

Nokia for
Business



Managing Mobility: An IT Perspective

White Paper

NOKIA
Connecting People



Executive Summary

Today's workforce is rapidly becoming mobile. According to a survey conducted by Simpson Carpenter in September 2005, employees spend on average, one third of their time out of the office, and almost half their time in the office away from their desks. And that trend is only growing. IDC projects that by 2009 there will be more than 878 million mobile workers worldwide.

In order to stay ahead of the competition, organizations are faced with the challenge of meeting workforce demands to provide them with the functionality that will keep them thoroughly informed, responsive and constantly connected. And with more and more workers spending greater lengths of time away from their desks, businesses are increasingly looking at how to capitalize on the significant benefits of enterprise mobility.

While mobile solutions offer organizations powerful tools for improved productivity and increasing revenues, they also present critical challenges for IT. This white paper examines the issues surrounding the security, manageability and cost of mobility and how Intellisync Mobile Suite from Nokia provides a comprehensive solution to address these key concerns.

Intellisync Mobile Suite from Nokia enables IT to manage critical functionality, such as providing mobile access to email, calendar, contacts, corporate directories and other applications. Through device management, IT gains the ability to distribute and synchronize files on mobile devices, as well as the ability to configure, backup, and restore them remotely. Device management provides easy-to-use tools needed to control every aspect of a mobile enterprise. With the Nokia solution, mobile device and application deployment, support, maintenance and security is made simple and cost-effective.

Addressing Business Needs

As the mobile workforce increasingly relies on a proliferation of remote devices—from smartphones, laptop and tablet PCs, to the newest PDAs—they are demanding greater access to the tools and applications that allow them to remain connected and be more productive.

For example, a busy executive needs push email on their mobile device so they can respond to a time sensitive communication on the way to the airport. A sales representative needs real-time access to contacts and calendars in order that they can be more responsive to customers and close more deals. Knowledge workers need access to corporate data and applications on the network so they can more effectively collaborate with team members from a remote location. These workers know that mobility can be a major business differentiator, helping them to be more informed, agile and capable.

Yet, with these workforce demands come significant challenges. IT administrators and managers are faced with real concerns over security, manageability and cost.

The Impact of Mobility on IT

As mobile workers increasingly access confidential information within an organization's IT infrastructure, administrators are faced with real security concerns. Critical corporate data must not be compromised. Questions arise over how mobile access to an organization's network will be controlled and whether user authentication can be employed? What happens if a mobile device

is lost or stolen? Can data on the device be encrypted so proprietary information is protected? And with the malicious spread of hackers and viruses, is it possible to protect mobile devices and the company network from these outside threats?

With these security concerns come equally critical questions surrounding manageability. IT administrators need a mobility solution that is highly manageable. They need to know if the solution they are considering is capable of managing multiple devices from multiple vendors, multiple device clients, and interoperating with multiple backend systems. In addition, they need to know if corporate standards for use can be implemented, such as setting email storage capacity, time limits, and the size of attachments. Can programming updates be "pushed out" remotely over-the-air to devices regardless of geographic location, so workers don't have to bring them in to IT, causing further burdens to already stretched resources? Does the solution provide backup and restore capability so data on a lost or stolen device can be instantly replicated on a new device, thus minimizing downtime?

Ever-present are concerns over costs as they relate to implementation, integration, maintenance, support, servers and asset management. IT administrators need to know what strains the mobility solution they choose will put on valuable IT resources. Can the solution drive efficiency, while minimizing the requirements for IT resources, thereby lowering total cost of ownership? And will it impact ROI corporate-wide? The Nokia mobility solution helps customers address these critical areas of concern.

The Mobility Solution: Intellisync Mobile Suite from Nokia

Finding a solution that meets all the functionality needs of an organization's mobile workforce, while also addressing the key concerns of IT is imperative. Intellisync Mobile Suite from Nokia is a comprehensive mobility platform with components that make it possible to put the right tools in the hands of mobile workers, so they are empowered to succeed.

Intellisync Mobile Suite from Nokia helps IT meet its most pressing demands. The solution supports multiple device types from different vendors allowing for greater manageability of resources. Intellisync Mobile Suite provides secure end-to-end data transmission from the network, through the firewall, out to the device, protecting critical information. Our flexible solution also supports multiple back ends and back end infrastructure, which maximizes the cost effectiveness of existing IT investments, enabling a strong return on investment. And solid mobile middleware supports vital top level user functionalities, including email, PIM, access to corporate directories and other business applications. (Figure 1)

Intellisync Mobile Suite from Nokia simplifies the use and administration of mobility solutions by employing a single client application and user interface advanced technology, providing only one Client GUI,

one Gateway and One Administrative Console for all components. Intellisync Mobile Suite addresses IT's need for a truly device agnostic solution.

Nokia Global Services and Support and Professional Services organization offers a full set of technical support, implementation and training services to assist customers focused on mobility. Nokia provides a choice of top-quality support plans to address the unique needs of customers.

The following is an in-depth look at the core functionality of Intellisync Mobile Suite.

Intellisync Mobile Server

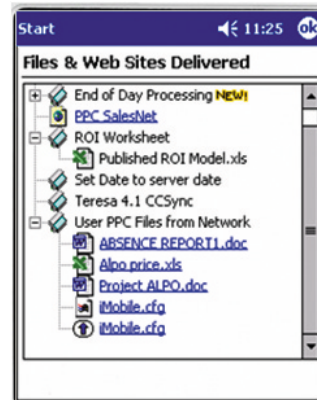
At the heart of Intellisync Mobile Suite from Nokia is Intellisync Mobile Server (Figure 2), a server that contains the elements needed to enable an organization's mobile workforce—Synchronization, Mobility Optimization, Transport and Compression Connectivity. For IT administrators, the server is the integrated control point for all Intellisync Mobile Suite applications. All administrative functions are managed from a single Admin Console, which is easy to use, and offers a consistent, familiar look and feel.

Intellisync Mobile Suite components are comprised of:

- **Intellisync Wireless Email** – Mobilizes email by enabling users to send and receive messages and view attachments on handheld devices

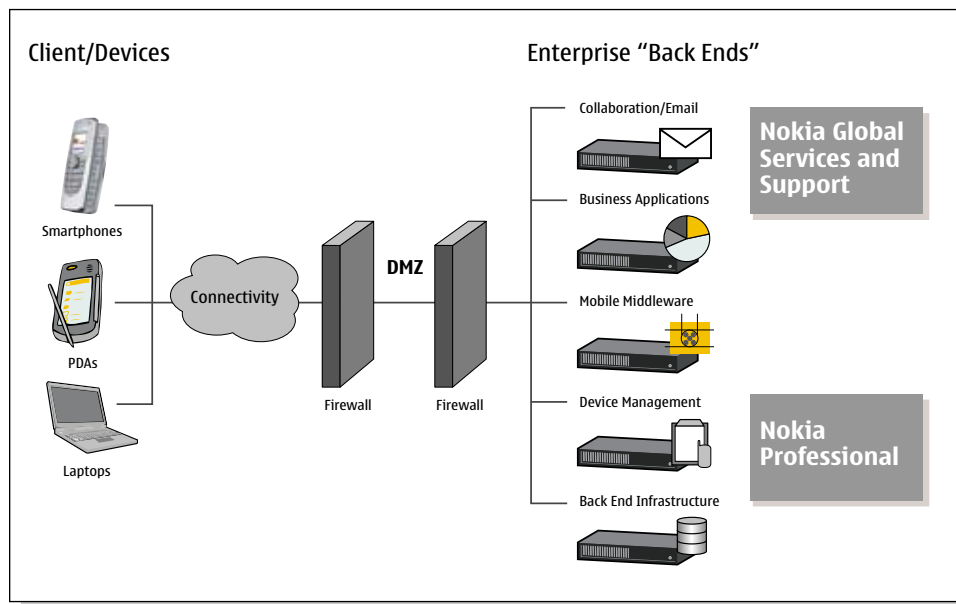
- **Intellisync PIM Sync** – Synchronizes contacts, calendar, corporate phone directories and other PIM information from popular groupware platforms and clients [to mobile devices]
- **Intellisync Device Management** – Allows IT to manage every aspect of their mobile solution through a fully integrated and flexible platform with key functionality that includes Security Policy Enforcement, Device Configuration, Software Distribution, Inventory and Reporting, and Backup and Restore
- **Intellisync File Sync** – Automates distribution of any file or intranet content on an organization's network to mobile devices, keeping them up-to-date and relevant

Intellisync File Sync User Screen



- **Intellisync Data Sync** – Powerful solution for extending corporate data or applications to mobile workers, on handheld devices as well as laptop and tablet PCs

Figure 1: Mobility Architecture



Administration can be done remotely and a subset of functions can be delegated to site administrators—all from a single installation. Intellisync Mobile Server is built on a highly scalable architecture that enables the growth of mobile networks, which are simple to manage. Users can easily be added to a server, and when new servers are required, they can be added with no interruption of service to existing users.

Intellisync Mobile Server is configurable in a number of ways that facilitate a rapid path to production, while maintaining solid security practices. Intellisync Mobile Suite is designed to run on a server behind a firewall. No network operations center is required, providing IT complete control of the security of the network.



Mobile Email Functionality



As more and more workers spend longer periods of time away from the office they increasingly require access to corporate email on their mobile devices, as well as calendar and contacts, corporate directories and other vital data. Intellisync Wireless Email solution helps IT take control of email, calendar, PIM synchronization, directory, WAP, web browser and Intellisync File Sync functionality, allowing for a secure, easily managed and standardized approach. (Figure 2)

The Nokia solution offers a complete wireless email platform that supports a wide range of mobile devices platforms, including:

- Symbian Series 60, Symbian Series 80 and Symbian UIQ
- Windows Mobile (PPC) and Windows Mobile
- Palm OS
- Brew,
- SyncML
- RIM (for device management only)

Intellisync Mobile Suite from Nokia supports languages including:

- English
- French
- Italian
- German
- Spanish
- Japanese
- Brazilian Portuguese
- Czech

Intellisync Mobile Suite also supports a broad set of network connectivity options, including:

- GSM
- GPRS
- CDMA
- WCDMA
- EDGE
- HSDPA
- WiFi

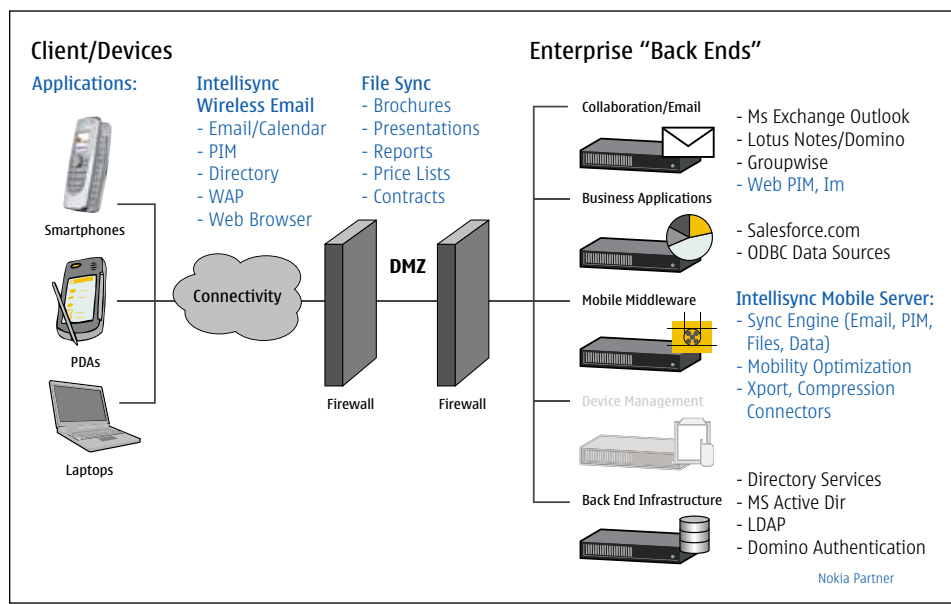
The Nokia mobility platform provides for extensive back-end compatibility, easily integrating with all leading groupware and email platforms, both corporate and personal, including:

- Microsoft Exchange
- Lotus Domino
- Novell GroupWise
- IMAP and POP email servers

The platform also supports different Directory infrastructures such as:

- Microsoft ActiveDirectory
- LDAP
- Domino Authentication

Figure 2: Mobility Architecture – Email View



Intellisync Mobile Suite can connect corporate data to a wide range of mobile devices over any network providing choice and flexibility to meet both current and evolving mobility needs.

Taking a Layered Approach to Security

With the Nokia mobility platform, IT can secure data across laptops and mobile devices, the wireless network, and into the enterprise data center. (Figure 3) This layered approach to security enables IT to effectively manage the risk of mobilizing workers and keeping them productive by providing secure access to critical corporate information.

The Nokia mobility platform supports device encryption, which helps secure data, so it can't be accessed by unauthorized parties should the device be lost, but hasn't yet been locked and wiped. Multiple over-the-air encryption options include:

- SSL
- AES
- 3DES

Intellisync Mobile Suite from Nokia is in the process of filing for a FIPS 140-2 certification.

Device management also provides anti-virus protection, which captures and removes viruses from mobile devices. In addition, it allows for seamless, over-the-air configuration without issues, so devices can be remotely and securely updated. Mobile Suite offers compatibility with an organization's existing firewall infrastructure. With mobile workers connecting to a company's network

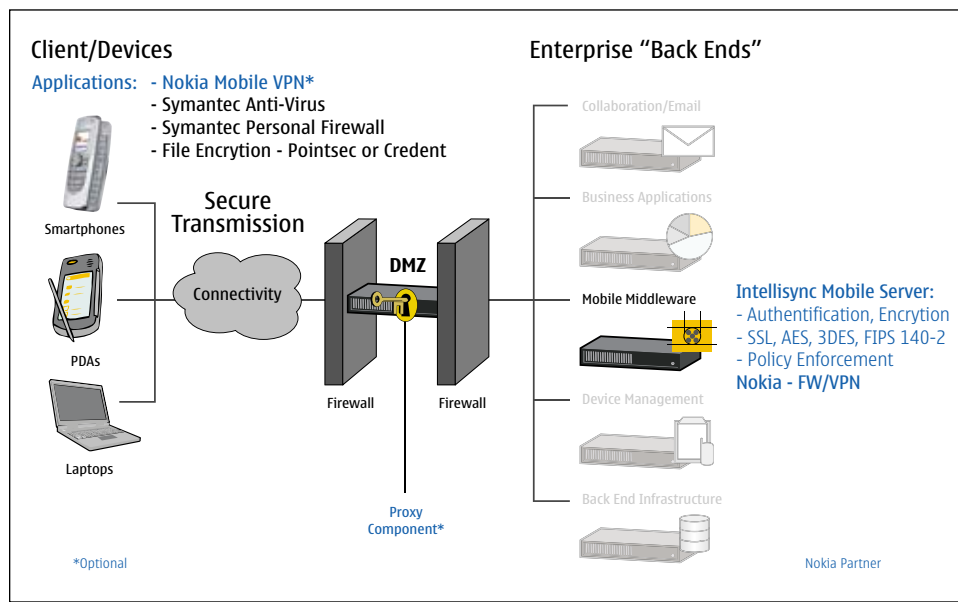
24/7, device management provides for infrastructure reliability, allowing IT to maintain the security of their network. Device management also utilizes packet optimization technology to reduce wireless network traffic for improved performance.

Policy Enforcement lets IT set and enforce policy at the device level. Multiple authentication options let IT validate the device, as well as the user, so only authorized personnel can access sensitive information. So, for instance, in the case of a contractor or temporary worker, IT can limit access through their mobile device.

Intellisync Mobile Server can be configured such that a proxy component can run in the DMZ (De-militarized Zone). This moves the point of access for your corporate network to the less sensitive DMZ. The proxy in the DMZ provides an additional buffer for the LAN, protecting your back-end server from direct exposure to the dangers of the open Internet. Through this solution an organization's inner firewall need only allow outgoing connections to the proxy component.

Device Management:

Figure 3: Mobility Architecture – Security View



Delivering Manageability

As mobile workers become ever more reliant on mobile devices to access vital information, IT is increasingly faced with the challenge of managing these devices. Concerns range from administering security policies to software updates to backup and restore functions, and compatibility with existing firewall infrastructure.

Intellisync Device Management is part of a fully integrated and flexible platform that addresses IT's need for a highly manageable solution. The key functionality of device management is Security Policy Enforcement, Device Configuration, Software Distribution, Inventory and Reporting, and Backup and Restore. This functionality allows IT to take control of mobile devices, similar to the way today's laptops have standard issue security, applications and backup procedures. (Figure 4)

Inventory and Reporting allows IT administrators to have full knowledge of the mobile device assets, the carrier being used and verification of configuration, all without asking users, launching an inventory project or interrupting other work.

Theft/Loss and Security policies for mobile devices help protect vital company information from unauthorized access. Security and encryption settings, as well as connection policies let IT control which

mobile workers can gain access to the company's network.

Device Backup and Restore allows IT administrators to set a schedule to retrieve files and data from a device when it is connected, then encrypt and store that information on the server in case there is a need to restore it later, on the same or similar device. In addition, contacts and calendar dates, which are critical to mobile workers, can be synced with the system, and then synced again to any number of devices (laptop, desktop, mobile device, etc).

The following is an example of how this might be used. Should an executive's mobile device, containing highly confidential data, be lost or stolen, device management enables IT administrators to push policies to the mobile device such as a hard reset (device wipe if the device is stolen). If the executive has simply misplaced the device, it can be locked and the number of failed password attempts can be reduced to minimize unauthorized access. If the executive subsequently finds the device, then they can use their password, or a temporary password to unlock it and get back to work.

The device management solution from Nokia offers advanced user support, which encompasses end-user software and device support. Policy changes are pushed out to mobile devices. Initial software deployments

and updates are done remotely over-the-air to devices no matter where they are geographically. These updates are done in the background, making them transparent to workers. Backup of all device applications and data are maintained on a single server or clustered servers. The solution allows IT to maintain a complete hardware/software inventory on the server for greater manageability.

In addition, Intellisync Device Management

Device Backup/Restore User Screen

Device Backup/Restore Settings

Backup
Choose from options below to perform a full device backup.

☒ Backup Device during next Sync

Backup Device Now

Restore
Choose Restore Device Now to connect and restore the latest full device backup.

Restore Device Now

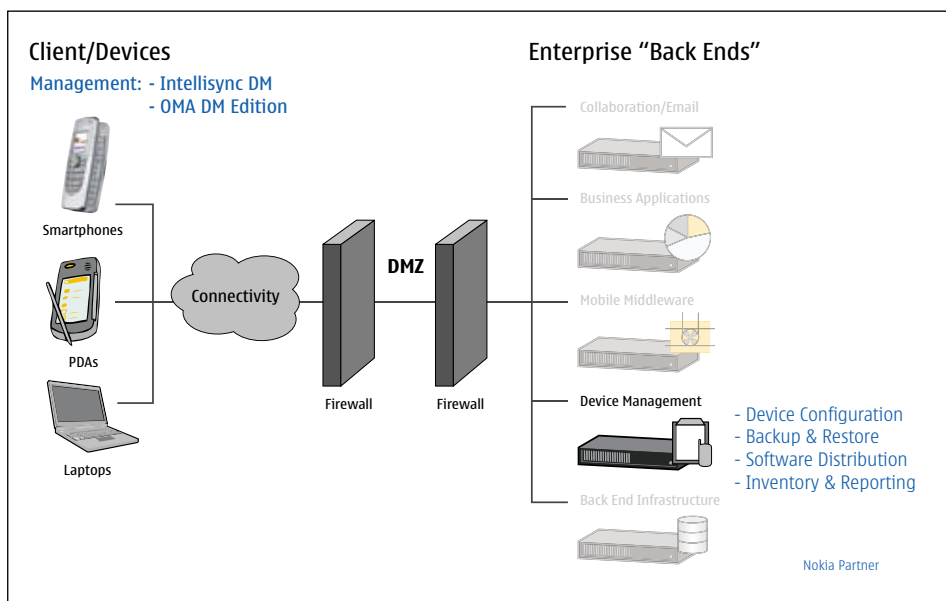
Check Status
Tap to connect and see if backup and restore is an option for current user.

Check Status

streamlines IT administration, offering a single, full-featured, easy-to-use GUI admin console that interfaces with the server and all mobile devices. This standardized platform eliminates the need for mobile middleware solutions that are expensive to maintain and require additional work to integrate and utilize. Plus, the application can be rapidly deployed and works with virtually any mobile device, with no need to replace existing hardware, and includes tools and wizards to simplify remote application delivery and upgrades.

Intellisync Device Management operates over multiple platforms and is designed from the ground up to provide comprehensive device management for the key needs of a mobile solution.

Figure 4: Mobility Architecture – Device Management View



Services and Support

Nokia offers a full set of capabilities to assist customers focused on mobility through Nokia Global Services and Support, and Nokia Professional Services organization. We offer a range of services designed to help customers get optimal returns from their mobility investment.

Nokia Global Services and Support provides technical support, technical account management, implementation services and technical training. Nokia provides a choice of top-quality service plans to address the unique needs of customers. The Nokia responsive Technical Support programs include personalized technical support through Nokia Technical Assistance Centers and software updates that provide on-going software maintenance and version upgrades. These programs also include on-line support, which offers web-based incident logging, access to technical knowledgebase and product documentation, as well as the following web-based capabilities:

- Open/Track cases
- Access to product documentation
- Technical bulletins and FAQs
- Searchable knowledgebase
- Proactive email notifications
- Nokia Service Contract Center

Add-on service options are available, and range from dedicated support personnel, to quarterly system health checks, to onsite engineer visits.

Nokia has a full set of capabilities to assist customers focused on mobility through our Professional Services organization. Through our Design and Integration Services, Nokia mobility solution professionals work with customers to design, deploy and manage secure customized business mobility solutions and devices. The Nokia service offerings includes:

- **System Integration** – Helps customers with orchestration of the relevant components required for a true end-to-end solution
- **Architecture Services** – Assists customers in developing architecture blueprints for business mobility solutions
- **Custom Engineering** – Provides customization of Nokia products per customer requirements



Nokia also offers a free one hour mobility phone consultation that provides an overview of current mobility technologies and vendors. For customers who are further along in their decision-making, Nokia Professional Services offers a facilitated workshop to help customers crystallize their business requirements and better understand their internal processes and capabilities relevant to mobility. This workshop is available for a fixed fee.

For customers who are evaluating mobile email solutions, Nokia offers a 'Pilot in a box'. This is a self-contained unit which can be shipped to your premises to provide your teams with hands-on experience of the software and devices and includes:

- Intellisync Wireless Email
- Intellisync Device Management
- Intellisync File Sync
- A wireless LAN as well as laptops and mobile devices

Managing Mobility Costs

Managing limited resources is a constant concern for IT managers. Intellisync Mobile Suite from Nokia lets IT manage every aspect of their mobile solution, driving efficiency and security, and helping minimize the resources needed, thereby lowering total cost of ownership.

Intellisync device management helps configure mobile phones correctly providing for connections to applications and services that are available and up-to-date. Having the capability to apply software updates remotely means workers don't have to physically

bring their mobile devices back to the IT department for maintenance and installation, which significantly reduces the burden on IT resources, and provides greater cost savings.

Device management also enables asset management, allowing hardware and software on devices to be examined remotely. IT administrators gain a complete view of all mobile devices deployed within the organization, and can restore or delete data and applications over-the-air, which allows for highly cost effective management. Additional cost savings can be achieved when an enterprise mobility plan is implemented, bringing devices under centralized purchasing and management. Companies can realize savings in the administration of mobile devices costs by using a corporate-wide service plan. With Intellisync Mobile Suite, IT administrators can reduce costs and improve

Intellisync File Sync is a cost-effective document and content distribution tool that helps keep the documents up-to-date that your organization uses to get their job done.

company-wide ROI, while securely managing all mobile devices, mobile workers and applications.

Conclusion

Enterprise employees increasingly rely on mobile devices to achieve greater levels of success in their jobs. Along with this increased level of mobility, workers are demanding new functionality from their devices. As a result of these workforce demands, IT faces real challenges.

At Nokia we understand the issues confronting IT and we have the industry expertise to help solve the critical concerns surrounding mobility. Intellisync Mobile Suite from Nokia enables IT to meet workforce demands, while addressing issues surrounding security, manageability and cost.

The comprehensive mobility solution from Nokia supports a wide range of mobile devices and integrates with most enterprise

back-end platforms and applications. Device management provides easy-to-use tools needed to control every aspect of a mobile enterprise. With the Nokia solution, mobile device and application deployment, support, maintenance and security is made simple and cost-effective.

Because Intellisync Mobile Suite supports a wide range of mobile devices, back-ends, and applications, it is also a platform for the future. Intellisync Mobile Suite will meet an organization's mobile enterprise needs today, and as the organization continues to grow it can be expanded to address a company's needs to scale, support multiple device types from multiple vendors, and address the needs for control and security.

For More Information

Contact Nokia today to find out how we can help your IT organization thrive in this emerging mobile environment.

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About Nokia

Nokia is the world leader in mobile communications, driving the growth and sustainability of the broader mobility industry. Nokia is dedicated to enhancing people's lives and productivity by providing easy-to-use and secure products like mobile phones, and solutions for imaging, games, media, mobile network operators and businesses. Nokia is a broadly held company with listings on five major exchanges.

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