Will Google Unleash The Next Wave in Mobile App Innovation? *By Phil Hendrix*

Introduction

Since the mobile phone was introduced some three decades ago, there has been a remarkable, steady stream of innovations across the entire mobile value chain, from chipsets and standards to wireless networks, devices and applications. Until very recently, however, mobile apps were used and enjoyed only by the small segment of individuals technically proficient and tenacious enough to install and use.

With the iPhone and App Store, Apple has unleashed mobile apps to the general population, and adoption and use have exploded. Now open in nearly 80 countries, the App Store has attracted more than 35,000 applications, and in less than a year more than 1 billion mobile apps have been downloaded — a milestone that took iTunes more than 3 years to achieve. Apple's iPhone success has also attracted developers in droves — both existing and new — who are devoting more of their efforts to creating innovative new mobile apps. Competitors are rushing to emulate Apple's success and strengthen their own mobile app stores.

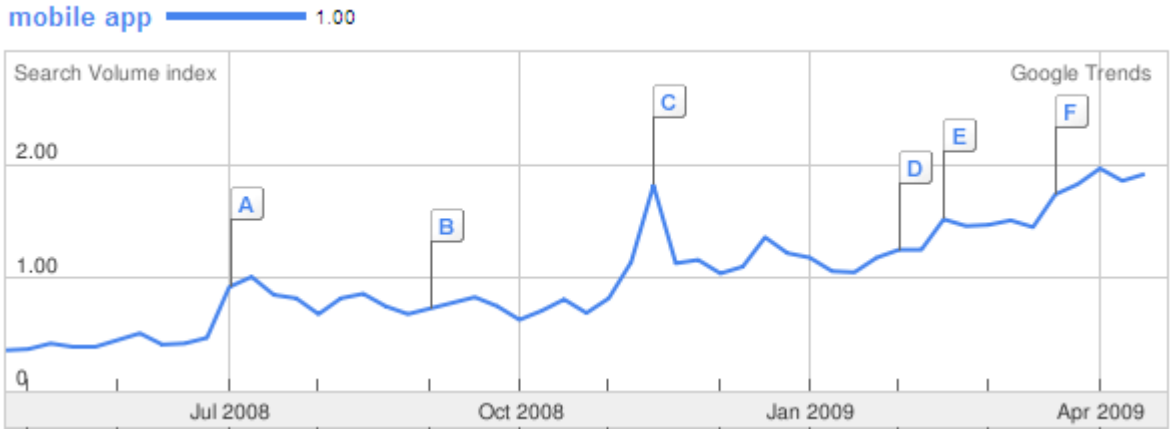
Shazam, the music recognition app, illustrates the impact that Apple has had on mobile apps. First introduced in 2002, Shazam, like many other mobile apps, languished for years, with few consumers aware of and even fewer accessing, installing, and using the service. Within six weeks of the iPhone 3G's launch, 1.5 million new users had downloaded Shazam from Apple's App Store. The fact that Apple featured Shazam in its advertising didn't hurt either. In the six months since, Shazam has been downloaded more than 35 million times. Small wonder that Chee Wong, Shazam's COO, calls the iPhone 3G launch the "moment of truth" for Shazam.

In a sense, then, Apple can be credited with unleashing the first wave of mobile app innovation. While few consumers were even familiar with the term a year ago, "mobile app" is now part of the vernacular of individuals young and old. Enter the words into Google, and results (below) show that the phrase has been indexed by Google in various forms nearly 400 million times. And this doesn't include the huge volume of search results for related terms such as app store (200 million), apstore (21 million) and others.

Figure 1: Google searches for app store-related terms

Source: IMMR Research

As more evidence that Apple has unleashed Mobile Apps, the search volume for the phrase Mobile App – according to Google Trends (visited on April 30, 2009) – has increased nearly six-fold in the last 12 months, and nearly doubled in just the last four months.



Apple has succeeded in part by reducing — if not entirely eliminating — the most egregious "frictions" that historically slowed mobile app innovation and adoption: cumbersome UIs (user interfaces) that made it difficult for consumers to install and use apps, closed operating systems that made it difficult for developers to produce scalable apps, and walled gardens that restricted consumers' choices.

With competitors rushing to close the gap with iPhone look-alikes and their own App Stores, it might appear as though Apple has found the key to unleashing mobile app innovation. Without a doubt, Apple has demonstrated the importance of four key prerequisites: findability, accessibility, usability, and cost. With competitors "raising their game" on these four dimensions, the rate of mobile app innovation will continue to advance.

What could lead to the next wave of Innovation in mobile apps, and who is likely to lead the charge? While there are many companies pursuing various paths, Google's strategy, investments and initiatives are fundamental and will likely stimulate the next wave of mobile app innovation. We also believe the next wave of mobile apps will swamp the first and reshape mobile, much in the same way that Wal-Mart fundamentally reshaped the retail landscape in the '80s.

This research note outlines Google's strategy to unleash the next wave of mobile innovation, particularly with respect to mobile apps. These efforts will create extraordinary new opportunities, not just for Google, but also for developers, OEMs, end-users and other mobile players. The changes that result also pose significant risks to legacy companies, who could be relegated to a supporting or niche role, or like the retailers who failed to adapt in the face of

change brought by Wal-Mart, disappear altogether. Of course, there is no guarantee that Google will succeed, but the logic of its strategy is sound, compelling and likely to unfold in some form.

Building Blocks of Google's Mobile Strategy

The three building blocks to Google's mobile strategy are well known, but worth recapping:

- Provide a new open operating system (Android) that (i) lowers the cost for mobile device OEMs, and (ii) makes it easier for developers to program innovative new mobile apps.
- Partner with leading OEMs to bring new devices to market with embedded Google Apps, especially Search and Gmail, but others as well.
- Enable developers to create new "killer apps" for mobile devices that take full advantage of the open OS and "work well together."

A Cheaper and More Flexible Mobile Operating System?

In November 2007, Google surprised observers when it announced that it was introducing not a mobile phone, as expected, but Android, "the first fully open, free and complete mobile [operating system], based on Linux." While the varying degrees of openness are hotly debated — even within the Linux community — Android offers four significant advantages:

- **Faster pace of innovation:** As open source, Android is designed to speed up innovation via third-party developers (TPDs). Recognizing the significance of TPDs, Nokia acquired the remaining assets of Symbian soon after Google's move and announced that it would make the Symbian OS available as open source.
- **Lower cost for OEMs:** The overall cost of Android is about 20 percent lower than that of a licensed operating system (Source: Google's Andy Rubin), which gives OEMs and operators an economic incentive to adopt Android-based devices.
- **Efficiency for Developers**: one report suggests development and emulator debug time with Android is less than half that of Symbian (Source: VisionMobile). For developers, time is money, and they are likely to "follow the money" and shift resources to developing for Android-based devices.
- **Scalability**: Designed for mobile devices with limited resources, Android may also be well-suited for other mobile devices, such as netbooks and MIDs (Mobile Internet

Devices), and other “appliances” in the home, such as set-top boxes. OEMs such as Samsung and Acer are evaluating Android for devices other than phones; if Android proves capable of supporting other devices, having a common, robust platform would make it an even more attractive OS for OEMs.

With more than 300 man-years invested in developing the new OS, Android clearly represents a critical building block in Google's strategy.

“Android Inside”

Rather than compete by producing its own mobile devices, Google has elected to work closely with handset manufacturers. To date, only one phone with the Android OS is available in the U.S. — the G1 by HTC, introduced by T-Mobile in the U.S. last fall. While reviews of the new device were mixed, T-Mobile has nonetheless sold more than 1 million G1's in less than six months.

Other Android-based handsets are in the pipeline, including the G2 by HTC, soon to be released by China Mobile and Vodafone, and other devices announced by Samsung, Acer and Lenovo. On its mid-April earnings call, Google reassured analysts that Android "would be highly successful" in 2009.

Developing and bringing to market a portfolio of new Android-based handsets has required more time than most observers anticipated. In hindsight, the challenges are obvious —OEMs produce handsets that operators will support, and operators are undoubtedly concerned about ceding search, LBS, and potentially other services to Google. As a result, Google and its OEM partners have had to work through negotiations and make concessions to reassure and gain cooperation from mobile operators. Despite the protracted dance between Google, OEMs and operators, at least half a dozen Android-based handsets should be available by fourth-quarter 2009, and by mid-2010 most operators are likely to have at least one Android-based handset in their portfolio.

By employing a strategy analogous to Intel's highly successful "Intel inside" model, Android-based handsets should be widely available globally in less than 18 months, giving consumers the

choice of a wide range of devices at various price points from leading OEMs, without requiring that they switch mobile service providers. Over the long term, this "Android inside" approach is likely to position Google well.

Of course, merely having devices with a new OS and the Google logo aren't enough to compete with Apple or even other OEMs. Much of the success of Google and its OEM partners will depend on their ability to match the user experience — of both the device and App Store — at which Apple excels. With information beginning to trickle out, there is a great deal of excitement about the G2, Samsung's Magic, and other devices in the pipeline. We also expect Google's App store to grow over time and eventually reach parity with Apple's.

Open Source = More "Killer Apps"?

Every platform and service provider — Apple, Microsoft, Symbian, RIM, Nokia, Qualcomm, and all the mobile operators — is competing fiercely to attract mobile developers and bring innovative new apps to its customers. Which platforms will be most successful in attracting and generating support from innovative developers?

Developers evaluate competing platforms, form allegiances and decide how to invest their time and resources based on a number of criteria, including:

- **Size and growth of the market served by the platform:** Traffic, trial, adoption and "prominence of placement" all play an important role. Here, Apple has tremendous momentum and is building significant first-mover advantage among third-party developers.
- **Margins and economics:** In other words, "How much money will I make selling an app on platform A vs. B?" Google has said that it will not take a cut of revenues from apps sold through its app store, which should increase the margins available to TPDs.
- **Programming efficiency:** As mentioned earlier, time is money for developers, and this appears to be a strength for Android.
- **Support for developers:** Technical support, but increasingly recognition, prize money, and marketing for innovative developers play a key role in attracting and retaining developers.

- **Flexibility:** The extent to which the platform's SDKs, APIs and other aspects "unconstrain" developers and enable them to build innovative, compelling new apps.

On the last criterion, open source platforms — like Android — offer significant advantages for developers and end-users. Among other things, Android allows applications to run in the background and "hook into other apps" so that they work together. As Shazam's Wong observes, "the [iPhone environment] is a delight to work in, but it's very closed — an app like Shazam [has to] live on its own."

Whether Android's OS will enable developers to create "killer apps" that are either impossible or difficult to implement on other OSes remains to be seen. And other platform developers, particularly Apple but also Palm with the Pre, aren't standing still; the excitement among developers around Apple's recently announced iPhone 3.0 SDK, announced mid-March, was palpable.

We believe that over the next 6-9 months Apple will continue to gain momentum and widen its lead in the competition for developers and mobile app innovation. However, Google's open platform — along with the capabilities described next — positions it to attract developers, enable innovative new mobile apps, and eventually close Apple's lead.

How Google Will Spawn the Next Round of Mobile Innovation

Moving Mobile Applications to the Cloud

Ask a group of consumers about cloud computing, and they are likely to respond with blank stares. Pose the question differently – for example, "do you use any online applications, like Facebook or Gmail? Do you store any documents or photos online? etc." — and many are likely to say "yes!" Mobile apps that reside "in the cloud" — also called web or browser-based apps — are beginning to appear, although few consumers understand the concept, and even fewer appreciate the value.

Mobile apps that reside in the cloud offer numerous advantages to mobile developers and consumers alike:

- **Freshness:** Cloud solutions give users access to the most up-to-date version of apps, without requiring users to worry about downloading, upgrading, migrating, etc. It is also easier and cheaper for developers to keep subscribers' apps updated, enabling a more consistent user experience.
- **Security:** With apps and content stored "in the cloud," the risk of losing data, time and productivity are largely eliminated. If an individual loses his or her mobile device, he or she can quickly resume "communicating" with immediate access to his apps and content on a replacement device. Cloud platforms also offer authentication and enterprise-grade security, reducing risks from hackers, viruses and malware.
- **Sharability:** Content stored in the cloud is more easily shared with others, which is especially useful for user-generated and social media, much of which is generated from mobile devices. Hence, the success of Flickr and other photo-sharing sites.
- **Resources:** Instead of running apps on small handheld devices with limited processing power and memory, cloud-based solutions utilize more powerful platforms with virtually unlimited memory.
- **"Write once, run anywhere":** Because they can be accessed from the browser, cloud-based apps circumvent the costly and arcane need for developers to customize and tailor their mobile apps for various platforms.

Google is at the forefront of bringing the cloud to developers and consumers. Some Google Apps – such as the photo-sharing platform Picasa and Gmail – have already gained wide acceptance among consumers, while others – like the long-rumored GDrive, which is intended to store "100 percent of users' data" – are in varying stages of development.

For developers, Google is also expanding its Google App Engine, which one reviewer called "one of the best designed development environments." While not without concerns and drawbacks, cloud-based platforms and solutions will dramatically accelerate development and adoption of powerful, innovative new mobile apps. Despite concerns about Google's growing power, the fact remains that it is one of the most trusted companies in the world — this is an invaluable asset as consumers evaluate the reliability and security of mobile apps and content that reside "in the cloud."

Persistent Mobile Apps

Cloud-based solutions are quite useful as long as one has access to the Internet, either via mobile broadband or a Wi-Fi connection. Unfortunately, when access isn't available or the connection is lost – not uncommon with mobile devices – one is "dead in the water," unable to run apps or access content. More than any other issue, the potential for disruption discourages consideration and slows adoption of cloud-based Mobile Apps. Google is addressing this issue with Gears, which in essence gives end-users access to Google apps, even when offline.

In addition to providing offline access, apps using Gears also open and run faster, as a portion of the data is cached on the device. Google just announced an update of Gmail for the iPhone and Android devices; using Gears, the new Gmail allows users to view their inbox, read and file messages, and write a reply without being connected to the Internet. The messages are sent once the end-user reconnects to the Internet.

At present, Google's new "persistent Gmail" works only on the iPhone and Android-based devices. However, the impact of Gears and persistent apps cannot be overstated – in effect, persistent solutions combine the best of the mobile Internet with capabilities that reside on the device. Integrating this capability into other apps will accelerate the adoption and deployment of cloud-based services, delivering on the promise of the benefits outlined above.

It is also important to note that (as example of Gmail for the iPhone shows) Google's cloud-based services and, conceivably, even future applications using Gears for persistent mobile applications aren't necessarily restricted to devices running Android. Thus, Google stands to gain on an even larger scale as these capabilities become available on other devices.

Conclusion

In this research note, we've outlined elements of Google's vision and strategy to unleash the next wave of mobile app innovation. There are other Google initiatives that could be equally, if not more important, including voice recognition for search and navigation; integration of Google Maps into applications; etc. As noted earlier, Google has said that it will not take a cut of revenues from apps sold through its app store. So how does it intend to make money if it should

succeed with any or all of these initiatives? Developing new ways to monetize Mobile Apps may be Google's most significant innovation, as discussed further in an upcoming research note.

About immr

Dr. Phil Hendrix is the founder and director of immr, a research and consulting firm that works with market leaders and startups to help them understand customers' needs, verify opportunities, bring innovative new products and services to market, and create distinctive customer experiences.

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