Anywhere Computing:

How Mobile Apps are Changing the World

by Jesse Cryderman, Associate Editor

Despite economic downturns, natural disasters and pervasive political punditry, those with a modicum of digital savvy have been able to use technology to make significant improvements to their personal, family and business lives. Tasks that once required a phonebook, a licensed detective and a private satellite are now within the reach of most working people in most developed (and many developing) countries. Whether locating a lost child or a lost phone, planning a wedding, or managing a salesforce, to quote one of the first iPhone ads, "there's an app for that." And apps are no longer just fancy music

> "Location-based apps are redefining what is possible—and expected—from handheld applications."

players or the first three letters of Apple.

Capitalizing on the hardware specs and new features in today's smartest phones, app developers are releasing new software that dramatically enriches the mobile experience in ways that were impossible five years ago. Today there are so many apps that navigating the App Store or Android Market is a chore in itself. And since mobile no longer just means cell phones, app developers are stretching out into hotrodded platforms like tablets, which have hardware specs and screen sizes that allow for much more functionality.

Location, Location, Location

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GPS chips are in most phones now, and they enable all kinds of amazing location-based apps that go beyond simple navigation and mapping. MyGeoReader takes navigation several steps further by turning a handset into a virtual tour guide. Location-based alarm clocks, like Bus Snooze GPS Alarm by Finko, allow a traveler to really relax without worrying about missing a stop. And GPS-driven planner apps like iQulabs remind@ alert the user to important location-based tasks: "don't forget to pick up flowers for your girlfriend when you approach her place."

Location-based realtime couponing is still in its infancy, but apps like Poynt promise to offer up relevant incentives to stores, restaurants and entertainment in your vicinity. Games have taken advantage of GPS too, like Parallel Kingdom, "a mobile location-based massively multiplayer game that uses your GPS location to place you in a virtual world on top of the real world."

Healthcare

"During health emergencies, rapid realtime response can mean the difference between life and death." Such dire warnings are the marketing meat for apps like BoBo alert, which offers fast and convenient

> "Tethering apps are very convenient, especially for travelers who are familiar with steep one-time wireless rates."

access to the most important medical information relevant to the safety of a child, and Nimble EMR (iPad), a software-as-a-service application that helps doctors manage their workflow. But cooler apps are just around the corner. At 4GWorld 2010, Sprint's Bob Azzi displayed video of a brainscan-sharing app that allowed a specialist to manipulate and comment on a patient's 3D brain scan while on vacation. In the U.S., all health records are to be digitized within four years, so there will be considerable development in this app arena in the coming years.

Tethering

While some newer phones like the HTC Evo 4G have a built-in capability to share their data connection with other devices, most do not, opening the door for tethering applications. There are many apps now that effectively turn a handset into a wireless modem.

> **"Development of enterprise-level apps will likely prove to be big business in coming years."**

One option is PdaNet by June Fabrics, available for all platforms, including Palm, Blackberry, Windows Mobile, Android, and iPhone. (Currently the only way to activate tethering on an iPhone in the U.S. is by purchasing monthly tethering service from AT&T or to jailbreak the handset and install a third-party tethering app.) The free version of PdaNet eventually blocks access to websites that require a login, but still allows general surfing.

Tethering apps are very convenient, especially for travelers who are all too familiar with the steep one-time wireless rates in airports and hotels. And for those who work from home, they are wonderful backup tools in the event of a home internet outage.

Utilizing the Cloud

Cloud computing can and will dramatically expand the mobile universe. Why store and manage large amounts of data and obtuse applications on a phone when you could pull it from the clouds? Cloud computing has made the leap to mobile platforms with mobile apps like Dropbox (backup and storage), Spinlet (cloud-based music archive and player), and Lotus iNotes (email/calendar/contacts). All the Google services-most of which are bundled with the Android-are essentially cloud applications, and new Windows 7 phones are bundled with Microsoft Office Mobile and SharePoint Mobile Workspace for cloud collaboration.

Free Voice

By now most people are familiar with Skype and Google Voice for their home computers, but how about using your handset to make voice calls without impacting your monthly talktime or data balance? The market is full of "over-the-top" apps that utilize

VOIP technology and a handset's Wifi capabilities to open the door to (sometimes) free calling, including Skype, Skuku, fring, Google Voice, and 3CX Phone. And traditional voice calling isn't the only service going over the top with apps; push-to-talk, or so-called walkie-talkie apps like TiKL are on the market that allow users to instantly talk to one or a group of friends or colleagues with the push of a button.

Mobile Recording/Music

Mobile devices that are powerful enough can host full-fledged recording and music production applications, turning life in a tour bus or on a train platform into creative renaissance. There are myriad drum machines and synths released by major hardware producers, like Roland/Korg, and many desktop programs have been reworked into mobile apps, like AmpliTube. In addition, new apps enable sound and lighting engineers to use tablets and faster handsets to control lighting and sound in realtime.

Remote Printing

"I forgot to print the report," will soon be an unusable excuse. Offering to print anything to any printer from a handset, apps like Roboprint (Android) and PrinterShare Mobile (Android, iPhone) enable users to print from nearby Wifi printers or any networked printer in the world with account access. Motorola recently announced development of a remote printing app, and other larger companies may follow suit, offering expanded features, but at a premium.

Mobile Payment and Processing

Mobile devices are the fastest vehicles in the drive to a cashless society. In many parts of the world, e-wallet and near field payment apps have revolutionized the way people do business. In fact, in some developing countries, the primary mode of banking is via mobile handset. In Vietnam, for instance, the Vinapay app for Android is "an easy, convenient and safe payment service for everyday transaction [sic]: transferring / receiving money, paying post-paid, prepaid bills, direct mobile phone topup in all Vietnamese mobile networks."

In the United States, e-wallets are not yet a reality,

and handsets are just beginning to be released with NFC (Near Field Communication) chips that enable near-field or swipe payment. However, many apps exist that turn a handset into a mobile payment processor. Apps like ePay and Intuit GoPayment can turn any garage sale into a credit-card accepting retail establishment. These apps either rely on a phone's camera or a Bluetooth swiper to capture credit/debit data.

Starship Enterprise

While functionality and security concerns have kept many larger business customers from deploying smartphones other than the Blackberry to manage mobile enterprise, this trend is starting to change, and savvy app developers are scrambling to create offerings that cater to this profitable and ripe market space. Apps like XORA GPS Timetrack "tracks the near real-time locations, speeds and stop times for your fleet using either hard-mounted tracking units or GPS-enabled mobile phones," and it integrates with payroll processing like ADP. There are also several

CRM clients and apps that offer SAP and Citrix integration. This area of app development will likely prove to be big business in coming years.

The Road Ahead

There are currently around 300,000 apps in Apple's App Store, and about 100,000 in the Android Market. This number is rapidly growing. As mobile devices become more feature laden and networks ratchet up their speed and capacity, many amazing new applications will be realized. 4G networks and higher-end phones will enable videoconferencing without WIFI and streaming HD video, realtime translation and facial recognition apps that auto tag and sort photos taken by phones with high megapixel (8+) cameras. These apps will likely be available by the end of 2011. Beyond that, virtual or augmented reality applications will become a reality in the next few years, yet again redefining the mobile experience. It's truly an exciting time for both users and developers of mobile applications.