



# **THE SOCIO-ECONOMIC IMPACT OF ULTRA HIGH BANDWIDTH OF THE INTERNET NETWORK BY 2020**

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# Overview

- **Technological Background**
- **Case Studies**
- **Adopted methodologies by EC!**
- **2020 Market**
- **Benefits**
- **Conclusion**

# Technological Background

- There are two ways to implement internet network bandwidth, either via fixed-wired or wireless connections.
- Fixed-wired connection provide network connectivity between the internet service provider and consumers:
  - ADSL2+ (Asymmetric Digital Subscriber Line) supports up to 24 Mbps
  - VDSL (Very high bit rate Asymmetric Digital Subscriber Line) provides up to 52 Mbps speed
  - Optical Fibre provides up to 14 Tbps (Terabits per second) over 160 Kilometre distance
- Wireless solution is delivered, for example via:
  - 3G or GPRS
  - WiMax
  - Satellite
- As there are 15 million rural homes in Europe that cannot access fixed-wired (cabled) broadband or ADSL, wireless connection is a promising solution. This is the best option to solve the digital divide in Europe.

# HUHSINB

- On the other hand, High and Ultra high speed internet network bandwidths (HUHSINB) leads to shorter times of delivery for the information (be it data, voice, or video) to travel long distances
- This translates to low cost for industry and consumers. Currently, HUHSINB is in utilization between servers and exchange units
- However, HUHSINB between closest exchange and houses front doors is a problem. The cost of installing a wired connection is high and there is no assurance that the user will pay for the service

# Current Market

- A recent report by the influential European Policy Centre suggests that a digital single market (DSM) could add at least **4.1%** to EU's GDP by 2020 [Thelle 2010]
- The EU is lagging behind US, Japan and S. Korea in development partly because of fragmented digital markets based on government policies, and partly because of the structure of digital services being provided
- Converging existing fragmented markets into a DSM has definite advantages to evolving businesses by having access to cross border digital resources adding value to services
- In Europe present communication technologies are restricted to low and medium bandwidth ranges for office and house-hold activities. This limits the speed and variety of applications that are required for digital inclusion and Single Digital Market across the EU.

# London Eye to Broadband



# Case Study 1: UK

## **UK Digital Market from Internet Service Providers (ISPs) perspective:**

The factors affecting broadband adoption within the UK are:

- High price
- Lack of content
- Lack of awareness

Those factors are severely affecting the adoption of broadband amongst the residential consumers in UK.

# Saturday in Hong Kong Without Broadband!



EUROMEDIA'2011, April 18-20, 2011,  
British Institute of Technology and  
Ecommerce, London, UK



# Case Study 2: Hong Kong

- In August, 21998, the government in Hong Kong announced the “Digital 21” strategy document. In 2001, 2004, 2007, 2008, improved versions of the strategy document were published subsequently. 5 key action areas for implementation between 2008 and 2010 have been identified:
  - **Facilitating a digital economy**
  - **Promoting advanced technology and innovation**
  - **Developing Hong Kong as a hub for technological cooperation and trade**
  - **Enabling the next generation of public services**
  - **Building an inclusive, knowledge-based society**
- Government’s push with ambitious goals did affect the incumbent monopolist and other ISPs actions. In addition, a variety of measures implemented by the government contributed to changing the broadband environment.

# SK: Wave of the Future



# Case Study: South Korea

The high rate of broadband adoption in South Korea distributed among:

- Public sector actions
- Private sector actions and

The factors that are responsible for high penetration rate of broadband within the South Korean residential consumers, are:

- The government's vision
- Strategy and commitment
- Facilities-based competition
- Pricing
- The PC Bang phenomenon
- Culture and geography and
- Demographic

# Adopted Methodologies by EC!

- In 2009, Stiglitz identified flawed in relating socio-economic variables like growth, inflation, unemployment, etc. to relevant inferences in EC
- Hence, recommendations made are not targeting real issues
- For example, household income and consumption not production are related to people's wellbeing.

# Benefits

- HUHSINB brings benefits cross UK and Europe:
  - UK: Individual household benefits include:
    - Better quality of life
    - High employment
    - Better income and
    - Efficient use of time
  - Europe: Benefits include:
    - All-inclusiveness
    - Single Digital Market across Europe making cross border transactions unified
    - Improvement in ICT and job market productivity
    - Innovation, and economic factors as GDP
    - And more ...

# Socio-economic benefits of very high bandwidth

- Broadband offers many services including, government provided online products and services
- The adoption and usage patterns of various users do change with the enhancement of high speed internet services
- There are issues such as value added services that can be afforded by very high speed internet to:
  - Citizens
  - Patients
  - Consumers
- These affect business models of organisations and adoption and usage patterns of residential markets.
- High and Ultra High Bandwidth is expected to produce positive and negative impacts similar to those listed below:
  - **Shared Decision Making (SDM) having a positive impact on member states.** Member states are not competitors but have complementary skill sets that can be well exploited. This leads to higher employment rates and therefore productivity rates.
  - **Multi National Company (MNC) involvement.** Large companies will be interested in contributing to this growth of economy. Several individual and small scale businesses will evolve as a result of high speed bandwidth.

# Socio-economic benefits of very high bandwidth: Continuation

- **Preparation for future recessions.** The recent recession has brought about an unexpected turn in people's life economically for the worse. A self-production economy through SDM and an educated society will be prepared for future recessions.
- **New secondary technological growth.** Secondary technologies such as collaborative tools for online business modelling with the aim to reduce production life cycle and improved productivity will spring up. New technologies that will address the digital divide will also spring up.
- **Improved quality of life.** Business markets, SDM will influence new job markets and higher incomes leading to affordability to comfort living.
- **Improved health quality of life.** New innovations such as, online games are assisting with providing assisted living technologies. We will identify the impacts of such innovations and assess their impacts upon the quality of life.
- **Improved social life.** With secondary technologies, people can afford to work in lesser time than before, therefore have more time for family and social life.
- **Technological threats.** New technologies will require new threats that need to be developed. Although, this problem creates new business markets and jobs.
- **Avatar life.** People tend to work glued to their computers. Social communication may be lost. This tendency is likely to increase until government policies to include human factors into design are enforced.

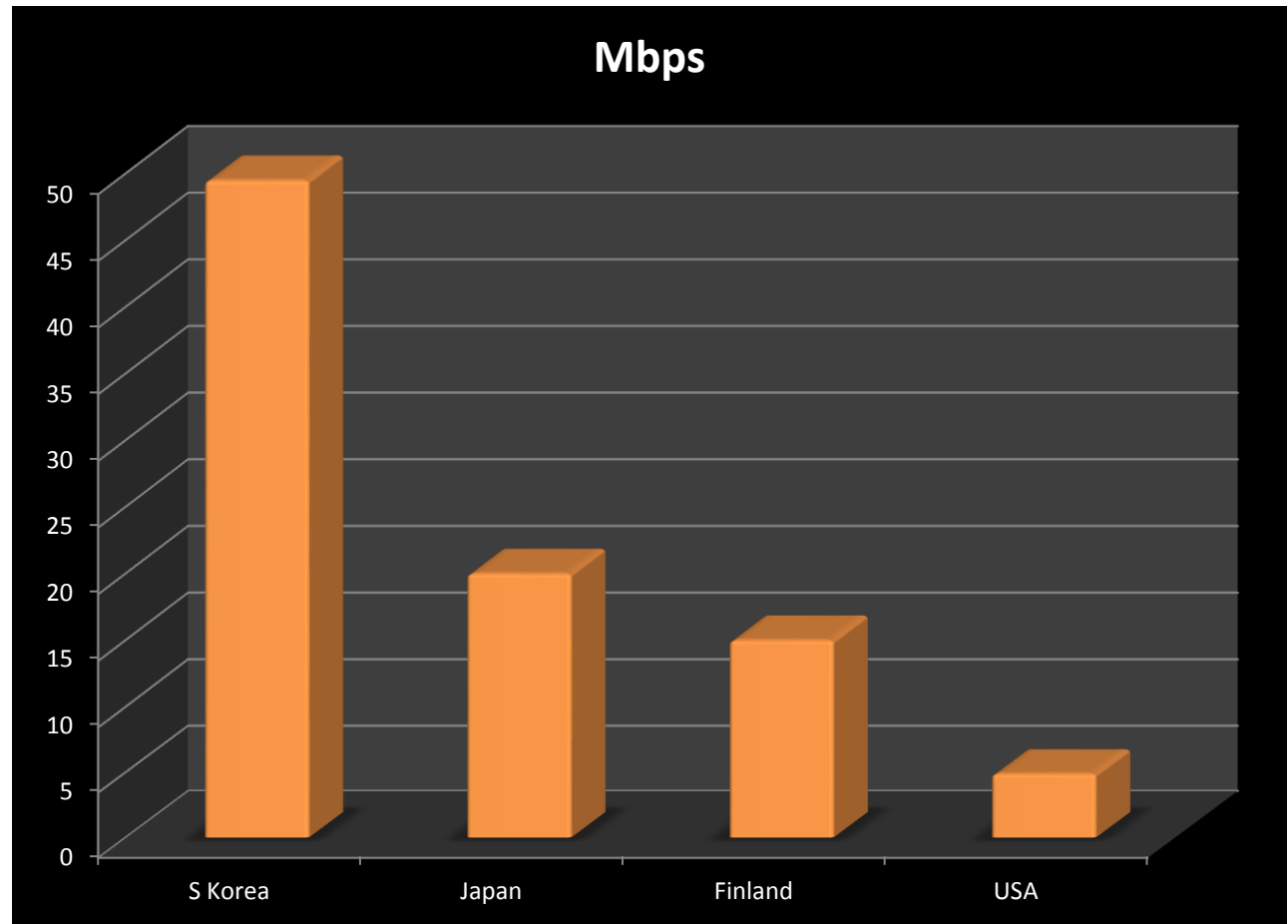
# The Overall Socio-economic Impact

- The digital divide: groups of society that have or do not have access to very high speed internet services and products
- The digital divide concentrated in areas within countries where economic factors such as, employment/ unemployment rates, work, life balance issues and uses of very high speed internet affect demand supply
- Key variables:
  - Demand and supply
  - Take up on the residential and business markets by speed categories (real versus provided speeds).
  - Coverage of different technologies (ADSL, VDSL, FTTH)
  - Network deployment and network operations costs (ARPU (AVERAGE RETURN PER UNIT))

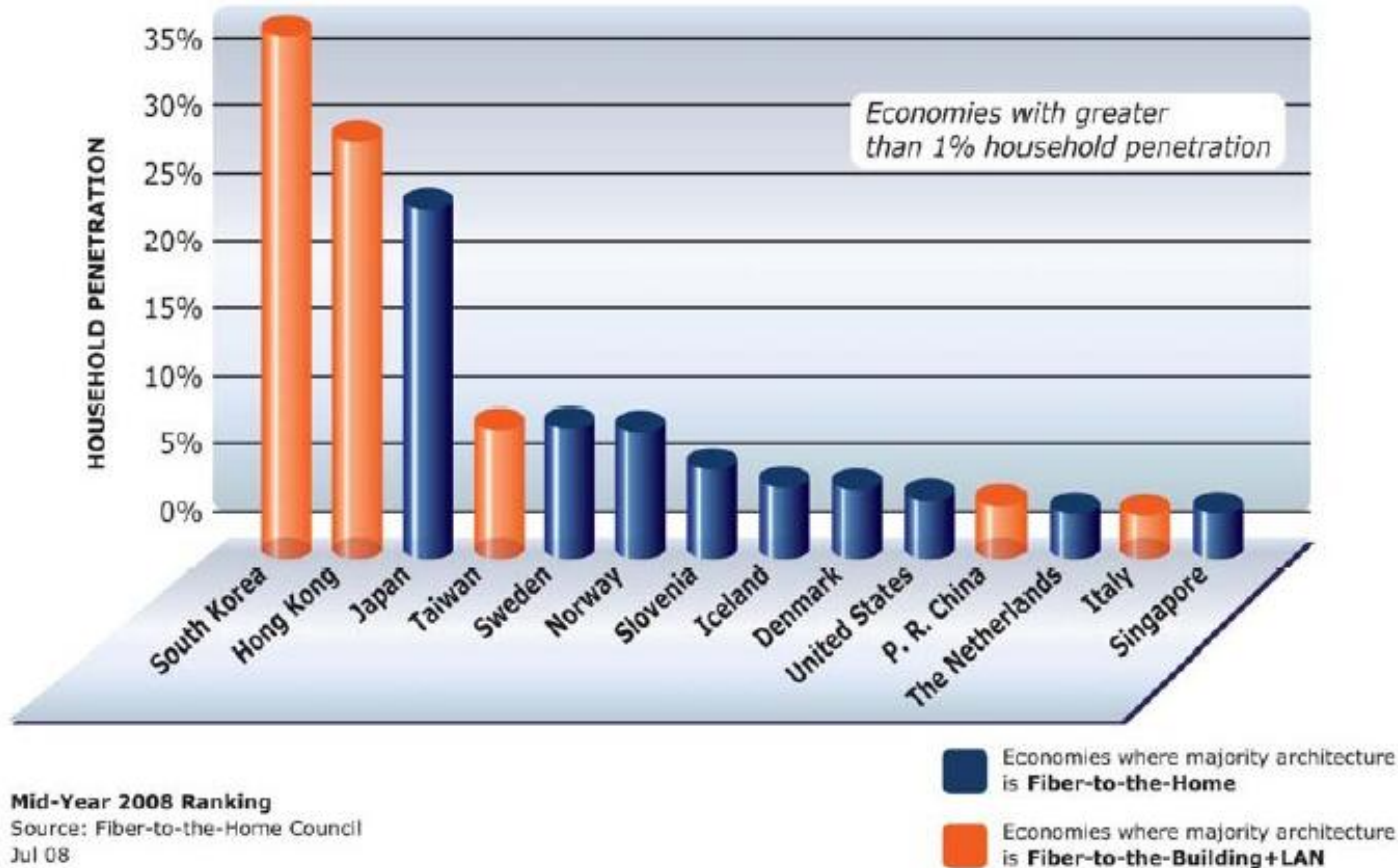


# South Korea: The Capital of Broadband

- The rank shows that S. Korea's broadband is the most developed, with the score 15.92. Its home broadband penetration rate is 93 percent, and the average speed rate is 49.5 Mbps. Japan ranks the second and Finland the third. United States ranks only 15th, with home broadband penetration rate of 57 percent and the average speed rate of 4.9 Mbps.
- S Korea in 2012 will have 1Gbps!



# Fibre-to-the Home / Building and LAN



# Conclusion

***Very high speed Internet is the way to the future.  
No exclusion, we should all benefit!***

**Q & A**

***THANK YOU!***