**FACT SHEET**
**(Jul 2013)**

**Next Generation Nationwide Broadband Network**

Singapore's **Next Generation Nationwide Broadband Network (Next Gen NBN)** is the wired network of the Next Generation National Infocomm Infrastructure (Next Gen NII), a project under the Intelligent Nation 2015 (iN2015) masterplan (www.iN2015.sg).  iN2015 seeks to transform Singapore into an intelligent nation and global city, powered by infocomm.

Offering pervasive, competitively priced broadband speeds of up to 1 Gigabit per second (1 Gbps) and more, the Next Gen NBN enables users to enjoy a richer broadband experience at comparable prices to ADSL and cable connection.  Enterprises, large and small, will also benefit from the ease of access to ultra high-speed broadband, and be able to use infocomm more extensively to boost productivity and competitiveness.

The network has been deployed to over 95 per cent of homes and businesses in Singapore. To-date, there are about 380,000 Next Gen NBN subscribers served by 20 different service providers that together offer various fibre-based broadband access plans for consumers and enterprise users.  Several of the service providers have differentiated themselves by offering targeted plans to meet the needs of specific user segments, such as gamers; by packaging their new ultra-high speed broadband services with value added services such as interactive TV applications, cloud services and online learning resources; or by providing more attractive terms such as shorter or no lock-in contract periods.

Members of the public and enterprises interested to learn more about Next Gen NBN can visit the Next Gen NBN website at www.NextGenNBN.gov.sg
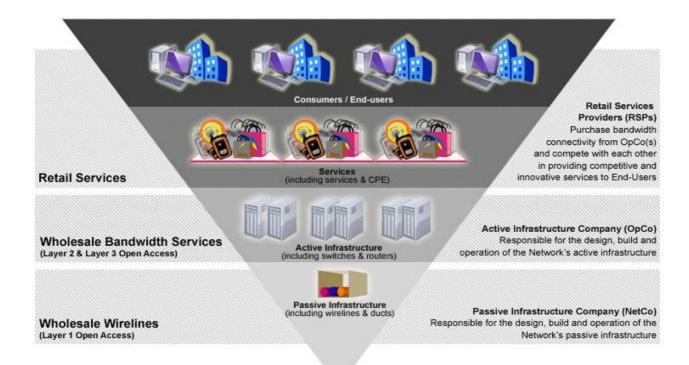
**Effective Open Access**

The Next Gen NBN comprises three distinct industry layers:

(a) The Network Company (NetCo) will be responsible for the design, build and operation of the passive infrastructure (such as dark fibre and ducts);
(b) The Operating Company (OpCo) will commit to offering wholesale network services over the active infrastructure comprising switches and transmission equipment; and
(c) The Retail Service Provider (RSP) layer will sell services to end users and industry, and will be a fully competitive layer, covering markets like Internet access and Voice-over-IP telephony.

For Singapore to fully benefit from the economic opportunities of Next Gen NBN, it is critical that Next Gen NBN provides effective open access to downstream operators.  To achieve this, structural and operational separation was implemented at the NetCo and OpCo layers respectively.  This has spurred greater vibrancy and competition at the services layer to benefit end-users.

The diagram shows an inverted triangle with three layers:

- **Retail Services** — Services (including services & CPE)
  - **Retail Services Providers (RSPs)** Purchase bandwidth connectivity from OpCo(s) and compete with each other in providing competitive and innovative services to End-Users
- **Wholesale Bandwidth Services** (Layer 2 & Layer 3 Open Access) — Active Infrastructure (including switches & routers)
  - **Active Infrastructure Company (OpCo)** Responsible for the design, build and operation of the Network's active infrastructure
- **Wholesale Wirelines** (Layer 1 Open Access) — Passive Infrastructure (including wirelines & ducts)
  - **Passive Infrastructure Company (NetCo)** Responsible for the design, build and operation of the Network's passive infrastructure

Consumers / 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. IDA announced the selection of the OpenNet consortium as the Next Gen NBN NetCo on 26 September 2008. On 3 April 2009, StarHub was chosen to establish the Next Gen NBN OpCo, which is named Nucleus Connect.

## Rollout of Next Gen NBN

In its deployment, OpenNet makes use of existing ducts and other underlying infrastructure to minimise disruption to the public.

When the network reaches a location, OpenNet contacts building management and owners to request for permission to connect their buildings to the network. Building management/owners are encouraged to engage OpenNet and facilitate deployment within their premises upon receiving the installation notification, as per their obligations under the Telecommunications Act and relevant Codes of Practice.

If the building owner/developer does not require OpenNet to conceal its wiring and has provided the necessary space and facilities, as well as access to such space and facilities, OpenNet will deploy infrastructure via open trunking/exposed method at no charge to building management/owner.

Under a Universal Service Obligation, which took effect in January 2013, OpenNet is required to provide fibre services to any physical address upon request. For residential locations, which have not been previously offered free installation, OpenNet will provide free installation, up to the first 15m of fibre, when the home owners subscribe to a fibre service.

Residents may check on the rollout status for their homes at http://www.opennet.com.sg or call OpenNet's hotline at +65 6563 4273.

**Benefits to End Users**

Tapping on its higher broadband speeds and larger bandwidth, the Next Gen NBN will catalyse the creation of a greater range of innovative Next Gen services for end-users in homes, offices, schools and other outdoor locations. Some of the next generation services that could ride on Next Gen NBN include interactive Internet Protocol TV, telehealth, multi-user real-time gaming and cloud computing services. The Next Gen NBN will enable Singapore to exploit new economic opportunities in the digital age and enhance the vibrancy of its infocomm sector. Here are some of the services that Singaporeans can enjoy:

*Fast Upload and Download Speeds*
With Next Gen NBN's scalable speeds of up to 1 Gbps, uploading and downloading of files will be significantly faster. Users will be able to download content in minutes rather than hours while utilising several high-bandwidth applications simultaneously. Among the many applications that could arise are Software-as-a-Service (SaaS), remote data backup and file restoration, and richer online gaming experiences.

*High-Definition Video Conferencing*
From telecommuting to keeping in touch with loved ones, the way people communicate from home and office will be transformed with the emergence of high-definition (HD) video conferencing enabled by the Next Gen NBN. With HD video, voice and data communication running on the same broadband bandwidth, users will be able to conduct video conferences that are highly realistic, without the need for hefty investments and bulky set ups.

*Leveraging on Cloud Computing*
With the Next Gen NBN, businesses are also well placed to make use of technologies such as cloud computing to maintain their competitiveness. Cloud services enable enterprises and end-users to have access to huge computing power, software and data storage on a pay-as-you-use, on-demand basis. Providers of cloud services such as Software-as-a-Service and Storage-as-a-Service offer businesses an alternative to the conventional model of having to heavily invest upfront on expensive infrastructure. Businesses, especially SMEs, can save by tapping on these services without having to incur heavy upfront capital costs in equipment and software licenses, and yet enjoy the flexibility of scaling the applications to support the business growth.

**Facilitating Services Delivery, Catalysing Adoption**

Beyond infrastructure deployment, IDA has developed an overall strategy that focuses on catalysing the delivery and adoption, and spurring the demand for services on the Next Gen

NBN. An important guiding principle of the strategy will be to ensure the direct engagement and involvement of the public, private and people sectors for a comprehensive and inclusive approach.

***Championing Nationwide Strategic Projects & Catalysing the Next Gen Services Ecosystem:***
The Next Gen NBN will also create new market opportunities for RSPs and Application Service Providers (ASPs) to provide impactful and innovative next generation broadband services and applications for the public, private and people sectors. To this end, IDA has launched various programmes and initiatives to foster and facilitate the development of innovative services.

The Next Generation Services Innovation Programme (NGSIP) is one such programme. Launched in the second half of 2009, it seeks to develop a thriving retail services layer that leverages the Next Gen NBN, and to support the deployment of innovative and impactful next generation broadband services for the nation.

Three exercises have been launched to date under NGSIP, including the Call-for-Collaboration to pilot Home-based Work and Smart Work Centres (CFC) launched in April 2012. Besides encouraging employers to adopt flexible working arrangements through the use of infocomm technology, the most recent exercise also highlights how the deployment of Next Gen NBN can open up new opportunities in the area of home-based work and Smart Work Centres, given its ability to offer pervasive, affordable broadband connection that supports major office functions such as high quality video-conferencing and cloud computing.

***Educating enterprises and consumers, fostering user-driven services and partnering community organisations to deploy useful services:***
Given the scale and nature of this nationwide deployment, it is important to inform and educate end users on the Next Gen NBN and its benefits such as faster upload and download speeds, and the opportunity to tap new manpower resources that work from home. Working with OpenNet, RSPs and grassroots organisations, IDA uses various platforms such as direct mail/notification, community outreach efforts and public education campaigns to generate greater awareness of the Next Gen NBN and actively promote the adoption of fibre and services.

IDA also set up the Infocomm Experience Centre or the iExperience to help consumers and businesses better appreciate the benefits of the Next Gen NBN. Located at the heart of the city at Esplanade Xchange, it showcases some of the Next Gen services they can already subscribe to, as well as possibilities they can expect in the near future. The interactive and engaging exhibits are designed to educate visitors via hands-on experience the possibilities presented by Next Gen NBN for use in their daily lives and business adoption. It is open from 10am to 8pm daily and admission is free. For more information, visit: www.iexperience.sg.

**About Infocomm Development Authority of Singapore**

The Infocomm Development Authority of Singapore (IDA) is committed to growing Singapore into a dynamic global infocomm hub. IDA uses an integrated approach to developing infocomm in Singapore. This involves nurturing a competitive telecoms market as well as a conducive business environment with programmes and schemes for both local and international companies. For more news and information, visit www.ida.gov.sg.

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