

REAL WORLD

CASE Best Buy, Med Star Health, and Unifi

The Challenges and Benefits of Wireless Mobile Applications

Double agents 340 patrols Yonkers, New York and surrounding areas looking for spyware-infected PC's and crashed hard drive. Within close reach rests his indispensable weapon, a pocket PC phone that serves up a wealth of information and connects him wirelessly to the headquarters IT systems.

The agent is Cristian Luzbet, dressed in a black and white ensemble with a matching breakaway tie, and he works for the Geek Squad, a 24 hour response unit that offers computer and networks support for home PC users or businesses without an on-site IT staff. Luzbet has worked two years for the Geek Squad, a division of electronics retailer Best buy, earnings him silver a badge that he proudly displays over his belt buckle. Luzbet drives one of the Geek squad's signatures black and white Volkswagen Beetles. His Geek mobile, as the cars are called, is loaded with hard drives, wireless cards, and routers. But you won't find street map books, computer manuals, or paper stacks of customer orders. All the information Luzbet needs he can get with his combo running Windows Mobile 5.0, which retails for about \$450. Using Internet Explorer, Luzbet can link directly to Best Buy's order system.

Best buy has about 12,000 agents like Luzbet nationwide driving Geek mobiles and answering receiving calls every day. Using their mobile devices from either Sprint or Verizon Wireless, they log on to the order system, where they can adjust price quotes if necessary, enter credit card information, compose payment receipts, and complete the transaction on the spot.

Agents connect wirelessly through sprint's EV_DO third generation cellular networks, one of the fastest available, and have complete Web browsing capabilities. "That sure beats asking the agents to carry laptops just for Web access," says Best Buy senior VP Sean Skelley.

Most agents services about three customers a day, with distances that can run 40 miles or so between customers. Luzbet accesses Google and Yahoo maps on the Web with his pocket PC to look up directions to customers homes. "It wasn't always this easy," he says, referring to the days when the agents had to call Best Buy's dispatchers on a cell phone to get step-by-step directions.

But for the Geek Squad, mobile devices present some challenges. "Typing on our Pocket PCs small slide out key board isn't as easy as on a full size keyboard," Luzbet says. That's why the agents often use handwriting recognition software to take notes on their Pocket PCs, such as the type of



services they perform at each customer site. The agents then input the notes directly into Best Buy order system, so the next time an agent gets a service a call from a customer, he or she can refer to notes from previous visits and review past problems. In the past, agents had to wait until after service call to type up their notes. "That's 10 to 15 extra minutes that could have otherwise been used to help the customer," Luzbet says.

While Best Buy has found a way to sidestep the problem of tiny keyboards, it isn't content to stop at handwriting recognition software. The Geek Squad is testing voice recognition software that lets agent's open and close orders and auto dial phone contacts through voice commands on their Pocket PC wireless devices. If the test is completed with flying colors, Luzbet will have an easier time keeping orders flowing and his hands on the Geek mobile.

On one recent services call Manhattan, a customer had trouble viewing Web pages on his laptop and couldn't get rid of a screen saver that came on every few minutes. Luzbet used his Pocket

PC phone to log on to Best Buy system and look up the customer's previous services calls, and discovered he was using an outdated version of Windows. Luzbet spent about 25 minutes with the laptop, adding and removing programs and accessing Best Buy's order system to his notes. He the adjusted price quote, processed the order, and e-mails the customer a copy of receipt, with enough time to spare for some lunch before his next service call.

Many businesses such as Best Buy that provide or manage mobile devices for accessing company information find that it's worth incurring the cost and time it takes to develop software that specifically support their business instead of buying one of thousand third party off the shelf software packages available. "An application to open and close orders sounds simple," Best Buy Skelley says, "but you won't believe how much more efficient it make the Geek Squad."

But Best Buy and other companies have found that there are a lot more developing business apps for mobile devices then fitting their displays on a small screen. Wireless carries and device makers want us to believe that the high speed, third generation cellular networks now available will make it easy to extend applications access to customer records, inventory management apps, and videoconferencing from PDAs and cell phone is far more complicated than wireless broadband boost.

A worthwhile mobile application isn't just shrunken version of a desktop one; it has to be formatted for display on device and easy to use without standard keyboard. While PCs are similar enough to make one size fits all desktop software, mobile devices come in all shapes and sizes. So software that works effortlessly on a Pocket PC with a touch screen could be unusable on a cell phone with a numeric keyboard.

MedStar health is facing those problems. The health care company's IT department supports thousands of doctors and nurses who use BlackBerrys, pocket PCs, Palm Treos, and other devices to access patient records lab images. Medical practitioners like to pick their own devices, and since there's no clear technology leader, there's not a great case for MedStar IT to push for a standard device. There's no perfect device," says Dr. Sameer Bade, MedStar's assistant VP of clinical IT strategies. But the freedom of choice approach makes difficult for the IT staff to keep up with new models and ensure that they're compatible with the company's application.

In some cases, businesses have the motivation and resources to collaborate with vendors to develop mobile software. There's what MedStar did with Siemens Medical Solutions on PDAAccess, software that lets medical practitioners access patient information from a Siemens invention main frame using PDAs. A business that insists on not sacrificing any functionality when developing a mobile app may be packing its IT department into a corner. "It may not be necessary for entire application to be ported to a mobile device structure-only those parts that drive the most value", says Ben Holder, VP and CIO of Unifi. The textile manufacturer used that approach when porting a custom-built IT services and support application to staffers PDAs.

Also developing mobile software that can access company applications typically requires middleware, such as Research in Motion's Mobile Data System or Sybase's. Any where division's Mobile Solutions, which synchronize data between back end systems and the devices.

Business software vendor including PeopleSoft, Salesforce.com and Siebel Systems offer mobile versions of their applications, but they typically don't include all the functionality of the desktop versions. About 60 percent of businesses running the BlackBerry Enterprise Server deploy apps beyond e-mail RIM says. More than 280 RIM partners have developed business application to run on the BlackBerry. Microsoft says in windows mobile 5.0 operating system supports about 20,000 off the shelf apps.

But often the functionality of these applications doesn't match mobile workers dreams. So off the shelf is often just the foundation. It's up to the IT staff to do the patchwork and integration for the various front-end and back-end applications involved in a development. It's usually a big effort to make an application small.

CASE STUDY QUESTIONS

What are the business advantages and limitations of the Best Buy Geek Squad's use of their wireless Pocket PC mobile devices? How have they overcome the limitations of their mobile devices?

Business Advantages of the Best Buy Geek Squad's Use of Their Wireless Pocket PC Mobile Devices:

- It connects wirelessly to best buy's IT and ordering system
- It also has web browsing capabilities, for access to Google and yahoo maps
- Handwriting recognition software bypasses small keyboard problem
- Voice recognition is being tested
- Provide all the information needed with running window mobile 5.0
- With the help of mobile devices they log on to the order system, where
 - -prices can be adjusted,
 - -edit credit card information,
 - -compose payment receipt and
 - -complete transactions.

Limitations

- Lack of application software
- Reduced functionality of software that exists
- Require middle ware to synchronize data between back-end systems and the devices
- Applications don't always meet workers need
- Typing on our PC's small slide out keyboards isn't as easy as on a full size keyboard

Limitations of mobile devices are overcome by

- Software are designed specifically to support their devices that help running in their business
- To overcome the difficulty of typing the agents often use hand writing recognition software to take notes on their pocket PCs. The agents input the notes directly in to the order system ,so that next time when agent gets a service call from a customer, he or she can refer to notes from previous visits and review past problems

What are the software development challenges of wireless mobile devices? How are Med Star Health and Unifi meeting those challenges?

Software development challenges:

- Software that works effortlessly on a pocket phone with a touch screen could be unusable on a cell phone with a numeric key pad.
- Mobile application should not be just a shrunken version of a desktop one
- Freedom of choice approach made it difficult for the I.T staff to keep up with the new models and ensure that they are compatible with the company's applications.

How challenges are met:

- In order to avoid the shrunken version of desktop it has to be formatted for display on a mobile device and easy to use without a standard keyboard
- Medstar collaborate with Siemens medical solutions to develop mobile software that let medical practitioner's access patient information using PDAs. Only those parts that derive the most value are ported.

Why don't the companies in this case use some of the thousands of software packages available for their wireless mobile devices? What are the advantages and limitations of this approach?

Why not using the software package available

- Company can easily remove the errors in their own self created software.
- It makes the company more efficient.
- It's worth incurring the cost and time it takes to develop software that specifically support their business instead of buying one of thousand third party off the shelf software packages available.

Advantages

- Easy to extend application

Limitations

- Mobile application has to be formatted for display on the mobile device and to use without a standard keyboard
- It is more complicated than a wireless broad band boost.