Broadband in Canada, South Korea and Japan: How Policy Objectives Influence Development

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(This presentation reflects only the views of the author, and not of the Federal Communications Commission)
US in Intl Context

• US doing well
• Other countries doing better
• Broadband subscriership rate of growth higher in other countries
Broadband Availability

• US is doing all right, especially in cable modem service
• Other countries are doing better, especially in DSL availability
• What are the implications of wireless broadband
Cable Modem Availability: Top OECD Countries
Source: OECD, 2004

% of total households passed by networks upgraded for cable modem service, data for 2003

- Canada: 85%
- US: 80%
- Belgium: 80%
- Netherlands: 79%
- Switzerland: 76%
- Portugal: 60%
- Korea: 57%
- Denmark: 47%
- UK: 45%
- Spain: 40%
- Luxembourg: 38%
- Austria: 38%
- Australia: 37%
- Norway: 28%
- Japan: 27%
DSL Availability:
Top OECD Countries
Source: OECD 2004

% DSL availability, projected 2003
(by population, lines, or households,
as data are available)
Canada: Broadband by provider
2004 estimates
Source: ISP Planet, June 2004

[Chart showing broadband subscribers by provider for Canada in 2004, with data from ISP Planet, June 2004]
Korea: Broadband by provider

Source: World Markets Research and company press releases

- 2000 4000 6000 8000 10000 12000 14000
- 2002 2003 2004 (est)

- Other
- Dacom (DSL)
- Thrunet (cable)
- Hanaro (DSL, cable, wireless)
- KT (DSL)
Japan: Broadband by Provider, 2002-2004 Source: World Markets Research and MPHPT Japan

Broadband Subscribers (1000)

- Other
- Yahoo! (DSL)
- NTT East (DSL)
- NTT West (DSL)
- KDDI (DSL)
- Jupiter (cable)
- Usen (cable)
Socio-economic explanations?

• Bauer, et al
• Population Density
• Government Subsidy
• Income
Total Population (millions)
Source: World Bank, 2002

Korea, 48
Japan, 127
Canada, 31
USA, 288

Population density
(people per sq km)
## 2003 Broadband Subsidies: US and South Korea[1]

<table>
<thead>
<tr>
<th>South Korea (US$1 = 1,150 won)</th>
<th>won (billion)</th>
<th>US$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linking public institutions nationwide</td>
<td>74.2</td>
<td>64.5</td>
</tr>
<tr>
<td>Research and development for next generation networks</td>
<td>81.2</td>
<td>70.6</td>
</tr>
<tr>
<td>Subsidized loans for remote areas</td>
<td>68</td>
<td>59.1</td>
</tr>
<tr>
<td><strong>Total subsidy</strong></td>
<td><strong>223.4</strong></td>
<td><strong>194.2</strong></td>
</tr>
<tr>
<td>Population (million)</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td><strong>Subsidy per capita</strong></td>
<td><strong>4654.1</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>United States</th>
<th>US$ m</th>
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<tbody>
<tr>
<td>Schools and Libraries</td>
<td>1,644.1</td>
</tr>
<tr>
<td>Rural healthcare</td>
<td>2.6</td>
</tr>
<tr>
<td>Rural utility service loans and loan guarantees</td>
<td>55</td>
</tr>
<tr>
<td><strong>Total subsidy</strong></td>
<td><strong>1,701.7</strong></td>
</tr>
<tr>
<td>Population (million)</td>
<td>288</td>
</tr>
<tr>
<td><strong>Subsidy per capita</strong></td>
<td><strong>5.91</strong></td>
</tr>
</tbody>
</table>

**GDP (US$billions, PPP)**
Source: World Bank, 2002

- USA, 10308
- Japan, 3430
- Canada, 925
- Korea, 807

**Sample broadband offers**
Company, Downstream kbps
Source: OECD, October 2003

- Korea Hanaro cable modem, 10,000
- Japan Yahoo BB DSL, 8000
- Japan NTT DSL, 8000
- Korea Telecom DSL, 8000
- Canada: Rogers cable modem, 5000
- Bell Canada DSL, 3072
<table>
<thead>
<tr>
<th></th>
<th>Unbundling local loops (telecom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Yes, rules in effect since 1998.</td>
</tr>
<tr>
<td>Japan</td>
<td>Yes, rules in effect since 2001, sparking huge DSL growth.</td>
</tr>
<tr>
<td>South Korea</td>
<td>Yes, rules in effect since 2002, a year after Korea established global lead in broadband subscribership.</td>
</tr>
<tr>
<td>Country</td>
<td>Third party access to cable television networks</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Canada</td>
<td>Yes, required since 1999.</td>
</tr>
<tr>
<td>Japan</td>
<td>No, but in 2003, cable networks pass only 9.2% of all households</td>
</tr>
<tr>
<td>South Korea</td>
<td>No, but structural separation of cable network ownership and cable television programming services meant that historically, independent companies did have access to cable networks to reach customers</td>
</tr>
</tbody>
</table>
3G subs per 100 people (December 2003)

Source: TMG

Korea (Republic) 59.1
Japan 10.9
U.S. 10.7
Canada 4.8
Actions Not Taken

- Content regulation
- Cable television development
What matters?

• Ranking?
• Use of Internet
• What kind of data do we need to understand the important questions?
Canada: Internet Use at Home, 2003
Source: Statistics Canada, CANSIM table 358-0006

% respondents

<table>
<thead>
<tr>
<th>Activity</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>52.1</td>
</tr>
<tr>
<td>General browsing</td>
<td>48.5</td>
</tr>
<tr>
<td>Medical/health info</td>
<td>35.6</td>
</tr>
<tr>
<td>Travel info/arrange</td>
<td>33.6</td>
</tr>
<tr>
<td>Govt info</td>
<td>32.2</td>
</tr>
<tr>
<td>Elec banking</td>
<td>30.8</td>
</tr>
<tr>
<td>View the news</td>
<td>30.2</td>
</tr>
</tbody>
</table>
Korea: Reasons for Internet Use
Source: 2003 Survey of Computer and Internet Usage, Ministry of Information and Communication, Korean Network Information Center, Feb 2004
Japan: Internet apps from PC
Source: Communications Usage Trend, Survey in 2003, MPHPT Japan

% of individuals surveyed

- Email: 57.6%
- Info search: 57.4%
- News: 48.7%
- Purchasing products/services: 36.8%
US: Main Reasons for No High-Speed Internet Use at Home, 2003
Source: A Nation Online: Entering the Broadband Age. U.S. Dept of Commerce. September 2004

- Don't need/not interested: 44.1%
- Too expensive: 38.9%
- Not available: 9.8%
- Other: 7.2%
Conclusion

• Japan, S. Korea and Canada all have highly competitive broadband mkts

• If bb means a better life and improved economy, then it is important for Americans to have good bb use

• If Americans say they do not need or are not interested in bb, then this may be the info gap that needs to be addressed.