

NOKIA ENTERPRISE SOLUTIONS

Expanding Mobile Email and Data Communications Across the Enterprise

In today's highly competitive business environment, staying connected isn't just a good idea, it's essential. The Internet and a wave of global communications technologies have set the bar higher than ever before and transformed information into a powerful commodity.

As the real-time enterprise emerges, the concept of "connectivity" is evolving almost as quickly as the increasingly virtual, mobile workforce that wants to stay connected. Indeed, these workers require more than just wireless communications in order to stay one step ahead of the competition today. They need access to their email, office applications and data wherever work takes them—from the board room, to the client site, to their home office after traditional "office hours."

A diverse array of solutions—from smartphones and Web-enabled phones to laptops, kiosks and home PCs with secure IPSec and SSL VPN connections—makes it possible for these workers to achieve significant productivity gains, and their companies to achieve competitive advantage.

MAKING CONNECTIONS

The increasingly mobile workplace is profoundly changing the way people act and interact. From senior executives to sales reps, technicians to IT staff, the ability to monitor events and stay connected is now crucial. Airports, coffee shops, even the back seats of taxis have become places to check email and access real-time applications. Wireless networks operated by cellular telephone providers along with wireless local area networks (WLAN) and Wi-Fi hotspots based on the 802.11 standard have become important cogs in the 24x7 business environment.

As the mobile revolution unfolds, managers and others in the workplace are becoming more vocal about their desire for greater mobility. Market research firm IDC reports that two-thirds of the U.S. workforce will be considered "mobile" by 2006. Already, more than 70 percent of businesses use mobile phones, and more than one-third of large companies use smartphones.

Many companies have already experimented with Web-enabled mobile phones and workers accessing data remotely through home-based networks and Wi-Fi hotspots via secure virtual private network (VPN) connections. Some of these individuals use wireless tools to access personal and business email and other Internet-enabled applications. Now they are looking to mobility solutions that provide more advanced functionality, including enterprise resource planning (ERP), customer relationship management (CRM) and sales force automation (SFA) to help them be more productive and connected at work.

To be sure, businesses are increasingly choosing to be con-

nected—and with the choices come the challenges of creating rules, policies and systems to accommodate everyone. These days, the question isn't whether mobility will impact a business but how it will affect it. And, as technical, financial and social issues converge, an organization must address all the factors that revolve around an effective mobile device strategy that covers everything from PCs to laptops to smartphones. In order to succeed, an enterprise must assemble systems and business processes that help it meet organizational goals and objectives while maximizing security.

Typically, a mobility strategy centers on three key components:

- **Human resources issues:** It is essential to provide the tools that allow workers to manage day-to-day business efficiently while respecting their personal time. These tools can help workers to be more productive throughout the course of the day, which may free up more time that they can use as they wish. Although it's impossible to legislate behavior, it is possible for an HR department to develop policies and guidelines—and make organizational expectations clear about the use of phones and other devices. In addition, an organization must let employees know what personal software they're able to load onto a device and what's not allowed. As viruses, spyware and other security risks increase, the need for clear guidelines and policies grows.
- **Information technology issues:** The introduction of mobility to an enterprise represents numerous challenges. For one thing, many individuals already carry their own mobile phone, PDA or smartphone and have specific preferences and established work habits. Any mobile initiative is bound to affect the personal and business lives of workers. For another, IT must ensure systems compatibility—so that the same applications and productivity tools are available across departments, divisions and the enterprise.

In practical terms, an enterprise must take a holistic view of the business and understand how data flows back and forth among workers. That data is the company's asset so IT must define what they will and won't allow. Then the right technical infrastructure can be built and the right security tools can be put in place. And IT must address asset management. Will a company allow access to corporate data from devices they do not own and control? As more and more workers use mobile devices, an IT department must track what's being used and when it's time to upgrade or retire devices. In the end, an organization should strive to evolve from a user-driven mindset to a business-driven approach that focuses on productivity and profits.

■ **Financial issues:** It's impossible to develop a solid mobility strategy without weighing financial considerations. Mobility solutions—including devices, servers and other systems—typically comprise 12 percent to 20 percent of an overall IT budget. Yet, many companies drive enormous cost reductions and productivity gains through the use of mobility tools. For example, one major technology company—a customer of Nokia's—achieved 1,700 percent return on investment (ROI).

Nokia has tools that can help you estimate ROI. They provide a solid starting point for identifying and understanding financial considerations related to VPNs and secure access systems. The ROI Calculator measures several factors, including hardware and software costs, installation, annual support and maintenance, and reduction in dial-up expenses. This generates a customized ROI model for a business. To access this calculator, visit www.nokia.com/mobilebusiness/americas/roicalculator.html.

Yet, it's also important to recognize that return on investment, while a central issue, is only part of the equation. It's wise to look at mobility as a driver for business change and identify opportunities to achieve a competitive edge. Equally important: once a company has a mobility strategy in place, it can benefit by using asset management systems to control hardware costs and subscriptions required by telecommunications service providers.

In some cases, HR policies and financial considerations directly intersect. In order to achieve maximum ROI, an organization should have strict rules about who can obtain a particular type of device and what kind of allowance is available for hardware and software. A growing number of firms have introduced specific procedures for obtaining devices and charge purchases against a department's budget. That way, companies can select the most appropriate device or set of devices for an employee's job function or role within the company.

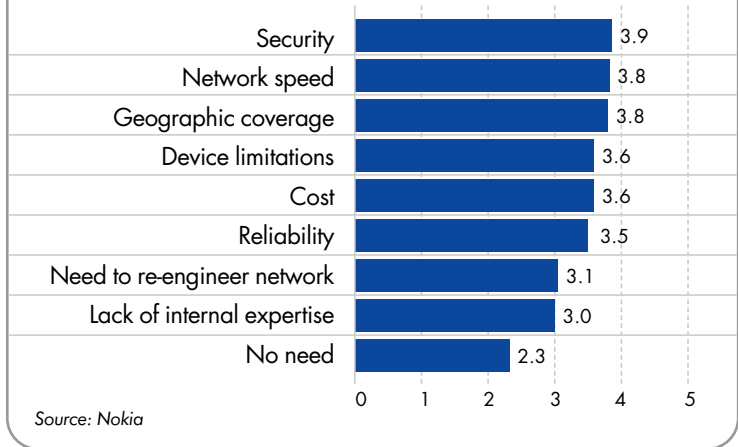
A NEW ERA OF COMMUNICATIONS

The challenge of managing wireless tools is growing. META Group reports that 65 percent of companies will deploy at least one wireless application by 2007. As many as 50,000 hotspots now exist globally and the number will swell to over 200,000 by 2008, according to market research firm In-Stat. Airports, hotels, cafes and even entire cities are increasingly cutting the wires. In addition, wireless networks operated by cellular telephone providers are more accessible and widespread. They are making it easier to use a phone or handheld device to exchange data while in the back seat of a taxi or in a client meeting in a far-away city.

Businesses must rely on multiple wireless connectivity options—and design corporate policies and workflow to reflect the economic and practical realities. At the most basic level, this means adopting hardware and software that make it simpler to use multiple networks and systems. For example, a standards-based mobile IP client enables seamless and transparent roaming

MOBILITY: BARRIERS TO ADOPTION

What factors do you consider barriers to your company adopting enterprise mobility?



capabilities. A worker can travel from one location to another and stay in touch.

No less important is choosing the right device and form factor for the right situation. In some cases—such as sales professionals who rely heavily on presentations—a wireless-enabled notebook computer or Tablet PC will suffice. In other instances, mobile workers may require a basic mobile phone, a smartphone or a handheld. Some organizations can also benefit by introducing wireless kiosks for the factory floor or other locations. These devices can provide access to an intranet as well as other applications.

Nokia 6820 and **6822** messaging devices are fully featured phones with fold-open QWERTY keyboards for sending and receiving email and text messages. These units are ideal for light email users (those typically receiving less than 50 messages a day and responding to about 25 percent of them) who require a highly functional, simple-to-use device that offers a low total cost of ownership. An added benefit is that for many users, it eliminates the need for multiple devices, including a mobile phone, pager and PDA. And for the enterprise, the device is easily reprovisioned for another user.

Power users have other options available. Almost all include built-in wireless email and other productivity applications such as calendars, task lists and contact managers. In addition, many offer a Web browser, full keyboard, integrated digital camera, Bluetooth connectivity and built-in WLAN connectivity for accessing the Internet or a local intranet. **Nokia 9500 Communicator** and **9300 Communicator** and other Symbian-based devices also support a variety of client/server applications, data synchronization and an array of other features.

With the right devices in hand, it is possible to enter a new era of productivity. An enterprise can launch applications that fit people's work styles and lifestyles. Individuals no longer find themselves chained to PCs at the desktop. They're able to access

information anytime and anywhere.

DIALING INTO RESULTS

Navigating this brave new world requires a vision and a focus. With the basic building blocks in place—a wireless-enabled network, adequate security, applications that support wireless mobility and devices that allow mobile workers to tap into email and other data—an organization can begin to realize the promise of the information age.

Achieving maximum results doesn't happen without planning, however. The basis for success is solid communication—and a shared vision—within an organization. When IT, finance and HR collaborate on a strategy, the resulting synergy pays enormous dividends. Yet, at the same time, building an effective wireless infrastructure and developing the right policies and strategy requires an enterprise to confront both practical and technical challenges. Key factors for achieving success in the mobile arena include:

- Ease of installation
- Ease of management
- The ability to optimize performance and viewing for a variety of devices
- Robust but simple-to-use features
- Flexibility and scalability
- A high level of security, including authentication and encryption

Wireless email and other mobility solutions offer the greatest return when they function independently of devices, networks and servers. For example, Microsoft Exchange or Lotus Notes can provide a messaging server that streamlines sending and receiving email across an array of environments, including POP3 and IMAP4. These enterprise applications can also support numerous devices running on multiple operating systems, such as Symbian, Palm, Pocket PC and RIM.

Nokia secure mobile connectivity solutions are another key to achieving wireless connectivity, and are the often unseen but integral components of a secure end-to-end solution. They provide a backbone for secure, authenticated and controlled access with an enterprise or across

RULES, POLICIES AND PROCEDURES

Here are some of the factors that an organization must consider when equipping workers for mobility:

- Matching devices to workers' needs and designating specific job classifications for each device
- Establishing service and calling plans that fit users' needs
- Having a system in place to deal with exceptions (i.e., workers that don't fit into a classification or, for one reason or another, have different needs)
- Establishing strict rules about which applications and content are allowed on devices (rules may vary for different types of devices, such as notebooks and smartphones)
- Developing clear rules about what constitutes personal and professional use of the device
- Establishing a policy about when workers can place calls and send e-mail to coworkers
- Ensuring that employees maintain adequate security on devices
- Specifying what happens to a device when an employee resigns or is terminated
- Determining an upgrade path and clarifying when employees should expect a new device
- Partner with an enterprise solutions provider with proven experience in building secure access to corporate applications and data

organizational boundaries. **Nokia One Business Server** provides mobile access to email with attachments, calendar, contacts and Web links. It reformats data on the fly—including Word, Excel, PowerPoint, PDF, JPEG and vCard files—so that it fits the form factor required for almost any mobile device, including notebook and handheld PCs as well as non-Nokia phones and handhelds. Moreover, it is available in 14 major languages, so it can be deployed to diverse groups of users.

Meanwhile, **Nokia IP VPN** and **Nokia SSL VPN** solutions connect users in remote locations to virtually all corporate applications. Companies can choose what technology is appropriate for their various user needs. Both provide secure, reliable and easily manageable corporate network access. The SSL-based solution is great for workers using a device the company does not own—like a personal home PC, airport kiosk or Internet café—as it adjusts access based on the user, device and security of that device at any moment in time. Nokia IP VPN with automatic network detection and authentication, easy scaling of resources, and a high level of reliability, makes application access seem like it is one click away. In addition, **Nokia Firewall/VPN** appliances offer a feature-rich, enterprise-class firewall combined with the

industry-leading Check Point™ VPN technology for organizations that require firewall and VPN on one hardened security device. No matter what combination of technology is chosen, an organization can build a mobile technology backbone and expand over time.

Finally, there's **Nokia Wireless Accelerator**. It boosts data transfer speeds for notebook users and others lacking a broadband or WLAN connection. Compatible with existing IT

EMBRACING THE RIGHT FORM FACTOR

In order to achieve maximum productivity, equip workers with the right devices:

Executives	Smartphone (Nokia 9300/9500 Communicator)
Managers	Smartphone, messaging device (Nokia 9300/9500 Communicator, Nokia 6822)
Sales	Notebook PC; Tablet PC, messaging device (Nokia 6822)
Technical support	Tablet PC; messaging device (Nokia 6822)
Line employees	Mobile phone with Web functionality (Nokia 6200)

infrastructures and fully integrated with Nokia IP security platforms, it provides comprehensive application protocol support including HTTP, FTP, IMAP, POP, SMTP and a numerous other formats. In addition, it can cut download time and data transfer volumes by 40 to 70 percent.

GOING MOBILE

Within any enterprise, the adoption of mobile technology is an evolutionary process. During the 1990s, mobile voice communication emerged as a mainstream tool. Today, organizations rely heavily on it to keep a workforce connected and productive. Now, many are taking the next step and implementing mobile collaboration applications.

In this new world order, email is clearly the foundation for corporate communication. According to market research firm Radicati Group, the availability of mobile email can result in individuals gaining up to 55 additional minutes of work time each day. What's more, mobile workers report that email is the office application they would most like to see integrated into their mobile phones.

Simply put, a well-conceived wireless strategy allows an enterprise to:

- Reduce operating costs associated with slow and inefficient processes
- Increase revenues by helping employees become more efficient and productive
- Speed the decision-making process throughout the organization
- Boost performance with suppliers, customers and employees

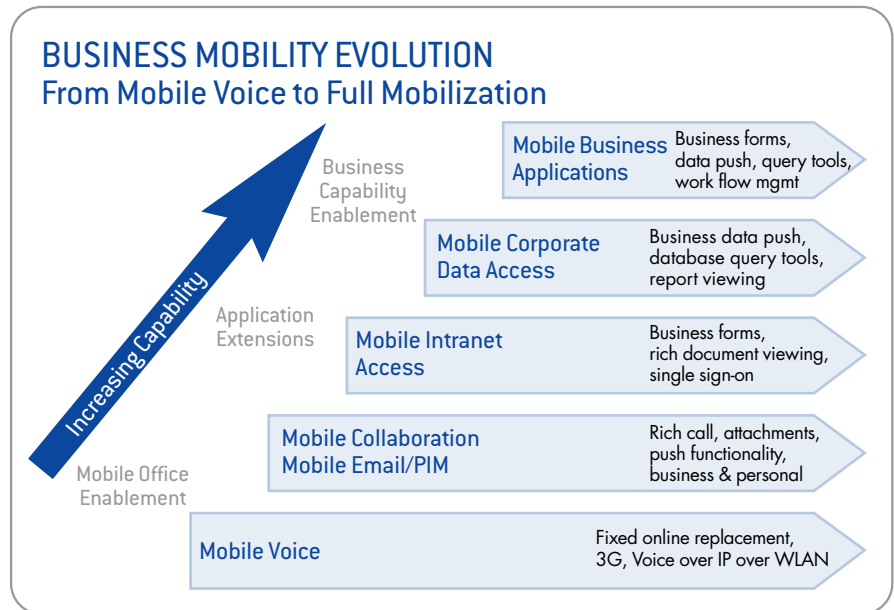
Suddenly, it is possible to make real-time data available and accessible, and remotely manage an array of tasks, including direct order entry and inventory and billing lookups.

At Cadre Information Security, a security risk management firm, mobility has emerged as the foundation for business. As the Cincinnati, Ohio-based company began opening offices throughout the Midwest United States, executives realized that desktop email couldn't move crucial information fast enough. What's more, supporting multiple devices was a huge challenge for IT. After turning to **Nokia One Business Server**, a device that serves as a proxy gateway and converts content to the correct format—field agents could receive email and information optimized for their handheld device.

Other companies are also benefiting from greater mobility. For example, 120-year-old PPG Industries, a Pittsburgh, Pennsylvania-based global supplier of coatings, glass, fiberglass and chemicals, found its increasingly mobile workforce heavily

dependent on information. Email serves as the hub of PPG Industries' communications platform. A standard application is available globally, through both local and remote access—and the company also offers a Web mail tool.

To extend email to users in the field, the company turned to **Nokia One Business Server**. This solution delivers a robust mobile capability, including the delivery of messages, attachments and contact data. It also synchronizes the data so that the PC-based mail application always reflects messages read and sent. Today, PPG Industries is communicating in real time and sharpening its competitive edge.



Some firms are taking the next step and turning to mobile intranet access, mobile corporate data access and mobile business applications. These capabilities allow a company to use wireless technology to query a database, process business forms, push data to workers in the field, and streamline workflow.

As mobility evolves into a centerpiece of corporate strategy, a growing number of businesses understand that the ultimate goal is to connect people with the information they need. While the right hardware and software are crucial, success can prove elusive without a tight focus on HR policies, IT concerns and financial considerations. In fact, when an enterprise strikes the right balance, it's possible to develop a strategy that achieves maximum results and bottom-line benefits.

As organizations become more adept at using mobile and wireless solutions, they're able to achieve gains that would have been unimaginable only a few years ago. These include a measurable cost savings from process improvement, the ability to gain a competitive advantage, and the adoption of entirely new business models that lead to far greater performance and profits.

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