Telecommunications Reform and Internet Penetration in the EU

by

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ABSTRACT

This poster is a demonstration and discussion of policy issues related to Internet penetration in the European Union, particularly the local telephony tariff infrastructure needed to support (the growth of) Internet penetration rates in EU member states. The usage of the Internet for economic growth, including e-commerce, and political participation has become a much discussed public policy issue. The European Union lags behind the United States in the amount of users connected to the Internet, particularly individuals and households. European local telephony tariff reform is crucial for the growth of Internet access by individuals and households, regardless of the level of network sophistication in place. Local phone tariffs in the EU member states vary from approximately US$0.25 to US$2.00 per minute compared to the U.S. local tariff of US$0.00 per minute. In effect, making a 10 minute connection to a local Internet Access Provider (IAC) (which in most instances is the national telecommunications provider) in Europe can cost between US$2.50-US$20.00 while in the U.S. a local connection to an IAC is cost-free. These local phone charges are in addition to rates individuals pay to an IAC for an Internet account on a (usually) monthly basis. Individuals and households have little incentive to connect to the Internet with such local tariff rates.

Member states are undergoing telecommunications regulatory reform, following European-wide initiatives for restructuring the sector. Local telephony tariff reform lags, however. Unless reform occurs to decrease tariffs charged by telecommunications operators for local calls, widespread access to the Internet will remain moderately low for individuals and households.
RESEARCH HYPOTHESIS

H1: TELECOMMUNICATIONS POLICY REFORM (impacts) ->

INTERNET INFRASTRUCTURE / PUBLIC POLICY

Specifically,

H1.a: LOCAL TELEPHONY TARIFF RATES (affects) ->

INTERNET PENETRATION RATES
NET COSTS

Cost of Internet use in U.S.$ per twenty hours on-line per month (including both telephone and Internet access charges). As of August 1996

Source: OECD, The Economist (May 4, 1997).
COST OF INTERNET COMMUNICATIONS

\[ \text{cI-comm} = m \cdot \text{cpm} \]

where:
\( \text{cI-comm} \): cost of making a connection to an IAP) (i.e. cost, local call)
m: minutes
\( \text{cpm} \): cost per minute

Country USA:

\[ \text{cI-comm} = (10) \cdot (0) = \text{US}\$0 \]
\( \text{cI-comm}: \text{US}\$0.00 \)
m: 10 minutes

Country EU X:

\[ \text{cI-comm} = m(10) \cdot (0.25) = \text{US}\$2.50 \]
\( \text{cI-comm}: \text{US}\$.25 \)
m: 10 minutes

Country EU Y:

\[ \text{cI-comm} = (10) \cdot (2.50) = \text{US}\$25.00 \]
\( \text{cI-comm}: \text{US}\$2.50 \)
m: 10 minutes
HOSTS PER 1000 Pop.

Includes all ending with .com, .org, .net
As of February 1997

Source: The Economist (February 15, 1997).
INCREASE IN HOSTS

In percentage since January 1996
Includes all ending with .com, .org, .net

Source: The Economist (February 15, 1997).
INTERNET TELEPHONY

Figure I: Computer-to-Computer

Figure II: Computer-to-Phone / Phone-to-Computer

Figure III: Phone-to-Internet-to-Phone
# INTERNET TELEPHONY APPLICATIONS

<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
<th>Platform</th>
<th>Web Address</th>
</tr>
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<tbody>
<tr>
<td>CU-SeeMe</td>
<td>White Pine</td>
<td>Macintosh &amp; Windows</td>
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<td>DigiPhone</td>
<td>Third Planet Publishing</td>
<td>Windows</td>
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<td>Windows</td>
<td><a href="http://www.intel.com">http://www.intel.com</a></td>
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<tr>
<td>Internet Phone (I-Phone)</td>
<td>VocalTec</td>
<td>Macintosh &amp; Windows</td>
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<td>NetMeeting</td>
<td>Microsoft</td>
<td>Windows</td>
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<td>Net Phone</td>
<td>Electric Magic</td>
<td>Macintosh</td>
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<td>Speak Freely</td>
<td>Autodesk</td>
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<td>NetSpeak</td>
<td>Windows</td>
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</tr>
<tr>
<td>WebTalk</td>
<td>Quarterdeck</td>
<td>Windows</td>
<td><a href="http://www.quarterdeck.com">http://www.quarterdeck.com</a></td>
</tr>
</tbody>
</table>

*Note: Free demonstrations of most of these applications are available from their World Wide Web sites. For a review of these applications refer to http://rerp.mit.edu/~itel/ .