

Telecommunications Reform and Internet Penetration in the EU

by

Venilde Jeronimo
European Forum, Institute for International Studies
Stanford University
Stanford, CA 94305-6055

Tel: 650-723-4716

Fax: 650-723-4811

E-m: venilde@leland.stanford.edu

ECSA Sixth Biennial Conference

June 2-5, 1999

Pittsburgh

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 HYPOTHESES

H1: TELECOMMUNICATIONS POLICY REFORM

(impacts) ->

INTERNET INFRASTRUCTURE / PUBLIC POLICY

Specifically,

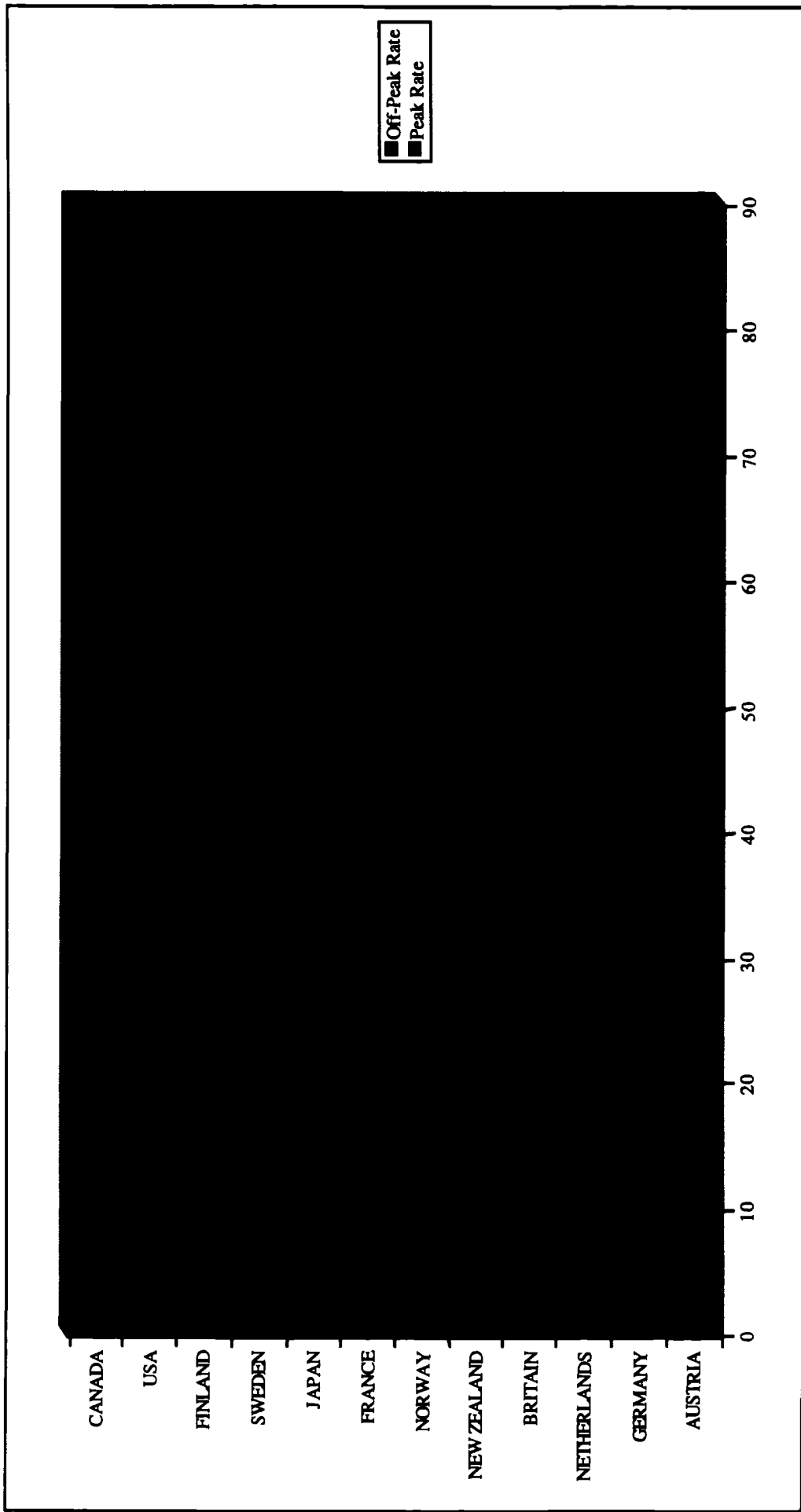
H1.a: LOCAL TELEPHONY TARIFF RATES

(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

$$cI\text{-comm} = m \cdot c_{pm}$$

where:

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

c_{pm} : cost per minute

Country USA:

$$cI\text{-comm} = (10) \cdot (0) = \text{US\$}0$$

$cI\text{-comm}$: US\$0.00
 m : 10 minutes

Country EU X:

Country EU Y:

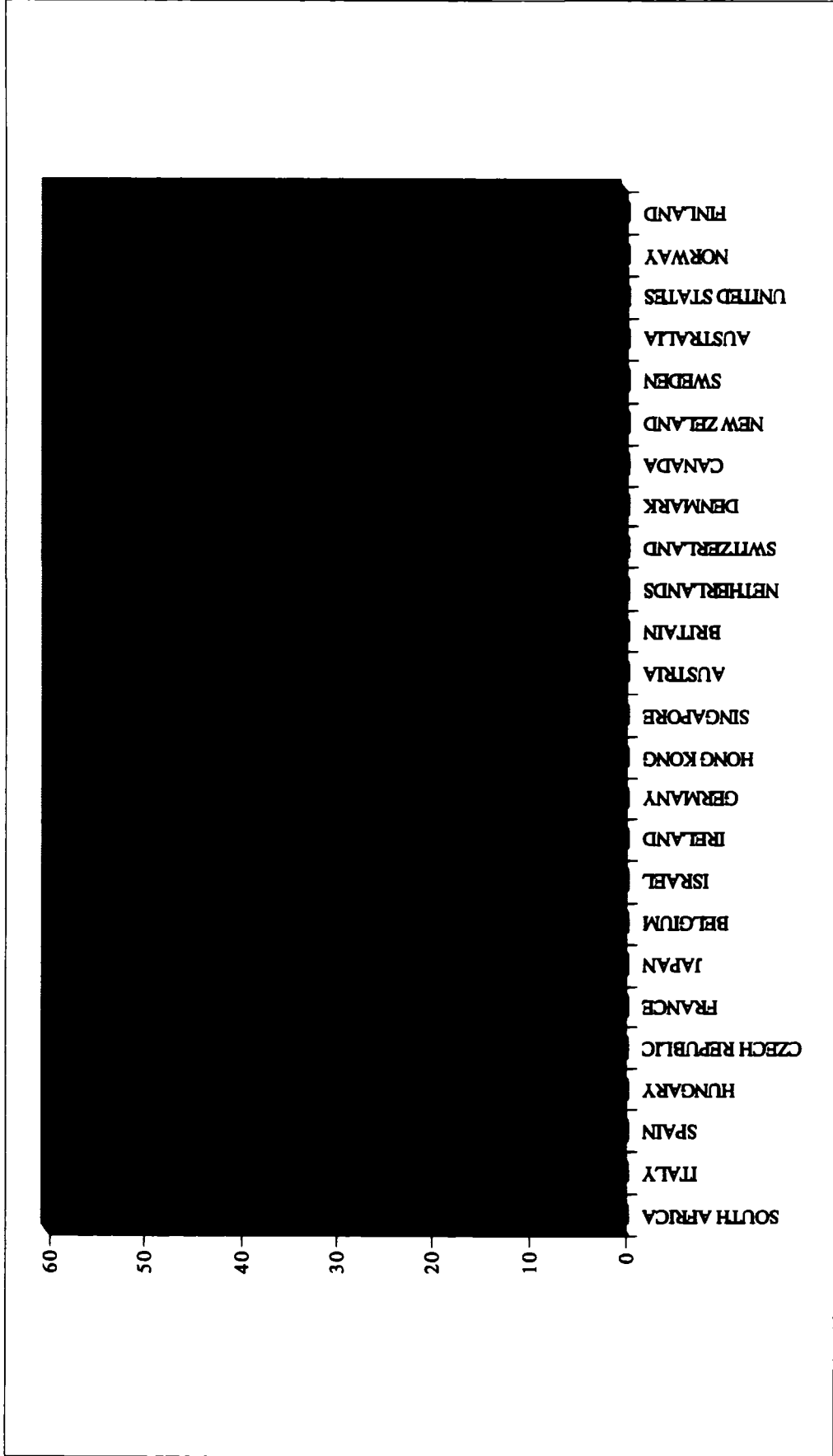
$$cI\text{-comm} = m(10) \cdot (.25) = \text{US\$}2.50 \quad cI\text{-comm} = (10) \cdot (2.50) = \text{US\$}25.00$$

$cI\text{-comm}$: US\$2.50
 m : 10 minutes

$cI\text{-comm}$: US\$25.00
 m : 10 minutes

HOSTS PER 1000 Pop.

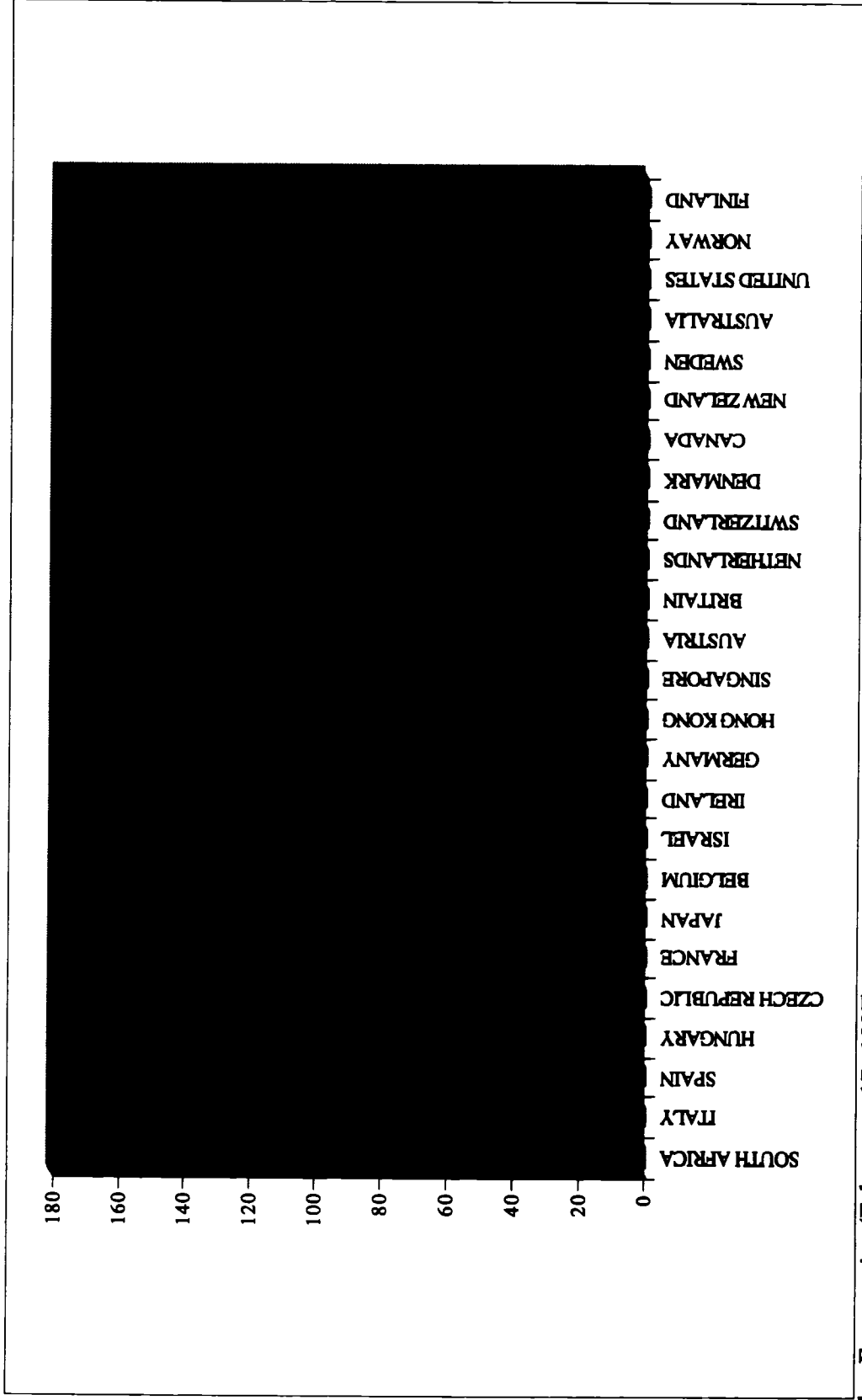
Includes all ending with .com, .org, .net
As of February 1997



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

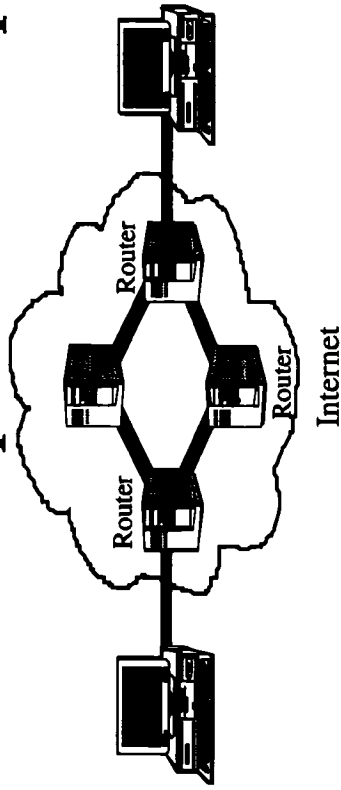


Figure II: Computer-to-Phone / Phone-to-Computer

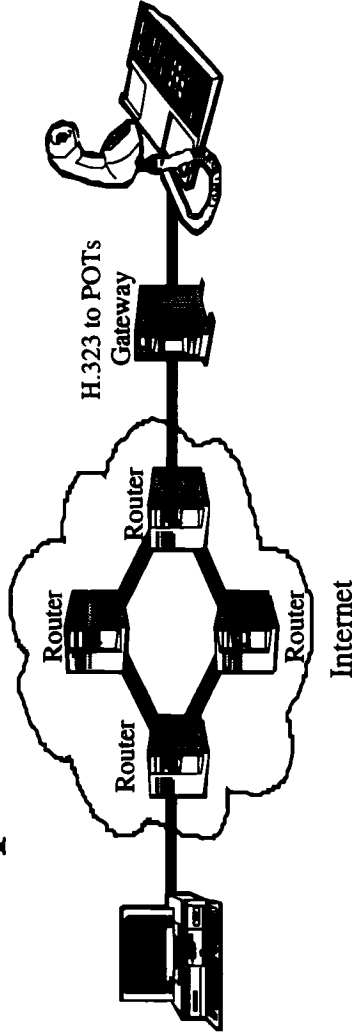
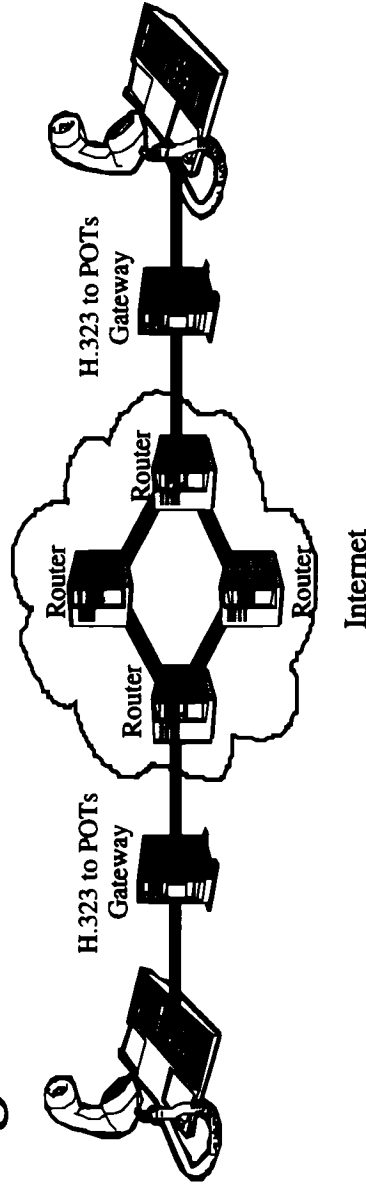


Figure III: Phone-to-Internet-to-Phone



INTERNET TELEPHONY APPLICATIONS

Product	Company	Platform	Web Address
CoolTalk	Netscape Comm.	Macintosh & Windows	http://www.netscape.com
CU-SeeMe	White Pine	Macintosh & Windows	http://cu-seeme.cornell.edu
DigiPhone	Third Planet Publishing	Windows	http://www.planeteers.com
FreeTel	FreeTel Comm.	Windows	http://www.freetel.inter.net
IBM-IC Phone	IBM	Windows	http://www.ibm.com
Intel Internet Phone	Intel	Windows	http://www.intel.com
Internet Phone (I-Phone)	VocalTec	Macintosh & Windows	http://www.vocaltec.com
NetMeeting	Microsoft	Windows	http://www.microsoft.com
Net Phone	Electric Magic	Macintosh	http://www.emagic.com
Speak Freely	Autodesk	Windows	http://www.fourmilab.ch
TeleVox	VoxWare	Windows	http://www.voxware.com
TS Intercom	Telescope Comm.	Windows	http://www.telescope.com
WebPhone	NetSpeak	Windows	http://www.itelco.com
WebTalk	Quarterdeck	Windows	http://www.quarterdeck.com

*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://rpcp.mit.edu/~itel/>.