The Cloud-based Telework Solution

Using the Cloud to Offload Remote Access Costs and Complexity

White Paper
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It would be hard to overstate the economic and environmental challenges that enterprises and government agencies face today. The pressure to reduce costs and maximize resources—human and natural—is enormous.

Organizations want effective ways to cut overhead expenses, such as facilities and energy costs, and boost employee output in order to bring more to the top and bottom line. They also want to take advantage of tax breaks and other incentives for “green” behavior.

Teleworking, particularly the use of home-based workers, has tremendous potential to help enterprises and government agencies survive—and thrive—in these difficult times. Study after study has shown that teleworking delivers benefits ranging from increased productivity and employee satisfaction to smaller real estate and carbon footprints. What’s stopping many enterprises from broadly implementing teleworking is the inability to measure its effectiveness in meeting productivity goals and “green” objectives. Fear of losing control over employees was the top reason cited for resistance to teleworking, according to a 2006 survey by Teleworking Exchange1.

Current remote access solutions are an impediment to wide scale teleworking because they fail to address the breadth of technical, management, and reporting challenges that IT faces. Software-based Virtual Private Networks (VPNs), for example, were designed for “road warriors” working on a laptop from airports and hotel rooms, or for short periods of access from home. They’re not optimized for employees working on a regular basis from a home office or a client site, as professionals such as consultants, merger & acquisition diligence teams, legal teams, offshore contractors and auditors often do.

Some vendors offer teleworking solutions based on routers or wireless access points. These are effectively branch office solutions applied to single-person offices and are too infrastructure and operations intensive to be deployed to hundreds, let alone thousands, of remote workers.

Legacy remote access solutions also lack the visibility and control necessary for accountability and oversight. As a result, enterprises must rely on manual methods for measuring the impact of teleworking initiatives on the business. Before enterprises can take greater advantage of teleworking, a more scalable, economic, and transparent remote access approach is needed.

By combining a cloud-based model with user-friendly devices, Pareto Networks has pioneered a new approach to remote access with the simplicity, centralized control, visibility, and economies of scale needed for broad deployment to permanent teleworkers. The Pareto Branch On Demand Solution enables organizations to fully realize the benefits of teleworking at a fraction of the cost and without the complexity of traditional remote access, firewall, SSL VPN or access point solutions.

Why Telework Is Taking Off

Teleworking is on the rise because it’s a win-win proposition, providing significant benefits to both employers and employees. According to Gartner Inc., the number of employees teleworking at least one day a week has grown at a compound annual rate of 8 percent over the past few years. Enterprises find that teleworking reduces expenses, increases productivity and employee satisfaction, enables them to meet “green” goals, and boosts emergency responsiveness and continuity of operations.

Today telework runs the gamut from employees who telecommute occasionally to those who work full-time from a home office or on site at a customer location. At-home workers help enterprises cut capital expenses by reducing office and parking space requirements as well as ongoing operational expenses associated with facilities management and energy use. The cost of office space varies by location, but in the U.S. averages around $21 per square foot annually—which translates to $15,000 per year, per employee for a 200 square foot cubicle. And a quarter of office space is typically vacant or underutilized.

In addition to lowering overhead costs, teleworking boosts employee productivity by eliminating commute time from their day and allowing for more flexible work schedules and expanded service hours. Although bosses may fret that home-based employees are watching YouTube or running errands, the job performance of teleworkers has been documented to either exceed or remain on par with workers in a traditional workplace arrangement.

Figure 1: Key Benefits of Teleworking

Teleworking is a low-cost benefit that can help recruit and retain employees. In a survey of 1,400 CFOs conducted by Robert Half International, 46 percent said teleworking is second only to salary as the best way to attract top talent—33 percent said it’s the number one draw. Among younger workers, 51 percent said they’d quit if another employer offered them the chance to telecommute.

Allowing employees to telecommute helps lower employee stress, absenteeism and tardiness, while increasing employee productivity, satisfaction and loyalty. A study by The Journal of Applied Psychology identified the positive results of telecommuting as: increased control, increased work/family balance, improved supervisor-staff relationships, reduced stress, increased job satisfaction, worker retention and improved productivity and career prospects. Telework also accommodates persons with disabilities.

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2 Gartner – “Teleworking Emerges as a Smart Way to Do Business” – ID#: G00137091, Jan. 12, 2006
Teleworking is “a smarter, more resilient way to do business,” say Gartner analysts, enabling governments and companies to better plan for disasters as well as tackle problems of traffic congestion, rising fuel costs, climate change and environmental degradation. For example, teleworking improves continuity of operations by decentralizing the workforce, thus helping firms stay operational during a crisis, such as a natural disaster, epidemic, or political unrest.

Home-based teleworkers help employers meet “green” objectives, such as the need to comply with local environmental and development requirements; reducing employee commute time, for example, translates to less traffic and a smaller carbon footprint. Studies by organizations such as the Texas Transportation Institute show that U.S. drivers are stuck in traffic over 4 billion hours per year at a cost of more than $60 billion in lost productivity and wasted fuel.

Teleworking Challenges

To reap the benefits of fixed teleworking, enterprises and government agencies must have the right remote access infrastructure in place—one that has the ease of use and performance characteristics that teleworkers need and the visibility and manageability that IT needs. Unfortunately, current remote access solutions have substantial cost, support, and visibility drawbacks when IT tries to implement them on a wide scale for a teleworkforce.

In particular, current remote access solutions don’t address the major roadblock to teleworking—management’s concern about loss of visibility into employee productivity. Legacy solutions fail to provide insight into teleworkforce activity and environmental impacts. These metrics are essential for measuring the positive effects that teleworking has on the business, such as increased productivity and carbon emissions saved. Today, enterprises must implement separate reporting systems in conjunction with remote access platforms and conduct manual surveys in an attempt to collect and correlate such data.

The key technology for road warriors and employees needing occasional remote access is the VPN. Implemented in software, VPNs secure remote user traffic using either IP security (IPsec) or Secure Sockets Layer (SSL) technology. Software-based VPNs are fine for the 20 percent of personnel who need remote access 20 percent of the time—but are inadequate for teleworkers.

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Whereas roaming users typically connect to corporate resources intermittently, for a few minutes or hours at a time, fixed teleworkers need consistent, persistent access to a rich set of applications and resources throughout their work day. In essence, home- and site-based teleworkers are single-person branch offices. They need a complete teleworker solution, complete with computer, printer, IP phone, Wi-Fi enabled mobile phone, and all the collaboration tools, SaaS applications and other Internet services they would use when sitting in a corporate cubicle or office.

Software-based VPNs lack the performance and Quality of Service (QoS) to handle the activities of home-based teleworkers, which can include running Web 2.0 & SaaS applications, voice, and video conferencing simultaneously. VPNs also pose scalability challenges. Each device in a home office needs VPN client software and its own tunnel for communicating with the corporate data center. The number of tunnels that IT needs to provision and manage escalates rapidly.

Teleworker solutions that treat the home office like a branch office—requiring IT to deploy a traditional full-scale router and/or wireless remote access point platform at each worker’s location—are overkill. This equipment carries a high per-user price tag and is too complex for many home workers to install. And it often has a significant energy expense that bites into telecommuting savings.

In addition to high capital costs, router and wireless access point-based remote access solutions have a high operational cost that begins with deployment. IT must purchase, stage, pre-configure, and ship the necessary gear to each teleworker. Ongoing operations and management is also costly and complex, involving multiple management, authentication and reporting systems as well as device management for routers, VPN termination and wireless platforms.

What’s needed is a new remote access approach, one that empowers enterprises to implement a teleworking program that drives productivity, accelerates access to SaaS and Cloud applications, liberates IT from the burden of operations, centralizes control of the remote, and provides management with visibility into the distributed workforce.

**Requirements for Teleworkers**

For fixed teleworking to be feasible on a large scale, enterprises and government agencies need a solution that delivers the business advantages of teleworking in an expedient, cost-effective, scalable manner. In particular, a teleworker solution must provide:

- **One-click provisioning and deployment**—IT needs the ability to bring up a new home teleworker quickly, as business needs arise, so provisioning must be rapid and simple. That means customer premises equipment (CPE) must be plug and play—employees don’t have IT staff or a tech-savvy co-worker on hand to help. And CPE must be delivered directly to the employee’s home. IT can’t be burdened with ordering, configuring, and shipping out CPE or having to make changes in numerous management and security systems to get each teleworker up and running. This easy, instant deployment also allows an employee to quickly set up a ‘corporate hotspot’ from any location with Internet connectivity.
• **Centralized operations**—Current teleworker VPN solutions are complex to operate and manage because they force IT to maintain a significant management infrastructure and to ping-pong between multiple management consoles. To reduce management overhead, a teleworker solution must provide a single, centralized management point for provisioning, access and security policy enforcement, and troubleshooting. An effective teleworker solution will minimize both management overhead and the management infrastructure required to support teleworkers.

• **Centralized Security & Compliance**—Expanding remote access to large numbers of permanent teleworkers requires a smarter approach to security services, one that maximizes security and makes efficient use of bandwidth while minimizing the burden on IT. A next-generation telework solution must be intelligent enough to apply security based on traffic destination. For example, it should provide secure VPN tunnels for traffic going to the corporate data center. A teleworker solution should also integrate with Cloud-based web-based security services to ensure that teleworkers’ Internet communications are “clean” without burdening IT with operating additional security services. Rather than using insecure split-tunnels, a proxy approach is preferred to minimize risk and to ensure remote cloud-security services are available before Internet traffic is routed to those services. These Cloud services combined enable an enterprise to simply and securely offload Internet, SaaS & Cloud application traffic from the data center, reducing bandwidth requirements and significantly improving application performance.

• **Comprehensive visibility**—To date, lack of visibility has been a major barrier to telework adoption. Enterprises need real-time feedback to assess the impact of teleworking on productivity and “green” initiatives. A next-generation teleworker solution must ensure accountability by giving IT visibility into the performance of all applications accessed by teleworkers, including SaaS applications as well as those hosted in the corporate data center.

**Pareto Networks Branch On Demand**

Pareto Networks recognizes that a fundamental change is needed in the way remote access is provided before enterprises can realize the full benefits of teleworking. Taking an innovative approach, the company designed the Pareto Networks Branch On Demand™ Solution leveraging the Cloud model, enabling enterprises to quickly implement teleworking on a pay-as-you-go basis with a lightweight remote access infrastructure. By combining open, standards-based SSL tunneling technology with management and security software as services, Pareto is able to deliver a teleworker solution that addresses the requirements for instant deployment, simple operations, smart connectivity and comprehensive visibility.

The Pareto Branch On Demand Solution consists of two components: Pareto Cloud Services, a comprehensive set of management, security and visibility services in the “cloud” and the Pareto Networks Branch Gateways installed at corporate sites and in the user’s home.

At the data center, a Branch Gateway connects to the corporate network and the Internet and provides high-performance, hardware-based termination for site-to-site VPNs. The Pareto Branch Gateway is fully managed via Pareto Cloud Services, as are all network and security services. The device also supports standards based 802.1X and user authentication via RADIUS.
Pareto Cloud Services, a globally distributed, multi-tenant infrastructure simplifies operations by allowing IT to configure and manage the entire remote access infrastructure “within the cloud,” eliminating the need to deploy servers or other management and reporting appliances. It has the ability to perform basic troubleshooting, but Pareto takes responsibility for ongoing operations and management, providing 24x7 support. In addition, Pareto ensures resiliency and provides built-in disaster recovery for a customer’s entire remote access infrastructure, further freeing IT resources.

Once IT has defined basic security and configuration parameters, the Pareto Branch Gateway provides for instant deployment of teleworkers’ remote offices. Pareto handles orders and shipments of the Branch Gateways, delivering them directly to teleworkers’ homes. Users can even order a device themselves using Pareto’s self-service web portal. When the Branch Gateway arrives, the user simply plugs the device—about the size of a deck of cards—into a DSL or other broadband connection for Internet access. For local workplace connectivity, the BG-100 includes both a wireless access point and two 10/100 Ethernet ports.

During initial setup, the BG displays a captive portal screen on the user’s computer. The user enters a unique one-time setup code that activates the device and automatically downloads the appropriate configuration for that user. IT never has to touch end user remote access gear. The BG implements a hardware-based, site-to-site VPN, providing higher performance than software-based IPsec and SSL VPNs. Also, the Branch Gateway supports optional guest access.

In addition to simplifying operations and providing instant deployment, the BG delivers split proxy functionality, intelligently distinguishing each type of traffic by destination and enforcing the appropriate security policies. Specifically, Pareto Cloud Services allows IT to define white lists of approved Internet sites, such as those hosting SaaS applications, that users may access only with secure connections. IT also has the option to redirect both business-related and non-business-related Internet traffic to a SaaS security provider for complete “scrubbing.”

![Figure 3. Pareto Networks Branch On Demand Deployment](image-url)
Pareto is partnering with independent Web security service providers, such as McAfee, to deliver a complete set of Web filtering, malware scanning, and other security services in an integrated, seamless fashion.

The Pareto Cloud Services also includes comprehensive visibility and reporting capabilities, which are key to measuring the impact of teleworking on the business. Pareto’s services can track user traffic patterns, providing aggregate and detailed data about resource, network throughput and latency, device availability, and application usage.

**The Pareto Value Proposition**

By leveraging the Cloud model, Pareto Networks enables organizations to realize the benefits of teleworking at a fraction of the capital and operational expenses of traditional remote access solutions. And Pareto’s visibility and control capabilities give management the tools they need to assess the impact of a teleworking program.

The Pareto Branch On Demand™ solution provides management and reporting “in the cloud,” eliminating the need for enterprises to invest in a complex management infrastructure to support remote access. As a result, enterprises can invest IT dollars in strategic projects, rather than the hardware, licenses, IT training and ongoing operations and management overhead that legacy solutions require. Pareto’s per-device, pay-as-you-go subscription pricing helps enterprises more accurately predict remote access costs and budget appropriately.

And because it’s in the cloud, Pareto’s solution can scale indefinitely. IT no longer has to worry about how many licenses it has, whether server hardware needs upgrading, or the number of devices that have to be managed. Pareto also ensures the reliability of the remote access infrastructure, boosting enterprise disaster preparedness without the burden of deploying redundant systems.

The user-friendly Branch Gateways, with simple provisioning, makes it quick and easy to support teleworkers. Enterprises benefit from greater agility in responding to competitive and market conditions, as well as significantly lower provisioning costs and fewer support calls. By providing a teleworking platform designed for permanent teleworkers, Pareto enables enterprises to reap the benefits of teleworking, including greater productivity, access to more qualified staff, and employee retention. Employees benefit from greater job satisfaction, less stress, and lower commute costs.

With its cloud-based architecture, the Pareto Networks Branch On Demand solution represents the next generation of remote access for the distributed enterprise. The solution allows enterprises to realize significant CAPEX and OPEX savings, meet environmental objectives, regain visibility of the remote workforce, and deliver new levels of employee work-life balance—all which drive revenue and a significant competitive advantage.
About Pareto

Pareto Networks is the leader in cloud-based Networking, eliminating the complexity and reducing the cost of distributed enterprise networks. Through an innovative, cloud-based network infrastructure, enterprises are able to easily deploy and gain centralized control of teleworker and branch office networks with a breakthrough zero CAPEX subscription model. The company is founded, led and funded by former executives from BlueCoat, Genesys, Juniper Networks, Kalpana, Neoteris, Netscreen, ONI Systems, Symantec and Secure Computing.

To learn more about Pareto solutions, please contact us at 1.877.727.8020 or visit us at www.paretonetworks.com.