

VOICE OVER INTERNET PROTOCOL (VOIP)

VOIP overview

- **Voice** is the sound produced in a person's larynx and uttered through the mouth, as speech or song.
- **VOIP** is the transmission of voice and multimedia content over Internet Protocol (IP) networks.
- VoIP historically referred to using IP to connect private branch exchanges (PBXs), but the term is now used interchangeably with IP telephony.
- VoIP is enabled by a group of technologies and methodologies used to deliver voice communications over the internet, enterprise local area networks or wide area networks.
- VoIP endpoints include dedicated desktop VoIP phones, softphone applications running on PCs and mobile devices, and WebRTC-enabled browsers. Real-Time Communications (RTC)

VOIP overview

- Voice over Internet Protocol (VoIP), is a technology that allows you to make voice calls using a broadband Internet connection instead of a regular (or analog) phone line.
- Some VoIP services may only allow you to call other people using the same service, but others may allow you to call anyone who has a telephone number - including local, long distance, mobile, and international numbers.
- Also, while some VoIP services only work over your computer or a special VoIP phone, other services allow you to use a traditional phone connected to a VoIP adapter.

VOIP overview

- Voice over Internet Protocol (VoIP) is referred to as and broadly includes Voice over Broadband (VoB), Voice over Digital Subscriber Line (DSL), Voice over Internet (VoI), Voice over Wireless Local Area, Network and Internet telephony.

Illustration of VOIP



How VoIP / Internet Voice Works

- VoIP services convert your voice into a digital signal that travels over the Internet.
- If you are calling a regular phone number, the signal is converted to a regular telephone signal before it reaches the destination.
- VoIP can allow you to make a call directly from a computer, a special VoIP phone, or a traditional phone connected to a special adapter. In addition, wireless "hot spots" in locations such as airports, parks, and cafes allow you to connect to the Internet and may enable you to use VoIP service wirelessly.

Which Equipments are needed?

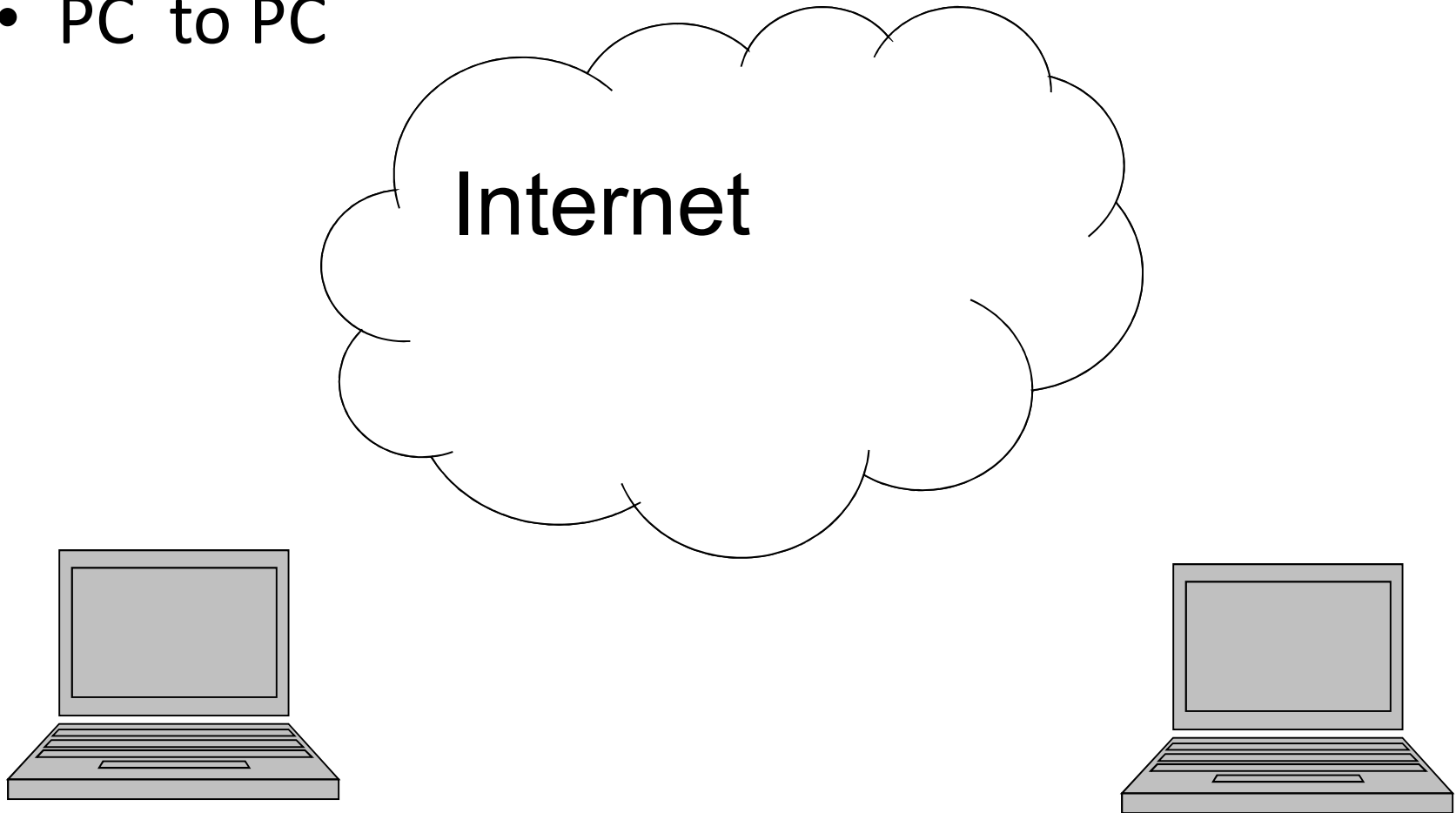
- **A broadband (high speed Internet) connection is required.** This can be through a cable modem, or high speed services such as Digital Subscriber Line (DSL) or a local area network.
- **A computer, adapter, or specialized phone is required.** Some VoIP services only work over your computer or a special VoIP phone, while other services allow you to use a traditional phone connected to a VoIP adapter.
- If you use your computer, you will need some software and an inexpensive microphone. Special VoIP phones plug directly into your broadband connection and operate largely like a traditional telephone. If you use a telephone with a VoIP adapter, you'll be able to dial just as you always have, and the service provider may also provide a dial tone.

VoIP strengthen factors

- For businesses: *Security at a lower cost*
- For consumers: *Significantly lower costs*
- For service providers: *Lower investment, capital and operating costs for operators*, it can be through :
 - ✦ Reductions in the bandwidth required to send any given voice message; and
 - ✦ Economies of scale: a proportionate saving in costs gained by an increased level of production
 - ✦ The possibility of converged services running over one network (as opposed to multiple, older legacy networks).
- Also it can be *Enhanced innovation, New business models and Entry into new markets for service providers.*

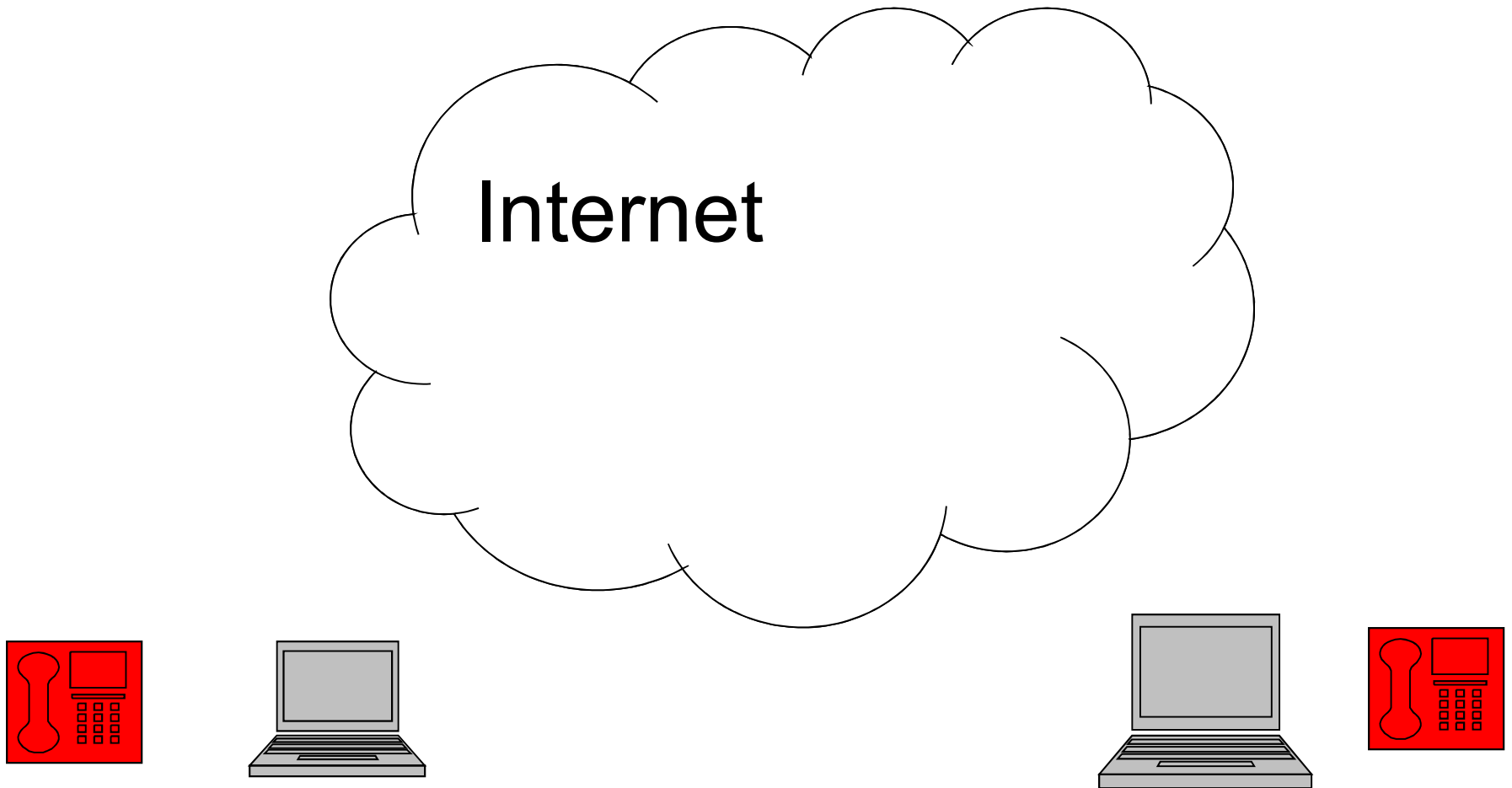
VoIP Architectures

- PC to PC



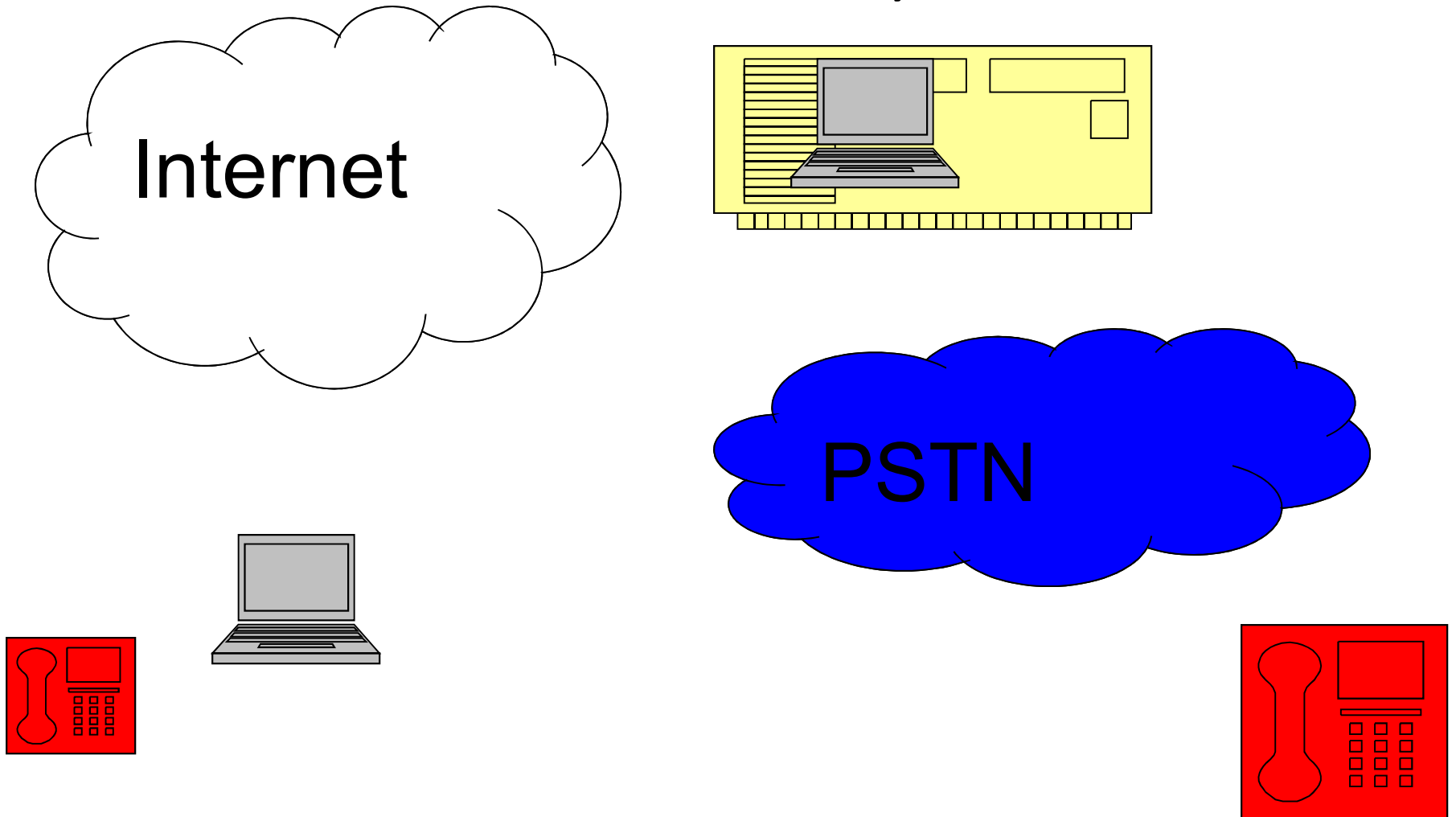
VoIP Architectures

- Phone to Phone via the Internet



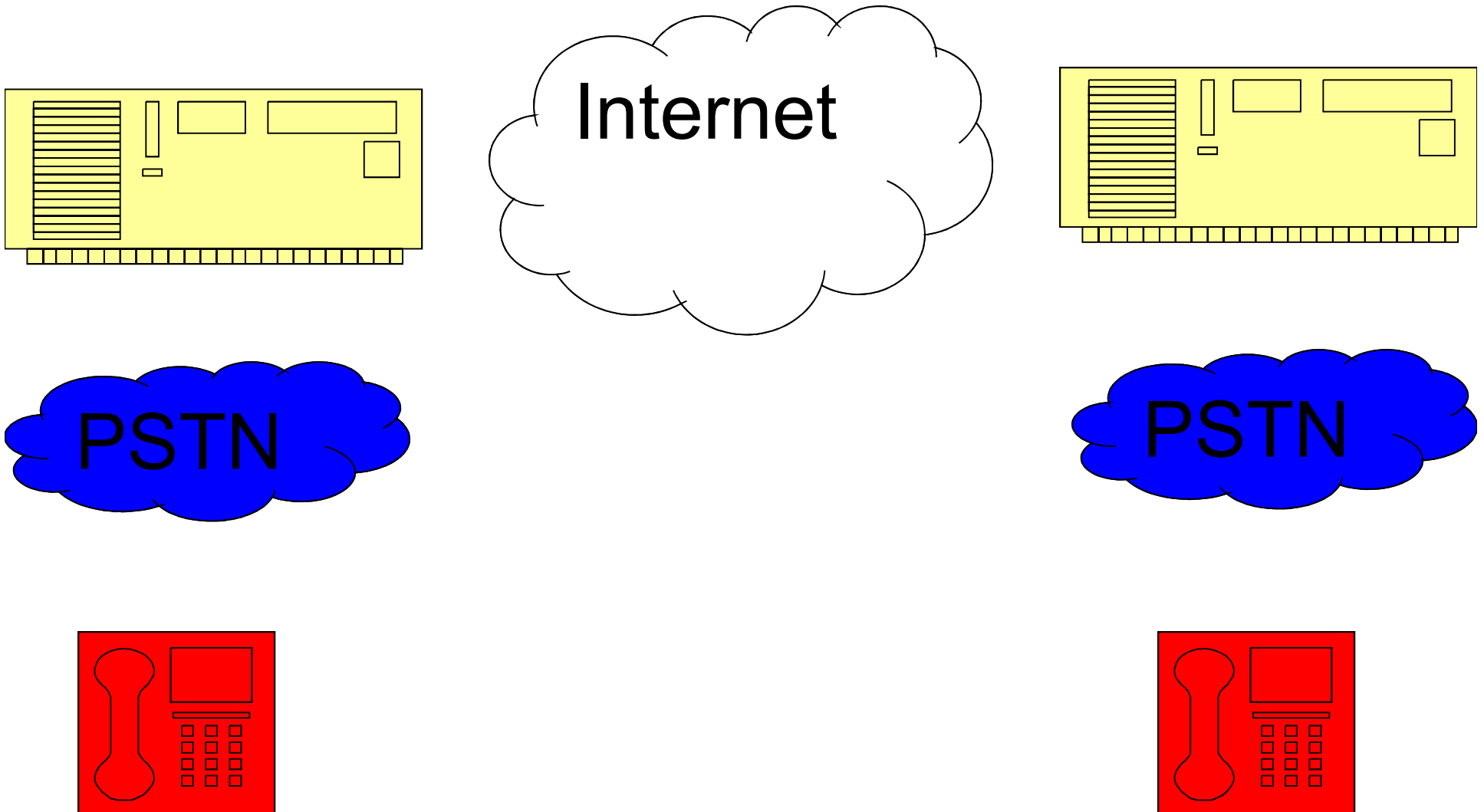
VoIP Architectures

- Phone to Internet to Gateway to PSTN



VoIP Architectures

- Public Switched Telephone Network (PSTN) to Gateway to Internet to Gateway to PSTN



VoIP Examples

- Xbox Voice
- Windows messenger
- AOL Instant Messenger
- Motorola Phone Adapter (Vonage)
- Cisco Phone
- Skype etc

Xbox Live

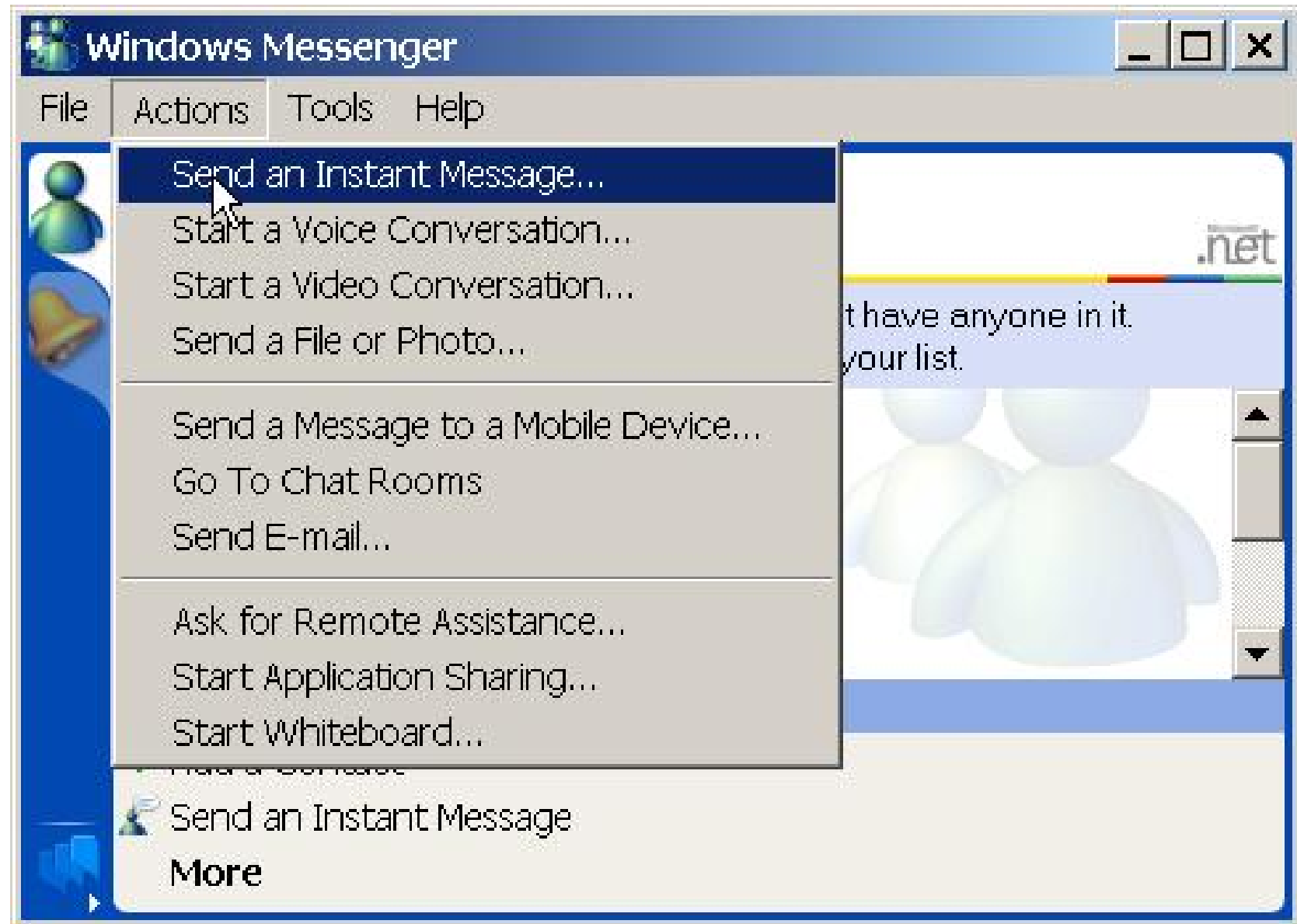
Get Xbox *Live*!

The new Xbox *Live* Starter Kit is here! So if you're not a subscriber, now's the time to make your move and join the ultimate gaming arena!

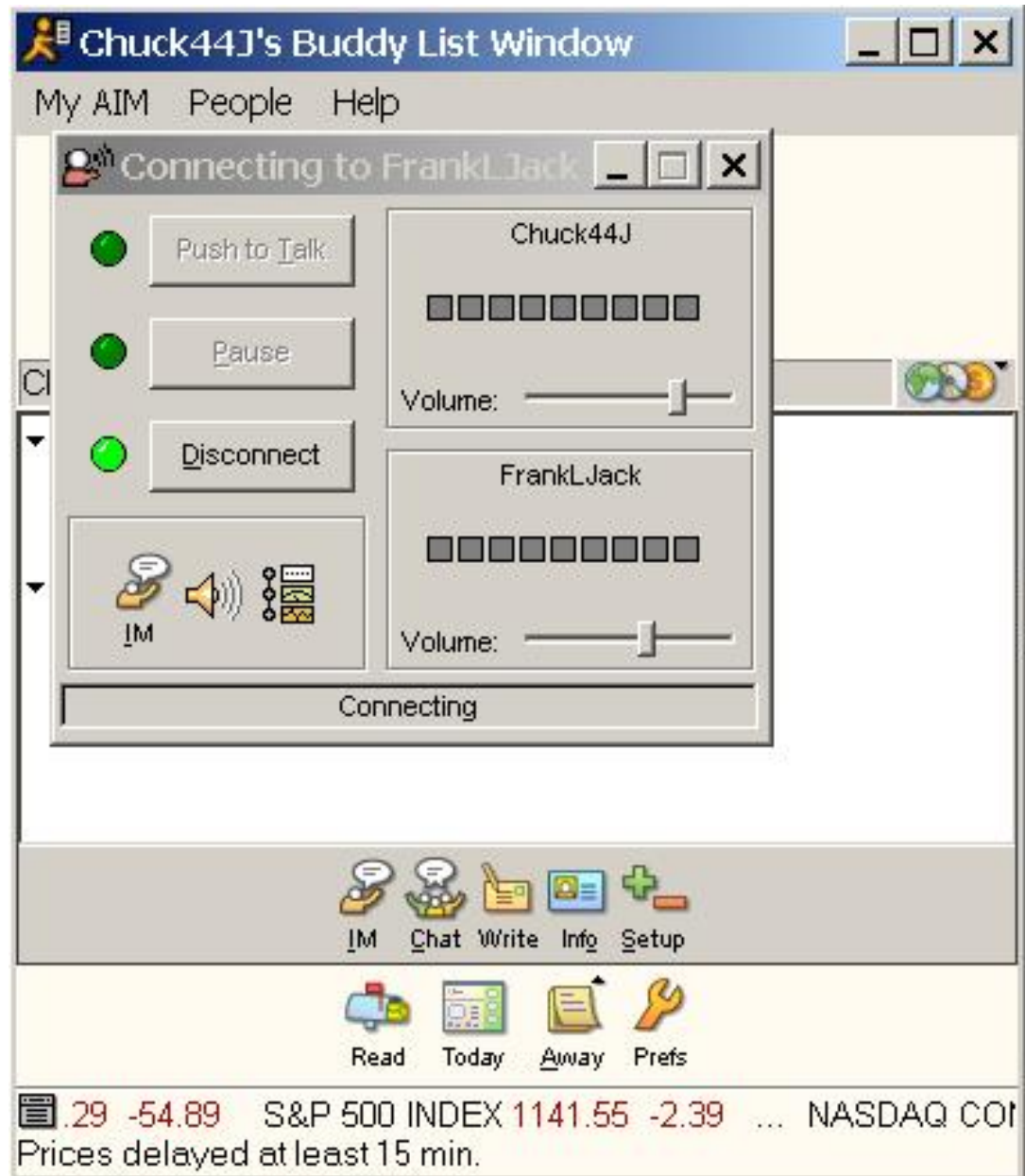


<http://www.xbox.com/en-US/live/about/StarterKit-Retailers.htm>

Microsoft Windows Messenger



AOL Instant Messenger



The Motorola Box Used by Vonage



VONAGE
THE BROADBAND PHONE COMPANY
WWW.VONAGE.COM

Cisco 7970 IP Phone



Concluding Thoughts

- VoIP is one of many higher-level communications capabilities among devices connected to the Internet.
- VoIP is not an application.
- VoIP is a capability that is part of many applications.
- VoIP capabilities are already pervasive.
 - Microsoft Windows Messenger (part of XP)
 - AOL Instant Messenger
 - Xbox and Sony Playstation
 - Skype
 - etc