

# Asia: Broadband & forms of government intervention

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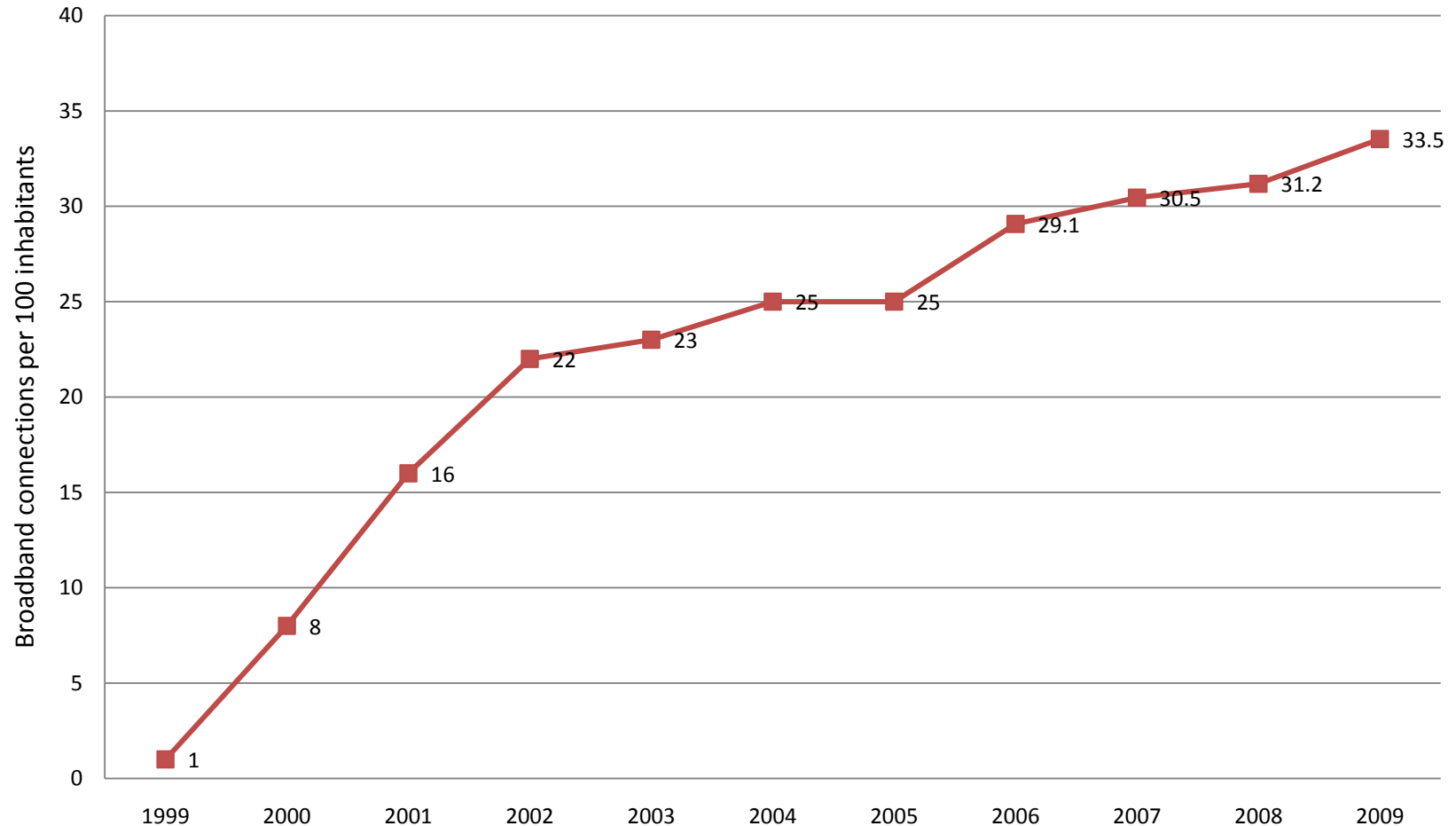


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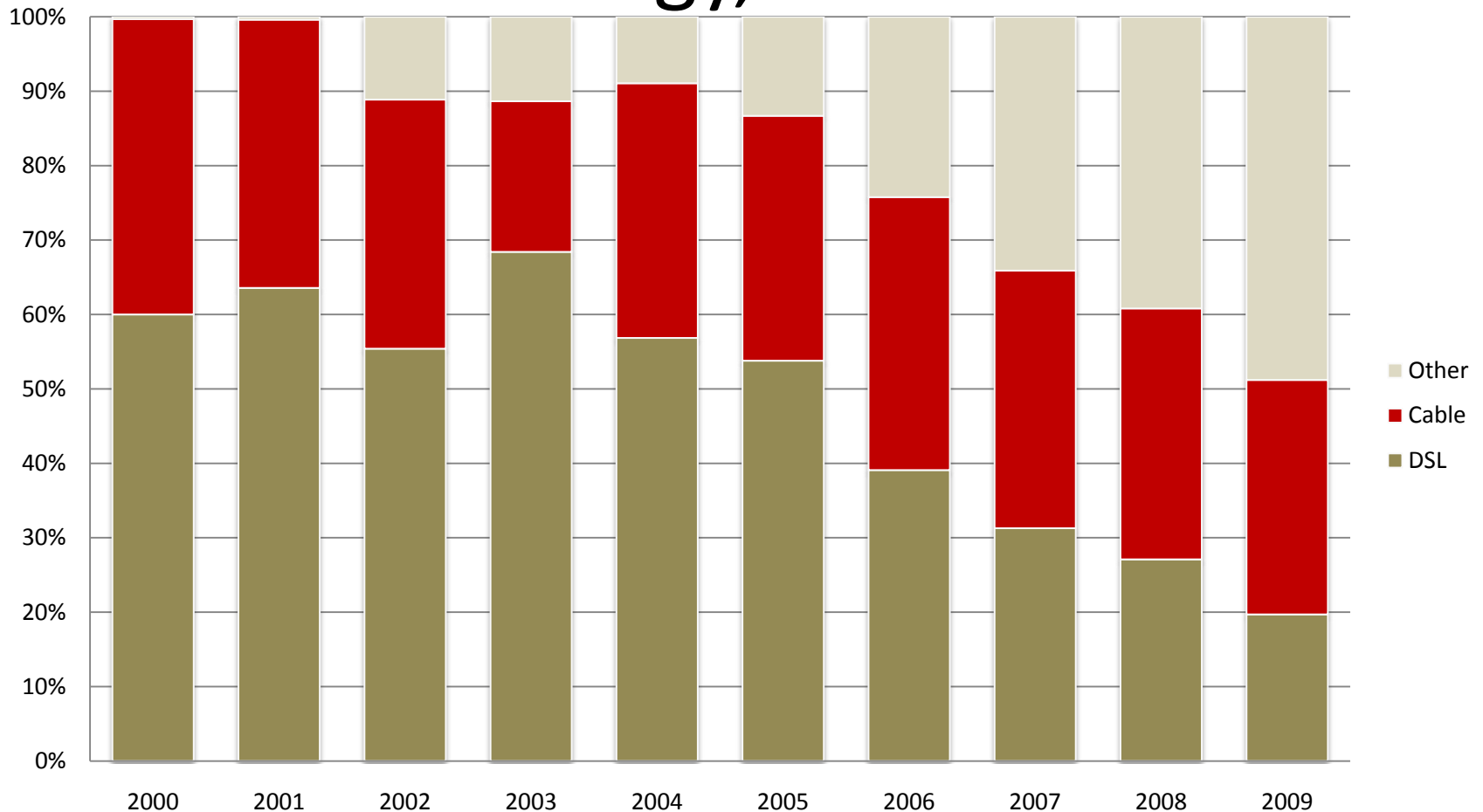
# Agenda

**KOREA: EVERYONE'S BENCHMARK**

# Broadband subscriptions per 100, 1999-2009 (users ~ 70 per 100 in 2009)



# Broadband subscriptions, by technology, 2000-2009



Source: OECD Communication Outlook documents

# How did Korea do it?

- Advantages of high population density & most people living in high-rises
- Early start
- Consistent policy development: successive policies correcting the errors of previous policies
- **Consistent implementation**
- Liberalization, privatization, competition
- **Money! Lots of money!!**
- Supply push and demand pull
  - Some random events too . . . .

# Gathering momentum, 1980-1994

- Large investment in **backbone infrastructure** in 1980
- National Basic Information System (NBIS) 1984
  - Problems with disbursements in centerpiece five national networks (administration, finance, etc.)
  - Also included encouragement of production of low-cost computers for Korean households (more successful)
  - Shortfalls in funding, absence of strong industry capability and failure to stimulate domestic demand
- National Information Infrastructure (NII), 1992
  - Emphasis on network expansion
  - Initially fiber backbone deployed to connect five metropolitan areas and nearby cities
  - **Deregulation, privatization, framework legislation**
    - Korea Telecom privatized; market liberalized

# Reform and take-off, 1994-2004

- GATS accession, 1994
  - Introduced regulatory reforms, significant tax breaks and eased FDI restrictions
  - Entry and pricing rules relaxed
  - Exemptions from national taxes (1994-2004) and local taxes (1994-2009)
- Hanaro enters broadband market in 1997
  - Causing KT to aggressively respond
- Inflection point in growth of broadband and household computers (1999)
- Cyber Korea 21, 1999
  - Increase competitiveness of Korean industry
  - Enhance quality of life of citizens



# Consolidating growth with global ambitions, 2004-

- IT 839 (8 services, 3 infrastructures, 9 growth areas)
  - Infrastructure 3 (Broadband convergence network, U-sensor network, IPv6) intended to create a broadband service platform and give Korean businesses first-mover advantages
  - Renamed u-IT839 in 2006
- Massive outlays but criticized for being too supply-side and serving Chaebols more than the public interest

# Money!

Year	Policy	Investment, USD m
1984	National Basic Information Systems (NBIS)	200
1987-96	National Database Computerization Project	5,536
1992	Korea Information Infrastructure (KII), 1992	40,000
1993-02	Informatization Promotion Fund	7,800
1994	GATS	Tax concessions for those in high-tech and value-added sectors
1999	Cyber Korea 21	918
2004	Information Technology 839 (IT 839)	70,000
2006	e-Korea Vision	84.4
2007	Broadband IT Korea Vision	
2009-13	Ultra Broadband Convergence Network	62

Source: MIC, *A critique of Korean National Information Strategy: case of national informational infrastructure*, Dong Hee-Shin +

# Demand pull: Gaming

- Gaming takes off in “cyber cafes” in 1994
- 24,000 PC rooms used for gaming by 2002 (USD 1/1 hour)
- Created demand for broadband even as gaming moved to the home
- Collateral effect: 60% of all stock exchange transactions over the Internet by 2002

# Can Korean model be replicated in emerging Asia?

- No luxury of time
- Lack of money

But even if money was available,

- **Consistent policy making** rare
- **Effective implementation** rarer
- Wire-guide based broadband unrealistic: example of Sri Lanka

# Why Korea cannot be replicated in Sri Lanka (& other emerging economies)

Population (mid 2009)	20.45 million
Wireless connections (2010 Q2)	15.86 m GSM +2.61 m CDMA= 18.47
Wireline connections (2010 Q2)	875,509
Cable households	Negligible (terrestrial & satellite TV dominate)
Estimated # of households	4,744,780
Maximum % of households with potential for wireguided broadband, most generous assumptions	18%
Percentage of wireless-connected households, using harsh assumptions	55% CDMA + 20% GSM = 75%
Period of 3G supply by 3 operators	7 years; 3 years intense competition
E Sri Lanka project costs (USD 83 m, huge by LK standards) as percentage of Korean investment	Less than 1 percent

# Choices

- Organic versus programmatic
- Subsidy-driven versus market-driven (both allow role for government)

# Organic-programmatic continuum

- India is organic, moving toward programmatic by consolidating multiple initiatives
- Sri Lanka started on the programmatic end (e Sri Lanka initiative in 2003), but is actually organic, in the face of weaknesses of execution

# Most relevant choice: Subsidy-driven v market-driven

- South Korea and Australia are exemplars of subsidy-driven approach
- Hong Kong is best example of market-driven approach
  - Drawing from presentation by Cheuk Sing Tak, Sanda, Head of Regulatory Affairs, OFTA, Hong Kong China at APT Policy & Regulatory Forum, July 2010



# Telecommunications Policy in Hong Kong

- Pro-competition and pro-consumer policy objectives
  - the widest range of quality telecommunications services be available to the community at reasonable price
  - telecommunications services be provided in the most economically efficient manner possible
  - Hong Kong be the pre-eminent communications hub for the region

# Telecommunications Policy in Hong Kong

- Market-driven approach
    - Fully liberalised market for telecom services
      - No upper limit of no. of licence to be issued
      - No deadline for application of licence
  - Telecom companies are entirely privately owned with *no government participation / subsidy* and *no foreign ownership restriction*
  - Minimum intervention; let market serve public interest to maximum extent
- ➔ *Market to decide form and pace of broadband deployment*

# The Future Broadband Network - Market-Led or Government-Led?

- **Government-led approach**
  - Government to drive broadband investment through incentive schemes, financial supports and even direct investments
  - Concerns are
    - Inadvertently affect the business case of private investors and could dampen investment sentiment
    - The public becomes overly reliant on government funding for future telecom infrastructure
    - Need to consider proper regulatory model
- **Market-led approach**
  - Market presumed to be better than government in making commercial investments
  - Concerns are
    - Could be slow in network rollout
    - Need to consider intervention if market fails to achieve public policy objectives (e.g. broadband coverage to remote areas)

# Market-Led Approach

- Role of the Government
  - Provide a clear, transparent and predictable regulatory regime
  - Minimise regulatory barriers to market entry and exit
  - Ensure effective competition and maintain a level playing field for all players
  - Safeguard the consumer interest
  - Facilitate the building of network infrastructure

# Market-Led Approach

- Universal service obligation
  - A comprehensive review conducted in 2007 concluded that the scope of universal service should not be extended to cover broadband Internet access service.
- Network neutrality
  - OFTA conducted a review in 2009
    - There is sufficient competition in both the network and service markets
    - As long as the Internet services providers adopt a fair and open method to control the flow of Internet traffic on their networks, this should be tolerated
    - OFTA will closely monitor the market and will take appropriate action if adverse market situation arises

# Measures to Facilitate Broadband Deployment

- Coordination of Lands Development Projects and Public Works
  - Operators' infrastructural requirements will be included in future development and infrastructural projects
- Government Premises and Public Facilities
  - Allow use by operators for network rollout
    - Fixed network operators – public roads, highways, government bridges & tunnels
    - Mobile network operators – highway facilities (lamp posts, flyovers, footbridges) & government premises
    - Wi-Fi providers –public payphone kiosks for access points
  - Only a nominal rental fee is charged

# Measures to Facilitate Broadband Deployment

- Facilitate extension of mobile broadband coverage
  - Use of microwave links and hill-top sites to establish backhaul network and base stations
  - More viable and cost effective option for broadband access in remote and rural areas
- 4. Timely Release of Radio Spectrum
  - release relevant radio spectrum through market-based mechanisms
    - Auction of spectrum in 2.3GHz and 2.5 / 2.6GHz bands in Jan 2009 for next generation mobile broadband services
    - Auction of spectrum in 850 / 900 / 2100 MHz bands to be held in end 2010

# Measures to Facilitate Broadband Deployment

- Registration Scheme for Buildings With Optical Fibre-based Access Networks
  - A voluntary registration scheme
    - For residential buildings
    - Buildings are classified into
      - FTTH building; or
      - FTTB building
    - Registered buildings are permitted to use label identifying the broadband infrastructure provided
    - OFTA acts as the scheme administrator



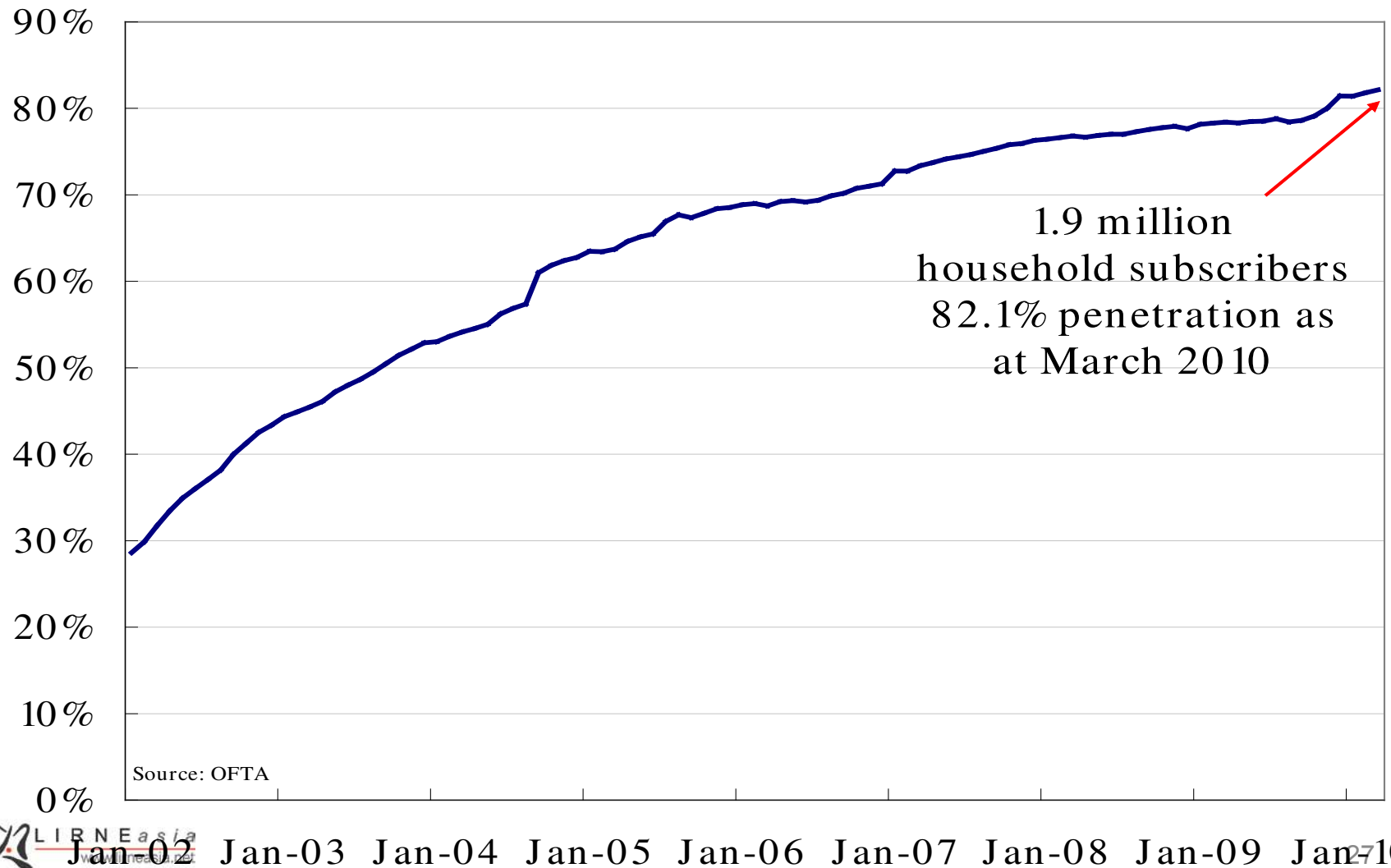
# Measures to Facilitate Broadband Deployment

- Facilitate landing of submarine cables in Hong Kong
  - Increasing transparency of application procedure
  - Enhancing coordination between government departments
  - Considering relaxation of government subsidised land for operating cable landing stations
  - Better use of existing spaces in cable landing stations

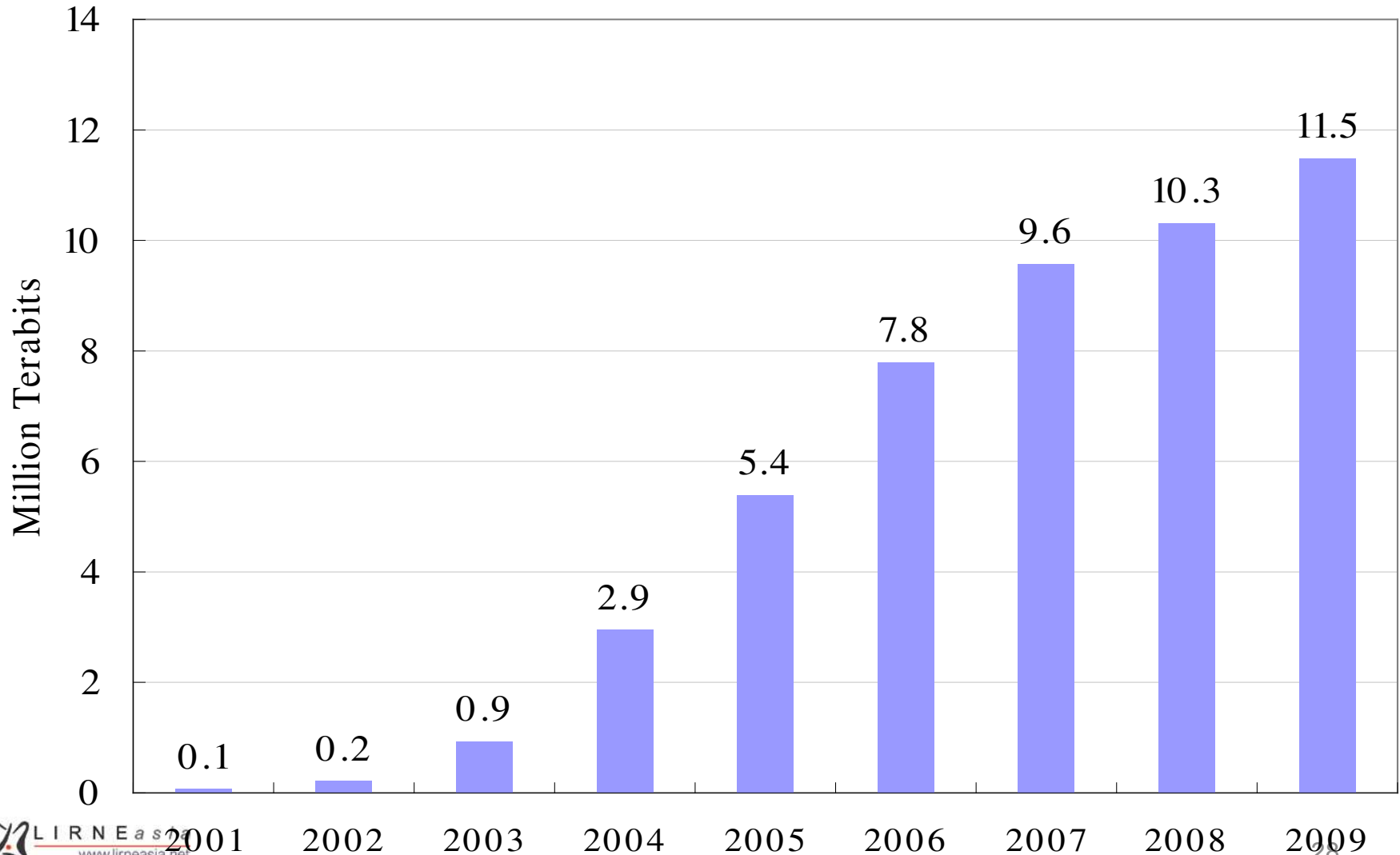
# Measures to Facilitate Broadband Deployment

- Improving access to broadband for needy families
  - Provision of cash subsidy for low income families with children attending primary or secondary school to have broadband access
    - USD 167 per year
  - Special Purpose Vehicle (SPV) established by government to provide low cost broadband services, low-cost new computers, and training / technical support
  - Aimed at mitigating the impact of the digital divide on the quality of learning of children and young people

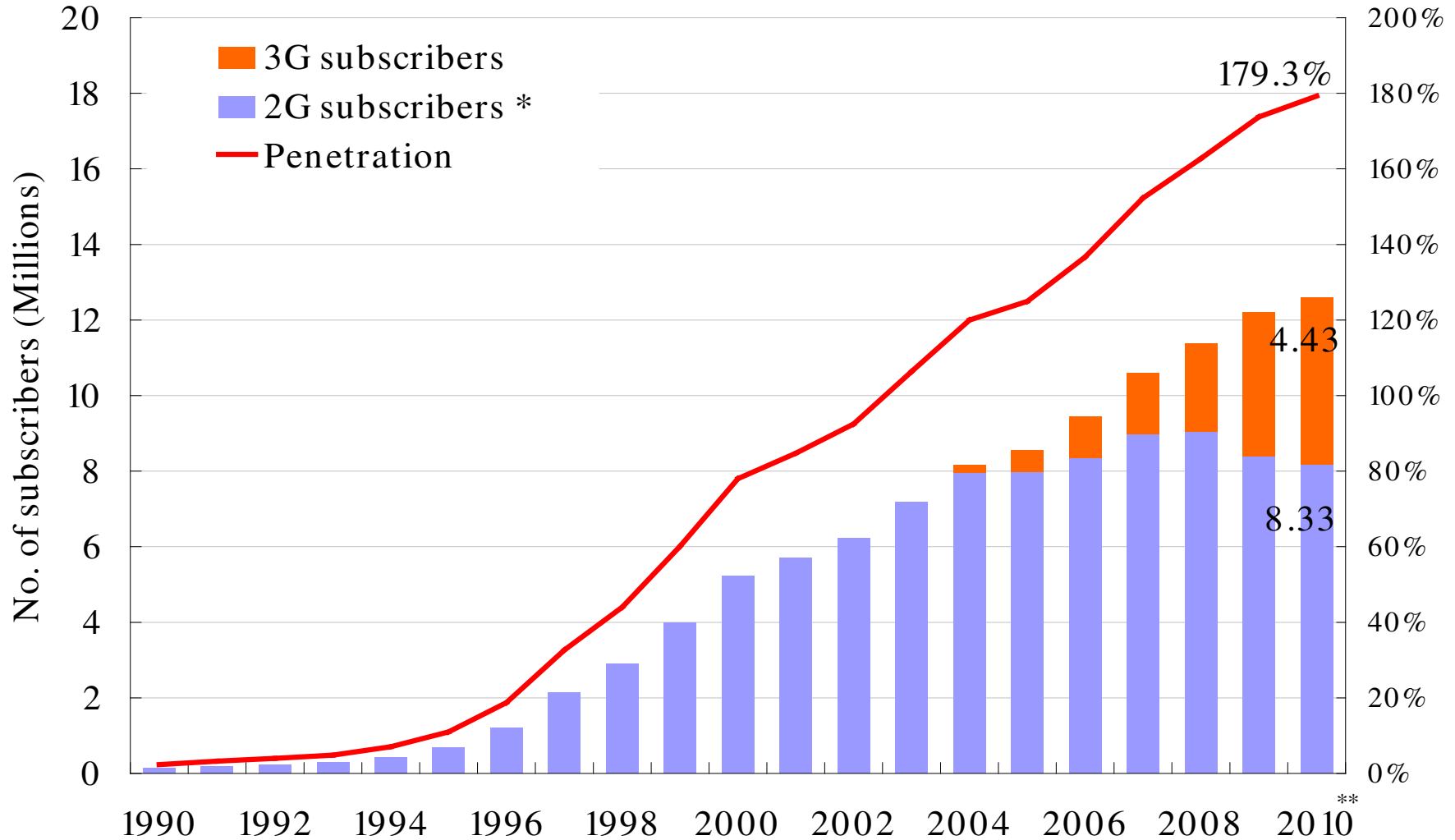
# Hong Kong: Fixed Broadband Penetration



# Hong Kong: Fixed Broadband Traffic

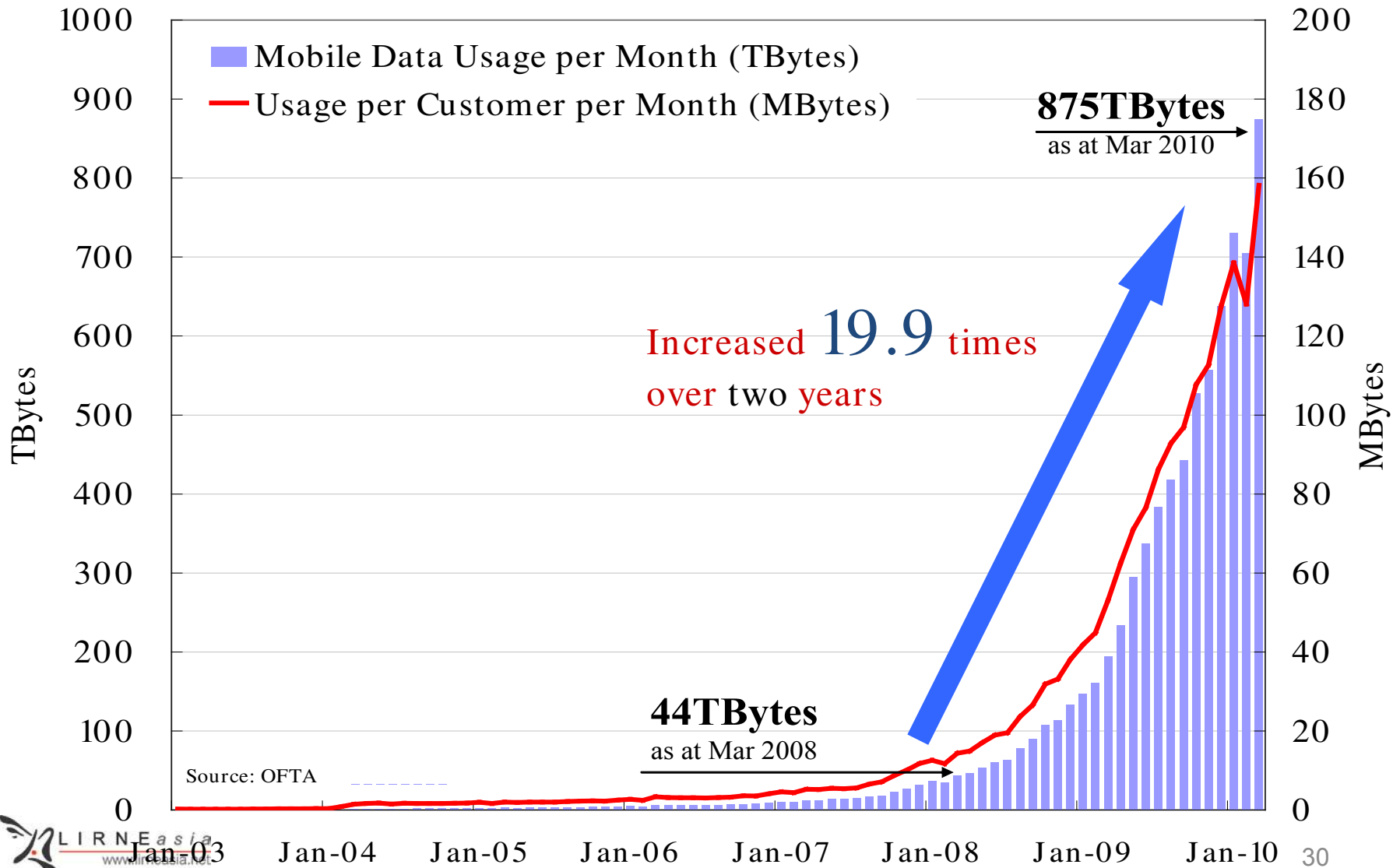


# Mobile Data Service Penetration



\* The figures of 2G subscribers include those who subscribed 2G plan or using 2G prepaid card but occasionally use 3G services.  
 \*\* For year 2010, figures of March 2010 are used.

# Mobile Data Traffic



# Conclusion

- Choices that need to be fully examined
  - Programmatic v organic
  - Subsidy-led v market-led
    - Why look only at S Korea, why not also study Hong Kong?
- The appropriate solution depends on nature of the state
  - What will work in a country with an efficient bureaucracy will not necessarily work in one that does not
  - Back to Levy & Spiller (1994)