VoIP Overview, pros and cons

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Part I

Definition

VoIP began with the specifications for the Network Voice Protocol (Nov. 22, 1977) and stands for "Voice Over Internet Protocol," and is often pronounced "voip." VoIP is basically a telephone connection over the Internet. The data is sent digitally, using the Internet Protocol (IP) instead of analog telephone lines. This allows people to talk to one another long-distance and around the world without having to pay long distance or international phone charges.

In order to use VoIP, you need a computer, an Internet connection, and VoIP software. You also need either a microphone, analog telephone adapter, or VoIP telephone. Many VoIP programs allow you to use a basic microphone and speaker setup. Others requires VoIP phones, which are like regular telephone handsets, but typically connect to your computer via USB. Analog telephone adapters allow you to use regular phones with your computer. IP phones are another option that connect directly to a router via Ethernet or wirelessly. These phones have all the necessary software for VoIP built in and therefore do not require a computer.

The largest provider of VoIP services is Vonage, but there are several other companies that offer similar services. While Vonage charges a monthly service fee, programs like Skype and PeerMe allow users to connect to each other and talk for free. However, these free services may offer fewer connections, lower audio quality, and may be less reliable than paid services like Vonage.

VoIP is also referred to as IP telephony, Internet telephony, and digital phone.

Part II

Pros and cons

Chapter 1

Pros

1.1 Affordable price

You can call and talk for free! The main advantage of the VoIP service is the financial savings; almost all calls from PC to PC (from computer to other computer) are free anywhere in the world. Free calls, this is an advantage that leads many people to switch to VoIP telephony.

You have to pay for making calls from PC to phone, land line or mobile, but this price is inexpensive, and it is lower than your regular phone service would charge you. Basically, no one from the VoIP providers will make any extra charge or have hidden fees. After switching to VoIP service you will remind with horror about the huge bills that you had to pay before.

1.2 Additional Features

The cost of the VoIP service depends on the chosen service provider. Also the there are great variety of the calling features. Most service providers include features such as call forwarding, call waiting, DID. Many companies use VoIP because it is very simply to make improved video-conference calls and make message and data exchange information parallel with the conversation. Any information can be sent virtually, anything at anytime; all you need it high speed internet connection.

1.3 Mobility

On of the major inconvenience encountered when moving to another house or apartment is changing the phone number. If you are moving to another country you will have to change your mobile phone number too.

VoIP telephony eliminates this inconvenience, because it is not distance or location dependent. The broadband connection gives you the possibility to make and receive calls all over the world simply by signing in to your VoIP account. Your location does not matter; you can use your assigned unique number which does not change, remaining constant.

Chapter 2

Cons

2.1 No Power mean no Phone

VoIP is not very reliable in case the electricity is out for any reason. You would not have the phone system. During the power outage there is no Internet connection, so there is no possibility to use the computer.

If you want to use the VoIP service during power outage, a power supply or a generator must be installed on the premises, but as a rule this is very expensive.

2.2 911 Calls

Your location can not be traced with VoIP service, because it is a transfer of data between two IP addresses, not physical addresses, so there is not way to determine your VoIP call origin. This is the main reason why many people are afraid to implement VoIP service in their home. The fear that they would not be able to contact the police, fire department, poison control, all these are important concerns for people.

2.3 Technical issues

The echoing and static has to be improved. The conversations become impossible in case there is poor quality of the connection and if all negative effects occur simultaneously. This problem of sound quality in VoIP-telephony has not yet been saved definitely, this being the biggest drawback.

As you can see, there are some disadvantages of the VoIP system, but since VoIP is a new technology, issues like latency, connection-time will be worked out. All these problems will soon go into the past. The advantages of the VoIP service make clear that it is worth to switch to this service. VoIP receives widespread consumer acceptance.

2.4 VoIP and Phishing

Before VoIP became popular, phishing attacks were made through spam email messages and PSTN landline phones. Since the advent of VoIP in many homes and businesses, phishers (how about phishermen?) turn to making phone calls, which makes people more accessible, as not everyone uses email as phones.

The question arises as to why phishers did not use phones using PSTN before VoIP. The PSTN is maybe the most secure modern means of telecommunication and has maybe the most secure network and infrastructure. VoIP is more vulnerable than PSTN. How VoIP Makes Phising Easier

Phishing is made easier for attackers using VoIP for the following reasons:

1. VoIP is cheaper than PSTN and is now quite widely available.
2. With VoIP, attackers can tamper with the caller ID that appears to the users and make it appear as if their bank or any other trusted organisation is contacting them.
3. VoIP software for PBXs, like the very popular open-source Asterisk, gives so much power to the programmer that now, people with minimum skills can achieve what only nerds could before. Any programmer with basic knowledge of VoIP can manipulate its deployment and make a bank of fake numbers that they can use to dupe their victims without compromising their own identities.
4. VoIP hardware, like IP phones, ATAs, routers, IP-PBXs, have become affordable and the software that accompany them are more user-friendly, thus facilitating the task for manipulators. These devices are also very portable and could be taken anywhere.
5. VoIP hardware and their easy intergration with PCs and other computer systems (like with voicemail) makes it easy for vishers to record phone calls of numerous victims who have been hooked, without having to be there themselves for the work.
6. Unlike for PSTN, VoIP numbers can be set up and destroyed in a matter of minutes, it is nearly impossible for authorities to track vishers down.
7. With VoIP, vhishers can send one message to thousands of recipients at one go, instead of having to type one single number for each vishing call.
8. Using VoIP, an attacker can create a virtual number for any country. He can then use a local number and forward the calls overseas, thereby emulating popular financial institutions in Europe or the US.

Chapter 3

Definitions

Phishing is an attack against data privacy whereby the victim himself gives out his personal data, after biting the bait. Not very different from ´fishing´! Phishing over VoIP is becoming so rampant that a special term has been assigned to it: *vishing*.

PSTN : Public Switched Telephone Network, is the global collection of interconnects originally designed to support circuit-switched voice communication.

PBX :Private Branch Exchange, mean in the field of telecommunications, is a system of electronic components that connects telephone calls. Also called telephone exchange or telephone switch.

ATA : Analog Telephone Adapter, it acts as an interface between your existing phone (or IP-enabled phone) and your Internet connection router or modem

Direct Inward Dialing Number, also known as DID or DDI Is the number that Vonage or some other phone service provider give you if you buy a phone line.

Chapter 4

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