

# A Global Overview of FTTH ( Fiber-to-the-Home )

*[www.ftthcouncilap.org](http://www.ftthcouncilap.org)*

# Role of the FTTH Council Asia-Pacific

## Mission :

To educate, promote and accelerate FTTH and the resulting quality-of-life and economic benefits.

## Objectives :

- Supply a consistent and accurate view of FTTH
- Promote FTTH market development
- Be recognized by the industry as the FTTH resource



# FTTx Architectures

## **FTTCurb / FTTNode** – Fiber to Street Cabinet

- distribution and drop cables: telco copper (DSL) or new copper
- categorised as DSL technologies.

## **FTTBuilding** – Fiber to Apartment / Office Building

- in-building cables: building copper or fiber
- regarded as a transitional stage to FTTH

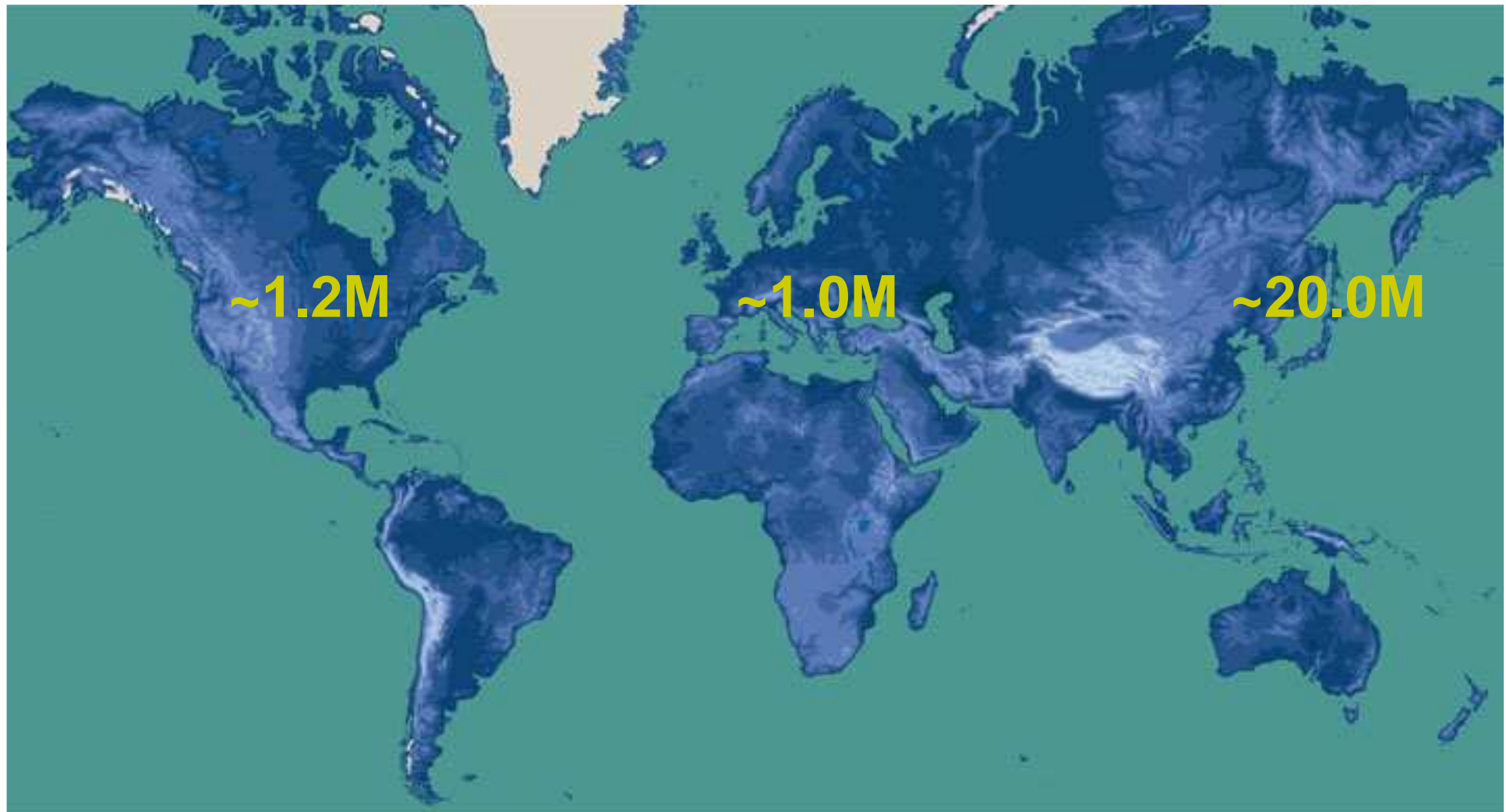
## **FTTHome** – Complete Fiber Path to Home

- in-building cables: house copper or fiber or wireless
- may require more initial investment (capex), but promises considerable savings in operating costs (opex).

( Note : FTTH is now a cost-effective alternative to the traditional copper loop. FTTH simultaneously handles several phone calls, TV/video streams, and Internet users in the home/office. )

# FTTH Subscribers Connected

( mid-2007 )



See the Light

# Business Models

## **Vertically Integrated**

- single operator provides retail services and owns and operates FTTH infrastructure
- popular with incumbent and competitive carriers
- needs regulatory clarity on wholesale access to switching network or to fiber plant unbundling

## **Open Access**

- wholesale operator owns and operates FTTH infrastructure; retail service providers pay for use
- popular with community and property developer carriers
- needs regulatory clarity on whether physical overbuild is possible (monopoly)

# North America

## Activity

Aggressive Incumbent builds (Verizon, AT&T)  
Numerous Community-Utility, Property Developer builds

## Competitive Situation

Cable-TV operators providing telephony competition

## Government/Regulatory

Government Strategy supports FTTx  
FCC agreed to provide relief from unbundling

# North America

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## Verizon “FiOS”

Full FTTH, 4.4M homes passed by 2Q06

Internet, Telephony, Video (RF Broadcast)

## AT&T (SBC / BellSouth)

Mixture of FTTN (brownfield) & FTTH (greenfield)

Internet, Telephony, Video (IP)

## USA Community / Utility / Property Developer

936 fiber communities across USA

# Europe

## Activity (116 FTTH projects)

- Incumbent telco's trialling FTTH

- Competitive carriers building aggressively

- Numerous Community-Utility, Property Developer builds

## Competitive Situation

- Most countries have substantial alternative infrastructure (cable networks, satellite, DSL)

## Government/Regulatory

- Leading National Governments support FTTH (Sweden, Netherlands)

- EU investing in FTTH R&D (MUSE project)

# Europe

## Incumbent Carriers

France Telecom

FTTH trials done, rollout in 2008-2009

## Competitive Carriers

Bredbandsbolaget (B2) Sweden

Initial focus on FTTB, extended with DSL

335,000 subscribers ( 2006 )

Internet + Telephony + TV/video

FastWeb Italy

Initial focus on FTTB, extended with DSL

542,000 subscribers (2006 )

Internet + Telephony + TV/Video

TV/video important, low PC penetration in Italy

# Europe

## Community/Utility Carriers

### Sweden

~200 “stadnets” (city-owned utilities)

Internet + Telephony + TV/Video

### Netherlands

Amsterdam CityNet

Regional cities (Nuenen, Eindhoven)

Internet + Telephony + TV/Video

### Denmark

Numerous Utility Builds

### Austria

City of Vienna, Sewer-Drain Deployment

### Spain

Barcelona [22@](#) Project, Dark Fiber / Conduit

# Japan



## Activity

World's largest FTTH build by NTT  
7.1M subs in Jun 2006

NTT West – FTTH overtook ADSL in early 2007

NTT East – FTTH will overtake ADSL in early 2008

Competitive carriers using NTT fiber or Wholesale FTTH  
Several Utility/Competitive builds

## Competitive Situation

Strong competition from DSL for Internet and VoIP

VoIP is approx 10% of telephone services

## Government/Regulatory

Strong Government support (“e-Japan” 2001)

Target 30M FTTH subscribers by 2010

Other carriers have access to NTT fiber

# Japan

## Unbundling of NTT FTTH Plant

### Optical Subscriber Line

use of cable from exchange/CO to subscriber  
Y5,074/mth

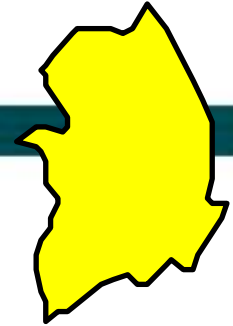
### Optical Interoffice Transport

use of cable from tandem exchange/CO to local  
exchange/CO  
Y2.166/metre/year (NTT East)  
Y2.241/metre/year (NTT West)

## Rural FTTH

Program to assist local public entities to build FTTH  
1/3 subsidy – budget 2004 Y834M, 2005 Y793M

# South Korea



## Activity

Very mature broadband market with 82% penetration of broadband services via DSL, HFC or Apartment LAN

Incumbent (Korea Telecom) trials in Pusan & Gwangju

## Competitive Situation

Extremely competitive environment

Telco's not allowed to deliver media broadcast services

## Government/Regulatory

Government has moved from e-Korea (2002) to u-Korea ("ubiquitous" integration)

Plan to build BcN (Broadband Convergence Network) as core network for U-Korea

# South Korea



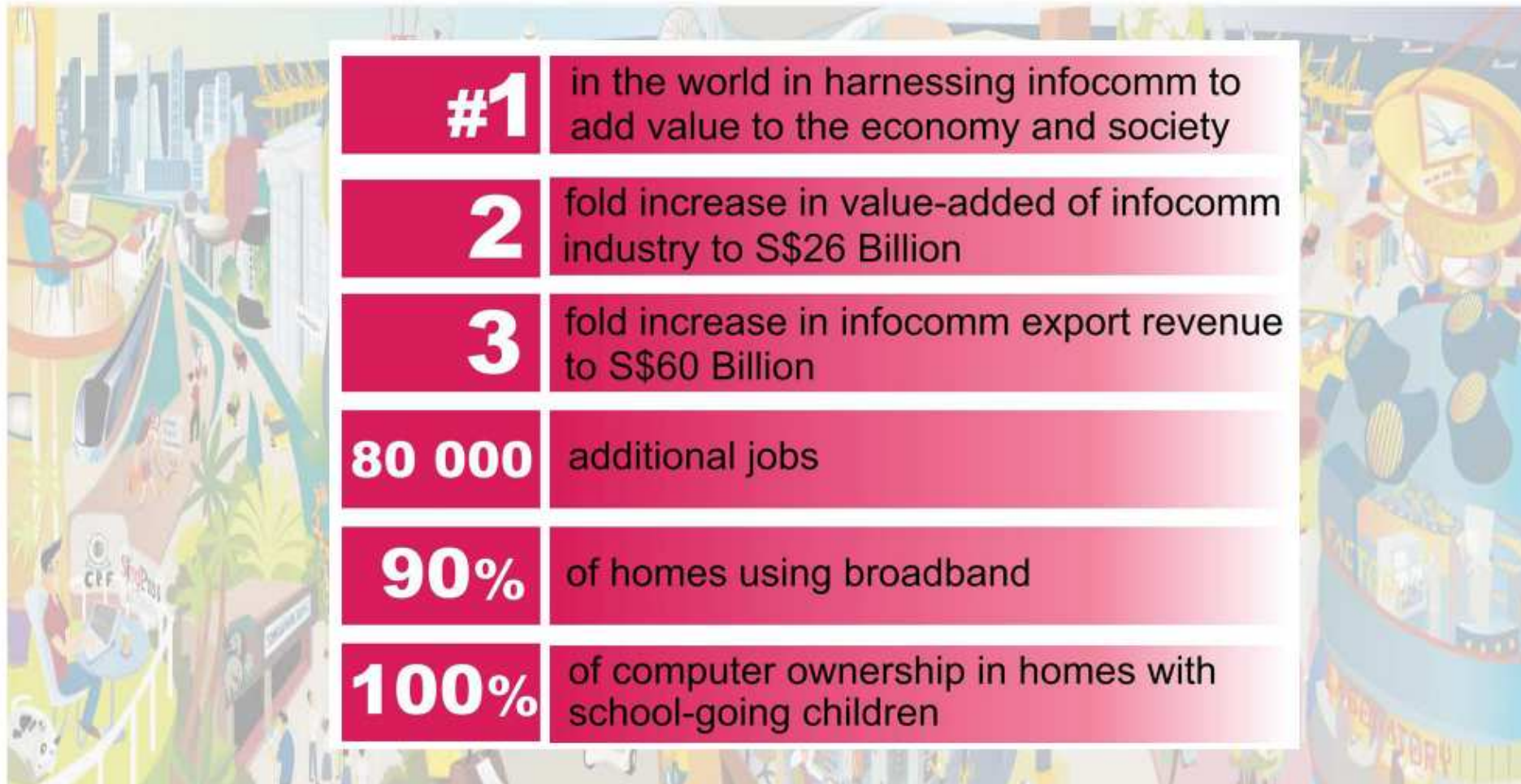
Apartment Building Certification / “Emblem” System  
“star rating” of large new apartment buildings for FTTH  
by Feb 2005 3,395 buildings rated

Education of Construction Industry  
educate 6,000 installers in FTTH

Finance  
support with loans for FTTH construction

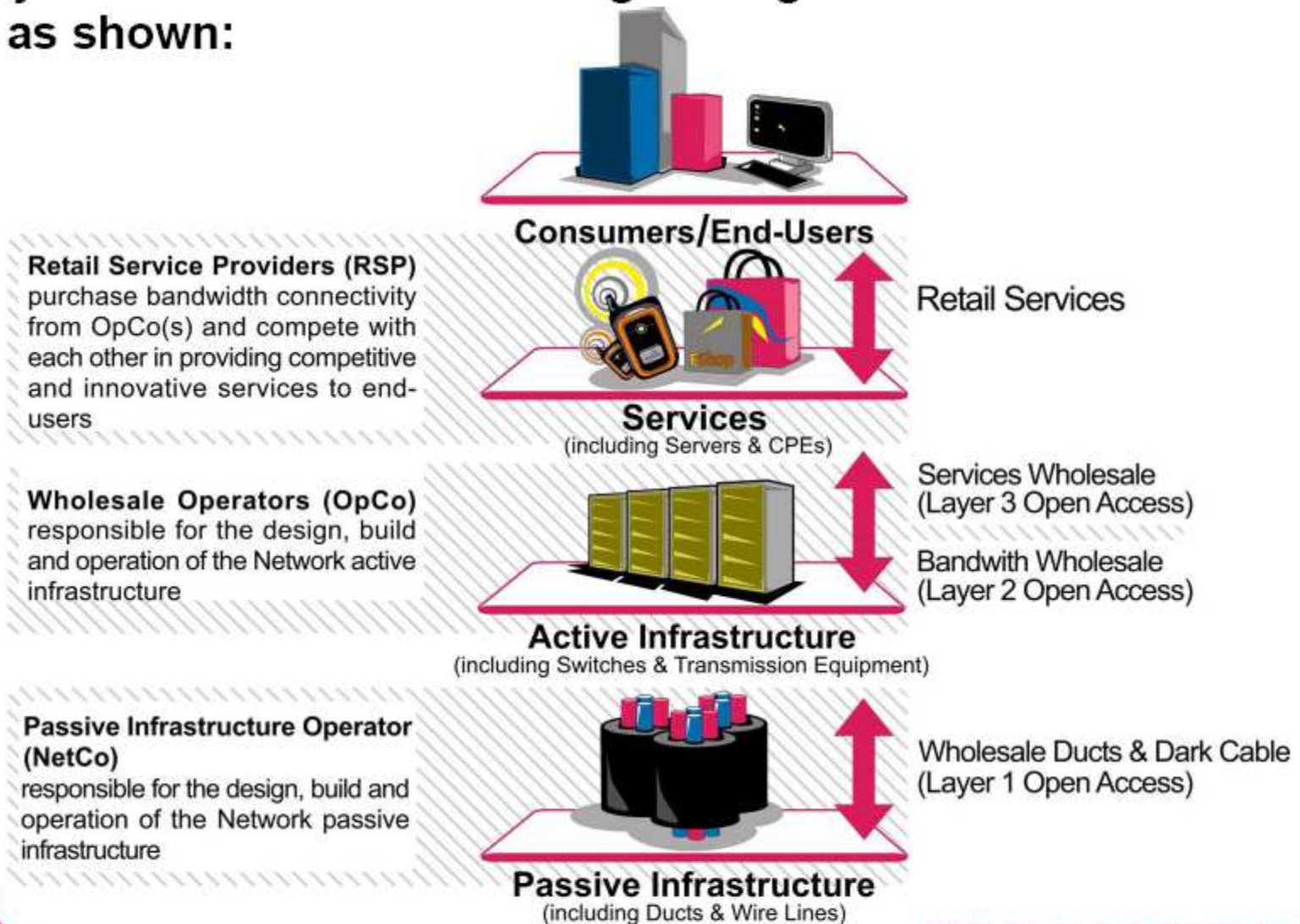
Technology Development & Standardization  
development and commercialisation of FTTH  
technologies (WDM-PON, EPON, AON)

# iN2015 Masterplan Goals



# High Level Network Concept Layers

The Project will be structured along the high level Network Concept Layers as shown:



# Australia & New Zealand

## Activity

### Incumbent

Telstra Greenfield build (“Velocity”)

TelecomNZ planning trials

### Government

AU Tasmania COLT (~1000 subscribers)

NZ Govt seed funding for 15 city networks

### Utilities

AU ACT Transact FTTN (>25,000 subscribers)

Property Developers (several)

## Competitive Situation

Powerful incumbents

## Government/Regulatory

Government “technology neutral”

# Which countries will succeed with FTTH?



Analysing the characteristics of countries that are successfully deploying FTTH, it is clear that successful countries :

- Have Government and Regulatory commitment to FTTH.
- Have strong user demand for broadband services.
- Have a competitive broadband market.