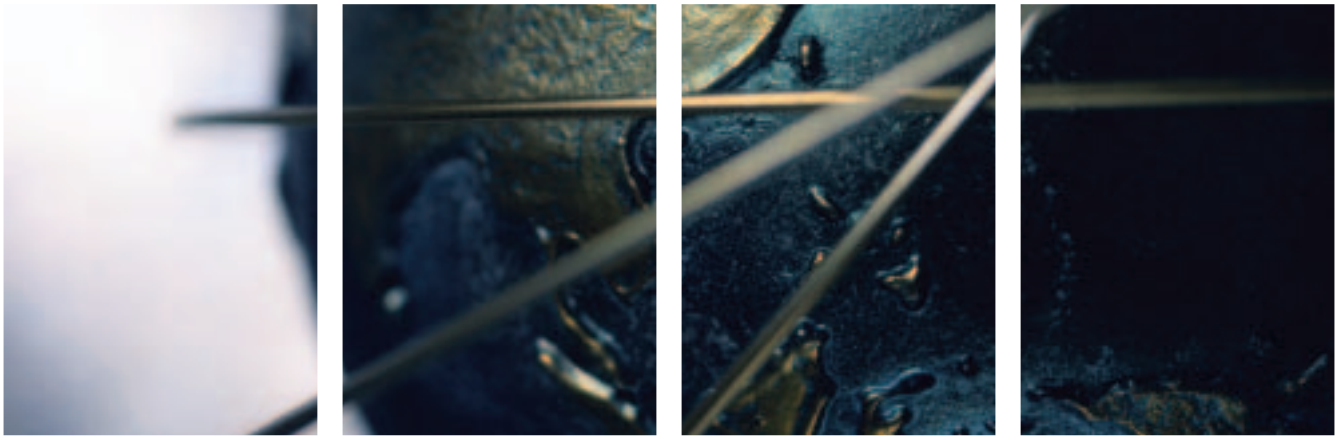
KPMG

Convergence gathers pace: Emerging trends in Asia Pacific ICT markets

INFORMATION, COMMUNICATIONS & ENTERTAINMENT

AUDIT ▪ TAX ▪ ADVISORY

Contents



Introduction

On behalf of KPMG's Information, Communications & Entertainment practice, I am pleased to introduce this forward view of the information and communications technology (ICT) markets in Asia Pacific. Produced in co-operation with the Economist Intelligence Unit, the aim of this outlook is to summarise the major short and medium-term trends at work in the region's ICT markets, as well as the key competitive challenges, opportunities and drivers of growth.

It would be easy to treat 2005-2006 as a continuation of years past: as in other regions, telecommunications service providers remain cautious in their investment, and consumers of IT and communications services are trying to squeeze more value out of existing assets. At the same time, growth of subscribers of communications services will remain extremely rapid in a few large underdeveloped markets.

The global ICT industry continues to see enormous opportunity in the Asia Pacific region, where close to 10m new mobile phone subscribers are registered every month, and which is home to the world's densest broadband markets and nine out of every 10 of its 3G subscribers. This means that for global ICT players, Asia is not only defining the growth opportunity, it is setting the standards of what next-generation services will become globally.

To that end, the following 'watchlist' details some of the most significant ICT trends in Asia Pacific.

Asia Pacific ICT Watchlist

- IT spending in the Asia Pacific region will continue to grow, although as elsewhere value will shift from sales of software and hardware to the provisioning of solutions. This will be a tougher sell in the region, where businesses like to pay for product rather than services, but it will be made easier by the fact that so much of Asia's ICT industry is becoming caught up in the largest service wave of all: outsourcing.

- As IT outsourcing firms in Asia – particularly India and the Philippines – get bigger and more global, expect competition to drive prices down.

- Interactive, rather than broadcast, content, will be what both mobile and broadband subscribers want: gaming and messaging will be big businesses in Asia.

- Mobile commerce – from electronic cash to full-fledged internet transactions – will also be led globally from Asia, not only from advanced markets like Korea, but also from innovation in the Philippines.

- Mobile data will happen in parallel with 3G development in the region – but ironically, 3G is not a direct catalyst; in many Asian markets 3G is being used to compete with existing 2G and 2.5G services on price and value, rather than advanced features.

- Unlike the US, regulatory environments will prevent Voice over IP (VoIP) service providers from making a big impact in most of Asia's consumer markets in the short term. However, enterprise markets will be a much different story – multinational companies will invest significantly in technology and services that are allowing them to us VoIP to manage their networking costs.

- In Asia, broadband rollouts will cease to be defined by access technology – wired and wireless technology will both be utilised by carriers, often simultaneously.

KPMG's Information, Communications & Entertainment practice aims to continuously provide clients with informed perspectives on critical industry issues. The following outlook not only highlights the depth of industry knowledge available from KPMG member firms, but also demonstrates an ongoing commitment to turning knowledge into value for the benefit of clients, people and the capital markets.

Gary Matuszak
Global Chair
KPMG's Information, Communications & Entertainment practice
February 2005

Executive summary

Asia Pacific ICT markets remain decidedly growth-oriented. The numbers bear this out: telecommunications service providers, particularly in China, India and the region's other less developed countries, continue to add new mobile and broadband subscribers at a tremendous pace. Investment in communications networks – most of it in next-generation infrastructure – is expected by analysts to continue outpacing that of the US and Europe.

The unique combination of immense growth opportunity and the technological sophistication of its markets means that Asia Pacific's brand of convergence will have a defining impact on the global ICT industry. Convergence of fixed and mobile telephony is already a given in Asia, where there will be nearly 1.3 mobile phones for every fixed line phone by the end of 2005. Mobility is so ubiquitous in Asia that even fixed line carriers are reinventing themselves around wireless services. In 2005 convergence will continue to gather pace – of voice and data, and of fixed and mobile technologies.

Another aspect of Asia's convergence phenomenon is its increasing integration with the global ICT marketplace and its changing role within it. Asia's markets are now more tightly integrated with other leading ICT markets globally – thanks in large part to the fact that Asia serves as the IT helpdesk and software developer to the world. Moreover, Lenovo's purchase of IBM's PC business underscores the reality that China's new generation of ICT manufacturers intends to alter the structure of global technology markets in more ways than one. They should not be underestimated.

Things are also looking up for the region's IT markets. Growth of hardware and software sales will recover from the slump of recent years to exceed seven percent in 2005, according to most analysts. The real engine of IT market growth, however, will remain outsourcing services. As ever, India, and to a lesser extent China, will be the main Asian beneficiaries of an estimated US$50bn global business process outsourcing market, but other Asian markets are also starting to attract outsourcing business.

At the same time, interviews conducted for this Asia Pacific outlook suggest that such sustained and rapid growth conceals serious risks, particularly for the industry's largest players. The challenges arising from them will come more into focus in the ensuing months.

- New mobile and broadband subscriptions are multiplying, but operators have yet to find the formula to earn substantial revenue beyond basic access and messaging. The current focus of 3G operators on low-cost voice, and of broadband providers on cheap access, threaten an early commoditisation of next-generation services. Although helping to drive their penetration, this would deprive many operators of anticipated revenue flows needed to cover investments in next-generation networks.

- India and China are no longer the only destination for outsourcing dollars in Asia. Low-cost capacity is expanding in such countries as the Philippines and Vietnam, and global firms have a growing array of options at hand in other regions. Prices of outsourcing services are likely to fall as a result. Indian firms' dominance will not be threatened in the short term, but to protect their margins they will need to generate greater value for their clients and at the same time become higher value outsourcing solutions providers in their own right.

This outlook is based on research conducted by KPMG and the Economist Intelligence Unit in late 2004. Interviews were conducted with senior executives of key players in the region's telecoms and IT industries, as well as with independent industry experts. The analysis also reflects the views of Partners from KPMG member firms in the Asia Pacific region, and it incorporates the technology forecasts of the Economist Intelligence Unit.

The purpose of this outlook is to bring into focus the most important trends at work in Asia Pacific's ICT markets over the short and medium-term. Rather than cataloging them, the aim is rather to illuminate those trends that will do most to shape – or reshape – the industry's growth dynamics and supply structure in this region. Consequently, they should also be front and centre in executive strategy discussions in Asia over the next eighteen months.

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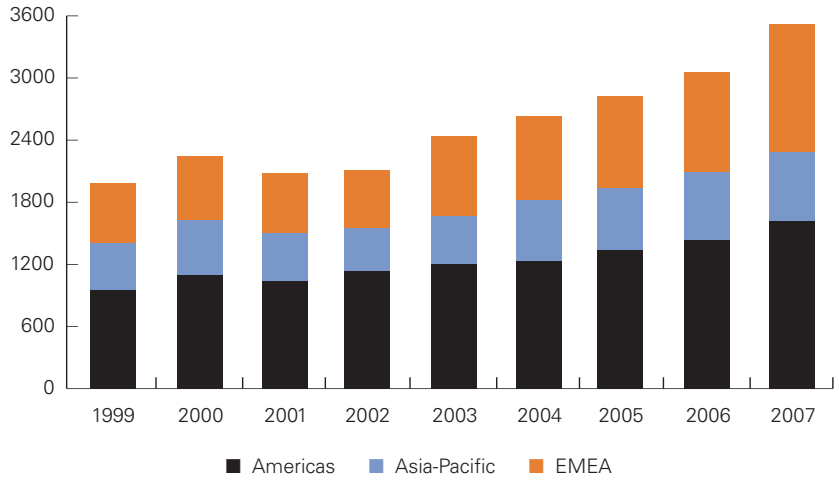
Asia Pacific ICT markets in review

Asia Pacific's technology markets are on the move upwards, as they are in most of the world. According to the World Information and Technology Services Alliance (WITSA), the global market for software, hardware, IT solutions and communications services will have expanded by over 10 percent in 2004 to some US$2.6 trillion. Asia is estimated to be over a quarter of that spend – some US$650bn – and by WITSA's projections will grow to some US$800bn by 2007.

Global ICT spending by region ($USbn)



Source: WITSA, Digital Planet 2004

Much of Asia's volume is rooted in its mature ICT markets, in particular Japan: its telecom revenues alone account for over a third of Asia's nearly $300bn spend on mobile, fixed and Internet services in 2004. But most of the growth comes from the fast-developing markets of east and south Asia: four out of every 10 new PCs sold in Asia go to China, and 1.5 to India. These two markets alone are also adding over 8m new mobile accounts every month, nearly 80 percent of total Asian subscriber additions.

Asian telecoms carrier spending on network infrastructure remains the one questionable area in an otherwise resurgent ICT marketplace. Operators must continue to invest in network assets to keep pace with organic growth, but they remain under shareholder pressure to keep costs down, and cuts in capex are still the best weapon to achieve this: leading carriers in Asia have reduced capex on average by five percent annually for the last two years. Most of this investment has been in traditional 'current generation' infrastructure, the falling prices of which (except for 3G gear) have helped to reduce the value of total spend. Equipment vendors, however, are seeing carriers in Asia finally wake up to the benefits of IP, and thus there will be measured growth in capex as carriers take the next-generation plunge.

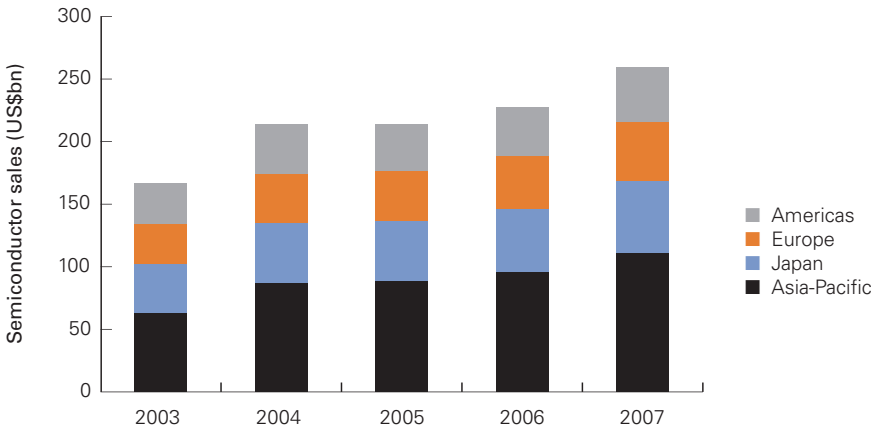
For Asia's consumer electronics manufacturers, the momentum of a good 2004 looks unlikely to carry into this year. Recent growth had been buoyed by strong growth of demand for home entertainment and other devices in the US, in which Asian vendors

play a prominent role. In addition, the Semiconductor Industry Association estimates that Asia's chip market, having ramped up production of cellphones, PDAs, computers and other IT-enabled devices to meet global demand, will have grown by over 38 percent in 2004, to some US$87bn – and that's excluding the US$48bn market of Japan.

The consumer electronics market has in fact become the primary driver of semiconductor growth, with demand for chips used in consumer devices outpacing that of business devices over the past year, according to the Semiconductor Industry Association. Business device makers such as HP have noticed and are modifying strategy to embrace the consumer market through partnerships with consumer-oriented firms. Should this trend hold, a potentially more important upshot for Asia is that the region's technology-hungry consumers will help it to become, over time, a much larger source of demand for semiconductor growth.

Nonetheless, chip technology giants like Samsung and Taiwan Semiconductor Manufacturing have begun to look a little weaker on the stock markets of late, as it appears that the recent boom is creating an inventory hangover. Moreover, beyond flat screen televisions, there is no new consumer (or enterprise) trend immediately on the horizon that would prompt major usage of new chips that they have developed. Existing ICT applications don't require them: personal computing processing power is largely regarded as sufficient, as is the power of mobile and 'smart' phones; incremental improvements in both are appreciated, but consumers are not screaming for them. Partly as a result, the Semiconductor Industry Association has predicted that Asia's markets will grow by less than two percent in 2005, and Japan's will be virtually flat.

World semiconductor sales



Source: Semiconductor Industry Association

Added to these concerns is the possibility of weaker than expected economic and jobs growth in the US. While the trends evident in 2004 are unlikely to be reversed, US-dependent technology exporters in Asia will have to hope that other global consumer markets – notably Europe and China – will pick up some of America's slack.

At the same time, the December 2004 acquisition by China's Lenovo of IBM's personal computer business underscores that the competitive structure of Asia's ICT industry – as well as the global one – is fluid. Lenovo hopes that the purchase will not only help it achieve global scale but also enable it to reach higher end markets. Whether or not it succeeds, it is representative of the efforts of China's ICT upstarts to elevate themselves to something more than low-cost suppliers.

Emerging trends in Asia's ICT demand and supply

- ICT markets in Asia Pacific are expanding strongly. According to the World Information and Technology Services Alliance, the region will have spent US$650bn in 2004 on software, hardware, IT solutions and communications services, and it projects this figure to grow to some US$800bn by 2007.

- Capital expenditure on telecoms infrastructure will continue to be restrained in the short term as carriers remain under shareholder pressure to hold the line on costs. There should be measured capex growth in the longer term, however, with carriers starting to invest in next-generation equipment.

- After solid increases in the past two years, semiconductor sales in Asia will experience flat or no growth over the next year as global spending on consumer electronics moderates, particularly in the US. After a 38 percent expansion in 2004, the Semiconductor Industry Association predicts that chip sales in Asia will grow by less than two percent in 2005.

"ICT markets in Asia Pacific are expanding strongly. According to the World Information and Technology Services Alliance, the region will have spent US$650bn in 2004 on software, hardware, IT solutions and communications services…"

The next stage of outsourcing in Asia

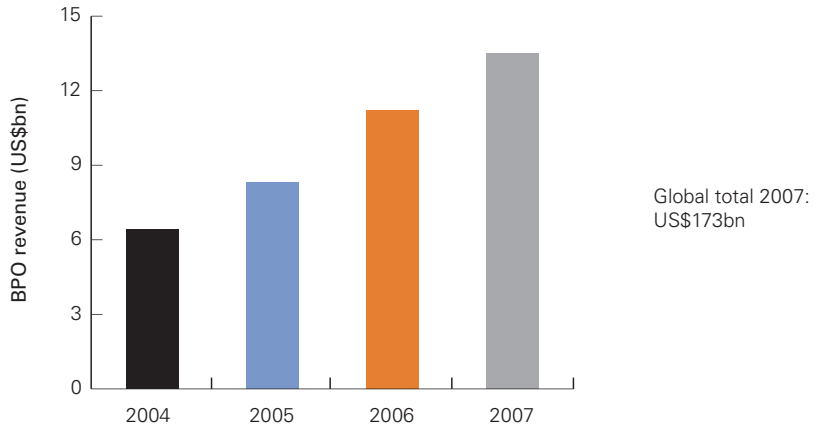
In the many-faceted world of outsourcing, Asian providers have established competitive advantage by maintaining an excellent cost-expertise ratio, particularly in the provision of business process outsourcing (BPO) and IT development services.

Toward a definition of outsourcing

The term 'outsourcing' is often used loosely to describe numerous and disparate business trends. But outsourcing generally takes a handful of recognisable forms. First, in 'traditional' IT-assisted business process outsourcing, telecoms and Internet connections allow functions such as customer care, data inputting, research or HR services to be assumed by lower-cost remote providers. Another variation is the outsourcing of complete service solutions, where entire IT departments and customer service centres are removed from the client's direct ownership, and ongoing management of ICT resources are placed entirely in the control of a remote, but integrated, service partner. A further twist involves software and IT service outsourcing, which comprise the coding and other labour-intensive tasks associated with building IT resources. This can expand from project-specific work all the way into the provision of continuous inputs to a company's R&D activities.

Numerous Asian markets have emerged as 'centres of excellence' for IT services; India and to a lesser extent China are IT outsourcing giants, and call centres and software shops are cropping up in other Asian hubs. This has even had a substantial knock-on effect for other technology-focused industries in even lower-cost markets, prime examples being software development in the Philippines and Vietnam.

India: Business process outsourcing revenue



Source: Gartner Group, analyst reports, National Association of Software Companies

Global firms will continue striving to control costs, while seeking access to better IT and business process skills. Asia's low-cost, high-skill service hubs will continue to benefit, but they, too, will need to tap the savings and efficiency gains from outsourcing. IT services are becoming commodity offerings, and Asia's purveyors of such services must find ways to compete beyond price.

Certainly many Asian markets, particularly India, have sufficient capacity and scale to continue offering high-quality, low-cost skills for some time yet. Customers, however, are becoming choosier and able to make more sophisticated choices about how to gain those skills and cost efficiencies. Outsourcing playing fields are becoming crowded, and not just in Asia: US and European firms looking to outsource increasingly have choices closer to home.

IT services – a different type of commodity…

The challenge for Asia's IT services innovators is thus to sustain their unique advantages or develop new ones. Fortunately for them, outsourcing provides two distinct opportunities for developing scale and service differentiation. The first lies in expanding the scope of processes performed for clients. India's IT services firms have quickly transformed themselves from single-process shops (answering help desk calls, coding or archiving medical records) into operations that take on increasingly more of a client's business or IT 'back office' operations. Such inter-dependency helps to strengthen client relationships and to expand business opportunities.

The second scale and growth opportunity lies in gaining increased exposure to advanced business processes and technologies, which gives firms and industries the chance to become innovators in their own right. A case in point is China's prodigious technology manufacturing sector: as the country's low-cost R&D attracts global IT and communications firms to build and test product there, and as its labs become more integral to global supply chains, local firms accrue the skills and processes to drive local innovation.

…but subject to the familiar rules of competition

Both clients and purveyors of outsourcing need to heed the lessons from the telecoms world – that competitive positions based on a price-sensitive commodity (in telecoms, bandwidth; in outsourcing, skilled labour) are not sustainable. The strategic issue of how outsourcers can go beyond the provision of services to help clients change the way they operate is thus gaining in importance.

Asia's outsourcing powers should take heed of another emerging trend that portends challenges down the road. Some of their clients are asking whether or not the cost-vs-value-added ratio is better served by buying outsourced expertise back into the organisation. Over the next two years, more enterprises are likely to opt for managing their outsourcing risk by taking the services back on board in a captive, off-shore operation. Some global technology firms are beginning to go this route with their technology partners in places like Bangalore and Shanghai. Thus, a major source of competition to Asia's emerging IT outsourcing giants may be their clients themselves.

Emerging trends in Asia's outsourcing industry

- Large IT services firms, largely Indian, have begun to regionalise their operations. They are taking advantage of comparative skills advantages elsewhere in Asia, such as China and the Philippines. In the next year, expect the outsourcer firm you deal with to be increasingly multi-site, multi-national…

- …and multi-process. Again, India is spearheading the trend to grow IT services and business process services vertically, taking over more of their clients' back offices. Expect to see global financial service firms and consumer electronics producers be the first to go this route with their Asian IT service providers.

- Despite the efforts of outsourcing houses to creep up the value chain, expect a decline in outsourcing service prices, particularly in India and the Philippines. Labour costs are increasing in each of these centres, but telecoms bandwidth pricing (a major cost component for any IT services firm) will continue to fall sharply over the next year. The greatest source of downward pressure on prices, though, will be the expansion of outsourcing capacity throughout the region.

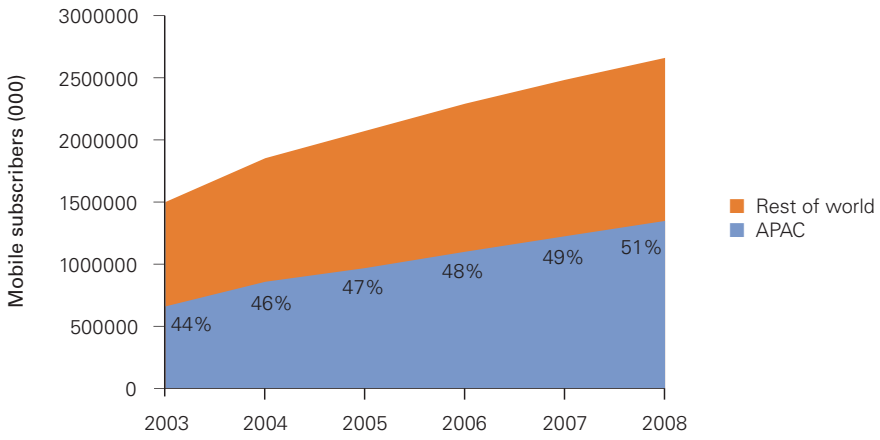
- Though not a flood, expect an increasing number of global firms to opt to buy Asian-outsourced services back into the organisation in captive, off-shore operations. Global technology firms going this route may even become competitors to Asia's emerging IT giants in local markets.

"Over the next two years, more enterprises are likely to opt for managing their outsourcing risk by taking the services back on board in a captive, off-shore operation… Thus, a major source of competition to Asia's emerging IT outsourcing giants may be their clients themselves."

Asia's mobile frontier

Wireless services are the defining aspect of telecommunications in Asia Pacific, and new business models and technologies emerging there are increasingly setting mobile standards for the rest of the world. Not only does the region represent the single largest market for organic growth opportunities in basic services – over 40 percent of the world's next billion mobile accounts will come from developing countries in Asia – but it is also increasingly the global centre of next-generation mobile development. Over three-quarters of the world's 3G subscribers today come from two Asian countries – Japan and Korea. At the same time, Asia's underdeveloped markets are helping drive the development of fixed-mobile convergence.

Asia Pacific as share of global mobile subscribers



Source: Economist Intelligence Unit, Pyramid Research

These dynamics ensure that Asia will remain pivotal in shaping global trends over the next year in mobile service development as well as application and device adoption. Yet there are clouds building. There are suspicions that the vaunted Asian innovations in next-generation technologies are not yielding the adoption required to reward operators' investment in them. And with Asia – particularly China, Korea and Japan – banging the 4G drum loudest, there is a growing concern that the pace of innovation, for once, will outstrip mobile market demand by a long shot.

Data driven

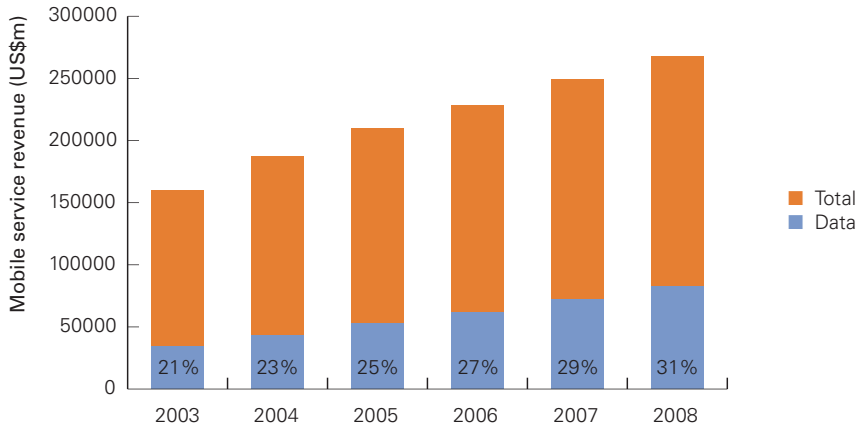
Not that there is no money in advanced mobile content markets – far from it. Even China's mobile users, while not as fervent devotees of mobile data as those in Japan and Korea (over 80 percent of whom use mobile internet services of some sort), are becoming comfortable spending money for services other than voice. Estimates place WAP service revenues for China's mobile game developers alone as a US$75m annual opportunity. One of China's top SMS content providers, Shenzhen-based Tencent Technology Ltd, reported profits up 56 percent in the first half of 2004, to Rmb220m (US$27m), largely thanks to soaring demand for premium mobile content. In the Philippines, data – mainly SMS-based services, but data nevertheless – constitutes an average of 40 percent of carrier revenue.

2.5G and 3G subscribers as share of total Asian mobile subscribers, 2003-2007

Source: Pyramid Research

Mobile data, then, is becoming an increasingly important part of carriers' balance sheets in Asia Pacific. Nonetheless, as yet it is not having a large impact on operators' overall revenue levels: the improving performance of data is largely offsetting maturing basic subscription revenue.

Mobile data as share of Asian carriers' mobile revenue



Source: Pyramid Research

3G is Asia's next wave – although not in the way that we may think

For operators, consumer adoption of advanced, 'value-added' 3G services is meant to alter this equation and deliver the desired revenue dividend. The problem, however, is that 3G service providers in the region have thus far prioritised subscriber acquisition over promotion of value-added services. While on the one hand, this may stunt the development of 'next generation services' promoted under the 3G flag, this strategy may in fact do more to hasten the growth of 3G services in Asia outside of Japan and Korea.

Subscribers in Hong Kong and Australia, for instance, have been surprised to find that Hutchison's '3' offers voice services at rates competitive to existing 2 and 2.5G service offers. Hutchison and other 3G carriers are indeed taking advantage of 3G's technical capabilities, but mainly to carry voice rather than multimedia content – better spectrum management can deliver more voice traffic more efficiently (read: cheaper) as well as deliver streaming video. As voice and 'narrowband' non-voice applications such as SMS continue to serve the vast majority of Asia Pacific subscribers' needs, 3G carriers are using the platform as an increased 'capacity play' to deliver those applications at competitive prices.

Carrier efforts to fill capacity at all cost threaten to cement subscriber perceptions of 3G services at the wrong end of the value spectrum. 3G has been hyped to Asia Pacific consumers as a monumental sea change in mobile services. In this context, the gulf between full-motion video and cheaper talk time is disconcerting to some users. More than one potential 3G convert in Hong Kong, Australia or elsewhere has been wary of signing up for service because of the belief that there is a catch – cheap handsets and big 'buckets' of talk time must be masking frightfully expensive surfing and downloading charges.

Most of the region's 3G subscribers today – mainly in Japan and Korea – have converted up from their previous packages because of voice-centric promotional offers that are not well integrated into 3G's future promise. The same subscribers have plentiful access to high-speed data and multimedia through broadband services at work and home, and increasingly prevalent WiFi services in between. This diminishes the need to access the internet through a phone – or at least pay a premium for it. Carriers will find it difficult to upsell consumers attracted to cheap talk time and fashionable handsets.

The great game

If any advanced data service gains traction quickly in Asia, it is likely to be mobile gaming, accessed through carriers' portals. US-based analyst firm IDC projects the mobile gaming market in Asia Pacific (excluding Japan) to expand from US$237m in size in 2003 to US$1.3bn by 2008, which represents growth at a compound annual rate of 40 percent. Korea is currently the dominant gaming market in the region, generating 73 percent of regional revenue last year, according to IDC. But China is coming up fast, and is expected to double its regional share to 42 percent by 2008, nearly matching that of Korea.

As in the broadband world, Asia's mobile gamers tend to prefer multi-player, interactive competitions (as compared to the US, for example, where games are more stand-alone). This is good for carriers because it requires mobile network capacity, but it will also suggest mass market solutions, in order to maximise their value to consumers (that is, potential access to many other users). This means the services will have to be affordable to young subscribers, something again which flies in the face of current mobile data pricing plans.

The risk of early commoditisation of data services extends also to transaction-based applications. In the Philippines, the use of SMS, which has transformed mobile communications overall, is gaining exceedingly broad application in mobile banking and micro-payments – all at very reasonable costs. Other 'transactional' services, such as mobile enterprise applications, are also coming to market at fire-sale prices: to convert corporate customers to its CDMA network, China Unicom is offering a variety of new corporate mobile data applications for workforce management and email for as little as US$12 an account – regardless of whether a company has five phones or five hundred.

Dedicated followers of fashion

While advanced services are languishing, the 3G handset itself is a hot consumer product in Asia, along with smartphones and other sophisticated mobile devices. More than one in three phones globally are sold in Asia. The bulk of these are sold into lower income markets (and increasingly into lower-function 'limited mobility' markets, as discussed below), but this is not always an indication of a low-value handset market. Handset sales in China are fast approaching the 100m unit mark annually; fully two-thirds of phones sold today are at least GPRS or CDMA1x capable, and over a third will have a camera installed.

Japanese and Korean manufacturers are increasingly ramping up their R&D facilities in China, not only for supporting their global development, but also to tailor models for the fast-maturing China market. At least two Japanese firms – NTT DoCoMo and Matsushita – have established 4G development labs in Beijing in the last year,

amongst the dozens of players working to define their handset specifications to the requirements of China Unicom or China Mobile.

The presently brighter fortunes of advanced handsets in Asia Pacific compared to advanced services points to an evolution in the relationship of terminal developers and carriers. These relations have traditionally been extremely close and have yielded positive results for the industry: the high take-up of mobile data in Korea and Japan owes much to the fact that carriers are marketing terminals as well as applications. But carriers have often been the dominant power in the relationship – only now, for example, are OEM brand names, rather than those of the carriers', becoming visible on handsets in Japan.

Since Asian carriers are proving less than effective in marketing advanced 3G services, handset makers, particularly those strong in consumer electronics (e.g. Samsung in Korea and NEC in Japan), are increasingly taking the promotion of next-generation applications into their own hands. In doing so they are potentially gaining influence with consumers at carriers' expense.

An example is the movement towards television-reception capable phones, pioneered by Samsung and being developed by other north Asian manufacturers. On one level it is a logical extension of mobile phone utility, which, like the camera phone before it, complements carriers' non-voice offerings. But the incorporation of TV into a phone can cause problems for the carrier: its ability to pick up TV signals 'free to air' is potentially damaging to the video-clip-download businesses of KTF or SK Telecom. This should provide a reminder to carriers that they do not control their subscribers' wallet share entirely, and will likely result in a new equilibrium in their relationships with handset makers.

Still growing

While mobile's next generation gets its start in Asia's mature markets, it will be in the developing economies that it realises its full potential. China's cellular growth – some five plus million new subscribers added every month – continues to amaze. So, finally, does India, where over a million new subscribers are added monthly. Even Indonesia and Thailand are growing their mobile bases by roughly a quarter of a million customers each month.

Mobility also continues to creep into Asia's connectivity landscape from another angle: the 'limited mobility' services based on stripped-down mobile technology and increasingly deployed by the likes of Reliance Telecom in India and by China's fixed line incumbents. Incumbent telcos in many other connection-starved developing nations, from Bangladesh to Indonesia and Vietnam, are also beginning to look at deploying this not-quite-mobile phone service. Mobility in all its forms will continue to be the core driver of telecom service expansion in Asia.

Emerging trends in the Asian mobile industry

- Expect handset manufacturers to continue redefining their position in the value chain, with additional functionality added to handset such as TV reception, which is 'off network'. At the same time, this will promote the take-up of more advanced devices overall and prime the market for mobile data services.

- Reduced – or rather, more realistic – consumer expectations from 3G services will take root as carriers continue to use the technology as a means to ensure competitiveness of basic voice service offerings, as well as to attract data users.

- The use of basic mobile messaging – SMS certainly, and increasingly e-mail – will continue to expand rapidly, ensuring that, for most Asians, the internet will be mobile.

- Asia's mobile market growth will continue to drive and define fixed-mobile convergence, along three paths:

  – the dominance of 'fully' mobile services as the access medium of choice

  – the continued development of 'limited' mobility services, as fixed carriers continue to deploy mobile tactics to stay competitive

  – the prevalence of increasingly affordable – if not particularly sophisticated – 'fully' mobile data, which will underpin the growth of WiFi and potentially WiMax as well.

"Expect handset manufacturers to continue redefining their position in the value chain, with additional functionality added to handsets… this will promote the take-up of more advanced devices overall and prime the market for mobile data services."

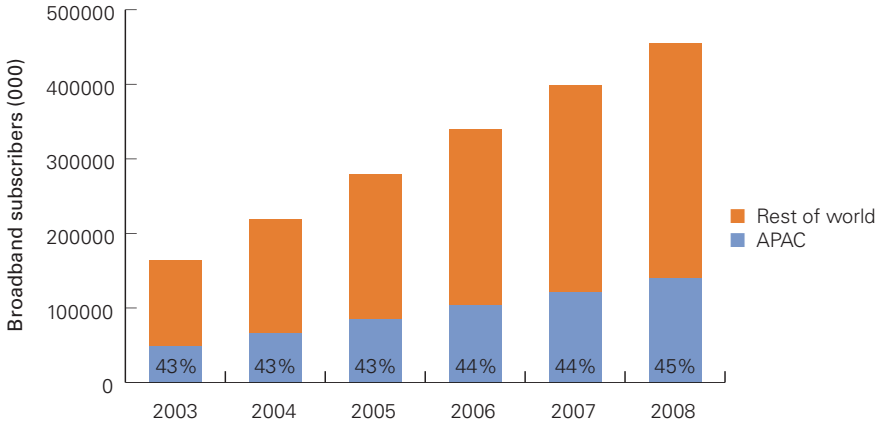
Broadband boom or blues?

Asia Pacific's famously dense broadband access markets may have grown too fast, too soon. Applications that will boost service revenues are beginning to gain some traction, but they are not likely to revive carrier fortunes in the short term. Rather, broadband services' more sustainable impact on the regional telecoms industry will be in their ability to trigger consumption and innovation within other segments.

The elusive revenue premium

Asia Pacific remains home to some of the world's mostly highly penetrated broadband markets. North Asia in particular continues to dominate the top spots in the ITU's broadband density rankings. And broadband subscriber growth remains on a steep upward trajectory thanks to competitive pressure and the push of policymakers. Worldwide, it is estimated that the number of broadband internet subscriptions will have reached around 280m by end of 2005; a quarter of this total will come from Japan, Korea and China.

Broadband subscribers, Asia Pacific v rest of world



Sources: Economist Intelligence Unit, Pyramid Research

Operators, however, have been unable to translate this burgeoning broadband subscriber base into a major source of new revenue. To be sure, broadband access fees are an increasingly important component of incumbent carriers' income. But growth of access revenue is not keeping pace with that of subscriptions. Price wars

"…broadband subscriber growth remains on a steep upward trajectory thanks to competitive pressure and the push of policymakers… Operators, however, have been unable to translate this burgeoning broadband subscriber base into a major source of new revenue."

and service promotions (often prodded by governments) have pushed prices down to the point where broadband revenue growth is doing no more than help carriers plug holes left by retreating fixed voice revenues.

Asian carriers: fixed voice, internet and data revenue as share of total revenue

	Fixed Voice		Internet and data	
	2002 %	2003 %	2002 %	2003 %
Chunghwa Telecom	56	53	23	24
Telecom Malaysia	65	53	12	11
SingTel	34	31	25	25
China Telecom	85	81	7	9
PCCW	52	40	25	22
NTT	49	48	6	6
Korea Telecom	42	41	13	16
Telstra	37	37	13	13
Telecom New Zealand	54	54	16	18

Source: Operators

New 'converged' broadband content and applications are beginning to be adopted, but the revenue generated from these thus far tends to elude the carriers that have made the initial technology investments. Take Japan's Passive Optical Network (PON) infrastructure, which serves over two-thirds of the country's local access network. Thanks to this, and the estimated two trillion yen annually that is ploughed into upgrading the local loop, NTT's fibre-to-the-home broadband subscriptions are expanding by over 50,000 monthly. Yet it was the relatively new broadband service provider Yahoo!BB that kick-started Japan's high-speed revolution with competitively priced DSL service. It is also the first carrier to popularise VoIP services over broadband – to the point where 90 percent of its subscribers use it, generating 25 percent of its revenue.

In the region's mature broadband markets, carriers have experimented with various models, usually involving broadband content, to squeeze more revenue out of fatter pipes. Such strategies have been effective in helping to preserve subscriber market share or reduce churn, but none have contributed to growth in average user revenue. Taiwan's incumbent Chunghwa has had reasonable success in folding streaming video content into its market-leading DSL service – but after enormous capital and opex outlays in the face of competition from other carriers, many with their own TV or multimedia application businesses. Hong Kong's PCCW is adding more broadband customers to its DSL-based CATV service than the city's incumbent cable operator is. Australia's Telstra has significantly beefed up its holdings in broadcast and online/multimedia content properties and has now exceeded 1m broadband subscribers. But neither have taken much more money off the average user; PCCW generated roughly the same revenue from broadband in 2003 as the year before – with 30 percent more customers, many of whom subscribe to its broadband TV service.

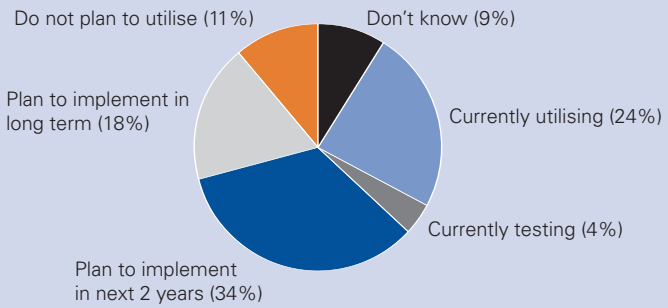
In Asia's emerging markets, by contrast, the main broadband challenge is simply to roll out services cost-effectively to build sustainable subscriber bases. Thus, new service and marketing plans are being deployed, some of which are borrowed from the mobile world. A case in point is pre-paid broadband services, which Philippine operators are experimenting with as a way slowly to build the broadband opportunity into a mass market on par with the flourishing mobile market.

VoIP to the rescue?

An application that could revive broadband's revenue prospects quickly is a distinctly 'last-generation' one: voice. Integrating voice into broadband services – whether through economical VoIP solutions or through clever packaging – is beginning to take hold as a marketing notion amongst Asian carriers. It is particularly appealing to alternative broadband service providers not only as a new point of differentiation from the incumbents – in which Japan's Yahoo!BB has been a notable success – but also as a way to prise open a revenue source that the incumbents still hold tightly.

Asia's policy environments are a stumbling block to widespread VoIP adoption, however. Regulators remain divided on the legality of VoIP and whether data (or 'value added') service providers should be able to carry voice. Fixed-line incumbents have been lobbying – successfully in the Philippines – to keep VoIP regulated as a voice offering, thus keeping it out of the hands of newcomers, such as internet service providers and CATV companies that could use it the most.

Asia Pacific firms' plans for VoIP



Source: AT&T/ Economist Intelligence Unit global survey of corporate executives on "Networking and business strategy", April 2004

A notable exception is China, where the incumbents China Telecom and China NetCom have for over two years been willing participants in the demise of circuit-switched long distance services, to the point where VoIP is now two-thirds of all long-distance voice traffic in the country. Japan aside, VoIP in the region has largely been the preserve of pre-paid card IDD retailers, notorious 'category killers'. Which means that carriers that finally jump on the VoIP bandwagon will need to tap the enterprise market to generate substantial value.

Game on

Online gaming is one broadband service that has caught fire in Asia. Subscription-based networked games are estimated by Korea's Ministry of Information and Communications to have generated 600 billion won (US$540m) in revenue last year, and will grow 25 percent annually through 2005. Online gaming is in many ways an application ideally suited for Asia's broadband markets. Home-grown gaming industries have developed in tight proximity to one another, and these clusters have developed close connections with content developers and service providers. This has allowed for rapid best practice development and easy testing of local and regional consumer interests. And sophisticated and dense broadband networks, particularly in North Asia, have helped accelerate the development of the more popular multi-player games.

Asia's ICT policy makers, however, are beginning to see online gaming as a double-edged sword. Governments have fostered gaming development as a high-potential broadband application that is good for local cottage industries and good for service providers, and which also has benefits in promoting IT literacy amongst youth. At the same time, Asian governments are growing increasingly worried about the social impact online gaming is having on the young. In Thailand and China, governments have gone as far as banning certain online games or closing internet cafes due to excessive game-play by schoolchildren. Multi-player gaming will remain a popular broadband service in Asia, but government action in some countries could create limits on its growth.

In danger of being squeezed out

For Asia's broadband providers, the biggest problem with online games – as with e-commerce and just about all services facilitated by broadband – remains that they see little, if any, of the revenue generated by them. Virtually nothing of Korea's half-billion dollar gaming market ends up in the coffers of Korea Telecom or Hanaro, the leading broadband operators. Mobile operators have proven more adept than fixed carriers at shaping the online experiences of their subscribers, and at retaining a sizeable chunk of the proceeds from services flowing over their connections.

This also serves to segregate Asia's carriers from the primary sources of innovation that fast internet service is fostering. Operators must find a way to insert themselves more intimately into the value chains that are linking up to deliver gaming content, commercial services or voice. Operators in mature markets that fail to engage content developers in revenue-sharing relationships will fail to realise any scalable revenue from what should be the chain's most valuable link – the connection to the broadband subscriber – and will relegate themselves to the commodity business. For carriers in Asia's developing markets, an early start in exploring revenue-sharing relationships with content providers will save considerable pain down the road.

Some carriers in the region are taking proactive stances to 'own' as many content and service links as possible; PCCW and Chunghwa are two, and Telstra has made acquisition of content a distinct component of its overall broadband strategy. However, self-sufficiency may be an admirable goal in broadband access, but it is unattainable and self-defeating in content – there is too much of it to control, and the carrier that confines the user to its own proprietary content is unlikely to capture much of the pie.

Emerging trends in Asia's broadband markets

- Governments will continue to push convergence-oriented broadband policies. Thus, expect policy-influenced carriers such as Japan's NTT to continue to lead in the pursuit of 'fibre everywhere' to the extent that DSL competitors begin to feel the pinch.

- The ensuing competition will sustain price erosion of 'basic' broadband access in Japan and the rest of North Asia. As a result, the 'download gap' (measured in cost per megabyte) between North and South Asia will continue to widen.

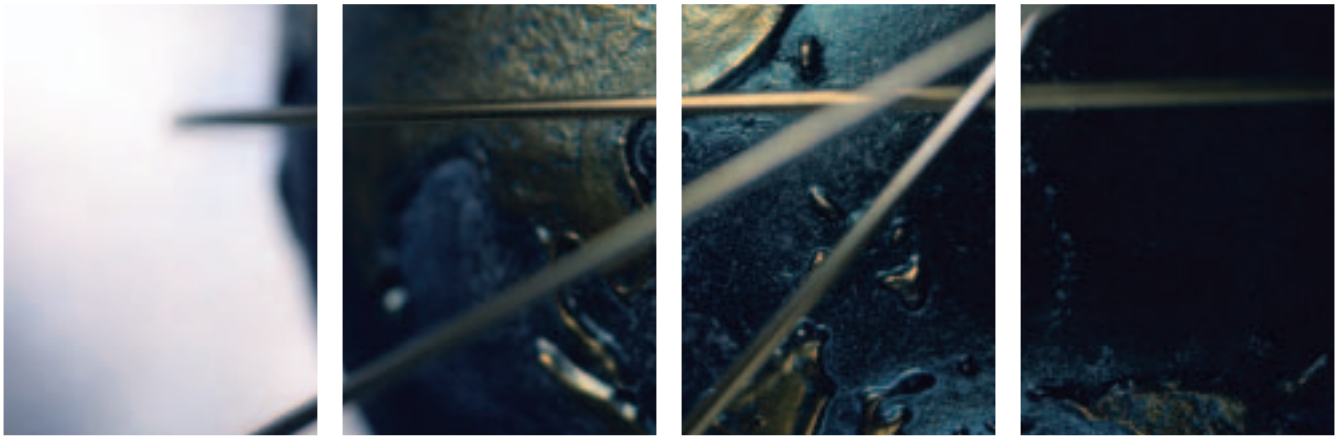
- Operators will cool toward the broadband plus broadcast service model. Where competition for broadband subscribers is high, cable TV or video-on-demand offers have been shown to reduce churn. But the offer is not sufficiently distinct in mature markets to expand the subscriber base, as Asian consumers have too many multimedia products and services at their disposal.

- The next year will be 'make or break' for broadband service carriers to increase their direct participation in online interactive entertainment, such as gaming. The models for doing so are likely to feature mobility; as a result, expect the successful carriers in this endeavour to have substantial presence in both mobile and fixed markets.

- Broadband wireless access will gain adherents in Asia Pacific over the next year, but as a complement, rather than substitute, to fixed broadband services. Wireless will not gain much traction as a consumer broadband play in developing markets – laptop penetration is too low, and income levels mean that consumers will still access broadband casually, in the internet cafe or PC kiosk, or increasingly through pre-paid service at home.

- Broadband wireless in the enterprise in developing Asia is a different story. Expect significant fixed wireless deployment in central business districts throughout South and Southeast Asia to tap corporate thirst for bandwidth.

Contact us



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