

## **FACT SHEET (June 2009)**

- (A) Next Generation National Broadband Network**
- (B) Next Generation Broadband Services**
- (C) Wireless@SG**
- (D) Grid Service Provisioning in Singapore**

### **(A) Next Generation National Broadband Network**

The Next Generation National Broadband Network (Next Gen NBN) is Singapore's nation-wide ultra-high speed fibre network. It is a strategic enabler of economic and social growth, transforming the way we work, live, learn and interact. It will offer competitively priced broadband speeds of 1Gbps and beyond to users at the workplace, homes, schools and learning institutions, as well as other outdoor locations. Next Gen NBN will achieve 60 per cent network coverage by end-2010 and 95 per cent by mid-2012. Services are expected to be available on Next Gen NBN as early as 1<sup>st</sup> half of 2010.

#### **Effective Open Access Industry Structure**

The Next Gen NBN comprises three key conceptual industry layers. The Network Company or NetCo, is responsible for the design, build and operation of the passive infrastructure layer. Leveraging the Next Gen NBN NetCo's passive infrastructure is the Next Gen NBN Operating Company (OpCo), which is responsible for the design, build and operation of the active infrastructure to provide wholesale broadband connectivity to downstream operators, in particular Retail Service Providers (RSPs). These RSPs will in turn compete to provide innovative services to end-users. To ensure that downstream RSPs have effective open access to the Next Gen NBN, the Next Gen NBN NetCo is required to be structurally separated from downstream operators and the Next Gen NBN OpCo is required to be operationally separated from the downstream RSP entities. An effective open access industry structure will spur greater vibrancy and competition at the services layer to benefit end-users.

#### **Selection of Next Gen NBN NetCo and OpCo**

The Next Gen NBN NetCo and OpCo Request-for-Proposals (RFP) were issued on 11 December 2007 and 7 April 2008 respectively. The Next Gen NBN NetCo RFP closed on 5 May 2008 with submissions from Infinity Consortium and OpenNet Consortium. IDA announced the selection of the OpenNet consortium as the Next Gen NBN NetCo on 26 September 2008.

At the close of Next Gen NBN OpCo RFP on 5 December 08, IDA received bid proposals from Intellinet Consortium, MobileOne Ltd, Singapore Telecommunications Ltd and StarHub. IDA announced the selection of StarHub's OpCo proposal on 3 April 2009. StarHub will establish the Next Gen NBN OpCo, which is named Nucleus Connect.

### **Rollout of Next Gen NBN**

By 2010, 60 per cent of homes and offices can already expect to have access to this new, pervasive, all-fibre network. By 2012, the coverage will be nationwide.

In its deployment, OpenNet will be making use of existing ducts and other underlying infrastructure to minimise disruption to the public. To encourage premise owners to connect their homes and businesses to the network, OpenNet is required to waive installation charges for home owners when the network first reaches their premises for the initial 15 metres to its termination point.

Under a Universal Service Obligation, which will take effect from 2013, OpenNet is required to fulfill all reasonable requests to install fibre termination points in homes, offices and buildings.

Nucleus Connect will work together with OpenNet, on a coordinated nationwide rollout of the network. It is expected to start offering commercial services by the first half of 2010, and be ready to fulfil its Universal Service Obligations of meeting all reasonable requests for service from 2013.

A Rollout Committee, which includes both the NetCo and OpCo, will serve as a forum for both parties to coordinate their respective rollouts.

### **Project Milestones**

Key project dates are as follows:

<b>Milestones</b>	<b>Timeline</b>
Issue of the Next Gen NBN NetCo RFP	11 December 2007
Issue of the Next Gen NBN OpCo RFP	7 April 2008
Next Gen NBN NetCo RFP Submission Deadline	5 May 2008
Next Gen NBN OpCo RFP Submission Deadline	5 December 2008
Award of Next Gen NBN NetCo RFP	26 September 2008
Award of Next Gen OpCo RFP	3 April 2009
Next Gen NBN coverage to 60% of Singapore	End-2010
Next Gen NBN nationwide	Mid-2012

## **(B) Next Generation Services**

Beyond infrastructure deployment, IDA aims to achieve impactful next gen broadband services deployment that maximise the economic and social benefits from the new all-fibre network. This will involve working with the public, private and people sectors for a comprehensive and inclusive approach.

To catalyse the development, commercialisation and deployment of innovative next generation applications and services, IDA will work with the industry to set up of the Next Gen Innovation Centres (NGICs). Through their expertise, user education initiatives, development and test facilities, NGICs allow major corporations to use Singapore as a test bed for new products, services and business models to meet the emerging needs of enterprises and consumers. By going to an NGIC, companies can avoid the costs of acquiring or building their own infrastructure, to better focus on the development and delivery of Next Generation services that meet market needs.

The first NGIC, Cisco's Enabling Platform Innovation Centre (EPIC@SG) was launched on 12 Dec 08. EPIC is the first centre in the world dedicated to help conceptualise, create and deploy next generation services to meet public and enterprise needs.

### **Next Gen NBN & Services Exhibition at imbX 2009 (Singapore Expo Hall 3)**

This year's imbX will showcase a plethora of Next Generation services that can be powered by Singapore's Next Gen NBN. The exhibition is divided into four distinctive themes of '*Live*', '*Work*', '*Learn*' and '*Play*' with more than 20 hands-on applications.

Some of the Next Generation services to look out for include IPTV and Home Telemedicine for '*Live*', Office High Definition Video Conferencing and Grid Services for '*Work*', Immersive Learning Lab and Interactive Digital Signage for '*Learn*' and '*Play*'.

Please refer to Annex A for Factsheet on IDA's Next Gen NBN and Services Exhibition at imbX 2009.

## **(C) Wireless@SG**

Wireless@SG launched its services in December 2006 with the aim of extending broadband access beyond homes, schools and offices to public places. There are now close to 7,500 hotspots covering Singapore, offering everyone free wireless access in public areas. This includes high human-traffic areas such as at the Changi International Airport, Central Business District, downtown shopping belts like Orchard Road and residential town centres.

There are now 1.3 million Wireless@SG subscribers since its launch two and a half years ago. Today, over 428,000 users chalk up a monthly average of more than three hours on the network, using it to work, check e-mails, blog and surf the Internet.

The next phase of Wireless@SG will focus on enhancing user experience and driving the adoption of innovative consumer and enterprise services. Consumers and enterprises can look forward to the following:

- i) Higher access speed;
- ii) Easier to login to the network;
- iii) Easier access to user relevant applications and services;
- iv) A wide range of services in the areas of payment, security, advertising and location-based applications

### **Free Wi-Fi till 2013**

In anticipation of future demands for higher speed Internet as media-rich online content becomes the norm, the access speed will be doubled to **1 Mbps** from Sep 2009 and the free service will continue until **31 March 2013**.

With this enhancement, Wireless@SG users will be able to easily access media-rich and interactive websites as well as use bandwidth-intensive applications like video streaming.

### **Seamless and Secure Access (SSA) From 2010**

Operators will introduce Secure and Seamless Access from Jan 2010 to enable secure automated logon to the network (much like to a user how mobile phones automatically log-on to the mobile networks when the device is switched on). This significantly enhances the user's experience in using Wireless@SG, particularly for users who are using their mobile devices like Wi-Fi capable mobile handsets to use the network. SSA will also facilitate deployment and usage of innovative services, e.g., VoIP, instant messaging, real-time feeds, etc.

## **Wireless@SG Dashboard**



The operators will also launch a Wireless@SG dashboard in Jan 2010. The Dashboard is a mobile portal that will host a variety of Wireless@SG applications and services. With the Dashboard, users can conveniently and instantly download and access these services and be notified of the latest Wireless@SG updates. A hotspot finder will also be available to allow users to search and locate nearest Wireless@SG hotspots.

## **Centralised Location-Based Engine**

By Jan 2010, the operators will integrate all the Access Points information in a common database. Third-party application developers will be able to develop location-based services applications (LBS) leveraging on this information. Consumers will be able to enjoy LBS in all Wireless@SG hotspots regardless of operators.

## **Wireless@SG Services**

The industry will rollout more services over the Wireless@SG network such as advertising, location-based services, cashless payments and facility monitoring, etc.

IDA welcomes the industry to collaborate with the operators in deploying both consumer and enterprise services.

Wireless@SG Operators' contact details are as follows:

<b>Wireless@ SG Operator</b>	<b>Website</b>
iCELL Network Pte Ltd	<a href="http://www.icellwireless.net/">http://www.icellwireless.net/</a>
QMax Communications Pte Ltd	<a href="http://www.qmax.com.sg">http://www.qmax.com.sg</a>
Singapore Telecommunications Ltd	<a href="http://home.singtel.com/wirelessSG/">http://home.singtel.com/wirelessSG/</a>

## **(D) Grid Service Provisioning in Singapore**

The National Grid is built upon commercial grid service providers, and seeks to equip industry and consumers with on-demand and pay-as-you-use access to high performance computing capabilities, software, and immense data storage capacity.

Singapore is one of the first countries in the world to embark on such a national effort that draws together commercial Grid Service Providers (GSPs) to offer industry and government consumers with on-demand and pay-as-you-use access to high performance computing capabilities, software, and immense data storage capacity.

On 17 June 2008, IDA awarded three consortia to be the first National GSPs. They are led by the Singapore Computer Systems Ltd (of which a 60% stake was acquired by SingTel in August 2008), PTC System (S) Pte Ltd, and New Media Express Pte Ltd.

With these commercial GSPs, grid services which are based on a pay-per-use model are now available to the masses. Businesses, from multi-national corporations to small-and-medium sized firms, can enjoy:

- Cost savings, since they no longer need to fork up hefty upfront investments in IT servers or software, and pay subsequent maintenance costs
- Better utilisation of IT resources, as they buy only what they need, and reduce idle computing resources.
- Increased competitiveness, as they can focus on core competencies instead of IT maintenance, by leveraging Grid's high performance computing capabilities to deliver new and innovative business models.

The National GSPs launched their commercial services on 1 November 2008. Businesses can now approach any of the three consortia to obtain grid services.

By 2011, more than 3,000 SMEs are expected to leverage the National Grid for on-demand, pay-per-use compute, storage and software resources.

By 2013, Singapore envisions a Grid Market Hub, an infocomm-enabled marketplace of GSPs offering the global community a platform to share, buy and sell infocomm resources such as software, computing and storage, on-demand and on a pay-per-use basis.

## Benefits of Grid Services to Users

- Lower Cost - With the establishment of GSPs, businesses can buy high performance compute capabilities for as low as S\$0.33 per core hour, and data storage capacity for as low as S\$0.48 per GB per month. This is opposed to having to spend thousands of dollars buying and maintaining in-house servers, or leasing them from overseas Grid providers that typically charge about US\$1 per CPU hour.
- Compute-As-A-Service - Firms requiring high performance computing, such as financial organisations that do data-crunching, or animation producers in Singapore, can look forward to local access to the compute capabilities of more than 2,500 cores for a start, then more than 3,500 cores by 2011, all on a pay-per-use basis. Typically, an animation company would have invested in one computer dedicated for animation rendering, for instance. But that process can be time-consuming. If more compute power is available, the process can be sped up. The GSPs will offer such companies the option to scale up their computing power when needed.
- Storage-As-A-Service - GSPs will offer immense storage capacity of more than 30 TB, making it possible to back-up massive amount of data. Educational institutions, for instance, which are increasingly adopting online learning models, will no longer need to fear the loss of their material stored on their in-house servers. Others, such as pharmaceutical companies that need massive archival space to keep the data generated by their experiments, can also tap on the National Grid's huge storage capacity.
- Software-As-A-Service (SaaS) – By 2011, businesses can look forward to choosing their software and obtaining them through on-demand pricing, from more than 80 SaaS providers who will be part of the National Grid. They will offer services such as productivity and desktop publishing tools on a pay-per-use basis.

## FOR MORE INFORMATION

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