



Group Enterprise

MARKET TRENDS

The regional and global operating environment continues to change rapidly for businesses and governments. Enterprises are leveraging greater connectivity and infocomm technology (ICT) to operate with agility, expand their market reach and achieve market competitiveness. Yet they also face challenges in ensuring that their assets – data, infrastructure and systems –

remain secure and scalable in an increasingly digital world.

As a leading ICT services provider in Asia Pacific, businesses and governments trust Singtel to provide integrated systems, innovative solutions and secure networks – enabling them to operate effectively anywhere, anytime.

STRATEGIC PRIORITIES

To strengthen our market leadership position, we are moving boldly into three priority areas:

- **Cyber security:** We aim to be a global cyber security service provider that can meet the diverse needs of governments and enterprises with trusted and differentiated solutions.
- **Enterprise cloud services:** Through our comprehensive suite of cloud services, we are helping enterprises to increase productivity, achieve lower costs and accelerate innovation.

- **Smart cities:** We are developing innovative solutions and intellectual property (IP) to position Singtel as the lead partner for Singapore's Smart Nation Programme. With these capabilities and IP, we aim to play a key role in enabling smart cities in the region.

OUR ASSETS/ STRENGTHS

Singtel caters to the ICT needs of enterprises and governments with its assets, scale, resources and expertise such as managed services, enterprise mobility, systems integration and applications.

We work closely with our customers to proactively identify and anticipate their needs, innovate and co-create customised solutions to improve their operations or whole cities.



One of the Singtel Group's key sources of competitive advantage is the reach and quality of its infrastructure, spanning fixed and mobile networks, data centres, a network with more than 200 direct points of presence in 160 cities around the world and a growing suite of cyber security assets.

In 2014, we continued to expand our infrastructure to maintain our strong leadership position in the Asia Pacific region. For example, we are the leading provider of international Internet Protocol Virtual Private Network (IP VPN) services in Asia Pacific, with a 19.6%⁽¹⁾ share in 2013. We also lead the regional market in international Ethernet Virtual Private LAN services and dedicated peer-to-peer services, with market shares of 19.6% and 14.4%⁽¹⁾, respectively.

These network services are essential for providing secured connectivity, and we are two to three times larger than the next provider in the Asia Pacific region in terms of revenue share.

We are investing in the trans-Pacific FASTER and SEA-ME-WE 5 submarine cable networks. These new data superhighways will enable the equivalent of thousands of high-definition videos to be transmitted every second. We have also opened a second data centre in Hong Kong to serve the Greater China region, bringing the number of world-class data centres in the Singtel EXPAN network to 12.

ENHANCING ENTERPRISE CLOUD CAPABILITIES

In the enterprise cloud services arena, we have seen strong take-up of our cloud infrastructure that we have built for the Singapore government and enterprises in the region. We have also been selected to be on the panel of providers for cloud services to the Australian Federal Government.

Singtel has built a strong partnership with Microsoft to help businesses and governments migrate their Microsoft applications and services to the cloud. We also acquired Australia-based company, Ensyst, in December 2014 to bolster our capabilities in the growing market for cloud-related professional and managed services in Australia and Asia Pacific.

PROTECTING ORGANISATIONS FROM CYBER THREATS

As more business and government activities move onto the internet, cyber security is becoming a critical concern. The frequency and sophistication of threats that enterprises and governments face are growing every day, making it even more challenging for organisations to protect their assets, customers and reputations.

According to the inaugural Singtel FireEye Threat Intelligence report⁽²⁾, 23% of enterprises in Singapore and 37% in the Asia Pacific region detected advanced and persistent malware – or malicious software code – in their systems between July and December 2014.



>200

POINTS OF PRESENCE IN 160 CITIES AROUND THE WORLD



>805,000 sq ft

DATA CENTRE SPACE, THE LARGEST IN SINGAPORE

Notes:

⁽¹⁾ IDC Asia/Pacific Semiannual Fixed Line Telecom Services Tracker (2H2013).

⁽²⁾ Singtel FireEye Threat Intelligence report is a bi-annual publication by Singtel and FireEye about evolving cyber threats in Southeast Asia.



The Outpatient Pharmacy Automation System uses an intelligent conveyor system to dispense medication at the SGH



CUSTOMER CASE STUDY: SINGAPORE GENERAL HOSPITAL

Singapore General Hospital (SGH) is Singapore's largest hospital. The institution needed to remodel its medication dispensing system at the outpatient pharmacy to address rising patient volumes and the shortage of skilled staff.

The Outpatient Pharmacy Automation System is an award-winning solution that combines LED-guided picking and barcode scanning technology, automated dispensing machines and an intelligent RFID-enabled conveyor system. SGH uses the system to manage the picking, packing, labelling, verification and assembling of medication and the hospital's dispensing queue workflow. It has reduced waiting times for patients, while increasing accuracy and efficiency for the hospital.

The solution was developed jointly by SGH, Integrated Health Information Systems (IHIS), Singtel and a consortium of other Singaporean companies.

"The Outpatient Pharmacy Automation System enables SGH to provide over 80% of our patients with medicine within 15 to 30 minutes instead of 30 to 45 minutes previously, and reduces errors in picking medicine by about 38%. This cutting-edge solution has placed SGH at the forefront in the use of technology to improve our operational efficiency, ensuring safety and enhancing the overall experience of our patients."

LIM MUN MOON
Pharmacy Director
SGH

To help our customers confidently and securely take advantage of productivity and efficiency gains offered by digital technologies, Singtel has been building our cyber security capabilities organically and through investments and partnerships. Our goal is to ensure that Singtel remains the natural and trusted choice for enterprises looking for a partner to secure their networks, infrastructure and services.

We announced a partnership with Akamai in September 2014 to provide cloud-based cyber security solutions which complement Singtel's suite of managed security services.

In October 2014, we formed a partnership with FireEye, a global leader in managed cyber defence capabilities, to provide services to customers and enhance the cyber security ecosystem in the Asia Pacific region.

We established the Singtel FireEye Advanced Security Operations Centres (ASOCs) in Singapore and Sydney, and introduced the Singtel Managed Defence powered by FireEye solution. These new ASOCs are linked to FireEye's three existing global ASOCs to provide enterprises with real-time intelligence on cyber attacks. The centres are also integrated with Singtel's network operations and Akamai's cyber security solutions,



CUSTOMER CASE STUDY: **WESTPAC BANKING CORPORATION**

Westpac Banking Corporation (Westpac) is one of Australia's largest banks. As part of its regional expansion, it required an integrated ICT services provider that could support its regional aspirations.

Singtel won a new five-year deal with Westpac to provide managed communications infrastructure and international data services to serve the bank's offices in Asia Pacific, New Zealand, the UK and the US.

Leveraging the reliability of its network, including the expanded 4G capabilities in Australia, Singtel will provide service management to more than 13,000 mobile

devices across Westpac's fleet in its home country. Singtel was also selected to transform Westpac's contact centre operation to enable it to respond to changing customer expectations, including social and mobile customer interactions.

Singtel's leadership in enterprise data services, world-class infrastructure and delivery capabilities enable Westpac to achieve 24/7 visibility of its business across the Asia Pacific region and beyond. Partnering Singtel allows Westpac to transform its data and network operations so that it can serve customers even more efficiently and deliver higher levels of innovation to meet their needs.

giving us a more holistic view of customers' networks and internet traffic. These linkages enable faster detection of threats and more effective responses. Singtel and FireEye will train up to 150 cyber security experts to operate the ASOCs.

In another big step towards our goal of becoming a global cyber security managed services provider, we announced plans to acquire Chicago-based Trustwave for an enterprise value of approximately US\$850 million⁽¹⁾.

Trustwave is the largest independent managed security services provider in North America and has presence in Europe and Asia Pacific. Singtel will leverage its expertise and talent, including its team of more than 1,200 security professionals, its global security asset of five

security operations centres, cloud-based security product suite and elite SpiderLabs forensics and threat research unit, to broaden and deepen our cyber security capabilities.

In Singapore, we are partnering the Economic Development Board to develop the Asia Pacific Cyber Security Competency Centre. This facility will enable Singtel to collaborate with leading international research and academic partners on big data security analytics and predictive security intelligence, develop threat scenarios and test cyber security solutions.

To meet the supply of certified cyber security professionals, we are partnering Singapore Polytechnic to offer scholarships for infocomm security studies. Under the Singtel Cadet Scholarship Programme,

Singtel will provide qualified students with internships and career opportunities to enhance Singtel's cyber security capabilities.

CREATING SOLUTIONS FOR SMART CITIES

We work closely with enterprises to develop solutions that give them a competitive edge. We also work with governments to develop technologies and solutions that improve living standards for their citizens. We are participating in Singapore's trials of Heterogeneous Network or HetNet, with the aim

Note:

⁽¹⁾ The acquisition is subject to fulfilment of certain conditions precedent, including relevant approvals from regulatory authorities and other third parties.

of validating the joint use of different mobile and wireless technologies to provide pervasive, seamless high-speed internet access. Our efforts complement the government's vision to make Singapore the world's first Smart Nation.

For the healthcare industry, we have pioneered an automated pharmacy dispensing system at two public hospitals in Singapore. The solution manages how medications are picked, packed, labelled and dispensed through the integration of automated dispensing machines and scanners. This enhanced workflow reduces patient waiting times while increasing efficiency and accuracy in the medication dispensing process.

In February 2015, we introduced SURF@NCS. This is a living lab for government agencies and enterprises

to test smart city innovations in education, healthcare, transport and public safety. The lab will also help build an ecosystem of partners including global technology players, local start-ups and research institutes, to co-create smart city solutions and build talent.

We are developing a talent pipeline to drive smart city innovations including collaborating with local educational institutions to develop curriculum in data analytics and communications engineering. Singtel provides internship programmes and on-the-job training for young talents to apply what they have learnt in real work context and build their careers in these areas.



CUSTOMER CASE STUDY: **FULLERTON HEALTHCARE**

To provide efficient and seamless healthcare solutions to its clients and patients at more than 130 fully owned clinics across Asia Pacific, Fullerton Healthcare Group required a one-stop telecommunications and ICT provider.

Fullerton Healthcare chose Singtel to provide a range of critical services including telephony, secure and dedicated high-speed fibre links, and mobile services. It also subscribed to Singtel's managed services for the ongoing support of its integrated voice, video and data communications. In addition, Singtel is helping Fullerton Healthcare to move to a secure and highly reliable cloud solution.

"In order to effectively serve more than 25,000 organisations across five countries in the region, Fullerton Healthcare Group relies on Singtel to provide a one-stop integrated communications capability. Singtel's managed services and secure cloud offerings allow us to stay agile, with the flexibility and scalability to deploy new applications and services at lower costs."

STEVEN YEO
CIO
Fullerton Healthcare Group Pte Limited