



Green Business: How Technology Can Make a Difference

As energy costs continue to climb, businesses around the world, from the largest corporation to the corner store, are looking for new ways to conserve energy and resources. And, as consensus builds on the long-term consequences of pollution, businesses and governmental agencies are looking for solutions.

The engine that will drive this new direction in environmental sustainability is technological innovation, including advances in battery technology and fuel cells in cars, and the developing viability of solar, wind, and geothermal energies.

And increasingly, businesses are looking to information technology for answers. According to a July 2008 Forrester teleconference on enterprise adoption of green IT practices by Christopher Mines, Senior VP of Forrester Research ("Enterprise Adoption Of Green IT Practices"), a "profound economic change is gathering pace," and enterprises are preparing for a future where green regulations are mandatory, green consumers make up a majority, and green IT is a requirement.

ICT and Green Transformation

While the governmental and private sectors wrestle with the issue, many have already made the decision to act. Providers that are thinking green are teaming up with businesses who also want to "go green." A natural synergy results, as new thinking passes from either side of the business-to-business equation.

A large component of this innovation revolves around Information Communications Technology (ICT). From the early promise of a paperless office (itself a green initiative), communications technology has always been about new, more efficient ways of doing business.

Today is no different. In a recent report, the World Economic Forum confirms that the convergence of global networking and computing can significantly reduce global carbon emissions. The report also noted that ICT solutions have the potential to be a significant player in the reduction of CO₂ emitted by non-ICT industries and the public.

While ICT consumes energy and creates about 2% of the world's CO₂ emissions, it can significantly reduce CO₂ emissions for the other 98% through the ability to empower new and more efficient ways of doing business. What are the components of an ICT-led reduction in carbon emissions and an increase in energy efficiency? Consider:

- Global IP-based networks facilitate e-commerce, providing virtual environments that use a fraction of the resources of their physical counterparts.
- Remote application and network management applications help resolve performance issues from a central monitoring location, removing the need for travel associated with a technician dispatch.
- Collaboration solutions enable meetings and distance learning through audio, web, and video conferencing, all in a virtual environment that helps reduce the need for travel and consumption of carbon-based fuels.

- Mobility solutions enable teleworking, providing secure, reliable connections to corporate resources—and using only the energy required to power the networks, data centers, and personal computing devices, thereby saving carbon-based fuel expenditures associated with travel.
- Electronic billing options can reduce significant amounts of paper while increasing the ability to analyze and improve service usage through the invoicing tools.

IP Networking Powers Green Initiatives

Technological innovation starts with the network, and IP networking provides the right foundation for technology that supports green initiatives. An IP network converges voice and data to help companies improve bandwidth utilization by eliminating much of the unnecessary duplication of bandwidth required to run separate voice and data networks.

A converged network requires fewer servers, routers, and other equipment required to run separate voice and data networks. A single converged network can also help control management costs—whether a company manages the network in-house, or has a third-party manage some, or all, of the network.

Through converged networking, businesses can reduce the need for internal resources to maintain disparate networks and applications. IT personnel can spend more time on proactive innovation, activities that lead to both organizational and environmentally responsible success.

By enabling teleworkers, and advanced conferencing and collaboration—all solutions with a strong “green” component, due primarily to a reduction in travel-related energy use—a converged network creates opportunities to increase productivity across the organization.

A converged network can facilitate environmentally friendly e-commerce, which reduces energy and air pollutants associated with traditional brick and mortar shopping. It can also reduce retail and warehouse space requirements, which in turn reduce energy required to build, heat, and cool retail showrooms and office space.

Managed Networks Bring Better and More Efficient Performance

To help the environment, companies should look for providers that maintain efficient networks. Along with their provider, they can demand an energy-consumption standard and an associated measurement process for new telecommunications-related equipment including certain broadband, video, data center, network, and customer-premises equipment to reduce power consumption and carbon footprint.

And with managed networks, organizations can leverage the provider’s expertise for maintaining efficient network conditions and expand the reach of advanced applications to help improve employee effectiveness.

Data Centers Consolidate Energy-Consuming Infrastructure

Data centers present an immediate opportunity to make an impact on resource conservation. Through consolidation of servers at data centers, users can save real estate and equipment energy use, HVAC, CO₂ emissions, and travel costs for personnel and management.

A well-run data center is an efficient data center. The best data centers use techniques to lessen the impact of their energy use, including the simple act of turning off unused servers. The easiest power to save is the power that isn’t used. With sophisticated operating processes, servers and disk drives can be powered down when not needed, then brought back online whenever demands require it.

During low points in activity, organizations can run their servers at reduced speed, which lessens their consumption of energy. In addition, an enterprise should always choose a server with the best power supply efficiency available with the selected configuration.

Data center managers can improve the efficiency of their facilities by rigorous maintenance to keep equipment operating efficiently, as well as modifying layout and configuration of equipment to reduce cooling requirements. These and many more steps will increase overall data center efficiency and help lower the carbon footprint.



Virtual Collaboration Reduces Travel

Audio, video, and web conferencing can foster collaboration among workers in various locations. These services enable users to 'skip the trip' but not the meeting, thereby eliminating unnecessary travel. By bringing people together through virtual meetings, enterprises can meet with customers, prospects, and team members without ever leaving their desk, office, or home office.

Video conferencing technology has evolved and now provides high definition and virtual platforms. These immersive video solutions, such as TelePresence, offer a next-generation virtual meeting service that goes beyond ordinary video conferencing by creating the impression that everyone is assembled face-to-face in a single conference room (e.g., a virtual meeting).

Mobility Reduces Need for Physical Resources

Mobility solutions offer virtually anywhere/anytime connections to corporate resources to enable workers to fulfill customer needs and complete tasks on the spot, saving resources by eliminating delays and excess travel to specific locations. Reducing pollution by reducing commuting and travel, paper usage, and the cost of running large, empty offices (eliminated through home offices and "hoteling" via communal work spaces), all contribute to a greener business.

Mobility solutions are powered by wireless voice and data applications that extend the boundaries of an enterprise, beyond the corporate campus. Voice mail and secure, hosted messaging applications provide options for timely and effective communications between employees, suppliers, and customers, while network-based applications like audio, video, and web conferencing, and voice over IP (VoIP) can enable collaboration on the go.

Optimization and Virtualization Add to Server Capacity

Servers typically use only 5-15 percent of their capacity. Through virtualization, businesses can consolidate multiple IT resources, such as operating systems and software applications, on a single server, running several "virtual" servers on one device. One server can do the work of several, reducing both costs and energy usage. Businesses also can duplicate their environment—providing backup capabilities—at a fraction of the cost and environmental impact common with physical replication.

And applications, whether on a virtualized machine or not, can be optimized. Bloated software, inefficient software, or even software that produces very little business value, all can be pruned, optimized and even discontinued to lighten the load on servers.

IP Telephony Boosts Efficiency

IP telephony provides voice connectivity without additional on-site applications and facilities; replaces outdated telephony, and helps consolidate existing devices for more energy efficiency.

VoIP helps power initiatives such as "hoteling," where employees use shared workspace on an as-needed basis. With IP telephony, employees can use their office number, voice mail, and features at several locations and devices. These employees also use remote access to corporate data and applications to perform their jobs on the road or from home offices. In this way, a company can provision fewer office spaces than number of employees, saving on real estate and associated energy consumption.

Supply Chain Management Smooths Transactions

Supply chain management solutions enable businesses to securely and seamlessly convert manual, paper-based processes into automated electronic transactions among vendors, partners, and customers, reducing the use of paper and making business transactions more efficient.

The exchange of standard transactions electronically between business partners and automation of the purchase-to-pay cycle of a company's processes not only enables direct benefits like eliminating paper and inefficient manual processes, but also permits "just in time" processing which can streamline inventory, storage, and 3PL (3rd Party Logistics) expenses.

Online Billing and Payment Cuts Down on Paper Usage

Networks have long supported online, paper-free billing, and more and more businesses and consumers are taking advantage. It's an easily implemented change that can have a large and positive environmental impact. At Verizon, more than 84 million paper bills were suppressed in 2007, saving 1,700 tons of paper, while the first three quarters of 2008 has seen 72 million paper bills suppressed, saving 1,540 tons of paper. Electronic bill presentation and payment also eliminates associated environmental costs of paper bill transportation between provider and purchaser. Verizon Business actively encourages customers to switch to paper-free billing by offering to plant a tree through the American Forests program.



EDI (electronic data interchange) and Direct Data offer other options for billing delivery. These electronic file delivery systems transport large volumes of billing data virtually to better automate monthly invoice processing and provide a paperless solution. eBonding takes the process one step further by providing a seamless system-to-system interface between client and provider. Designed for enterprises with a high volume of transactions, eBonding allows customers to leverage their existing operational support systems to communicate directly with a provider's systems as part of an end-to-end automated business process.

How Verizon Business can Help You Go Green

Going green is good for business and good for the environment. Verizon Business has the expertise, experience, and global capabilities to implement solutions that can help support your green initiatives.

We begin with a foundation of a worldwide IP network. The Verizon Business global network includes more than 485,000 route miles, including terrestrial and undersea cable, spanning six continents and access to another 187,000 route miles from Verizon Telecom.

Verizon Business has increased the capacity of its fiber-optic networks with energy-efficient Ultra Long Haul (ULH) technology. ULH allows the extension of light-beam signals beyond 1,200 miles without the need for regeneration. Going forward, we plan to decommission many of our electrical-powered regeneration shelters where ULH is deployed. This state-of-the-art network uses bandwidth more efficiently, reduces network equipment and management costs, and requires less electricity to operate and cool.

The network supports green ICT initiatives by enabling remote application and network management that bring businesses the ability to accomplish tasks virtually. Mobility solutions, teleconferencing, and hosted services are a few of the tools supporting green initiatives. This is supported through secure, remote network access from virtually anywhere, multiple network access options, hosted or premises-based VoIP solutions to support teleworkers, wireless mobility solutions with Verizon Wireless, and hosted e-mail and IM services for employee "presence."

Verizon Business's conferencing services include audio, web, and video. These services enable users to remotely attend meetings, eliminating unnecessary travel. By bringing people together through virtual meetings, enterprises can meet with customers, prospects, and team members without ever leaving their desk, office, or home office. Currently, Verizon Business handles millions of electronic meetings each month.

Online invoicing, a standard for Verizon services, helps control telecom expenses, while saving the energy and environmental costs associate with paper bills and their transport. The Verizon Enterprise Center is a secure, online portal with all the information businesses need to order, manage, and pay for their services. The tool gives customers the ability to view their invoices online by entering an account or telephone number, or by choosing the account from their account list. And Verizon Business provides further options for EDI and eBonding.

When virtualization is on the green agenda, Verizon Business is ready with a family of virtualization consulting and management services to guide the businesses in the design and assess phase, build phase, and ongoing management of virtualized servers.

Finally, Verizon recommends, installs, and manages energy efficient Customer Premise Equipment (CPE) from partners such as Cisco, Nortel, and others that have concrete environmental initiatives in place. And to encourage our partners to develop more energy efficient equipment, Verizon will implement new energy-use standards requiring telecom equipment purchased after January 1, 2009 to be 20% more energy efficient.

Global business trends are driving enterprises toward a greener way of conducting business. Verizon Business can help you identify, develop, choose, and implement specific product and vendor solutions to meet your green initiatives. We're thinking green in everything we do, because innovation not only makes businesses better, it helps everyone breathe a little easier.

About Verizon Business

Verizon Business, a unit of Verizon Communications (NYSE: VZ), operates the world's most connected public IP network and uses its industry-leading global-network capabilities to offer large-business and government customers an unmatched combination of security, reliability and speed. The company integrates advanced IP communications and information technology (IT) products and services to deliver leading enterprise solutions including managed services, security, mobility, collaboration and professional services. These solutions power innovation and enable the company's customers to do business better.

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