



# Improving Communications in Emergency Situations

Mobile Business Continuity  
Planning Solutions

AN INDUSTRY WHITE PAPER  
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## Executive Summary

Without an effective plan in place, disruptions to business operations or government services can cause substantial financial loss, unnecessary personal or property damage, and serious impacts to communities. Business continuity planning (BCP) and organizational procedures for continuity of operations (COOP) can be strengthened and enhanced by means of proven wireless solutions. Preparing effectively for catastrophic events, power outages, weather-related incidents, and similar threats requires forward-looking procedures, a responsive communication network, and a framework of supporting technology.

Developing and implementing an effective mobile BCP strategy includes establishing best practices to make sure the solution is:

- Architected to minimize potential revenue loss and brand damage
- Reliable and easy to use
- Secure and confidential
- Capable of communicating promptly to stakeholders during crisis
- Engineered for efficient usage of battery, processing, and network resources
- Designed to protect employees and other corporate assets
- Compliant with regulatory mandates and reporting requirements

This white paper addresses the ways in which organizations can ensure preparedness by deploying wireless software solutions based on the BlackBerry Enterprise Solution and BlackBerry applications from Wallace Wireless. Wallace Wireless, a leader in mobile business continuity, develops BCP solutions that help mitigate risks and improve responsiveness to emergency situations.

## Measuring the Cost of a Crisis

The cost of a crisis is measured not only in dollars and shareholder value, but also by people, brand and reputation. Ultimately it is the CEO's responsibility to manage a crisis, and it is something all CEOs should expect to deal with during their tenure.

Recent research from Marsh Crisis Consulting<sup>1</sup> notes that more than 85 percent of CEOs expect to experience a crisis within the next five years, one that could potentially result in an immediate 20 to 30 percent decline in market valuation. A company's ability to respond to emergency situations directly impacts whether that share valuation can be recovered. Depending on the nature of the business, the cost of downtime can be in the millions per hour.

British authors Rory Knight and Deborah J. Pretty provided proof of this in a study published with an independent strategic advisory firm, Oxford Metrica<sup>2</sup>. Citing data from the NYSE, LSE and companies traded on markets around the globe, the authors discovered that there was an immediate decline of 8 to 11 percent in shareholder value following a crisis. They discovered that enterprises then fell into one of two categories: recovers and non-recoverers. More importantly, there was a 22 percent positive difference in stock price for those companies that were recoverers.

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<sup>1</sup> Marsh Crisis Consulting, Winter, 2002

<sup>2</sup> The Impact of Catastrophes on Shareholders Value by Rory F. Knight and Deborah J. Pretty. Templeton College of Oxford University, 1996. A research report sponsored by Sedgwick Group, from the Oxford Executive Research Briefings series from Oxford University.

Clearly, being able to access vital information promptly during a crisis directly affects the bottom line. Organizations that are prepared and ready to respond to a disruptive incident can recover or increase shareholder value if investors and the public believe they are trying to do the right thing. As shown in Figure 1, the cost of failure can be substantial.

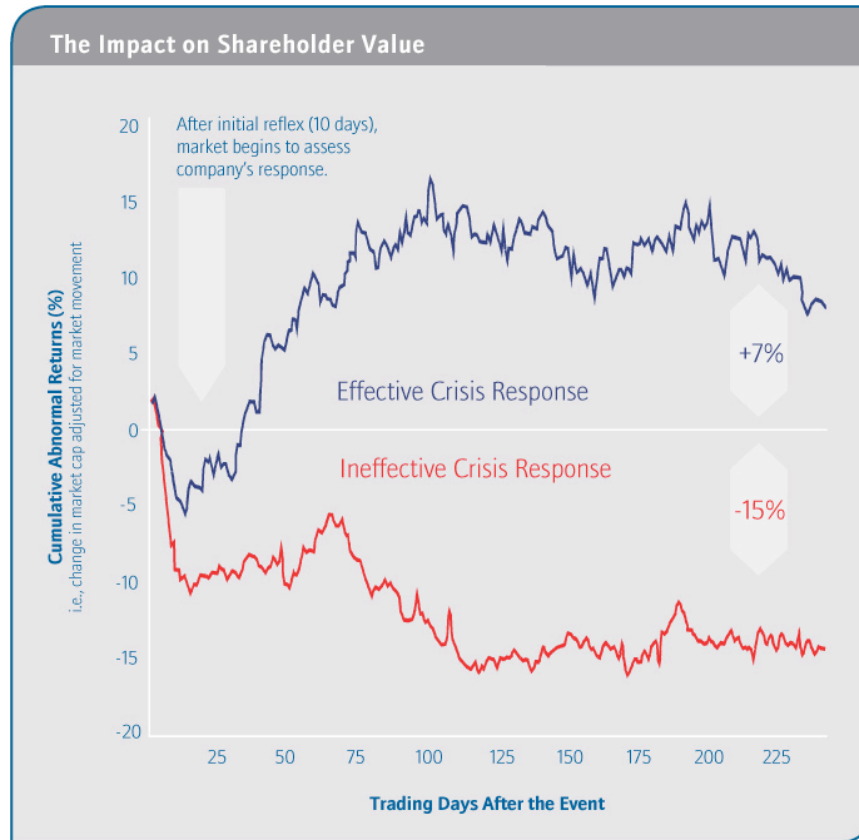


Figure 1. Crisis Response and the Impact on Shareholder Value

Following an incident, the activities that take place during the first 20 minutes are very important to a corporation's recovery. Key executive management, crisis communications staff members and operational leaders need to quickly assess the situation and follow response protocols for managing risk. Timely communication is vital. The latest generation of wireless applications can provide the necessary supporting technology to ensure prompt communication and access to the procedures, references, and information to empower and inform the crisis response team.

Many major institutions have existing business continuity plans that have been activated at some point in response to critical events, such as severe weather, power failures, or acts of terrorism. A successful outcome depends on an institution's ability to respond to and manage an incident. Communicating and sharing information is essential for all members of the continuity team. These team members must ensure that the right information is being shared and that decision making is guided by input from those stakeholders identified in the continuity plan.

The design and deployment of wireless applications as a part of BCP and COOP strategies encourages organizations to refine and clarify their business processes and data so corporate standards can be easily maintained. This exercise can play a key role in ensuring that the emergency response activities are prompt, coordinated, and well informed.

## Selecting the Optimal Wireless Business Continuity Solution

Reliability, security, data confidentiality, and overall communications capabilities are all important factors when considering wireless business continuity solutions, as discussed in the following sections.

### Maximizing Reliability

By incorporating mobility into a business continuity plan, organizations can generate alerts promptly, access procedures readily and ensure a quicker response to unfolding events. Ten years ago, organizations typically dealt with emergency procedures by creating a binder of protocols and procedures and making it available to staff members. Most workers, however, didn't have access to this vital information when they most needed it. Organizations required a more convenient and effective BCP system that would enable them to respond to incidents more efficiently.

Improvements in wireless networks, devices and applications over the last decade now make it possible to distribute information that was previously contained in a hard-copy emergency binder across the organization. Mobile devices and mobility application can deliver access to crisis information at any time, from any location. With mobile solutions that combine applications from Wallace Wireless and the BlackBerry Enterprise Solution, organizations can centralize the push of information out to the mobile workforce, ensuring that communication begins quickly and dependably from the moment a disaster occurs.

The BlackBerry Enterprise Solution provides a reliable, proven wireless platform for maintaining communication and delivering information during a crisis and Wallace Wireless applications fully exploit these capabilities. Secure push delivery capabilities, and the BlackBerry network infrastructure offer mechanisms with a high degree of redundancy and fault tolerance to help ensure messages reach their destinations, even if an organization's servers fail or Internet access is unavailable.

### PIN-to-PIN Messaging Advantages

BlackBerry users can directly communicate using PIN-to-PIN messaging in emergency situations, a feature that has proven invaluable during events such as the North American power outage of 2003, in the wake of Hurricane Katrina, and in other crises. The BlackBerry Enterprise Solution has also proven reliable, helping people communicate in less-than-ideal circumstances. For Ray Nagins, mayor of New Orleans during Hurricane Katrina, PIN messaging proved to be a lifeline; he stated "PIN was the only thing that worked for me."

BlackBerry PIN-to-PIN communication, which can be configured as needed by the system administrator, offers unique advantages in crisis situations. As shown in Figure 2, unlike conventional BlackBerry email, which relies on a functioning corporate infrastructure (including email server, BlackBerry Enterprise Server, and network servers), PIN messages are routed directly from one BlackBerry handheld to another by means of the wireless carrier networks and BlackBerry infrastructure. Using PIN messaging substantially shortens the chain of components required for transmitting and reduces the number of places where communications breakdowns can occur. This factor is especially important in disaster scenarios where corporate headquarters and datacenters have been adversely affected. Relying on BlackBerry PIN-to-PIN messaging is simpler and more cost-effective than establishing a redundant communications infrastructure for failover.

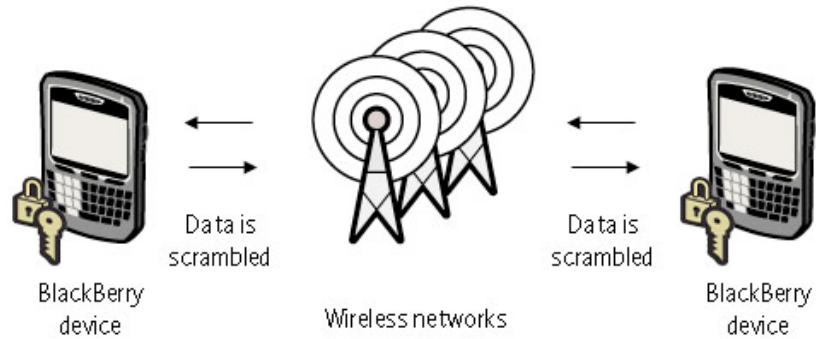


Figure 2. BlackBerry PIN Network

### Data Delivery Assurance

The BlackBerry Enterprise Solution helps confirm when data has arrived at its destination, using the same proven push delivery for business continuity information as it does for email. This allows users to send and receive data on their BlackBerry smartphone with the same sense of security and confidence associated with BlackBerry email. Push delivery can be used confidently to deliver alerts, plan changes, contact information updates and other critical data directly to a wireless handheld. Mechanisms built into the PIN network can also provide positive confirmation that a message was successfully delivered to a recipient.

To test this feature, identify a contact with a current PIN number, and send them a PIN message. In the email client on the BlackBerry, you should see the PIN appear as an outgoing message. When the PIN message reaches the contact's device, the character "D" will appear next to the check box. When message is actually opened by the reader, the "D" will change to an "R" indicating that not only has the message reached the device, but that the recipient has opened it and very likely read it.

### Alerts and Notifications

Policies and procedures change, personnel move to new positions or leave the company, bulletins are issued periodically, and other vital data may be modified on a central server. Particularly in the case of emergency response scenarios, organizations need assurance that key personnel all have access to the most current information. With the BlackBerry Enterprise Solution, organizations can use push technology to proactively and automatically update information residing on BlackBerry smartphones. This feature can be an effective means of consolidating and updating data any time that crucial information—such as business continuity planning data stored behind the firewall—changes.

Ideally, all wireless business continuity applications should employ the push technology approach. Wallace Wireless applications for the BlackBerry Enterprise Solution integrate push technology throughout to ensure that essential information is distributed consistently and effectively to users. Without push technology, users have no reliable way to determine when alerts or notifications have been issued. Push technology ensures that any alerts, notifications, or content changes will be sent automatically to the wireless device. Depending on the importance of the update, a user can be alerted with appropriate sounds or vibrations on the BlackBerry smartphone, signifying the relative level of importance.

The wireless technologies in use across North America offer varying levels of reliability, which can sometimes be prone to the destructive consequences of extreme weather, unanticipated power outages, local disasters, and catastrophic events. The PIN-to-PIN capabilities of BlackBerry increase the odds that communication exchanges can take place in instances where local power is interrupted or an organization's servers fail or traditional communication lines are overloaded or disrupted. The robust characteristics of the BlackBerry Network Operations Center,

provide additional, often invaluable, alternatives to conventional communication channels. PIN communication with on the BlackBerry platform sometimes represents the only reliable form of communication available in severe emergency scenarios.

In certain situations, carriers have the ability to assist in supplementing conventional networks in emergencies. Trucks equipped with satellite technologies can be brought in to replace networks that have been destroyed. Check with your carrier to see if they have an emergency response team that can be called upon when networks are jeopardized.

### Energy Efficiency and Bandwidth

Intelligent engineering is a pre-requisite for developing mobility solutions that are dependable and practical during real-world emergencies. Such solutions need to address central issues such as battery life and network bandwidth usage as an integral aspect of design. In comparison with similar products in the market, the entire BlackBerry solution is engineered to use available battery power efficiently and to minimize usage of available network bandwidth through features inherent in the architecture.

The BlackBerry Enterprise Solution is built from the ground up for wireless environments. Conscientious design practices ensure that it makes the most of finite resources, such as battery life, network bandwidth and the processing capabilities of smartphones. The BlackBerry Enterprise Solution uses a variety of techniques to optimize efficiency, including compression of transmitted information. By efficient use of available bandwidth and processor, the BlackBerry Enterprise Solution substantially extends battery life and reduce monthly data plan costs as compared to other wireless solutions.

The importance of extended battery life during emergency conditions is self evident. BlackBerry applications, such as the Wallace Wireless solutions, can capitalize on built-in functionality to ensure that power can be extended significantly. Every additional minute of connectivity may be a critical element in life-or-death situations.

### Strengthening Security and Protecting Confidentiality

Security ranks among the most important considerations when evaluating wireless applications. At a minimum, any wireless solution worthy of consideration should be accredited as compliant with the latest, prevailing IT security standards, such as FIPS 140-2 . FIPS 140-2, issued by the National Institute of Standards and Technology (NIST) specifies requirements and standards for cryptographic modules, ensuring a high degree of protection when distributing sensitive information electronically. Regulated industries, such as financial services and healthcare, must comply with FIPS 140-2, but compliance with this standard also makes sense for the protection of confidential or sensitive information used by any organization.

The BlackBerry Enterprise Solution has been engineered with security provisions integral to the architectural design, ensuring that sender-to-recipient encryption is consistently applied to email communication. Data confidentiality can be further protected with the S/MIME Support Package for BlackBerry smartphones, which offers an additional layer of extended security features encompassing the overall email infrastructure.

The extra attention given to security as part of the BlackBerry Enterprise Solution and the built-in encryption capabilities provide the framework for applications running on the BlackBerry platform to incorporate the functionality. The Wallace Wireless applications, for example, benefit from built-in end-to-end security, covering message distribution starting behind the corporate firewall and extending through all network points directly to the recipient's device, as shown in Figure 3.

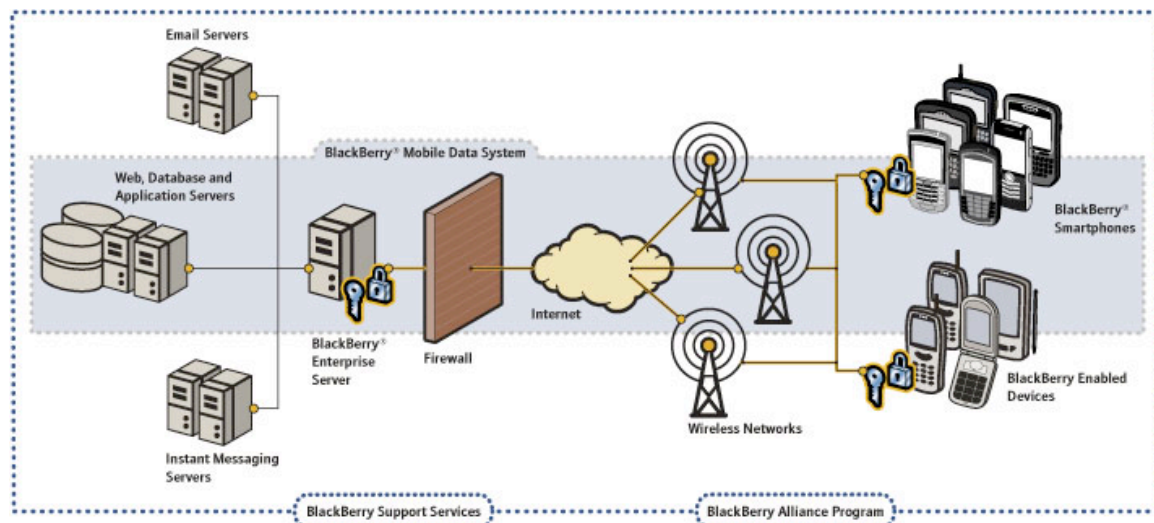


Figure 3. End-to-end Security Implemented in Wallace Wireless Applications

Enterprises will also want to ensure that any application they choose works with their existing security infrastructure. The key components of a successful wireless deployment can be reduced to a simple formula: “DNA”, referring to devices, networks and applications. RIM has always favored efficient power use and fluid network access as important design features. Wallace Wireless takes a similar approach with applications, making sure they use the absolute minimum amount of memory, battery power and network bandwidth.

### Enhancing and Extending Communication

New communication tools are emerging throughout the industry. Instant messaging, blogging, threaded chats, web-based forums and social networking portals offer new and powerful tools to continuity specialists for exchanging ideas, developing emergency procedures, refining response plans and participating in educational forums. Informing large groups of people quickly is easier than it has ever been. BlackBerry smartphone users can freely choose among a variety of communication options, including email, phone, short message service (SMS), browser, instant messaging, direct connect, and PIN.

Features in Wallace Wireless applications take advantage of extended communication options. The Wallace Incident Commander (WIC) Responder works with existing continuity plans and accepts content from a wide variety of sources, including databases, Microsoft Word and Excel documents, HTML files, XML content, and other sources. Available applications support:

- Secure chat
- Wireless incident management
- Notifications and alerts across platforms and technologies
- Custom content, securely pushed to any device as needed

New BlackBerry smartphones, such as the BlackBerry Pearl, include a built-in camera. Today's collaboration tools from Wallace Wireless not only allow organizations to quickly notify stakeholders of a disaster, but also enable employees to share information using a BlackBerry smartphone. For instance, an employee could use the camera in the BlackBerry Pearl to upload photos to a central server, where they could share them with other users across the enterprise.

Or, when responding to an event where a vehicle has driven into the front of a building, a security guard could quickly take a picture of the incident with his BlackBerry Pearl and immediately notify his team members using Wallace Wireless Incident Communicator with both text and pictures. Users can be promptly notified about earthquakes, hurricanes, volcanoes and other natural disasters with visual images. Figure 4 illustrates this capability.



Figure 4. Mount St. Helens VolcanoCam

Supporting these kinds of collaborative tools and implementing new ways for users to access relevant crisis information with a wireless handheld represents a fertile area for application development. Progress is continually being made to provide user interaction similar to the typical experience when browsing the web.

Having an address book on your handheld is useful in emergency situations, but how do you know if it is up to date? People usually send an email when their contact details change and individual users are responsible for

updating this information within their local address books. With Wallace Incident Communicator, companies can guarantee that critical contact information is available on a BlackBerry smartphone, all the time. The BlackBerry Enterprise Solution automatically pushes any changes behind the firewall to BlackBerry smartphones.

When responding to a crisis, phone numbers and other contact details are vital to key members of the response team. Having instant access to contact data can save lives and money when responding to an incident. In fact, WIC Contacts adds a separate icon to the BlackBerry menu, and locally stores corporate contact information. The exact content is based on user-assigned roles and responsibilities. Users are only allowed to view the plans they have been pre-authorized to see.

For example, Rex Pattison, the Director of Business Continuity Management at Scotiabank, printed 2,000 hard copies of the bank's critical plans every year. Much of this data was contact information and it included details on who to contact in the event of a particular situation. The top 2,000 people within the bank were supposed to carry this binder with them at all times. Clearly, the security risk would be substantial if anyone lost their binder. And, because of the nature of paper-based documentation, the information was only updated once per year. Having updated contact information stored locally on a device is critical to a business continuity plan. If a user changes their BlackBerry smartphone, for example, then the WIC software automatically updates all the devices with those changes, a process that appears seamless to the end user.

Applications stored locally and updated wirelessly provide essential continuity information and this information can improve decision making at every level. Wireless applications can eliminate the need for physical binders, giving users a convenient way to rapidly access vital information stored on the device.

## Locating Staff Members Instantly

Responding to an incident is much easier if you know where everyone is. Now that the BlackBerry Enterprise Solution includes BlackBerry smartphones that feature integrated GPS or that can be used with external GPS transmitters, leaders can use WIC to quickly locate key team members, as shown in Figure 5. This helps determine which members are in position to rapidly respond to a critical event. Using location-based services (LBS) also gives governments and corporations the capability to utilize their own map sources with custom data views integrated.

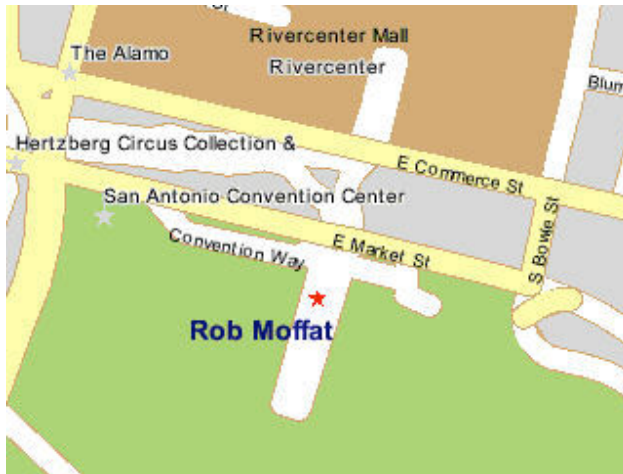


Figure 5. Staff Member Location using Integrated GPS

In order for enterprises and government organizations to be able to deploy and manage wireless smartphones and applications, they need a high level of central control. Applications should have policy-driven management consoles, which provide precise administrative control over what content is distributed to individual smartphones.

In configuring the BlackBerry Enterprise Server, system administrators can set policies to determine which users are allowed to load and access third-party

applications. The BlackBerry Enterprise Server also has a *kill* feature that lets administrators remotely disable a device if a user loses or misplaces it.

Applications should also give corporate administrators control over the information displayed on each BlackBerry. When deploying applications wirelessly, user interfaces are critical. The applications and content that users are allowed to access should be appropriate to their roles and secure. For example, Figure 6 shows icons for the range of capabilities that can be individually tailored by the system administrator.



Figure 6. User Interface Customized As Necessary

## Reporting Features for Regulatory Compliance

Compliance has become a major issue over the last 10 years. In most organizations subject to current regulatory mandates, all electronic messages must be logged and auditable for a certain period of time. This means electronic messages, from email to instant messaging to SMS to phone logs—both cell and landline—must be logged. Increasingly, this includes new electronic communications like a PIN and MMS.

Any wireless auditing application should be able to record all types of messages currently available and help integrate with major email compliance databases that manage access to storage of all corporate messages.

WIC routinely logs critical messages to ensure compliance with:

- USA Patriot Act
- Sarbanes-Oxley
- NASD Rules
- NYSE Rule 446
- California's S.B. 1386
- Gramm-Leach Bliley Act

Features to ensure compliance should be integral to a well-designed BCP application.

## Summary

Given the potential financial damages, disruption to business processes, negative impacts to business reputation, and risks to personnel, every organization needs a strong, effective plan in place to contend with emergency situations. Responsible CEOs owe it to shareholders and employees to ensure that a robust BCP or COOP has been implemented and that the plan includes provisions to minimize disruptions, maintain communications in adverse conditions, and coordinate the operations of the emergency team in an effective manner.

To be effective, wireless BCP solutions must be fail-safe and more intelligently conceived than the typical wireless solution. The combination of the BlackBerry wireless platform and applications from Wallace provides users with exceptional tools for managing incidents and events from anywhere. Best practices must be crafted with the needs of end users foremost. Risk managers, compliance officers, security teams, and executive management can better protect the assets and value of an organization when they have the well-designed tools available supported by a proven platform architecture. Wireless applications have matured to the point that they are highly reliable; organizations need to make sure these tools are included in their playbook and that the entire team knows how to execute the plays.

Business processes and best practices for contending with emergency situations can be supported by a wireless business continuity application with the features and capabilities to address the most important concerns. Effective applications must:

- Be reliable
- Be secure and confidential
- Enhance and extend communication capability
- Let you manage incidents from any location
- Include compliance and reporting features

By utilizing solutions that are based on these best practices, organizations are empowering themselves to better respond and to be better prepared to protect shareholder value. BlackBerry Enterprise Solutions provide an ideal framework for supporting these types of plans and Wallace Wireless applications complement and enhance this framework, placing vital tools and information in the hands of anyone involved in a continuity of operations event.



## About BlackBerry Business Solutions.

BlackBerry® Business Solutions are about much more than wireless email. They're about understanding and offering ways to improve everything from customer service to cost control and service delivery – whatever your industry or business challenge may be. BlackBerry Business Solutions are about wireless access to your critical information and communications through a combination of applications, services, peripherals and BlackBerry product offerings. They're about having everything you need, right where you need it.

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