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“The significant problems we face cannot be solved
by the same level of thinking that created them.”

Albert Einstein

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Abstract

The rise of the Internet, advances in mobile technologies and an expanding global marketplace are requiring companies to compete harder for business and employees. However, technologies like wireless telecommunications, and the Web are also creating an environment where companies can finally create highly flexible work environments that seamlessly put workers and their offices anywhere at any time. Telecommuting has given rise to teleworking — with the aim of providing employees with a robust and increasingly mobile access to a company's entire working infrastructure, through a simple phone call or Internet connection.

This Technology Guide examines the business issues and explains some of the critical benefits and decision issues related to adopting, promoting and benefiting from a strong teleworking initiative.

Introduction

Imagine a world where any worker, at any time, could simply connect via their PC and phone to their corporate offices and be as effective (or perhaps even more effective) than if they had made an hour-long, stress-filled commute from their home to their workplace. Imagine customers who have calls returned quicker by staff in the field — or engineers working from home late at night to respond to clients halfway around the globe. Imagine being able to attract a top manager or engineer who doesn't want to pull their kids out of their current school district just to be able to take a job with your company. And finally imagine the ability to add five new call center representatives right from their homes with five minutes notice due to an unexpected surge in customer support calls after a new product is suddenly profiled on a morning news program.

Today these instances are more the norm than the exception. Flexible and responsive workforces and companies can thank the increasing roll of teleworking, which enables a company to instantly connect employees to critical office telecommunication and IT functions that enables them to work without commuting to the office.

The Importance of Teleworking

In today's mobile business world the key to success is speed and autonomy. The ability to put workers anywhere they're needed — not by tying them down to a desk in a centralized corporate location — but by giving them ubiquitous access to all communications and computer systems through teleworking solutions. This is an essential dimension of today's business model. Teleworking is the initiative and set of supporting technologies that provides a broad range of dynamic and flexible work arrangements including home offices and telecommuting. It's not about working just at home instead of the office; it's about putting the office anywhere that workers are located. Teleworking allows today's organizations to conduct business in the most effective manner possible, without being restricted by the constraints of having everybody working at the same time and place. It empowers the modern enterprise with a practical way to seize new business opportunities as they emerge.

As wireless technologies, the Internet, and the global economy grow, so too does teleworking. Teleworking is not just about letting people stay home instead of making the daily commute — it can be an overall productivity booster for any type of worker. The GartnerGroup estimates that 33%-40% of all jobs could be handled more effectively using some method of alternative workplace. Although teleworking has many forms, these forms all share two common characteristics:

1. Geographic distribution of an organization's workforce

By enabling freedom from the office, companies can more easily place key workers based on their geographic effectiveness. Whether it's to provide them with better quality of life living conditions or

to place them near key clients or markets, breaking down the geographic requirements of work is a key competitive point in today's global economy.

2. Electronically supported communication and collaboration

Teleworking is more than reducing the need to commute — it is also about building a more effective working environment through enhanced communications; and its about collaboration through electronic networks with the goal of improving communications among key employees, business partners and customers.

Teleworking is the sum of many parts

As a process and a set of technologies, teleworking encompasses many different aspects of mobile work activities and information distribution. These include:

- **Telecommuting:** work that is done at a home office, eliminating the commute to the corporate office on either a full or part time basis.
- **Mobile working:** work that is done by a traveling employee at various locations, including a wireless connection to the teleworker.
- **Telework Center:** work that is done at a satellite or branch office accessing the features and functions of the corporate office.
- **Hoteling:** shared office space in a company location designed for use on a drop-in basis by employees. Especially effective to reduce real estate expenses by implementing this concept for highly mobile workers like sales representatives who are only in the office a short period of time and can therefore share desk space with others.

How Teleworking Works

Unlike telecommuting, which essentially has come to mean extending email, and basic phone access for work purposes to an employee's home, Teleworking involves connecting a worker seamlessly to an employer's telecommunications and IT networks.

With teleworking a basic employee would initiate a teleworking session by logging-on via a phone, mobile or other network connection or via a web browser interface to a management system. There they can redirect all calls to a single internal or external destination. Teleworking calls will be routed directly by the teleworking system installed and log-on/log-off events are captured by a statistics engine — enabling management the ability to monitor availability and work usage in those cases (such as call centers) where it's an important part of management and quality assurance.

A teleworker session is ended when the worker logs off or an automatic timer ends their availability to the system. Call forwarding back to the original office destination is automatically re-activated.

These basic sessions usually involve telephone-based management and working, but more advanced sessions might also include simultaneous access to the Web and corporate intranet and hosted applications (such as a customer service system or access to critical documents and spreadsheets).

Advanced teleworking features can also include:

- Multiple destination searches that allow a worker's phone to ring at possible consecutive locations, allowing maximum mobility and responsiveness. Destination searches can be conducted in a serial or broadcast manner.
- Outgoing call routing that routes calls from any location out through the companies phone network for easier billing, tracking and cost containment.
- Auto fax detection and reception.

Mobility profile creation where a user can configure multiple mobility profiles where calls are routed to specific locations under certain circumstances (such as caller profile or schedule) which can ensure only priority calls are routed when a worker is in the field or working from home during off-hours.

Internal/external call screening and forwarding which allows intra-company calls to be treated differently than external calls.

Advanced call-back which allows a worker to have the system automatically retry busy internal numbers until the destination is available useful for cutting response times between distributed work teams.

Advanced hand-off capabilities that allow incoming calls to be manually routed and handed-off to alternative destinations (e.g. from mobile to home or mobile - office) providing a seamless transition as workers move from one destination to another.

The factors driving business teleworking today

As more and more companies embrace mobile technology and businesses become less monolithic, the need for every business to become more mobile increases. Mobility is also about flexibility. In today's fast paced climate where new business (and competitors) are popping up daily; and mergers and major new initiatives among established businesses are becoming more frequent, having a highly adaptive company and workforce is paramount. Teleworking is a key tool that can be used to achieve more mobility and flexibility.

Economics: The bottom line is under increasing pressure. The quest to drive costs toward zero is not the Holy Grail it once was but a real aspect to doing business today. Teleworking technology is a great help in reducing costs, increasing productivity and subsequently improving profit margins. It can help lower costs during mergers and acquisitions where employees may need to coordinate the jobs from newly remote locations. It can lower costs by widening the ability to work with foreign-based labor and temporary contract workers. Real estate and office space costs, which have risen during a booming economy, can be cut back as people work from home, and offices need

only be places to accommodate group meetings or subsets of the corporate workforce.

Cultural influences: As productivity increases, workers are looking for a more diverse set of benefits that move beyond common salary demands. Two-income families want to increase time at home with family and children. Lifestyle and geographic changes are increasing requests from valued employees. Most of all, the ability to schedule the workload over an entire week to meet pressures for personal time and professional time in a way most productive for both is becoming perhaps the signature work issue of the day. Another important factor is that employees can broaden their search for suitable/desirable areas to live as time in the corporate office is reduced. In these cases, even longer commutes from more remote areas can be a realistic opportunity.

Environmental factors: It's more than just a social or employee issue, the reduction of air pollution, congestion, and the environmental impact of reducing commuting is becoming a business issue. Local municipalities and government programs provide tax incentives and regulations that are motivating businesses to do what they can to reduce daily commuting by their employees.

Technology: Technology is finally providing the global productivity that it has long promised. The emergence of the Internet, e-commerce and corporate LANs/WANs has created one of the most fluid business environments ever in history. As these technologies improve and spread, traditional notions of location and time as they relate to business activities are dramatically changing. Wireless devices are spreading faster than the original PC or the first wave of the Internet. Pagers,

PDAs (like the Palm Pilot®) and cell phones are expected to become one of the most dominant ways people receive and send data via the Internet. This is creating a whole new category of mobile workers. At the same time, mainstream communication applications such as email, and voicemail are giving rise to Web based meetings, unified messaging platforms (which combine, fax, email, voicemail, and instant messaging in one mailbox), and desktop videoconferencing.

The result is that an entire array of services can be offered directly from any desk located anywhere in the world. It's also possible today to generate messaging and communication links to customers, employees or business partners that go far beyond a mere telephone call. This can be nearly as good as sitting in the same room with them. Whether it's to sell a product, instruct employees, or interact with consumers, today's technologies are reducing geographic limitations. Companies see this as an advantage once they begin a strong teleworking initiative that facilitates not only off-site communication but fosters real collaboration between decentralized workgroups.

Specific Benefits to Teleworking

The factors driving the overall environment for teleworking only tell part of the story. At the more direct level there are many specific examples why companies are and should adopt aggressive teleworking strategies. These benefits include:

Improvement in overall employment environment

Tight labor markets are everywhere — especially among the most educated and best performing workers. Retention of intellectual capital, and reducing turnover is more than just a major savings for any employer. Recruiting costs can also be lowered as teleworking widens the geographic search for key talent. This is especially so in a tight labor market that is spurring increased competition to acquire and retain top-level producers. However, it is also true on the lower-end of the employment spectrum where teleworking improves the ability to effectively use contract and part-time workers, who might otherwise not be easily integrated into a traditional work environment. Teleworking also opens up entirely new pools of labor that may have been harder to accommodate, for example, disabled workers who find it hard to commute or to work in buildings that are not handicapped accessible.

Employees today want more empowerment and want to design their own way of achieving the objectives given to them. At the same time they are also looking to improve their overall quality of life. Teleworking sits at the heart of these two goals. Providing the ability to work from home reduces the daily commute and cuts down on commuting expenses. It also reduces the stress and fatigue caused by travel. Flexible access to information systems and company related communications also enables employees to empower themselves more to deal with work at anytime of day — a necessity for some and an appreciated luxury for others. This increased flexibility also helps them meet personal requirements that can subsequently increase their focus during work.

Improvement workforce effectiveness and productivity

Teleworking has been promoted within many companies over the past decade mainly as a way of dealing with increased travel expenses, and commutes by employees. Rising real estate prices have also contributed to the increasing number of employers with telecommuting programs. Most early teleworking employees tended to be sales people and managerial types of workers who typically who could operate with little supervision, little interaction with others, or without the need of an office supplied infrastructure.

Traditionally, employees involved in call center functions, or other areas that required team supervision, interaction and strong communication technologies had been tougher to move to a teleworking system. Until recently it had been extremely difficult to include a home worker into a call center without the same call center features as available in the office.

Besides the ability to reach new types of workers, consider that in today's mobile world, workforce effectiveness is more than just increasing an individual's productivity and availability. It also concerns how productive a work group can be. This includes being able to quickly form ad-hoc groups with a particular mix of expertise and talent, from people in distant, unrelated locations. Ad-hoc groups can also be brought together to deal with sudden daily or seasonal work spikes that are part of the contemporary event-driven 24X7 work week.

Effectiveness and productivity can also be gained by using Teleworking to put employees closer to their customers — not only by distributing people and “hoteling” them closer to key accounts but also by making them more accessible whenever a client is seeking their counsel. Teleworking effectiveness is also about decreasing the interactive response times among the members of a workgroup and fostering a better

availability to business partners and customers. This creates not only a more productive work environment but also one that becomes more effective at doing work on time — and with higher quality.

Reduced overhead and increased ROI from existing infrastructure

Implemented properly, teleworking can make existing infrastructure even better. By giving workers outside the company more ubiquitous access to communications, and software applications it means those resources are available and used more hours of the day. Response times are also reduced which generates more productivity from pre-existing facilities. In terms of overhead the most obvious savings, as previously stated, can be from real-estate costs but other costs like those associated with recruitment, payroll, travel time, and office support should also prove possible as reduction targets.

Improved customer service and satisfaction

As alluded to earlier, teleworking provides more robust remote resources to employees than ever before and as a result should help reduce response time and coordination with customers. It can also improve availability of employees, stretching out the amount of hours they can reply to customer inquiries. Whether it be from using teleworking to place pockets of customer service representatives in different time zones, to enabling sales people to respond to all inquiries, messages, documents and other work in the early morning hours or late in the evening. Teleworking also reduces intra-company response times and availability allowing better coordination by active representatives and those who may have gone home or otherwise moved off-site for the day. This allows workers servicing a customer at 8 PM to reach out and coordi-

nate their actions with an employee who may be working at home after returning from the field or office.

What to Look for in a Mobility Solution

Choosing a teleworking solution requires looking at a number of factors including cost issues, and ease of integration with current IT and communication services. Above all, a system that can reduce overall costs, and increase the overall flexibility of its use is paramount. Key evaluation points include:

Does the solution provide seamless access to information for mobile employees?

For teleworking to be an optimal success a solution must provide seamless access to all common office-based communications and information systems. The less a solution does this, the less autonomous an employee will be and subsequently the notion of being able to seamlessly work outside of the office will be lost.

Can the solution easily integrate with IT & communications services?

No solution can be an island unto itself. This makes it tough to integrate pre-existing systems into a teleworking solution. A system must be made to be as painless as possible to install and integrate alongside already established technologies and processes. This ensures strong security, continuous messaging, and access to office based call centers (and their management systems). In today's mixed mode telecommunica-

tions environment, that means a good system can support analog, digital, and cellular devices.

Is there a flexible migration path as a company grows and as it adopts new technologies?

Companies grow — and new technologies, especially in the communications and Internet arenas, debut daily and once adopted, those number of employees using teleworking within an organization tend to grow. This creates a key need for a solution that is easily and quickly expandable, with a minimal marginal investment. This can be accomplished by using a system that implements as much of its feature set through software solutions instead of hardware — one that offers very flexible licensing arrangements that are based on the number of simultaneous users rather than on absolute users.

Can it support access pooling to reduce costs?

Access pooling allows a system to support any number of users so long as the number of simultaneous users is never above a preset number. Pooling also allows a business to support teleworkers more cost effectively because by pooling line ports one can substantially increase the number of teleworkers supported by any single line.

Does the solution integrate Web based applications and newer Internet telephone (i.e. VoIP/Voice over IP) technologies services?

The Internet and the Web are reshaping everything and play a central role in teleworking. In addition, IP based telephony systems are revolutionizing telecommunication costs, and companies (especially ones with call centers) are quickly adopting voice-over-IP systems. Thus, a solution must be able to

support such voice and data networks. Strong Web access with web-based management of teleworking features are important ways that the solution can be easier to use for employees and will ensure a long life as the Internet expands.

Is the solution designed as a software-based solution so it can scale and be easily modified?

Communications systems that rely more on software than dedicated hardware have a longer life cycle and are far more cost effective. Teleworking “boxes” that house proprietary hardware and hardwired firmware will pose problems.

How easy is the solution to manage and license?

As workers become more mobile and leave the office environment, the ability to manage them and administrate their teleworking environment is crucial to launching a successful teleworking program. Furthermore, employers must be able to quickly move teleworking resources around as employees arrive, leave, and shift positions. And if much of the system administration functions can be handled by employees in the field, it reduces overhead costs for teleworking in general. The key to achieving this is to have a system that provides easy remote administration (preferably via a Web like interface) and one that can easily allow you to scale as you add new employees and grow the ranks of teleworkers within an organization.

Does the provider or integrator provide strong technical and customer support globally?

The more teleworking strategy the company employs the more flexible, autonomous and mobile the workforce will be. At the same time, the new business model and the nature of the Internet are driving even

small and medium-sized companies to think and extend themselves globally. Support in the field that is available on a worldwide basis thus becomes more critical. Also as some telecommunications networks differ from each other on a technical basis from continent to continent it pays greatly to have an organization that has experience with the plethora of global networks at work today.

How to Maximize the Benefits from Investments in Teleworking

Once the decision is made to organize an effective teleworking program there are a number of important initiatives that, implemented properly, can help create a successful program. While many of these initiatives are of benefit to any technology oriented rollout each has specifics relative to a teleworking push.

Clearly define business objectives

Since teleworking will impact a number of constituencies within an organization, a critically important thing to do is develop a steering-committee approach to teleworking. Recruit the appropriate individuals in the organization and get the proper feedback and communication fostered to ensure each group's successful integration, adoption, and management of teleworking solutions and employees. Each group will have objectives it wants to meet with teleworking — and success in part depends on every group integrating its objectives into a definable company-wide move.

It is also essential that the guiding force of any company clearly articulate the measurable benefits of

teleworking to the entire organization. Teleworking can inject enough radical change in an organization that it might generate some apprehension alongside bubbling enthusiasm. When articulated well and benefits (with supporting company policies) for each impacted constituency are made clear it can increase adoption speed and use of a teleworking initiative.

Strategic partners are also key beneficiaries of any system that makes them more responsive, but they may also be disturbed by changes in employee location and work habits. Thus, as you set the business objectives, be sure, where applicable, to brief strategic partners, suppliers, and customers who will experience the impact of it and may subsequently help with overall objectives and implementation plans for your teleworking implementation.

Finally, as demonstrated, teleworking has quantifiable aspects that can help you to set goals with your teleworking vendor. These include improved ROI, specific lower overhead costs, and increased retention and productivity among employees. As your steering committee, business partners, and customers help you define your overall objectives for teleworking, it's important that you have a vendor that will work with you to develop and subsequently measure the results to produce the most effective rollout. By working with a vendor or service provider that has managed teleworking programs, from planning and design to implementation and support, you will have more than just an equipment supplier — you have a consulting partner who can help with many of the management intangibles that come alongside teleworking rollouts.

Protect teleworking investments

No company has a completely clean slate from a technology standpoint — and a new investment can quickly gain costs if it requires you to toss out previous investments that still haven't been fully utilized.

Therefore, select vendors with a wide range of solutions from which to choose from to achieve maximum flexibility in your teleworking deployment. Such vendors will be able to adapt their systems to work in a multitude of hardware environments and among a number of co-existent ubiquitous technologies.

As a business develops its specific teleworking infrastructure it looks for systems that promote and retain compatibility with as many standards-based technologies as possible. This includes newer communication protocols, Web standards, and emerging messaging Internet voice standards. By sticking with systems that are committed to standards, the business not only gains a system that should feature increased scalability but also increased interoperability - a critical need as the Internet enables the organization to stitch together more and more previously disconnected systems into a unified whole.

In the end there is no need to force a major change in existing IT and communications infrastructure investments. Investments such as these require a number of years to fully realize their payoff. When implementing a teleworking system, build a system that can work alongside and on top of existing frameworks and IT foundations. This will reduce not only equipment costs but also administration costs and user training.

Exploit technological advances

From the outset, the notion of teleworking is that it's a successor to telecommuting and other forms of remote working. Teleworking is meant to be a completely seamless solution that has one eye (and a design) set on enabling far more collaborative and effective working arrangement than a simple program to reduce commuting to and from the office. As network speeds and capabilities improve, a good initiative should be able to envelop and support future

aspects of teleworking that include new forms of voice, data, video, and Internet communication.

Most important are new forms of collaborative applications, programs, and systems that, for example, make working together on documents or support functions via the Internet and telephone as easy as sitting side-by-side in an office. Be sure that the teleworking system can easily support integration with the Internet and other applications. The best way to do this is focus on a software based solution that is more easily adaptable to the new forms and applications to which teleworking will evolve.

Simplify implementation and maintenance

A key aspect to developing a successful teleworking program is ease of use. This insures that employees will not only feel good about adopting it, but will eliminate many intra-company support calls and complex training. A system should also be as modular and as easily expandable as possible so that teleworkers can implement new features easily as their job roles change. Many newer systems utilize Web based browser interfaces that make configuring call routing, voicemail, and other important teleworking functions quite easy. It's also important to give good support to employees when they need it. This not only means adding a teleworking help desk but also supporting key technology partners that may need to make "house calls" to support the dispersed workgroup.

Key benefits

An Internet-based teleworking project provides a seamless way for companies to take advantage of additional resources available throughout the country. This type of technology helps both the employees gained from it and the company utilizing it. By offering employment opportunities to individuals preferring to

work from home, including retired, disabled, or child-rearing individuals, organizations are able to discover excellent resources while presenting employment opportunities that may not have been previously available. And by improving productivity within the call center a company is better able to maintain service levels for customers and easily justified the cost.

A key benefit in teleworking-enabled call centers is the ability to solve one of its most challenging situations. Scheduling around sick days, bad weather days, and other emergencies is a critical issue for any call center, but by using teleworking, a company can increase the availability of agents in the face of these obstacles. Businesses have achieved a quantifiable difference in the service levels on bad weather days compared to those of prior years without a teleworking dimension.

As the teleworking programs are designed, call centers are required to adapt their workflow to accommodate this new environment. With individuals working from home, companies need to change several functions in order to develop a better paperless workflow. This creates the benefit of moving entire workflow to a paperless environment. And as these programs are continued the paperless environment will continue to grow in each business unit, providing overall improved workflow.

In one example, the teleworking call center program is increasingly successful with almost 35 agents working from home across the country. The program is so successful, this number expected to double in the next year. Productivity increases of 20% to 50% have been realized from the business units with a teleworking program. In the call center environment, this could equate to as many as 40 handled inquiries per day, increasing overall customer satisfaction and reducing overhead costs.

Conclusion

The world is getting more complex — but that doesn't mean the workplace has to. Teleworking brings more freedom and flexibility to a company and its workforce, which in turn can improve more than just the bottom line. It can simplify workflow and solve lifestyle problems in the workplace.

Telecommuting introduces the idea that businesses can improve their operations in many ways that focus people on reducing the need for people to travel in to a physical office.

In today's mobile business world the key to success is speed and autonomy. The ability to put workers anywhere they're needed by giving them ubiquitous access to all of the organizations communications and computer systems frees them from the office desk. Teleworking is key weapon to deploy in the new economy.

Teleworking creates a flexible and responsive workforce and enables companies to instantly connect employees to critical office telecommunication and IT functions without being in the office. Teleworking also expands the geographic distribution of an organization's workforce.

The forces driving the increasing adoption of teleworking are:

- Economics, because the bottom line is under increasing pressure.
- Cultural influences, because as productivity increases, workers are looking for a more diverse set of benefits that move beyond common salary demands.

- Environmental factors that go beyond just a social or employee impact. Air pollution, congestion, and environmental impact from reducing commutes are also becoming bottom-line business issues.
- The emergence of the Internet, e-commerce and corporate LANs/WANs that truly increase global productivity as long promised.
- There are specific benefits to teleworking which include a better overall work environment that increases employee retention of intellectual capital, and reduces recruiting costs. It enables improvement in workforce effectiveness and productivity, reduces overhead, and increased ROI from existing infrastructure, and improves customer service and satisfaction.

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