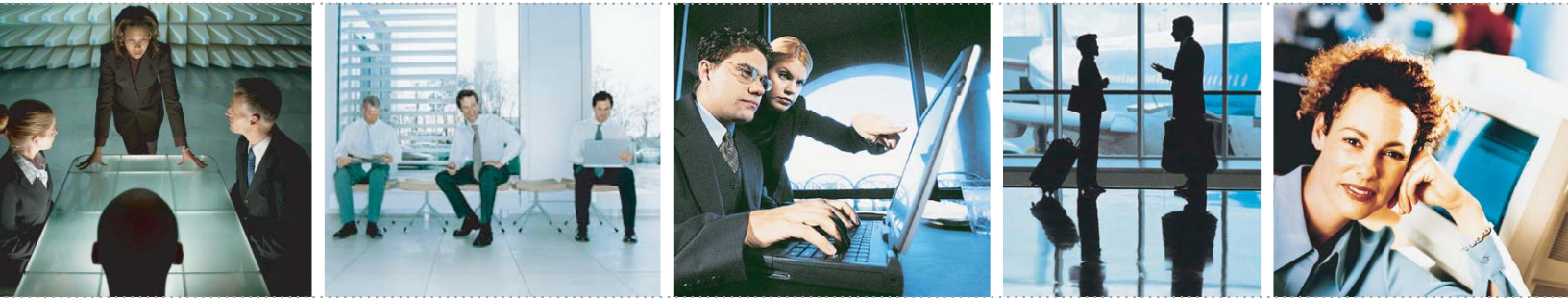


Cutting Remote Access Costs In The Enterprise:

Financial benefits of a managed service solution

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CORPORATE



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Executive Summary

This paper illustrates how companies can reduce the cost of providing secure remote access to teleworkers, day extenders, and mobile professionals by using GoToMyPC Corporate secure managed remote access services. By examining cost factors and examples based on customer interviews and reference materials, the following benefits have been shown:

- **Less up-front investment** GoToMyPC Corporate often requires less up-front investment and/or smaller monthly fees than IPsec or SSL VPNs.
- **No Capital Outlay** In-house VPNs require capital investment in customer premises equipment, while a network-based service like GoToMyPC Corporate requires no capital outlay.
- **Less Expensive Administration** In-house VPN administration is often more expensive than a managed service like GoToMyPC Corporate.
- **Laptops With Client Software Are Costly** VPN client software on company-paid laptops make IPsec much more expensive than either SSL or GoToMyPC Corporate.
- **Desktops Cut Costs Over Laptops** GoToMyPC Corporate monthly savings are even greater when calculations include the savings associated with using employee desktops instead of company-managed laptops.

Many companies are considering browser-based alternatives and managed services to overcome deployment barriers and further reduce costs. GoToMyPC Corporate embraces both of these emerging trends, helping companies to deliver more convenient and cost-effective remote access to various end user communities.

- Companies with existing VPNs can save money by using GoToMyPC Corporate to offload end users – especially teleworkers and day extenders with high-speed access.
- GoToMyPC Corporate is a viable, competitive solution for teleworkers, day extenders, and many travelers who require the same desktop environment, whether working from home or at the office.
- GoToMyPC Corporate can be a convenient, cost-effective alternative to traditional in-house VPNs for companies just getting started with secure remote access.

This paper estimates typical costs based upon industry analyst reports, VPN vendor research, and interviews with GoToMyPC Corporate customers. However, we recognize that every company has its own unique remote access needs and cost variables.

Evolution of Corporate Network Remote Access

GoToMyPC Corporate is a next-generation managed service that leverages industry trends to drive down remote access costs. Many enterprises are now moving to browser-based managed services like GoToMyPC Corporate to speed deployment and reduce operational expenses. To understand why, let's review the evolution of remote access to corporate networks.

Methods for remote access to business networks have changed significantly over the past decade. In the early 90's, popularity of email and the world wide web spurred growth in corporate and residential Internet connections. By 1995, TCP/IP had been integrated into Windows, and Internet access was growing ubiquitous. By the late 90's, early VPN adopters began leveraging the Internet to offer travelers readily-available inexpensive remote access. By year 2000, 20% of corporate traffic was transported over VPN tunnels, cutting telecommunications costs in half for many companies.^[15]

IDC expects the VPN market to grow from \$5B in 2001 to 9.7B in 2005, with a compound annual growth rate of 18%^[7]. Factors driving VPN adoption include globalization, growth of teleworking, need for security, and desire to make more efficient use of business resources. Today, three out of four enterprises that employ remote VPNs access use them to support travelers, followed closely by home-based workers (60%) and mobile field workers (59%).^[11]

As the workforce grows increasingly distributed, VPN deployment and administration become more challenging. According to a 2003 Network World survey, large enterprises spent an average of \$3.4M last year on security, plus another \$2.4M equipping and connecting remote workers. To further stretch their IT budgets, 73% of these companies plan to move functions to the web, and 46% plan to outsource security functions to managed service providers.^[11]

Many consider web browsers as an alternative to VPN client software to reduce cost of VPN ownership and complexity. According to Gartner, 36% of the companies using VPNs say trouble-shooting home-based workers is a significant deployment challenge; 28% also cite VPN end user training as a barrier.^[18] By leveraging the familiar web browser, present on nearly every desktop, laptop, and PDA, companies may avoid installing, configuring, and updating VPN software on remote devices. Browsers also tend to be easier for employees to understand, launch and use. To capitalize on surging demand for web-based remote access, a new crop of SSL VPN products emerged last year.

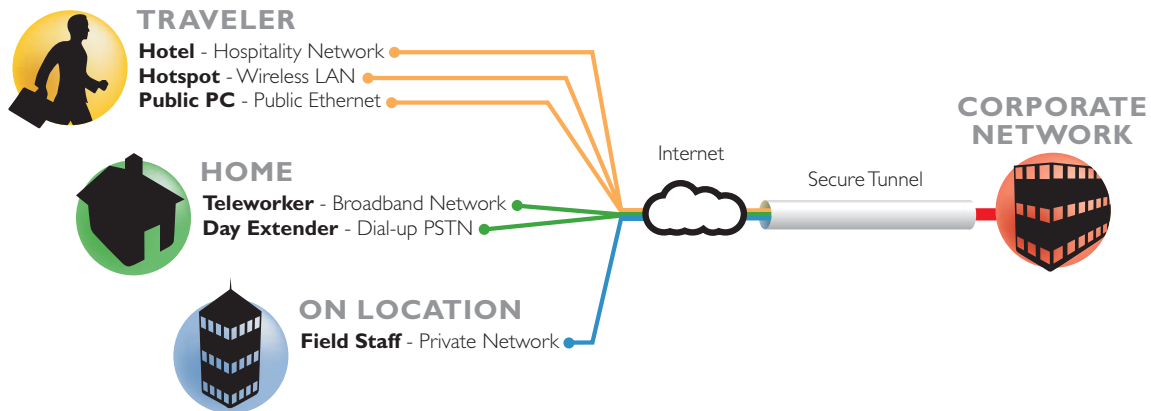
However, like IPSec VPNs that came before, SSL VPNs require gateway appliances at the edge of the company network. These in-house VPNs can require weeks or months to deploy, complex network and/or application integration, and security-savvy administrators for configuration, maintenance, and monitoring. Because time-to-implement, the cost of new infrastructure, and hiring skilled people are top Internet Business System barriers^[6], many companies are now looking to buy managed VPN services rather than build their own in-house VPNs.

According to Gartner, the managed security services market is expanding rapidly, doubling from \$4.1B in 2001 to nearly \$9B by 2006.^[13] Managed services are gaining in popularity because they free up capital, reduce on-going operational costs, and decrease the need for in-house security expertise. By outsourcing to a managed service provider, companies can increase internal focus on their own business goals by leveraging the provider's security infrastructure and expert staff to ensure the safety of business traffic over the Internet. Most managed IPSec VPN services still install customer premises equipment (CPE) at the edge of the customer's network. Network-based managed IPSec VPN services and CPE-based SSL VPN services do exist, but are far less prevalent than CPE-based managed IPSec VPN services.

GoToMyPC Corporate is a unique secure managed remote access service that capitalizes upon all of these emerging trends. As a network-based managed service, GoToMyPC Corporate is much easier to deploy than in-house IPSec and SSL VPNs. By leveraging existing web browsers and employee desktops, GoToMyPC Corporate can also be less expensive to operate than client-based VPNs. This paper illustrates how and why companies can save money by using GoToMyPC Corporate to enable secure remote access by teleworkers, day extenders, travelers, and other mobile professionals.

Remote Access User Communities

Remote access solutions are associated with per-user cost, as though all end users were identical. But there are several distinct end user communities, each with different business objectives and access requirements. As we shall see, most of these end user needs can be met by GoToMyPC Corporate -- in many cases, yielding a better fit than traditional VPNs.



Teleworkers: One quarter of U.S. employees worked full or part-time from home in 2001.^[14] Teleworkers require the same computing environment, whether working at the office or from home. This means high-speed broadband access for efficient communication. It means exactly the same desktop and server applications and configurations. It means seamless access to files, folders, and databases back at the office. Anything less reduces worker efficiency and ultimately increases total cost.

Day Extenders: Employees that rarely telework often log into the company network during the evening or on weekends. Employers are highly motivated to facilitate after-hours access because 62% experience noticeable productivity improvements.^[18] Day extender needs vary - for example, a software developer may have requirements similar to those described for teleworkers, while an IT administrator may need broad access to servers and devices at several data centers. However, many business needs can be satisfied by enabling remote access from a day extender's own home PC.

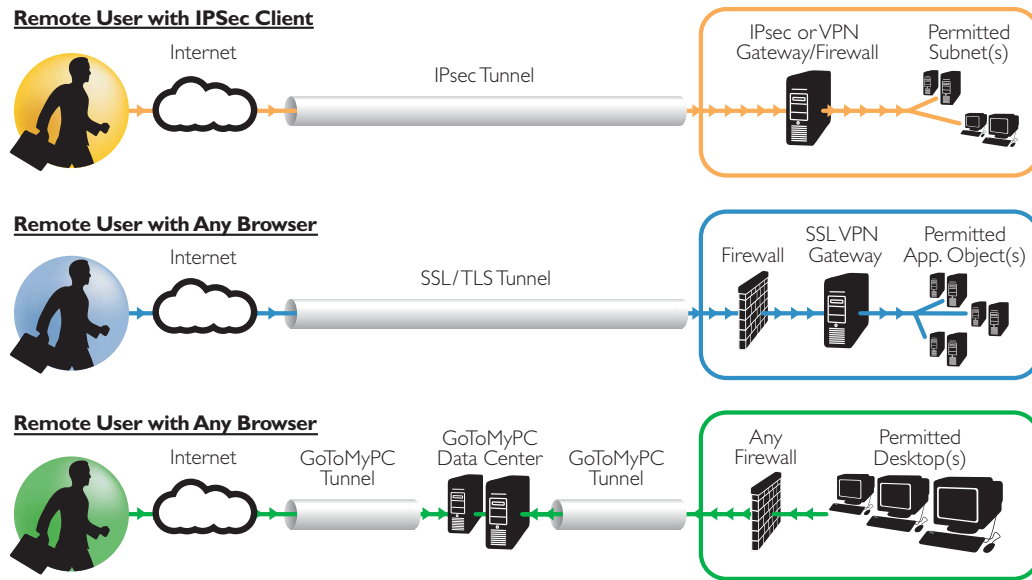
Mobile Professionals: According to IDC, 12 million mobile workers will come on-line between 2002 and 2006.^[11] Many will be field workers involved in sales, on-site consulting, support, or delivery. Mobile initiatives have been strong in healthcare, financial, manufacturing, retail, and education - verticals where employees spend little time at a desk. Mobile professionals require full-time access, but are less likely to have a desktop that requires duplication. Instead, they need convenient access to mobile applications that may accommodate low-bandwidth wireless web access from small-footprint devices.

Travelers: Many employees have a primary workplace, but travel on business. Their needs differ from full-time mobile professionals. First, most travelers have a desktop back at the office. Second, application and data needs are similar to day extenders - many travelers can be satisfied with basic email, but others require access to their usual desktop applications and files. Access speed can range from low-speed dial (particularly for international travelers) to high-speed access from customer sites, hospitality networks, or Wi-Fi hotspots. Travelers require dependable access from anywhere, unimpeded by differences in network topology or bandwidth.

GoToMyPC Corporate is an especially strong fit for teleworkers and day extenders because it provides remote access to the worker's own desktop back at the office -- including his existing mailbox and mail client, enterprise applications, files, and databases. For this reason, and also because it can be used from any browser, GoToMyPC Corporate is very attractive to travelers with at least medium-speed network access (56 Kbps or better). In fact, GoToMyPC Corporate can be a better fit for these user communities than traditional VPNs. To understand why, let's take a look at other remote access alternatives and how they compare to GoToMyPC Corporate.

Secure Remote Access Alternatives

Before VPNs, private dial-up was used to meet traveler and day extender needs. Today, it is widely understood that using the Internet cuts cost by eliminating long distance and toll-free surcharges. The rest of this paper therefore compares solutions for providing Internet-based remote access: specifically, in-house IPsec VPNs, SSL VPNs, and GoToMyPC Corporate.



IP Security (IPsec) VPNs extend the company network's perimeter by using tunnels to add remote nodes - traveler laptops, teleworker desktops, and mobile PDAs. IPsec provides peer authentication and confidentiality, integrity, and replay protection for IP packets that traverse the Internet. IPsec VPN Gateways control traffic exchanged between VPN clients on each remote host and authorized subnets inside the company network. IPsec is a robust, general-purpose platform for accessing any IP-based client/server application.

Some end users require broad access, but many do not. User permissions can be narrowed, but most IPsec VPNs tunnel all traffic to the company network. This reduces risk when IT has complete control over remote nodes, but can increase risk when using unmanaged PCs. To meet teleworker needs, companies try to replicate each worker's desktop on his or her home PC, including applications, configurations, and data. According to Network World, 48% of surveyed companies actually set up remote nodes for workers to ensure VPN security. However, doing so substantially increases operational cost.

Secure Sockets Layer (SSL) VPNs provide tunneled access to individual enterprise applications. SSL provides asymmetric client/server authentication and confidentiality, integrity, and replay protection for application data crossing the Internet. SSL VPN Gateway appliances control traffic between remote browsers and authorized server applications inside the company network. By leveraging existing browsers, SSL VPNs avoid installing IPsec VPN client software, thereby reducing per-user software administration costs.

With SSL, day extenders and travelers enjoy "anywhere" access from home and public PCs. However, some teleworkers, mobile professionals, and those with broad access needs may find SSL VPNs limiting. SSL VPNs usually support web portals and common business applications like enterprise mail and network file access. Other application support varies; custom development may be needed to "webify" less-common applications. Webified applications also require workers to

interact differently over the web vs. at the office. To address these issues, some SSL VPN products use Java/ActiveX to support native GUIs and/or generic port forwarding. Because SSL VPN products vary quite a bit, companies must be careful to match remote access needs with individual product capabilities.

GoToMyPC Corporate provides secure tunneled desktop access to authorized PCs inside the company network. GoToMyPC Corporate provides two levels of mutual authentication, with an optional third level based on One-Time-Passwords or SecurID tokens. End users log into Expertcity's managed server from any web browser, secured by SSL. This managed server "brokers" connect requests, establishing secure end-to-end connections between remote users and host PCs.

Because GoToMyPC Corporate is a hosted, network-based managed service, no VPN gateway is needed inside the corporate network. To facilitate firewall compatibility, only outbound sessions are used. However, companies remain in complete control over remote access services because GoToMyPC Corporate permits access only by authorized remote users, only to authorized host PCs.

GoToMyPC Corporate's secure data connections provide 128-bit AES confidentiality, integrity, and replay protection for all traffic between browsers and host PCs. Secret keys known only to the end user and host PC ensure that not even Expertcity can access company resources or decrypt tunneled data.

Because GoToMyPC Corporate is a fully-managed service, policies and reports are accessed through a secure admin portal. GoToMyPC Corporate features like file transfer, chat, and guest invite can be selectively enabled or disabled at group and user levels.

Like SSL, GoToMyPC Corporate users also enjoy "anywhere" access from any device with a web browser, subject to controls defined by the GoToMyPC Corporate administrator. Unlike SSL, GoToMyPC Corporate users have access to all applications installed on their own office desktop, and all files and network shares normally accessible to that desktop. Like other VPNs, GoToMyPC Corporate employs strong encryption and authentication. Unlike IPSec, GoToMyPC Corporate does not connect nodes to the entire company network - end users can only connect to PCs that belong to them and are authorized by the administrator.

Using GoToMyPC Corporate, teleworkers and travelers with high-speed connections have access to all the resources they need to do their jobs. Travelers with 56 Kbps dial connections will find GoToMyPC Corporate screen sharing and file transfer an acceptable combination for shorter sessions. Although GoToMyPC Corporate cannot directly satisfy mobile professionals that lack office desktops, many will still find GoToMyPC Corporate convenient for access to home PCs.

Secure Remote Access Cost Factors

There are many factors that influence the total cost of providing remote access. To estimate the return on investment (ROI) associated with adopting GoToMyPC Corporate, we start by decomposing total cost into one-time and recurring (monthly or annual) costs. The following matrix illustrates these costs for the 1000-user company described later in this paper:

Comparing Cost Factors			
	GoToMyPC Corporate	In-House SSL VPN	In-House IPSec VPN
One-Time Setup Costs per User			
Capital Equipment Purchases	\$ -	\$ 100	\$ 42
Software License Purchases	\$ -	\$ -	\$ 5
Managed Service One-Time Fees	\$ 22	\$ -	\$ -
Administrative Staff Costs	\$ -	\$ 1	\$ 1
Administrator Training	\$ 1	\$ 16	\$ 16
Total Setup Cost per User	\$ 23	\$ 117	\$ 64
Recurring Monthly Costs per User			
Monthly Hardware Maintenance Fees	\$ -	\$ 2	\$ 1
Monthly PC Leasing Costs	\$ 17	\$ 17	\$ 56
Monthly Software Update Fees	\$ -	\$ -	\$ 1
Monthly Managed Service Fees	\$ 14	\$ 8	\$ -
Monthly Administrative Staff Costs	\$ 2	\$ 15	\$ 30
Monthly New User Costs	\$ 1	\$ 2	\$ 6
Total Monthly Cost per User	\$ 34	\$ 44	\$ 94

Based on Example 3 with 1000 Users

The cost factors defined above reflect assumptions detailed in Appendix A. Every company is different, and remote access costs can and do vary widely. Nonetheless, this example illustrates trends that appear to apply to many companies:

- Capital equipment purchases drive set-up cost for in-house VPN solutions. Network-based services like GoToMyPC Corporate are therefore less expensive right from the start.
- VPN and user administration are the most significant recurring costs for in-house solutions. The monthly tab associated with a managed service can be far less because providers can amortize these costs over thousands of end users.
- "Client-less" solutions can cut hardware lease expenses by re-using worker desktops instead of requiring company-purchased laptops. Traditional VPN cost analyzers overlook this factor, but Expertcity customers say that PC leasing plays an important role in purchase decisions.

To more fully understand all of these factors and how they influence total cost of ownership, let's look at each item individually.

One-Time Costs

- **Installing Internet Access:** While this factor plays an important role in total cost of ownership, it is common to all Internet-based methods and thus ignored by our comparison.
- **Capital Equipment Purchases:** IPSec and SSL VPNs require purchased or leased VPN hardware. Most in-house VPNs require capital outlay to purchase hardware; outsourced VPNs may offer customer premises equipment (CPE) purchase or lease options. GoToMyPC Corporate and other network-based VPN services do not require CPE purchase or leasing.
- **Software License Purchases:** IPSec VPNs require VPN client software. Today, many enterprise-grade IPSec products used for remote access include an unlimited license for Win32 VPN client software. Separate VPN client licenses are often required for non-Windows nodes, entry-level SOHO products, and bundled desktop security packages that combine VPN, personal firewall, content scanning, etc.. GoToMyPC Corporate and most SSL VPNs do not require VPN client purchase.
- **Managed Service Activation Fees:** In lieu of hardware and software purchase, service providers charge set-up fees to cover their cost of deployment. Set-up fees may be flat-rate, per-user/seat, per-site, or per-application. For example, managed IPSec VPNs may include a per-site fee that covers CPE installation, plus a per-user fee for VPN client set-up. Managed SSL VPNs may include an engagement fee to evaluate fit, plus per-gateway and per-application fees to cover custom plug-in development. GoToMyPC Corporate customers pay a per-seat start-up fee, from \$49.95 per host PC (minimum 10 hosts), with volume discounts.
- **Administrative Costs:** In-house VPNs require administrative effort to install and configure VPN gateways. Integrating VPN gateways with firewalls, authentication servers, and other network devices also takes effort. Because they operate at the network layer, IPSec VPN gateways may require more up-front effort. SSL VPN gateways tend to have less impact on the company network, but may require integration with back-end servers (see custom development, above). There are no comparable costs for GoToMyPC Corporate or fully-managed VPN services.
- **Administrator Training Costs:** Every VPN, whether in-house or managed, requires competent administrators that have been trained to configure security policies and monitor usage. Of course, in-house VPN administration requires more expertise; managed service administrators need only learn how to use a much simpler Administrator web portal.

Recurring Costs

- **Annual Hardware Maintenance Fees:** Each VPN gateway purchased or leased typically requires an annual maintenance contract that covers patches, software upgrades, technical support, and parts replacement. This does not apply to GoToMyPC Corporate or other network-based VPN services.
- **Annual Hardware Lease Fees:** Companies that choose not to purchase IPsec and SSL VPN gateways usually incur annual leasing fees, unless these are included in monthly managed service fees. Once again, this does not apply to GoToMyPC Corporate or network-based VPN services.

In addition, companies that use IPsec VPNs very often lease laptop computers for remote access users. Companies that use browser-based solutions like GoToMyPC Corporate or SSL VPNs can sometimes reduce cost by leasing desktop computers in lieu of laptops. Employees can use home or public PCs for remote access, rather than carrying a laptop to and from the office. PC leasing costs are often over-looked in VPN costs analysis, but we include this factor here because Expertcity customers tell us that this is actually very important.

- **Annual Software Update Fees:** As previously noted, IPsec VPNs require VPN client software, and those that impose per-client license fees usually charge for annual upgrades as well. GoToMyPC Corporate and most SSL VPNs do not require client software updates, beyond updating the standard browser included with most desktop operating systems.
- **Monthly Managed Service Fees:** Managed service providers operate by charging monthly or annual fees. Recurring usage fees may be flat-rate, per-user/seat, or per-site. For example, a managed IPsec VPN provider may deliver secure broadband for \$20 per user per month more than "vanilla" Internet access. Managed SSL VPNs may incur additional recurring costs associated with custom plug-in development for new business applications. GoToMyPC Corporate customers pay per-host PC fees, starting at \$227.40 per year (\$18.95 effective monthly rate), with volume discounts.
- **Monthly Administrative Costs:** Administrators must maintain in-house VPN gateways, update firewall and authentication server rules, trouble-shoot failed connections, and review gateway logs and reports. Once again, we assume that SSL VPN gateways require less on-going effort than IPsec. Fully-managed services like GoToMyPC Corporate require only modest helpdesk and report review costs, since administration is part of the service.
- **New User Costs:** Remote access users are added over time, rolling out services to existing employees, adding new hire accounts, and deleting old user accounts. "Adds, drops, and changes" can be a significant cost in large enterprise VPNs, depending upon the level of platform automation and centralized management. All IPsec VPNs require installation and/or configuration of VPN client software. Most SSL VPNs do not. GoToMyPC Corporate mails a self-activation URL to each new end user. Although GoToMyPC Corporate does not require client software, end users must launch a wizard to install a server program on each host PC. Finally, naïve end users are the weakest link in any remote access solution. End user education should be factored into all deployments, regardless of underlying technology.
- **Monthly Internet Access:** Monthly costs associated with obtaining Internet access range from \$20/month dial-up to \$40/month broadband to 10 cents per minute hotspot access. However, since they are constant for all remote access methods, recurring Internet access costs are not included in our IPsec vs. SSL vs. GoToMyPC Corporate comparisons.

These cost factors are further described in Appendix A.

Remote Access Cost Examples

To illustrate the initial investment, recurring cost, and return on investment (ROI) associated with adopting GoToMyPC Corporate, we consider three example companies. These examples are fictitious, but based upon interviews with actual GoToMyPC Corporate customers, anecdotal input from other VPN users, and nearly two dozen analysts and VPN vendor documents referenced at the end of this paper.

We start each example by describing the company requirements for remote access, including the number of end users in each category: teleworkers, day extenders, travelers, and mobile professionals. Next, we discuss any customizations made to the assumptions. Finally, we summarize our results, including initial investment, monthly cost, and payback period (where applicable).

These examples have been chosen to illustrate a variety of cases:

- In-house VPNs vs. GoToMyPC Corporate for a small business starting from scratch;
- Moving from IPSec VPN to GoToMyPC Corporate for a mid-sized business; and
- Reducing costs in a larger company by offloading some IPSec end users to GoToMyPC Corporate.

As we shall see, in all three examples, GoToMyPC Corporate setup and monthly costs turn out to be lower than in-house VPN alternatives.

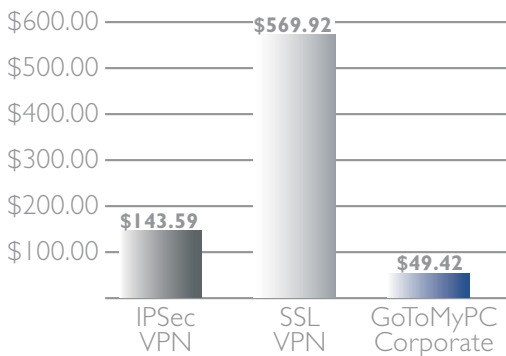
Example 1 Small Business with 50 Remote Access Users

In-house VPNs vs. GoToMyPC Corporate for a small business starting from scratch

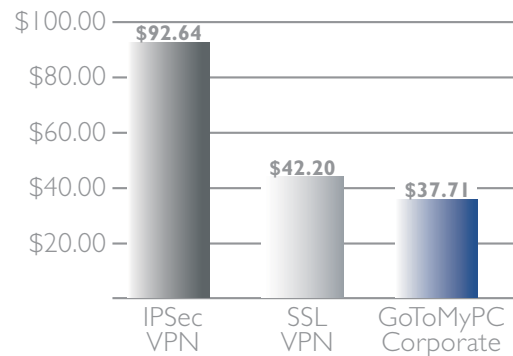
This is a small software development company, with a total of 50 employees needing remote access. Several developers telework part-time, requiring access from home to the software development environment at the office. Field support staff spend many weeks at customer sites, requiring access to both on-site customer data and development systems back at the office. All other employees are day extenders that need occasional access to email from home.

This small business is moving from ad hoc private dial-up to an Internet-based solution. It has not yet invested in VPN platforms and has the opportunity to start from scratch with the most cost effective solution. As a small business, capital expenditures must be minimized. To help make this decision, this company wants to compare setup and recurring costs for all three secure remote access alternatives.

Proposed Setup Cost Per User



Proposed Monthly Cost Per User



These estimates are based on the worksheet in Appendix A, using defaults for in-house IPsec and SSL VPNs, one administrator, and no custom application development. This example clearly shows that, while an SSL VPN is far less expensive than an IPsec VPN on a monthly basis, the entry cost of an SSL VPN is prohibitive for a company this small. Today, entry-level SSL VPN appliances are simply more expensive than entry-level IPsec VPN appliances.

With its low set-up cost, GoToMyPC Corporate can help this small business avoid up-front capital investment. Better yet, GoToMyPC Corporate continues to cost less than either IPsec or SSL every month. Of course, an inexpensive remote access solution is meaningless if it does not satisfy business requirements and meet security needs. In this example, GoToMyPC Corporate can meet all end user requirements, securely making desktop development environments at the office available to teleworkers and travelers.

This example includes savings that result from using company-paid desktop PCs instead of laptops for all 50 users. Even if those savings were not included, GoToMyPC Corporate is still nearly half as expensive as IPsec. With PC leasing, monthly per-user costs are almost \$93 for IPsec vs. \$38 for GoToMyPC Corporate. Without leasing, monthly tabs are \$37 (IPsec) vs. \$21 (GoToMyPC Corporate). In other words, the added impact of PC leasing makes an already strong business case that much more compelling.

Example 2 Medium Business with 500 Remote Access Users

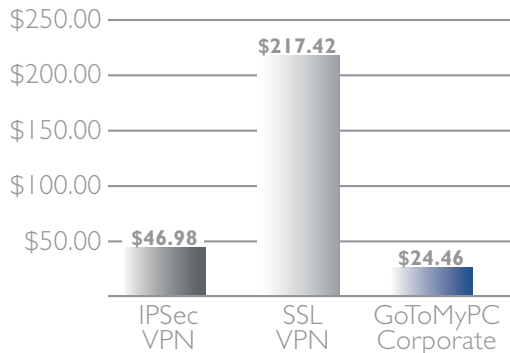
Moving from IPsec VPN to GoToMyPC Corporate for a mid-sized business

This is a public services agency with 500 employees that require remote access to email or legacy applications. Nearly one hundred employees telework full-time or part-time; a similar number attend weekly meetings at branch offices. The rest are case workers who visit clients all day and need nightly access from home to a legacy application.

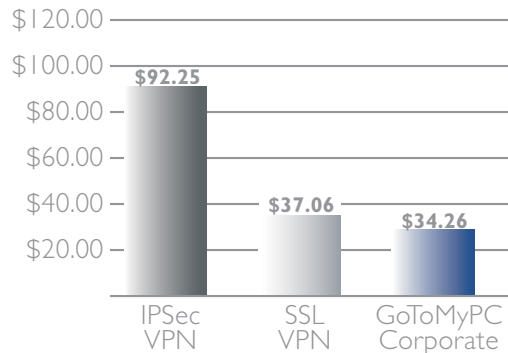
This business used another agency's IPsec VPN for traveler access, but has grown to require its own solution. In particular, finding a workable solution for legacy application access has been difficult. Long-term plans call for this application to be entirely rewritten, using newer platforms and a web interface. However, a near-term solution is needed to cut costs now, preferably without up-front capital investment because the agency has no funds for new equipment purchase.

We start our analysis by comparing initial and recurring costs for in-house IPsec VPN, SSL VPN, and GoToMyPC Corporate, as shown below.

Proposed Setup Cost Per User



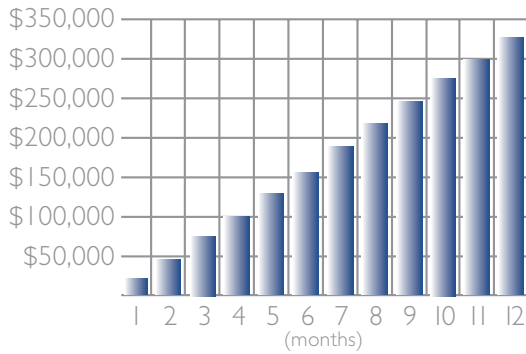
Proposed Monthly Cost Per User



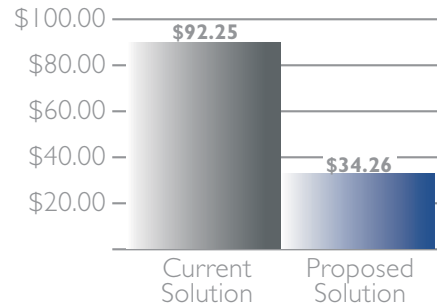
Because it is upgrading from an existing VPN, this agency is interested in comparing monthly costs associated with a proposed alternative (GoToMyPC Corporate) and the cost of making this transition. As shown below, making this change will cut this company's monthly remote access tab 63%. The initial investment made in GoToMyPC Corporate setup (\$11,665 for 500 users) can be recouped in less than one month, without capital equipment investment.

Upgrading Existing Solution: Current vs. Proposed			
Current Solution		Proposed Solution	
IPsec VPN Users	500	IPsec VPN Users	0
SSL VPN Users	0	SSL VPN Users	0
GoToMyPC Corporate Users	0	GoToMyPC Corporate Users	500
Current Total	500	Proposed Total	500
Current Monthly Cost per User		Proposed Monthly Cost per User	
IPsec VPN per User	\$ 92.25	IPsec VPN per User	\$ -
SSL VPN per User	\$ -	SSL VPN per User	\$ -
GoToMyPC Corporate per User	\$ -	GoToMyPC Corporate per User	\$ 34.26
Average Monthly Cost Per User	\$ 92.25	Average Monthly Cost Per User	\$ 34.26
Savings and Return on Investment		Proposed Setup Cost per User	
Current Total Monthly Cost	\$ 46,123	IPsec VPN Setup per User	\$ -
Proposed Total Monthly Cost	\$ 17,132	SSL VPN Setup per User	\$ -
Monthly Savings	\$ 28,991	GoToMyPC Corporate Setup per User	\$ 23.33
	63%		
Incremental Setup Cost	\$11,665		
Months To Recoup Setup Cost	1		

Net Return On Investment



Average Monthly Cost Per User



These estimates are based on the worksheets in Appendix A, using default assumptions -- for example, two administrators, redundant VPN gateways, and desktop-to-laptop conversion for all 500 users. To be conservative, we assumed that IPSec Win32 clients are included at no additional cost, and that this agency can use the vendor's SSL VPN offering without custom application development. In reality, because this agency must contend with a legacy application that's already proven difficult over IPSec, that application would probably challenge some SSL VPNs and could further narrow deployment options. On the other hand, GoToMyPC Corporate can meet all of this agency's remote access requirements, making the legacy application transparently accessible to day extenders that log into office desktops from home at night.

Example 3 Large Business with 1000 Remote Access Users

Reducing cost in a larger company by offloading some IPSec end users to GoToMyPC Corporate

This enterprise uses an in-house IPSec VPN to offer secure remote access to 1000 employees. One hundred (100) employees telework full-time, another 100 part-time. 300 employees require email and enterprise application access while traveling. The remaining 500 are day extenders that work from home at night and on weekends.

This is a large, diverse workforce that requires access to a variety of enterprise servers and data. One hundred travelers use PDAs that require third-party VPN client licenses. Redundant VPN gateways are required for high availability. We assume four VPN administrators for 24/7 coverage (approximately 250 end users per administrator). This may be low, since on-going support for IPSec VPN client installation and trouble-shooting have proven significant, and security policies have grown complex over time. Supporting 1000 home PCs or company-owned laptops has become a never-ending chore, even with good management tools. As a result, this enterprise wants to adopt a browser-based alternative for 600 workers – specifically, its day extenders and part-time teleworkers. A comparison of recurring costs before and after this transition to GoToMyPC Corporate is shown to the right.

Upgrading Existing Solution: Current vs. Proposed			
Current Solution		Proposed Solution	
IPSec VPN Users	1,000	IPSec VPN Users	400
SSL VPN Users	0	SSL VPN Users	0
GoToMyPC Corporate Users	0	GoToMyPC Corporate Users	600
Current Total	1,000	Proposed Total	1,000
Current Monthly Cost per User		Proposed Monthly Cost per User	
IPSec VPN per User	\$ 93.88	IPSec VPN per User	\$ 95.89
SSL VPN per User	\$ -	SSL VPN per User	\$ -
GoToMyPC Corporate per User	\$ -	GoToMyPC Corporate per User	\$ 34.15
Average Monthly Cost Per User	\$ 93.88	Average Monthly Cost Per User	\$ 58.84
Savings and Return on Investment		Proposed Setup Cost per User	
Current Total Monthly Cost	\$ 93,883	IPSec VPN Setup per User	\$ -
Proposed Total Monthly Cost	\$ 58,843	SSL VPN Setup per User	\$ -
Monthly Savings	\$ 35,041	GoToMyPC Corporate Setup per User	\$ 22.77
	37%		
Incremental Setup Cost	\$13,660		
Months To Recoup Setup Cost	1		

Using the same defaults, we also performed a similar analysis for transitioning 600 workers to an SSL VPN. In that case, we applied one customization: we assumed that this company can start offloading IPSec clients to SSL without custom development, but that one new mobile enterprise application per year will require webification. As shown in Figure A, GoToMyPC Corporate proves to be less expensive, both initially and on a recurring basis.

As Figure B illustrates, offloading IPSec clients onto either an SSL VPN or GoToMyPC Corporate can reduce this company's total monthly cost. However, recurring costs associated with GoToMyPC Corporate are lower than with our example's SSL VPN. The payback period for moving 600 workers to GoToMyPC Corporate is less than one month, while it takes four months to recover the cost of installing this SSL VPN. These differences are illustrated in the following figure, showing cumulative savings (net ROI) for each solution over a one year period.

Comparing Average Monthly Cost Per User

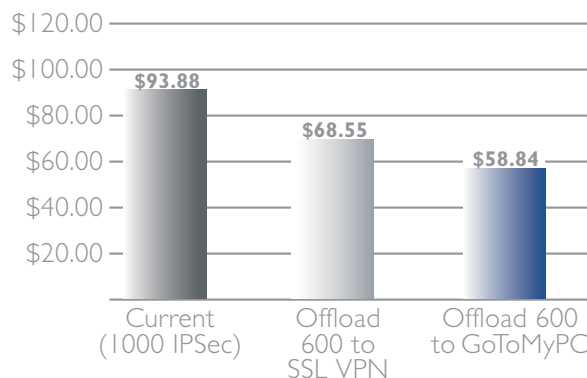


Figure A

Net Return On Investment

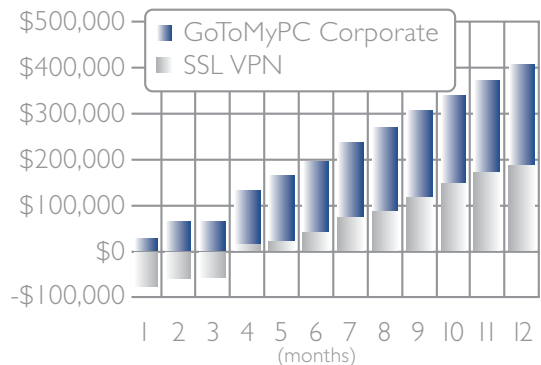


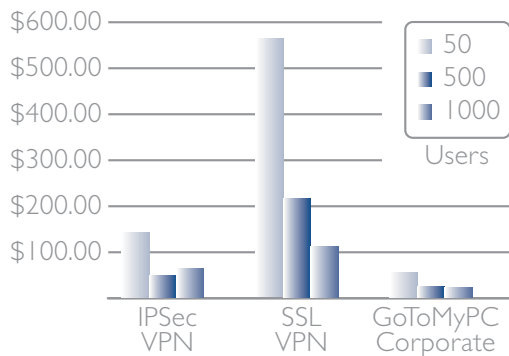
Figure B

Conclusion

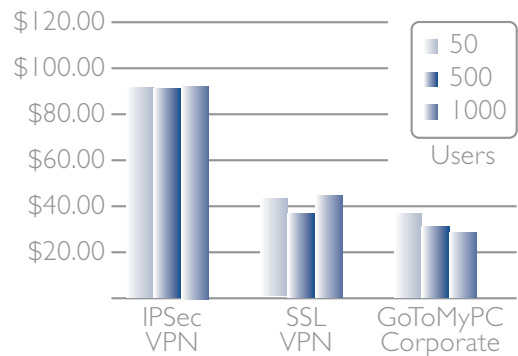
In this paper, we have examined business needs driving web-based remote access and managed security outsourcing. We have compared both functionality and costs associated with IPsec VPNs, SSL VPNs, and GoToMyPC Corporate. We have broken one-time and recurring costs down into quantifiable factors, and used three examples to illustrate costs and return on investment for new and upgrade scenarios. By comparing results for all three, we can spot several trends.

1. As our examples demonstrated, GoToMyPC Corporate can be a convenient, cost-effective alternative for companies just getting started with secure remote access. Companies with existing VPNs can save money by using GoToMyPC Corporate to offload end users - especially teleworkers and day extenders that require the same desktop environment whether working from home or at the office.
2. As shown below, GoToMyPC Corporate often requires less up-front investment and/or smaller monthly fees than IPsec or SSL VPNs.

Setup Cost Per User

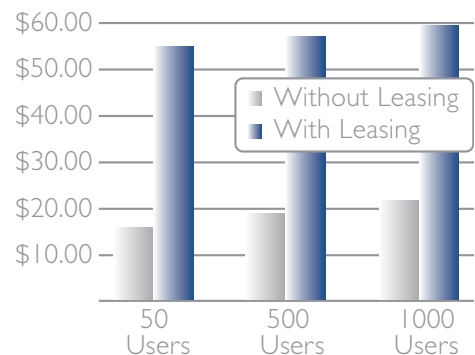


Monthly Cost Per User



3. For small-to-medium businesses, in-house SSL VPN setup costs are currently higher than IPsec setup costs because low-end IPsec security appliances are less expensive than the least expensive SSL VPN appliances. The two VPN alternatives do get closer together as the end user population increases, but a network-based service like GoToMyPC Corporate still requires less up-front investment and no outlay for capital equipment.
4. When it comes to recurring costs, VPN client software on company-paid laptops make IPsec much more expensive than either SSL or GoToMyPC Corporate. Even when assuming that an in-house SSL VPN requires roughly half the per-user administration as an IPsec VPN, GoToMyPC Corporate still appears to be less expensive. GoToMyPC Corporate's monthly service fees represent the bulk of this recurring cost, since a managed service requires comparatively little on-going administration.
5. As previously noted, GoToMyPC Corporate monthly savings are much greater when calculations include the savings associated with leasing desktops instead of laptops. But, as shown in the graph to the right, even without taking those extra savings into account, GoToMyPC Corporate can still save companies money when compared to IPsec.

GoToMyPC Corporate Monthly Savings Over IPsec VPNs



Of course, every company is different, and your company's remote access costs may or may not resemble these examples. Please contact Expertcity at <http://www.gotomypc.com/mm/g2c4WPIp.tpl> or (888) 646-0016 to request your free cost analysis, using this same methodology and your own set-up and recurring costs to estimate your potential savings and return on investment. See for yourself how GoToMyPC Corporate can provide a fully-managed, cost-effective, secure remote access solution.

Appendix A: Cost Analysis Method and Assumptions

Defaults and assumptions used to derive the cost examples and conclusions documented in this paper are shown below.

- Given staff hours for administration, we calculate administrator costs by applying the average network professional's total compensation (\$74,000/year) identified by the 2003 NetworkWorld Salary Survey.^[4]
- Based on July 2003 sampling of PC retailers, we assume typical purchase prices of \$2000 per laptop and \$600 per desktop, spread over a 36 month lease.
- To estimate the cost of VPN Administrator training, we use Cisco's CSVN 4-day course, as delivered by GlobalKnowledge.com (\$2,795).
- Based on interviews with GoToMyPC Corporate customers and our own experience, we estimate that administrator self-training with supplied documentation requires no more than one day.
- We combined and averaged manufacturer's suggested retail prices for two popular VPN Remote Access Concentrators to derive "typical" IPSec VPN gateway prices. We further assumed that a high-availability pair of gateways is required for 500 or more users.
 - Per Cisco's VPN Calculator, we used the following MSRP values for Cisco IPSec VPN gateways: Cisco 3005 (\$4000, up to 100 users), Cisco 3030 (\$22000, up to 1500 users), and Cisco 3060 (\$40000, up to 5000 users).^[5]
 - Per Nortel Networks' eNet Tools configurator, we used the following MSRP values for Nortel IPSec VPN gateways: Contivity 600 (\$2400, up to 50 users), Contivity 1600 (\$7250, up to 500 users), Contivity 2600 (\$20000, up to 2000 users), and Contivity 4600 (\$53000, up to 5000 users).^[12]
- We combined and averaged price information obtained from four vendor's white papers and press releases to derive "typical" SSL VPN gateway prices. We further assumed that a high-availability pair of gateways is required for over 400 users.
 - According to Netilla's white paper, Netilla-ESP SSL VPN gateway hardware and software, sized to support 100 users, can be purchased for \$30,000, plus 8 hours per device installation cost.^[7]
 - According to a Rainbow Technologies white paper, Rainbow NetSwift iGate SSL VPN equipment can be purchased for \$50,000 (sized to support 400 users).^[19]
 - According to a Whale Communications white paper, a Whale e-Gap SSL VPN appliance can be purchased for \$50,000, configured to support 2000 users.^[19]
 - According to an Aventail press release, the Aventail EX-1500 appliance starts at \$13,395 for 25 users. We assume a 50-user configuration would run \$24,000
- According to Cisco's VPN Calculator, the incremental cost of a managed IPSec VPN service is \$10-20/user (i.e., an extra \$20/month for "secure" broadband).^[5]
- Cisco estimates that managing an in-house IPSec VPN costs approximately \$30/user/month.^[5] For the sake of comparison, we assume that managing an in-house SSL VPN requires half this same effort.

- According to Expertcity customer interviews, GoToMyPC Corporate requires two minutes per end user per month for helpdesk and two minutes per end user per month for reviewing usage reports. To be conservative, we boosted this estimate to five minutes per end user per month for each task.
- According to the Giga Information Group, annual maintenance is typically 22% of a VPN/firewall's purchase price, and device installation requires 8 hours per device. ^[17]
- Custom development to "webify" a legacy business application depends upon the application, its platform, and the SSL VPN platform. We do not believe there can be a meaningful "typical" cost for this parameter. For the purpose of comparison, we used \$100,000 per application, taken from the Citrix ACE Cost Calculator's default average cost of upgrading an in-house developed application to a web-portal-enabled version. ^[6]
- Based on GoToMyPC Corporate customer interviews, we assume that GoToMyPC Corporate User Activation involves 5 minutes to issue an invitation, 5 minutes for self-activation, and 10 minutes for end user training. This training typically consists of reviewing the setup process and supplying end users with documentation about how to safely use the service.
- Based on anecdotal feedback from IPSec VPN customers and our own experience, we assume that IPSec VPN User Activation involves 5 minutes to add the user's account, one hour to deliver/install/debug the IPSec VPN client, and one hour of end user training.
- Based on anecdotal feedback from SSL customers and our own experience, we assume that SSL VPN User Activation involves 5 minutes to add the user's account and 30 minutes of end user training (i.e., learning to navigate webified application interfaces).

Comparisons in this paper use derived "typical" values to enable realistic estimates and defaults. The three-part worksheets actually used to calculate and sum one-time set-up and recurring monthly costs are illustrated on the following pages. Product prices are clearly subject to change and negotiation. When comparing your own costs, we strongly recommend getting actual quotes from every vendor you may be considering. Please contact Expertcity for a free cost analysis, based on your own company's remote access needs and usage profile.

Total Costs

Total costs are summarized by the following worksheet. (Example 1 is shown here).

Secure Remote Access - Total Costs			
Number of Users		Monthly Cost per User	
IPSec VPN Users	50	IPSec VPN per User	\$ 92.64
SSL VPN Users	50	SSL VPN per User	\$ 42.20
GoToMyPC Corporate Users	50	GoToMyPC Corporate per User	\$ 37.71
Number of VPN Gateways		Total Monthly Cost (All Users)	
IPSec VPN Gateways	1	IPSec VPN per Month	\$ 4,632
SSL VPN Gateways	1	SSL VPN per Month	\$ 2,110
		GoToMyPC Corporate per Month	\$ 1,885
Number of Laptops		One-Time Setup Cost per User	
IPSec VPN User Laptops	50	IPSec VPN Setup per User	\$ 143.59
SSL VPN User Laptops	0	SSL VPN Setup per User	\$ 569.92
GoToMyPC Corporate User Laptops	0	GoToMyPC Corporate Setup per User	\$ 49.42
Number of Desktops		Total One-Time Setup Cost (All Users)	
IPSec VPN User Desktops	0	IPSec VPN Setup	\$ 7,180
SSL VPN User Desktops	50	SSL VPN Setup	\$ 28,496
GoToMyPC Corporate User Desktops	50	GoToMyPC Corporate Setup	\$ 2,471
Legend:			
Modify These Defaults As Needed For Your Network			

Setup Costs Details

Total breakdown of one-time setup costs are provided by the following worksheet

Secure Remote Access - Setup Cost Details			
	IPSec VPN	SSL VPN	GoToMyPC Corporate
Capital Equipment Purchases			
Price of VPN Gateway Hardware	\$2,400	\$24,000	
Number of VPN Gateways	1	1	
Total Capital Equipment Cost	\$2,400	\$24,000	\$0
Software License Purchases			
VPN Client Software License (per User)	\$0		
Number of VPN Users	50		
Total Software Licensing Cost	\$0	\$0	\$0
Managed Service One-Time Fees*			
Fixed Account Activation Fee(s)	\$0	\$0	
Per-User/Seat Activation Fee	\$0	\$0	\$44
Maximum Concurrent Users	50	50	50
Per-Gateway Activation Fee	\$0	\$0	
Number of Gateways	1	1	
Per-Application Integration Fees		\$100,000	
Number of Applications requiring Integration		0	
Total Managed Service One-Time Fees	\$0	\$0	\$2,188
Administrative Staff Costs			
VPN Gateway Installation (Staff Days per Gateway)	1	1	
Network/Firewall/AAA Integration (Staff Days per Gateway)	2	1	
Average Annual Salary for Admin	\$74,000	\$74,000	\$74,000
Total Administrative Staff Costs	\$851	\$567	\$0
Administrator Training			
Instruction Fees per Administrator	\$2,795	\$2,795	
Hours of Training per Administrator	32	32	8
Number of VPN Administrators	1	1	1
Total Administrator Training Cost	\$3,929	\$3,929	\$284
Total One-Time Costs	\$7,180	\$28,496	\$2,471
Customize These Values For Your Network	* Applies only to managed services		
Modify These Defaults As Needed For Your Network			
Not Applicable			

Monthly Costs Details

Total breakdown of recurring monthly costs are provided by the following worksheet.

Secure Remote Access - Monthly Cost Details			
	IPSec VPN	SSL VPN	GoToMyPC Corporate
Monthly Hardware Maintenance Fees			
Per-Gateway Annual Maintenance Contract	\$528	\$5,280	
Number of VPN Gateways	1	1	
Total Hardware Maintenance Fees (Monthly)	\$44	\$440	\$0
Monthly Hardware Lease Fees			
Per-Gateway Annual Lease Fee	\$0	\$0	
Number of VPN Gateways	1	1	
Per-Laptop Annual Lease Fee	\$667	\$667	\$667
Number of Company-Paid Laptops for VPN Users	50	0	0
Per-Desktop Annual Lease Fee	\$200	\$200	\$200
Number of Company-Paid Desktops for VPN Users	0	50	50
Total Hardware Lease Fees (Monthly)	\$2,778	\$833	\$833
Monthly Software Update Fees			
Annual VPN Client Updates (per User)	\$0		
Number of VPN Users	50		
Total Software Update Fees (Monthly)	\$0	\$0	\$0
Monthly Managed Service Fees*			
Fixed Annual Account Fee(s)	\$0	\$0	
Per-User/Seat Monthly Fee	\$0	\$0	\$18
Number of VPN Users	50	50	50
Per-Gateway Monthly Fee	\$0	\$0	
Number of VPN Gateways	1	1	
Per-Application Integration Fee		\$100,000	
Number of Applications added per year		0	
Total Managed Service Fees (Monthly)	\$0	\$0	\$304
Monthly Administrative Staff Costs			
VPN Gateway Maintenance (Days/Month)	2	1	
Network/Firewall/AAA Updates (Days/Month)	1	0	
Help Desk / Trouble-Shooting (Days/Month)	2	1	0.17
Review Logs and Usage Reports (Days/Month)	1	0	0.17
Average Annual Salary for Admin	\$74,000	\$74,000	\$74,000
Total Administrative Staff Costs (Monthly)	\$1,500	\$750	\$98
Monthly New User Costs			
Add Account, Update Policy (hours per add)	0.1	0.1	0.1
Install VPN Client/Host PC Software (hours per add)	1.0	0.0	0.1
User Training (hours per add)	1.0	0.5	0.2
Number of VPN Users Added Per Month	4.2	4.2	4.2
Total User Training Cost (Monthly)	\$310	\$87	\$50
Total Monthly Costs**			
Including Laptop/Desktop Leasing	\$4,632	\$2,110	\$1,885
Without Laptop/Desktop Leasing	\$1,854	\$1,277	\$1,052
Customize These Values For Your Network	* Applies only to managed services		
Modify These Defaults As Needed For Your Network	** Plus Internet Access		
Not Applicable			

About The Author

Lisa Phifer owns Core Competence, Inc., a network security technologies consulting firm based near Philadelphia, Pennsylvania. She has been involved in the design, implementation, deployment, and evaluation of management, remote access, wireless, and security products for over 20 years. Phifer teaches about Virtual Private Networking and wireless security at industry conferences and webinars. Her network security articles and product evaluations appear frequently in industry publications like Wi-Fi Planet, BCR Magazine, Information Security, and ISP-Planet. Phifer's monthly columns are published by searchMobileComputing and searchNetworking, where she serves as both a VPN and wireless site expert. She has extensive hands-on experience with a variety of secure remote access alternatives.

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