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The Business-Savvy Smart Phone Review: Nokia E62, BlackBerry Pearl, T-Mobile Dash, Palm Treo 750

– Al Sacco, CIO

April 26, 2007

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Introduction

Smart devices—call 'em what you will: handhelds, smart phones, PDAs—make business people's lives easier. They help to ensure continuous communication by offering features like calendar applications, instant messaging and e-mail services, cell phone functionality and Web access.

Any number of today's smart devices can satisfy the basic needs of the average business user, and plenty of websites can give you consumer-conscious reviews. However, the real challenge for IT executives seeking smart phones for themselves or for their organizations is selecting a device that fits their telecom needs with as few tweaks to the company's IT architectures as possible—and therefore as little time and money expended.

There are important differences between selecting phones as a business handheld and choosing a consumer device. Most consumers need only basic phone and messaging functionality; everything else is just frosting on the cake. Not so for business users. CIOs and their staff depend on smart phones to stay connected; in some cases, mobile devices keep their companies up and running. Depending on the organization, specific features beyond phone calls and e-mail are a necessary part of business.

Even when CIOs are willing to upgrade their architecture or buy new hardware, it pays to know the implications of launching a new device across the enterprise. Some devices don't support corporate e-mail services without specific mail servers. Some are designed to function with specific servers, so they work better with one than another.

If you're researching corporate smart phone deployment, the first thing you should do is assess the organization's needs, and thus create a sort of informal criteria for selecting a phone. Purchasing business phones without a clear idea of how the company will use them is like hosting a dinner party and offering only chopsticks as utensils, even though you're unsure if the main dish will be a porterhouse steak, fried chicken or sushi.

For instance, you need to determine if your users frequently compose and reply to messages, or if they employ the device more to monitor inboxes in case of an emergency. Do your users need the functionality to view documents, and if so, which file formats must the phone support? Do users need to create and edit documents? Do they travel overseas? What level of security is necessary? Is it OK for your corporate smart phones to include digital cameras and expandable memory, which can introduce their own risks?

Second, assess your current IT architecture to identify the mail servers your organization uses (and the version thereof), as well as corporate mail clients, firewalls and other existing systems that may be affected by a smart phone deployment.

These first two steps are on you, but we can help with the rest. In the following pages, we provide an in-depth look at four of the hottest smart phones available today—Research In Motion's BlackBerry Pearl 8100, Nokia's E62, Palm's Treo 750, and T-Mobile's Dash—through the eyes of four IT executives: Paul Roche, Network Services CIO; Stephen Ramsey, principal with Brulant; Hugh Scott, Direct Energy VP of IS; and Stacey Morrison, an aerospace industry deputy CIO. In other words, we bring to you both a technical overview and a real-world exploration of what the features mean in a business environment.

We intentionally selected devices with varying levels of business and consumer-oriented features. Doing so can help CIOs understand what a corporate deployment would mean for users and IT

departments, and also highlights what it takes to support a phone that users might purchase themselves and request that you link to the company network.

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Nokia E62 (Cingular)

With a large, full qwerty keyboard, thin profile and impressive messaging features, the Nokia E62 has quickly become a smart phone-fan favorite. But is it a suitable business phone for IT executives? Yes—with some caveats.

In September 2006, Nokia released the Cingular E62, an evolution of the E61 specifically tailored for the American market. The E62 is practically identical in appearance to its E61 sibling; they're both large, thin slabs of matte silver metal, with the same form factor. Both have a large, full qwerty keyboard, thin profile and impressive messaging features. However, the E62's guts are significantly different. The most notable modifications are the lack of Wi-Fi support and the fact that the phone is not a 3G device—two features that helped propel the E61 to popularity in Europe.

Though Nokia caught some criticism for the elimination of Wi-Fi and the lack of 3G, the E62's robust messaging and Web-surfing applications overshadowed the missing features. With e-mail options for a variety of e-mail clients and a unique Nokia S60 browser, the Symbian 9.1a-based device has quickly earned a reputation in the smart phone community as a "Q killer." But does the E62 deserve the title?

To get the real deal on the E62 and its value to business users, we asked Stephen Ramsey to give the device a test drive. Ramsey is principal at Cleveland, Ohio-based Brulant, a consultancy that focuses largely on e-commerce initiatives, and former CIO of Rogers Enterprises, the parent company of Midwest retail chain Rogers & Hollands Jewelers. Though he's not currently in charge of smart phone deployment at Brulant, Ramsey did select and issue smart phones to his staffers at Rogers Enterprise and is a smart phone user himself. Ramsey's current phone of choice is the Motorola Moto Q, which he employs as both a business and personal device.
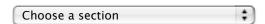
Bottom Line
The Nokia E62's wide, full qwerty keyboard and bright display, combined with its strong voice quality, robust messaging feature pack and office suite, make it a fully functional device for business users

who focus on messaging. On the downside, its large, slab-like form factor makes the Nokia E62 too big to carry around without a holster or bag, and its Symbian operating system can be sluggish and unresponsive.

Among the other things we liked was the Nokia E62's document viewing and editing capabilities. Also, its impressive battery life—the longest of all the smart phones we evaluated—gives users more than 12 hours of talk time and multiple days of standby time. If you type lots of e-mails or other messages and prefer a keyboard to a touch screen, you don't mind the device's large package and you are patient enough to deal with the Symbian OS, the Nokia E62 is a great option.

But it's not a great option for everyone. Ramsey said he would not deploy the phone across an enterprise because of configuration issues and difficulties in linking it to Microsoft Exchange Server. Ramsey also found the device's operating system to be notably less responsive than his Windows Mobile-based Moto Q. Faced with a choice between the Moto Q and the E62, he'll stick with the Q as both a business and a personal phone.

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Nokia E62: What We Liked

Among the most compelling features of the Nokia E62 is its full qwerty keyboard. Ramsey called out the keyboard and display as his favorite features. (We'll get to the display in a moment.) Business users who prefer to use a keyboard on mobile devices, as opposed to a touch screen, will appreciate the size and performance of the E62's keyboard.

Most keys are bigger than the ones on the other phones, and they're housed snugly in the device's face. There's little room for sideways movement, which can lead to typing errors. The key spacing makes it easy to depress a key without hitting another, even if you've got wide fingers.

Four horizontal rows of keys are all the same size, except for the left-most and right-most columns, which are slightly larger, and the entire bottom row of keys, which are smaller and beveled. The bottom row of buttons are a bit too small for our liking, as they're about half the size of the rest of the device keys, except for the elongated space bar, but none is a letter key. The overall functionality of the keyboard makes this factor only a minor inconvenience. This may seem like excessive detail, but you'll spend a lot of time with this keyboard—and it's among the device's most compelling features.

The screen (320 by 240 pixels) is notably bright and clear, and colors are vibrant. That matters when you're using the device's document viewing and editing capabilities, and for Web surfing, because there's more screen space to display content. The display, however, is not touch sensitive; if that matters to you, look elsewhere.

The E62's voice quality was quite strong on calls placed from the Boston area, though we had to turn the volume to its maximum—an issue with all the phones reviewed. Ramsey made calls from the Chicago area and agreed the quality was impressive. However, we noticed a constant buzzing feedback whenever we turned the device's volume to its highest level, especially after staying on a call for any extended period of time.

The Nokia E62 offers the most out-of-the-box options to set up corporate mail. You can link the device to a Microsoft Exchange Server, Lotus Domino and a BlackBerry Enterprise Server (BES) via Good Mobile Messaging, Mail for Exchange, Cingular's Xpress Mail and BlackBerry Connect. For example, Mail for Exchange lets users wirelessly access corporate Outlook e-mail, contact and calendar information, though Exchange Server 2003 SP2 is required. To set up the Nokia E62 with an Exchange Server, the user (or whoever performs the setup) needs the name of the Exchange Server, a user name, password and domain. The setup does vary from one system to another, from "no assistance needed from IT" to the need to activate a BlackBerry Connect plan through Cingular.

Business users who travel internationally will value the E62's overseas functionality. The E62 is a Cingular GSM/EDGE phone, which means that it functions in North America, Europe and Asia.

In our tests, the Nokia E62 had the most impressive battery life of the devices we reviewed. With approximately 12 hours and 45 minutes of talk time—without any e-mail redirect applications running, which can reduce a device's battery life significantly—the E62 blew away its competition. It more than tripled the battery talk time of the Palm Treo 750, which had less than three hours and 40 minutes, and significantly outlasted even the number-two ranked device for talk time: the T-Mobile Dash, which had just under 11 hours.

Another strength of the E62 is its document viewing and editing capabilities. You can view documents in Microsoft Word, Excel, PowerPoint and PDF, and edit existing Word, Excel and PowerPoint files. The E62 is the only phone we reviewed that offered the ability to edit PowerPoint presentations. Though none of the CIOs who evaluated phones for this review said that document management was a necessity, users who want this capability on the go will find the E62 to be one of their best options.

Security isn't an afterthought. The Nokia E62 keyboard can be locked while not in use. A PIN code can lock the SIM card (or "SmartChip" in Nokia's terminology) or disable the device if a new SmartChip is inserted. A secondary PIN2 code can lock specific device functions, and users can set a predefined text message to remotely disable the device. The phone can be set to block entry once three consecutive erroneous passwords are keyed in, and that block can be circumvented only with the personal unlocking key number, which can be obtained from a service provider.

Depending on your mail server, the E62 can offer various levels of IT security based on the specific safeguards administrators have applied. For instance, because the E62 can connect to corporate mail clients using the BlackBerry Connect service, many IT policies available in an organization's BES can be applied individually to E62 users.

The Nokia E62 has a few other features that bear examination—and appreciation.

A dedicated e-mail key's sole purpose is to lead users to their e-mail inboxes with a single click, no matter which application they're in. (The T-Mobile Dash has a similar e-mail key.) That'll be useful for business users who employ a smart phone mainly for messaging.

The E62 lets you display the device's screen during meetings via compatible projectors or projection systems, using a wireless connection such as Bluetooth. Drivers for the compatible projector must be downloaded to the device, but once it's all installed, it takes only a few clicks to display the screen via projector.

The default Web browser on the Nokia E62 is the HTML 4, WAP 2.0 Nokia S60. Combined with the large display, it was the most functional we reviewed. You use the device's left action key to go to the

address bar, create and access bookmarks, view history, as well as zoom in and out and modify a webpage's font size. A cursor enables users to click wherever they want on any given webpage—unique to the E62. It's particularly valuable since many Internet sites are still not optimized for mobile devices, and therefore sometimes appear jumbled and disjointed. The Nokia browser's cursor allowed us to easily click on any section of any page we desired and led to speedier Web browsing. Whenever you click on the E62's right action key while browsing the Internet, you're shown a page with small screen shots of the webpages you most recently visited. The joystick becomes a toggle between screens, and it really improves Web surfing.

The Nokia E62 includes built-in support for the AIM, MSN Messenger and Yahoo Messenger services, and each can easily be accessed with two clicks from the device's home screen. Only a screen name and password are required to sign in to IM accounts, and the device's large keyboard is particularly suitable for messaging. Though the E62 is not the only device we reviewed that supports IM services out of the box—the Dash also supports three different IM applications—no third-party applications were required, which means there was no need to download additional programs.

But nothing is perfect.

<< Nokia E62: The Bottom Line | Nokia E62: What We Didn't Like >>

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Nokia E62: What We Didn't Like

At 4.6 inches long, 2.7 inches wide and 0.6 inches in depth, the Nokia E62 immediately feels a bit clunky in your palm. Its size becomes even more noticeable when you place the long, thin slab up to your ear for a phone call. The E62 is too large for most users to fit in a pants pocket; a holster or some sort of bag is likely required to tote it around. However, its larger dimensions don't make it much heavier. The E62 is actually lighter than the Treo 750. Ramsey appreciated the device's large keyboard and display and wasn't particularly turned off by its size, but you should pay attention to the device's dimensions (or at least the size of your pockets).

The Nokia E62's design is oldest of all the smart phones we evaluated, and it shows; though the E62 hit the United States in September 2006, around the same time as the Pearl, Dash and the Treo 750, the E61, which features a near-identical form factor, was available in Europe in October 2005, almost a year earlier. Whereas the BlackBerry Pearl, T-Mobile Dash and even the somewhat clunky Palm Treo 750 could easily become talking points in a bar or other social setting, users may be inclined to keep the E62 pocketed. However, its plain, no-nonsense matte silver metal exterior could be a draw to business users who want to stay away from flashier, more attention-grabbing devices.

Stephen Ramsey, Principal, Brulant

The E62 accesses Cingular's GSM/EDGE network, which means it's not a true 3G phone. Cingular's EDGE network offers users average download speeds of 74 to 135Kbps compared with the average download speeds of 220 to 320Kbps of its 3G/Universal Mobile Telecommunications System (UMTS) network or its faster high-speed downlink packet access (HSDPA) network, which offers users average download speeds of 400 to 700Kbps, according to Cingular. Users who need to make phone calls and surf the Web at the same time, or place calls while they send e-mail, should think twice before investing in the E62. Third-generation smart phones also speed up downloads of large files like PDFs, videos or presentations, so users who frequently download such files and want to do so as quickly as possible should seek out a true 3G phone.

The Symbian 9.1 OS powers the E62, and overall we found the device to be rather sluggish. In some cases, we pushed a button two or three times before the E62 performed the command. Ramsey noted that the OS was slower than the Windows Mobile OS in his Moto Q, and it took him significantly longer to navigate through menus or screens and to launch applications with the E62.

The E62's user interface (UI) was somewhat unintuitive (which is always a personal perception), and its joystick, which is used not only to move up and down and from side to side, but also as the "action" or "enter" key, could sometimes make navigation a bit awkward. Ramsey had some difficultly getting used to the UI and joystick; on a scale of 1 (least intuitive) to 10 (telepathic), he ranked the E62's UI as a 4. "It took me a couple of hours to really get used to," Ramsey said.

Setup is intended to be a snap, but it wasn't for our IT manager. Ramsey first attempted to connect to his corporate mail client via the Mail for Exchange application. He was able to initially sync e-mail, calendar and contacts, but the device stopped syncing immediately. Brulant's IT department doesn't support the E62 and its staffers were unfamiliar with the device, so Ramsey reached out to the E62 product manager, whom Nokia provided as a technical support contact, to no avail. He uninstalled and reinstalled the application, but the device generated no error messages, so he couldn't locate the cause of the problem. Even when Ramsey attempted to force the sync, the device responded by saying the task had been performed; however, his e-mail, calendar and contact information still did not sync up with the E62, and no corresponding log records were generated.

Ramsey eventually could use Cingular's Xpress Mail application to sync his mail, but the experience with Mail for Exchange and the inability to work through the issue with the Nokia product manager left a bad taste in his mouth.

One important weakness is that the Cingular Xpress Mail Client lets users circumvent the IT administrator. We used Cingular's Xpress Mail client to link the Nokia E62 (and the Treo 750) to our corporate network. Both were easy to install and use; however, a note within the Nokia E62 Getting Started Guide is particularly relevant to CIOs and IT executives: "Xpress Mail is a self service option for accessing your corporate e-mail from your Nokia E62 without IT support. NOTE: Your IT administrator may prohibit self service options. Please consult your IT administrator before beginning setup."

Interestingly, the Treo 750 reviewer and user guide sent along with the device don't mention that Xpress Mail users may want to check with IT administrators before connecting to their corporate inboxes and calendars or any other parts of their organizations' networks. Because we set up our Xpress Mail e-mail account on the Treo 750 before the Nokia E62 and didn't need to read the setup instructions twice, we linked to our network without the approval of our IT staff. (In fact, CXO IT staffers are still unaware that we have multiple devices using Xpress Mail to access corporate e-mail and calendar information. Please keep that under wraps. We don't want to get in trouble.)

Ramsey was unaware of the Xpress Mail application until we brought it to his attention. He, too, expressed concern. "That's not how I would want it to happen," he said. "From a technology standpoint, that could cause difficulty. I want to know who's connecting to mail and how they're connecting. I would want to limit that feature."

Xpress Mail is available on a handful of devices beyond Palm's Treos. A list of devices that support Xpress Mail can be found on Cingular's site, though the list is incomplete (it doesn't include the Treo 750).

The E62 doesn't have a built-in digital camera. That can be a positive or negative. If your organization has banned digital cameras on its premises, the Nokia E62 might be a good option for your smart phone deployment, as you won't need to disable the camera and ensure that it stays disabled.

Though the E62 features a slot to expand its available memory via a miniSD card, the additional memory cannot be disabled by an IT administrator. Ramsey would look for the ability to disable any expandable-memory functionality, but would still deploy corporate phones with expandable memory that cannot be disabled. Your security policies may restrict such expandable memory and thus eliminate the device from consideration.

You access the E62's voice recorder and voice-activated dialing features with a button directly below the volume-up and volume-down keys on the device's right side. We often inadvertently hit the voice-recorder key while trying to adjust volume, and recorded small snippets when we were only trying to hear our correspondent. There is no way of locking the voice-recorder key to stop it from accidentally being depressed, and the key cannot be programmed to represent a different function.

How does the Nokia E62 stack up to its competitors? Keep reading to see how well it fared.

<< Nokia E62:What We Liked | RIM BlackBerry Pearl 8100 (Cingular) >>

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RIM BlackBerry Pearl 8100 (Cingular)

The BlackBerry Pearl is not like other BlackBerrys. And that's no accident. But does this consumer-oriented smart phone still work for enterprise users? Despite business-friendly features, one IT executive says he'd buy a Pearl for himself ... but probably not for his IT staff. Find out why.

Research In Motion (RIM) has proven that it can do business phones right. Now it's moving on to bigger things. The handset maker has taken a lesson from Motorola's tiny, ultra-popular RAZR phone, and come up with the BlackBerry Pearl 8100. The Pearl is the first truly small handheld from RIM and the first BlackBerry to include features specifically aimed at consumers.

Because it is so different from other BlackBerrys, the Pearl is making a name for itself in both the trendy consumer space and the unforgiving business world as one of the hottest phones on the market. Named for the pearl-shaped trackball embedded in the center of its keyboard, the device is RIM's first move away from its trademark thumbwheel. The "pearl" is the device's central means of navigation. The handheld was initially offered in the United States by T-Mobile in September 2006, and later by Cingular in December.

To provide an inside perspective of the BlackBerry Pearl, we called on a real IT executive to review the device: Paul Roche, CIO of Network Services Company, a multibillion-dollar distribution organization with more than 400 warehouses located across the United States. Roche is particularly qualified to review the Pearl. His CEO recently came to the IT department with a brand new Pearl of his own, and since nobody else at Network Services used a BlackBerry, Roche had to get the device set up and linked to his network without any of the necessary ingredients in place.

The Bottom Line
The BlackBerry Pearl is without a doubt the most aesthetically pleasing device we reviewed. It is also a completely functional business device due to the high level of security it offers users, as well as its strong battery life and intuitive user interface. However, due to its small size and the lack of a full qwerty keyboard, the Pearl is best suited for users with smaller hands and for those who read lots of e-mail but don't frequently respond. (That should cover most of the managers in your office, unfortunately.) Because of the Pearl's delicacy, it's not suitable for users who carry a phone in their back pockets. (Crunch.)

Roche, together with his vice president of operations, determines which smart phones are deployed across Network Services. Although there are no official feature criteria, a full qwerty keyboard is a necessity, so Roche doesn't plan on deploying more BlackBerry Pearls anytime soon. However, he said, he would purchase it for use as his personal phone.

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RIM BlackBerry Pearl 8100: What We Liked

For Roche, e-mail functionality is a key feature in a business smart phone, along with voice quality and keyboard. High on the list of the BlackBerry Pearl's most valuable business features is its tried-and-true BlackBerry "push" e-mail service. Messages are "pushed" from users' inboxes immediately upon receipt, instead of having to be retrieved manually at the expense of users' time and a portion of device battery life.

The Pearl's home screen is icon-based—as opposed to the menu-based navigation in smart phones running Windows Mobile—and there are separate icons for each e-mail account linked to the device (up to 10 accounts, as with other BlackBerrys). It's simple to tell how many messages are waiting in each mailbox. Roche identified this icon-based navigation of e-mail accounts and other programs as his favorite Pearl feature.

Whenever the Pearl is mentioned, one of the first things you hear is how small the candy bar-style phone is, especially since the majority of RIM's handhelds more often resemble bricks than they do Hershey bars. At just 4.2 inches long, 2 inches wide and .57 inches deep, the Pearl's size is a bane or boon depending how it's put to work. If you're looking to do away with that funky holster latched to your belt and to stuff the handheld comfortably into a pants pocket, the Pearl is one of your best options. According to Roche, the Pearl's display is roughly 25 percent smaller than his Palm Treo 650's display; he missed the extra space, but also appreciated the Pearl's 1.65-by-1.5-inch (260-by-240-pixel) LCD screen as notably clear and bright.

A primary reason BlackBerrys have found their way into so many enterprises is the level of security they offer users and IT administrators. A wide array of security policies help IT departments using BlackBerrys and BlackBerry Enterprise Servers (BES) apply rules to set content encryption, limit installation and use of third-party applications, implement various virus-protection measures and more. IT administrators can also remotely wipe all data from the Pearl should it be lost or stolen.

The Pearl itself offers a number of unique security features, beyond the typical password lock, and the ability to lock a SIM card. The Pearl can limit the number of times a user can attempt to enter a password after an incorrect entry is logged, to reduce the chance of an unauthorized person accessing the device by trial and error. A "password keeper" application stores users' various passwords.

Finally, to mitigate the new risk introduced by including a camera, media player and microSD slot for expandable memory, RIM includes a new set of IT policies for the Pearl. IT administrators can remotely disable the device's camera function, disable expandable memory and keep it from being used as a USB mass storage unit. IT administrators can also control data encryption on the microSD memory card. Data encryption can be disabled, or content can be encrypted to the user password, device key or both. Each of these safeguards, as well as all BES IT policies, can be applied to an individual user, a set of users or the complete smart phone deployment.

Roche saw no particular business value to the Pearl's consumer features, but he did say he and his organization would deploy a phone with such features—as long as they come at no additional charge.

At Network Services, Roche has smart phones issued to 10 executives, 10 sales representatives and 10 IT staffers, five of whom travel regularly to Europe and China. Global System for Mobile Communications (GSM) phones are a necessity. Network Services staffers with corporate-issued smart phones all use Treos, the majority of which are Sprint phones, except for the traveling executives, who use Cingular-based Treos. (International calling functionality is not available on the Sprint Treos.)

The Pearl's impressive battery life also makes it a viable business tool. In CIO.com's tests, it had a little less than eight and a half hours of talk time, and multiple days of standby time. RIM estimates the device's standby time to be roughly 15 days. "I can't go 24 hours without recharging [my Treo], even if I'm not using it," Roche said.

The Pearl's icon-driven navigation makes it easy to find your way around whether you're a "CrackBerry" addict or a new, casual user. The lack of extraneous buttons also simplifies navigation. In addition to the keyboard keys and trackball, there are only four buttons on the Pearl's face: Send, End, Menu and Escape/Back.

Before deploying Treos across Network Services, the firm used BlackBerrys, so Roche had personal experiences with the devices, and was therefore somewhat familiar with the user interface (UI). He had to refer to the instruction manual only twice to discover how to use a new function, and called the overall UI "very intuitive." On a scale of 1 to 10, with 10 the highest rank, Roche gave the Pearl's UI an 8.

Many organizations already have a BES in place. In such cases, linking a new BlackBerry to the network is typically a breeze (once licensing issues are resolved, that is). Setting up personal e-mail, such as an AOL, Hotmail or Gmail account, is even simpler, and both can be done wirelessly without a PC. To access a corporate e-mail account via a BES, an activation password from a systems administrator is required. As mentioned previously, Roche recently linked his CEO's Pearl to Network Service's network; after the BES server was up and running, it took him only a half-hour to link the device.

Those are the features most valuable to business users. But there are others that particularly appealed to us.

The Pearl's LED indicator can be set to flash green whenever network service is available, red when a new message arrives or when a call is being received, blue when paired with a Bluetooth device and amber when the battery level is low. (The Nokia E62 has a similar e-mail indicator light.) All we had to do to see if a new message had been received was look at the device. The LED functions without any sort of audible message alert, so we could use the Pearl during a meeting and keep track of messages without worrying about noisy notification—or even having to touch the device. Our one complaint is that the red message-received light blinks for only 15 minutes, and we couldn't find a way to change the setting for the length of time it blinked.

The Pearl comes with the TeleNav Maps 1.0 application installed for free, easy access to maps and driving directions. The TeleNav GPS Navigator is also available ($9.99 a month for unlimited use), which provides turn-by-turn driving directions and location of nearby businesses by name or by type. Roche often uses MapQuest via his Treo, but felt the TeleNav service was a valuable business feature.

Cingular's Push to Talk service ($9.99 a month for individual plans) lets users connect instantly with up to five people whom they communicate with frequently, on an individual or group call. On the Pearl, Push to Talk lets users see contact availability status via four icons, such as a yellow smiley face to indicate the contact is available. The service is available on a number of Cingular phones besides the BlackBerry Pearl.

For Roche's sales team, the Push to Talk service could be particularly valuable. Ten members have company-issued Treo 650 smart phones, and as they're frequently communicating, the instant connectivity and ability to view availability before making a call would come in handy.

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RIM BlackBerry Pearl: What We Didn't Like

A major drawback of the Pearl's tiny package is that it lacks a full qwerty keyboard. With the exception of two buttons, there are two characters on each of the phone's letter keys. Its built-in software does help. The SureType system helps users identify which letter is intended, and attempts to save time by identifying or guessing at words being spelled out before the user is finished. It also builds an ongoing custom list of words it doesn't recognize, to quickly find the word next time a user attempts to enter it.

In Roche's estimation, the Pearl's keyboard is its worst feature, and would keep him from deploying the device across his enterprise. Though Network Services doesn't have official criteria to determine which smart phones can be used throughout the organization, a full qwerty is a necessity, he said.

Paul Roche, Network Services CIO

Roche didn't find the SureType system particularly effective in selecting the words he wanted. Forget messages that require in-depth responses or those that consist of more than a few sentences. "Even typing an e-mail address is extremely painful," he said. It also doesn't seem to have any sort of "smart recognition" system to select frequently typed entries over other less-used words or addresses. In defense of SureType, we did find that it becomes easier to use as one gets accustomed to it, and it can be quite accurate in recognizing words being typed if the user ignores all of the potential suggestions and types in the appropriate letters.

Roche placed calls from various locales in the Chicago area, and found the Pearl's call quality "somewhat spotty," even when his device showed the maximum number of reception bars. We placed calls from central Boston and New York City, and consistently heard small bursts of static, in some cases every few minutes. Roche noted that the device's volume doesn't go quite as high as he'd prefer; a problem that he also experiences with his Treo. Even with the hands-free headset that's included, which is meant to partially increase sound quality and volume, the Pearl's volume level still seemed a bit low.

Another drawback of the Pearl's tiny size and light weight is how these specifications affect its durability. Older BlackBerrys were known for their strength, largely because many were bigger, bulky devices. This BlackBerry is made of thin, silver and gray plastic; it instantly feels very delicate, at least in comparison to older models. And weighing in at just 3.16 ounces with the battery, the Pearl is somewhat fragile to users' perceptions. We didn't test how many times we could drop the device

without it breaking into pieces (the company does want the device back, after all, and it'd be a bit rude to return it in a baggie), but it's fairly obvious that Pearl users would be wise to minimize such occurrences.

The Cingular BlackBerry Pearl uses Cingular's GSM/EDGE network, which offers average download speeds of 100Kbps to 160Kbps; however, it cannot currently access Cingular's 3G/UMTS network or its faster HSDPA network. In other words, it is not a true 3G phone. Cingular's 3G HSDPA network offers average download speeds of 400Kbps to 700Kbps, according to the company. Though Roche said the 2.5G Pearl's download speeds are fast enough for his needs, users who frequently download large files, such as media files or PDFs, may want to think twice about selecting a phone without 3G support. Also, because the Pearl runs on Cingular's GSM/EDGE network, it can't transfer both voice and data simultaneously; users cannot access the Web while on a phone call or vice versa.

Though the Pearl lets users view Microsoft Word, Excel, PowerPoint and PDF documents, the BlackBerry does not allow you to edit documents. If that functionality is important to you, you may want to eliminate the Pearl from your consideration.

If your organization doesn't already have a BES, you may need to include the cost of adding one in the budget spreadsheet. All BlackBerrys are designed to function best with a BES. Unless you want to use a BlackBerry Desktop Redirector—which means you must keep corporate PCs connected to the Internet at all times so you can consistently receive messages—you may want to steer clear of the Pearl or any other RIM handheld. Or, of course, spring for the cost of RIM's BES.

To take advantage of the Pearl's camera disablement and remote memory control IT policies, you need to upgrade BES to v4.0.6 or v4.1.2. Figure that into the budget as well. The Pearl can still link to corporate networks via older versions of the BES, but the new IT policies aren't available to administrators.

GSM phones commonly cause interference with nearby speakers, or any devices with embedded speakers; this can happen when a message or phone call is sent or received or when the user accesses the Internet. Some GSM phones also cause speakers to buzz without apparent cause, because the network is verifying that the phone is still in range. There are technical reasons behind this, but the end result is that, according to Roche, the speaker interference caused by the Pearl was nearly unbearable. He had to keep the phone away from his workstation or it'd cause his desktop speakers to howl. "From a CIO perspective, if I deploy phones and no one can keep them on their desks, well, that's a problem," Roche said.

All of the devices we reviewed are GSM phones, and each caused some degree of buzzing when in close proximity to speakers, but the Pearl was by far the worst in this respect. Our review copies buzzed nearly constantly at times when anywhere near speakers; even when they weren't in use, the smart phones buzzed briefly every hour or so, sometimes more often.

The Pearl features a 1.3-megapixel digital camera with 5X zoom; that's great. But to snap a photo is difficult, due to the size of the device and the fact that you must depress the trackball—which is sensitive and rolls easily.

Though Roche indicated that it's not particularly important to have Wi-Fi support on the smart phones used throughout his enterprise, business users who travel outside of Cingular coverage areas or who wish to save on data charges will miss the functionality.

The Pearl can be equipped with a microSD card to expand its available memory (card is sold separately); however, the slot is located inside the device, and users need to remove the battery to access it. That means the device must be powered down to insert or remove the microSD card, and then powered up again before use.

How does the BlackBerry Pearl stack up with other smart phones for enterprise use? Take a look at the other devices we reviewed.

Choose a section ⬍

Palm Treo 750 (Cingular)

How does Palm's Treo 750 measure up to its Treo siblings, and is it a viable business device? The benefits include Microsoft Direct Push technology, a touch screen/stylus combination and unique messaging options—but the smart phone is marred by really lousy battery life.

Palm has built a loyal base of business users who depend on its PDAs and Treo smart phones. However, U.S. Treo fans had to be patient to get their hands on the Treo 750, which was available in Europe via Vodafone months before its introduction in the United States. In January, Cingular became the first to offer the smart phone in the states.

So what sets the Treo 750 apart from its elder siblings? To start with, the device is the first Treo available in the United States to run on Cingular's 3G/Universal Mobile Telecommunications Standard (UMTS) network, which promises average download speeds of 220Kbps to 320Kbps. It has the same, streamlined design as its consumer-oriented sibling, the Treo 680. The Treo 750 (like the 680) is slightly smaller than earlier models, as Palm has done away with the protruding knob-like external antennae, and is an ounce lighter. Palm also made modifications under the hood, with more messaging and security features, many of which are detailed in the coming pages, via the Microsoft Windows Mobile 5.0 Messaging and Security Feature Pack.

To evaluate the Treo 750 from the standpoint of an IT executive, we recruited Hugh Scott, Direct Energy's information services vice president for its retail business in the United States and for its energy trading and risk management groups in both Houston, Texas and Calgary, Alberta, Canada. With U.S. headquarters in Houston and North American headquarters in Toronto, Direct Energy is a retail energy provider with annual revenue of $8 billion.

Scott, a "dyed in the wool BlackBerry user," is in charge of 80 IT staffers. He has roughly 500 smart phones deployed throughout Direct Energy, all of them BlackBerrys. Because this was his first experience with a Palm Treo, Scott provides an interesting viewpoint on what features he missed and which he wished were available on his BlackBerry. In the following pages, we examine the Treo from the eyes of a real business user and provide facts on what you and your IT department might like—and dislike—about this phone.

The Bottom Line

The Cingular Palm Treo 750 is a Windows Mobile-based business smart phone with many features to appeal to CIOs, such as Microsoft Direct Push technology, a touch screen/stylus combination and the ability to respond to phone calls via text message directly from the home screen. However, the device's battery life seriously hinders its overall value. If, however, your organization is standardized on Microsoft products, yearns for a device with a touch screen and can deal with frequent phone recharging, the Treo 750 is a good option.

Scott's affinity for BlackBerrys will likely keep him from deploying Treo smart devices across Direct Energy. But if he were in the market for a personal phone and could get over its steep $400 price tag, he would consider the Treo 750.

<< RIM BlackBerry Pearl 8100: What We Didn't Like | Palm Treo 750: What We Liked >>

| Choose a section ⇕ |

Palm Treo 750: What We Liked

The Palm Treo 750 runs the Microsoft Windows Mobile 5.0 Pocket PC Phone Edition operating system with Microsoft Direct Push technology. If your enterprise uses Microsoft Exchange Server 2003 Service Pack 2, you can receive "push" Outlook e-mail and calendar information via the Treo 750 without manually retrieving messages. Though Scott had a problem getting his device linked to his Exchange Server due to a company firewall setting, syncing up Outlook e-mail and calendar information to the Treo 750 should be simple for most using Microsoft's ActiveSync program. To begin syncing, you need the server address and domain. Outlook and Lotus Notes corporate e-mail accounts can also be set up using Cingular's Xpress Mail solution and the Good Mobile Messaging application.

The Treo 750 supports POP3 and IMAP accounts. It recognizes the server settings for most major e-mail providers, such as AOL and Gmail, without outside assistance. Hotmail accounts are even easier to access via the device's Pocket MSN application.

Scott cited strong voice quality as absolutely necessary for a corporate smart phone. The Palm Treo 750's voice quality was the best of all the phones we reviewed. Scott placed calls from Texas, and

we made calls from the Boston area. The phone's volume doesn't go quite as high as we'd like, but this is an issue common to all four smart phones evaluated.

The Treo 750 has all the security safeguards you've come to expect from high-end cell phones today, including a device lock option with two levels of password security to prevent access to the phone or to the Subscriber Identity Module (SIM) card. IT administrators can apply existing Exchange Server security settings to the Treo 750, including content encryption using S/MIME, antivirus measures and remote data wipe, in case a device is lost or stolen. The Treo also includes Microsoft's Messaging and Security Feature Pack (MSFP), which provides administrators with additional security options via Exchange server.

The Treo 750 is a Cingular GSM/Universal Mobile Telecommunications System (UMTS) phone, so it functions in North America, Europe and Asia. Only 5 percent of Direct Energy's 500 employees with company-issued smart devices travel outside of North America, so it's not a necessity for smart phones to offer international roaming. Yet, the functionality is very important to Scott's users who do travel.

The Palm Treo 750 is the only device we reviewed with a touch screen, along with its color (240-by-240-pixel) display. Scott didn't find the touch screen to be particularly valuable, but our own experience was quite different. The Treo 750's stylus was particularly helpful when typing messages on screen. It cut in half the time it took to type a message using the Treo's keyboard, and made it easier to scroll long webpages. The stylus tucks neatly away into the back of the device, and the touch screen is automatically disabled when the device is locked.

The Treo 750 is meant to be fully functional using one hand. The stylus and touch screen are not required for any task—fingers can be used on the touch screen as well—so users like Scott who prefer to avoid them aren't trapped.

The Treo 750 is the heaviest and bulkiest of the devices we reviewed. Whereas the BlackBerry Pearl instantly feels delicate in a user's hand, the Treo 750 feels much more durable.

The Palm Treo 750 is the only device we reviewed that is a true 3G phone; while the others are GSM/EDGE phones, the Treo 750 can access Cingular's 3G/UMTS network, which offers average download speeds of 220 to 320Kbps, compared with the 74 to 135Kbps available via the company's EDGE network, according to Cingular. The wireless carrier also recently announced that it will offer Treo 750 users, among others, an upgrade to its faster, high-speed downlink packet access (HSDPA) network, which offers average download speeds of 400 to 700Kbps, within the coming months. 3G support is not mandatory for Direct Energy employees, but organizations whose users need to download large files should be aware of the time-saving benefits of using a UMTS or HSDPA-capable smart phone.

Using the Palm Treo 750, you can both view and edit Microsoft Word, Excel and PowerPoint documents via Office Mobile. The device can view PDF files using the Picsel PDF viewer, but it can't be used to create or edit such documents or PowerPoint presentations. None of the CIO reviewers considered document-editing capabilities a priority—Scott, in fact, stated the functionality is not at all important—but this matters significantly to some business users. If yours are among them, give this device another check mark.

We didn't find the Treo 750's user interface (UI) to be particularly intuitive—Scott ranked the UI as a 3 on a scale of 1 to 10, with 10 being extremely intuitive—but it does have some unique business features. For instance, you can find contacts directly from the home screen; you don't need to navigate to a separate contact list page and then scroll. Also, users can search the Web via Google directly from the home screen.

Because the device is powered by Microsoft's Windows Mobile 5.0 Pocket PC Phone Edition, it is designed to function best with Microsoft Exchange Server. The OS includes Microsoft's MSFP, which adds a number of messaging features and e-mail security safeguards, as long as you use Microsoft Exchange Server 2003 SP2. Even so, the process may not be simple. Scott was unwilling to modify a firewall setting to allow the Treo to link to his network, so he never linked his Outlook mail to the device.

One unique feature allows users to silence a phone call and instantly respond via text message, with two clicks from the home screen. For instance, assume Scott was in a meeting, with the phone set to vibrate. When the phone rang (er, buzzed), he could answer the phone call, ignore the call altogether or ignore it with a text message. With the text-message option, Scott could type, "I'm in a meeting. I'll call in an hour." The Treo 750 is the only phone we reviewed with this functionality. A threaded chat view for text and MMS messages is not unique to the Palm Treo 750. But the Treo's message organization makes it easier to keep track of conversations, showing time received, color-coding and status icons.

Treo 750 users can assign specific device buttons to voice-mail control functions, such as rewind, save and fast-forward. Those functions are displayed on the screen while you access voice mail, so you can, say, delete a message using the touch screen.

That's a lot to like. But we found several faults, too.

<< Palm Treo 750: Bottom Line | Palm Treo 750: What We Didn't Like >>

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Palm Treo 750: What We Didn't Like

The Treo 750's talk time of three hours and 40 minutes was abysmal. We also tested battery life with the Xpress Mail application, used to sync our e-mail and calendar, turned off. Xpress Mail can consume additional battery life depending on delivery settings because it's constantly checking for new mail. The results were still depressing. Some of this is due to Cingular's UMTS network, which uses more power. However, the fact remains that the Treo 750's battery didn't last 24 hours when running Xpress Mail, unless we turned off the phone—and therefore the data connection—each evening. Palm estimates the device's standby time to be about 10 days.

Business users who cannot or aren't willing to charge the Treo 750 every day or so—or at least carry around a spare battery—should think twice before investing in Palm's newest Treo.

The Treo 750's full qwerty keyboard is cramped. Typing long messages or notes using the device's tiny, hard keys can be a chore for users with large fingers.

Hugh Scott, Direct Energy VP of IS

Scott considered the Treo 750's UI unintuitive. On a scale of 1 to 10, 1 representing a UI that's not at all intuitive, he ranked the Treo 750 as a 3. His experience was largely influenced by his familiarity with BlackBerrys; it took him a few days with the Treo to get comfortable with the five-button

navigation mechanism. The Windows Mobile Start menu also required adjustment; BlackBerrys are more icon driven, with most programs available within one click from the devices' home screens. Scott found it time consuming and frustrating to find applications on the Treo 750.

In defense of the Treo 750 UI, it is much like any other Windows Mobile-based device or Windows-based PC; users who prefer Windows over other operating systems will appreciate the Treo's UI familiarity.

Though the Treo 750 is at least an ounce lighter than its Treo 650 and 700 predecessors, it is still heavier and thicker than the other phones in our review. These features help to make the device durable, but the phone also feels too big to fit unobtrusively in a pants pocket.

The Treo is streamlined to function with Microsoft Exchange Server. If your organization uses something else, Treo 750 setup can be significantly different. There are a number of ways to link corporate e-mail, calendar and other settings to the device, but each requires additional processes, and some affect device performance. For instance, to use the Good Technology solution to link the device to Lotus Notes, a separate Good server is required, as well as an associated PIN log-in. To use Cingular's Xpress Mail client, users must visit the Cingular site, create an account, download the desktop software, set up the software on the device and complete additional steps before being able to receive messages. The burden of setting up 100 separate Xpress Mail accounts could be enough to make IT staff run cowering away to hide in a closet.

The Treo 750 is by far the most expensive phone we reviewed. In Scott's opinion, the $399 price tag is a bit much—and that's after a rebate and with a new, two-year data plan. Price may mean less to one organization than another, but the Treo 750 is at least $100 more expensive than any other device we reviewed. Deploying only 10 devices would add $1,000 onto the overall project cost.

Though a number of Web forums suggest the Treo 750's camera and expandable memory features can be disabled by tampering with the device, we couldn't find an "official" way for IT administrators to disable these features. (And of course, tampering with the Palm Treo 750 voids its warranty.) If you work for an organization that has banned cameras from its premises, you won't be able to use your phone or bring it into the restricted areas, unless you do so on the sly.

Scott saw no particular business value to consumer features like expandable memory or a media player within a corporate smart phone, except perhaps for executives who might listen to music or watch videos while traveling. He did, however, think his fuel technicians in the field might find the digital camera handy, so he would deploy phones across Direct Energy that have these features—though he has not yet done so. The ability to disable a camera or expandable memory within corporate smart phones would be a benefit, Scott said, but the lack of such safeguards would not keep him from deploying a phone with these features.

We used Cingular's Xpress Mail client to link both the Treo 750 and the Nokia E62 to our corporate network. However, according to the E62's Getting Started Guide, "Xpress Mail is a self service option for accessing your corporate e-mail," and users should check with IT administration to ensure that the company does not prohibit self-service options. We linked to our network without the approval or knowledge of IT staff. (Please don't tell them; it could be embarrassing.) Scott was unaware of the Xpress Mail application until we brought it to his attention, but was quick to note that Xpress Mail would likely be frowned upon from any sort of information security perspective, and that the application "would keep [Direct Energy] from using the device."

How does the Treo measure up to the other phones we reviewed? Read on to find out.

Choose a section ▲▼

T-Mobile Dash (T-Mobile)

The T-Mobile Dash is designed more for play than for work, but its compact size, durable build and strong battery life make it a viable option for some business users. Would you find a friend in the Dash? The answer depends on your personal needs.

When the T-Mobile Dash, a.k.a. the HTC Excalibur or HTC S620, hit American shores in October 2006, the smart phone space was all abuzz over the Motorola Moto Q, and every new phone on the horizon seemed to be aimed at capitalizing on the Q's popularity. The Dash, manufactured by Taiwan's High Tech Computer (HTC), was no exception. The Dash aims to steal customers from Motorola and its Q smart phone by offering similar functionality in an equally tiny—and perhaps more aesthetically attractive—package.

Though aimed largely at consumers, the T-Mobile Dash offers a number of features business users could find valuable, including its portable size, durable build, Microsoft Windows Mobile operating system and impressive battery life. It pays for CIOs and other IT executives to know what it means to support the Dash; its popularity means that one of your staffers could request that you link his snazzy new device to your network.

Stacey Morrison, an aerospace industry deputy CIO, agreed to review the Dash to reflect the needs of a real IT executive. Morrison, who requested that we not reveal the name or identity of her organization, is in charge of an IT staff of five managers and 30 contractors. She is responsible for smart phone deployment, and she selects and supports smart phones for about 100 corporate users. Her organization standardized on BlackBerrys, so her experience with smart phones has largely been with Research In Motion (RIM) devices. Morrison currently uses a BlackBerry 8700c as her business phone.

Bottom Line
The T-Mobile Dash is a consumer-oriented smart phone, and it shows. Among the device's best features are its media player and messaging applications—though its cramped keyboard makes typing a chore. The Dash's more business-oriented offerings, such as document management capabilities and corporate e-mail setup options, suffer at the expense of pleasing the Sidekick set. For users looking for a smart phone that can be comfortably pocketed, who want to receive e-mail but don't always need to respond, or who require only basic document management capability, the Dash is a viable option. Organizations standardized on Microsoft products will also appreciate the device's

Windows Mobile OS and the ease of connecting it to Microsoft Exchange.

However, users who want a high-end business smart phone with robust document management features, an easy-to-use keyboard and multiple options to sync with various corporate mail servers will want to look elsewhere. For Morrison, who was unable to wirelessly sync e-mail from her Exchange Server due to a security setting, the device was somewhat difficult to configure. She much preferred her BlackBerry's user interface (UI) and track-wheel navigation to the Dash's UI and five-button navigation mechanism. Morrison also disliked the device's full qwerty keyboard, which she said she'd rarely use because it was too frustrating to type more than a few words. Because Morrison's organization is standardized on BlackBerrys, she won't likely be deploying any Dash phones in the near future. Were she to purchase a personal smart phone, she said she'd probably seek out a device with a touch screen and stylus to improve typing, but would consider the Dash.

<< Palm Treo 750: What We Didn't Like | T-Mobile Dash: What We Liked >>

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T-Mobile Dash: What We Liked

Though longer and wider than the BlackBerry Pearl, the T-Mobile Dash is the thinnest device we included in our review; its size and shape are its main strengths. We liked the Dash's size best of all the devices we reviewed—small enough to fit unobtrusively in a pocket, yet large enough for a full qwerty keyboard. Morrison also appreciated that no holster is needed to comfortably tote the Dash around, and it was notably smaller than her BlackBerry 8700c. The Dash is thin and somewhat slab-like, but it's not so wide that it's uncomfortable when holding against an ear to make a call. The Dash's width and contoured rear panel also make it sit comfortably in the palm of your hand.

Because the Dash runs on Windows Mobile Version 5.0 and functions best with a Microsoft Exchange Server, organizations standardized on the Microsoft product line will appreciate its simple Outlook e-mail, calendar and contacts synchronization. The Dash also includes the Windows Mobile 5.0 Messaging and Security Feature Pack (MSFP) with Microsoft's Direct Push Technology, which instantly delivers Outlook e-mail when it hits an organization's mail server. Exchange Server 2003 SP2 or later is required to take advantage of Direct Push. All that's needed to sync the device to an Exchange Server is the server name, domain name, user name and password. However, Exchange Server 2003 is required to wirelessly sync information, and it must be set to allow for wireless synchronization. For security reasons, Morrison's Exchange Server has wireless synchronization disabled, so she was unable to wirelessly sync the device.

Like the other phones featured in this review, the Dash offers various levels of device security, depending on which mail server is employed. Security safeguards available to any Dash user include password options to lock the device via PIN if a new Subscriber Identification Module (SIM) card is inserted, and to lock its keyboard with two levels of password security when not in use.

T-Mobile Dash users who link their devices to Microsoft Exchange Servers can take advantage of identity security functions. For example, you can individually sign and encrypt Outlook e-mail to protect message privacy and prove to the message recipients that the message is from whom it claims to be from. Remote data wipe is also available should the device be lost or stolen.

Additionally, since the device is meant to function best with a Microsoft Exchange Server and it includes the Windows Mobile 5.0 MSFP, various security safeguards set by IT administrators through the Exchange Server can be applied to the Dash.

The T-Mobile Dash has impressive battery life with a little less than 11 hours of talk time, second only to the Nokia E62. T-Mobile estimates the device's standby time to be about nine days.

The Dash feels sturdy and durable the second you touch it. Its body is composed of two separate materials, not including its keyboard and navigation buttons: a black rubbery plastic that makes up the rear panel and battery door, and a silver metal plate on its face behind the keyboard and navigation buttons. More than half of the Dash's body is made of this rubbery plastic, which protects the device by absorbing shock and making it slip resistant.

The Dash accesses T-Mobile's GSM/EDGE network, which means it is a "world phone" that functions not only in North America, but also in Europe and Asia. Because 90 percent of Morrison's smart phone users travel overseas regularly, GSM phones are a necessity.

The Dash is the only device included in this evaluation that supports Wi-Fi (IEEE 802.11b/g compliant). None of the CIOs who participated in this review required Wi-Fi support for smart phones deployed across their enterprises, but users who travel outside of T-Mobile coverage areas, or who wish to save on data charges, will value Wi-Fi on the Dash. (Note: Wi-Fi drains device power, so the Dash's overall battery life will be affected by Wi-Fi use.)

We appreciated the Dash's dedicated e-mail key, which is meant to bring users to the device's e-mail

inbox with a single click from any application. (The Nokia E62 has a similar key.) Business users who employ their devices mostly for messaging will appreciate this fast and easy access to e-mail.

T-Mobile's myFaves plan (which starts at $39.99) lets you select five people for unlimited calling. When you click on one of your myFaves, a screen displays that person's name and contact information and lets you make a call, send a message, share a photo or send a voice note.

The Dash also includes out-of-the-box support for AIM, Yahoo Messenger and ICQ instant-messaging services.

And on the flip side ...

<< T-Mobile Dash: Bottom Line | T-Mobile Dash: What We Didn't Like >>

Choose a section ⊕

T-Mobile Dash: What We Didn't Like

The T-Mobile Dash has a full qwerty keyboard. However, due to the tiny size of its buttons and the minimal space between keys, the keyboard was difficult to use. It was frustrating; we frequently depressed two or three buttons when trying to push only one. Morrison called the Dash's keyboard its worst feature and said she'd avoid typing messages on the device due to its cramped keys. Business users seeking a device with a full qwerty keyboard to frequently type messages will want to pass on the Dash, unless they've got very tiny fingers.

The Dash's UI is somewhat awkward. With its five-button navigation mechanism—which like the Treo 750 is composed of one "action" or "enter" button surrounded by "up," "down," "left" and "right" keys—we often had to click through multiple screens to find an application. Because the Dash runs on Windows Mobile, navigation is largely menu-based, beginning with the Start Menu for the majority of applications. That means users often must click through multiple levels of menus. Morrison, who is used to her BlackBerry's icon-based navigation, quickly became frustrated with clicking through multiple screens to find what she wanted. She also missed a track wheel or trackball feature that would've cut down on the number of times she had to click the device's navigation buttons.

Stacey Morrison, Aerospace Industry Deputy CIO

With its ClearVue suite of office applications, the Dash can view Word documents, Excel worksheets, PowerPoint presentations and PDFs. However, you cannot make changes to documents using the Dash. Fortunately, none of the CIO reviewers felt document-editing capabilities were required for corporate smart phones.

The device should be a breeze to link to Microsoft Exchange Servers for access to Outlook e-mail and calendar information, but setup could be less than simple depending on your organization's Exchange settings, firewalls or additional security measures. Furthermore, your organization must have a Microsoft Exchange Server or Good server to link the Dash to Outlook or Lotus Notes corporate mail accounts. Due to a setting in her Exchange server that doesn't allow for wireless synchronization, Morrison was unable to wirelessly access her Outlook mail or other information. She was, however, able to sync Outlook e-mail from her PC via USB connection.

The Dash accesses T-Mobile's GSM/EDGE network, which means it is not a true third-generation (3G) phone. T-Mobile's EDGE network gives users download speeds of up to 168Kbps, the company claims. T-Mobile USA doesn't currently offer a 3G network like Cingular's Universal Mobile Telecommunications System (UTMS) network or its faster high-speed downlink packet access (HSDPA) network, which offer average download speeds of 220 to 320Kbps and 400 to 700Kbps, respectively. If your users frequently download large files, or need to search the Web while on a phone call or send an e-mail message during a conversation, you may want to invest in a 3G device.

The Dash has a digital camera and expandable memory. It cannot be disabled by IT administrators.

One of our least favorite features of the Dash was its Volume Touch Strip, a small section of plastic that's used to turn the device's volume up and down. You can set the Touch Strip's "activation speed," or how hard you must press it to activate the control, and its sensitivity—how hard you must press it to adjust volume—but it was frustrating no matter what the settings. Our biggest complaint is that you almost always have to remove the phone from your ear and look at the screen to see if the Touch Strip is activated before you can make volume adjustments. Doing so interrupts calls. When the strip's activation speed is set to very slow, you have to push your finger on it repeatedly to register the command, and when it's set to "very fast," you can't hold the device in your palm without the Touch Strip being activated. There are three settings in between for both activation speed and sensitivity, but we had trouble finding a balance between the two, and decided to disable the control completely to avoid further frustration. We couldn't adjust call volume after the strip was disabled, but this didn't bother us too much because we just turned the volume up to its maximum level.

We also missed the presence of "convenience keys," or keys that are specifically meant to launch your most-used applications. Two of the four devices we reviewed have these buttons, which we appreciated particularly because we could set frequently used applications to the convenience key and eliminate the need for device navigation.

Finally, we know it's never intelligent to judge a book by its cover, but that doesn't mean it never happens. The fact that the T-Mobile Dash looks very much like a consumer phone—with keys that glow bright blue when activated, rounded shape and rubberized body—may turn off business users. If you want your business device to reflect its purpose, you may want to go with a less flashy phone.

Check out our additional review sections to learn how the Dash measured up to the Nokia E62, Palm's Treo 750 and Research In Motion's BlackBerry Pearl.

<< T-Mobile Dash: What We Liked | Executive Summary >>

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Executive Summary

We handpicked four of today's hottest smart phones—the Nokia E62, RIM's BlackBerry Pearl 8100, the T-Mobile Dash, and Palm's Treo 750—to judge how well they satisfy the needs of IT executives and business users. While each has compelling business-oriented features, your budget and project schedule probably limits you to one. See which phone gets our nod.

We set five main criteria in examining smart phones appropriate for corporate deployment or personal business purposes: phone features (including voice quality), Web access, e-mail and messaging options (with associated security safeguards), productivity applications and battery life.

The BlackBerry Pearl and Treo 750 offer the best phone feature sets of the devices we reviewed. On top of basic phonebook functionality, both the Pearl and Treo 750 have easy-to-use voice dialing options and simple one-button access to contact lists. The Treo also offers a cool option that lets you ignore a phone call and reply with a text message—with only two clicks from its home screen. We liked the Treo 750's touch screen and stylus combination best for typing messages or entering Web addresses, but the Nokia E62 was the most functional for typing via keyboard.

As far as voice quality goes, the Treo 750 consistently provided the clearest call quality, with the Nokia E62 close behind. On calls from the Houston and Boston areas, the Treo sounded crisp and clean with little feedback. The Nokia E62 also had great call quality from the Chicago and Boston areas, but we noticed a slight buzz whenever we used the device for an extended period of time.

The Treo 750 is the only phone we reviewed that is a true 3G device. Because it accesses Cingular's GSM/Universal Mobile Telecommunications System (UMTS) network, average download speeds are 220Kbps to 320Kbps. Cingular's UMTS network offers data transfer speeds that can double those available via Cingular's or T-Mobile's EDGE network. Though we didn't find the Treo's data transfer speeds to be far speedier than those available via EDGE, it was clearly faster, particularly when accessing sites with minimal graphics or images. We also liked that the Treo lets you place a phone call when browsing the Web, and send e-mail while on a call.

On the Web side, our favorite is the Nokia E62's default HTML 4, WAP 2.0 Nokia S60 browser. The application has unique features we took a liking to, including a cursor that lets you click anywhere on a webpage, and a "back" function that displays tiny screenshots of your last viewed pages.

For organizations that already have a BlackBerry Enterprise Server (BES), the Pearl is (unsurprisingly) easiest to get up and running on corporate networks. If you've standardized on Microsoft Exchange Server, both the Treo 750 and T-Mobile Dash will be the simplest choice (though you may need to upgrade your Exchange Server for the coolest features to work). However, the device with the most out-of-the-box options for corporate e-mail and calendar setup is the Nokia E62, no matter which mail server your organization employs; it has multiple methods of linking to Outlook or Lotus Notes accounts, via its Mail for Exchange, BlackBerry Connect, Cingular Xpress Mail and Good Mobile Messaging solutions.

The security safeguards for smart phone users rely heavily on the enterprise mail server and other infrastructure. A variety of security options are available to BlackBerry users with the appropriate BES in use, including safeguards to disable, say, the digital camera on the Pearl. The T-Mobile Dash and the Palm Treo 750 run on the Windows Mobile 5.0 operating system, and rely largely on Microsoft's Messaging and Security Feature Pack and Microsoft Exchange to set security policies.

Our top choice for office productivity tools is the Nokia E62, as it enables users to view Word and Excel documents, PowerPoint presentations and PDFs. E62 users can also edit Word, Excel and

PowerPoint files; it is, in fact, the only device we reviewed with PowerPoint-editing functionality.

The battery lives vary widely. At the top of the list was the Nokia E62 with a whopping 12 hours and 45 minutes talk time, followed by the T-Mobile Dash, which clocked in at nearly 11 hours of talk time. The Pearl also had impressive talk time, at just under eight hours and 30 minutes, while the Palm Treo had a meager three hours and 30 minutes.

While your personal needs and your company's deployment concerns will vary, if we had to vote with our own checkbooks for a business-class smart phone, the Treo 750 is our winner, with the Nokia E62 just a notch behind. Typing functionality, voice quality and Web features are arguably a smart phone's most important features. For us, what sets the Treo 750 apart from the others are its touch screen and stylus, high voice quality and 3G capabilities. You can type messages faster and hear calls better, as well as access webpages and download files more easily and in less time than any other device we evaluated. It's that simple. The E62's full qwerty keyboard was its main draw, and if we preferred to type with a keyboard instead of a stylus, we would've been hard put to pick a victor—though the E62's large size would have helped. The Treo 750's weak battery life will certainly scare off some users, but we're willing to carry around an extra battery and charger in exchange for the above-mentioned benefits.

Read the full reviews for the reasoning behind our decisions.

<< T-Mobile Dash: What We Didn't Like | Feature List >>