Technology Brief...

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INSIDE THIS ISSUE

The Next Great Smart Phone Battle – Network Efficiency

Making the Case for a Smart Phone Benchmark

The newly implemented commodity-based wireless carrier pricing plans are likely to ignite a marketing war among smart phone vendors. In a move to lower the total cost of ownership (TCO) for data-hungry users, vendors may soon shift to defining their data efficiency quotient – that is, how much data traffic they actually use for messaging, surfing, etc. This is important as it relates to two critical issues facing the wireless market. The first issue relates to the cost of service plans and data limits for end users. If I use less data per page view on my device, I can either view more pages per month for the same cost or I can go with a lower quota and a cheaper data plan. This is a major component of a user's TCO for any smart phone device. The second issue is carrier infrastructure related. Carriers may favor more data efficient devices as well, as it allows them to have more users on-line at the same time without degrading performance. Further, it may enable them to reduce costs of operations and make more efficient use of existing infrastructure, while at the same time increasing end user satisfaction (a key carrier Achilles Heel, as the iPhone proved all too well).

"…In a move to lower the total cost of ownership (TCO) for data-hungry users, vendors may soon shift to defining their data efficiency quotient – that is, how much data traffic they actually use for messaging, surfing, etc… To level the playing field as much as possible, the industry should quickly create a Smart Phone Benchmark (SPB)...."

So, will smart phones soon be marketed with the equivalent of the MPG rating on cars or Energy Star rating on appliances? They may very well be in the not too distant future. At the very least, vendors should indicate their compression ratios and other pertinent data transmission reduction strategies for their devices. As examples of this approach, Opera browsers do this as part of their market differentiation strategy, and RIM has been doing this with BlackBerry messaging for years. But although BlackBerry does a good job of very efficiently using bandwidth, the message has largely been lost on users. Given the new commodity pricing of wireless data plans, it's time for the industry to revisit this bandwidth reduction message. But vendors should also include the popular new forms of interactions like Facebook access and media streaming in addition to the traditional messaging functions when determining their efficiencies.

To level the playing field as much as possible, the industry should quickly create a Smart Phone Benchmark (SPB), much as has existed in the PC industry for years. While no benchmark is perfect, it could be used to measure the relative performance of the various platforms (e.g., BlackBerry, Android, WebOS, iPhone, WP7, Symbian) and provide consumers with a measurement of device efficiency. We should expect to see a wide variance between OSes, NOC-centric

implementations, and perhaps even within different implementations of similar devices (e.g. different vendor's Android implementations). But a Smart Phone Benchmark would be a major step forward in allowing consumers, and indeed the entire industry, to evaluate true life cycle TCO of a device based on a mix of messaging, web browsing, etc. No doubt the SPB would have to be somewhat subjective in the mix and types of data it measured, but since it would be equally applied to all devices, it would provide a valid comparative number that could be used like MPG or Energy Star ratings to give consumers the ability to judge how their data usage (and costs) would be affected. Yes, individual mileage will vary based on usage and vendors may try to manipulate the results for their own gain. But having an objective rating, even one that is somewhat flawed, will be much better than not having one at all.

SPB could be developed very quickly and could be implemented just as quickly. But it likely won't happen unless there is user demand, or is driven by one of the large industry organizations like CTTIA, which is highly unlikely. The best approach would be for all the major vendors to come together and agree on a realistic SPB. But it's unlikely that they will do so anytime soon. What could be equally as useful to users would be for one of the major smart phone players to produce a realistic and publicly disclosed SPB and make it available on multiple platforms and across all carriers. Perhaps Android or BlackBerry could provide such a valuable service to the industry.

Bottom Line: An SPB would be an important and useful tool for smart phone purchasers as well as for carriers. It would be relatively simple to implement and deploy and could provide users with a true measure of lifecycle costs. However, it remains to be seen whether or not the industry has the vision and customer focus necessary to make this happen.

The Battle for Enterprise Mobile Dominance

There is a large scale battle taking place currently that could signal which smart phone OS will win the hearts and minds of the enterprise users. Indeed, the popularity of "user liable" devices and the ensuing infiltration of iPhones into enterprise territory previously dominated by BlackBerry has given rise to speculation that BlackBerry is in decline. Couple that with an expected rise in popularity of Android-based devices and the diminishing prospects for Windows Mobile and Symbian, and all this leaves companies wondering if the battle for the enterprise is over and BlackBerry has lost.

"…There is a large scale battle taking place currently that could signal which smart phone OS will win the hearts and minds of the enterprise users… We believe the question of who wins the enterprise in the long term, Google, iPhone or BlackBerry has to be evaluated on a number of factors……."

First, the best device for the task at hand often has to do with whether or not companies deploy their apps in the cloud or as thick applications resident on the device. Android is likely to win big if companies deploy to the cloud. "All apps working in the cloud" is Google's stated strategy. Even iPhone wins if all things go to the cloud or are provided as "Software as a Services (SaaS), although iPhone does support thick apps. But not all apps for all work styles perform well in the cloud or as SaaS. If companies are looking to deploy rich apps built for a platform, BlackBerry offers more capabilities and tools to do so than either Android or iPhone, and importantly do it in a far more secure and managed environment. HTML5, so often pointed to by supporters as the answer to "off-line cloud computing", is not always adequate, and many of the components of HTML5 to enable such functions are not yet complete. And lack of adequate bandwidth at a low cost further hampers the cloud's appeal.

Second, the various platforms are not created equal when it comes to the cloud. Google is betting big time on the cloud. If the cloud doesn't emerge as quickly or as deeply as expected, Google will be at a major disadvantage, given Android's weak security model for on-board apps, and a lack of enterprise management capability. Apple has taken a middle of the road approach to the cloud. The iPhone has app development capability for traditional apps based on the iPhone stripped-down version of the MacOS, iOS. And it has a high performance browser in Safari including Java support. It is updating its security and manageability, and while better than Android it does not approach the level available from BlackBerry. BlackBerry is at disadvantage in the cloud based on an underperforming browser (which it is fixing with its move to Webkit based on its acquisition of Torch and available in the next OS later this year). But it has a key thick client advantage with its traditional reliance on Java apps, and its compelling advantage in security and manageability

But a key question that needs to be answered is, what will enterprises do about corporate apps – will they cloud/SaaS or not? And how quickly? We expect many companies to deploy cloud based apps but we also believe that the transition to the cloud will be slower than most experts expect. We expect it will be at least 3-4 years before most companies transition a significant portion of their mission-critical apps to the cloud and SaaS. So for SaaS apps like Salesforce.com, Android will be a very attractive candidate, as will the iPhone as it requires very little corporate effort to deploy. But for the traditional thick purpose-built applications, we expect BlackBerry to maintain its significant installed base in the organization through its ISV community and its superior manageability and security services.

Bottom Line: Despite the popularity with enterprise users of the iPhone and soon the Android devices, we do not expect most companies to quickly change their mobile deployment strategies for mission critical applications. For casual users or those apps that can be cloud-based or SaaS, iPhone and Android will be attractive. For most thick apps, we expect to see a continuance of BlackBerry popularity, with some inroads made by iPhones.

Android: Not Ready for the Enterprise

We had recently predicted a major uptake of Android in the enterprise as compelling new devices with features desired by end users become available (see our Technology Brief, January 15, 2010). However, based on the current state of limited Android support for ActiveSync, and no detail as to when these issues might be resolved, we are re-evaluating the market share we believe Android will achieve. The primary fault lies in the inability of Android to enforce key corporate polices set within Exchange so companies can assure compliance before allowing a device to connect. And while third party apps exist that "trick" the Exchange server into thinking the policies (e.g., wipe, complex password, VPN, etc.) have been set, the current implementation of Android (2.1) doesn't allow such settings to be enforced. The upcoming version of Android (2.2) is better but still suffers a lack of real enterprise-class policy enforcement. We therefore believe that Android posses a significantly greater risk to enterprises than the other major mobile OSes (see chart below for a comparative evaluation).

"…At this point, we can not recommend deployment of Android-based devices at any enterprise that is worried about security and compliance……"

Figure 1: Mobile OS Security Comparison

	BlackBerry OS	iPhone OS	Win Mobile OS	Android OS
Authentication	↑↑↑	↑↑	↑↑	↑
Data Vaulting	↑↑↑	↓	↑↑	↓↓
Application Verification	↑↑	↑	↑	↓
Reliability	↑↑↑	↑↑↑	↑↑	↑↑↑
Manageability/ Policy Enforcement	↑↑↑	↑↑	↑↑	↓
Tamper Resistance	↑↑	↑	↑	↓
Security vs. Usability	↑↑	↓	↑↑	↓↓
Meeting Security Validations	↑↑↑	↓↓	↑	↓↓↓
Allowing Security Extensions	↑↑	↑	↑↑	↑↑

Bottom Line: At this point, we can not recommend deployment of Android-based devices at any enterprise that is worried about security and compliance (e.g., SOX, HIPAA). Unless Google rapidly fixes the issues around corporate policies and implementation with ActiveSync on Android, it will lose its ability to have a major impact on large organizational deployments, relegating those deployments to BlackBerry or to iPhone with third party security extensions (until Windows Phone 7 ships devices, it is difficult to determine if it will have any real impact on the dwindling installed base of Windows Phone users). There are third party security enhancements available for Android but they are not yet as mature as those available for iPhone and companies should wait before deploying them.

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