Linux and Mobile Open Source

“With Android, open source is holding its own on the mobile front.”

by Pete Choppin

One of my many varied tasks at work is the management of all mobile phones and devices. To keep my sanity, among other things, I try to keep our list of approved devices to a minimum. But already, our users are asking about the Motorola Droid, the Android and the iPhone. I can hardly blame them. Our mobile world is only expanding and everyone is looking for the coolest and newest devices.

And while Microsoft is finally getting a clue and incorporating its Zune media playing and Xbox game capability into its new Windows Mobile, mobile Linux is making its own improvements.

From our users' perspective—and quite frankly, from mine—there really hasn't been a viable open source platform for mobile devices that can be called "market ready." Sure, there was the Yopi device in the late '90s that was based on Linux, and we can't forget the famous Compaq iPAQ Pocket PC that had a Linux build floating around for a while. These and other attempts to use open source to power a device for public consumption just never took off. Until now, that is. Google's Android is, of course, open source and based on Linux. It is taking off in a big way, to the point that some people claim it will be the king of smartphones in just a few years, passing Windows Mobile, BlackbBerry and the iPhone.

Whether or not Android can pull that off is irrelevant. It has changed the smartphone landscape probably more than any open-source project has changed any other market. HTC and Motorola have jumped in with Android devices in a big way, as have other handset makers.

Where is Linux?

It makes you wonder why open source hasn't taken off as well in other areas, namely the desktop. Linux is a serious contender with real market share on servers and embedded devices like firewalls and routers, but when it comes to the desktop, you'd be hard pressed to find someone running Linux on their PC in your neighborhood. You may find a few that have it installed in a virtual machine or in a multiboot situation (I'm guilty here), but probably not too many who use it exclusively, or even primarily. Even open-source application software such as OpenOffice.org hasn't made that large of an impact.

Part of the reason for this may just be expectations. People expect to be able to run certain pieces of software. iTunes, Quicken, Office and Photoshop are just a few examples. You can generally load these onto a Mac or Windows PC with no problem. There are open-source alternatives to many of these that run fine on Linux, but they aren't the same thing—they aren't what people expect. People don't run Windows, they run *applications* and they want an OS that will support their apps.

The Mobile Phone Market

Conversely, there is the mobile phone market. People are used to getting a new phone every year or so and have come to expect it won't work much like their previous phone. It just needs to do what they are used to doing—making calls, storing contacts, e-mail, Web browsing, etc.

The cooler it looks, the better. Until the iPhone launched, third-party apps being installed on phones was a relatively minor phenomenon. Windows Mobile and PalmOS supported it, but you'd be surprised how many people never installed the first thing on those phones. I knew there were apps available for the Windows Mobile device, but personally, I felt it was too much of a pain. You have to get desktop connectivity software (Active Sync) to dock the device, or use a USB connection, and install apps from the PC side, so you still rely on the PC. The iPhone App Store changed all of that in 2008 and now everyone expects to be able to install apps on their phone.

Until there is a killer app that will keep people anchored to a single platform, a well-funded open source platform will thrive. I don't think there will ever be a killer app like that for phones. I think the only thing that will keep the number of mobile operating systems in check is the carrier's willingness to support them. The key players today are Symbian, Windows Mobile, BlackBerry, iPhone, WebOS and Android. Each is just as viable as the other. I personally think that is too many, but I'd wager that even if that amount was cut in half, Android would be one of them because of the advantages open source offers when it comes to flexibility and customizations, both of which are far more important on a phone than a PC.

The point is open source has, for now, a unique position in the mobile space. In just about every conceivable area, open source is a major player, keeping big boys like Microsoft and Apple in check. And that is a good thing.

Beyond Cell Phones

Talk has it that netbook manufacturers will offer Android as an alternative to the household staple from Redmond. It is too early to say whether the netbooks will stick as a viable platform, but Android would be a fantastic platform for netbooks.

Lightweight in hardware, software and inexpensive (free), an Android-powered netbook offers mobility, connectivity and capability. Application support, the challenge of most new platforms, is really not a problem. Just visit the Android Market where new applications are being launched daily by developers around the globe. Add a Terminal Services or Citrix client to Android so a business user can access the corporate network while traveling and you've got a great mobile platform for the entire market, be it a phone or a netbook. I also think Android also has a future as an embedded OS for appliances like printers and entertainment units, but let's save that discussion for another day.

Android is a Linux platform—great, but what exactly does that mean? Android runs atop a Linux kernel with a layered subsystem providing core computing services. Process and memory management are provided by Linux. User space applications are written in Java and even Android's built-in applications are written just like the applications developers write for the platform.

Is Android the perfect mobile software platform? Can it dethrone iPhone? Well, perhaps that is not a fair or even relevant question.

The first challenge for Android is to establish itself as a platform deserving to stay—and I think it has made very good strides in this direction thus far. If new devices rumored to arrive on the market actually show up and bring smartphone-like features to the masses, things are going

to be pretty exciting.

What all this adds up to is that even more Linux mobile devices like Motorola's Droid and Devour will be coming soon. In addition, you can expect to see a slew of mobile Linux-powered netbooks and the first samples of, yes, the Linux-powered answers to Apple's iPad tablet.

Android has shown that not only can open source be a viable platform, it can actually compete with the big players. Again, what I think is even more important is that open source developers understand that true innovation in computing is not restricted to private silos, no matter how big. They are opening up this platform to the broader community.

Linux and open source have always championed the idea of one well-supported, well-designed project that addresses cross-platform, cross-device and cross-architecture development. The fact that open source is holding its own on the mobile front is a good sign that things are moving in the right direction.