



Extended Connectivity for the Enterprise: The BlackBerry Wireless Platform

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BlackBerry Wireless Platform Overview

Through wireless connectivity, businesses can embrace the communication advantages of email and extend their enterprise applications, providing their mobile workforce with access to corporate data. The BlackBerry® wireless platform from Research In Motion® (RIM) delivers an end-to-end wireless connectivity solution that can help an organization:

- Reduce operating costs by making business processes more efficient.
- Increase revenues by enabling workers to be more productive.
- Improve the quality and speed of decision-making through rapid, secure distribution of information.
- Improve communication and collaboration among employees, partners and suppliers.

The BlackBerry Enterprise Solution meets the business requirements of fast-moving enterprises. Mobile professionals equipped with BlackBerry devices demonstrate increased efficiency and productivity in a number of application areas, including:

- Field service
 - Receive and react to important customer, dispatch and inventory information while on the go.
 - Conduct on-the-spot billing and inventory look-ups.
- Sales force automation
 - Access customer and partner information, as well as enter orders directly on the device, while still at the customer site.
 - Receive opportunity alerts immediately, rather than waiting to call or dial-in to the office.
- Field data collection
 - Perform electronic forms data collection in the field, with integration to back-end data stores.
 - Keep employees productive in the field using wireless deployment and updates to forms.
- Network and systems management
 - Remotely manage servers and applications, increasing system uptime and the productivity of the IT staff.
 - Centrally monitor BlackBerry infrastructure with integration to leading management framework systems.
- Business intelligence
 - Provide wireless access to enterprise performance dashboards and reports, extending the reach of business decision support tools for the mobile executive.
 - Notify executives of business events, using BlackBerry push capabilities, ensuring visibility into business processes.

This white paper describes the components of the BlackBerry platform and explains how BlackBerry solves business problems by providing a comprehensive, enterprise-wide solution to communication and corporate data access.

Integrated Components for Better Manageability

Fully integrated BlackBerry platform components extend wireless connectivity to enterprise applications and systems. This scalable, secure platform establishes a comprehensive architecture that simplifies development and deployment of wireless enterprise applications. IT professionals, system integrators, and system architects can create end-to-end secure solutions using the products, services, and programs of the BlackBerry platform. The open-standards, extensible design of BlackBerry supports evolving technologies and helps ensure a rich user experience as increased capabilities become available.

Enterprises intent on empowering the mobile workforce gain the advantages of a well-established, proven architecture that adapts to the varied requirements of individual organizations. Designed to accommodate the

most rigorous enterprise implementations, this wireless solution also provides substantial flexibility in configurations and component selection. IT administrators can determine the scope of enterprise data to distribute wirelessly, select the appropriate wireless network technology, and choose from a range of device manufacturers.

The BlackBerry platform also supports an extensive variety of applications, from small-footprint browser-based applications to traditional client-server applications. The development environment capitalizes on standard Java™ applications. It supports web-based deployments that utilize HTTP, WML, HTML, JavaScript, and XML, as well as more traditional applications based on the client-server model. Standard enterprise development frameworks, such as Microsoft® .NET and Java™ 2 Enterprise Edition (J2EE), can also be used to enable both push-based and pull-based access to a wide range of corporate systems and databases, while using existing back-end architectures.

Benefits of the BlackBerry Wireless Platform

Forward-looking enterprises recognize that staff members need to be able to communicate freely and access data in a secure yet fluid manner. Tools and technologies that enhance communication and data connectivity break down boundaries, bringing greater efficiency to everyday business operations. The BlackBerry platform provides a unified framework for mobile access to enterprise applications, as well as wireless email communication. Benefits include:

Streamlining Deployment and Maintenance

To reduce the administrative tasks associated with device deployment, the BlackBerry wireless platform includes numerous features to streamline deployment tasks. Cradle-less provisioning allows users to self-activate and provision their devices wirelessly, while IT administrators retain secure global control over assets, third-party application distribution, and deployment criteria. Enterprise-calibre management reporting tools provide a solid platform for stable information exchange within organizations, thus requiring minimal IT involvement in routine tasks.

Enabling End-to-End Connectivity

The BlackBerry wireless platform provides a robust infrastructure that supports communication with BlackBerry devices as well as BlackBerry-enabled devices. It does this over many wireless networks through a secure connection from behind the firewall. It monitors BlackBerry users' mailboxes for email, pushes data out to end users, and also manages data requests, messages, and organizer items that are submitted from the device. These capabilities ensure a rich, positive end user experience and provide seamless, uninterrupted workflow, wirelessly synchronizing organizer data and messages generated on the road with users' corporate accounts back at the office.

Supporting Multiple Devices, Applications and Networks

A single BlackBerry Enterprise Server™ supports multiple devices, applications and networks. The BlackBerry Enterprise Server supports all BlackBerry devices, regardless of network technology or service provider. Through BlackBerry Connect™ and BlackBerry Built-In™ technology, the server also supports a variety of other mobile devices¹ from participating manufacturers. The BlackBerry platform integrates with enterprise application servers and an enterprise's messaging and collaboration servers (including IBM® Lotus® Domino™, Microsoft® Exchange, Novell® GroupWise®, Oracle® or SUN)² and supports major global networks, which currently include CDMA2000™ 1X, DataTAC®, GSM™/GPRS, iDEN®, Mobitex® and WLAN.

Simplifying Management

The BlackBerry platform reduces administrative burdens through an architecture design that automates and simplifies many common tasks. Key statistics of devices can be easily tracked and managed, even as users change locations and move between BlackBerry Enterprise Servers. Administrative tools provide centralized control of the wireless environment, offering precise control over use of third-party device applications and asset tracking.

¹ Requires minimum software version: BlackBerry Enterprise Server v3.6 for Microsoft Exchange or BlackBerry Enterprise Server v2.2 for IBM Lotus Domino. Check with service provider for features and availability on BlackBerry Connect and BlackBerry Built-In devices.

² Oracle and SUN support available through third-party applications.

Administrators can easily customize corporate-wide and workgroup-specific policies, such as enforced device software upgrades and periodic device backups.

Pushing Important Information to Mobile Users

Through BlackBerry push technology, employees equipped with BlackBerry devices can immediately receive up-to-date communications and information, including email and organizer data that are fully wirelessly synchronized, cradle-free, with the corporate servers. The BlackBerry push model eliminates the need to actively retrieve information from corporate servers. Mobile professionals can gain access to important corporate information, email, attachments, address book data and calendar appointments while away from their desk. Managers can communicate effectively with their mobile workforce through memos, messages, and alerts distributed immediately to BlackBerry devices.

The BlackBerry Mobile Data Service (MDS) feature of the BlackBerry Enterprise Server wirelessly distributes information consolidated on back-end servers to a community of device users. Software and services tailored to the needs of an active mobile workforce improve the productivity of business operations. Through a fully integrated end-to-end system, mobile users receive data as it is needed. The BlackBerry Enterprise Server supports global enterprise operations in numerous industries, including legal, financial services, government, healthcare, manufacturing, and international commodities trading.

Keeping Data Confidential

Maintaining the integrity of enterprise applications and ensuring trusted communication require rigorous attention to security. The BlackBerry platform maintains information integrity and confidentiality by incorporating some of the most stringent security measures in the industry. BlackBerry Wireless Handhelds™ have received the FIPS 140 validation, signifying their adherence to strict government security standards. Using end-to-end encryption (by means of either the Triple DES³ or Advanced Encryption Standard model), data remains protected at all points between the device and the BlackBerry Enterprise Server. For organizations that already make use of S/MIME (Secure Multipurpose Internet Mail Extensions) to protect their data, BlackBerry offers optional support for this security standard⁴.

To further protect the confidentiality of the information stored on the device, IT administrators can set and enforce security policies such as mandatory passwords and password configuration. They can also wirelessly lock the device, or erase its information, if the device becomes lost or stolen.

For more rigorous, universal protection of sensitive data, the Content Protection feature provides local encryption of user data on the device, including address book entries, memos, tasks, and messages. IT administrators can optionally enable this feature, which employs AES encryption technology.

All aspects of the BlackBerry security model have been audited and verified by @stake Inc., a premier digital security consulting firm. This independent audit and analysis indicated that "...the BlackBerry security model provides the same level of security as a traditional VPN connection." For details, refer to the link given in the *Additional Resources* section at the end of this paper.

Leveraging Existing Infrastructure

The BlackBerry platform integrates well with existing enterprise components, extending and enhancing them. BlackBerry Enterprise Server supports a variety of corporate messaging systems and supports corporate data stores and applications through the BlackBerry Mobile Data Service. The BlackBerry architecture routes all communication between the BlackBerry Enterprise Server and the device through an authenticated, outbound-only initiated connection in the corporate firewall. No additional configuration is required to handle process application data instead of email data communication.

Staying Connected

The BlackBerry platform uses an 'Always On, Always Connected®' model to provide the mobile workforce with continuous access to vital information. Within the work facility and outside the enterprise walls, the BlackBerry platform creates an extended collaborative environment in which employees, partners, and suppliers can

³ Available for BlackBerry Enterprise Server for Microsoft Exchange and BlackBerry Enterprise Server for IBM Lotus Domino only

⁴ S/MIME support available with BlackBerry Enterprise Server for Microsoft Exchange only.

routinely conduct business transactions and maintain contact with each other. As described in the case studies later in this paper, enterprises experience greater productivity, heightened efficiency, and improved communication through wireless access to information.

What's New?

The BlackBerry Enterprise Software v4.0 release includes new features that greatly simplify deployment and maintenance, improve the end user experience, add enhanced security provisions, and create a more extensible environment. Highlights of the features added for version 4.0 include:

Wireless enterprise provisioning	IT administrators can take advantage of new features that streamline provisioning throughout the entire user base. Distributed secure deployment and automated device fulfillment substantially reduce administrative tasks and help reduce the total cost of ownership.
Device configuration tool	For more precise control over the initial user experience, IT administrators can use the device configuration tool to centrally load device software, provision devices with a pre-determined range of user data. This tool allows administrators to perform concurrent actions on multiple devices, in a manner similar to the way notebook computers are deployed, providing flexibility while reducing administrative overhead.
Flexible administrative control	Everyday administrative tasks are minimized through automated procedures and architecture re-design. Users can freely move between BlackBerry Enterprise Servers without cradling their device. They can obtain approved third-party software through push technology and enjoy more reliable operation through updated fault-tolerance features. Additional mail agents can be created automatically by the BlackBerry Enterprise Server to accommodate current usage without administrative intervention.
Wireless synchronization of email and organizer data	Two-way wireless communication ensures complete synchronization of email messages as well as PIM data while traveling.
Improved end user functionality	End users benefit from many additional device capabilities. More attachment formats are supported, including JPG, BMP, GIF, and TIFF. A richer, more capable browser interface supports more display options (including animated GIF files), handles JavaScript, and supports more offline uses, such as the queuing of forms and requests. On-device help opens up access to the full range of features. An improved interface for phone access improves speed dialing and handles phone calls on a locked device more efficiently.
Expanded security features	Trusted communication is enhanced through new encryption support, including the Advanced Encryption Standard (AES). IBM Lotus Domino, Microsoft Exchange and Novell GroupWise administrators can employ standard IT wireless policy constraints and execute wireless commands to enforce passwords, lock or wipe devices, modify passwords, and ensure encryption protection. Through local encryption of all user content, sensitive information transmitted wirelessly also benefits from strong local protection.
Improved extensibility	With significantly expanded device browser capabilities, BlackBerry supports the development of richer and more dynamic enterprise applications. New development tools accelerate the creation of applications that can incorporate JavaScript, XML, complex HTML tables, enhanced push and pull functionality, a variety of graphic formats, message attachments, and offline forms handling. All in all, these extensibility features substantially enhance the scope and capabilities of applications designed for corporate uses.

For more details about the changes implemented in version 4.0, access the topic "Why upgrade to 4.0?" at: <http://www.blackberry.com/go/serverupdate>.

BlackBerry Core Extensibility Components



Like the pieces of a puzzle, BlackBerry platform components fit together smoothly to create end-to-end wireless connectivity solutions within the enterprise. Introduced in 1999, BlackBerry quickly became the wireless email standard for many enterprise and government organizations. Since then it has evolved into an industry-leading wireless data platform, providing access to a wide range of applications on a variety of devices around the world.

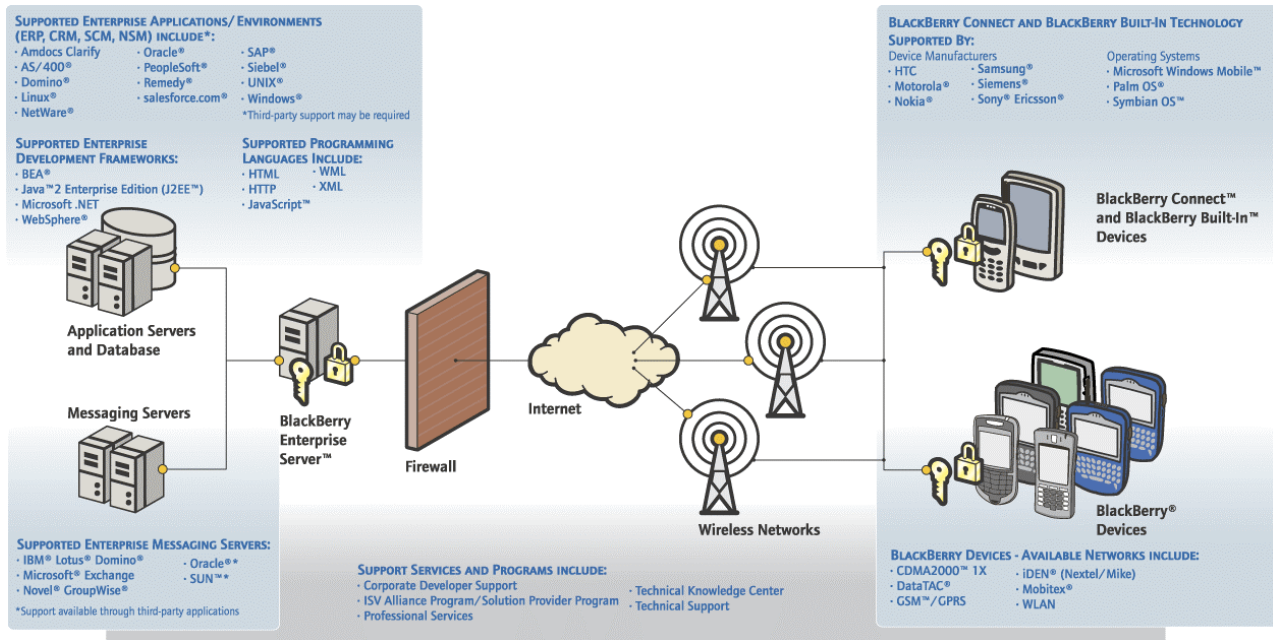


Figure 1. The BlackBerry Enterprise Solution Architecture

This section further describes the BlackBerry core extensibility components, which include the BlackBerry Enterprise Server with Mobile Data Service, BlackBerry devices, BlackBerry-enabled devices, device software, development toolkits, the global carrier network, and support services and programs.

BlackBerry Enterprise Server with Mobile Data Service



The BlackBerry Enterprise Server with Mobile Data Service extends HTTP connectivity to BlackBerry devices, linking the wireless network and the enterprise intranet or the Internet. The BlackBerry Enterprise Server resides behind the corporate firewall and is tightly integrated with an organization's messaging platform and other corporate application servers. This creates an open, extensible and secure interface for extending corporate applications and the corporate intranet.

BlackBerry users can access enterprise applications such as business intelligence tools, customer relationship management (CRM) systems, enterprise resource planning (ERP) systems, and document management systems. Through a framework based on HTTP and XML, the BlackBerry Enterprise Server integrates easily with front-end servers.

The Mobile Data Service uses the delivery mechanism in the BlackBerry Enterprise Server to push data wirelessly to mobile workers' devices. To meet enterprise-calibre security requirements, the BlackBerry Enterprise Server facilitates encrypted data exchange through corporate messaging and application servers.

A suite of centralized management tools simplifies administrative tasks and streamlines management functions for the BlackBerry platform. Application deployment is largely automated through a self-provisioning feature,

which allows administrators to set up a one-time global deployment configuration. End users can then wirelessly deploy required applications as needed. The BlackBerry platform management features are equipped to accommodate large-scale enterprise environments and have been designed to minimize manual intervention and to support continuous connectivity.

Adapting to Individual Organizations

The BlackBerry Enterprise Server effectively supports many organizations' wireless networking requirements without modification. Where needed, organizations can use the BlackBerry customization and extensibility features to deploy unique or specialized applications. Enterprises can choose from the following application development options:

- **BlackBerry Developer Toolsets** – BlackBerry developer toolsets enable organizations with development resources to build applications in-house. The BlackBerry corporate developer support program can help streamline efforts and tune applications for the BlackBerry platform. The rich capabilities of the BlackBerry device browser support increasingly sophisticated applications, including those incorporating XML, JavaScript, and offline forms handling.
- **Pre-packaged Solutions** – For mainstream business applications, customers can choose from a wide selection of pre-packaged solutions developed by BlackBerry ISV Alliance Partners, ranging from database access and customer relationship management tools to network system management applications.
- **Third-Party Development** – Customers with requirements not easily met by off-the-shelf solutions, or who may not have the necessary development resources, can receive assistance from BlackBerry System Integrators or BlackBerry Solution Provider Alliance Partners.

Abstracting Wireless Network Complexities

Implementing a wireless solution at the enterprise level and distributing data to a mobile workforce—reliably and securely—can be a challenge. The BlackBerry Mobile Data Service has been designed to meet this challenge by abstracting the complexities of individual wireless network structures. System architects, IT professionals, and administrators can extend data to the mobile workforce through simplified development and deployment tools that work in a familiar way, regardless of the wireless network type in use. Streamlined set-up, testing and deployment of mobile applications can be performed rapidly through the cradle-less activation and provisioning capabilities of the BlackBerry Enterprise Server.

Realizing the Benefits

The BlackBerry Enterprise Server lets organizations quickly realize the benefits of wireless applications while preserving their investments in legacy systems and equipment. The BlackBerry Enterprise Server also functions as the backbone of a vibrant, far-reaching mobile strategy, which enables organizations to connect their worldwide mobile workforce to corporate resources—safely and securely.

BlackBerry Devices



In the field or in the office, BlackBerry devices equip users with mobile access to their email and applications resources. Designed to work in combination with the BlackBerry Enterprise Server with Mobile Data Service, BlackBerry devices offer continuous connectivity, providing a convenient channel through which data can be automatically pushed to users. Users can also retrieve information using conventional pull techniques. Through mechanisms built into the BlackBerry Enterprise Server, back-end databases and intranet content can be made widely accessible to mobile users.

Staying in Contact

The range of practical tasks for mobile computing has increased with advances in wireless technology. Lightweight, highly portable BlackBerry devices offer new opportunities to the mobile workforce and provide ease of use and a long battery life. BlackBerry devices can work in environments where notebook computers are too cumbersome and PDAs too limiting.

Improving Manageability

Wireless management of BlackBerry devices gives administrators an edge by helping to ensure that corporate security and best practices are maintained. Critical management functions, such as remote password setting, device locking and data wiping, can be performed wirelessly. End users can also self-provision their device wirelessly without relying on a cradle. Administrators gain flexibility in supporting an extended workforce and reduced effort in maintaining the security and availability of corporate data. On-device help lets novice users learn how to access the full range of features without requiring help desk support.

Supporting a Range of Devices

The open-standards, extensible architecture used for the BlackBerry platform supports a wide range of devices and mobile devices from participating manufacturers through the BlackBerry Connect and BlackBerry Built-In License Programs. This successful licensing program will be extended to provide support for additional data access over time.

BlackBerry Device Software



Software designed for devices, because of their limited memory and processing power, requires ingenuity and innovative programming techniques. The BlackBerry Java Development Environment (JDE) provides a programming environment ideally suited to rapid development of J2ME™ (mobile) applications. Development toolkits offered by RIM accelerate the creation of enterprise-class mobilized software.

Through compliance with mobile software standards such as CLDC and MIDP, the BlackBerry platform can be integrated with a number of different environments. Each BlackBerry device runs a compact browser that handles content presented in WML, HTML, JavaScript, and XML-based formats, and also supports secure connections leveraging SSL/TLS and WTLS. In addition, secure transactions using HTTP(S) protocol are supported.

Through the capabilities of the BlackBerry Java-based software platform and flexible device browser software, web-enabled applications, such as those often used on a corporate intranet, can be conveniently accessed with a BlackBerry device. The built-in capabilities of BlackBerry devices and the BlackBerry Enterprise Server make it easy and straightforward for mobile users to connect to corporate resources, with little or no development. For specialized and customized applications, this Java-based software environment and the support toolkit provide a reliable, familiar framework for launching full-featured applications tailored to mobile users.

Global Carrier Networks



To accommodate the expanding requirements of mobile access, the telecommunications industry has developed a variety of global carrier networks to support wireless voice and data communications. The BlackBerry platform supports multiple network technologies by providing compatibility with the leading carrier options including CDMA2000 1X, DataTAC, GSM/GPRS, iDEN (Nextel, Mike), Mobitex and WLAN. With features that leverage high-speed packet-data networks, the BlackBerry platform has proven popular with carriers expanding their services to attract large-scale corporate customers.

This expansive coverage ensures that mobile computing operations can be conducted worldwide, taking advantage of BlackBerry coverage on fifty networks distributed throughout over thirty countries. For enterprises participating actively in the global marketplace, this level of flexibility and network support is designed to provide unhindered operations in almost any location.

BlackBerry Support Services and Programs



Support services, an essential component in any enterprise-class wireless implementation, provide the final piece in the end-to-end BlackBerry platform. The reliability, availability and accessibility of corporate resources help an organization sustain or enhance their competitive advantage. RIM offers several support services and programs that help enterprises realize the full benefits of their wireless solution deployment. These programs and services range from a comprehensive technical knowledge base to extensive developer support, as discussed in the following sections.

Comprehensive Knowledge Base

Self-service access to facts, guidelines, and tips for the BlackBerry platform can be gained through a comprehensive knowledge base oriented to the needs of customers. The customer knowledge base and technical knowledge center deliver problem-solving guidelines, Frequently Asked Questions (FAQs), full documentation for BlackBerry products, guides to accomplish common tasks, and a library of white papers that address relevant issues.

This frequently updated information repository allows BlackBerry users, administrators, and developers to have access to current information about BlackBerry products.

Technical Support

RIM provides five levels of technical support so enterprises can select the level that best meets their specific needs. Through an annual subscription service scaled to the level of use, enterprise customers obtain ongoing software maintenance and technical support.

The base level service (Tx1) offers telephone support during normal workdays, 12 hours a day, as well as email support and access to the Enhanced Technical Knowledge Center. Subscribers at this level receive all current software releases and support for two identified callers.

The most extensive service level (Tx5) provides round-the-clock support, 7 days a week and 24 hours a day. This level also includes BlackBerry application development training and provides on-site technical assistance if required, as well as an executive sponsor at RIM for support issue escalation.

Corporate Development Support

Subscribers who select Level 3 (Tx3) technical support or above gain additional benefits such as access to the BlackBerry Developer Web Site, which supports the creation of well-designed, trouble-free mobile applications. Among a wealth of developer tools and information, this web site includes membership in Developer Forums in which leading-edge developers share their expertise with a growing community of mobile software creators. Customers at this support level are also provided incident-based telephone support for developing, deploying, and managing applications.

ISV Alliance Program/Solution Provider Program

The BlackBerry ISV Alliance Program is available to independent software vendors (ISVs) who build tools and products based on the BlackBerry platform. This program offers tiered membership levels, technical support, and marketing resources to ISVs who want to add value to BlackBerry components. To help ISVs compete successfully in the wireless marketplace, the tools and techniques provided in this program equip companies with essential knowledge and timely advice for designing and marketing innovative products.

As a result, customers have the ability to purchase off-the-shelf applications and application extensions, or to receive external custom solutions support from leading enterprise application vendors and mobile middleware companies.

Professional Services

The BlackBerry Professional Services group at RIM helps link organizations with the resources and skills required to accomplish their enterprise-wide wireless connectivity goals. Through a network of system integrators, system

architects, developers, design specialists, and consultants, BlackBerry Professional Services matches expertise with need and helps customers achieve a seamless wireless connectivity environment scaled to the precise needs of an organization.

End-to-End Solution

The components discussed in the preceding sections fit together seamlessly to create an extensible, comprehensive end-to-end solution—a well-integrated architecture for enhancing corporate communication and distributing information wirelessly. The BlackBerry platform provides connectivity from a networked community of devices to the enterprise servers that provide access to the primary resources of an organization. The extensive support services and programs complete the picture, making the BlackBerry platform the choice of enterprises that are serious about bringing the benefits of mobility to their workforce.

Mobilized Applications for the Global Enterprise

The BlackBerry wireless platform was first established as a solution for wireless email exchange, but its use in the enterprise now encompasses a number of other areas—areas where the wireless distribution of corporate data and improved communication help generate greater productivity and workplace efficiency. Field service operations can function more effectively when technicians can reference problem-solving data and order parts wirelessly. Sales and marketing personnel gain streamlined access to customer relationship management data, information that can help develop a marketing program or improve customer service. Government organizations or corporations with a widely distributed mobile workforce can submit reports remotely or complete required forms online, wirelessly, from an airport, meeting room, or hotel. IT departments gain the ability to manage enterprise services remotely. The potential uses include many traditional computer applications that are made more accessible and portable through a wireless model.

This new generation of mobile software, running on a solid foundation anchored by the BlackBerry Enterprise Server and extended by BlackBerry devices, goes well beyond the original benefits of convenient email communication. Organizations can benefit from wireless synchronization of data from both email and organizers through the BlackBerry Enterprise Server. With increasing support for rich media and XML capabilities in the BlackBerry device browser, more sophisticated enterprise applications can be developed and deployed, adding to the productivity and efficiency of the mobile workforce. The BlackBerry platform creates an environment that frees the enterprise from the limitations of cabled networking, based on the 'Always On, Always Connected' capabilities of BlackBerry components. Through expanding support for wireless networks, devices from other manufacturers, and other platforms, the BlackBerry platform fits securely in the strategy and future of the forward-looking enterprise.

BlackBerry Case Studies and Examples

The following case studies show how companies in several different fields have created applications where mobility offered advantages and helped increase the competitiveness and efficiency of typical business processes.

Providing Mobile Access to Investment Data: Essex Investment Management Company

Business Situation: Essex Investment Management Company, a Boston-based investment firm, operates in an industry where making the right stock call can mean millions of dollars to their customers and their company. Their challenge: give Essex sales people first-hand access to critical information that fuels company growth, while also finding a data access solution that is secure, simple for the user, integrates into their existing IT infrastructure, and meets budget mandates.

Essex had previously relied on BlackBerry devices for email communication, but other tasks, such as accessing attachments and obtaining information from the Essex research database, required expensive notebook computers. To streamline operations and increase the productivity of the sales force, Essex decided to deploy a wireless connectivity solution for employee trips of less than three days. A key consideration was that corporate data had to be delivered in a convenient format, without requiring a long learning curve for the analysts and portfolio managers who rely on the data.

The Solution: The BlackBerry Enterprise Server with MDS proved equal to the task, allowing cross-platform access to customer portfolios and investment prospectuses managed through a variety of applications. The BlackBerry Enterprise Server simplified the process of delivering information in a readable format to the devices, and gave sales people secure access to internal web pages customized with customer and company content. The BlackBerry Enterprise Server with MDS allowed the sales team to improve customer service by having immediate access to customized data while on the go. With the solution, the sales team was able to perform more effectively, making decisions and recommendations with the most current information customized to their needs.

Benefits and Results: The value was readily apparent. Randal Wilson, IT Assistant Vice President at Essex, said, "BlackBerry has created what I would consider our biggest asset to date—corporate data access via MDS. The implementation and functionality have been outstanding. For our firm, we were able to offer our users something unique: our own data wirelessly."

The benefits of the BlackBerry platform as a wireless connectivity solution have proven themselves to the decision makers at Essex. This solution helped reduce IT and purchasing costs, improve the efficiency of managing corporate data access to accommodate traveling employees, provide a higher level of customer service, and differentiate Essex in a competitive financial market.

Tracking and Reporting Job Status at the Work Site: Eurodesign

Business Situation: Workflow inefficiencies and operations restricted by manual, paper-based processes caused Eurodesign, a manufacturer and installer of kitchen cabinetry, to rethink their business processes. However, Eurodesign discovered that finding the right wireless solution could be complex. The search required a careful comparison of the users' needs to the pros and cons of the available solutions.

The Solution: After several unsuccessful trials with other technologies, Eurodesign chose BlackBerry Wireless Devices with the BlackBerry Enterprise Server, using Onset Technology's METAMessage® software. A pilot project met the challenge squarely, creating a simple forms-based interface for more efficient reporting. BlackBerry and Onset Technology provided an optimal combination of corporate data access and workflow automation, equipping field personnel with the advantages of portability without the enterprise-limiting factors associated with the typical PDA device. Integration with back-end corporate databases was handled easily with the BlackBerry Enterprise Server, and this framework provided the necessary data structures to bridge the wireless environment with the enterprise servers.

The METAMessage forms builder tools simplified the customization of easy-to-use forms compatible with BlackBerry devices. The store-and-forward model employed by METAMessage better suited the traveling range of field personnel, who are sometimes beyond the reach of wireless access. Installers could update their customized information on the forms-based application, and whether field personnel were in a coverage area or not, BlackBerry would store and automatically forward the data once they returned to coverage.

Benefits and Results: With the BlackBerry solution in place, field personnel can now send status reports directly to their supervisors from the customer site. Eurodesign is excited about the business process improvements they foresee, such as work hours delivered wirelessly to the payroll system. Also, customers who inquire about the progress of installations will be provided with immediate status reports based on centrally stored data. These improvements in job reporting and tracking will help to achieve productivity gains and more efficient use of personnel resources.

As the result of a well-integrated reporting system, customer service features, time management tools, and tracking mechanisms, Eurodesign anticipates a return on investment of almost 250 percent.

Enhancing IT Support: Hennigan, Bennett & Dorman

Business Situation: Like most law firms, Hennigan, Bennett & Dorman LLP (HBD) relies on the availability of information to keep processes moving. The effectiveness of the IT systems for performing research, creating legal briefs, tracking billable hours, and maintaining client records can significantly affect the success of a firm. A systems problem can result in lost productivity of key billable staff and affect the quality of service that can be provided to a firm's clients. To ensure that HBD's system was operating efficiently on a 24/7 basis, at least one member of the IT staff had to either be in the office or be tethered to a PC or laptop to dial-in and fix any system issues on a moment's notice.

The Solution: To help deliver information when and where it was needed, HBD had previously implemented the BlackBerry wireless solution. After researching options, HBD decided to extend the BlackBerry solution and deploy a remote IT management tool, **sonicadmin™** for BlackBerry, from Sonic Mobility.

Benefits and Results: This tool enabled administrators to gain wireless access to the network servers from BlackBerry Wireless Devices, making it vastly simpler to handle difficult support issues after hours or from diverse locations. For IT staff members committed to providing 24/7 support for the network servers at HBD, **sonicadmin** and BlackBerry gave them the ability to respond more quickly to network issues and increased the flexibility of the team for handling a wide range of routine tasks. From a BlackBerry device, IT employees can make password changes, reboot servers, perform typical system modifications, and accomplish many other administrative tasks.

This wireless connectivity solution has reduced the amount of HBD system downtime, thereby boosting the productivity of the legal staff. It has also reduced the IT staffing requirements needed to ensure 24/7 support by empowering IT staff members with the tools to resolve problems dynamically at any time and from any location.

Conclusion

The BlackBerry wireless platform offers a comprehensive, far-ranging solution to communication and corporate data access needs, well suited to the requirements of the modern enterprise. By empowering the mobile workforce, BlackBerry devices coupled with the capabilities of the BlackBerry Enterprise Server enable organizations to compete more effectively and to streamline many business operations. With an architecture that integrates and interoperates with many leading wireless networks and system infrastructures, the BlackBerry platform offers exceptional total cost of ownership value and a rapid return on investment. With features that automate and simplify many common tasks, this platform delivers exceptional reliability and scalability, while minimizing basic maintenance and administrative duties.

The BlackBerry wireless platform emphasizes extensibility, using components that are designed to accommodate future technology developments, evolving protocols, extended application support, and new generations of wireless data connectors. The architectural model promises to deliver real value today and ongoing value as wireless enterprise connectivity gains momentum throughout the industry.

Additional Resources

The following resources provide additional information and background material for the BlackBerry Enterprise Solution.

- BlackBerry White Papers: <http://www.blackberry.com/knowledgecenter/livelihood.exe?func=llworkspace>
 - BlackBerry Enterprise Server - Feature and Technical Overview-
 - BlackBerry Application Platform - Technical Overview
 - BlackBerry Enterprise Server - Security Overview
- @stake Security Assessment:
http://www.blackberry.com/knowledgecenterpublic/livelihood.exe/fetch/2000/645094/An_@stake_Security_Assessment.pdf?nodeid=644990&vernum=0
- BlackBerry cross-industry solutions: http://www.blackberry.com/solutions/cross_industry/index.shtml
- Technical Support program overview: <http://www.blackberry.com/support/tsupport/index.shtml>
- BlackBerry developer web site: <http://www.blackberry.com/developers/na/index.shtml>

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