

THE 6 HIDDEN Costs of VoIP

More and more companies switch from POTS (Plain Old Telephone System) to VoIP, because of the great saving opportunities and higher Return on Investment (ROI) it offers.

However, there are many hidden costs to a VoIP implementation: beware and plan accordingly!

HIDDEN COSTS #1

REVAMPING INTERNAL IT INFRASTRUCTURE

VoIP is a real-time application that requires more resources than traditional e-mail, HTML, and databases.

Companies switching over to VoIP have no choice but to make these improvements in the network systems and power supplies, because they are critical components.

NETWORK IMPROVEMENTS



A loss of data packets sent over traditional IP environments is called "latency".



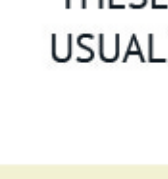
To have a conversation, the maximum delay can be no more than 150 milliseconds.



VoIP works in real time and needs the **lowest latency possible**.



LAN cabling needs to be replaced with gigabit Ethernet or a fiber backbone.



Switches and routers need to be upgraded.

THESE COSTS ARE OFTEN VERY HIGH AND USUALLY **NOT INCLUDED** IN THE VENDOR'S ESTIMATE.

POWER SUPPLY IMPROVEMENTS



Every device needs a reliable and uninterruptible power supply (UPS).



Standard desk UPS's **will not suffice** if the building doesn't have backup generators.



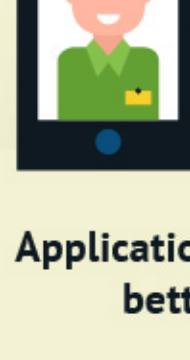
Some companies install separate power cabling for network components.



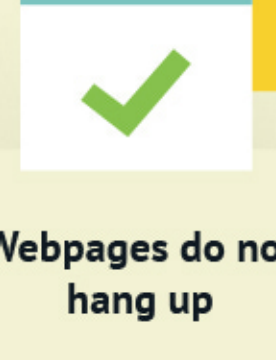
Some companies rely on a small emergency generator and a battery bank.

THESE COSTS ARE USUALLY **NOT INCLUDED** IN THE VENDOR'S ESTIMATE.

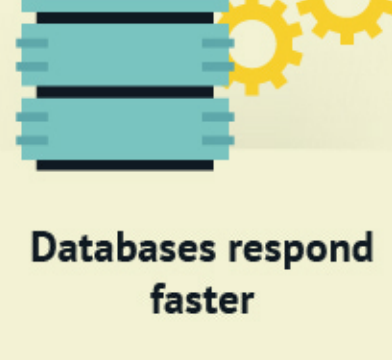
THESE IMPROVEMENTS DO HAVE HIDDEN BENEFITS!



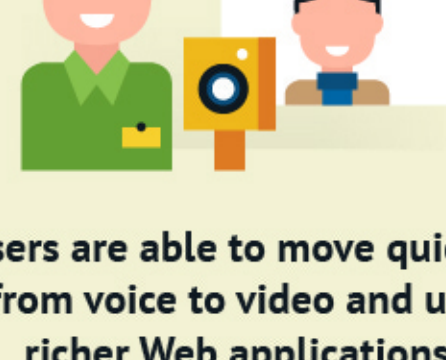
Applications work better



Webpages do not hang up



Databases respond faster



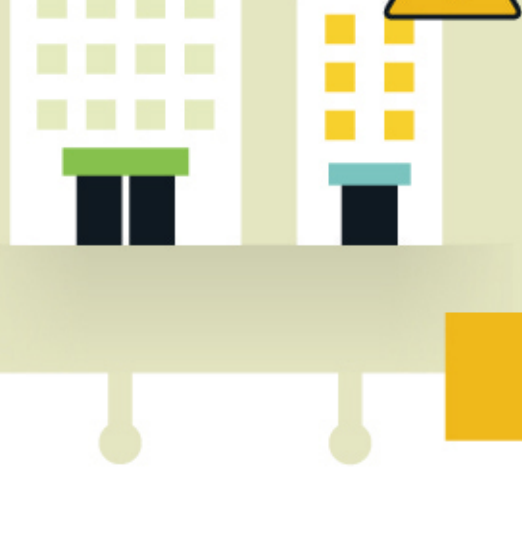
Users are able to move quickly from voice to video and use richer Web applications

THESE IMPROVEMENTS ARE ESSENTIAL AND SHOULD BE TREATED AS MANDATORY!

HIDDEN COSTS #2

VULNERABILITY AND SECURITY

The switch to VoIP can introduce **unexpected risks** into the phone system of a company.



Small businesses are especially vulnerable, because they may not have the number of trained, qualified personnel that larger companies have.

Smaller companies are also **less resilient** to any disruptions of business.

MOST COMMON VOIP THREATS

TYPE OF THREAT

EXPLANATION

CONSEQUENCES



Confidentiality Threat

Calls could be eavesdropped upon and/or recorded; voicemail may be tampered with

Loss of sensitive information and/or corporate secrets; identity theft



Service Availability

Primarily, viruses and worms similar to those that attack computer networks

Denial of service



User Authenticity

Registration hijacking and Caller ID spoofing

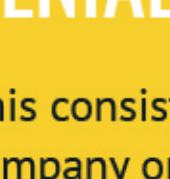
Identity theft; disruption of work



Larceny

VoIP toll fraud

Theft of data



Voicemail Spamming

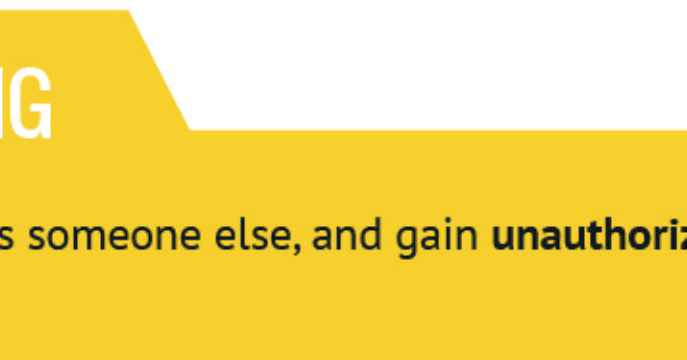
Unsolicited calls; "stuffing" of voice mailboxes

Disruption of work

DENIAL OF SERVICE (DOS)

This consists in **overloading the VoIP service and forcing it to shut down**, to harm the company or demand a ransom to stop the attack.

During the 2012 London Olympics, the servers of Olympic press agencies were hit by a DOS attack overloading them with 300,000 data packets per second. **The servers had to be shut down.**



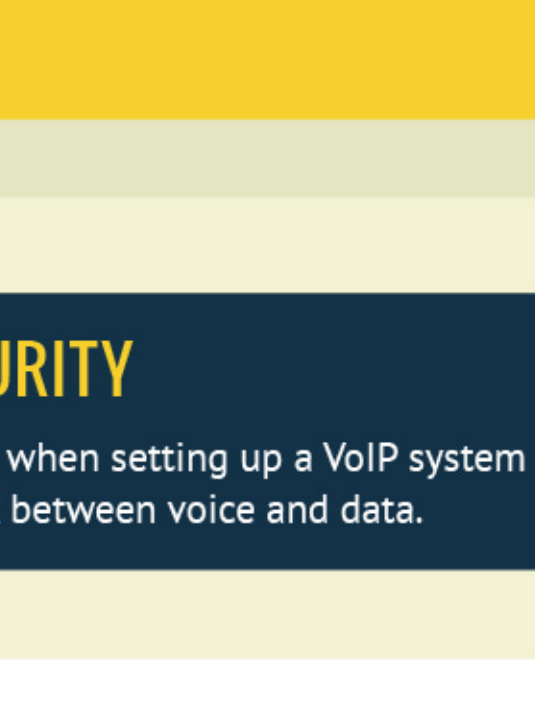
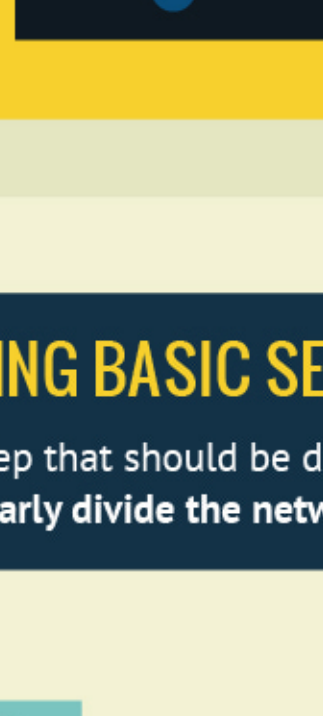
Due to the high costs associated with a **total disruption of business**, DOS attacks can be considered a major hidden cost.

IDENTITY SPOOFING

An attacker can **falsely pose** as someone else, and gain **unauthorized access** to information.

If the **only method of authentication used is caller ID**, this sort of attack is extremely simple.

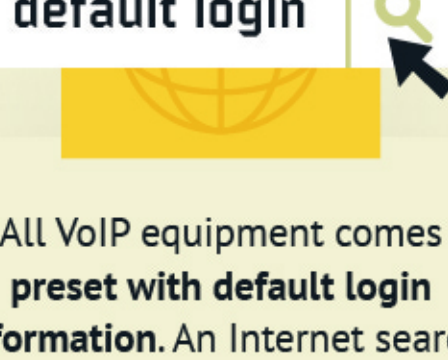
Any attack on an organization's telephone system has a cascading effect on the entire company, because it is the **one system that links all other systems**.



HIDDEN COSTS #3

IMPLEMENTING BASIC SECURITY

The most basic step that should be done when setting up a VoIP system is to ensure to **clearly divide the network** between voice and data.



All VoIP equipment comes **preset with default login information**. An Internet search can quickly find these default usernames and passwords.



VoIP equipment is also **vulnerable when unneeded services and ports are not shut down**. As a result, hackers can log in to a company's servers from the Internet.



RESET ALL DEFAULT USER NAMES AND PASSWORDS!

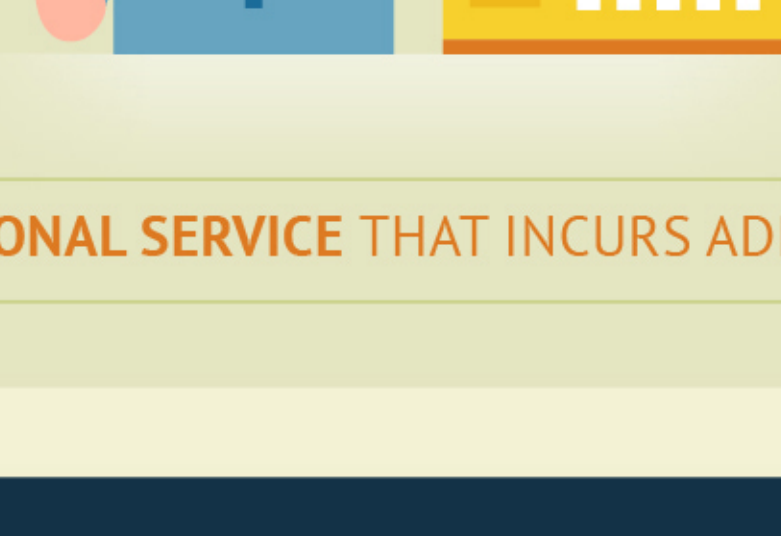
HIDDEN COSTS #4

FAX OVER IP

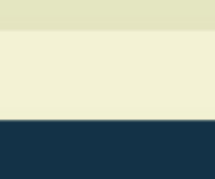
Fax machine are **NOT** designed to work over the VoIP system.

Fax machines were designed for the public switched telephone network (PSTN).

Even with VoIP-specific fax machines, the receiving machine might still be analog.



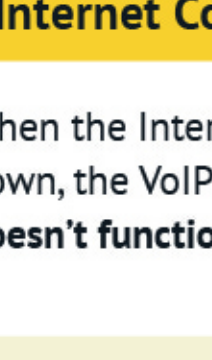
Businesses looking to use Fax over IP need the **T.38 subsystem**, which alters the signal to ensure that it can travel over the IP network.



T.38 IS AN OPTIONAL SERVICE THAT INCURS ADDITIONAL COSTS.

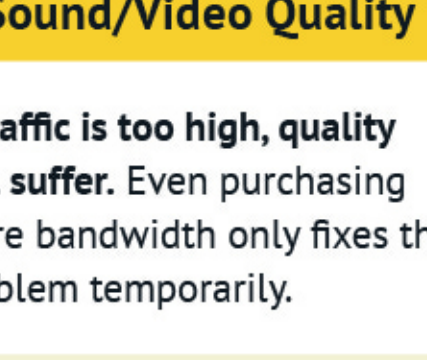
HIDDEN COSTS #5

LIMITATIONS OF VOIP SERVICES



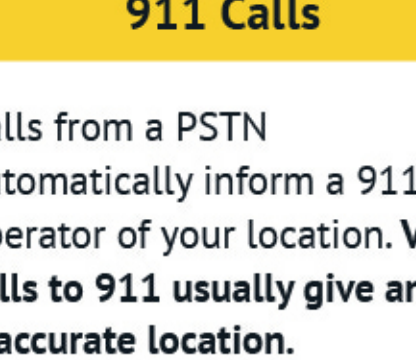
Internet Connectivity

When the Internet goes down, the VoIP system **doesn't function anymore**.



Sound/Video Quality

If **traffic is too high, quality will suffer**. Even purchasing more bandwidth only fixes the problem temporarily.



911 Calls

Calls from a PSTN automatically inform a 911 operator of your location. **VoIP calls to 911 usually give an inaccurate location.**



IT Issues

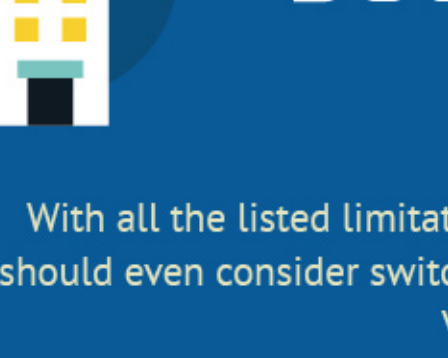
Anything that can affect your IT network or your computer can also affect your VoIP system. A business must always assign someone to do regular checkups and monitor the VoIP system.

HIDDEN COSTS #6

IMPACT ON EXISTING SYSTEMS

Many legacy systems can only work on an analog phone line.

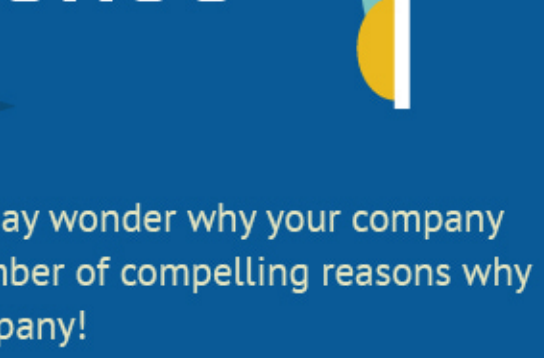
EXAMPLES MIGHT INCLUDE:



Alarm Systems



Point of Sale Devices



Credit Card Readers

IF THIS HIDDEN COST IS NOT DISCOVERED BEFORE ROLLOUT, IT COULD ADD TREMENDOUS COSTS TO THE PROJECT.

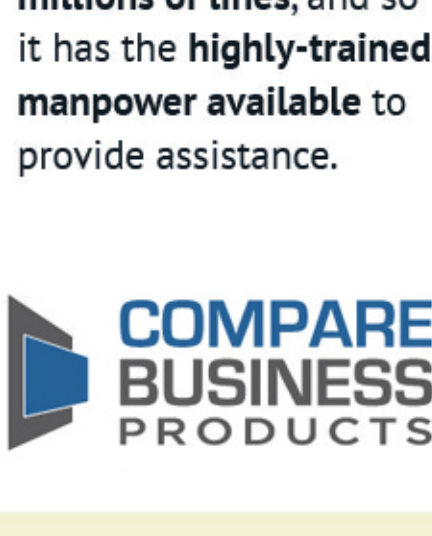
Does VoIP Make Sense FOR YOUR COMPANY?

With all the listed limitations and the abundance of hidden costs, you may wonder why your company should even consider switching to VoIP. The good news is, there are a number of compelling reasons why VoIP might still be a viable option for your company!

THE BENEFITS

VoIP means a natural computer/telephone integration – your **phone system and your data systems can work together, greatly enhancing productivity while reducing costs**.

In France, for example, **95% of calls are made through VoIP**. And the rest of the world – especially the developed nations – are rapidly following suit.



SMALL BUSINESSES

It makes sense for small businesses to use a **hosted VoIP solution**, rather than trying to manage it themselves.

The VoIP server **runs on a cloud platform**, and the business simply hires the needed number of extensions.

The user **simply connects his phones to the Internet** and makes sure that he has sufficient bandwidth to support the service.

The hosting company **handles all server management, security and other issues**.

At any given time, the hosting service provider might be **handling millions of lines**, and so it has the **highly-trained manpower** available to provide assistance.