfusion division by virtue of the several tenders it had secured to provide e-services to the Singapore Government and its

statutory boards. At the same time, however, PacNet decided to scale down its direct telecommunications operations (such as LMDS) and instead, seek strategic partnerships with telecommunications service providers to leverage on their infrastructure investment. Accordingly, the company's fixed assets related to the provision of the telecommunications services were written down. (See also: **Exhibit 6** - Chronology of PacNet's Key Milestones; **Exhibit 7** - PacNet's Asia-Pacific Operations at a Glance; **Exhibit 8** - Five-Year Financial Performance; **Exhibit 9** - Summary of Business Services Offered By Singapore's Top Three ISPs; and **Exhibit 10** - Typical ISP Revenue and Cost Components.)

SEIZING THE FUTURE

After five months as PacNet's CEO, Tan Tong Hai had had plenty of opportunity to examine the company's strengths and weaknesses relative to its competitors and the general market conditions in which it operated. Now, in order to position the ISP for renewed profitability, he needed to answer some fundamental questions regarding the company's future strategic direction. For example, given that residential dial-up access prices had become commoditized, should PacNet make a stronger commitment to the development of its broadband services line? Alternatively, should greater emphasis be placed on the development of value-added business services such as data storage and web hosting? Tan also had to determine what should be done with PACfusion, the company's e-commerce subsidiary. Another fundamental issue concerned the need to identify what markets the company should prioritize for future development. Should PacNet focus more of its resources on developing existing and possibly other services in Singapore? Or should the company make a stronger commitment to developing its presence in one or more of the five international markets in which it had already established operations? The outcome to any of these questions was far from certain. What was certain was that, in the months ahead, Tan's managerial acumen would be seriously tested.

Table 5
Recent Financial Performance

Period	2Q - 2001	1Q - 2001	2Q - 2000
Revenue	20.0	16.4	14.6
Net Income Loss	(3.1)	(3.3)	(2.9)
EBITDA	2.1	0.6	(0.3)

EXHIBIT 1
**INTERNET USER DEMOGRAPHICS AND USAGE BEHAVIOURS -
 HONG KONG AND SINGAPORE – MARCH 2001**
Demographic profile (%)

	Men	Women	15-24 years	25-34 years	35-49 years	Students	Professionals
Hong Kong	55.8	44.2	41.8	26.7	23.8	34.4	10.1
Singapore	56.0	44.0	36.0	29.6	25.1	34.6	13.5

Usage behaviour (%)

Activities	Hong Kong	Singapore
Audio-video	69.2	31.6
Chat	15.5	28.2
File transfers	38.5	18.4
Games	50.9	5.4
Instant Messaging	25.8	51.4
Mail	12.7	55.5
News	3.4	6.6

Source: Netvalue.com

EXHIBIT 2
INTERNET USAGE STATISTICS - SINGAPORE - JULY 2001

Number of Sessions per Month	15
Number of Unique Sites Visited	24
Time Spent per Site	22: 02
Time Spent per Month	8: 48: 06
Time Spent During Surfing Session	35: 14
Duration of a Page viewed	00: 35
Active Internet Universe	955,824
Current Internet Universe Estimate	2,103,331

Source: Nielsen NetRatings

EXHIBIT 3

FORECASTED E-COMMERCE ACTIVITY IN ASIA

Activity by Type (US\$ billion)

	2001	2002	2003	2004
B2B	68.6	120.3	199.3	300.6
B2C	8.2	15.6	26.4	38.0

Activity by Country (%)

	2001	2002	2003	2004
Australia	6.6	7.0	8.2	8.1
China	2.1	5.3	6.9	7.0
Hong Kong	1.7	2.6	2.6	2.8
India	0.4	0.9	1.3	1.8
Japan	69.4	64.3	58.9	60.5
Korea	4.8	4.3	4.8	4.6
Singapore	1.4	1.9	2.4	2.2
Taiwan	5.8	6.3	6.3	6.1

Source: The eAsia Report, eMarketer.com. February 2001.
Retrieved from the International Finance Corporation Website:
<http://www.ifc.org/sme/acrobat/eAsia.pdf>

EXHIBIT 4A

PROFILE OF KEY COMPETITOR: SINGNET

July 1994	SingNet established as subsidiary of then local telephone monopoly SingTel.
September 1999	Parent SingTel co-established LycosAsia, a US\$50 million joint venture with Lycos. Inc to develop localized portals for 10 Asia countries. SingNet entered into an agreement with LycosAsia to have its default homepage "powered" by the navigational portal.
September 2000	SingTel established SingTel Magix, a subsidiary dedicated to the provision of broadband Internet access services.
March 31, 2001	SingTel Full Year Financial Performance (2000/2001): Revenue * S\$4.926 + 1.2% over 1999/2000 EBITDA S\$3.290 + 8.3% over 1999/2000 Net profit S\$2.324 + 26.4% over 1999/2000 Liquid Assets S\$6.600 * 21.5% of revenues were generated from public data and private network services, which had grown by 40% over the previous year. Revenue breakdown in this segment was: S\$634.9 (leased lines); S\$232.7 (Internet); and S\$197.4 (others).

Related businesses: Parent SingTel was a controlling shareholder in the following companies:¹

- NCS - Wholly-owned subsidiary was Singapore's leading IT service and consulting provider, employing some professionals throughout the region.
- Sesami.com - B2B global trading portal
- SingPost - provided mail delivery, information communication and distribution services from more than branches and 90 agencies throughout Singapore.
- Optus - The second largest communications company in Australia, operating three divisions: Mobile; Data Business Services; and Consumer & Multimedia.²
- Bharti Group - A leading private fixed line and mobile communications service provider in India with more half a million subscribers. Subsidiaries included Bharti BT Internet, the first multinational Internet service in India.
- Advanced Info Service - Leading cellular telephone service operator in Thailand, with 3.3 million subscribers as of July 2001.
- Globe Telecom - Philippines-based full-service telecommunications provider (e.g. digital wireless, fixed line, international telephony, inter-exchange carrier and data communications services). Second largest provider of mobile services in the Philippines, with 3.5 million subscribers (as of July 2001).

Source: Company website

1 SingTel held a monopoly on the local fixed line market. Several international long distance service providers were also present. However, these players bought wholesale capacity from SingTel, which was then resold to end users.

2 Although the takeover of Optus eventually proceeded as planned, some Australian interests had raised concerns about SingTel's close relationship with the Singapore government. This was the same reason often cited in the press for SingTel's failed attempts at taking over Malaysia's TimeDotCom and Hong Kong's Cable and Wireless HKT, both of which offered a variety of telecoms-related services, including Internet access and data communication.

EXHIBIT 4B

PROFILE OF KEY COMPETITOR: STARHUB INTERNET

1996	Cyberway established; became StarHub Internet after takeover by StarHub Communications in October 1998.
<i>December 1999</i>	Launched Singapore's first "free surf" program, which attracted 100,000 subscribers in first nine days, reached 180,000 by February 2000; partnered with Yahoo! Singapore to develop co-branded website My StarHub.
<i>September 2000</i>	StarHub Communications compensated S\$1.082 billion by IDA for acceleration of complete liberalization of telecommunications market two years ahead of schedule, which occurred in April 2000. Deal calls for StarHub Communications to develop nationwide network facilities and services that will also serve the residential market
<i>October 2000</i>	StarHub Internet announced ADSL broadband services
<i>March 31, 2001</i>	First full year of operations saw parent company earn S\$308 million in revenue, with the mobile communications arm attracting more than 300,000 subscribers; StarHub Internet's subscriber base had grown to about 280,000 dial-up customers (including "free surf") and 770 corporate accounts.
<i>April 2001</i>	StarHub Communications and Singapore Cable Vision (SCV) announced pending merger, which was formalized in June 2001. SCV had previously invested S\$600 million in developing a broadband network and it held a public telecommunications license. At the time of the merger, SCV's Max TV had 265,000 subscribers, while its 15 month-old broadband service, Max Online, had 50,000 subscribers.

Source: Company website

EXHIBIT 5
TOP PORTALS IN SINGAPORE – JULY 2001

Property	Unique Audience	Reach (%)	Minutes per person
Yahoo!	683,529	71.51	0:43:41
MSN (Microsoft network)	561,541	58.75	0:43:30
Lycos Network (1)	552,459	57.80	0:18:09
AOL Time Warner	378,986	39.65	0:10:45
Microsoft	312,136	32.66	0:03:31
AsiaOne (2)	205,364	21.49	0:31:09
Pacific Internet	197,766	20.69	0:06:56
CNET Networks (3)	182,004	19.04	0:12:31
MediaCorp Websites (4)	162,888	17.04	0:17:25
About-Primedia (5)	159,725	16.71	0:08:23

- (1) – Lycos Network: set of portals that included Lycos Asia (50 percent owned by SingNet).
- (2) – AsiaOne: online version of local news print monopoly, Singapore Press Holdings.
- (3) – CNET Networks: set of portals dedicated to news and analysis of computers and related technologies
- (4) – MediaCorp: online version of Singapore's local television and radio monopoly.
- (5) – About-Primedia: multi-media news and information provider

Source: Nielsen NetRatings

EXHIBIT 6

CHRONOLOGY OF PACNET'S KEY MILESTONES

September 1995	Commenced operations in Singapore
June 1996	Commenced operations in Hong Kong
June 1997	Commenced operations in the Philippines
November 1997	First ISP to establish retail presence in Singapore
February 1999	First Asian-based ISP to list on the NASDAQ
May 1999	Acquired Australian ISP Mira Networking
June 1999	Acquired Australian ISP Zip World
October 1999	First ISP to establish LAN gaming shops in Singapore
January 2000	Launched commercial operations in India; purchases 49% interest in Thai ISP World Net & Services; acquires Sydney-based ISP Zeta Internet
February 2000	Acquired Hub Communications, a Brisbane-based ISP
March 2000	Formally launched PACfusion.com portal; awarded Facilities Based Operator (FBO) license by IDA in Singapore
April 2000	Acquired Hunterlink, an Australian ISP with points of presence in seven of the country's largest cities.
May 2000	Acquired Safe & Mansfield Travel Group Pte. Ltd
June 2000	Commenced operations in Thailand
October 2000	Launched broadband services in Singapore and Hong Kong
January 2001	Awarded telecommunications system franchise in the Philippines
February 2001	Launched new Internet data center in Singapore; CEO Nicholas Lee resigned; replaced by Tan Tong Hai.

Note:

In 1999, cash used in investing activities amounted to S\$44.5 million. In 2000, cash used for investing activities amounted to S\$34.1 million.

Source: Company Annual Reports

EXHIBIT 7

PACNET'S ASIA-PACIFIC OPERATIONS AT A GLANCE

	Revenue (million)	Subscribers	Average revenue	Churn
Singapore	\$38.3	209,765 dial-up (subscribers up 7.4%; revenue down 27%) 644 leased lines 1,519 broadband	\$9.32 dial-up; \$1,526 leased line	2%
Hong Kong	\$6.1	55,925 dial-up 465 leased lines 939 broadband	\$10.99 dial-up; \$545 leased line	3.8%
Philippines	\$10.8	48,216 dial-up 113 leased lines 0 broadband	\$19.43 dial-up; \$1,047 leased line	na
Australia	\$7.9	49,212 dial-up 835 leased lines 1,519 broadband	\$15.55 dial-up; \$139 leased line	na
India	na	10,494 dial up 0 leased lines 0 broadband	na	na
Thailand	na	9250 dial up 39 leased line 0 broadband	na	na

Source: Company Annual Report, 2000.

EXHIBIT 8

5 YEAR FINANCIAL PERFORMANCE
(YEAR ENDED DECEMBER 31)

(S\$ millions)	1996	1997	1998	1999	2000
Income statement					
Dial-up access	11.8	31.8	52.5	67.8	62.7
Leased line access	4.0	7.0	12.6	17.8	25.2
Broadband access	-	-	-	-	2.3
Value-added services (1)	0.7	1.6	2.5	5.8	8.5
Other (2)	12.5	8.5	4.3	4.0	7.5
Total Gross revenues	28.9	48.9	71.9	95.4	106.2
Cost of sales				32.3	36.9
Staff costs				21.4	40.4
Sales & Marketing				7.2	10.8
Other General & Admin.				12.3	19.5
Depreciation / Amortization				10.3	17.8
Allowance for doubtful receivables				0.6	2.2
Total operating expenses	(14.9)	(5.2)	12.4	84.1	127.6
Other income/(losses)	(0.4)	(4.6)	(0.2)	1.3	(3.9)
Net income /(loss)	(14.5)	(9.8)	12.2	2.7	(22.4)

Balance sheet					
Cash and cash equivalents (3)	1.5	1.5	2.4	53.9	18.3
Intangible assets	6.9	5.7	4.5	2.5	36.6
Total assets	38.2	41.9	44.9	133.8	141.4
Total debt (4)	20.9	31.8	10.1	8.0	21.6
Total shareholder's equity /(deficit)	1.7	(7.8)	11.1	90.8	73.7

Other					
Adjusted EBITDA (5)	(11.0)	2.4	19.4	11.6	2.0
Capital expenditures	9.8	4.4	7.0	11.9	14.3
Dial-up subscribers (6)	69,151	122,827	203,446	287,051	382,862
Leased line subscribers	227	385	593	1,434	2,097
Per dial-up subscriber	\$24.73	\$27.25	\$27.52	\$24.64	\$19.81

Notes:

- (1) Includes revenues from roaming, SMS and other products tied to dial-up accounts.
- (2) Includes revenues from website development and design.
- (3) Includes subscribers in Singapore, Hong Kong and the Philippines at the end of the period.
- (4) Includes capital lease obligations, bank borrowings and non-trade payables to related parties but exclude payables to related parties arising from transactions in the ordinary course of business.
- (5) Represents earnings (loss) before depreciation and amortization, interest income and expense, income tax expense (benefit), equity in loss (earnings) of unconsolidated affiliates, impairment in value of investments, extraordinary items and minority interests.
- (6) Includes subscribers in all six country markets.

Source: Company website. http://www2.pacfusion.com/sg/ir/f_highlight/0,7780,,00.html

EXHIBIT 9
**SUMMARY OF BUSINESS SERVICES OFFERED BY
 SINGAPORE'S TOP THREE ISPs**

	PacNet	SingNet	StarHub
Managed IP Dial Up Services *	Yes	Yes	Yes
Managed Intranet Services	Yes	Yes	Yes
Content Management	Yes	Yes	Yes
IP Voice services	Yes	Yes	No
IP Fax Services	Yes	Yes	Yes
Hosting	Yes	Yes	Yes
Web design	Yes	Yes	Yes
E-Commerce	Yes	Yes	Yes
Consulting / Project Management	Yes	Yes	Yes
Other	Software development; Domain name setup; Global roaming; and Network configuration	Intranet roaming; Domain name setup; and Global roaming	Intranet roaming; Domain name setup; Global roaming; CliQLink – fax/voice; and mail integration service
Support	24 x7 customer and technical support	24 x7 customer and technical support; onsite support outsourced	24 x7 customer and technical support
Service agreements (N.B. All ISPs had to comply with quality of service guidelines issued by the IDA)		Dedicated leased-line access to the Internet – 24 hours uptime or money back guaranteed.	
Pricing	Various plans and access methods for residential and corporate clients	Various plans and access methods for residential and corporate clients	Various plans and access methods for residential and corporate clients

* IP - Internet Protocol

EXHIBIT 10
TYPICAL ISP REVENUE AND COST COMPONENTS

Revenues	%	Costs	%
Subscription	83	Point of Presence Maintenance	30
Web-hosting	7	Customers services	26
Broadband	6	Leased lines	16
Advertising	4	Internet access	16
		Data centers	8
		Billing	4

Source: *Internet Access Providers*, Eisenmann, T. and Green, D. Harvard Business School Publishing. HBS Note: 9-801-304. 11-12-2000.