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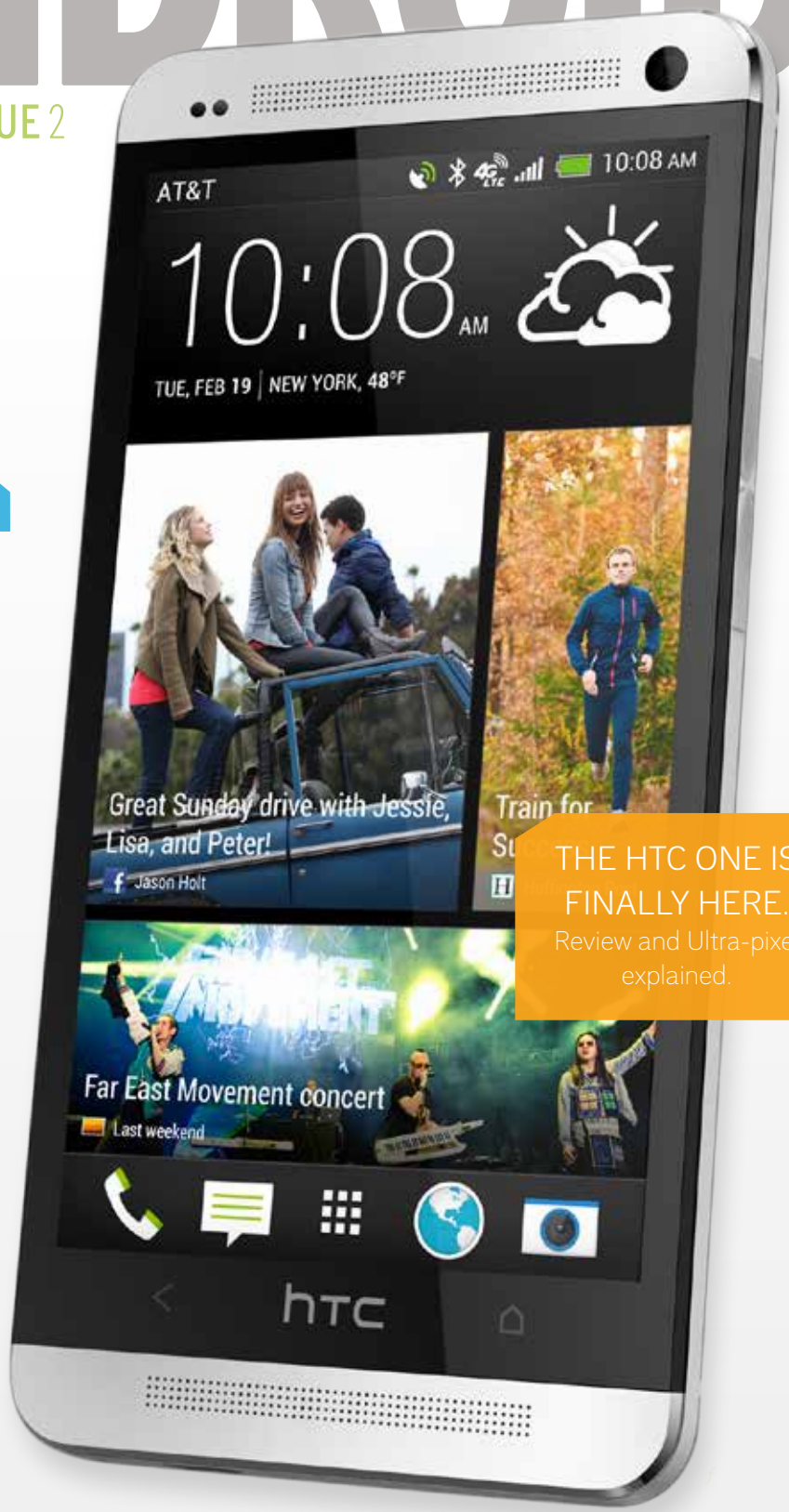
fANDROID

April 2013 VOL. 1 ISSUE 2

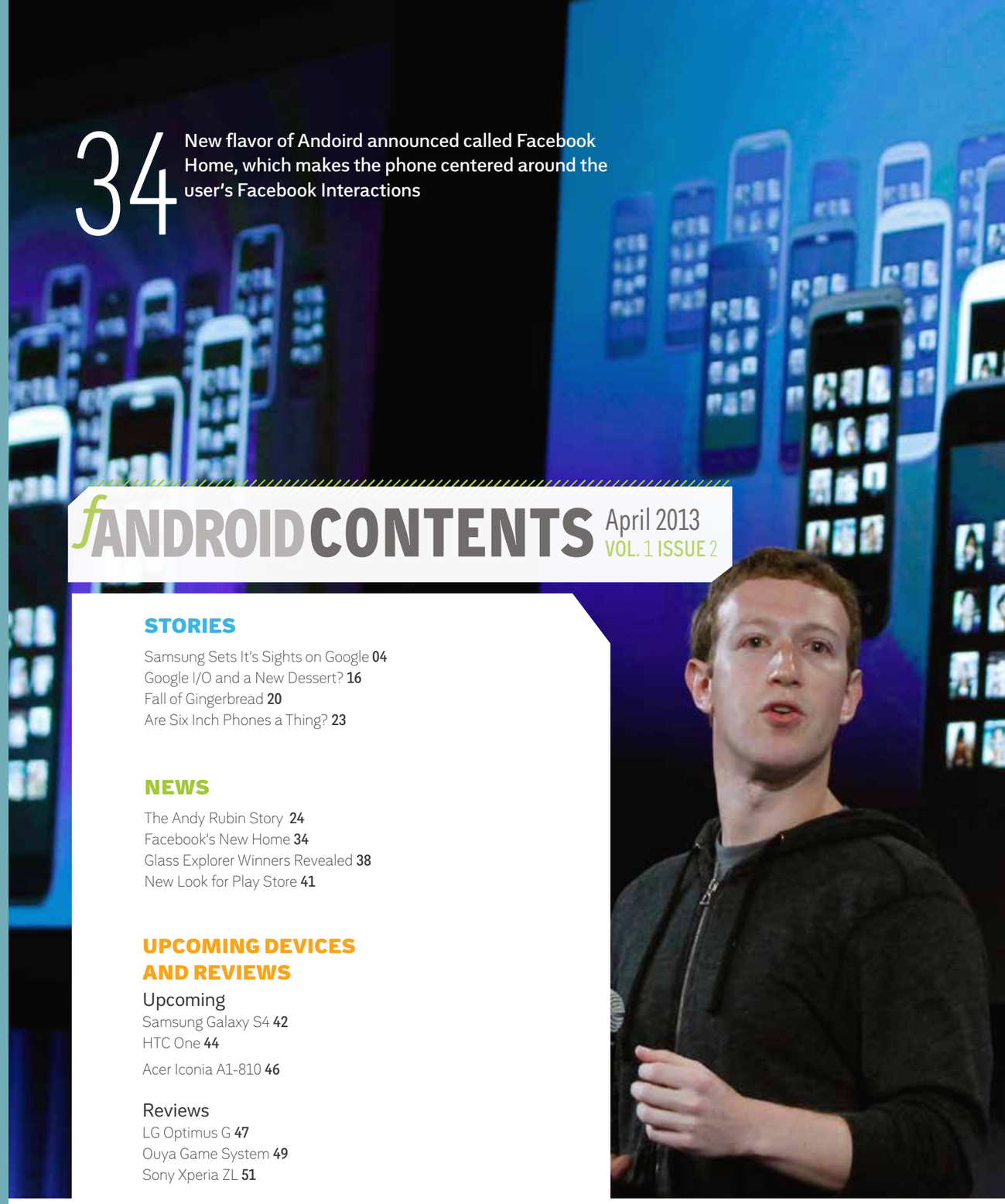
WHAT'S GOING ON

- Andy Rubin no longer with Android, No Fooling
- Samsung and Google Money Problems
- Interview with Eric Schmidt



THE HTC ONE IS FINALLY HERE.
Review and Ultra-pixel explained.

US $5.99
Canada $6.03



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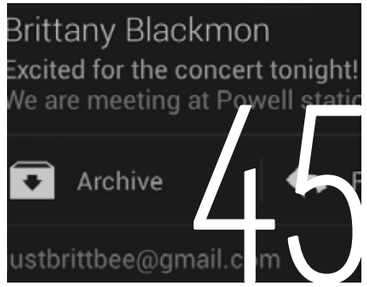

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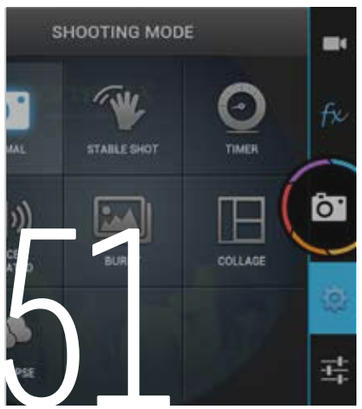

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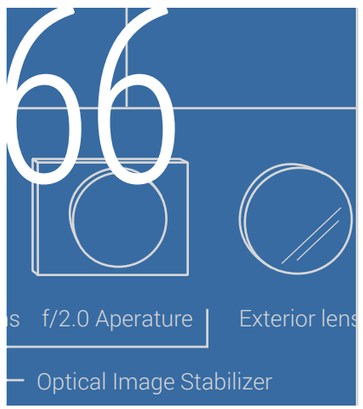

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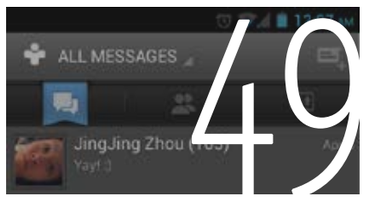

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SAMSUNG SETS SIGHTS ON GOOGLE'S WALLET... NOT THE APP.

The growing struggle between hardware and software in the mobile world.

BY JASON HINER

Samsung's pole position in the Android ecosystem is about get another boost when the Korean electronics giant unveils the Galaxy S4 in New York on Thursday night. But, while it's all glitz and glamour this week, there's an underlying tension between Samsung, Google, and the Android ecosystem that is about to reach a crossroads in 2013.

Samsung's current flagship phone, the Galaxy S3, became the best-selling Android device in the world in 2012. In its first 6 months on the market, the Galaxy S3 sold over 40 million units. In the 3rd quarter of 2012, it even passed the iPhone as the single best-selling smart-phone in the world, though Apple snatched back that distinction in Q4 with the launch of the iPhone 5.

Now, Samsung is so bullish on the S4 that it is reportedly ordering enough parts to handle sales of 10 million phones per month. With much of the world still converting from old-style cellphones to smartphones, there's certainly a solid case for that kind of bullishness. But, it also assumes that Samsung will remain Google's per-eminent Android partner over the next 12-18 months. The big question is how safe that assumption is.

If you want to know how key Samsung has been for Android, just look at the fact that when Google bought Motorola in May 2012, Eric Schmidt flew directly to Samsung's headquarters in South Korea to personally assure its executives that Motorola would not get special status in the Android ecosystem andwould be treated as anyother brand.

"I told them that the (Android) ecosystem has to be favored at all costs," Schmidt said. "The Motorola products can't be unduly favored, unless you're also unduly favoring Samsung. If it looks unfair, and then the ecosystem unravels, then it's a terrible mistake."

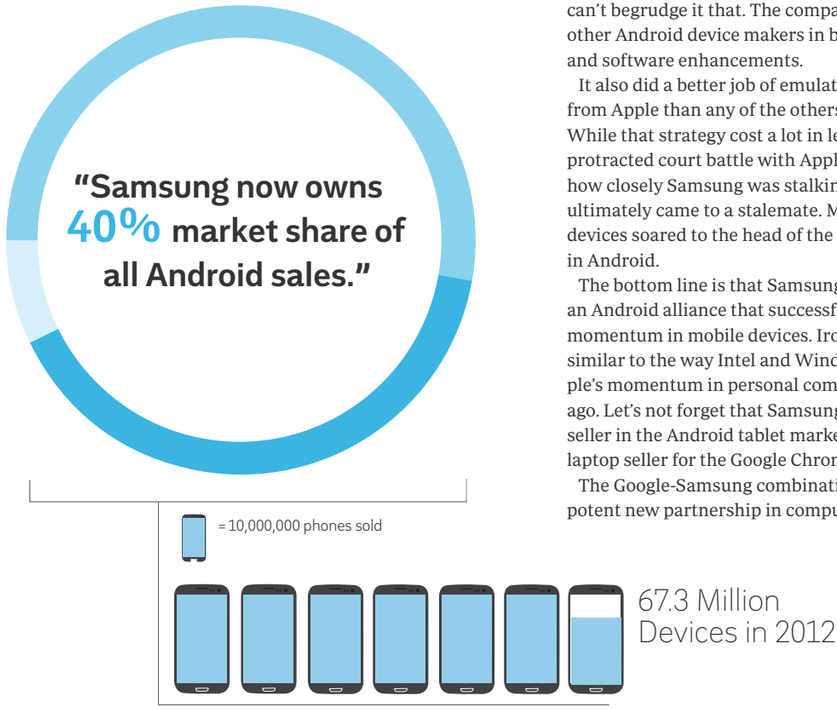
True to Schmidt's word, Google has not shown Motorola any outward favoritism. Since the acquisition, Google hasn't even tapped Motorola to build any of Android's flagship Nexus devices. And, during the past year, Samsung's leading role in the Android market has only been enhanced, with the help of runaway hits like the Galaxy S3 and the Galaxy Note.

Samsung now owns 40% market share of all Android sales. Second place? Huawei with about 7%. Samsung has certainly earned its success. You can't begrudge it that. The company has out executed other Android device makers in both hardware design and software enhancements.

It also did a better job of emulating best practices from Apple than any of the others Android vendors. While that strategy cost a lot in legal fees after a protracted court battle with Apple (that revealed just how closely Samsung was stalking Apple's moves), it ultimately came to a stalemate. Meanwhile, Samsung devices soared to the head of the class in Android.

The bottom line is that Samsung and Google forged an Android alliance that successfully stemmed Apple's momentum in mobile devices. Ironically, it was very similar to the way Intel and Windows stemmed Apple's momentum in personal computers a generation ago. Let's not forget that Samsung is also the leading seller in the Android tablet market and the leading laptop seller for the Google Chromebook market.

The Google-Samsung combination is the most potent new partnership in computing and it is putting



tremendous competitive pressure on Apple and Microsoft. But, can the partnership hold together? There are several competing interests that are driving a wedge between the two companies, as is common with these types of partnerships. However, in this case, the future of both companies in the mobile business as well as the overall health of the Android ecosystem itselfis at stake.

The first issue is that Samsung's lead over the rest of the Android phone makers is beginning to evaporate. Just as Samsung skillfully executed plays from Apple's play book, now other Android vendors are emulating Samsung.

HTC is taking a page out of the Apple and Samsung play-books by consolidating down to one flagship smart-phone. In this case, it's the HTC One, a sharp new device that was announced in February and is generally drawing strong reviews. Remember, HTC was the leading Android phone maker before Samsung's recent ascent.

Meanwhile at CES 2013 in January, Chinese device maker Huawei unveiled a pair of high-end Android devices that are aimed squarely at Samsung's two hit products, the Galaxy S3 and the Galaxy Note. The 6.1-inch Huawei Ascend Mate is a phablet that goes even a little larger than the Galaxy Note, with a very similar design.

The Huawei Ascend D2 also emulates Samsung's thin plastic design and features a quad core processor, 32GB of built-in storage, 2GB RAM, a 13 mega-pixel camera, a screen with 443dpi pixel density (surpassing both the S3 and iPhone 5), and a 3000mAh battery that rivals the Droid Razr Maxx. Those are eye-popping specs that the Galaxy S4 will struggle to match when it is unveiled on Thursday.

After the Samsung Galaxy S3, the next hottest Android phone of 2012 was the Nexus 4, built by Google in partnership with Samsung's Korean rival LG. In fact, the Nexus 4 would likely have taken a bigger chunk out of Galaxy S3 sales if the product hadn't been sold out for most of the fourth quarter due to overwhelming demand.

With Google subsidizing the Nexus 4 so that it could be sold for $299 (8GB) or $349 (16GB), one of the Nexus 4's greatest features was clearly its price tag since the device is unlocked and does not require a contract with a wireless carrier. The unlocked version of the Galaxy S3 costs $500 to $600.

The Nexus 4 price tag is great for consumers and for Google, who simply wants to get more Android smart-phones in the hands of more people because it makes money off of people using its mobile platform. However, it's not so great for Samsung, which makes its money off of selling devices. And, that is where the major conflict comes into play.

Bolstered by the success of the Nexus 4 and a similar scenario with the Nexus 7 tablet (built by ASUS), we have to expect Google to get even more aggressive in selling inexpensive Nexus smart-phones and tablets directly to consumers to help free them from expensive and onerous contracts with wireless carriers and to help get more Google-centric devices in the hands of more people.

Google has been betting on this scenario since the launch of the Nexus One in January 2010 and it finally generated significant momentum around the concept in 2012. As such, I fully expect Nexus devices to take a bigger chunk out of Samsung's Android market share in 2013.

While fighting low-priced Nexus devices on one front, Samsung will also have to deal with the re-emergence of HTC and the rise of Huawei, which could steal customers away from its core business of selling subsidized phones to consumers on traditional wireless plans.

Since Samsung's devices are based on standard industry hardware components that any of the electronics companies can use and the Android software platform is open for any company to co-opt, that leaves Samsung very little room to innovate as an Android device maker. And when there's little room to innovate, the primary differentiator becomes price.

The primary product innovation that catapulted Samsung into the lead in the Android ecosystem in 2012 was that it did a better job than its Android competitors of integrating hardware and software.

While Samsung's Android success can also be attributed to its go-to-market strategy (getting its devices sold everywhere with wireless carriers and retailers), its massive advertising budget, and its ability to get parts inexpensively, the demand for its products was ultimately driven by a perception of quality and ease-of-use.

"The primary product innovation that catapulted Samsung into the lead in the Android ecosystem in 2012 was arguably that it did a better job than its Android competitors in intergrating hardware and software."

Again, Samsung had a jump on its Android competitors by being able to watch how Apple carefully integrated hardware and software on the iPhone since Samsung was one of Apple's key parts suppliers for the product during its early years

Samsung learned those lessons well and by the time it launched the Galaxy S3, it had included a variety of unique feature that showed its growing savvy in software as well as strengths, hardware integration.

While Samsung is likely to continue this kind of innovation in Android to help its devices stand out against HTC, Huawei, Motorola, LG, and others, these types of software add-ons will inevitably remain outside of the core Android functionality and will be overlooked by lots of mainstream users, who are more likely to be influenced by price and usability.

So, unless Samsung can leap forward by being the first to integrate a groundbreaking technology like the flexible OLED displays that its affiliates are developing, then it's destined to face long-term trouble in the Android market where it is going to become a race to see who can sell advanced smartphones at the lowest price.

Samsung does make some money from Google's mobile ads receiving around 10% of the profits. However now since Samsung has now 40% of the Android market share it seems as if they can help the mobile world against mutual rivals such as Apple.

SAMSUNG'S SOFTWARE FEATURES

- S Beam sharing that lets you tap two Galaxy S3s together to share photos, videos, or files
- Smart Stay eye-tracking technology that automatically keeps the screen bright for as long are you're looking at it
- Best Photo camera feature that takes eight continuous photos and then suggests the best one (and lets you override it and manually select the best one of the eight)
- Direct Call lets you lift your phone to your ear to automatically call someone that you had been texting
- S Voice (right) for enhancing the built-in voice commands that come with Android
- Split-Screen Multitasking that lets you run two programs at once

Flexible displays like this one would open up the doors to new types of phones and give Samsung an edge on the smart-phone market.

Samsung showing some early Tizen phone prototypes at a mobile convention.

Amazon is another big player in the Android market, however Amazon uses a tweaked version of Android and doesn't load Google apps on its devices, and therefore is not a threat or a problem for Google.

That's why Samsung is doing Tizen, which could eventually become its parachute for jumping off the Android bandwagon. Tizen was originally the next-gen mobile OS to replace Symbian, back when Intel and Nokia were collaborating on it and it was called "MeeGo." But, when Nokia hired Steven Elop as CEO and he burned all bridges and moved the mobile pioneer exclusively to Windows Phone, that left MeeGo abandoned. So, Samsung swooped in and picked up the pieces. It formed a new partnership with Intel, integrated its own LiMo project into the platform, and Tizen was born.

It seemed like a minor, futile endeavor when Tizen was announced in September 2011, but it's increasingly looking like it could become a critical part of Samsung's future. At Mobile World Congress 2013 last month in Barcelona, Samsung put the spotlight on Tizen and gave the tech industry a sneak peek at the platform, CNET has reported that the first Tizen phones will arrive this summer.

Tizen is still very raw, but it's clear that Samsung is getting more and more enthusiastic about the platform. It not only folded its LiMo project into Tizen but it has now reportedly also folded its other pet project, Bada, into the Tizen platform as well.

Don't expect the Tizen phones released in mid-2013 to be much of a threat to the Galaxy S4 or the iPhone, but you should keep an eye on how many software innovations and hardware/software integrations like the ones we've seen from Samsung recently are integrated into Tizen. Many of the Galaxy features Samsung rolled out last year are core functions that could form the heart of an excellent mobile platform.

Samsung will be testing the waters. It won't quickly abandon the Android ecosystem and put a lot of potential phone sales at risk. Any time the question of Tizen is brought up, the overwhelming reaction on Internet forums from existing Samsung phone users is that they would likely stick with Android and switch to an HTC or Nexus phone if Samsung went all Tizen. So, this isn't going to be something radical that happens in 2013.

But, 2013 could be the sea change. I'll give you one scenario to consider. If the Galaxy S4 remains the best-selling Android phone in the world (but with greater competition) and Tizen becomes a modest hit (with Samsung giving it a few exclusive features), then we could see Samsung move a lot more aggressively. For example, what if Samsung used the equity of the Galaxy brand to push Tizen? What if the Galaxy S5 or the Galaxy S6 becomes a Tizen phone?

"Many of the Galaxy features Samsung rolled out last year are core functions that could form the heart of an excellent mobile platform."

What if the Galaxy Note 3 or 4 becomes a Tizen tablet?

Sure, Samsung would lose some users in those scenarios, but it would protect the profitability of its popular high-end devices. It would also gain the ability to make money off of services on the devices, rather than only making money on the hardware sales and then letting Google make all of the money from services, as Samsung currently does with Android. That's why the Tizen experiment is more than just a hedge or a negotiating tool to get a revenue-sharing deal with Google to get a cut of that services money. Tizen might also be more experimental due to the shear number of mobile operating systems that are either already out or in development by other companies.

"It will focus on Samsung and it will attempt to create not just a device but a platform and an ecosystem."

If the Android ecosystem becomes a race to the bottom on smart-phone prices and Google refuses to share any services revenue with Samsung, then Tizen could become the platform where Samsung redirects mosts of its energy. Even then, I doubt it would completely pull the plug on Android devices, but it could certainly bet on the Samsung brand and Samsung products being just as appealing to the market as Android.

In other words, Samsung isn't likely to market Tizen phones under the Tizen brand. It will focus on the Samsung brand, and it will attempt to create not just a device but a platform and an ecosystem. In the long run, that's where almost all of the innovation – and the profits – will be as the mobile device market matures.

The thing to watch will be how effectively Samsung can create its own platform and ecosystem versus how aggressively Google makes concessions to keep Samsung primarily focused on the Android platform and ecosystem.

Either way this particular chapter in Google and Samsung's history will most likely change the entire nature of their so far symbiotic relationship in providing quality alternatives to Apple's iOS devices. This will most likely lead to Google trying to distribute it's business else where, most likely to LG since they have already used them to produce the Nexus 4 phone. This will shift the Android phone manufacturing world and will probably yield some great new innovation and devices that we might not have seen.

With other high end Android phones coming out on the market Samsung might need to dial back on Tizen, desipte the competition they are planning on releasing a phone this year running Tizen.

ROUND UP Here is a collection of all of the different mobile platforms that are currently out or under development.

Nokia running Windows phone mirroring the metro tiles from Windows 8

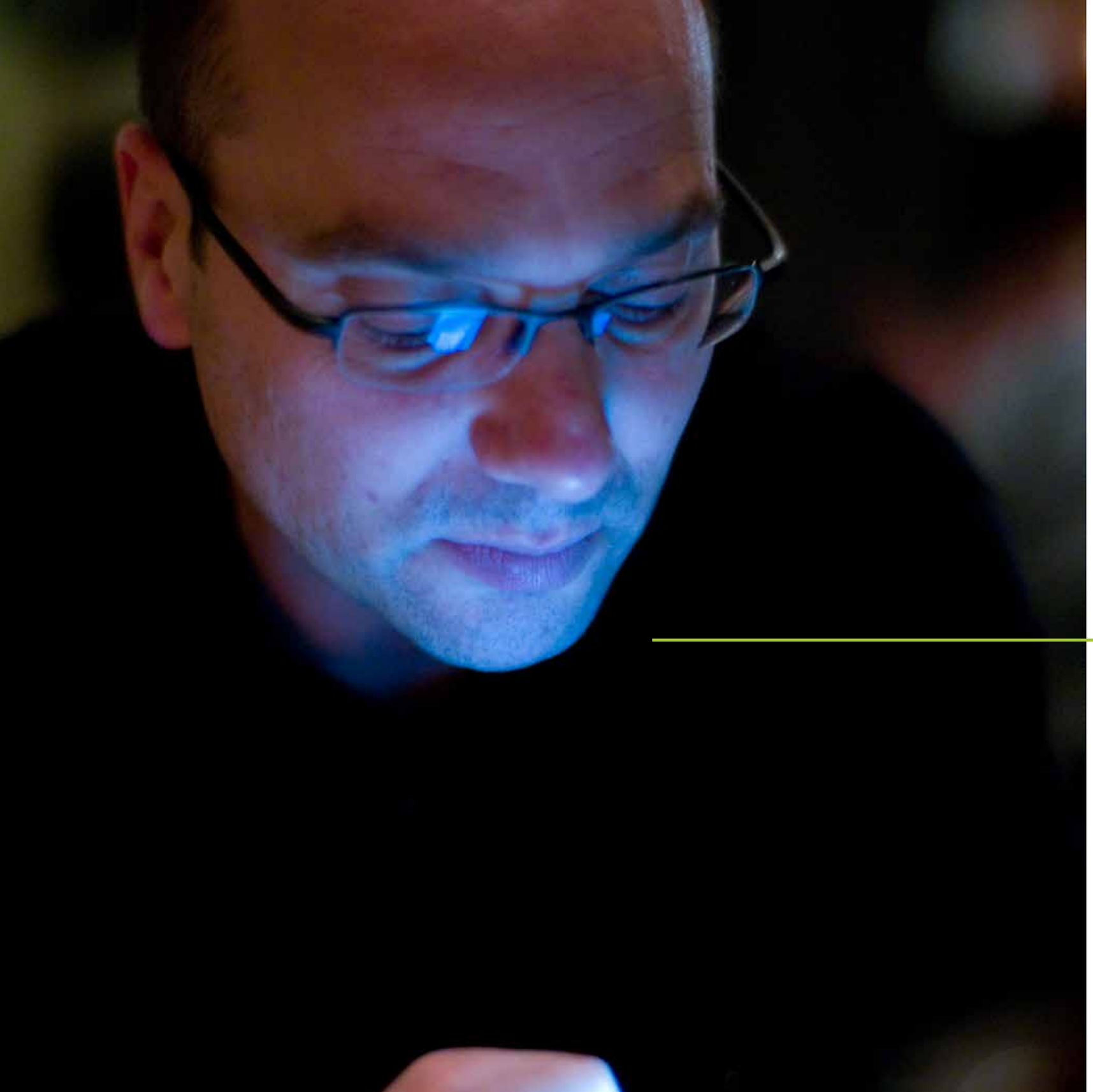
Firefox OS that is still under development and no word on which carriers are on board.

Ubuntu Touch a new open source OS that can run on almost any Android phone.

Blackberry 10 running the Blackberry OS

SPEAK UP here is your chance to speak your mind and see what others are saying with our online poll either scan the QR code or go online to vote at *fandroid.com/poll0413*

Do we really need another mobile OS on the horizon with Ubuntu Touch and Firefox OS?



The Andy Rubin Story

By Daniel Roth

"Is this interesting to Google?" That's what Andy Rubin was asking Larry Page. It was a spring day in 2005, and the two were in a conference room just off the main lobby at Google's headquarters. A simple yes and Rubin would have walked away happy.

They had met three years before, when Rubin was about to launch a smart-phone he'd invented called the Sidekick. At the time, Google was just an up-and-comer, trailing AOL and even Lycos in traffic. But Rubin, a well-known Silicon Valley player, chose Google as the Sidekick's default search engine. Page was flattered by the unexpected endorsement. So when Rubin called out of the blue and requested this meeting, well, Page couldn't say no.

The Google cofounder arrived late, as usual. Rubin walked to the white-board and began his pitch. There were nearly 700 million cell phones sold each year compared with fewer than 200 million PCs — and the gap was widening. Increasingly, he said, phones were the way people wanted to connect with each other and with everything else. Yet the mobile industry was stuck in the dark ages. Unlike the Web, where open standards had fos-

tered a multitude of cool companies and applications, mobile was a tyrannical, closed system, repelling all innovators and disrupters who tried to gain entrance.

Rubin said his startup, called Android, had the solution: a free, open source mobile platform that any coder could write for and any handset maker could install. He would make his money by selling support for the system—security services, say, or email management. Android would have the spirit of Linux and the reach of Windows. It would be a global, open operating system for the wireless future.

Rubin didn't want money from Page. He already had funding. What he wanted was Google's imprimatur—even an email from Page would do. Rubin figured he could attract more VC funds with the search giant on board, possibly with a hint that Google might be interested in developing its own branded phone. He pulled out a prototype.Page picked up the device. He had been personally frustrated yet fascinated by the mobile market for years. He already knew the numbers — he didn't need Rubin to tell him how many PCs and mobile phones were out there. He also knew that it added up to a massive problem for Google.

The desktop metaphor was fading. Phones were going to replace PCs as the main gateway to the Internet, and they were going to do it soon. Why would consumers tether themselves to a PC when phones were growing more and more powerful — and were cheaper, too?

But because cell phones ran on different software, had less memory, and operated under the constraints

One of the first Android phones that was produced modeled after the prototype that Mr.Rubin created. This particular model was made by HTC in 2008.Luckily we have come a long way.

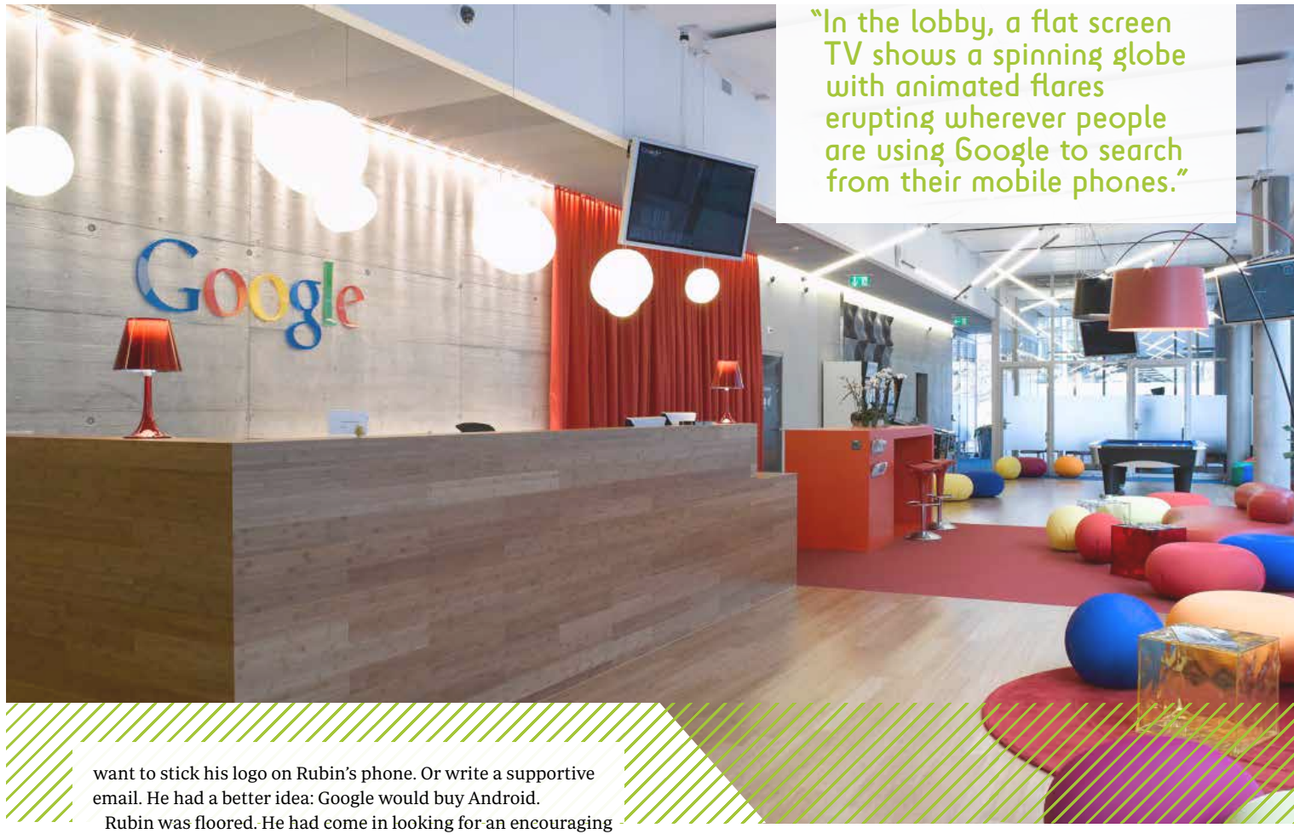
"Google dominated the Web today, but tomorrow might be a different story."

of pay-per-byte wireless networks, the mobile Web was a stripped-down, mimeographed version of the real thing. Reading and surfing and — more to the point — viewing Google ads was a slow, stultifying chore. Even worse, a second-class Web could derail Google's grand strategy. The company was trying to worm its way deeper into users' lives by hosting applications and personal files on Google servers, then dishing them out to the always-connected consumer whenever and wherever needed. That was easy on PCs, but phones didn't play nice with the cloud. Google dominated the Web today, but tomorrow might be a different story.

Working the problem had been a nightmare. Google engineers had a closet overflowing with mobile phones to test the company's wireless applications mobile Google, Blogger, search over SMS. There were dozens of operating systems to navigate, a mobile Tower of Babel completely at odds with the easy access and universal language of the Web.

What worried Page most was that the only firm from the PC world that seemed to be successfully navigating the mobile labyrinth was Microsoft, one of Google's biggest rivals. The Windows Mobile platform had less than 10 percent of the US smart-phone market, but it was growing fast. Microsoft's system, however, was the ugly stepsister of what Rubin was proposing: Redmond executives cared less about opening up the Net to mobile users than about tying the mobile operating system into its desktop dominance. A decade ago, Microsoft had underestimated the growth of the Web and then lost control of it to Google. Now it looked like it was Google's turn to be caught flat-footed.

If Google had it bad, users had it worse. Every year since 2002, the wireless sector managed to place at or near the top of the Better Business Bureau's tally of the most complained-about industries. Americans would rather do business with a used-car salesman or a collection agent than with a customer service rep for, say, T-Mobile or Motorola. And who could blame them? The plans were expensive, pricing was complex and capricious, and the phones never lived up to expectations. Constant innovation, the first principle of Page and Rubin's world, was anathema to phone companies. There had to be pent-up demand out there for something better. So was Rubin's pitch interesting to Page? Absolutely. But he didn't



"In the lobby, a flat screen TV shows a spinning globe with animated flares erupting wherever people are using Google to search from their mobile phones."

want to stick his logo on Rubin's phone. Or write a supportive email. He had a better idea: Google would buy Android.

Rubin was floored. He had come in looking for an encouraging word and left with the biggest payday in his life. (The eventual purchase price was estimated at as much as $50 million.) Now all he had to do was live up to his own hype.

"Google's model is to build a killer app, then monetize it later," Rubin says. We're sitting in another conference room across the street from where he and Page struck their deal three years ago. The building, which houses Google's mobile division, is Rubin's domain now. There's a self-piloting model helicopter bearing an Android logo parked in the hall — Rubin builds them in his spare time. Beyond are floors of people who think of nothing but the cellular future of their employer. In the lobby, a flat screen TV shows a spinning globe with animated flares erupting wherever people are using Google to search from their mobile phones. This fall, when the first Android phones hit the market, those flares will presumably flame even higher.

Rubin is tall and skinny and a casual dresser even by Google standards. He's 45 but seems younger. Sitting with one leg tucked beneath him, he explains the mission of the Googlefied Android to me, but I barely follow the words. I'm staring at his phone. It's clearly a demo — black, scuffed, covered with fingerprints; most of the face is taken up by the screen. Rubin absentmindedly slides it around the big wooden table, then picks it up and shifts it from hand to hand. It's maddening. All I want to do is get a closer look at his killer app.

After Google bought Android in July 2005, Silicon Valley pulsed with gossip and speculation about what the search giant was planning. Everyone figured Apple had a phone in the works and assumed Google must be developing one too. Rubin and his cofounders, Rich Miner, Nick Sears, and Chris White, weren't talking. "Trying to guess Google's next move recently replaced digging through Steve Jobs' garbage ... at the top of our weekend activities list," wrote tech blog Engadget. When Apple unveiled the iPhone last summer, expectations for a gPhone — could it be called anything else? — grew even more feverish.

But when Google finally broke its silence in early November, there was nothing about a gPhone. Instead, there was a press release. Thirty-four companies — firms like Texas Instruments, Intel, T-Mobile, and Sprint Nextel — were joining Google to build a wireless interface based on open source Linux software. The group dubbed itself the Open Handset Alliance. Competitors sighed in relief. This was how Google planned to shake up the nearly trillion-dollar global wireless market? A consortium? "Their efforts are just some words on paper," remarked Steve Ballmer, CEO of Microsoft, at a conference in Japan. "Another Linux platform," shrugged the CEO of Symbian, the dominant smart-phone operating system outside the US.

Andy talking about the new mobile OS and it's impact on the mobile market.

A week later, Google upped the ante. The company put a free Android software developer's kit on its Web site and announced the Developer Challenge, with $10 million in prize money to be parceled out to the creators of the best applications for the new system — a great social networking tool, say, or a handwriting recognition program. The Challenge was an open call; anyone was invited to take a shot.

Those hoping for a new gadget to rival the iPhone finally understood that Google had something radically different in mind. Apple's device was an end in itself — a self-contained, jewel-like masterpiece locked in a sleek protective shell. Android was a means, a seed intended to grow an entire new wireless family tree. Google was never in the hardware business. There would be no gPhone — instead, there would be hundreds of gPhones.

HTC, Motorola, and LG all announced plans to market new Android phones in a multitude of shapes and sizes, each with different software options. Android was a fully customizable system. Any application could be removed or swapped out for another. Even the few programs that Google was creating from scratch — an email app, a contacts manager could be replaced with third-party software that did the same thing. Google didn't care how any individual model was pimped out as long as the hidden Android DNA was there underneath, keeping everything tied to the Internet.

> "Google didn't care how any individual model was pimped out as long as the hidden Android DNA was there underneath"

The company's theory was that if you make browsing by phone easy and fun, people will use it just like a desktop browser, with Google search as the main port of entry. Christmas Day 2007 offered Google proof that the strategy could work. That morning, people unwrapped their iPhones, powered them up, clicked on the easy-to-use Safari browser — and pointed to Google. In 24 hours, the iPhone, which accounted for fewer than 5 percent of all smart-phones worldwide, drove more traffic to Google than any other mobile device. If Apple could generate that much business for Google, surely Google could do even better for itself. CEO Eric Schmidt, a BlackBerry man at heart, was initially skeptical about teaming up with Rubin. But once he embraced the idea of Android, he did it with a convert's zeal. "That is the re-creation of the Internet. That is the re-creation of the PC story," Schmidt told business leaders at the World Economic Forum in Davos a month after Christmas. "And it will happen in the next year."

Rubin finally turns on the battered phone and launches Google Maps. "So, here we are," he says, moving the satellite image of San Francisco by dragging one finger along the screen. "This is the Embarcadero. I can manipulate it. I can zoom." He taps to focus in on a street view of a truck's license plate, then clicks to a new application. "Let's see, let's go to a music player. I can go to Artist here and get my list of — oops, oh it says the SD card is missing."

He squints into the tiny card slot. "Hmm, it's there. Looks like I have a little bit of a bug." He shrugs, taps on an icon to go to the browser, and checks out CNN.com. It looks good — a small but fully functional version of the Web site. Back when he and Page were first talking, this would have been amazing. But now, with the iPhone and other enhanced smart-phones out there? No big deal. A minute later the battery dies.

He pockets the phone and finishes up. I can't help feeling a little disappointed. This is the phone Page is making his big bet on? In Google's regular line of business, the strategy has always been to unveil innovative, occasionally flawed products, like Google Docs then keep them in beta for months or years. But people don't want to buy a phone in beta. Android products have to work right from the start. Is this really the phone that's going to change everything? Only time would tell.

It was Dan Morrill's first time out of the country, and that made him a little nervous. But as he gathered his bags in the Munich airport on a surprisingly warm January morning earlier this year, after the last leg of a long, exhausting flight from San Francisco, he looked up to see a Paul Bunyan-sized BMW grill fixed to the wall. If you're looking for engineers, he thought, there are worse places to go than a city that welcomes you.

> "The virus was spreading. At an event the next day in Israel, the local Google office had to switch locations to handle the overflow crowd."

Morrill is a software engineer turned "developer advocate." He's a roving evangelist to the coder world. But that's just his cover. Morrill's real mission is to make sure Android triggers a full-on network effect — that mystical melding of passion and self-interest that fueled the growth of behemoths like eBay and Facebook. Google wants developers to build cool programs that can draw huge numbers of users, creating an expanding market that attracts more developers to build more cool programs to attract more users. If the $10 million prize is the spark, Morrill's job is to make sure there's ignition. Google had dispatched him to Germany to meet with a small group of local mobile programmers interested in the new platform. The morning of his talk, Morrill dresses in his usual uniform, an untucked button-down over a silk-screened T-shirt, this one with the image of a friendly green robot, the Android icon. He walks into the conference room of the Inside Hotel and stops. There are almost 200 people, more than twice what he expected. A dozen developers are sitting on the floor in the back of the room, computers propped on their knees. There are hobbyists, chief technical officers, indie programmers, and students.

Morrill runs through his prepared remarks then starts taking questions. They want to know about Android programming, of course, but they also ask why Google is doing this, what the company's expectations are, and what the criteria will be for awarding the prize money. At one point, hotel management shows up to warn Morrill that the size of the gathering violates the fire code.

The virus was spreading. At an event the next day in Israel, the local Google office had to switch locations to handle the overflow crowd. In London, registration for the developer's conference filled up in two hours. Fanboys were putting up sites for the platform: AndroidGuys, Phandroid, Planet Android. In Thailand, the government carved out an entire floor of Software Park — a federally funded business incubator housed in a skyscraper north of Bangkok — for Android development work. In Japan, quickie books on Android programming were appearing in major bookstores. In Chennai, India, attendees at a Nokia developer conference compared notes on Android's coding kit during the presentations.

Dan Morrill in 2008 at Developer Day giving out the developer guidelines on the new Android mobile OS.

As soon as programmers started playing with the emulator, they saw how big Google's ambitions were. The company was trying to make programming for a cell phone analogous to programming for a PC or the Web. Coders were told that their applications would have constant access to the Net, not the usual mobile hurry-up-and-wait feel. Working with the cloud — enabling programs to push or pull info to or from the Web — was a must. All Android phones would know where they were at all times, either by tapping into onboard GPS or by cross-referencing cell towers using a proprietary database owned by Google. And applications would be allowed to share information, which at the simplest level meant the kind of copy-and-paste functionality across all programs that cell phones currently lack.

Even better, at least in a developer's eyes, the Android team had violated an essential tenet of the wireless industry: that users are too dumb and dangerous to be trusted with downloadable software. Engineers who write for just about any mobile operating system today have to spend time and cash obtaining security keys and code-signing certificates. Android would allow any application to be installed and run, no questions asked.

By the April 14 deadline for the first round of the Developer Challenge, Google had received nearly 1,800 submissions. Entrants ranged from huge corporations to single-person shops and came from all over the world. Only a third were from the US.

Among the contact management systems and shopping tools, there were applications that truly fulfilled Android's

> "Google will supply the basic starter apps, but Android's secret weapon is really the network effect."

Sidenote

Looking at Android's progess as compared to Windows Mobile we can see why Microsoft was concerned.

Currently Windows has about 150,000 apps available for it's users. If we compare this statistics with Android, which has around 850,000 apps, and Apple which has around 775,000 apps in their app store.

It appears that Microsoft may have waitied it out too long, with android taking about 53% of the mobile market and iOS taking about 44% which leaves a small 3% left which makes it a very tough market for Microsoft to push it's way into.

promise, particularly in their use of location awareness, social networking, and cloud computing. One developer offered up Jamdroid, a program that you turn on in your car to feed real-time traffic data to a central server; the info is then compiled and beamed to other Jamdroid users, crowdsourcing road conditions. LifeAware tracks friends or family, plotting them on a map and alerting the user when, say, a kid leaves a preset area. E-ventr mashes up evites and Google Maps to organize parties on the fly. BreadCrumbz lets you share photo-enhanced driving and walking routes with the world. Already, Android has half as many outside applications as RIM's BlackBerry platform and about 10 percent the number offered for Windows Mobile at Handango, a leading application download site — and that's still months before it launches.

No wonder Rubin seemed so unconcerned with the faulty prototype he showed me back in Mountain View: It was just a framework waiting to be filled out by others. Google will supply the basic starter apps, but Android's secret weapon is really the network effect.

Among developers there is a giddy sense that Android is ushering in Web 2.0 to the barely 0.5 world of mobile. But it won't take much to stop the movement. If manufacturers like Motorola and HTC put out lousy phones, Android suffers. If carriers like AT&T and Verizon Wireless block the gates to their networks, Android fails. "Working with partners is not easy, and the operating system is just a part of it," says Scott Rockfeld, group product manager for Microsoft's Mobile Communications Business. "It seems like Google's strategy is 'Just get something out there so we can put our services on top.' Well, very quickly they're going to see that mobile operators don't want to be dumb pipes and that manufacturers want to differentiate their phones."

Windows Mobile is now installed on 140 devices, hosted by 160 carriers around the world. Key to its success was Microsoft's ability to use its desktop domination as a battering ram. Businesses wanted seamless integration between their office-based email and mobile phones, and by offering that, Microsoft was able to challenge the BlackBerry. "Google is just trying to copy our model," adds Rockfeld. (Not that Microsoft isn't a bit unnerved. Earlier this year, it bought Rubin's old company, Danger, for $500 million. Steve Ballmer now owns the Sidekick, just in case.)

Google says it has learned the rules of the game — sometimes the hard way. Not long ago, the company enhanced its mobile version of Picasa, a photo-editing, storage, and slide-show service, so users could instantly upload images from their camera phone. Google took it to a phone company for placement but couldn't get the necessary sign-off. The service, which was free, would have competed with a similar proprietary offering the carrier was rolling out — and charging $10 a month for. The idea of instant mobile uploading to Picasa was quietly shelved.

This time Google is going out of its way to assuage the fears of potential partners and pay the necessary fealties. The cockiness that marked its relationships in the past has been replaced by at least the appearance of empathy and cooperation. When one chipmaker got cold feet at the idea of having some of its code open-sourced, Rubin immediately called senior executives to talk over the benefits. Then he had his top engineer, Brian Swetland, sit down with the chipmaker's attorneys and engineers to work out solutions. "You have to very carefully figure out how to help them help you do the right thing," Swetland says.

HTC CEO and Andy Rubin showing off some of the latest Android phones in London 2010.

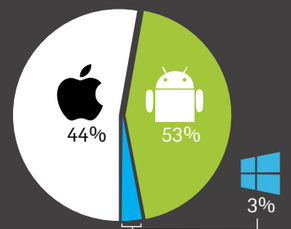
Rubin has a well-rehearsed spiel for the handset makers, too. They fear losing their individual identities. Rubin counters that Android will liberate them from having to spend valuable resources managing and maintaining vast amounts of code. Instead, they can concentrate on phone design and proprietary apps that are specific to their own brand (which Google's open source license allows).

You can imagine heads nodding in boardrooms as Rubin finishes his talk — he gets us! — And in fact it has worked pretty well. HTC, an upstart Taiwanese handset maker that is closely tied to Windows Mobile, has built a 200-person engineering team to focus on Android. Motorola has gone a step further. The company's handset business, slated to be spun off, is on life-support, and it's counting on Android for a comeback. It has assigned its top designers — the people who crafted the Razr — to create new must-have models. Engineers from Good Technology, the BlackBerry competitor Motorola purchased in 2006, are now writing applications for Android. For Motorola, Android has to work.

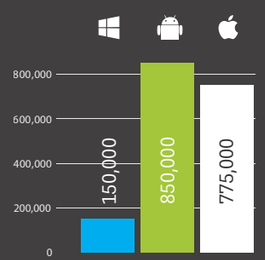
"The handset makers are on a treadmill, trying to turn out hardware every six months that's innovative and thinner, with bigger displays and lower costs, while having to do the systems integration," Rubin says. "The net result is no innovation. They don't have time. You know what? We make really good software. We can take on all that work."

Convincing the big carriers — that's been the tougher task. For them, Rubin is offering Android's unbeatable price: free. Software normally makes up about 20 percent of the cost of a phone. The service providers will be able to pocket the savings or use lower-priced handsets to get more consumers hooked on smart-phones, increasing the number of lucrative wireless-data plans. Plus, Rubin insists that the Android software will take the limits of the carriers' networks into consideration. "We have to

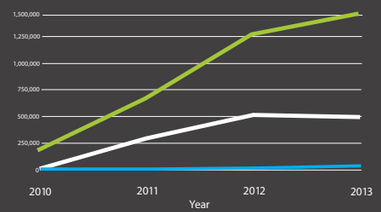
CURRENT MOBILE MARKET



Mobile Market by Platform



Apps Availalbe for Platform



Daily Activations

Dear friends,

In November of 2007 we announced the Open Handset Alliance with 34 founding members. Today, I'm grateful to the over 85 OHA members who have helped us build Android and drive innovation at such an incredible pace. The Android ecosystem has seen tremendous growth since the launch of the very first Android device in October 2008. The volume and variety of Android devices exceeds even my most optimistic expectations - over 750 million compatible devices and counting!

At its core, Android has always been about openness - the idea that a thousand brains are better than one. Just as the ecosystem has grown, so has our team at Google. I am incredibly proud of the phenomenal group of people that spend their days (and nights) building the Android platform and services. Just look at last year...a lean yet incredibly ambitious team released Jellybean with Google Now, launched Google Play in many languages and countries and collaborated with several partners to build three new Nexus devices to help drive innovation in the ecosystem.

Today, the success of Android combined with the strength of our management team, gives me the confidence to step away from Android and hand over the reins. Going forward, Sundar Pichai will lead Android, in addition to his existing work with Chrome and Apps. Hiroshi Lockheimer - who many of you already know well - plus the rest of the Android leadership team will work closely with all of our partners to advance Android and prepare the platform for new products and services yet to be imagined.

As for me, I am an entrepreneur at heart and now is the right time for me to start a new chapter within Google. I am amazed by what we have accomplished from those early days (not so long ago!), and remain passionate about the power of a simple idea and a shared goal - an open source platform freely available to everyone - to transform computing for people everywhere.

Thank you for your support,
- Andy

Andy's public anouncment about stepping down from Android on March 13th

be conscious of the cost they incurred to purchase the air," he says. "So we don't want to use too much data. We have to constantly think about how we can give users a great experience without wasting all of their available data."

So far, Android has been able to persuade only T-Mobile and Sprint Nextel to join the Open Handset Alliance. Neither is a surprise: T-Mobile partnered with Rubin on the Sidekick, and as one of the smaller carriers it's more willing to take risks. Sprint, suffering from massive consumer churn and almost junk-rated debt, seems game for anything that might help. But the two biggest players, Verizon Wireless and AT&T, have passed. "There wasn't anything viable we we're willing to entertain," says Verizon Wireless spokesperson Jeffrey Nelson. This spring, the carrier even backed an Android competitor, an open source consortium called the LiMo Foundation.

And why would a network operator join Android's cause? Android — like the iPhone — will hasten the day when phone companies become nothing more than dumb pipes to deliver data. If it manages to turn the cell phone into a perfect tool for surfing and cloud computing, with voice as just another cool app, then the only things left to differentiate one carrier from another are which has the most towers and which the cheapest unlimited data plans. Android's decision to let anyone make add-ons and applications is also a threat. Today, developers who want to have their application on an AT&T phone have to fork over a chunk of their revenue while meeting stringent security requirements. (Apple has copied this model: Jobs & Co. will skim 30 percent off all sales of iPhone apps, which will be available only through Apple.) Under Android rules, everyone's their own boss.

No big carrier is going to hand over its network to Google for nothing. And if Google doesn't show up on the two biggest networks, which together control 54 percent of the US wireless market, it might as well not show up at all.

There is, however, one incentive that Google can still offer that might bring the carriers around: access to its advertising mother lode, expected this year to top $16 billion. The chance for a taste of Google gold has lured competitors like AOL, Ask.com, and potentially even Yahoo into partnership deals. Mobile advertising is expected to grow from more than $1.7 billion in 2007 to $12.8 billion in 2011. If Google can translate its Web dominance into the mobile arena, who wouldn't want to partner with it? (Google says it can't comment on future ad-sharing deals.)

"You have a significant challenge in mobile, in that the screens are much smaller, so you can't display nearly as much advertising or take as much space," Google cofounder Sergey Brin told Wall Street analysts on a recent conference call. "On the other hand, you have much more relevant and timely information, like what location the person might be in meaning a greater user experience, so on balance that leaves me quite optimistic."

Telecom consultant Chetan Sharma says that Android's success depends on Google's willingness to share the wealth. "What's the relationship going to be between Google and the carriers in terms of advertising dollars?" he asks. "That needs to be nailed down before we know how big Android can be."

In May, Google committed $500 million to bankroll Clearwire, a national WiMax system with partners that include Intel, Comcast, and Time Warner Cable. Any device, including Android phones, will be able to use the high-speed wireless network, cutting the carriers out of the picture. "You need something more substantial than a coalition of the willing to cut the ice with Verizon and AT&T," says Jeffrey Lindsay, an analyst with Sanford C. Bernstein in New York. "They are formidable competitors." Google would

Larry Page, Google CEO, talking about the company's new mobile platform.

rather partner, but it appears ready to fight.

Larry Page doesn't seem worried about the details. He's got people who will hammer out the business deals necessary to make Android work. We're just around the corner from his office, in yet another Google conference room. "That phone you're carrying around," he says, "we think of it as a phone, but it's really a computer, right?" Page is dressed in a blue blazer over a white T-shirt. He leans forward in his chair. "We've learned from computers that it's really nice to have complete connectivity, to be able to connect anything in a kind of open way. We've also learned that it's really nice to be able to run any application you want to run, also in an open way. For a lot of people and a lot of the time during your life, the phone is your main computing platform. We look at those technologies and say, wow, we could do a whole lot more."

Page rarely shows much emotion, but I detect a flicker of genuine excitement when he's talking about Android. This isn't just another of the mini apps, like Google Checkout or Google Desktop, that the company's engineers seem to air-drop onto the Web every week — each of which has the potential to become a massive challenge to an entrenched competitor or remain forever in development. This is a much bigger gamble. It's designed to change an industry and Google along with it. "People can debate how long it will take us, but I have 100 percent confidence that eventually we'll get there," Page says.

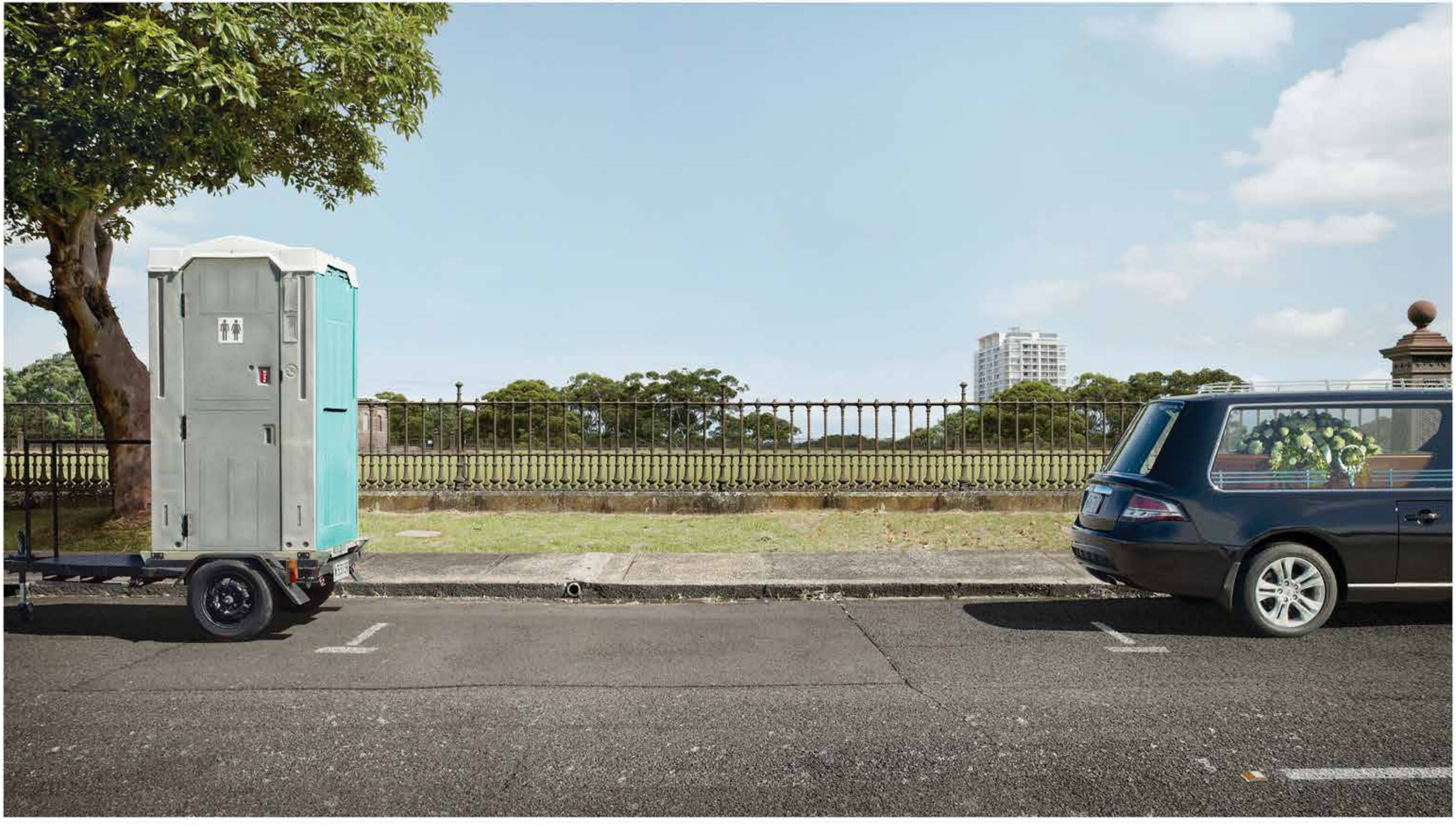
And if they don't? Not much downside. If the only thing Android achieves — as Page knew before Rubin walked into Google three years ago — is getting more people to spend more time online, then Google still profits. More users mean more people viewing pages with Google ads. If they're doing that from an Android phone, great. If not, but they're on a phone made more Web-friendly thanks to competitive pressure from Google, that's also fine. "I hope it's Android," Page says. But either way, Google wins.

Now, let's look at some interesting facts from that. Mr. Sidekick himself (Andy Rubin) came up with the idea for Android. Google, being Google does what they do best...

> "Page rarely shows much emotion, but I detect a flicker of genuine excitement when he's talking about Android."

recognized the potential and immediately bought the company in July 2005. People immediately assumed the gPhone would be the next thing out of the gate to challenge the upstart iPhone. Instead of the intense advertising and funding that it would require to make an iPhone challenger, they put their money into the software which would eventually let multiple phones challenge the iPhone on each manufacturers/carriers own merits. The pressure suddenly was off of Google to be the iPhone killer, they only handle the software.

Now in 2013 there are so many different phones that various companies are producing that are all threatening the iPhone's grasp on the market. All of this was made possible by Mr. Rubin, he brought this platform to Google and developed into the most widely used mobile OS in the world. However this March he decided that he is stepping down and leaving the project in the hands of Sundar Pichai, who currently also is running the Chrome project. However this is not the end for Andy at Google, in fact since they see him as a valuable asset in the early stages of projects, and Android is no longer in that stage of its life, Google is going to move him to a new unannounced project. Some rumors indicate that the new project will deal with actual androids, which Andy is quite fond of for those who might not know. Whatever Andy ends up working on at Google we'd like to thank him for brining us a great mobile operating system and hope to see him bring us aanother new amazing technology.



Park Assist technology from Volkswagen.

Das Auto.

The Big Deal About HTC's Ultra-pixel

By Tucker Mulcahy

What is the seceret behind what HTC is calling the "Ultra-pixel"? It is actually something quite clever and challenges what the rest of the smart-phone industry has been pushing out in their newest phones. All digital cameras use a set of parts in order to caputre the image that is in front of it, the HTC One has the exterior lens, a fixed aperature or opening at f/2.0, the interior lenses , the pixel sensor and then the imaging chip.

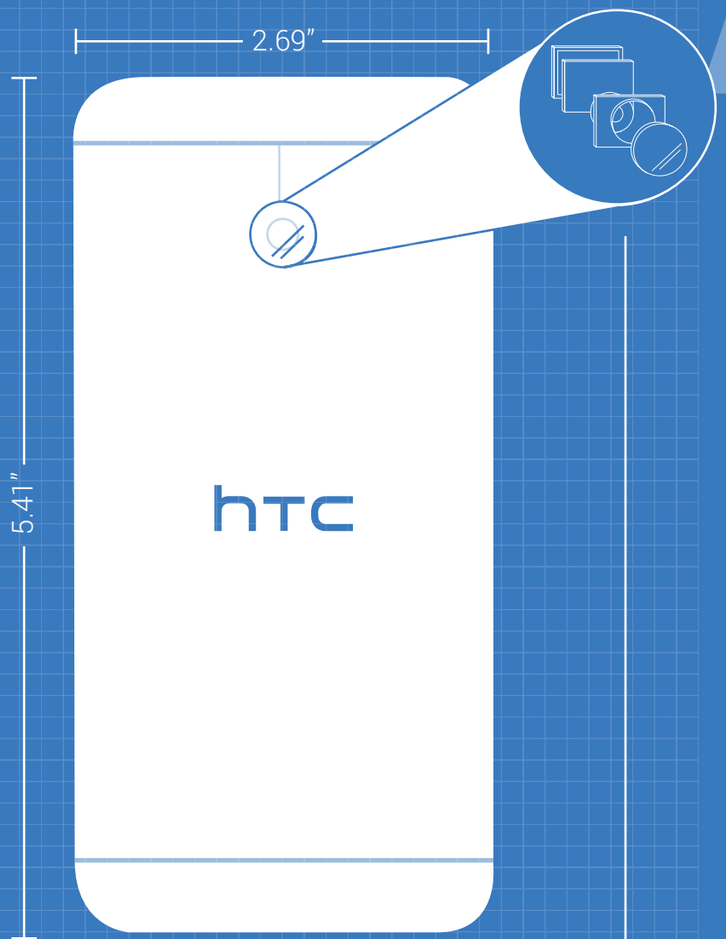
The first big difference is that HTC is not pushing to plant the biggest number of megpixels on the back of their phone, instead they are only going to put in a 4 mega-pixel camera, which for most consumers is plenty large enough, you can easily print a nice high resolution 8"x 10" photo of grandma dancing at the family reunion. The reason that they are only putting in a 4 mega-pixel camera is because space in a smart-phone is limited meaning that cameras can't really get bigger so to get these higher mega-pixel cameras the manufacturers are actually squeezing more pixels into the same amount of space. This means that the actual pixels are much smaller, well they both have incredibly small pixels, but relatively speaking the ultrapixel is almost twice as large since the sensor has to house less pixels.

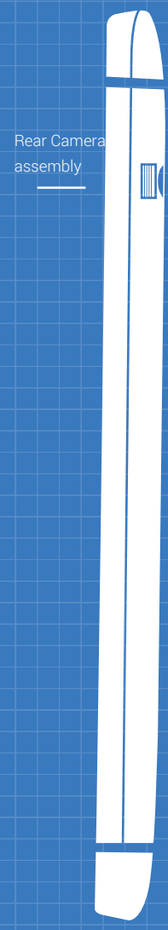
HTC knew that shrinking the number of pixels down would cause the sharpness of photos to suffer a little. To combat the loss of pixels they fitted the imaging chip with a automatic sharpening filter so that every photograph taken with the HTC one gets a boost in the level of detail. Now this solves the problem for most users but those who are going to zoom in an crop the photos or try and sharpen it a little bit more are going to start to experience some issues with the loss of quality in the shots.

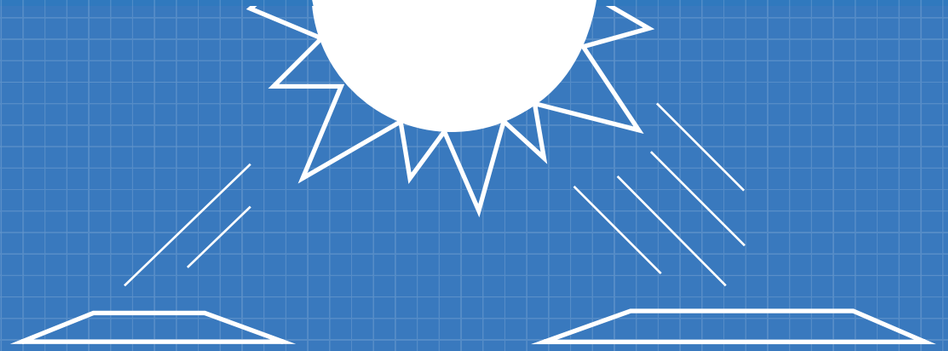
The HTC one uses another trick to try and keep it's images sharper and brighter than it's competitors by using the largest fixed aperature of any phone out there, it uses a f/2.0 aperature allowing more light into the sensor, however this does mean that things that you are not focusing on are going to be more out of focus than other smart-phones but not by much.

This trick also allows the phone to try and keep the ISO or the light sensitivity down on the sensor so that the photo will not have much noise, or colored speckles. The HTC one is able to keep the ISO lower in most cases due to this larger aperature.

Based on everything that HTC has done to make this camera different from the classical approach of increasing the mega-pixel count it is pretty obvious that they knew that in most cases that we use our phones to take photos the lighting is not going to be ideal and tried to deliever a phone that would fill the need to take better photos in low light.







Single Pixel from a 13 Mega-pixel sensor. Actual pixel size is 1.1 micrometer or .0000433 inches.

Single Pixel from the HTC One 4 Mega-pixel sensor.Actual pixel size is 2 micrometers or .0000788 inches.This is actually the "ultra" pixel, huge isn't it?

What does it mean for the photo?

Photo taken with HTC One

Photo taken with iPhone 5

QUICK LESSON ON IMAGE NOISE

Noise is unavoidable in our current day and age because no sensor can be built without defects, due to the small size of the unit, these imperfections show up in our images as noise. However in most situations the light hitting the sensor is enough to mask the noise, but when the ISO gets boosted to work with less light the "light" from the imperfections is also increased and we start to see them in the image. ISO is how sensative the sensor is to light and can be changed by the user or the phone.

NEW APP REVIEWS

Repulze ($2.99)

Get ready for the futuristic adrenaline rush from the developers of Reckless Racing! This action racer puts you in the seat of experimental Repulze hovercraft working as a test pilot for the Man. Well, the Synthetic Man is more accurate.

The Synthetics run the corporations. The corporations run the world. You are way down the food chain getting pushed around to complete their "scientific" challenges. This racing game takes some of the old N64 style space race games and puts it in the palm of your hands, just like you had alway wished you could.

Repulze features online multiplayer action and is vastly addicting. Here at fAndroid we don't always play games, but when we do... well you know.

Requirements
Android 2.2 +
257mb free

SCORE
usability 4.1
design 4.4
value 4.2

OVERALL
4.2

Contacts+ (free)

People use their phone for one main reason, to stay in touch with one another, however sometimes the stock texting app or phone book app simply doesn't cut it. Or perhaps you're looking for a new fresh look. Enter Contacts+, this handy little app comes in and links together all of your buddies social media accounts and phone number into a new contact book.

There are many features that this new app allows you to do, you can send text messages, auto-sync beautiful pics to your contacts from Facebook. Contacts+ gives you customization by giving the user two different themes to choose from. With Emoji support.

Requirements
Android 2.1 +
7.7mb free

SCORE
usability 4.2
design 4.5
value 4.6

OVERALL
4.4

Camera Zoom FX ($2.99)

Ever find yourself wanting just a little bit more control over your phone's camera? Camera Zoom FX aims to fix this by giving you access to a slew of settings that is normally reserved for the phone to decide. You also get a whole bunch of filters and other fun tools to give your photos a personal touch.

Camera Zoom FX gives you the professional tools to create beautiful photos right on your phone with cropping and image sharpening for when you might get that blurry photo. Plus if you can't find the exact effect or tool you are looking for there are tons of add-ons that are available to get you backin business.

Requirements
Android 1.6 +
1.9 mb free

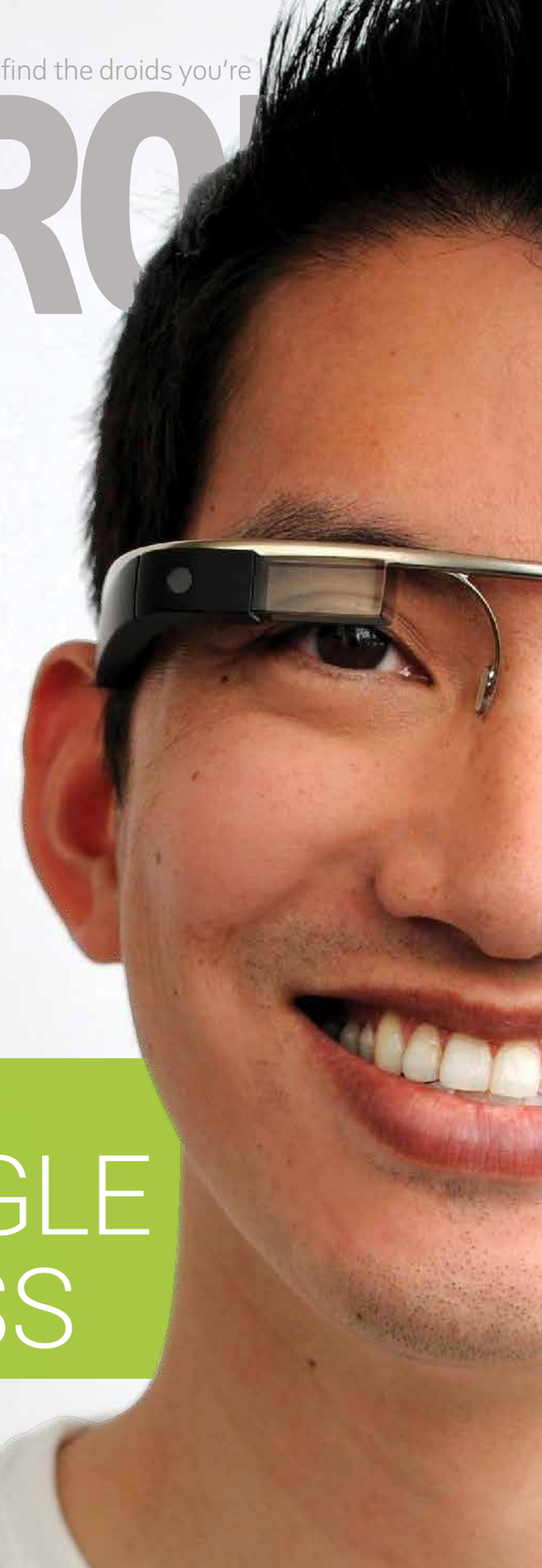
SCORE
usability 4.0
design 3.0
value 4.5

OVERALL
3.8

Helping you find the droids you're l

fANDRO

May 2013 VOL. 1 ISSUE 3



HAPPENINGS

- Prediction List for Google I/O 2013
- LG Optimus G Pro Revealed
- Update to HTC One's Camera

introducing

GOOGLE GLASS

US $5.99
Canada $6.03

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THE HTC ONE IS FINALLY HERE.
Review and Ultra-pixel explained.

WHAT'S GOING ON

- Andy Rubin no longer with Android, No Fooling
- Samsung and Google Money Problems
- Interview with Eric Schmidt

US $5.99
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fANDROID

April 2013 VOL. 1 ISSUE 2

Helping you find the droids you're looking for.