

The information provided in this section is derived from various private and/or government publications. This information has not been independently verified by the Company, the Sponsor, the Underwriters or their respective advisers.

INDUSTRY OVERVIEW

Development of the Internet

The Internet is a global network of interconnected, separately administered public and private computers and computer networks that enables commercial organisations, educational institutions, government agencies and individuals to communicate, access and share information, provide entertainment and conduct business remotely. Use of the Internet has grown rapidly since the start of its commercialisation in the early 1990s. IDC estimates that the number of Internet users worldwide will grow from about 154.9 million at the end of 1998 to about 517.1 million by the end of 2003. Asian Internet growth is projected to be equally strong, as IDC forecasts that the number of Asian Internet users will increase from about 24.4 million to about 137.5 million during the same period. This increase reflects a compound annual growth rate of about 41.3%.

This rapid growth in the popularity of the Internet is due in large part to increasing PC and modem penetration, development of the web, the introduction of easy-to-use navigational tools and utilities, and the growth in the number of informational, entertainment and commercial applications available on the Internet. Technological advances relating to the Internet have occurred and continue to occur rapidly, resulting in more robust and lower cost infrastructures, improved security and increased value-added services and content. Growth in client/server computing, multimedia personal computers and online computing services and the proliferation of networking technologies have resulted in a large and growing group of people who are accustomed to using networked computers for a variety of purposes, including e-mail, electronic file transfers, online computing and electronic financial transactions. These trends have led businesses increasingly to explore opportunities of providing Internet-based applications and services within their organisations and externally to customers and business partners.

World wide web

The Internet is based on the use of the network of servers and information available called the “world wide web”. The web is a network medium which offers content, activities and services. Examples of content available on the web include magazines, news feeds, radio broadcasts, and corporate, product, educational, research, and political information; activities include chat and web communities; and customer services include reservations, banking, games and discussion groups.

The rapid deployment of the web has introduced fundamental changes in the way information can be produced, distributed and consumed, lowering the cost of publishing

information and extending its potential reach. Companies from many industries are publishing product and company information or advertising materials through the web and collecting customer feedback and demographic information interactively. The structure of web documents allows an organisation to publish significant quantities of information while simultaneously allowing each user to view selected information that is of particular interest in a cost-effective and timely fashion.

Asia-Pacific Internet growth opportunities

IDC forecasts that the number of Internet users in the Asia-Pacific region (including Japan) will increase to about 137.5 million by the end of 2003 from about 24.4 million at the end of 1998, reflecting a compound annual growth rate of about 41.3%, while in the more developed US Internet market, the number of Internet users will increase to about 181.1 million in 2003 from about 70.1 million in 1998, reflecting a compound annual growth rate of about 20.9%. IDC research projects that Internet users outside the United States will surpass US users by the year 2000.

The Directors believe the recent economic downturn in the Asia-Pacific region has not significantly slowed the rate of Internet penetration in many individual Asia-Pacific markets, as consumers and corporate customers have discovered that Internet applications, such as e-mail and web-site advertising, represent lower-cost substitutes for comparable non-Internet products and services.

INDUSTRY OVERVIEW

IDC has projected high growth in both Internet usage and PC installations, important indicators for Internet accessibility, in the Asian market in which the Group currently operates and intends to operate (including the PRC, Singapore, Taiwan and Japan). The following table summarises key historical and projected data in the Asian markets:

	1998	2003	Projected Compound Annual Growth Rate 1998-2003
<i>(in millions except penetration and growth rates)</i>			
Hong Kong			
Number of Internet users ^(a)	0.7	2.3	26.9%
Number of PCs installed ^(a)	1.6	2.7	11.0%
Internet penetration rate	10.4%	31.9%	25.1%
PC penetration rate	23.9%	37.5%	9.4%
Population ^(b)	6.7	7.2	1.4%
Asia Pacific (including Japan)^(c)			
Number of Internet users ^(a)	24.4	137.5	41.3%
Number of PCs installed ^(a)	65.2	154.6	18.8%
Internet penetration rate	0.8%	4.5%	41.3%
PC penetration rate	2.3%	5.1%	17.3%
Population ^(b)	2,880.8	3,058.3	1.2%

Notes:

- (a) Source: IDC, November 1999.
- (b) Source: Economist Intelligence Unit, 1999
- (c) Sum of the PRC, Hong Kong, Taiwan, Australia, New Zealand, Singapore, Malaysia, Thailand, Japan, the Philippines, Indonesia, India, South Korea and Vietnam.

THE INTERNET AS A NEW BUSINESS MEDIUM

The growth in the number of Internet users, the amount of time users spend on the Internet, the increase in the number of web-sites and the rate of Internet and PC penetration is being driven by the increasing importance of the Internet as a platform for consumer services and content resources, and as an advertising medium.

The Internet is dramatically affecting the methods by which consumers and businesses are evaluating and buying goods and services, and by which businesses are providing customer services. Businesses have sought to capitalise on the Internet as a platform for consumer services through the establishment of web-sites devoted exclusively to the dissemination of information relating to their products and services.

The Internet provides online merchants with the ability to reach a global audience and to operate with minimal infrastructure, reduced overheads and greater economies of scale than other means, while providing consumers with a broader selection of products and greater convenience compared to some other shopping methods. As a result, the volume of business transacted on the Internet is anticipated to grow significantly.

Advertising

Advertisers have identified the Internet as a means for mass communication of their messages, similar in many respects to the use of advertising in traditional media such as television and radio broadcasting and print publishing. The Directors believe that advertisers have also recognised that web-based advertising may be more effective in a number of respects than traditional media advertising. The Internet allows advertisers to present messages to specific, targeted audiences, and to enable users to interact with advertising information presented in web pages. This characteristic of the Internet also permits advertisers to measure the number of impressions, or times that an advertisement appears in page views downloaded by users, through verification by independent third-party auditors. Advertisers can also measure the effectiveness of advertising in generating "click-throughs," or user requests for additional information made by clicking on the advertiser's banner linking the user to the advertiser's web-site.

THE ASIAN INTERNET MARKET

The substantial increase in the number of Internet users and web-sites and the development of Internet technologies are fuelling the expansion of two key Internet business areas: online advertising and e-commerce. IDC estimates that worldwide e-commerce revenues will grow to about US\$1,351,118 million by the end of 2003 from about US\$49,775 million as of the end of 1998. IDC predicts that e-commerce revenue in Asia will increase to about US\$304,483 million from about US\$5,454 million during the same period.

Hong Kong

According to IDC, the number of Internet users in Hong Kong is expected to increase to 2.3 million by the end of 2003 from 0.7 million at the end of 1998, representing a

five-year compound annual growth rate of about 26.9%. Given a current population of about 7 million, mainly resident in urban areas, Hong Kong had achieved a penetration rate of about 10% by the end of 1998. Similar to Singapore, Hong Kong is relatively technologically advanced, having been one of the first cities in the world to have a fully digitised telecommunications network. Hong Kong is currently developing its broadband Internet access capability to meet expected demand. E-commerce revenues are also expected by IDC to grow significantly. IDC forecasts e-commerce revenue to increase to US\$3.2 billion by the end of 2003 from US\$60.8 million at the end of 1998. Overall Internet growth is expected to be further enhanced by government driven incentives to encourage the use of the Internet such as the "Cyberport" initiative, which aims to build incubation facilities to establish Hong Kong as a technology / Internet hub for the region.

The PRC

According to IDC, the number of Internet users in the PRC is expected to increase to about 25.2 million in 2003 from about 2.4 million at the end of 1998, representing a five-year compound annual growth rate of 60.0%. Given a current population of about 1.2 billion, this represents an Internet penetration rate of 0.2%. Although the PRC is still a technologically developing country, Internet growth in the next five years is expected to be significant. Growth is expected to be supported by a reduction in access costs and proliferation of personal computers. The potential for Internet access through television-based Internet access devices, using telephone lines or through cable or satellite technology, may further accelerate Internet growth. IDC forecasts e-commerce revenues to reach about US\$6.5 billion by 2003 from about US\$8 million in 1998. As the Internet becomes more pervasive in the PRC, the opportunities for online advertising and e-commerce are also expected to expand.

Singapore

As one of the most technologically advanced countries in Asia, Singapore has one of the highest Internet penetration rates in Asia, at about 18.1% at the end of 1998 according to IDC. According to IDC, Internet users in Singapore are expected to increase to 1.9 million by the end of 2003 from 0.6 million at the end of 1998, representing a five-year compound annual growth rate of 25.9%. Singapore has a highly developed communications infrastructure with a fully digitised telecommunications network that creates a strong base for continued Internet growth. IDC forecasts e-commerce revenue will grow to US\$2.8 billion by the end of 2003 from US\$35.2 million at the end of 1998. IDC expects that continued encouragement from the government to promote Internet usage in business, home and education will accelerate further development of the Internet sector in Singapore, and that Singapore will position itself as a key Asian Internet market.

Taiwan

The Taiwan Internet market is also expected to achieve significant growth in the next five years. IDC estimates that the number of Internet users in Taiwan will increase to 4.5 million users by the end of 2003 from 1.0 million at the end of 1998, representing a five-year compounded annual growth rate of 35.1%. Given a current population of about

22 million, this represents an Internet penetration rate of 4.5%. Taiwan's Internet market is helped by the number of technology manufacturing companies based in Taiwan, as companies account for 60% of the total Internet usage according to IDC. In the future, however, Internet user growth is expected to be mainly driven by individual user growth. IDC forecasts e-commerce revenues to increase to US\$5.2 billion by the end of 2003 from US\$45.2 million at the end of 1998.

Japan

Japan has established itself as the second largest Internet market after the United States in terms of Internet users. IDC has forecasted that the number of Internet users in Japan will grow to about 60.3 million by the end of 2003 from about 11.5 million users at the end of 1998. This represents a five-year compounded annual growth rate of 39.3%. Given a current population of about 126 million, this represents a penetration rate of 9.1%. According to IDC, Japanese e-commerce revenues were about US\$4.7 billion in 1998 and by 2003 e-commerce revenues will reach US\$253 billion. According to IDC, Japan was the largest e-commerce market in Asia at the end of 1998, accounting for about 83% of total e-commerce in the Asia Pacific region.

e-Commerce

The rapid technological development of the Internet has fundamentally changed the way that consumers and businesses conduct transactions. As e-commerce becomes more popular, consumers and businesses are expected to increasingly engage in online offering, evaluating, selecting and purchasing of goods and services.

INDUSTRY OVERVIEW

The following table sets out the e-commerce revenue from different countries in Asia-Pacific region in 1998 and 2003 (forecast):

Country/Region	e-commerce revenue		Projected Compound Annual Growth Rate 1998-2003 %
	1998 <i>US\$ million</i>	2003 <i>US\$ million</i> <i>(forecast)</i>	
The PRC	8	6,547	282
India	3	1,635	253
Indonesia	7	1,364	187
South Korea	57	10,290	183
The Philippines	7	1,012	170
Thailand	10	1,346	167
Taiwan	45	5,213	159
Malaysia	18	2,066	158
Singapore	35	2,811	140
Japan	4,730	253,218	122
Hong Kong	61	3,160	120
New Zealand	40	1,566	108
Australia	<u>433</u>	<u>14,222</u>	101
Total	<u>5,454</u>	<u>304,450</u>	124

Source: IDC, November 1999

According to IDC, e-commerce revenue in different Asian countries is expected to experience levels of compound annual growth rate ranging from 101% in Australia to 282% in the PRC from 1998 to 2003.

The following table shows the split of e-commerce revenue in the Asia-Pacific region in 1999 by two-purpose components:

	Notes	Revenue					
		Asia Pacific (excluding Japan)		Japan		Asia Pacific	
		US\$ million	%	US\$ million	%	US\$ million	%
Personal use	(1)	1,135	52	1,988	15	3,123	20
Non-personal use	(2)	1,047	48	11,480	85	12,527	80
— Business use	(3)	678		n/a		n/a	
— Supply chain	(4)	<u>369</u>		<u>n/a</u>		<u>n/a</u>	
Total		<u>2,182</u>	<u>100</u>	<u>13,468</u>	<u>100</u>	<u>15,650</u>	<u>100</u>

Source: IDC, November 1999

Notes:

1. "Personal use" refers to those products/services individuals buy for themselves, family, friends, etc.
2. "Non-personal use" refers to the sum of "business use" and "supply chain". Such split is not available for Japan.
3. "Business use" refers to those products/services individuals buy to support their work/company, but that are NOT integrated into the company's product/service offering.
4. "Supply chain" purchases refer to those products/services that are integrated into the company's product/service offering.

INDUSTRY OVERVIEW

The following table shows the components of personal spending in the Asia-Pacific region (excluding Japan) in 1999:

	<i>Notes</i>	Revenue						
		Asia Pacific (excluding Japan)			Japan		Asia Pacific	
		<i>US\$ million</i>	<i>%</i>	<i>US\$ million</i>	<i>%</i>	<i>US\$ million</i>	<i>%</i>	
Hardware goods	(1)	260.38	23	795.36	40	1,055.74	34	
Travel and leisure		211.99	19	357.91	18	569.90	18	
CDs/video/music		125.50	11	139.19	7	264.69	8	
Books		147.39	13	69.59	3	216.98	7	
Computer software		151.22	13	39.77	2	190.99	6	
Brokerage	(2)	123.47	11	19.88	1	143.35	5	
Subscriptions		90.71	8	39.77	2	130.48	4	
Others		24.25	2	526.93	27	551.18	18	
Total		<u>1,134.91</u>	<u>100</u>	<u>1,988.40</u>	<u>100</u>	<u>3,123.31</u>	<u>100</u>	

Source: IDC, November 1999

Notes:

1. "Hardware goods" include electronics, automobiles, machinery, etc.
2. "Brokerage" include banking, insurance, real estate, etc.

THE INTERNET SERVICES MARKET

IDC defines Internet services as the consulting, design, systems integration, support, management, and outsourcing services associated with the development, deployment, and management of Internet sites. IDC estimates that the worldwide demand of Internet services will grow to about US\$78.6 billion by the end of 2003 from about US\$7.8 billion in 1998, representing a five-year compound annual growth rate of about 58.7%. The following table summarises the worldwide Internet services spending by region:

Region	1998 <i>(US\$ million)</i>	2003* <i>(US\$ million)</i>	Projected Annual Growth Rate 1998-2003
United States	4,642	39,015	53.1%
Europe	1,751	22,841	67.1%
Japan	545	7,476	68.8%
Asia Pacific (excluding Japan)	457	4,525	58.2%
Rest of the world	408	4,714	63.2%
Total	7,803	78,571	58.7%

* forecast figures

Source: IDC, May 1999

IDC considers that the growth of worldwide Internet services is being driven by the adoption of Internet technology by corporations and the number of Internet users online.

The Directors believe that factors driving the demand for professional services related to e-commerce solutions include a lack of staff experienced and skilled in Internet technologies, the perceived need amongst companies to take advantage of the Internet and e-commerce, the new business models being employed to conduct business online and ongoing technological changes. The Directors further believe that these factors apply to the market for these services in Asia and will contribute to strong growth in the market in the future.