

# Evaluating the Total Cost of Ownership for Small to Medium Business VoIP Phone Systems



It seems that interest in Voice over Internet Protocol (VoIP) is higher than ever. You can't pick up a major publication (mainstream or trade) or read a telecommunications Web blog without seeing the term at least once. "Enterprise VoIP Adoption Soars", screams one headline; "28 Millions Consumers will Switch to VoIP by 2008", says another.

Despite all this buzz, the Small and Medium business (SMB) market for VoIP products and services continues to be under served. Out of the many companies selling VoIP products and services to large enterprises and consumers, few have focused on what VoIP means to small businesses, how it will affect their bottom line, and how they should evaluate these products and services.

This white paper outlines a method for businesses to evaluate VoIP products in a way that directly addresses their needs and concerns.

**SMB VoIP Considerations**

Since 2003, Savatar has been conducting research on the small to medium business VoIP market. Our findings have become a benchmark for how these businesses view VoIP, how and why they purchase VoIP systems, and how VoIP solution providers should address their market needs.

By and large, SMB's are confused about what VoIP might offer their business. Our most recent study, conducted in the third quarter of 2006, found that SMB owners and decision makers are aware of and interested in VoIP and they thought switching to VoIP could provide real business cost savings. However, they are unsure of:

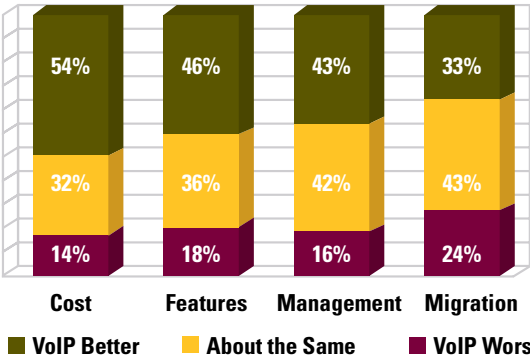
- What benefits VoIP could bring to their businesses
- Which type of VoIP system is right for them
- What kind of service provider they should contact to learn about VoIP

**But, SMBs are very clear on why they would switch to a VoIP solution**

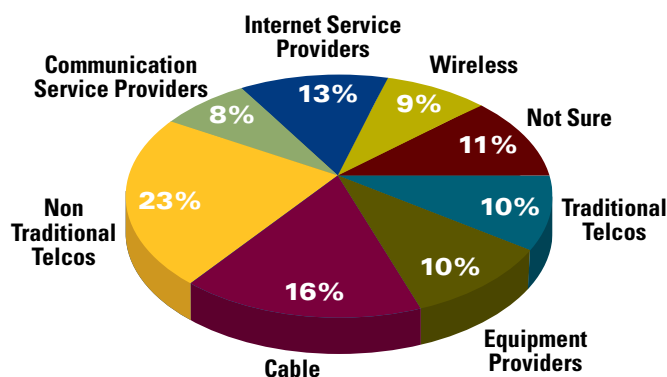
We asked over 500 SMB owners and decision makers how they thought a VoIP system would compare to their current system in four areas: cost, system management, migration and features. Did they think VoIP would be better, worse or about the same? The results were surprising and showed that SMBs have some interesting thoughts on how VoIP could benefit their businesses (see chart below).

- Fifty-four percent of the SMB owners who responded said they thought VoIP would be more cost effective than their current system. This is true, particularly when you consider the Total Cost of Ownership (TCO) of a VoIP system. We will discuss TCO in much more detail later.
- Almost half of the respondents thought that a VoIP solution would have more features than their current system. This is particularly shocking. All VoIP systems offer all of the features SMBs count on now (voice mail, call transfer, conference calling, etc.) and offer a number of advanced features that are only available with VoIP.
- Only 43 percent of survey respondents thought that a VoIP solution would be easier to manage than their current phone system, which may or may not be true. With many of the industry leading VoIP solutions, all of the routine, day-to-day changes you might want to make to your phone system (adding or deleting users,

*Figure 1: Perceptions of IP Telephony*



**Figure 2: VoIP Solution Providers**



changing extension numbers, setting permissions by extension or user, etc.) can be made by a designated administrator using a simple, intuitive Web interface; no special technical skills are required. On the other hand, with most non-VoIP traditional systems, routine changes require the intervention of a service provider (usually at some cost) or a highly skilled technical specialist.

- Just 33 percent of survey respondents thought that switching to a VoIP system would be easier than switching to another traditional phone system. Switching to VoIP is in fact easier, especially when the migration is managed by a certified VoIP solution provider who is capable of coordinating the logistical details of making the switch.

Confusion was also the rule when we asked what kind of VoIP system (premises based IP PBX or hosted IP PBX) the survey respondents would be prepared to consider: over 70 percent said that they weren't sure. For smaller companies, 50 employees or less, the number who said they weren't sure jumped to over 75 percent.

In addition, respondents did not have a clear idea on what kind of solutions provider could help them make the choice. We asked, "Whom do you think of as a business VoIP provider?" As you can see from **Figure 2**, there was no single type of service provider that garnered a majority of the response.

**What SMBs want**

Despite the confusion, we found a remarkable agreement in two areas: the types of problems SMBs had with their current phone systems and why they would switch to VoIP.

If you are currently familiar with telephone systems and small business environments, the problems most often cited will likely seem familiar to you. SMB owners said that they had issues with making changes to their systems (like adding, changing, or removing extensions) and that their

current system lacked features that were critical to business productivity. Other major complaints were the high cost of adding features, the difficulty in managing their systems across multiple office locations, and the expense of adding capacity to the systems. Again, VoIP provides solutions to these problems.

When asked, "How important are each of the following factors in your decision to switch to a VoIP system: cost, system management, features, age of your current system?" SMBs were very clear. *Over 75 percent said that lowering cost was the most important factor they would consider when contemplating a switch.*

**Comparisons can be complex**

Unfortunately, comparing the cost of VoIP solutions to each other and to traditional systems is not as straightforward as comparing the cost of competing long distance plans from different companies. Because a VoIP solution will replace and improve an SMB's voice and data infrastructure, another type of assessment is needed.

The correct way to evaluate competing systems, both VoIP and traditional, is to calculate and compare the Total Cost of Ownership (TCO) of each solution. In the next section we will define the TCO concept, show how to calculate TCO from the perspective of an SMB end user and recommend ways to use TCO to compare SMB VoIP offerings from different providers.

# Total Cost of Ownership

The concept of TCO has been used by information technology professionals for a long time to compare the economic consequences of major equipment purchases in a business. TCO is used to sum up the cost of the initial purchase and all other costs associated with the use and maintenance of the equipment over a set period of time.

## TCO for VoIP

During the course of our research into the SMB VoIP market, we had an opportunity to speak with the owner of a 30 person company in the Midwest. While discussing a number of offers that he had received to switch to VoIP from several different providers he expressed frustration with the information being supplied. “All of them inundate me with talk about features and, when they do address economics, they tout the Return on Investment (ROI) that their system will realize for my business.” “What’s wrong with that?”, we asked.

He was very clear in his response. *“First, while features are important, I want the solution providers to tell me about how the features relate to my business. Secondly, and most critically, my phone system is not an investment. I do not get a return on it. It’s a cost of doing business and I expect a solution provider to talk to me about my total cost for owning and operating the system.”*

We hear many comments like this one which have led us to establish a benchmark for calculating the TCO of VoIP solutions offered to SMBs. From the point of view of an SMB owner the TCO equation is simple:

$$\text{TCO} = (\text{Acquisition Costs}) + (\text{Monthly Recurring Costs}) + (\text{Annual Maintenance Costs})$$

Let’s look at each element separately.

## Acquisition Costs

You can think of Acquisition Costs as any cost that is paid up front. For VoIP, Acquisition Costs are more than just costs related to equipment purchases. All VoIP systems will have some up-front charges for things like system installation and training of employees on the new system. Remember, with VoIP, voice and data are carried over the same connection so there is usually installation and other charges related to the provisioning of that connection.

Simply put, an SMB wants their prospective VoIP solution provider to answer this question, “What do I need to write a check for up front to make a switch to VoIP?”

For an IP PBX, Acquisition Costs will include the cost of the IP PBX and any other equipment like routers, Power over Ethernet (PoE) switches, VPN, firewall, phones, cabling, power supplies, etc. There will also be costs for shipping, installation, and configuration of the equipment. Sometimes there will also be a purchase cost for software licenses that run the IP PBX and voice mail.

The solution provider selling the system affects these costs in many ways, some of them obvious, others not. Let’s start with the IP PBX itself.

## Integrated “All in One” Solution

Most IP PBXs have voice feature parity with one another but not all IP PBXs are engineered the same. The most advanced IP PBXs targeted at SMBs offer data routing capabilities with firewall and Virtual Private Network (VPN) functionality and PoE switches, in addition to the standard VoIP routing and voice feature set (auto attendant, voice mail, etc.).

Working with a solution provider whose product is engineered to include these capabilities provides benefits to the SMB customer. First, the cost of a

single, integrated device is less than the cost of several discrete devices which lowers their TCO. Second, an integrated device is easier to install and configure which reduces the set up costs. Finally, an integrated device allows the solutions provider to focus on adding value to the customer, not on resolving complex interoperability issues between devices.

### **Monthly Recurring Costs**

With VoIP, Monthly Recurring Costs include calling plans for both voice and data and can take several different forms. Some SMB plans charge per minute usage fees for local and long distance calls, along with a fixed monthly cost for data. Others bundle these charges together into a single monthly fee that offers unlimited data access and either a block of voice minutes for shared use by everyone in the company or unlimited voice minutes.

Regardless of how a solution provider constructs an offer, SMBs want an answer to the following question, “What do I need to write a check for every month for my voice and data service?”

Recurring charges should be made as simple as possible for the business customer. For SMB customers with more than one business location, solution providers need to help the customer understand the concept of “On Net” calls (calls from one office to another) and how they factor into lowering overall TCO.

Smaller (less than 50 employees) SMBs often prefer to purchase an IP PBX as a managed service offering which means that the solution provider will be responsible for all management and maintenance of the IP PBX and any other equipment that resides in the SMB’s office. SMBs pay for this management as a monthly recurring charge so the better an IP

PBX is engineered, the lower the solution provider’s cost of support will be and, consequently, a lower TCO.

When considering IP PBX systems, buyers should consider other factors that will affect their costs. What happens if the SMB grows? Will they need to purchase additional hardware or software licenses to increase system capacity? How will that effect end user TCO? Be sure that the solution provider you choose can answer these questions.

### **Annual Maintenance Costs**

For years, Annual Maintenance Costs have been a staple when purchasing hardware or software. Solution providers often charge 10-20% of the purchase cost of these products each year to guarantee technical support and product updates. The situation is no different with VoIP.

SMBs will want to ask, “What do I need to write a check for at the end of each contract year for maintenance of my voice and data network?”

Each IP PBX solution provider will handle these costs a bit differently. Some will charge a single fee that is a percentage of the purchase price of the IP PBX. Others will charge a fixed annual fee for each piece of equipment under management. Some offer different levels of support at different fee levels. They may charge one price for telephone-only support during regular business hours if a piece of equipment breaks down. Or, they may offer a higher price for premium support that includes technicians on site within two hours, seven days a week, to fix any problem that arises.

Again, SMBs need to look closely at how solution providers can support them. And, again, a better integrated solution is the right choice: find a product with a better track record in the market and a better system warranty.

# Real World TCO for Small Business

Savatar was recently involved in the purchase of a VoIP solution for an insurance company based in a large metropolitan area on the east coast.

The company had 20 employees and was using different providers for local and long distance voice services and a third provider for access to the Internet. They had an aging PBX bought nearly 10 years earlier that provided them with basic voice mail and calling features. The company had no dedicated IT staff to manage the PBX, but paid another solution provider for this service. The company expected to grow about 20 percent over the next three years.

With a switch to VoIP, the company hoped to meet several business objectives that should seem familiar to any small business. They wanted to:

- Reduce their overall voice and data costs
- Reduce the number of companies providing these services
- Avoid hiring dedicated staff to manage the new infrastructure

We started the buying process by drawing up a short list of 10 solution providers who offered VoIP products and researched their offerings on their websites. We then placed calls to the vendors and their resellers to learn more about their products and see how their sales force operated. We found that many of them did not return our phone calls and, of those who did, many had a very shallow understanding of the products. Worse, some of the vendors and resellers did not appear to be interested in learning about the company's concerns and business objectives.

We quickly narrowed down the list to six vendor products each represented by a different solutions provider. Our selection was based on their responsiveness and product knowledge. The vendors and products selected were:

- ShoreTel® IP Phone System
- NorTel® BCM 50
- Cisco® CME

- Alcatel® OmniPCX
- Avaya® IP Office
- ADTRAN NetVanta® 7100

Through a series of sales meetings and site visits we began to gather the information necessary to calculate the TCO of these product offerings.

## Acquisition Costs

Given the age of the company's old phone system, we decided that we would replace the telephone sets. This would be the first Acquisition Cost. Each vendor carried VoIP telephones from name brands with similar features. ADTRAN, Alcatel, Avaya, and Nortel resellers offered phones that included software licenses for about \$300 per phone. ShoreTel's reseller offered the phones for \$230 plus software licenses for \$175, a total of \$405, and Cisco phones ran about \$400 including the licenses.

At this point the Acquisition Costs of the systems began to diverge further.

ADTRAN's solution provider would provide the ADTRAN NetVanta 7100 for \$6,394. The product came with an interface for a dedicated T-1 circuit and a host of other integrated features not available with the other products. These included a 24-port Power over Ethernet (PoE) switch/router, a firewall and Virtual Private Network (VPN) for security, a voice mail system, analog line connections for a fax machine, and other devices. The NetVanta 7100 quickly became the standard to which we would hold the other products.

The ShoreTel IP Phone System provider quoted us \$6,358 for their IP PBX product. This was comparable to the NetVanta 7100 until we found that a firewall and PoE switch would cost an additional \$5,800, bringing the cost to \$12,158. Avaya IP Office and Alcatel had a similar story. For equivalent functionality, the cost of hardware was over \$18,000. The Cisco quote included a number of components and licenses, totalling \$10,681, and NorTel equipment came in at \$10,234.

Installation and configuration charges for the six products were \$2,969 for the NetVanta 7100, \$3,823 for Avaya IP office, \$3,756 for Alcatel, \$4,291 for ShoreTel IP phone system, \$4,800 for NorTel, and \$12,000 for the Cisco CME.

After a few questions for each solution provider, we concluded that the ADTRAN NetVanta 7100 offers lower install charges because of its single box, integrated design.

### Monthly Recurring Costs

We received quotes for calling plans that ranged from \$500 to \$600 per month up to \$900 monthly depending on the number of long distance minutes, data service, and other factors that each local service provider offered in their bundles. Due to the wide variations, we have chosen not to include those costs in the following TCO charts to avoid over complicating the scenarios and keep the focus on the systems. As a small business, be aware that you may be able to lower your overall TCO by consolidating voice and data into a bundled service but those integrated services are subject to change and are not available in every region and market. Check with your local service provider for the best options in your area or be sure to ask your solution provider for advice on ways to reduce your monthly recurring charges through integrated circuits.

### Annual Maintenance Costs

The small business in this research project wanted to keep their new IP PBX up to date, support changes, and have on-site support available in the event of an outage. We asked each solution provider to provide quotes for this service.

ADTRAN's provider said the cost was \$1,200 annually, Alcatel's was \$1,958 each year, ShoreTel's provider quoted us \$2,039 per year,

*\* Pricing may vary by region, configuration, or service.*

NorTel was \$1,736, Avaya's \$2,500 per year, and Cisco's was \$3,774.

### TCO Comparison

Figure 3 and 4 show the results of our TCO calculation.

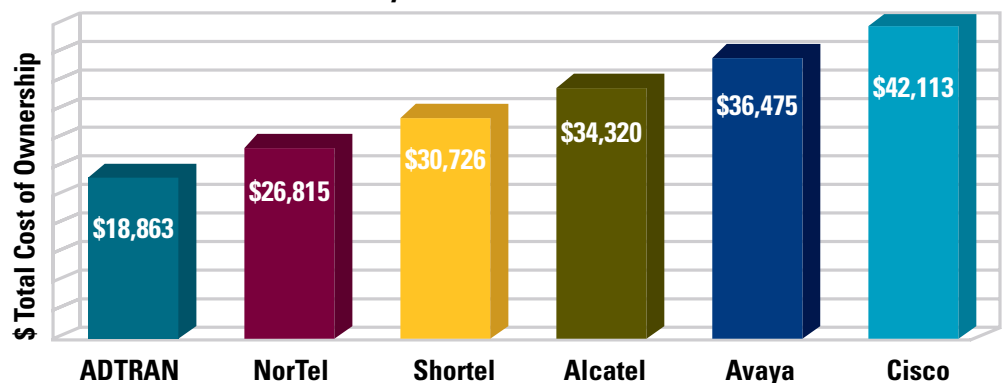
From a TCO point of view, the answer is clear: the ADTRAN NetVanta 7100 has a TCO significantly lower compared to all the other systems.

Figure 3

Acquisition Costs	ADTRAN NetVanta 7100	NorTel BCM 50	Shortel	Alcatel Omni PCX	Avaya IP Office	Cisco
Phones	\$5,900	\$6,493	\$8,160	\$5,840	\$6,160	\$8,110
Equipment	\$6,394	\$10,234	\$12,158	\$18,850	\$18,992	\$10,681
Installation, Configuration, Training	\$2,969	\$4,880	\$4,291	\$3,756	\$3,823	\$12,000
Subtotal	\$15,263	\$21,607	\$24,609	\$28,446	\$28,975	\$30,791
<b>Maintenance Costs</b>						
Three-years Maintenance and On-Site Support	\$3,600	\$5,208	\$6,117	\$5,874	\$7,500	\$11,322
Subtotal	\$3,600	\$5,208	\$6,117	\$5,874	\$7,500	\$11,322
TCO	\$18,863	\$26,815	\$30,726	\$34,320	\$36,475	\$42,113

Figure 4

### Three-year TCO for a 20 Phone Solution



ADTRAN wins on every front. The NetVanta 7100 has the lowest acquisition costs and the lowest TCO. Based on our real world research, and from the point of view of both solutions providers and small businesses, the ADTRAN NetVanta 7100 with its IP PBX and integrated voice and data functionality came out as the best engineered solution and lowest overall cost.

# Other Considerations

There are a variety of other factors that augment TCO analysis and should be considered when analyzing VoIP products for the SMB market. Some of the most important are solution scalability, and, ease of sales and support.

## **Solution Scalability**

There are two dimensions to consider when evaluating the scalability of a VoIP solution: adding users to the system and adding features to the system.

A VoIP solution with a 30 percent TCO advantage for a 20 person company may not maintain that advantage as the company grows.

As noted earlier, not all IP PBXs are engineered the same. Some products have hidden costs that only present themselves when a business grows. For example, even though a particular IP PBX may have the port capacity to handle growth, activating new ports may require the end user to purchase more software licenses or additional equipment. If our 20 person client were to grow by 20 percent over the three years of the contract, the TCO for many systems would increase by nearly 15-20 percent whereas the ADTRAN NetVanta 7100 would grow by less than eight percent since the licenses are included. The differences could mean a great deal to an SMB.

## **Ease of Sales and Support**

Every solutions provider has a goal to keep sales and support costs down while providing superior customer service. The choice of IP PBX system can directly impact these costs. The ADTRAN NetVanta 7100 again scores high when evaluating these dimensions.

Because of its integrated design, ADTRAN solution providers are able to produce sales quotes and respond to users more quickly. Our ADTRAN reseller produced a quote in one business day versus three business days or weeks for the other systems. The same design advantage plays out in lower support costs. The integrated NetVanta 7100 product takes less time to install and configure than the discrete IP PBX, firewall and PoE systems offered by the other multi-box systems. Lower ongoing support costs are clear from the TCO analysis: ADTRAN's reseller charged \$100 per month versus much larger figures for the other solution providers, this too as a result of the ADTRAN NetVanta 7100 being easier to remotely manage and support.

## **Conclusions**

As this report shows, VoIP and IP Telephony systems, implementations, and on-going support varies greatly across the market.

VoIP can bring significant cost savings to Small and Medium Businesses. But, with different types of VoIP sold by many diverse service providers and solutions providers, SMBs should evaluate their options carefully before making the switch. The real world TCO equation detailed in this paper provides an excellent starting point for SMBs to evaluate the economic consequences of product choices.



**About Savatar®**

Savatar is a strategy and technology consulting firm. People frequently describe Savatar as “Relationship Management” consultants. While Customer Relationship Management (CRM) and Partner Relationship Management (PRM) are certainly in vogue today—new “solution” suppliers seem to be popping up everywhere—Savatar likes to avoid trendy labels.

Savatar knows that sustaining superior performance in today’s market still depends on simple, traditional business virtues—superb planning and flawless execution—coupled with the selective use of appropriate technology and innovative business practices. Savatar helps their clients strike this balance.

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