

Voice Over IP: A New Paradigm for Telephony?

by Ken Finkelson

The winds of change are blowing in the world of voice networking and they are whistling a tune called “voice over IP.” Voice over IP (VoIP) means “voice over Internet protocol” or, more simply put, voice over the data network. Its potential effect on your organization is more likely to be that of a series of small storms than of single tornado that lays waste to your current phone system.

Before reading any further, there is one message that you must consider: If you are planning on entering into any new contracts for telephone service or making any new capital expenditures, make sure that you take this new technology into consideration. If you do not, your organization could be married—via contract—to older, more expensive technology for years!

In terms of your telephone system, VoIP can apply to either the line side (the portion of your network that is within your physical premises) or the trunk side (the portion which connects your facility to the outside world, from your building to the servicing telephone company).

The line side

Let’s begin the discussion with the line side. Line-side VoIP would allow you to migrate your internal voice traffic over the data network. You could plug in a telephone in the same manner as a computer. The voice system would recognize an individual staff member’s telephone by its internal interface card on the network wherever it was plugged in, and route calls to it.

Behind the scenes, your data folks will need to make sure the data network is capable of handling this additional traffic before you can opt for line-side VoIP. Many older data networks may not be able to handle this added load. If you were to go with this technology, you would almost certainly need to replace the telephone sets as well.

Computing the total cost of ownership of a line-side VoIP system is a complicated task. By using the same wires as the data network, there is a cabling savings. If you have 50 stations and new phone jacks cost \$100 per cable run, the cost for phone wire would be \$5,000. The savings generated by avoiding these cable costs, however, could be offset by the cost of “beefier” closet data switchgear, which may be more expensive. If your existing data network is too old, or too slow, you may have to spend that money anyway. As you can begin to see, each case needs to be analyzed separately. There is no one solution for all offices.

Trunk-side VoIP

Trunk-side VoIP is scaring the telephone companies. Telephone company stock prices show a steady decline. The phone industry has made its bread and butter from providing metered service for businesses. With metered service, you call your lawyer for five minutes, and you are charged for five minutes. VoIP changes this. You maintain a steady connection to the Internet, and you simply pay for that connection. You can use it as much or as little as you want.

Trunk-side services are popping up for flat rate connections at a set fee per month. This is an emerging technology but is almost certain to stay with us. Accordingly, it would be foolish to enter into a three-year agreement with a telephone company for service at a potentially lower rate if that service may be offered at a much lower rate when the new technology takes hold. It may be cheaper to pay the higher rate for a one-year agreement or go month-to-month, than to take the risk of a long term, unfavorable commitment.

Hybrid technology

Much of the newer technology available is referred to as “IP ready” (or hybrid). This technology allows IP connectivity on the line side or the trunk side, as well as traditional telephone services. This type of technology may protect existing hardware investments in phones and wiring while allowing a migration, over time, to the IP world.

An example where this might be a consideration would be where a new system was purchased within the last three years. This system could be IP ready. If you were expanding services and adding 10-20 people, VoIP could save costs. As always, thorough cost analysis would be in order.

PREFERRED CHOICES			
Phone System Technology			
	IP	Traditional	Hybrid
1. Phone system is five years or older	X		
2. Phone system is two years old			X
3. Phone system is eight years old, works well and you are only adding two stations		X	
4. Phone system is eight years old and breaks down constantly. Parts are scarce	X		
5. You have a three- year-old system, but the telephone sets do not support caller-ID and this is necessary for bill-back purposes*	X		
* Sets are generally one of the largest expenses. If you need new ones, it may be worth replacing the whole system.			

Let me share an example to illustrate these considerations. The preferred choices are indicated in the chart directly above.

As you can see, sometimes there are more questions than answers. Again—and I can't stress this point enough—each office needs to analyze its specific phone needs and resources. Many LRIS programs have to plan their phone needs in concert with a larger bar association system, although some may have separate systems. The best, and least expensive way to do this is through the request for information (RFI) process. This allows vendors to outline their pros and cons in writing, with pricing. Using a matrix, like the one outlined below can be an excellent tool.

You are not alone

Don't despair if the brave new world of VoIP seems overwhelming. There are many user groups and organizations that can be of great assistance in the selection process. Additionally, most reputable vendors will provide references. You can ask them for their experiences with the operation of the systems and the quality of the relations with the vendors and support personnel. And don't forget, vendors will always point out the vulnerabilities on their competitors' systems. Take advantage of all the available information and use it to form a knowledge base on which to make a decision.

SAMPLE MATRIX Phone System for X Bar Association				
Location	Memorial Courthouse			
Number of Stations	65			
Vendor	Avaya	Nortel	Siemens	Cisco
Switchgear	\$ 14,000.00	\$ 12,000.00	\$ 16,000.00	\$ 12,000.00
Telephones	\$ 13,000.00	\$ 12,000.00	\$ 15,000.00	\$ 9,000.00
Cabling	\$ 5,200.00	\$ 5,200.00	\$ 5,200.00	\$ 5,200.00
Installation	\$ 3,000.00	\$ 2,000.00	\$ 4,000.00	\$ 1,200.00
Training	\$ 2,000.00	\$ 1,500.00	\$ 900.00	\$ 1,500.00
Voicemail	\$ 5,000.00	\$ 4,200.00	\$ 3,920.00	\$ 5,500.00
Total Cost	\$ 42,200.00	\$ 36,900.00	\$ 45,020.00	\$ 34,400.00
Maintenance/year	\$ 3,120.00	\$ 2,184.00	\$ 3,600.00	\$ 3,000.00
Move/Add/Change Cost	75/Hr	0/Hr	0/Hr	5/Hr
Cost per Person (65)	\$ 697.23	\$ 601.29	\$ 748.00	\$ 575.38
Cost per Person (65) over 3 years	\$ 793.23	\$ 668.49	\$ 858.77	\$ 667.69

(These numbers are for illustrative purposes only. Any numbers you acquire will be different.)

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