DISTRO

050313 #89

engadget

VISIONARY INTERFACE

WITH GOOGLE'S GLASS EXPLORER EDITION MAKING ITS WAY TO THE HANDS AND FACES OF DEVELOPERS, IS THE FUTURE OF WEARABLE COMPUTING FINALLY IN SIGHT?

GOING BACK TO QWERTY WITH THE Q10

LENOVO'S YOGA 11 TRADES PROCESSING FOR UPTIME

PLUS: Q&A WITH PLAYJAM CEO JASPER SMITH

ISSUE 89

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WS

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FORUM

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REVIEWS

FEATURES

By Tim Stevens

ESC

IRL

TM

On the Cover:
Photograph by Rayon Richards

WELCOME TO MAY

DISTRO
05.03.13

EDITOR'S LETTER

A bit of a lull this week ahead of what is shaping up to be an insane May — and perhaps an even crazier June. We have events stacked three-deep at times, with industry ones like Google I/O, BlackBerry World, CTIA and SID Display Week looming along with private ones like Microsoft's next-generation Xbox unveiling. Next month? WWDC and the Electronic Entertainment Expo, just to name a few. Giddyup.

This week, we got what should be the final dredges of first-quarter earnings, with Facebook reporting $1.46 billion in revenue. That's a 38 percent increase over this quarter last year and a healthy $312 million in profit. Daily active users are also up, from 526 million to 665 million and, perhaps most importantly, Facebook managed to increase the performance of its mobile ads. That will be the key to its long-term success.

Key to T-Mobile's long-term success was the acquisition of MetroPCS and all the sweet, sweet spectrum locked up in its dowry. Big Magenta has been claiming this was a done deal for months, making some of us in the industry a little uncomfortable after the AT&T thing fell through amidst similarly confident talk. Thankfully for T-Mo, we needn't have worried. The $1.5 billion arrangement is indeed done and T-Mobile (and parent company Deutsche Telekom) plans on maintaining the MetroPCS brand in addition to its own. For now, at least.

In the wired-connectivity realm, my home state of Vermont made me proud this week by bringing gigabit fiber connectivity to the lucky residents of the greatest state in the Union — for just $35 a month. That's about half the price of an equivalent plan in Google's fabled fiber service, but even more exclusive, with just 600 of VTel's subscribers opting in. I may yet move back and become the 601st.

We gained access to some new supposed details on iOS 7 this week, courtesy of matching reports in *Bloomberg* and *AllThingsD*. Jony Ive, who was promoted to oversee both hardware and software, is reportedly shattering silos and pulling developers from the Mac OS X side of things to help keep the radically retooled mobile OS on-track. Development is supposedly coming

EDITOR'S LETTER

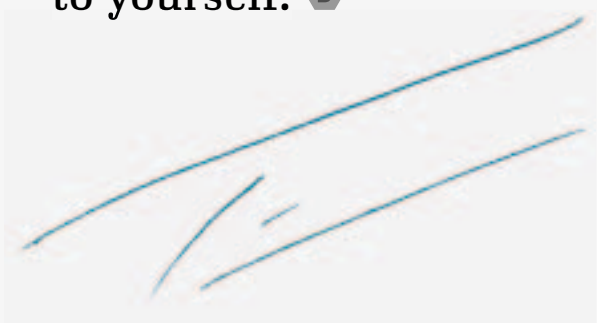
down to the wire for a planned September release and we'd hate to think what a delay might mean.

BlackBerry CEO Thorsten Heins looked a little further in the future to predict that tablets will be dead in just five years. Well, perhaps not dead, but he did say nobody would need them: "In five years I don't think there'll be a reason to have a tablet anymore." Of course, one could quite successfully make the case that there's no need for tablets *now* — they sure are nice to have, though. Heins has made similar statements in the past, saying that with no recurring revenue model, he sees no point in wading back into the tablet game.

The Wii U has allegedly been hacked, with mod chip developer WiiKey claiming to enable the execution of games stored on a USB drive. Things haven't been fully confirmed yet, but they certainly look legit — legit enough for Nintendo to respond and say that, while it hasn't seen anything itself, it's ready to "take the necessary legal steps to prevent the facilitation of piracy." In other words: get ready for yet another Wii U system update.

Finally, some updates on the space tourism front. We'll start with the good: Virgin Galactic's SpaceShipTwo had its first successful test flight on Monday. It rocketed up to a mere 55,000 feet before shutting down and gliding back to terra firma, an important first step before a full-altitude flight later this year and planned commercial flights in 2015. In less stellar news, NASA was forced to extend its partnership with the Russian space agency Roscosmos until 2017. The reason? No American commercial space program has yet proven it has the chops to handle the duty.

In this week's Distro, we're getting you inside the world of Google Glass — as much as we can without actually putting the thing on your head. We have a recap of my early experiences with the headset in my Living with Glass series before diving into the review itself. (It's a long one, so you might want to refill that coffee now.) Those two features are followed up by my interview with Bill Maris of Google Ventures, who is helping to push the wearable into the future. We also have reviews of the BlackBerry Q10 and Lenovo IdeaPad Yoga 11. In Switched On, Ross Rubin examines Google's presence on a competing mobile operating system. Joshua Fruhlinger tells you how to dodge digital fate in Modem World and PlayJam CEO Jasper Smith sits down for Q&A. Now, before you go, there's one vitally important thing you must know:
It was not my idea to put my face on the cover, so keep your Oprah jokes to yourself. D



TIM STEVENS
EDITOR–IN–CHIEF,
ENGADGET

POWER-USER PERSPECTIVE, BOXEE BUYOUT AND THE TINKER UTOPIA

Touch article names to read full threads

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INBOX

MICROSOFT'S SMALL TABLET TRAP

ISSUE 88,
APRIL 26TH, 2013

"It's true that there is a challenge in getting a product to look right in the eyes of the public and with Microsoft and its choice of two kinds of tablets it can make things even more difficult. But all things are possible, and with enough effort and education I think Microsoft will probably end up being king of the tablet world even with An-

"So that whole Ultra Mobile PC thing was a dream. o_0"

— DAQUANTUMFRO

droid being as powerful as it is. And one of the reasons is because of its longstanding experience with computers."

— ZENMASTER

"I have no idea where people get the notion that they would rather use a tablet to have Windows than a 'full computer.' Most people look to tablets as book readers, car audio players, and something to use while on public transportation. If you're doing real work, most likely you're sitting down and thus, would rather use a 13-inch + laptop already constructed for practical use on any surface. These small 10-inch 'pro' tablets are nothing but glorified netbooks, IMO."

— JUECE

NOTHING IS NEW. IT'S BEEN DONE BEFORE

ISSUE 88,
APRIL 26TH, 2013

"'It was huge and had to be charged every single night.' Sounds like some people's phones."

— ASP

"No mention of Chevy HUD systems?

There is still room for

innovation, but a lot of things are just reinventions or small improvements."

— PARKERSROUNDS

SAMSUNG GALAXY S 4
ISSUE 88,
APRIL 26TH, 2013

"The Galaxy S 4 has taken a bit of a beating review wise. At least it's good but not great or it's merely a development of the S3 is the message I'm receiving.

It'll be interesting to see if buyers vote with the feet and walk over to the HTC One."

— MARTINS27

ASUS CUBE
ISSUE 88,
APRIL 26TH, 2013

"Why doesn't Google just buy Boxee and have their original dev team create a box and system for them? There's no reason to keep starting from scratch with Google TV when the heavy lifting is already done. And Boxee is dying slowly right now so they could buy them on the cheap!"

— TREVORCASON

"Seems Samsung has copied Apple to the point of updating a phone, without actually updating a phone. SGS3S."

— DELTIDO

TECHSHOP: AN INDUSTRIAL REVOLUTION FOR $125 A MONTH
ISSUE 88,
APRIL 26TH, 2013

"TechShop is great. I became a member when the San Francisco location first opened. Having access to all those machines (after you've paid for and taken the classes of course) has been amazing. The place makes me feel like I'm back in school again, tinkering around in the model shop. I thought I'd never be able to have that kind of experience again."

— REDBEARDED

"This is freakin' awesome. I wish there was one in the LA area. Love the part in the second video where they test the breathalyzer, lol."

— MOZVOLTA

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EYES-ON

MISSION WORKSHOP WAXED CANVAS RUCKSACK

WEATHERPROOF BACKPACKING

It's no secret that San Francisco's Mission Workshop has staked its claim on dapper bags for hauling the daily gadget arsenal. This time around, the outfit has wrapped two sizes of its Sanction rucksack in weatherproof material, creating a limited edition offering. And one that is sure to keep valuables from getting damp in a sudden afternoon shower.

THE DAMAGE: $219 & $259

Tap for detail

BLANK CANVAS

BUCKLE DOWN

STAY DRY

PHOTOGRAPHS BY WILL LIPMAN

EYES-ON

MISSION WORKSHOP WAXED CANVAS RUCKSACK

STAY DRY

Zippers are urethane-coated and covered with a flap of that waxed canvas to keep those accessory pouches nice and dry. Even the smaller offering can wrangle a 15-inch laptop and those requisite cords.

PHOTOGRAPHS BY WILL LIPMAN

EYES-ON

MISSION WORKSHOP WAXED CANVAS RUCKSACK

PHOTOGRAPHS BY WILL LIPMAN

BUCKLE DOWN
Like many of Mission Workshop's offerings, the Sanction design sports a buckle-down flap that protects zippered pockets and the main compartment from water droplets.

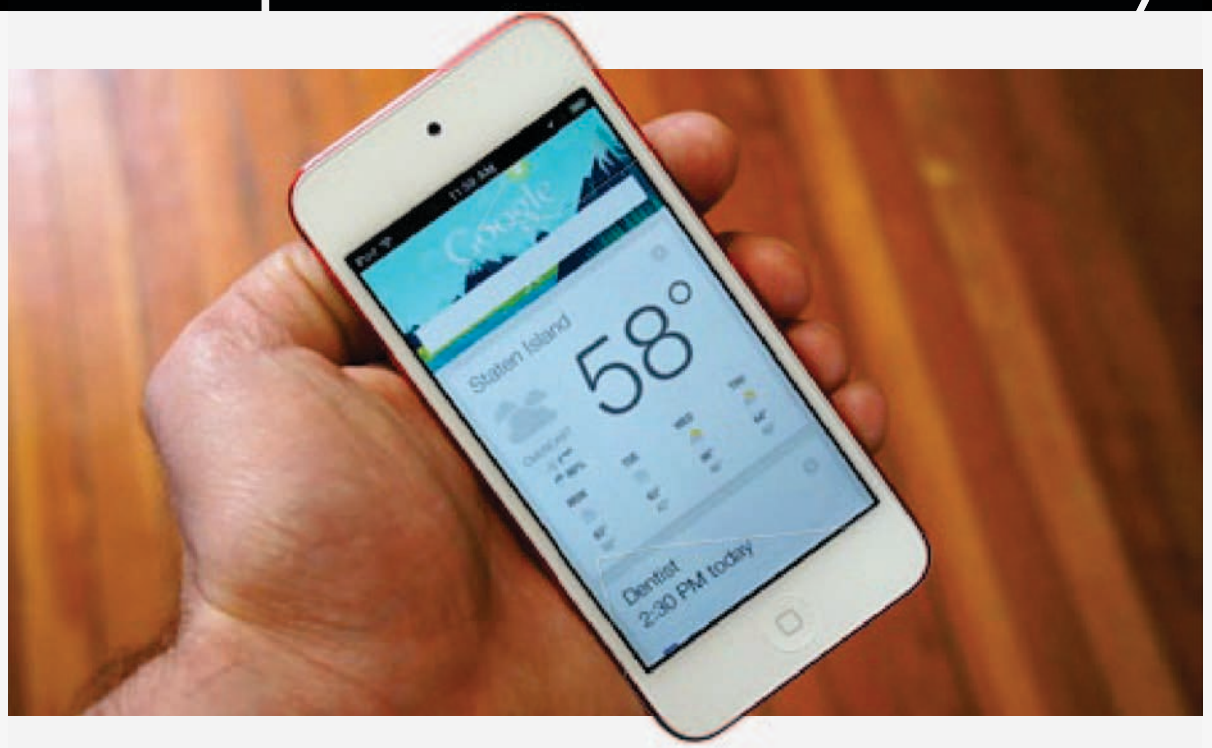
EYES-ON

MISSION WORKSHOP WAXED CANVAS RUCKSACK

PHOTOGRAPHS BY WILL LIPMAN

BLANK CANVAS

These bags are made of waxed canvas — a material that has been used for its moisture-fighting properties for quite some time. While the brown version is shown here, natural and charcoal options round out the crew.



Click on product names to read full stories

PRICE: FREE

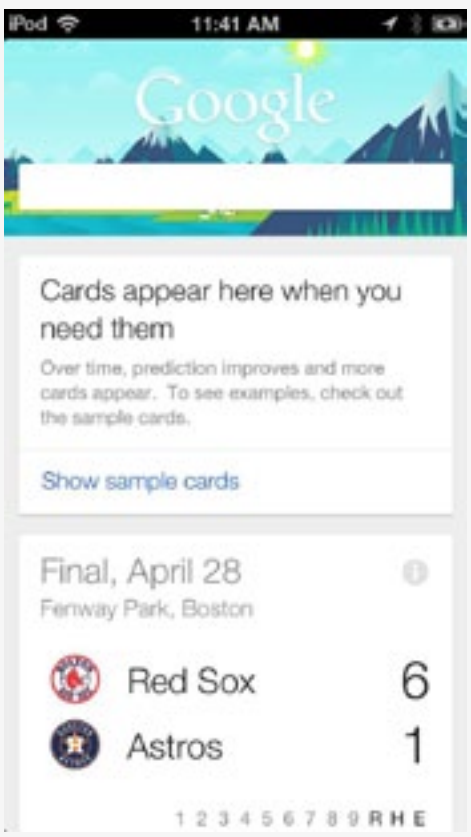
AVAILABILITY: NOW AVAILABLE

THE BREAKDOWN: GOOGLE BRINGS ITS INFO-DELIVERY SYSTEM TO iOS, BUT THE ARRIVAL IS A BIT BUMPY.

GOOGLE NOW FOR iOS

Almost a year after Now debuted with the launch of Jelly Bean, Android's (mis)labeled Siri competitor finally landed on Apple's mobile OS. If you haven't yet updated the Google search app on your iPhone, do it now. We'll wait. Now that you're up to speed, we've got a bit of bad news — not all of the cards are available on iOS. Right now, there's no access to boarding passes or the monthly pedometer, but many of the marquee cards are still here. Just like on Android, you can swipe pieces off the screen to dismiss them, or tap the "i" in the upper-right-hand corner to change the settings.

While there are a few data sources missing, in our brief time with the app, we didn't discover any that we'd consider dealbreakers. Where Google Now for iOS falls short, though, is in its convenience. On Android, Now is just a swipe or a long-press away; on an iOS device, you need to first launch the Google search app, then swipe up from where your cards are peeking out at the bottom of the screen. You also can't simply say "Google" to launch a voice search from within Now. Worst of all, there are no alerts or notifications. That effectively removes the pre-emptive component of Now. Sure, it knows to keep the score of the Mets game handy when you open the app, but it can't proactively warn you if traffic on the way to your doctor's appointment is particularly heavy.



Click on product names to read full stories

MARSHALL MONITOR HEADPHONES

PRICE: $200

AVAILABILITY: NOW AVAILABLE

THE BREAKDOWN: MARSHALL'S LATEST CANS SPORT FAMILIAR AESTHETICS AND TACK ON A FELT TREBLE FILTER SYSTEM.

When you've got legitimate rock-sound credentials, why wouldn't you make headphones? Right? To that end, Marshall is back with a new pair — called Monitor — to sit at the top of its existing range. Under the hood is a 40mm driver, and the same gold, black and leather stylings we saw on the Major model. The folding mechanism works like a charm, and is one of the smoothest we've seen. Certainly, it goes a long way in making them more travel-friendly.

The detachable cord is handy, but there's no locking mechanism to keep it in place. There's a 3.5mm input on both ears, giving you the choice to use either side, as well as the option of letting a friend plug their cans in too. Magnets hold the pads on the earcups, which means they can be removed easily to reveal the F.T.F. (Felt Treble Filter) system. Essentially, this is a removable felt pad that sits over the driver, taking the edge off the high end when in place.

As for the sound, Marshall claims that the Monitors have a frequency range that goes all the way down to 10Hz and anything above around 3KHz is gently tamed — if you have the filters in place. In fact, for casual listening, we preferred the sound with those pads. In the brief time we tested the headset, we found the sound to be clear, bright and not too bassy, even as we sampled various musical styles. Best of all, the Monitors are comfortable.

Click on product names to read full stories

SYNRGIC UNO

Taiwan might have an HTC One and an HTC First, but now, Singapore has a Synrgic Uno to join the banter (get it?). Announced in its home city recently, this device is positioned as a mid-tier Android phone with some modest specs, namely a 4.7-inch, 720p IPS display with Gorilla Glass and, more interestingly, a dual-core 1.5GHz Texas Instruments OMAP 4470 SoC (with 1GB DDR2 RAM and SGX 544 graphics chip). With the upcoming TI OMAP 5 series shifting towards automotive systems, chances are the Uno will be one of the last OMAP-powered smartphones before TI waves goodbye to the mobile world.

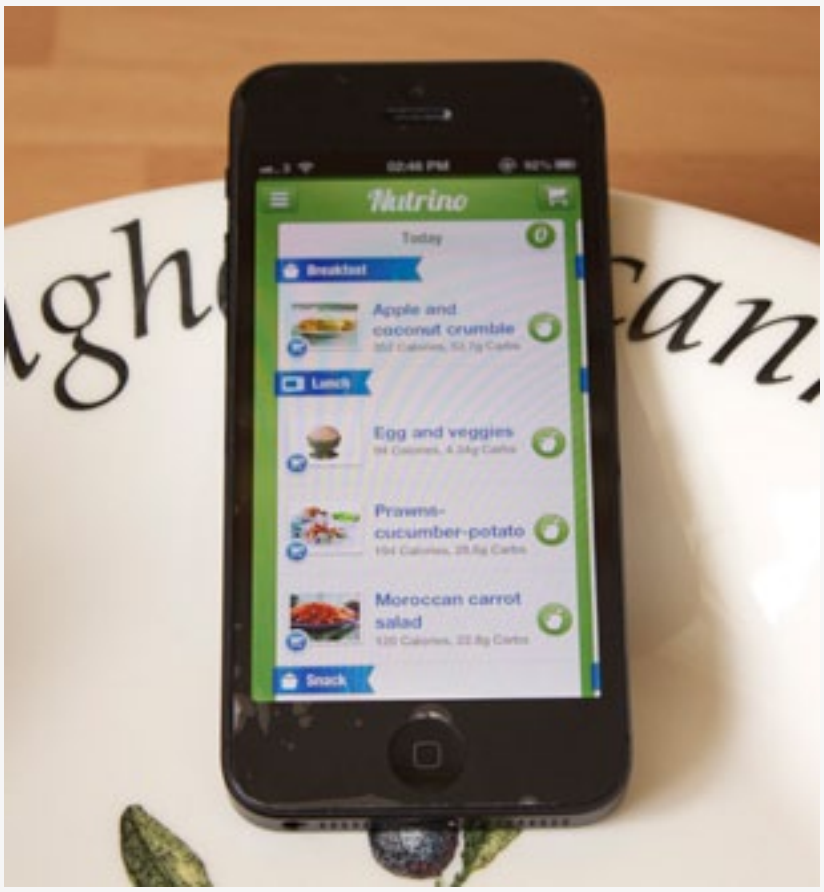
This 9.5mm-thick, 133g phone also packs 16GB of built-in storage along with up to 32GB of microSD expansion, which should give plenty of space for the 8-megapixel main camera (with 1080p video capture) and 2-megapixel front imager. And in case you're wondering, yes, the 2,300mAh battery is removable. As for radios, the Uno comes with quad-band HSPA 3G (up to 21 Mbps) as well as the usual package: 802.11b/g/n, Bluetooth 3.0 with A2DP, GPS, FM and NFC.

The software? Just vanilla Android 4.0.4 (a 4.2 update is coming in this quarter) with Google services included, as 26-year-old Chairman and CEO Cheo Suan Jin isn't too keen on bloatware; and he also promises to release the source code soon so that the enthusiasts can tinker with other ROMs.

PRICE: $320

AVAILABILITY: NOW AVAILABLE

THE BREAKDOWN: SYNRGIC'S 4.7-INCH MID-RANGE UNO IS LIKELY ONE OF THE LAST OMAP-POWERED SMARTPHONES.



NUTRINO (BETA)

We've been told on numerous occasions that washboard abs are created in the kitchen, not in the gym. That's why we were intrigued to take a look at Nutrino, an iOS app that promises a "virtual nutritionist" service to help slice away the adipose from our stomach. All of the information is in a day-by-day format which will tell you which meals to have, and when. Upon launching the software, we were met with a rotating broccoli floret that stuttered to a halt. It's rare that we experience shaky performance on an iOS app, so it's worth mentioning that there are some bugs to work out. It's a shame, because we found ourselves taken with the look and feel of the app.

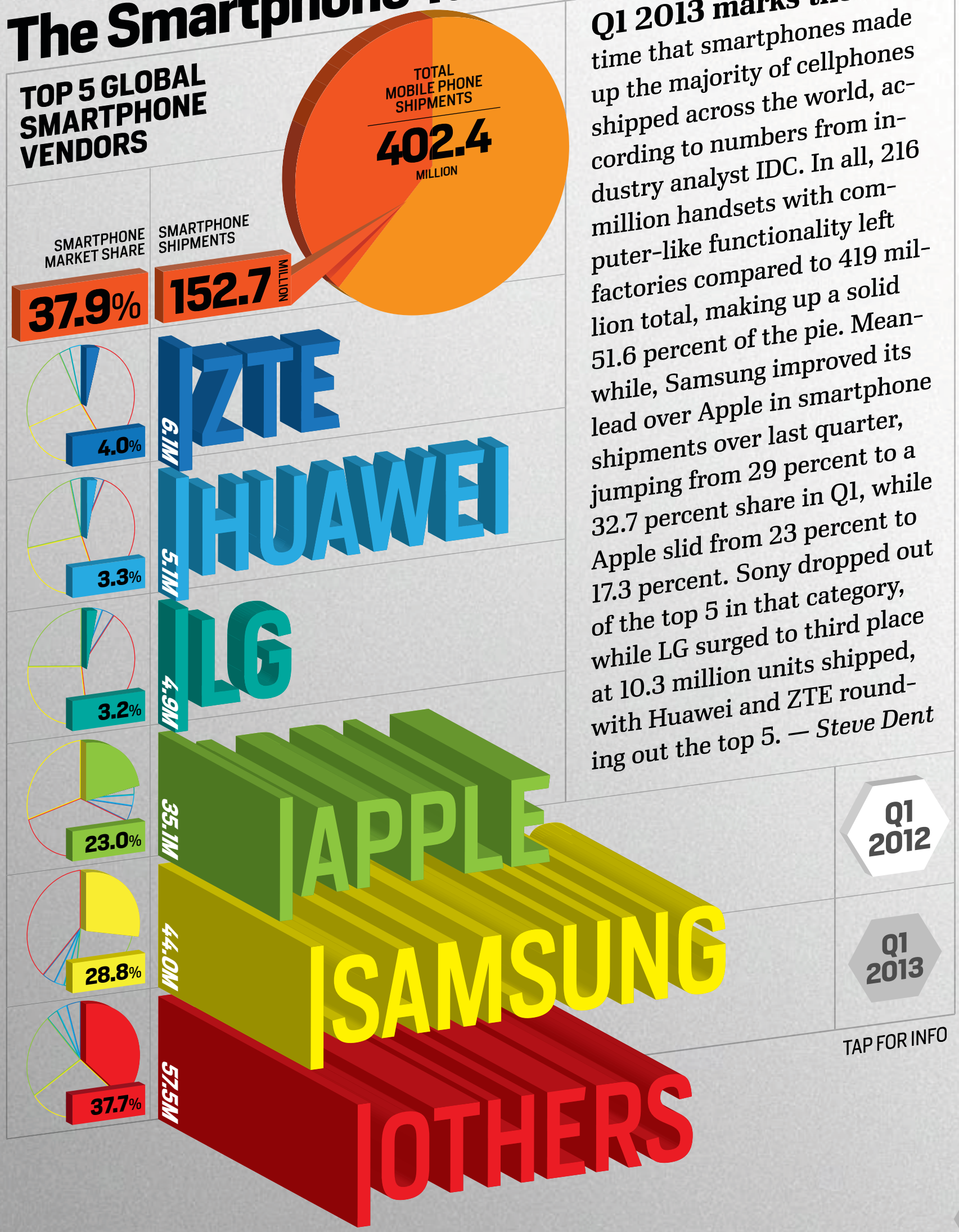
Once we'd managed to get in and connected the app to our Withings and Facebook accounts, we were asked to plug in our vital statistics. Admittedly, this was annoying, purely because we'd have expected the software pull this data from the aforementioned services. Afterward, we were asked to swipe through a Pinterest-style gallery of food pictures and drag various images into brown paper bags (or into the trash) to denote which we'd like to eat for each meal. Then all we had to do was select a target weight and an intensity level. After it has cooked up a diet for you, it lays it out on a day-by-day basis, letting you mark off each meal that you've successfully eaten, giving you a score out of 100.

Each meal has a recipe section, and you can buy a day's worth of ingredients with just a few presses. Here is, however, where we encounter our first real problem with the system: one day's shopping was priced at £40 ($61). Upon further inspection, it transpired that many of the meals were for four servings, but there was no way to break this information out or work out grocery lists on a weekly basis. D

Click on product names to read full stories

PRICE: FREE
AVAILABILITY: NOW AVAILABLE (iOS)
THE BREAKDOWN: NUTRINO LOOKS GREAT, BUT CURRENTLY LACKS THE DIETARY-PLANNING CUSTOMIZATION THAT WE'RE AFTER.

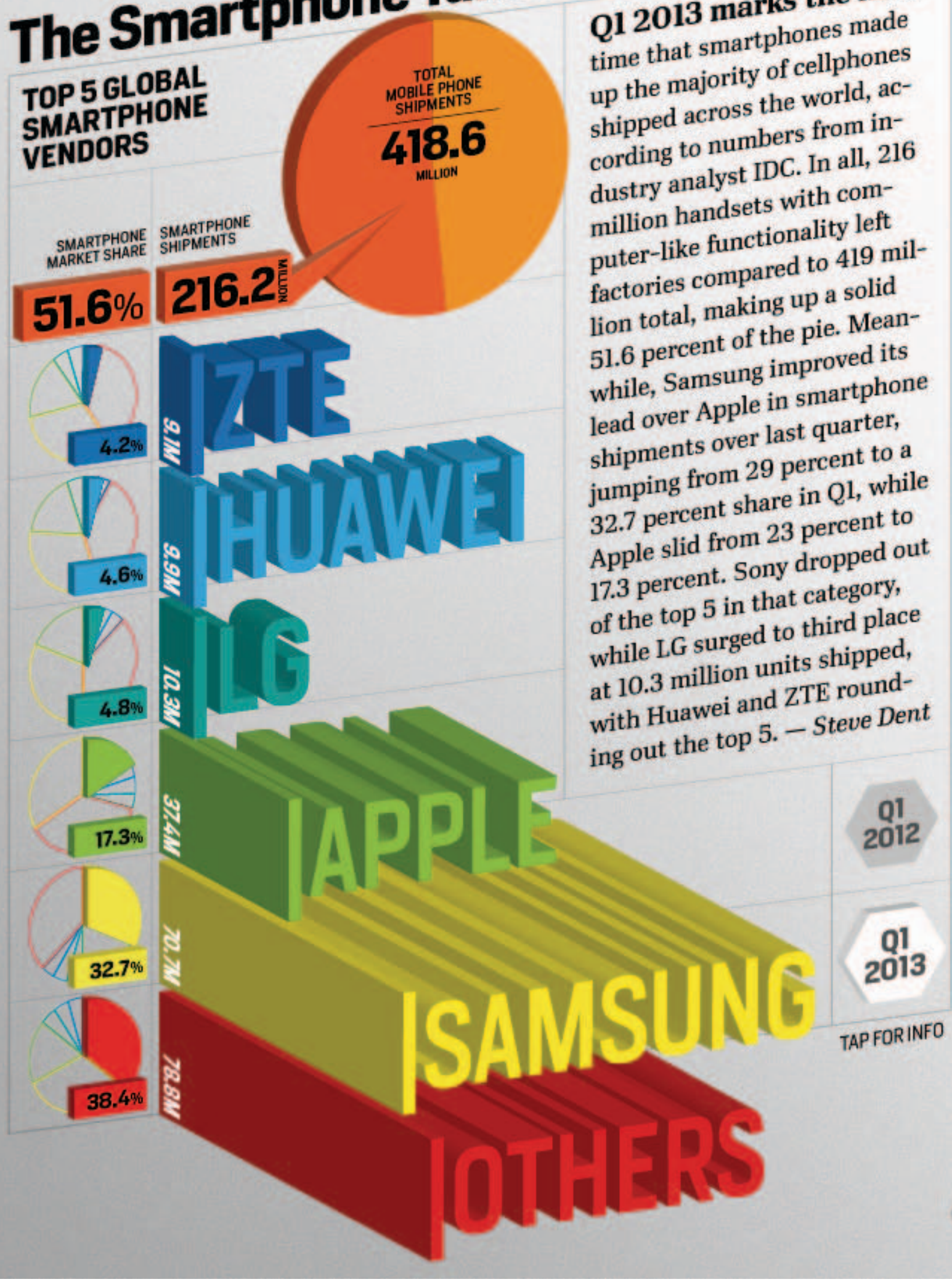
The Smartphone Takeover Begins



Q1 2013 marks the first time that smartphones made up the majority of cellphones shipped across the world, according to numbers from industry analyst IDC. In all, 216 million handsets with computer-like functionality left factories compared to 419 million total, making up a solid 51.6 percent of the pie. Meanwhile, Samsung improved its lead over Apple in smartphone shipments over last quarter, jumping from 29 percent to a 32.7 percent share in Q1, while Apple slid from 23 percent to 17.3 percent. Sony dropped out of the top 5 in that category, while LG surged to third place at 10.3 million units shipped, with Huawei and ZTE rounding out the top 5. — *Steve Dent*

SOURCE: IDC

The Smartphone Takeover Begins



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William Gibson On Burroughs, Sterling, Dick, Libraries, The Uncanny, The Web

Click on headlines to read full stories

By
Brent Cox
The Awl

Last month saw William Gibson make a somewhat rare public appearance at the New York Public Library, and with it came a number of write-ups recounting the event. This one from *The Awl* captures many of the highlights, including the influence William S. Burroughs had on him at a young age, the origins of the term "cyberspace" and a taste of his forthcoming novel, tentatively titled *The Peripheral*. It's not just science fiction but SF inside SF, as Gibson explains it; with one of the alternating storylines set 30 years from now and the other in a far more distant future. Naturally, the full sit-down interview itself is also well worth checking out, and can now be found on the NYPL website in audio, video and transcript form.

PHOTOGRAPH COURTESY OF JOE KENDALL / FLICKR

George Saunders: My Desktop
Interview By Ben Johncock
The Guardian
The latest in *The Guardian's* ongoing series on writers' desktops, this one has short-story writer George Saunders reflecting on the obsessiveness hinted at in his desktop-icon organization, his reasons for avoiding Twitter, his fondness for WordPerfect (since replaced by Word) and how computers, smartphones and the internet have changed his reading habits.

A Spambot's Cookbook, Hilariously and Creepily Exposed
By David Yanofsky and Zachary M. Seward
Quartz
The world of internet comments can be an unseemly place, aided in no small part by bots producing comments that can sometimes seem *almost* authentic. For the curious, this "cookbook" first turned up on computer programmer Scott Hanselman's blog and offers a glimpse at exactly how those comments are pieced together.

How to Name a Planet
By Matthew R. Francis
The New Yorker
Finding exoplanets is one thing, but naming them can also be a tricky matter. As Matthew Francis explains in this piece for *The New Yorker*, that process has recently been further complicated by the entrance of a new organization that's aiming to crowdsource planet-naming (and raise money for science and space exploration in the process), a development that has proved controversial with some astronomers.

ON iOS, NOW IS GOOGLE'S TIME

DISTRO 05.03.13 | FORUM | SWITCHED ON

BY ROSS RUBIN

IN THE EARLY DAYS OF THE INTERNET economy, the saying went that webpages were created on Macs, served on Unix and viewed on Windows. In the iOS app economy, it's often the case that apps run on devices by Apple, but connect to services by Google. With the exception of many games, at this point, apps increasingly strive to be internet services.

Google has been investing in more of these services for a longer time and in a way more directly tied to apps than Apple has. Google Maps has been the best example, but others include Google Drive (with its editing features), Google Voice, and Google+. In contrast, Apple's biggest consumer online service success (other than the iTunes store) has been iCloud, which is less app-like and more of a silent shuttle for documents and files among iOS devices.

The latest Google app to come to iOS is the newest version of one of the search giant's oldest ones: Google Search, now noteworthy for including the Google Now feature set that has become an indirect competitor to Siri. Both interaction models have value. But whereas Siri is about having a conversation, Google Now is about avoiding one. It can do this because, unlike Siri, it is tied into a matrix of information about you through other cloud-connected Google services. Google Now is the proactive payoff for using them. In contrast, Siri requires you to manually specify your name and indicate your address.

In addition to Google's heritage being web-based (some of its early rationale for

“Much has changed between Apple and Google since the stalemate around Google Voice.”

Android was to ensure that it wouldn’t be locked out of Microsoft’s then-ascending position in the smartphone space), it now has its own Chrome OS that is little more than a window into optimized web applications.

Much has changed between Apple and Google since the stalemate around Google Voice, an app that, at least in theory, could have done so much towards winning Google’s allegiance on the mobile phone. Apple has virtually abandoned the prohibition against replicating the functionality of its own apps and Google hasn’t delivered any major new functionality to Voice in years, instead turning its messaging attention to the social focus of Google+ and its integrated Hangout video chats.

One Apple policy that has affected Google apps on iOS has been the prohibition against alternate rendering engines in other browsers on the platform combined with not being able to use Apple’s “Nitro” JavaScript engine. However, the speed hit that followed hasn’t stopped Chrome from becoming one of the most popular apps for the iPhone and iPad.

Google’s support for iOS is, on one hand, a simple way to reach out to a significant share of the smartphone market. The company’s line is that it would be open to, for example, supporting Windows Phone were the installed base high enough. However, iPhone users are desirable to Google — not only to try to get them into Google’s rival ecosystem, but to provide a broader target audience, particularly for Google’s premium advertisers.

That said, Google apps on the iPhone are developing their own visual style with fonts and gestures that look and act more like a modern Android app than most iPhone apps — helping to expose and acclimate iPhone users to Google’s aspirational app interface. That situation is reminiscent of when Microsoft’s Mac apps had a particularly Windows-like look and feel during the days when dark gray toolbars and status bars ran amok in Office. There was an eventual backlash that forced a reversal, but Google’s services extend far deeper into our lives than Office likely ever will.

The next chapter of Google’s love affair with Apple users will play out in devices that extend beyond the smartphone. Will there be a Glass app for the iPhone? Would Google Now cards pop up onto an Apple watch? For now, anyway, the detente between the two rivals is allowing rich functionality for those with divided loyalties. D

WHY DON'T I CRASH?

DISTRO 05.03.13 | FORUM | THIS IS THE MODEM WORLD

BY JOSHUA FRUHLINGER

MY FIRST COMPUTER WAS A COMMODORE VIC-20. It raged with 3.5K of RAM, a high-speed cassette deck and built-in BASIC. I used to copy game programs string-by-string from the back of *COMPUTE!* magazine — tens of thousands of lines of code — and small errors were not an option. One syntax error and the program wouldn't work. When I did make those errors, I'd go back, line by line, and check for differences. There was nothing — at the time — more annoying than seeing hours of code crash because of one bad POKE statement.

That digital fastidiousness has stuck with me since. I keep all my computers' files in order, keep operating systems updated, back up constantly to a remote storage device and quickly go after a machine that's behaving strangely. The net result, and I may be tempting fate, is that I have never had a computer completely fail in the 30 years I've been using them.

There was, of course, that one time, but that wasn't my fault and I'll leave that for the end of this column to reward those who keep reading — or those who have read this far and now know to skip to the end.

I've helped many friends and relatives deal with crashed machines and devices more times than I'd like to count, and in each and every case, I can track the cause to human error. Sure, machines and media can go bad on their own, but that happens a lot

“The net result, and I may be tempting fate, is that I have never had a computer completely fail.”

less than problems caused by poor digital hygiene.

With that I present to you the top three signs that a user is going to experience digital failure in the future:

BAD DIGITAL HYGIENE

Ever walk by a computer at work or school — or even in your own house — and the desktop looks like a quilt of icons? That’s because that computer user doesn’t put his or her files where they belong: in folders and subdirectories. They also don’t run the occasional file permissions or drive-optimization routines because they don’t know how or simply don’t take the time.

This practice probably doesn’t do much to harm the computer or hard drive immediately, but it’s a warning sign that the user isn’t thinking about their computer’s health. Sort of like how an out-of-shape person isn’t necessarily unhealthy at the moment, but chances are there will be problems down the line.

Digital cleanliness issues can be physical, too: ever see a keyboard so speckled with dust, dirt and food bits that, if turned over, could feed dozens of hungry children? This straight-up dirty computer use might look harmless if not downright icky, but it is a sign that the user isn’t thinking about digital hygiene.

EXTENSIONS AND PLUG-INS

Extensions and plug-ins are cool, I suppose, if you’re looking to enhance your internet experience. A pop-up here to alert you that shoes are on sale, a toolbar there to flatten search results — I get it. But what you’re really doing is adding software that comes between you and the software you really want to use. Sounds fine on the surface, but when one bit of code updates and leaves the other behind, you end up with digital loose ends that can lead to bigger problems, usually on the performance side.

So the next time you’re installing that plug-in, ask yourself: will this really save me time when the search bar is already right in my browser? Don’t I already have a program that I can keep running in the background that does this even better and faster? What am I gaining here other than some new thing

> “If you’re stuck on an old version, you’re probably putting yourself in harm’s way.”

to get out of whack when Google updates Chrome? Chances are that since you’re an Engadget reader, you’re pretty advanced as a computer user. Ditch the unnecessary detritus and keep your browser clean.

And may the computer gods have mercy on your soul if you install antivirus and other security utilities and just let them do their thing.

OUT-OF-DATE APPS AND OPERATING SYSTEM

My wife’s computer was acting up — running really slow, taking forever to wake up, you know the symptoms — so the first thing I did was take a look at what she was running. Her operating system was up to date enough as she uses a late-model laptop, but when I ran a check for software updates, I was presented with dozens of prompts begging me to let her software join modern times.

I let the updates do their thing, restarted a couple times, ran a quick disk utility to clean out some old databases and she was up and running. When I asked her why she didn’t let the software update itself when prompted, she simply said, “Because I had other stuff to do.”

Keeping your software up to date assures that you’re running code that has been error-checked and tested. Software engineers don’t just release software and let it sit. They cull user feedback and update software to make it run faster and bug-free. If you’re stuck on an old version just because you like it or don’t have time to update, you’re probably putting yourself in harm’s way.

Nine times out of 10, terminal crashes can be avoided by a user who pays attention to their machine’s behavior. Like keeping a pet, we have to notice when our systems are doing strange things before larger problems develop. Perhaps only experienced users even notice when things are about to go bad, but even the most novice user can learn to keep things in order.

I live a computer life without plug-ins, antivirus software and even without third-party utilities. I just look out for symptoms. As for that one time when I did have a fatal crash, well, that was that hard drive’s fault — ahem. It was a 60MB external Seagate drive that had a bad SCSI bus and eventually shredded its own sectors to oblivion. I did all I could, but those were the early days of spinning discs and sometimes they just got ill. RIP, Big Bertha. D

REVIEW

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Lenovo IdeaPad Yoga 11

BlackBerry Q10

REVIEW

LENOVO IDEAPAD YOGA 11

The Yoga 11 adds stellar battery life to a flexible form factor, but will the OS tradeoff spoil the fun?
By Dana Wollman

Normally, when a company releases two laptops in different sizes (the MacBook Air, anyone?) we review just one: we assume you'll get the gist about the design and trackpad the first time, ya know? So it's funny, then, that we're taking a look at the Lenovo IdeaPad Yoga 11 after we've already tested the Yoga 13 and named it one of our favorite Windows 8 convertibles. They look alike, with an inventive hinge allowing you to fold the screen back like a book cover. The keyboards are the same too, though the 11-incher's is understandably a tad more crowded. They even have the

same oddly shaped power port.

Except, of course, they're totally different products. Whereas the Yoga 13 is a proper laptop, with a Core i5 processor and full Windows 8, the Yoga 11 runs Windows RT, and is powered by a Tegra 3 chip (yes, the same one you're used to seeing in Android tablets). That means a big dip in performance, but exponentially longer battery life. Legacy x86 apps are off-limits too, given that this is Windows RT and all. Now that we've set up that equation for you (weaker performance plus longer battery life minus standard Windows apps equals what?) let's see if this is just as good a deal as its big brother.

LOOK AND FEEL

What's nice about the Yoga 11 is that it takes the same design found on the higher-end Yoga 13 and shrinks it down into a package that starts at a much lower price ($599, as of this writing). It's right up there with the Microsoft Surface in terms of build quality, as different as they are, and it's certainly nicer than all the remaining Windows RT tablets out there (all two of them). Heck, it's nicer than most Atom-powered Windows 8 tablets, too, albeit not quite as powerful.

But first, a little more about that build quality. More than anything, we like how the Yoga 11 feels — sure, it might be your backup laptop, but nothing about the design feels disposable. We're talking about the soft-touch lid, yes, but also the smooth, glassy trackpad and textured, leather-inspired palm rest. The display doesn't wobble when you set the machine down, and is anchored by two tasteful metal hinges. Speaking of the hinge, the act of fold-

The Yoga's unique hinge allows a full 180 degrees of flex.

The nearly edge-to-edge display lends the Yoga 11 a certain panache — enough, possibly, to make you forget the resolution is a ho-hum 1,366 x 768.

ing the screen back into tablet mode feels controlled, but it isn't so tightly bound that you'll ever struggle to move the display this way and that. Finally, of course, there's the dense, sturdy keyboard, but let's not get too far ahead of ourselves.

Setting the keyboard facedown is unsettling at first.

Certain visual flourishes help, too. The nearly edge-to-edge display lends the Yoga 11 a certain panache — enough, possibly, to make you forget the resolution is a ho-hum 1,366 x 768. The system also has more or less the same book-inspired shape as Lenovo's U-series Ultrabooks, meaning when the notebook is closed, the top and bottom edges protrude ever so slightly beyond the sides, sort of like a hardcover shell cradling a spine full of pages. If only it ran full Windows 8 — it might have won based on hardware alone.

You'll also get more ports than you would on some other Windows RT devices: not one, but two USB connections, along with a full-sized HDMI socket and a full-sized SD reader to match. As you'd expect, too, there's a volume rocker and screen-orientation lock button for use in tablet mode, along with a 3.5mm headphone jack and your typical power / lock button.

IN USE

For those who haven't heard much about the Yoga, here's a quick primer. In addition to folding it all the way back into tablet mode, you can stop partway so that the laptop is in a "V" shape. Set it down on a table like a teepee and you've got what's called ~~Downward Dog~~ Tent Mode, which is good for sharing presentations or watching a movie. You can also fold the screen so that it's facing you with the keyboard facedown against the desk. That's called Stand Mode, and it serves much the same purpose as Tent, which is to say it's ideal for using the thing as a tablet, without actually having to hold the 2.8-pound device in your hands.

All told, it's the most versatile Windows 8 form factor we know of, with the only drawback being that the keyboard is always exposed. Indeed, it feels

LENOVO IDEAPAD YOGA 11

The 1,366 x 768 resolution display does have style.

a little unsettling to hold the device in tablet mode and feel your fingers pressed against loose keys, even if they *have* been disabled automatically. Lenovo obviously heard early complaints about that: it's selling $40 sleeves for both the Yoga 11 and the Yoga 13, which you can use to sheathe the entire device, or just cover the keyboard area.

KEYBOARD AND TRACKPAD

It'd be inaccurate to say Lenovo never does any wrong when it comes to keyboards (see: the IdeaTab Lynx), but it certainly gets most things right, most of the time. Like so many other Lenovo machines we've tested recently, the Yoga 11 combines big, well-spaced keys with an underlying panel sturdy enough to handle the heaviest of heavy-handed typing. The individual buttons themselves are the same U-shaped "Smile" keys you'll find on other Lenovo PCs, complete with a decent amount of travel. Our only complaint is that certain important keys (Backspace, etc.) are undersized and difficult to find by feel alone. Though that might well be a function of the fact that this is an 11-inch device, and such machines often have somewhat cramped keyboards.

The other nice thing about a traditional laptop form factor? There's room for a spacious trackpad — something you won't find on most dockable tablets

The palm rest has a unique leather-inspired texture.

(or sliders, for that matter). The touchpad here is fashioned out of a smooth, low-friction material that's easy to drag your finger across. The problem is, when you drag your finger, the cursor doesn't always come with you. As we've found on some other laptops we've tested, the pointer sometimes stops short on the screen as you're navigating, or simply doesn't move at all. This is less of an issue when you're using the Metro (nay, "Modern") interface, where everything is large and an easy target. (Not that you'll be using your mouse much there, but you get our point.) On the desktop, though, hitting those smaller, more defined objects can take multiple tries if you're unlucky.

DISPLAY AND SOUND

As we alluded to earlier, the display here is quite nice for a $600 machine, in part because of that nearly edge-to-edge glass and partly because the viewing angles are so shockingly wide. What we have here is an 11.6-inch, 350-nit panel making use not of IPS, but of Vertical Alignment (VA) technology, allowing you to view from off to the side and with the lid dipped far down. The screen is bright too (350 nits is fairly high as far as laptop-type devices go) and color reproduction is also good. Again, it's a very nice display. So nice, in fact, that you might easily forgive its 1,366 x 768 resolution, especially in the Start Screen environment where everything is big and finger-friendly anyway.

The two tiny speakers, located on either side of the machine toward the front, are low on bass, as you might have guessed. But the volume gets loud enough that you should have all the amplitude you need if all you're doing is having a listening party of one.

PERFORMANCE AND BATTERY LIFE

As tech writers, we became intimately familiar with NVIDIA's quad-core Tegra 3 chip back in 2011 — you know, when there was a new Android tablet to review every other week. In recent months, though, we've become reacquainted as Tegra 3 has started to ap-

pear in various Windows tablets. The Yoga 11, in particular, has a 1.4GHz chip, paired with 2GB of RAM and a 64GB SSD. Alas, there aren't many benchmarks designed to run on Windows RT — and we don't have much to compare the Yoga 11 to, anyway. If our anecdotal experience is any help, we didn't encounter any of the crashing or instability that plagued our ASUS VivoTab RT review unit.

Still, the performance does suffer when you go from a full Windows 8 tablet with an Atom processor to an RT device running with an ARM SoC. In IE10, particularly, we often found that even after a page loaded, we'd need to wait a few extra seconds before we could click around or do anything like scroll or zoom in. Also the boot-up time is just shy of 30 seconds, which is about two to three times slower than many Atom-powered tablets we've tested.

Officially, Lenovo says the Yoga 11 is good for up to 13 hours of battery life. In our experience, that's true and not true, depending on what kind of luck you're having. One day, for instance, we started our battery test (video looping, WiFi on) and didn't log a final time until 16 hours and 14 minutes later. Another time, the battery gave out after around 10 and a half hours. We're at a loss to explain that gap and strangely enough, Lenovo is too; the company said its own engineers have seen varying results, though never less than 10 hours, which matches our own experience pretty exactly.

The Yoga 11 features a soft-touch lid for enhanced grip.

SOFTWARE AND WARRANTY

In a way, Lenovo's the beneficiary of good timing here: had we reviewed this months ago, we probably would have said the same thing we said about the Surface and VivoTab RT, which is that the app selection is too low. And it still is, at least compared to more mature platforms like iOS and even Android. But the selection of Windows apps has grown, with the biggest newcomer being none other than Twitter. People who purchase an RT tablet now might still be frustrated to find a favorite application is missing from the Windows Store, but maybe you'll at least take some comfort in the expediency with which things have been added.

As for pre-installed apps, there's thankfully very little of note here; with the exception of eBay, Evernote and the streaming service rara.com, Lenovo gave us the gift of mostly stock Windows.

The Yoga 11 has a one-year warranty — pretty standard for laptops and tablets (and laptop / tablet hybrids, even).

CONFIGURATION OPTIONS

The Yoga 11 comes in two flavors — a 32GB model and a 64-gig one — and technically, their list prices are $849 and $949. As it happens, though, Lenovo is currently offering the 64GB version for a special price of $599, so until that deal expires, the 32GB model shouldn't even be up for consideration. In any case, the specs are the same, save for the internal storage: both have that 1.4GHz Tegra 3 chip we talked about, along with an NVIDIA ULP GeForce GPU, 2GB of RAM and a four-cell battery.

The edges extend just a touch, resembling a book cover.

THE COMPETITION

We understand why RT was born: there was a market for Windows tablets that were every bit as thin as the iPad, or your typical Android tablet, and offered similarly long battery life, to boot. Windows RT tablets accomplish that, for sure. The thing is, so do low-powered Atom tablets running full Windows 8: they're thin and light with robust battery life and performance that's actually a cut above what you'd get from an ARM chip. Oh, and you can run legacy x86 apps, too.

With that in mind, if we've persuaded you to give Atom a chance, we'll make things even easier for you and narrow your choices down to just two models: the Lenovo ThinkPad Tablet 2 and the ASUS VivoTab Smart. The Lenovo is pricey, at $579 and up, but in absolute terms, it's our favorite, thanks to long battery life and a best-in-class keyboard dock. It also accepts pen support, if you think you might want to scribble once in a while. (Though really, if that were so important, why would you be looking at the Yoga 11 anyway?) The VivoTab Smart doesn't last quite as long on a charge, and the keyboard isn't as delightful to use, but at $499 for the 64GB model, it offers better value than anything else out there. As far as consolation prizes go, this one is pretty great.

If you do insist on a Windows RT device (and who are you, anyway?), the Yoga 11 is a good choice, mostly owing to its comfy keyboard and long battery life. If you'd prefer something a bit easier to use as a bona fide tablet, the Surface RT is lighter. Samsung has an RT device too, the ATIV Tab, but it isn't even for sale in the US, so those of you who live here in the states have an especially limited selection. C'est la vie.

Finally, it's worth mentioning that Lenovo also plans to sell the Yoga 11S, which has the same form factor as the Yoga 11 (and roughly the same dimensions), except it runs a Core i5 processor. That's great news for folks who actually need a little more horsepower than either Atom or ARM has to offer. But the battery life might be half as long, precisely due to that higher-voltage chip. Just a heads-up.

If Lenovo had swapped in an Atom processor and installed Windows 8, it might have had a hit on its hands.

Flip the Yoga 11 into Tent Mode for keys-free interaction.

WRAP-UP

We love the Yoga 11, but we can't shake the feeling it's running the wrong OS or at the very least, that it's ahead of its time. As the little brother to the wonderful Yoga 13, it's every bit as versatile, well-made and comfortable to use. (Seriously. That keyboard.) And if Lenovo had swapped in an Atom processor and installed Windows 8, it might have had a hit on its hands. In fact, we hope Lenovo does just that when it sits down to design the inevitable follow-up product — after all, what good is a laptop-style product without the ability to run legacy x86 apps? It doesn't help that there are so many Atom tablets (including Lenovo's own ThinkPad Tablet 2!) that offer long battery life, a decent typing experience and support for most Windows programs.

Still, we can't totally pan this. Maybe if the battery life were the same as on Atom tablets, but in fact, the runtime here is so epic we can't recreate it on any other device (and believe us, we've tried). If you're satisfied with the current selection of Windows apps and imagine using this primarily as a tablet, then the Yoga 11 could be a win: it lasts longer on a charge than any other Windows tab, and it has a comfortable keyboard at the ready when you need it for pecking out the occasional email or web search. If you thought this might make a nifty travel laptop, though, we'll give you the same advice we dispense to people considering Chromebooks: be sure (very, very sure) you don't need any additional apps for using the keyboard. D

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BOTTOMLINE

LENOVO IDEAPAD YOGA 11

$599+

PROS

- Comfortable keyboard
- Epic battery life
- Versatile, well-crafted design
- Wide viewing angles

CONS

- Sluggish performance
- It's a laptop that doesn't run x86 apps

BOTTOMLINE

We love the Yoga 11 for its keyboard, display and long battery life, but it might have more use if it were running full Windows 8.

REVIEW

BLACKBERRY Q10

BlackBerry releases its portrait-QWERTY Q10, but does it offer any new tricks for the tactile-typing diehards?

By Tim Stevens

You can't please everybody all the time, and if there's a company who knows this better than the rest, it's BlackBerry. At the showy launch for BlackBerry 10, the company finally unveiled its new stable of smartphones with which it would fight the likes of Apple, Samsung, HTC, Microsoft, Nokia and Google. No simple task, that, and so BlackBerry rolled out not one, but two weapons: the all-touch Z10 and the portrait-QWERTY Q10.

But there was a catch: only one would launch at a time. It was a staged attack, with the Z10

forming the initial volley. Many said this was a mistake, and that the Q10 and its familiar physical keyboard should have gone first, paving the way for the more radical, all-touch Z10. After what seems like an eternity, the $249 BlackBerry Q10 is finally ready for duty, so let's put it through its paces and see which of these fraternal twins is truly the flagship.

HARDWARE

As a portrait-QWERTY smartphone, the Q10 is a bit of a rare bird these days. In many ways, its closest sibling is actually a phone with a few years of seniority on it, the Bold 9900, a piece of hardware we quite liked despite its aged operating system. That said, the Q10 shares plenty of design language with the keyboard-free Z10.

Its 119.6 x 66.8mm dimensions actually slot in somewhere between those two. The Q10's 10.35mm thickness is one full millimeter thicker than the Z10 that came before and just fractionally thinner than the 9900. You'd never know it, though. Thanks to the Bold's tapered edges, the older phone actually feels considerably thinner.

Both have custom glass-weave back panels, but where the Bold's is just an inset in the center, the Q10's is a full backplate that pops off by sliding downward, exposing a 2,100mAh battery, micro-SIM and microSD expansion. (Note that the white version of the Q10 will feature a rubberized backing, much like the Z10.) It looks quite nice and a soft-touch coating means it isn't likely to slip out of your hand. Plus its composition won't interfere with any of the internal radios, keeping precious signal strength strong. Still, its flat shape doesn't fit the hand anywhere near as nicely as the tapered one on the 9900.

A metal band partway down from the top-rear visually divides the removable battery cover from the rest of the back, which surrounds the 8-megapixel camera and its LED flash — a near-identical setup

The Q10 and its predecessor, the Bold 9900.

We're somewhat more drawn to the look of the brushed, stainless-steel rim used on the Bold 9900 than the monotone darkness found in the Q10.

to that on the Z10. That sliver of metal protrudes ever so slightly, ostensibly to keep the camera elevated from the table when it's lying on its back, and terminates on the sides of the phone, formed by a black rim.

Under here, we're told, is the same metal construction as was used on the 9900, but we have to say we're somewhat more drawn to the look of the brushed, stainless-steel rim used on the elder phone than the monotone darkness found in the Q10. It's very much in line with the Z10 and indeed the PlayBook before, which is to say it's stoic and understated. Looking professional whilst using this phone will certainly not be a problem. Getting your friends and co-workers excited about how the thing looks, however, could be.

The only visual highlights on the front are another four unpainted stainless bands that separate the rows of keys. These four frets provide plenty of separation for quick touch-typing and are actually a structural element of the chassis now, adding extra rigidity to the mix. Indeed, this phone passes the twist test with flying colors, not flexing or creaking when some torque is applied.

Situated just above the keyboard is a 3.1-inch, 720 x 720 Super AMOLED display. Yes, it's square, which makes watching 16:9 video content a bit of a bother, but it works well in nearly all other regards. In fact, the biggest problem isn't with the display; it's with its placement. The thing is set so far down close to the keyboard that it's actually somewhat difficult to execute the key gesture in BlackBerry 10: swiping up from the bottom bezel.

This is the gesture that exits you from your current app and allows you to peek into the Hub. We constantly found ourselves having to swipe up a second time to successfully get home. Those with small thumbs may have less of a problem, and if you train yourself to actually start your swipe on the keyboard and drag up from there, you'll have more success, but we can't help but wish BlackBerry had shifted the entire display assembly up a quarter-inch or so. There appears to be plenty of room between the top of the display and the earpiece, taken up only by a bit of branding at this point.

Speaking of branding, it's typically minimal here. There's a metal BlackBerry logo inset on the battery cover, which looks quite polished, and an unfortunate silkscreened AT&T globe logo

The Q10 keeps it QWERTY, but adds BB10 OS into the mix.

down beneath the spacebar that looks a bit wedged in there.

Situated above the display, and above the BlackBerry branding, are the earpiece, 2-megapixel front-facing camera and a notification LED. Up on top of the device, you'll find a power / lock button, 3.5mm headphone jack and a pair of microphones for noise cancellation. Moving to the right side is BlackBerry's excellent three-way volume rocker, with a middle button for play / pause and also for quickly toggling vibration mode. On the bottom, you'll find the primary microphone and the device's speaker — which, we're happy to report, seems to be quite a bit louder than that on the Z10. Finally, on the left are the micro-USB and micro-HDMI connectors. They're positioned farther up the side than on the Z10, where they sit close to the center, but they are at least the same distance apart, meaning, in theory, a dock built for the Z10 could also work with the Q10.

Like with the Z10, BlackBerry will offer four SKUs of the Q10, three with LTE (two with HSPA+ and one with CDMA) plus a fourth, non-LTE HSPA+ model. The AT&T version we tested offered quad-band LTE at 2, 4, 5, 17

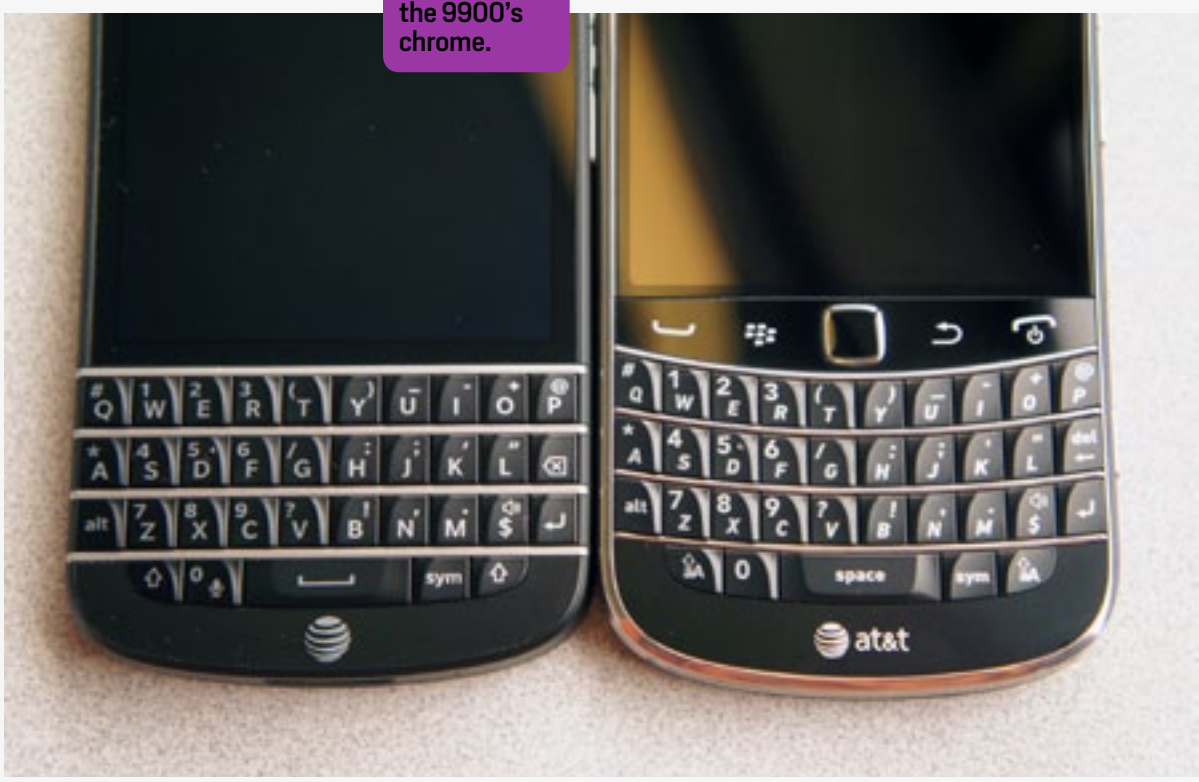
(700 / 850 / 1700 / 1900) plus penta-band HSPA+ I, II, IV, V, VI (800 / 850 / 1700 / 1900 / 2100) and quad-band EDGE. A second LTE model adds in Verizon-friendly CDMA, with LTE band 13 (700), dual-band CDMA (800 / 1900), dual-band HSPA+ I, VIII (900 / 2100) and quad-band EDGE. The third LTE model offers quad-band LTE at 3, 7, 8, 20 (800 / 900 / 1800 / 2600), quad-band HSPA+ at I, V, VI, VIII (800 / 850 / 900 / 2100) and quad-band EDGE. Finally, there's the penta-band HSPA+ model at I, II, V, VI, VIII (800 / 850 / 900 / 1900 / 2100) with quad-band EDGE. All offer 802.11a/b/g/n connectivity and Bluetooth 4.0. Those who like to move it, move it will find an accelerometer, gyro, magnetometer and GPS.

The Q10 has already been confirmed for all four major national carriers and while we don't have a formal release date yet, BlackBerry promises it'll be in American stores by the end of May. As of May 1st, however, Canadian and European readers can head down to local stores and pick one up.

Powering the device is the same 1.5GHz Qualcomm MSM8960 dual-core CPU with 2GB of RAM. The phone also offers 16GB of internal storage, with microSD expansion on tap. Call quality was on par with the Z10, so about average, but again we're happy to report the built-in speaker on the phone seems to have more oomph than the one on the Z10.

KEYBOARD

While the display is certainly worth talking about (and we shall, in just a moment), given the internal similarities with the Z10, the highlight of the Q10 is surely its keyboard. Thankfully, it's a very good one — but we're not entirely sure we'd call it better than that on the Bold 9900. The biggest distinguishing feature is the keyboard layout, which does away with the ergonomic, curved shape in favor of straight rows. While this does mean you may need to move your wrists closer together to achieve proper thumb alignment with the keys, you're not likely to notice much of a difference.



The Q10 opts for matte black over the 9900's chrome.

Otherwise, the layout is almost exactly the same, with the only slight difference being the addition of an alternate function on the 0 key: a little microphone. It's with this that you trigger BlackBerry 10's Voice Control feature, though in general we'd much rather just type. And, thankfully, you can. You can just start typing from the phone's home screen to search for apps or contacts. You can also enter in commands, like "email" to start an email or "bbm" to send a message. This is a very handy extension to the OS that can certainly speed up simple tasks.

Overall key shape is the same as on the earlier Bold, with that same gentle arc of the keys curving to meet your thumbs. It is, then, very nearly the same as you've experienced on earlier BlackBerries, and that is, of course, a very good thing. That said, we couldn't help but wonder how this device compares to typing on the new, predictive keyboard on the Z10. So, we compared them.

The move to physical keys defeats some of the most compelling aspects of BlackBerry 10's predictive virtual keyboard, namely the ability to flick upward on individual letters to autocomplete words and the ability to swipe from right to left to delete a whole word. There *is* a predictive mode you can enable on the Q10, which simply places a row of suggestions along the bottom of the display as you type. We found reaching up to it and then back to the keyboard a bit clumsy and, indeed, it's disabled by default.

Even though the predictive modes on both the Q10 and the Z10 quickly figured out our primary testing phrase ("the quick brown fox...") we were still slightly faster on the Z10. In fact, in nearly every situation we tried, we were quicker entering text on the virtual keys of the Z10 than the physical ones of the Q10. The exception? Email addresses and passwords. Getting to special characters is far less cumbersome when they're all right there on the keys.

In nearly every situation, we were quicker entering text on the virtual keys of the Z10 than the physical ones of the Q10.

DISPLAY

It isn't too often you see a square display on a smartphone these days, but then again portrait-QWERTY devices are hardly a dime a dozen either. The panel in the Q10 is a 3.1-inch, 720 x 720 Super AMOLED that, we're happy to report, looks quite good from all angles — though, it must be said, the color temperature goes from overly warm to cool when you look at it off-angle. Even so, contrast remains quite high. Brightness is also good and the panel is easily

The square, 3.1-inch display looks bright from most angles.

visible in direct sunlight.

It's really the size and the shape that are its only detractions. The 3.1-inch display is about 10 percent larger than the 2.8-inch LCD on the Bold 9900, and that we've moved up to 720 x 720 from VGA definitely helps too, but the panel here certainly looks and feels tiny compared to the relatively mammoth displays found on other smartphones. That includes the 4.2-inch, 1,280 x 768 LCD on the Z10, by the way, which feels far better-suited for consuming content, surfing the internet and even cruising through long lists of emails and other social missives.

Of course, that phone doesn't have a keyboard.

CAMERA

On the Q10, we have the same pair of cameras as we found on the Z10 — that is, a 2-megapixel shooter in the front and an 8-megapixel unit in the back, paired with an LED flash. Unsurprisingly, then, we found camera performance in the Q10 to be just the same as on the Z. In bright light, photos are passably good, lacking sharpness and having a bit of noise, but color reproduction is solid. Low-light shooting is something we would avoid.

That is, unless you enable the new HDR mode that comes along as part of the BlackBerry 10.1 OS update. In this mode, the camera will take two shots at different exposures and average the two together. It will, thankfully, save

Skies seemed to actually have their contrasts decreased when HDR was enabled.

two shots to camera storage: a normal one and one "enhanced" by the HDR. In almost every circumstance we liked the non-HDR photo better. While dark colors did indeed get richer with HDR enabled, anything that was already well-lit seemed to actually get duller. Disappointingly, skies in particular seemed to actually have their contrasts *decreased* when HDR was enabled. Finally, as on other platforms, make sure you're only photographing stationary subjects when using HDR. Otherwise you run the risk of introducing some spooky ghosts into your images.

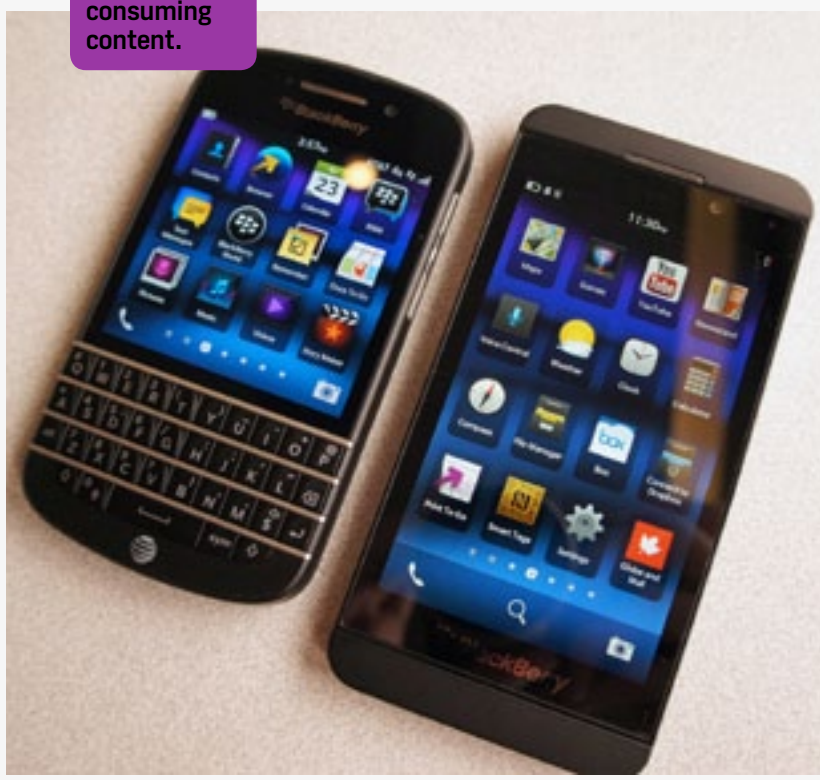
Maximum video recording is 1080p out of the rear camera, and quality is reasonable. Video can be digitally stabilized here, but enabling it actually introduces some rather distracting jiggling to the mix. We're not entirely sure that's actually better than the shake it aims to replace. The camera is reasonably quick to re-focus while filming, but we did notice a bit of focus-hunting when shooting at more distant targets.

SOFTWARE

We reviewed the QNX-based BlackBerry 10 quite comprehensively when it released, so we won't cover much of the same ground here, but it is important to note that the Q10 is actually running version 10.1, an update that won't come to the Z10 for a few weeks at least. While there are no major changes, there have been a few tweaks we should mention.

Again, the main feature of BlackBerry 10 is easy multitasking, primarily facilitated by gestures. Swiping up from the bottom bezel of the phone drops you back to your running apps and that's actually a bit of a challenge given the proximity of the keyboard to the display. Swipe up and to the right and you get to the BlackBerry Hub, which consumes all your messages from email, Twitter, Facebook, LinkedIn, BBM and elsewhere into one massive, fast-flowing pile.

With 10.1, you can now download email attachments, a rather necessary feature missing in the initial release, and send pin-to-pin messages in BBM. You can also now



The screen on the Z10 is better for consuming content.

Color schemes have been made darker in many apps, helping to boost the battery life on this OLED panel.

paste phone numbers into the dialer and take HDR photos, if you're so inclined. Specifically for the Q10, color schemes have been made darker in many apps, helping to boost the battery life on this OLED panel, and many on-screen controls have been shrunk or removed entirely to make the most of the 3.1 inches on offer here.

The biggest change is the addition of Instant Actions which enables you to type something like "email bob" to send an email to Bob. Other available commands include "text," "bbm" and "call."

What's not changed? Most everything else, including, most tragically, the navigation app. It's still far too limited to be taken seriously when compared to the mapping offerings from Microsoft, Google or Apple. Similarly, the app selection in BlackBerry World hasn't changed substantially in the past few months since the release of the Z10, leaving it hurting when compared to those other platforms.

PERFORMANCE AND BATTERY LIFE

Given the Q10 offers the same dual-core 1.5GHz Qualcomm MSM8960 processor and 2GB of RAM as the Z10 you'd expect it to have similar performance. And, indeed, it does. Still, the OS did feel slightly more responsive and apps were slightly quicker to load. We're prone to put this down to internal improvements in BlackBerry OS 10.1 and hope the Z10 will see a similar, if slight, boost when it's available there. The SunSpider JavaScript benchmark seems to back that up, with an average score of 1,456ms. That's a nice improvement over the 1,775ms scored by the Z10, but still a far cry from the sub-1,000ms scores dropped by other top-tier smartphones.

Indeed, overall improvements are slight and the Q10 works and feels very much like its predecessor. While the OS is very quick and responsive and the browser is as well, 3D gaming is not this phone's forte. The *Need for Speed* game that came pre-loaded on our review unit often stuttered and struggled, and if the pack-in game isn't working well, that's not a good sign. For your more casual mobile gaming pursuits, the Q10 will suffice.

The Q10 will also do just fine lasting through a day of usage, we found. On our standard battery rundown test, which entails a video looping endlessly while the phone is connected to LTE and with the display on and set to a fixed brightness, the phone managed nine hours and 35 minutes total. That's an hour and 20 minutes

Behind the removable back sits the 2,100mAh battery.

more than the Z10 before it, putting it more or less on par with the LTE Samsung Galaxy S III. More importantly, we easily got through a full day of typically heavy use without reaching for the charger. That said, the 2,100mAh battery pack here is slender enough that carrying a second around won't take up too much space in your satchel.

Finally, boot-up times are still as painfully slow as on the Z10. The phone took one minute and 20 seconds to cold boot and a full 22 seconds just to completely shut down. That'll be a definite pain point for battery-swappers.

WRAP-UP

The BlackBerry Q10 is, for the most part, exactly what we expected it to be: a Z10 with a smaller display and a physical keyboard. There's not much between the two phones when it comes to performance or aesthetics and, while the improvement in battery life is nice, both still fall into the "average" category in that regard. Unsurprisingly, then, which of the two is right for you boils down to a single question: how badly do you hate typing on glass?

Again, our testing found text entry to be faster on the Z10 than the Q10 in most situations, but speed doesn't

The glass-weave design is wrapped in a soft-touch coating.

always equate to satisfaction. All things being equal, we'd prefer a physical keyboard to peck at than a piece of glass to smudge, but here we'd choose the Z10 just for that larger display.

And what of the broader question, of whether the $249 Q10 can help BlackBerry get its groove back and compete with the rest? There are certainly those who won't buy a phone without a keyboard, and the Q10 is unquestionably the best phone with a keyboard on the market. However, given how weak the competition and demand there has become, we're not sure cornering that market will move the needle very far in BlackBerry's favor. D

Tim Stevens is Editor-in-chief at Engadget, a lifelong gamer, a wanna-be racer, and a born Vermonter.

BOTTOMLINE

BLACKBERRY Q10

$249

PROS

- Great physical keyboard
- Solid build quality
- Good display

CONS

- Small display
- Mediocre camera
- Limited app selection

BOTTOMLINE

The BlackBerry Q10 delivers the great QWERTY feel that fans have been waiting for, but those looking to consume content will want to stick to the larger panel on the Z10.

Google Glass

Tim Stevens takes on the Explorer Edition for a week of impressions, a full review and an interview with Google Ventures' Bill Maris

PHOTOGRAPH BY RAYON RICHARDS

Living With Google Glass (Day One)

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A week behind the lens of Google's $1,500 wearable tech

By Tim Stevens

In a loft atop Chelsea Market, Google is doing something special. Here, lucky Explorers will get their first taste of Project Glass. Yes, Google's latest X project (that we know about, at least) has finally made its way to the East Coast en masse. More importantly, it's also made its way to my face. A full Engadget review of the headset can be found

PHOTOGRAPH BY RAYON RICHARDS

in this issue, but this is the sort of thing that warrants documenting the whole experience. You can quite quickly size up the next iteration of a great smartphone. Evaluating a wholly new product category to see how it fits into your life? That takes a little longer, dear readers.

I plan to spend a little while living with Glass in a variety of ways, some exciting and many less so, with the goal of getting comfortable with the thing — or uncomfortable, if that's how it turns out. Given how many of you are excited to read about Google's new wearable, we wanted to let you come along for the ride. After all, isn't sharing an experience what Glass is really all about? Join me for my very first impressions after picking up my headset and some sample images of the trip home.

Enthusiastic Google employees will ensure every aspect of Glass is perfect before letting early Explorers start exploring on their own.

So how did I get here? Did I post an inspirational video online pledging why I should be an Explorer? Nothing that aspiring, sadly. As you may recall, Google first started accepting pre-orders very nearly a year ago at its I/O developer conference. After being wooed by skydivers and extreme bikers, I stood in line like everyone else and walked away with my own little individually numbered Lucite cube. This week, nearly 10 months later, I got an email. My time, it seemed, had come. I set an appointment and scrambled down to NYC as quickly as I could get there to pick up my new headgear.

On the other end of an elevator hidden in Chelsea Market was where lucky ones got to pick theirs up. It's a clean, open space, full of stations where enthusiastic Google employees sat and patient-

ly ensured that every aspect of Glass was perfect before letting those early Explorers start exploring on their own.

There were mirrors at every station and the whole place looked a bit like a high-end, open-air, futuristic salon — minus the chemical smell and banal chitchat. Here it's just a team of very eager-to-please Glass experts who walk you through every step of the process, from opening the box to pairing to your phone, even adjusting the nosepieces so that the whole thing rests just perfectly on your face. The final step? A trip over to the window to sample the great view — and to capture your first photo and video through your new headgear.

You do get your choice of color and I had my heart set on something pastel. Alas, currently available choices were somewhat limited: what amounted to gray, darker gray or white. I went with the latter, a particularly conspicuous hue that I may learn to regret. Indeed, I wasn't more than a few steps out the door before the curious looks started and, on my first subway ride, I noticed a total stranger smiling at me. This is not a typical thing.

"Is it as good as they say?" he asked, after a few moments. I apologized, saying I'd just barely put them on and didn't really have any impressions to give yet. "It looks cool," he concluded. Not a bad start.

"Is it as good as they say?" a stranger asked. "It looks cool."

I managed to capture our conversation on video, a process achieved by holding down the tiny shutter button on the right of the device. It records for only 10 seconds by default, but two quick taps on the touch-sensitive side of Glass will extend that indefinitely. Just shutter pressing the button once captures an image.

You can, of course, do all that using voice if you like, but saying

"Okay Glass, take a picture" every time is a bit cumbersome. You can also speak to get directions, make phone calls and search the web; things I'll dive into a bit more next time.

The speaker on Glass, in case you're wondering, is a bone-conductive unit that buzzes just behind your right ear to create sound. It actually tickles a bit sometimes and is a little hard to hear in crowds, I learned, but if you plug your ears it works well even there. Interestingly, I found I could hear it best whilst wearing earbuds.

I captured a few other short clips on the long, late-night ride home and as things got progressively darker, you could begin to see the limits of this tiny, 5-megapixel shooter when it comes to low-light capture. The last clip, of me getting home late at night and being greeted by our sleepy, but excited mutt Yoshi (who you may remember from an earlier review), looks like a murky scene out of a horror movie. It was very dark indeed, but after I turned the light on, I could still see my pooch just fine. All Glass could pick up was a hint of a happily wagging tail.

As daylight turns to nightfall, the limitations of the 5-megapixel camera become increasingly apparent.

Living With Google Glass (Day Two)

"You look ridiculous." This was not exactly the reaction I was hoping to receive from my wife the first time she saw me wearing Glass. She was long-since asleep when I arrived late the night before, and so had missed my triumphant, technologically augmented homecoming. I confess Google Glass is a bit odd-looking, but my wife is even more of a hardcore Trekker than I am and I thought somehow this headgear would channel her deep-seated love for bizarre, high-tech facial appendages.

Nope. She wasn't the least bit impressed. When she tried them later, she came around a bit, but spent more time saying the silicone grippers pinched her nose than reveling in the potential future applications of such technology. You can't please everybody.

My first full day spent wearing Glass would be a rare one: a full day working at home. Well, almost full. I had to make a run into town to take care of some business, which proved to be a perfect opportunity to spend more time experimenting with the navigation in Glass.

From what I can tell so far, this is the most comprehensive aspect of the headset. You can select a destination in a few ways, speaking the address being the default. You can also search for a business by name or category and get directions that way, but if you have your Android phone paired, you can just use Maps normally and then, when asking for navigation, the phone will inquire whether you'd like to use Glass. In fact, I did.

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When outside the range of WiFi, you can still use wireless tethering on your smartphone, however, for some carriers it may be an extra charge.

(Day Two)

With a variety of ambient light sources shining in, we were able to manage passable indoor snaps.

You can select walking, driving or bicycling navigation — sadly no public transport yet. Once you're going, your path is shown as a blue arrow over a scrolling map. It's being rendered in real-time, but it's important to understand that this isn't proper augmented reality stuff. You'll see the arrow pointing on a map where to go, but if you turn your head, that arrow doesn't swivel around to stay pointed in the right direction. At least, it doesn't yet, but I have a feeling that'll come in a future update.

Now you'll note that I said "if" you have your phone paired. Pairing with a phone is not necessarily a requirement for using Glass. The thing can work entirely over WiFi and, it's worth pointing out, that if you're pairing to your phone over Bluetooth, you'll likely need to add wireless tethering to your data plan. I'm a Verizon subscriber and will now be looking at an additional monthly cost just to use Glass. As if the $1,500 up-front cost wasn't bad enough.

So yes, you can in theory use Glass out and about with an iPhone or other device that has wireless data enabled, but if you want the full experience (reading and replying to texts, for example), it'll need to be Android. Thankfully, pairing to your Android handset is predictably easy. Just install the MyGlass app and select to pair to a new headset. It'll display a large QR code that you hold in front of Glass' camera and, in a few moments, you're good to go.

As for my experience on day two, other than directions downtown and back, I honestly struggled to find a good use for Glass. I was typically standing in front of my dual-monitor desktop, so any notification that came through on my headset, I had already seen on my PC. I also answer my calls on Google Voice on my PC and couldn't really find a good reason to keep the thing perched on my head. At home, it just isn't that useful. So, I went and played fetch with my dogs and recorded that.

Up next: the joys of airport security whilst wearing Glass, and a discussion of the available, and the missing, security within the headset itself.

Living With Google Glass (Day Three)

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You might be inclined to think that airport security is not the best place to wear Google Glass. You'd probably be right, but given the amount that I travel, it was pretty well inevitable that I'd cross through some security checkpoint before the course of this testing was through.

I was honored to be part of the XPRIZE Visioneering conference, a gathering of incredible minds putting their considerable brainpower behind the creation of competitions to make the world a better place. But, to take part I'd have to get out to California, and that meant yet another long flight across the country — and another trip through the full-body scanner. The question is: how would the folks at airport security react to Glass?

As it turns out, with curiosity. At 4:30 in the morning, few of my line-mates were awake or adventurous enough to ask about Glass, but the first security person I passed did. She'd never heard of Glass. When I told her what it could do — take pictures, video, get navigation, even read emails — her response was "Get out!"

Photos taken with Glass in bright situations seemed to produce the best results.

The other security guards were similarly intrigued, but in a friendly, curious way. I, of course, passed them through the scanner along with all my other circuitry, though I almost forgot to do so. I had, in the course of barely more than a day, already become so used to wearing Glass that I had to be reminded to put it in a bin. (Note: In case you're wondering, yes, it is legal to film in a security checkpoint so long as you don't

(Day Three)

record the computer monitors or interfere with the jobs of the security workers. I was very careful to do neither.)

This feels like a good opportunity to talk about the security of Glass itself, which is a somewhat complicated subject. Some aspects are quite good. Others are quite poor. Let's start with the bad: there's no way to prevent someone from picking up your headset, putting it on and reading your email. They could also reply, make a call, take a lewd photo and upload it to Google+ ... you get the idea.

There's no concept of a secure unlock on Glass, which must be considered at least mildly disconcerting. Then again, it's difficult to envision an unlock method that is simple and quick enough to not kill the Glass experience. Voice recognition seems like the obvious solution, but talking to the thing every time you put it on would be a bother. A retinal scanner sure would be nice. Shame it doesn't have one.

All in all, the low-light performance of Glass' 5-megapixel camera still leaves room for improvement.

Other aspects of security are, thankfully, more comprehensive. Sign in to the MyGlass app and you can see on a map exactly where your headset is, which must be a sure sign such functionality is finally coming to Android phones soon. While you aren't able to deactivate a headset remotely (though Google can), you are at least able to factory reset the thing from afar.

So, while Glass seems perfectly capable of handling the scary situation of someone stealing your headset and running away with it, it's rather less able to fend off the office prankster who might post a picture of their posterior to your Google+ account.

Next, we'll talk photo quality, call quality and, most importantly, take you inside the helmet for a gorgeous ride up the coast. Assuming the battery life lasts long enough, that is.

Living With Google Glass (Day Four)

Finally, the flash of newness is wearing off. It's taken a few days, but the initial novelty of Glass, enjoying wearing it simply because I could wear it, is running thin. The haze of new gadget excitement is clearing and we can truly get down to brass tacks — but that doesn't mean I'm not having fun. In fact, I've had the opportunity to take Glass with me to do something very fun indeed: ride a Ducati Streetfighter 848 on some of the most amazing roads in the world.

Even as I did this, a jaunt more focused on gathering some exciting footage than truly evaluating the device, I learned some things — including the fact that a Google Glass headset doesn't really fit underneath a full-face helmet. Not comfortably, anyway.

The thickness of Glass, its battery pack perched behind your ear, means getting it into position while wearing a motorcycle helmet is an impossibility. It's impossible, at least, while wearing a motorcycle helmet that fits properly. Where there's a will, there's a way and I found if I wedged the earpiece up against my temple, the helmet padding *just* held it in place, suspended about an inch or so in front of my face. I couldn't hear anything this way, but it was at least pointed in the right direction.

My goal had been to do a Google+ Hangout with all my followers on there, but it wasn't until I was out on the road that I realized this isn't possible. You have to select a specific Circle of friends to Hangout with — broadcasting to the public like you can with photos or videos is not al-

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Prepping for some on-the-go Glass action aboard a Ducati Streetfighter 848.

lowed. Unfortunate. I have a few select Circles set up, but with only a couple hundred folks in them at most, few awake at 6:30 in the morning when I was riding, it didn't make for quite the grand demonstration I'd been hoping for. Things got even worse when I hopped back on the bike, entered the canyons and my phone immediately lost signal. So much for the Hangout. Thankfully, recording video works online or off.

Later, back on two feet and off two wheels, after losing the leather jacket and donning an unconstructed linen one to explore the XPRIZE Visioneering conference, I found myself making a lot of new friends with people who wanted to try Glass out for themselves. Friends like Sprint CEO Dan Hesse, Qualcomm CEO Paul Jacobs and Microsoft co-founder Paul Allen. (Yes, this was quite an impressive roster of very talented people I was surrounded by at XPRIZE, but more on that in a future article.)

After a little guidance, peoples' initial reaction to Glass is almost universal: "Whoa!"

Letting others try the headset was very instructional for me in a few regards, primary among them that watching other peoples' reactions to something new is a great way to determine its initial ease of use. Most struggled to find the location of the touch-sensitive portion of the frame, either tapping too far forward (near the lens) or too far backward. Additionally, not a single person could figure out the interface without a few moments of instruction. But, with a little guidance and a few demonstrative swipes of the finger, the reaction was almost universal: "Whoa!"

However, a very small group of people with eyesight difficulties tragically could never make out the image at all. One gentleman, who had laser-corrective surgery on his right eye to provide far vision and on his left to provide near, couldn't see a thing. A few others with vision troubles reported the same, whether they tried Glass with prescription glasses or without. There's no adjustment for focal length in the headset at this point, but hopefully this

(Day Four)

is something coming in a future revision.

Letting others try Glass also forced me to be a bit introspective. With everyone asking for my opinion on the headset I was, therefore, forced to actually have an opinion at all times. As the weekend wore on, I found that opinion starting to skew more toward the negative. I had run out of new things to try and I wasn't finding the act of skimming truncated versions of emails compelling enough to warrant wearing Glass around all day. And, as impressed as I was with the navigation aspect, that's hardly a daily thing for most.

Still, two events really raised the value of the headset for me. One was the opening ceremony of XPRIZE Visioneering, where a dancer up on stage performed an amazing demonstration of spinning, whirling and rolling around in a giant metal hoop. I'd never seen anything like it. I could have fumbled into my bag to pull out my camera. I could have pulled my Note II out of my pocket, entered my PIN and waited for the camera app to load. Either would have meant missing at least the first few moments of the act. Instead, I just held the button on Glass and was instantly recording from my perspective.

Secondly was another Google Hangout, this one with a much smaller Circle of friends: my wife. Having only been home for a night or two over the past few weeks, I was lamenting being away yet again. I'm typically not one for video calling in general: if I'm at my laptop then there are emails to be read and holding a phone in front of my face isn't very compelling. Here, I could show her the amazing views at the Visioneering resort and watch her react as I panned the view up and down the coast. Of course it might be better if she could see a bit of *my* face too, but we'll have to wait for NTT DoCoMo's prototype to get a little smaller for that.

That experience definitely made me recalibrate my opinion on Glass yet again. Still, I'm finally getting my head around this thing that's been around my head for the better part of a week.

Glass was an awkward fit underneath a helmet, but the voice recording was much improved when closed off from outside noise.

Google Glass (Explorer Edition)

Are price and privacy roadblocks to untapped potential?

By Tim Stevens

Stand in a line of people in just about any major metropolitan area in the world and you'll see the same thing: slouched shoulders and down-turned faces staring glumly at smartphone screens. Some people never look away, completely immersed in whatever is happening in the palms of their hands, while others get stuck in a loop of

pulling phones from pockets or purses and popping on the screens for just a moment before putting them away again for just a minute or two.

Smartphones are amazing things, but for those who have become addicted to messaging instant gratification, they are a bit unwieldy. This annoyance gets even worse as these devices grow larger and larger. Well, certainly one approach would be to relax a little and stop feeling so compelled to check for Facebook notifications every 30 seconds. Those fully immersed in the information age, however, will be more inclined to fix the physical inconveniences presented by the problem. A heads-up display seems like a natural fit, and thus we have Google Glass. It's a headset with a projected display, a camera and a data connection that could revolutionize the mobile device industry. It could also cause a public uproar over privacy concerns. Is the potential worth the risk? Read on to find out.

HARDWARE

First, a bit of grammatical clarification is needed. While we of the English language typically (and confusingly) refer to eyeglasses as a "pair" despite actually being one thing, here we'll be referring to Google Glass as a singular item. So, it's not a pair of Google Glasses, but a single Google Glass headset.

Glass has a very simple, clean design that, in some regards, is beautiful and elegant; in others, crude and clumsy. We'll start with the elegant bits, most compelling being the plastic-backed titanium band that sweeps around and forms the frame. It's a single piece that grows very subtly thinner in the middle and thicker on the edges, deceptively simple from a distance and strongly defining the overall look.

From here, two nose grippers (also titanium) arc down, each one terminating with a clear silicone pad. These pads are replaceable and tacky enough to keep the whole assembly from immediately sliding down your nose. That's not to say they stay completely in place — in fact they will slowly, but surely migrate lower, particularly if your nose is anything but perfectly dry.

The continuous titanium band plus the two arcing grippers provide a beautifully simple, basic shape, an innate symmetry that is wholly ruined by the plastic assembly that looks crudely slung from the right side. Admittedly, this is a huge step forward from the original "Android smartphone duct-taped to Sergey's sunglasses" concept, and in many ways, its functional styling has its own techy appeal. But, in the grand scheme of consumer electronics design, the overall aesthetic here leans far closer to prototype than polished.

All the circuitry for the device lies in two plastic housings, one that rests behind your ear (containing the battery and bone-conductive speaker) and a second that's up front (with the processor, camera and display assembly). The side of the forward portion is also touch-sensitive, forming a bit of a slen-

Glass is as comfortable as a regular pair of spectacles.

der trackpad. This division does a good job of hiding the bulky battery from sight and ostensibly balances the whole contraption evenly, with the battery mass offsetting that of everything on the front.

In practice, though, this editor had a hard time getting Glass to sit evenly for long periods of time. The right side (with all the equipment) tended to shift lower than the left. That does pose a bit of a problem, as Glass is supposed to be positioned such that the display is arranged high enough above your right eye that it isn't a distraction. Google's (incredibly helpful) Glass trainers will ensure you've got it perfectly positioned before you walk out the door, but keeping it there required constant fiddling.

Overall, though, Google Glass is no more or less uncomfortable to wear

Google Glass can and will fit over most eyeglasses, but rarely will it do so comfortably.

than your average pair of glasses. The overly flexible nature of the band means it can be a bit tricky to put on without using both hands, but once positioned properly, it manages to be quite comfortable on both large and small heads. Those not used to wearing non-Google glasses will probably find the nose grippers uncomfortable at first, but those who *are* used to wearing glasses have their own sets of troubles ahead.

Google Glass can and will fit over most eyeglasses, but rarely will it do so comfortably. And, depending on the size and shape of those glasses, the eyepiece may be partially blocked by the frame. Finally, after letting dozens of people briefly try it on, a few with eyesight difficulties were simply unable to focus on the display at all. Before Glass goes mainstream, it will require an adjustable focal depth.

In fact, very little is adjustable in Glass. You can modify the wake angle (how far back you must tilt your head for the display to pop on) and enable or disable head detection, which automatically turns off the headset if you remove it. That's about it. You can't adjust volume levels or display brightness, can't disable WiFi or Bluetooth (both appear to be always on), can't re-arrange the application cards in the interface or set their priority, can't modify the default screen timeout length and you can't enable a silent or do not disturb mode — though it could be argued that simply taking Glass off serves the same purpose.

Unfortunately, that act of taking off the headset can be rather inconvenient. That unbroken titanium band looks nice and provides flexibility, but it also means that Glass doesn't fold up like a traditional pair of glasses, so it won't dangle from the front of a shirt or slide easily into a pocket. That's made worse by the seeming fragility of the exposed refractive display, which we were told shouldn't be touched. Google thoughtfully includes a microfiber carrying case with a hard plastic insert to protect everything sensitive, but the resulting package is hugely bulky. Better bring your big purse.

Crack the case open (which we do not recommend) and you will find a TI OMAP 4430 processor, paired with 1GB of RAM and 16GB of storage (12GB available). Content will push to your Google+ account wirelessly by default, but you can pull it off through the micro-USB port if you like — which is also how Glass charges. Battery size is unknown, but battery life is: it's poor. In what we'd consider average usage, reading emails and taking short pictures and videos, we got about five hours before the headset unceremoniously shut itself down. With lengthier filming of videos, which can be demanding enough to make your temple warm,

Battery size is unknown, but battery life is known: it's poor.

we're sure you could deplete the headset's power reserves in a couple of hours. For a device that you'd want to set on your face and forget about, having to remember to charge it in the middle of the day is a definite disappointment.

WIRELESS AND CONNECTIVITY

When Glass was first introduced, many made the assumption that it would be wholly dependent on a smartphone (particularly one of the Android variety) to function at all. As it turns out, that's not the case. The thing can function quite happily with a WiFi (802.11b/g) or Bluetooth data connection — yes, even if that data is coming through an iPhone.

Glass is a fully independent device. This means you can leave your phone behind and walk around anywhere with WiFi without losing connection. But, that poses an unfortunate problem. Since Glass is independent, not pulling data through a dedicated app or the like, your wireless carrier will treat it just like any other tablet or laptop. If your current plan doesn't include Bluetooth data tethering, there's a good chance you'll have to pay to add it. That could make an already pricey device even more expensive to run.

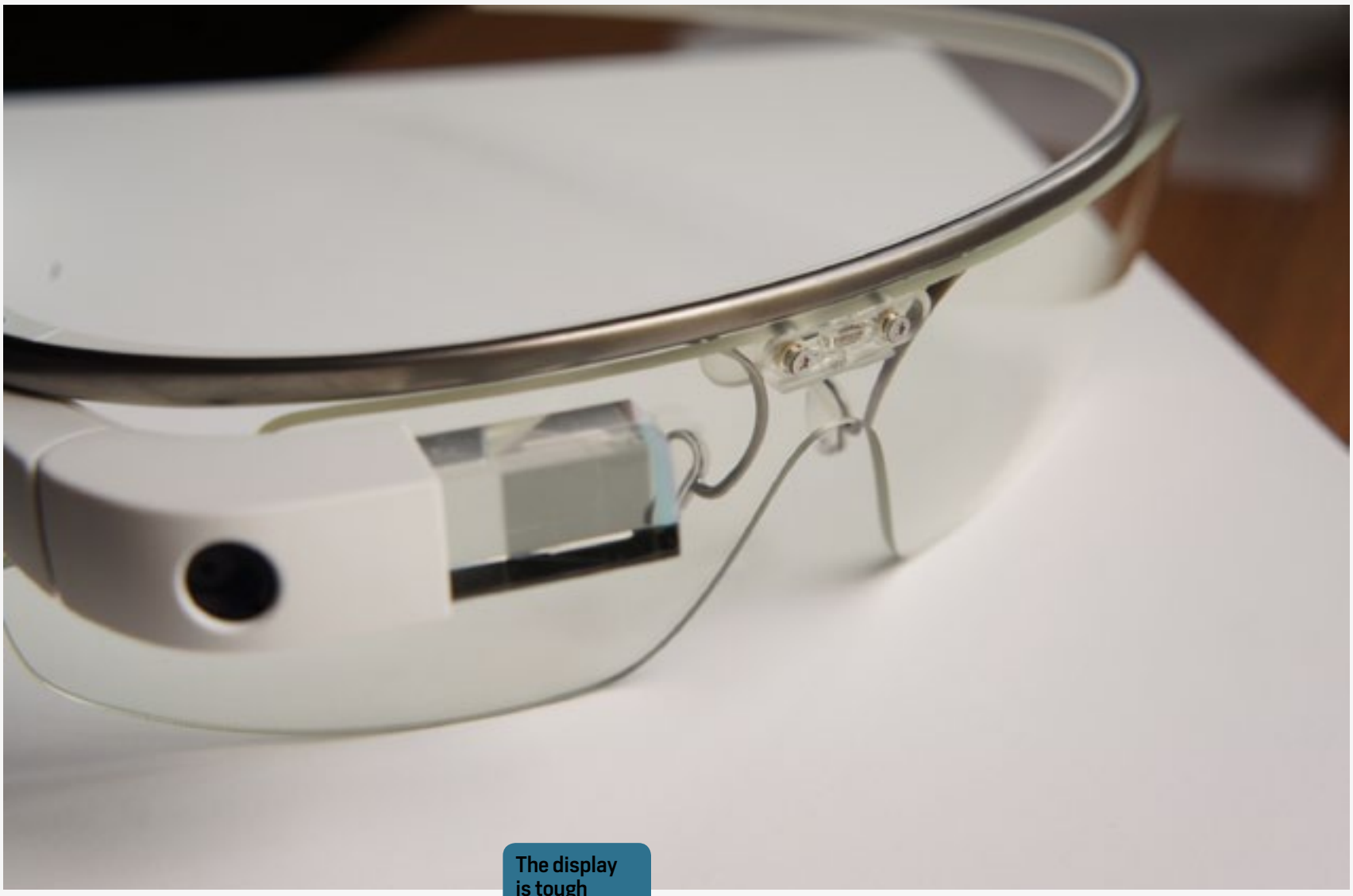
DISPLAY

The display in Glass is an interesting one. When wearing the headset, you can look straight through the transparent part and barely even see it. It only minimally refracts the light that's beaming toward your eye. But, if you look at it from above, you can clearly see the reflective surface embedded inside at a 45-degree angle, forming the display your eyes see.

The panel itself is off to the right, built into the headset and beaming light into the clear piece from the side, which then hits that sliver of material and reflects into your eye. It's an interesting arrangement and the net result is, indeed, a glowing image that appears to be floating in space. Google says it's "the equivalent of a 25-inch, high-definition screen from eight feet away" and that sounds about right — except that we're not sure about the high-definition part.

Google isn't talking specifics about resolution, but we do know that developers are advised to work with an array of 640 x 360 pixels. Individual pixels aren't immediately apparent, but the level of detail on the display doesn't come anywhere near your average, high-PPI smartphone display these days. You'll rarely see more than six rows of text at a time.

Colors, too, aren't exactly consistent and the whole thing similarly lacks the accuracy of a modern LCD or OLED panel. It almost has the look of an old-school, passive-matrix LCD, with its occasionally murky hues. And there's another problem, too: rainbowing. If you had the misfortune of owning a DLP television a few years back, you'll be familiar with the rainbow effect caused by the spinning color wheel. Moving your eyes from side to side quickly on



The display is tough to see in bright, sunny conditions.

those sets created a dazzling, chromatic demonstration that would make a unicorn dizzy. The issue is less problematic here, but it is immediately apparent.

Finally, while contrast is reasonably good, seeing the display in bright sunlight can be a problem. That's doubly true if you use the included sunglasses attachment, which slots in between your eyes and the Glass display. In this way, Glass actually makes for nice sunglasses, but the insert has the effect of further reducing the brightness and contrast of the display.

SETUP AND USER INTERFACE

Setting up a Google Glass headset is trivially easy. Install the MyGlass app (which requires Android 4.0.3 or above) on your phone and tap a few choices to pair a new headset. Bluetooth will be enabled and a massive QR code appears. Hold that code in front of your face (while wearing Glass, of course) and, hey presto, Glass is now signed into your account.

It takes a few minutes to learn the basics, but once you do, it's easy to get around.

Swipe gestures navigate content and emails.

Once that's done, you can use the app or go to Google.com/MyGlass to configure your headset. As mentioned above, setup is limited, but through a big, tiled interface you can select which contacts are accessible by name (only 10 are possible now), which of your Google+ Circles you'd like to have the option of sharing content with, which Glass apps are enabled (Google+, Gmail, Google Now and Path are there by default) and which WiFi networks you want your headset to connect to.

Through here you can also bring up a Google Maps display of the current location of the headset, useful if it should be unwittingly removed from your face. That is disappointingly about the limit of the security features of Glass. You can also remotely wipe it, but there's no way of setting any kind of protection on the thing itself, meaning if you should set it on your desk and walk away, anybody can pick it up, put it on and start sending uncouth emails and pictures to your contacts.

Once you throw Glass on your face, the interface is actually much the same, just flattened down to two dimensions. It's a bit like Sony's XrossMediaBar, in that you move left and right across a grid of options. Unlike XMB, you can't travel up and down. Instead, each icon in the row represents something and you tap to dive into it. Swipe downward to exit and jump back up a level, or to turn off the Glass display if you're already at the top.

You can activate the display in two ways: tilting your head up or tapping the capacitive touch portion on the side. The default display is a clock with "ok glass" written below. This is actually quite useful, as tipping your head up is a quick and easy way to check the time, though it'd be nice if you could turn off the "ok glass" bit. It's not that hard to remember.

If using the touch controls, you can swipe forward or backward. Swiping forward takes you back in time, with all recently captured photos and videos mixed in chronologically with emails, messages and notifications from apps. Swipe backward from the start screen and you'll

get Google Now cards and, ultimately, a screen showing connection status and battery life. Flick your finger and you'll move one screen at a time, but slide it more quickly along the length of Glass and you'll cycle across multiple.

Tap on any of these options to bring up a context menu. For example, tapping on a photo or video lets you share or delete it. Tapping on an email lets you read more of it or reply. It takes a few minutes to learn the basics, but once you do, it's easy to get around.

VOICE COMMANDS

If you're trying to operate in a hands-free mode, your key is "Okay, Glass." This initiating command must come before any other command, but it's worth noting that Glass itself must be enabled first. So, you can't just say "Okay, Glass." You have to tilt your head up or tap the side first. Only then is it willing to obey your commands.

What sort of commands? The most basic ones are "take a picture" or "record a video." Googling is also a very handy one, where you can say, "Google, what's 20 percent of 30?" to calculate a tip at dinner, or "what year was *Brave New World* published?" If you ask a simple question like the above, you're likely to get a result you can read on Glass. If you ask for something more detailed, like "Google a list of Tom Cruise movies," you'll only be able to read the first few results.

Hangouts are of course a big part of Glass, and you can start one by saying "start a hangout with" followed by the individual or Circle. Note that you sadly can't start a public Hangout, so make sure you build those Circles now. You can also call any of your earlier-designated contacts by name, assuming Glass is connected to your phone as a Bluetooth headset.

Glass knows the weather, too, defaulting to your current location, but also letting you ask about other places. Do this enough and Google Now will thoughtfully include a persistent weather screen, which will slot in to the left. Navigation is also a big feature, with a command like "give directions to 125 State Street." Disappointingly, you can't use commands like "give directions home" and expect Glass to remember where your home is, neither can you get directions to your contacts. You'll have to speak the address, or do a business lookup by name or category. You can, for example, say "find me the closest pizza" and it will bring up a card showing a result, which you can tap on to call or get navigation directions.

There are some other miscellaneous commands, including translation ("say 'hello' in Spanish"), photo search ("Google photos of Ferraris") and flight information ("what time does flight 123 depart from ALB?"). In general, all are received and understood without fault, but the broader voice recognition definitely leaves a bit to be desired, as we'll discuss shortly.

TAKING PHOTOS AND VIDEOS

Again, there are two ways to capture imagery with Glass: by voice (as described above) or by hitting the shutter release on the top-right of Glass. Click it once to

By default, Glass grabs 10-second video captures.

take a picture, and whether you do it by voice or with the button, there's a momentary delay. This is important, as it gives you time to take your finger off, helping to stabilize things.

For video, hold the button down for a moment. By default, Glass captures 10-second videos, but if you want longer, you can tap on the side twice and it will record until you run out of storage — or battery. Once captured, you can swipe forward or backward through what you've seen. Videos play automatically in this way, but with a few taps, you can either share them on Google+ (with the public, or with certain Circles) or delete them.

Sadly, though, you can't add any text. Anything shared has the hashtag "#throughglass," but nothing else to describe it. This does add a bit of mystery to your photo stream, but it would be nice if you could optionally speak a caption. Photos are synced with your Google+ account, so you can share them later at your leisure, but photos shared after the fact are rather less fun than those pushed online instantly.

Although, it must be said, the photos we shared often took minutes or sometimes even hours to get online. If your connection is anything less than very solid, you could be looking at a substantial lag. Larger videos will naturally take even longer.

GOOGLE NOW

Google Now is an increasingly powerful part of the Android operating sys-

Get directions from Penn Station to a location and, once you get there, you're likely to find Now suggesting how to get back to Penn.

tem, making recommendations based on where you go and what you do, and it's reasonably well-integrated to Glass. Weather is the easiest demonstration, showing an icon representing the current weather, along with temperature and high / low temps.

Now will also suggest directions based on where it's tracked you going. Get directions from Penn Station to a location and, once you get there, you're likely to find Now suggesting how to get back to Penn. It'll also throw up lists of nearby restaurants at dinnertime and, while suggestions are far from perfect, Now regularly surprises with its almost prescient understanding of what you're up to.

Of course, each of these screens can be interacted with. Tap on the current weather to get the forecast. Tap on a restaurant to call or get directions. Tap on a recommended destination to get navigation. All very helpful stuff, but we do wish we could manually pre-configure a bit more — namely important locations and flights.

NAVIGATION

Navigation is one of the best features in Glass. You can speak an address, find a business or tap on a Google Now suggestion and get turn-by-turn directions there. If you have the MyGlass app, it will also configure itself as capable of handling naviga-

Glass doesn't yet offer augmented reality navigation.

PHOTOGRAPH BY BRIAN HEATER

tion, so you'll get the option of sending directions from your phone to Glass once you select a destination.

Directions look more or less as they do on an Android smartphone using Google Navigation. If you were hoping for a fully augmented reality experience, with a 3D arrow hovering in the distance over your next turn, that is sadly not the reality of the situation. But, it certainly seems like such a thing could be built in, as Glass does offer a degree of head tracking.

As with Google Nav, spoken directions are sent into your ear as you drive. However, unlike Google Nav on the smartphone, you can't disable that audio. Thankfully, the voice used here is of the friendly, supportive type — not the seemingly angry, short-tempered type that comes along with some GPS units. Also, you're not able to choose navigation using public transport. It's driving, walking or biking for now.

MESSAGING

Messaging is an area of huge promise with Glass, but one that's a bit clumsy right now. When you get an email or a text, you'll hear a chime. To see the message, just tilt your head up. You'll see only the first few lines of the message, which is a bit unfortunate, but it's enough to know if you want to see more. If you do, it's two taps: one to bring up the menu, another to select "Read More." From there, it's another tap and a few swipes if you want to have the email read to you. You can also reply, reply all, archive or star the message.

It would be nice to be able to read an entire email just by tilting your head up and down to scroll.

An ideal use-case for this is getting emails read to you while in the car and then replying back by voice. Unfortunately, as it takes two taps and two swipes just to get to the "Read Aloud" option, it's not exactly something you should be doing while driving. Even if you're sitting on the train, it would be nice to be able to read an entire email just by tilting your head up and down to scroll. The technology is in there, and hopefully Google will enable it eventually.

It's also worth noting that you cannot compose a new email. And, all responses must be performed by voice ... and all will have the text "Sent through Glass" inserted on the bottom, whether you like it or not. Speech-to-text is passable, but not good enough for anything other than a quick response. For example, it struggles to differentiate between things like "was" and "wasn't," which can definitely cause some unintended consequences, and complicated place names are a bit hit-or-miss.

Speech-to-text is useful for short quips and quick notes.

(Glass got "Schenectady" just fine, but "Azerbaijan" was heard as "our body John.")

If you speak slowly, clearly and avoid grammatical contractions, you have a chance of sending a correct email. Should Glass hear you incorrectly, you have to cancel the entire message and start again. All the more reason to keep those responses short.

SEARCHING

Google lets you search for lots of things, and indeed you can do the same through Glass. But, with the low-resolution display, you're limited in terms of what you can receive. You'll basically get the "I'm feeling lucky" result for any query, which may or may not be what you're looking for and, even if it is, may or may not contain any actual information you want.

Asking "Google, how many ounces in a cup?" will get the answer spoken to you.

For example, say "Google Engadget" and you'll see the description of Engadget — but not the page itself or indeed any gadget news. But, say "Google Paul Allen" and you'll get his Wikipedia result. Glass will even thoughtfully read the first sentence for you: "According to Wikipedia, Paul Gardner Allen is an American investor..." After that, you can swipe through a few pages of information about him, including a photo.

PHOTOGRAPH BY BRIAN HEATER

So, Googling is of mixed usefulness through Glass. Anything that hits Wikipedia is great, as is asking for simple math and conversions (asking "Google, how many ounces in a cup?" will get the answer spoken to you), but anything more complex may result in disappointment.

HANGOUTS

Video calling from a smartphone or tablet, where you need to hold that device up in front of your face, is a far-from-compelling experience that we generally avoid for anything longer than a quick "howdy." With Glass, we actually found it quite compelling. Now you can look straight ahead and see the face of the person (or people) you're talking to hovering out in space.

Of course, they won't see *your* face, which can be a good or bad thing depending on what you're looking at — and how you feel about your face. We had a lot of fun trying impromptu Hangouts while walking through busy crowds or riding a motorcycle, and it definitely makes for a great way to show someone something if they're not able to be there in person. It's easy to envision touring a museum with someone who's stuck at home. It's also easy to envision museums not being happy about such a scenario.

However, the usability of this is hugely dependent on connection quality. You'll need to be on a solid LTE signal to have a hope of transmitting decent-quality video and audio without terrible lag. WiFi is obviously the better choice, where available.

APPS

The *New York Times* app is the most notable to be released to the public yet. It is very limited, pushing updates to Glass about every hour, more frequently if there's breaking news. Tap on any and Glass will read the headline and the first sentence of the article to you. And that's it. There's no "Would you like to know more?" prompt or any way to get to the full story.

We're incredibly eager to see what's coming next, as the potential here is, of course, huge. Right now, we'd be happy to post pictures straight to Twitter and Facebook.

CAMERA

The camera pointing out the front of Glass is a 5-megapixel unit capable of recording 720p video. Resulting photos range from very good to very poor, largely depending on the amount of light available. On a bright, sunny day, Glass can capture some genuinely good shots, with bright, accurate colors and good contrast. In poor lighting, shots can be acceptable, but they very definitely fall into "mediocre camera-phone" quality, with murky colors and often subtly blurred results. In low light, photos will likely be a mess. No UltraPixels here, folks.

One thing that helps is that the camera waits a few seconds after you press the button to capture the shot.

This could theoretically mean you miss some incredibly fast-paced moment, but more helpfully, it gives you time to take your hand from the headset and steady yourself before the shutter fires. Annoyingly, though, the way the shutter button pokes out of the top of the frame, you're more likely than not to take a picture when you set Glass down upside-down. We had dozens of unintentional upside-down photos clogging our storage.

After the picture is taken, it's shown to you for a few moments, a useful feature since there's no viewfinder at all and the angle of the picture won't line up exactly with where you're looking. Also, if Glass isn't perched perfectly on your face, there's a good chance the picture will be at an angle, meaning you may need to cock your head one way or the other.

The same can be true for video capture, but here you get a real-time view of what's being recorded. Quality is generally quite good, again largely dependent on the amount of available light. You do have to be careful to be steady while walking, but in general we were able to capture smooth video without too much trouble. The biggest issue? Remembering not to nod when having a conversation with someone.

REAL-WORLD USABILITY

How does all that come together when the world stops being polite? It's a series of highs and lows. Navigation was an immediate high point, and while not being able to say things like "home" or "work" is a disappointment, we found using Glass for turn-by-turn directions was actually less distracting than looking down at the dash of the car, or a window-mounted smartphone.

Hangouts, when they worked, were a great experience too. Being able to quickly and easily share something you're seeing with friends is an experience that will make you smile. We also enjoyed wowing friends over dinner by looking up the authors of obscure books or doing complex conversions just by asking Glass. And, snapping pictures of impromptu moments is far easier than with a smartphone. Business travelers, you'll enjoy grabbing pictures of receipts and having them all synced (privately) to the cloud.

But, there were plenty of lows, too. We were surprised to find that Glass makes a pretty mediocre Bluetooth headset. One would think calling someone would be an easy thing given everything else that the headset can do, but the audio capture seems far more focused on grabbing audio of the environment than the wearer. People we called constantly had issues understanding us in even mildly noisy environments, like a car on the highway.

The bone-conducting speaker occasionally leaves a bit to be desired as well. In noisy areas, like airports or city streets, you'll struggle to hear anything. Plugging your ears with your fingers helps a lot, but also makes you look a little funny. Thankfully, wearing

Heading out for the day? You'll need to plan some charge time.

earbuds is similarly effective. In fact, we'd love to see a 3.5mm headphone jack on a future set of Glass so that you could wear your own earbuds and listen to music — which, by the way, you can't do on Glass right now.

Additionally, the short battery life means you can't spend a day on the town — not without a charging pit stop, anyway. The photography in low light is a mess, having emails read to you is far too cumbersome and the general lack of customization options is surprising. There's also another challenge that affects not only those who wear Glass, but everyone else around: privacy.

We can't talk about Glass without addressing the privacy concerns of the thing. There are many, and they are troubling.

PRIVACY CONCERNS

We can't talk about Glass without addressing the privacy concerns of the thing. There are many, and they are troubling. The most disconcerting bit is that you can be recording video at any time and there's really no way for anyone else to tell. Google made the unfortunate decision to not include something like a red LED on the front to indicate when Glass is recording, which would have been a limited (and easily defeated) step — but it would have been *something*.

The point can certainly be made that it's possible to take a picture or video of someone these days without their knowledge, but the situation here is a bit reversed: nobody knows if you're *not* taking a picture or video of them. This will, at first, result in some good-natured "Are you recording this?" comments in conversations, but as time goes on, as a wearer, you'll notice that people will be acting a little more cautiously around you. (As an aside, they'll also struggle to maintain eye contact. One person told us that Glass looked like a "third eye" that he couldn't stop staring at.)

People can and should be a bit concerned about someone walking in a public restroom with Glass on and, since you can't fold them up and stick them in your pocket, finding something to do with them while you do your business is a challenge. You can easily imagine plenty of other situations where Glass owners would innocently wear their headsets much to the discomfort of others and as of now, there's no way to assure them that you aren't recording them.

Video can be captured at any time and no one will ever know.

PHOTOGRAPH BY BRIAN HEATER

WRAP-UP

Right now, the Explorer Edition of Google Glass is very difficult to get. To have a realistic shot of getting one, you had to pre-register at Google I/O last year, and even then, the headsets have been slow to ship. Ignoring that for a moment, if you could buy a pair today, is Google Glass worth $1,500 for casual gadget fans? Absolutely not. Don't even consider it — unless your pockets are deep enough that you routinely spend that much on watches, sunglasses or jewelry. Future iterations of Glass will have to get far cheaper before we'd begin to consider this a good value, although much of that value proposition depends on future developer support.

In reality, this Explorer Edition isn't supposed to be thought of in that way. The current version of Glass is intended for developers and a lucky few others, and as a research project, it is a fascinating one. Developers will want to get their hands on this ASAP and, frankly, we hope that they do because we can't wait to see what they can do with it. The potential here is phenomenal, and while we're looking to Google to drive much of that, the unexpected things that developers do will really move Glass forward as a platform.

However, we're also looking to Google to address the privacy concern. Right now, this issue is largely floating under the radar and will likely continue to do so until Glass headsets start appearing in public in greater numbers. If Google doesn't get ahead of this now, the story of Glass could very quickly become one of fear, uncertainty and doubt by the public at large. The future is incredibly bright for Google's Project Glass and it'd be a damn shame if it were dimmed by public outcry. D

Tim Stevens is Editor-in-chief at Engadget, a lifelong gamer, a wannabe racer, and a born Vermonter.

BOTTOMLINE

GOOGLE GLASS (EXPLORER EDITION)

$1,500

PROS

- Amazing potential
- Easy Hangouts
- Surprisingly comfortable

CONS

- Short battery life
- Camera suffers in low light
- Privacy concerns

BOTTOMLINE

Google's Glass is a fascinating innovation and has more potential than any new device category we've seen in years. But, it's very early days and its cost makes it an impossibility for most.

THE ENGADGET INTERVIEW

Bill Maris

How Google Ventures and the Glass Collective are taking the device to the next level

By Tim Stevens

"THE INITIAL VERSIONS of Glass were just Sergey [Brin]'s Oakleys with a phone taped to them," Bill Maris, managing partner of Google Ventures, told me in a noisy cafe in Midtown Manhattan. Given his position and our topic of conversation — Google's Project Glass — he was conspicuous for wearing no eyewear whatsoever. "[Ser-

gey's prototype] was not very compelling." You'd forgive him for being a bit skeptical back then about what the company's leadership was hoping would be the next big thing — or, at least, a thing worthy of the time and money required to iterate from those humble beginnings to the sleek device we now know and covet.

So, then, how did we get from those initial doubts to the launching of the Glass Collective, dedicating millions of dollars to finding, funding and fostering innovative applications (not just of the software variety) for Google's new wearable? Maris spoke of Glass project lead Steve Lee and a later prototype that took photos every few seconds. "Imagine if you had this for your entire life. You could ask: 'What did I do 10 years ago today?'" That was compelling enough for Maris to commit to the foundation of the Collective, helping Google move the project beyond a single product and into the all-important realm of the platform. This is a platform, he believes, that could change our lives over the next 10 years just as smartphones have over the past decade.

Google Ventures started spinning up internally in 2008. Before that, Maris' interests actually lay more on the side of consumer health than consumer technology. He

The Glass Collective: [from left] Marc Andreessen (Andreessen Horowitz), Bill Maris (Google Ventures) and John Doerr (KPCB).

PHOTOGRAPHS COURTESY OF GOOGLE

received a degree in neuroscience from Middlebury College, but after school drifted into the typically high-pressure stakes of the financial realm. He was a biotech and healthcare portfolio manager for Investor AB and, later, an engineer in the startup arena before coming to Google to spin up Ventures, which formally launched in 2009 — with some particularly abstract goals.

Maris recounted his guiding directive from Google thusly: "We're going to give you $50 or $100 million. Go do something important with it. If it looks like you're doing something important, we'll give you more." More indeed, with $1.5 billion under management now, Google is shoveling in hundreds of millions every year to keep the fires stoked.

Thanks to that, Google Ventures invests in between 50 to 100 salient startups annually, with a definition of "success" only somewhat less nebulous than the organization's founding principles. Here's how he phrases it:

"We're going to give you $50 or $100 million dollars. Go do something important with it."

"There are two ways to look at it: there is how do you do against your peers, and how do you do overall? If everybody loses money and you lose least, it's probably still not great. It's better than losing most, but if you can make money is the question. I've been really, really pleased with how well we've done thus far."

Maris declined to give specific figures or returns on any of those dollars that have been funneled toward those fledgling innovators deemed compelling enough. But Ventures does have a number of success stories under its belt, including investments in the recently IPO'd Silver Springs and vacation rental marketplace HomeAway, as well as Nest.

Nest, Maris said, was a particularly compelling offering despite, much like Glass, not seeming so at first. It was the potential that captivated Maris. "When you apply computer science and machine learning to areas that haven't had any innovation in 50 years, you can make rapid advances that seem really incredible." While "incredible" might be a bit strong for an (admittedly impressive) intel-

ligent thermostat, there's little doubt that the still-young Nest must already be chalked up in the success column. Looking for success too early, he says, can be risky too:

> *"It's hard to tell at an early stage when entrepreneurs are going to do something that is really important. More often than not, the commercial enterprises that become really important tend to be financially successful ... If we invest in lots of companies that become really important but don't become billions of dollars, then I think that's still a job well done. But obviously the goal is to do both of those things."*

So that takes us to the Glass Collective, Ventures' latest fling — formed in partnership with VC firms Andreessen Horowitz and KPCB. The organization isn't directly investing in Project Glass itself, of course, with Google already having seen that its X division has what it needs in that regard. It's that commitment that attracted Maris and the other partners at Ventures, a commitment that he believes will help Glass achieve platform status.

The plastic-backed, titanium band is flexible and helps define the overall look of the Glass headset.

A product is a thing, a single device that works — perhaps quite well — but does not foster the development of an ecosystem. The first iPhone, closed and limited in functionality, was a product. When the iTunes App Store was launched in 2008, leading to billions in revenue for developers, it quickly became a platform. Glass, Maris said, has the potential to be the next very important platform:

> *"The technology needs to be pervasive and well-accepted and it needs to do more than one thing and it needs to do those things well. This device has the potential to do all of those things. If we're wrong about the potential, that's okay. That's the business that we're in ... The Glass team is building the product and we're along for the ride."*

Where will that ride take us? It's too early to tell, said Maris, but I couldn't help asking the obvious question: how will third parties make money off of Glass? Google, of course, stands to make some money selling the things, but with advertising on apps expressly disallowed (for now) and with a very, very limited user base for the foreseeable future, where's the revenue? Intriguingly, Maris says, nobody knows:

> *"None of us have even talked about a revenue model. That's probably the last thing anyone's concerned with at this point. If it gets popular and people want to use it and they sell a lot of devices, that will follow. If it doesn't go anywhere, then the revenue model never matters."*

Crazily, that the potential revenue stream is unknown actually makes Project Glass *more* appealing to Google Ventures. It's par for the course, he said:

> *"People have been asking that question about YouTube for years and now, it's okay. Now there is a revenue model. And Google was in the search business and search was not attractive. And Gmail was email, and that's not attractive. And MapQuest owned maps ... If*

"There are things that go beyond just developing *FarmVille* for this platform."

it's obvious, then someone else is going to do it and it's probably not that great an idea."

That's not to say Ventures hasn't thought about potentially profitable applications. Maris imagines UPS deliverymen scanning and delivering packages with just a glance, nurses at hospitals receiving real-time information on patients without having to stop what they're doing and, indeed, patients with limited mobility having greater access to the world of information themselves. "There are things that go beyond just developing *FarmVille* for this platform."

These applications are foreseeable in the near future, but it's the period a decade from now that Maris believes will be truly compelling, where wearables will be orders of magnitude more powerful than they are now; where they can truly change our lives.

So, then, if this is such an amazing platform-to-be, a device that will change our lives, why wasn't Maris wearing a Project Glass headset himself? Because, quite simply, he wanted to be on time. Days earlier, around when the first Explorer Editions started shipping, Maris tried wearing his Project Glass headset on the streets of New York City. "I got maybe three steps outside of the building before I got stopped."

Maris couldn't walk a city block without some new passer-by asking if that was Project Glass, how it worked and, of course, whether they could try it on. Maris politely obliged for many, but it quickly became apparent that if he wanted to get anywhere, he'd need to pocket the thing. So, in the name of expediency, he was making do without.

Though this will definitely pose a bit of a practical problem for early adopters in metropolitan areas, ultimately it must be seen as a very positive sign. If even extremely jaded Manhattanites are excited enough about it to stop a stranger on the street, Project Glass clearly has the potential to be Google Ventures' next success story. D

Tim Stevens is Editor-in-chief at Engadget, a lifelong gamer, a wanna-be racer, and a born Vermonter.

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VISUALIZED

LASER FOREST

See it in action!

Marshmallow Laser Feast, the creative team behind the 2012 quadrocopter showcase "Meet Your Creator" at Cannes is back with a musical and visual installation called "Forest." As part of the STRP Biennale in Eindhoven this March, the team laid out a grid of touch-sensitive, laser-emitting "trees." By shaking and vibrating the trees, the audience could elicit waves of harmonious, room-filling sounds and a laser-traced lightshow up above.

PHOTOGRAPHS COURTESY OF MARSHMALLOW LASER FEAST AND SANDRA CIAMPONE

JASPER SMITH

THE PLAYJAM CEO reflects on Nokia's early device design and dreams of a space-scooting future

What gadget do you depend on most?
My BlackBerry, my iPad and a multi-country power adaptor.

“I don’t think I despise any advancements; even if it doesn’t work, it’s normally a stepping-stone to something that does.”

Which do you look back upon most fondly?
SodaStream — can you still get them?

Which company does the most to push the industry?
ARM.

What is your operating system of choice?
Android. Nice and open, but Tizen will be interesting.

What are your favorite gadget names?
I like names that say what the gadget is — which is why we picked GameStick — it is a stick for playing games.

What are your least favorite?
Nexus — it sounds like a government agency for benefits.

Which app do you depend on most?
My alarm clock and Google Maps.

What traits do you most deplore in a smartphone?
Design over function. The early iPhone suffered from being slow and not being multi-threaded; it was annoying to use. I make a lot of calls, so a simple phone that makes calls is just great for me.

Which do you most admire?
Simple navigation and good battery life.

What is your idea of the perfect device?
Looking back, the early Nokia phones were brilliant. Simple, strong and lasted for hours.

What is your earliest gadget memory?
A Motorola phone that was the size of a small suitcase. I actually thought it was cool. Unbelievable.

What technological advancement do you most admire?
The internet. Although I am quite interested in flexible screens at the moment.

Which do you most despise?
I don’t think I despise any advancements; even if it doesn’t work, it’s normally a stepping-stone to something that does.

What fault are you most tolerant of in a gadget?
None really, I am quite impatient.

The Space Scooter lets you propel yourself into the final frontier (or at least down the sidewalk).

PHOTOGRAPH COURTESY OF SPACESCOOTER.CA

Which are you most intolerant of?
Insane roaming charges and intermittent crashes when you are midway through an email.

When has your smartphone been of the most help?
Hmm. I was sailing across the Bering Sea some years ago in a small boat that had engine and battery failure, so no radio. I called the Coast Guard using my last bit of battery about three miles off the coast of Dutch Harbor, Alaska to ask for help — they were great.

What device do you covet most?
My son Harper asked me for a Space Scooter. It sounded cool, so I want one of those please.

If you could change one thing about your phone what would it be?
I would like to have a modular phone where the processing unit was separated from the screen. The processing unit could be tiny. The screen, foldaway and flexible. Smartphones have become like bricks. There is a better way.

What does being connected mean to you?
Work, mostly.

When are you least likely to reply to an email?
When I am annoyed with something — or asleep, although some would argue otherwise.

When did you last disconnect?
[A] 14-hour flight from LA to China last week. D

IN REAL LIFE is an ongoing feature where we talk about the gadgets, apps and toys we're using in real life.

SKULLCANDY CRUSHER

ASUS G74SX-3DE

I'VE ALWAYS BEEN an earbud guy, despite the fact that over-the-ear headphones can offer a more comfy and higher-quality listening experience. Why? I travel a lot for work, and I like to travel lean — the thought of a bulky headset taking up precious cargo space in my tote bag is, shall we say, less than appealing. After spending a brief time with Skullcandy's Crusher headphones back at CES, however, I was ready to see what they could do to enhance my listening experience on the hour-plus train rides between Mountain View and San Francisco I regularly endure.

Hip-hop comprises a considerable portion of my music collection, which is why the Crushers, with their bass vibration system, held particular appeal to me. At face value, the rumble feature seems a gimmick, but it really does round out the low end of music in a way that no earbuds (or headphones costing less than $100) I've ever used can. And, you can increase or reduce the effect with the slider on the left earcup — which is crucial, because while it's a boon listening to Lloyd Banks, it becomes obnoxious when taking a phone call or listening to a podcast. My only quibble with the feature: the slider's too snugly fitted and takes more effort to adjust than it should.

As for wearing the Crushers, well, they're about as comfortable as such headphones can be. The faux-leather earcups are soft and supple, but I couldn't get through more than a couple hours of listening before needing to give my lobes a break. While the plastic construction isn't the most luxurious look, it does keep the Crusher lightweight, and it handles the rigors of travel well (read: these things can take a beating). Will I be replacing my earbuds with them? No, simply because they're still too cumbersome on many occasions, but when I've got room in my bag I'll be taking them along for the ride. *— Michael Gorman*

ASUS G74SX-3DE

Skullcandy Crusher

AFTER SEEING MY OLD, over-matched laptop suffer the electronics equivalent of a myocardial infarction when I tried viewing a 1080p video, one truth became self-evident. Mr. Hidalgo — no relation to Viggo Mortensen's horse — needed a new computer. Given my work demands and personal preferences, I had some hard and fast requirements. Naturally, one was running 1080p video without looking like it needed the Heimlich maneuver. It also had to be portable so I could take it on the go or easily move it around my house when I want to work on the kitchen table or hook it up to my Mitsubishi WD-82740 TV. It had to be able to run photo- and video-editing software at the same time. Lastly, it had to run PC games using relatively good settings.

A few weeks later, I became the owner of an ASUS G74SX-3DE "Republic of Gamers" laptop. The tacky ROG name aside, there's a lot to like about the G74SX-3DE. The dark, stealth-fighter-style design looks cool, but is still subdued unlike the Technicolor Dreamcoat approach of some competitors. Having the huge fans vent on the back also keeps the bottom nice and cool. Another plus is that the G74SX-3DE is easily upgradeable for a laptop. I had the original 12GB of RAM replaced with 16GB, for example. The dual-hard-drive configuration also gives added flexibility, allowing me to swap out, say, one of the drives for an SSD. Meanwhile, the 1080p matte display does a good job of cutting back reflections (I don't really use the 3D feature, though) and also gets a lot of positive comments from onlookers when I'm playing games. So far,

I've been able to play everything I've thrown at it in either medium or high settings. The G74SX-3DE is also great with multitasking. It easily handles multiple Adobe Creative Suite programs at the same time even without Mercury Playback GPU acceleration enabled.

Downsides include one of the most annoying collections of bloatware I've seen in a laptop. ASUS Live Update is especially horrible and I uninstalled that sucker pronto. The touchpad can be wonky as well, and it's easy to hit by accident when you're typing unless you disable it. The keyboard, meanwhile, feels a bit shallow and the laptop also lacks a FireWire ExpressCard slot, which I normally use to grab footage from my tape-based Canon HV20. Battery life is laughable but this thing is meant to be plugged in at all times so that's fine. It's freaking heavy, though, and requires a large bag. Still, I'm quite happy with the G74SX-3DE overall. I can take it with me to play local sessions with friends and relatives, and it handles pretty much anything I throw at it with aplomb. In short, I really like it. — *Jason Hidalgo*

"The dark, stealth-fighter-style design looks cool, but is still subdued unlike the Technicolor Dreamcoat approach of some competitors."

WHAT IS THIS?

TOUCH TO FIND OUT

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LAWRENCE CYCLOTRON

In the early 1930s, an invention called the "cyclotron" – a semicircular subatomic particle accelerator developed by UC Berkeley professor Ernest Lawrence — helped usher in a new era of scientific research and development often known as "Big Science." After funding cutbacks at Lawrence's school lab, major donors from the private and federal sector began contributing to his research and eventually led to a new Radiation Lab. Biomedical applications were developed, including radiation therapies and medical imaging tools, while the lab's nuclear energy research played a part in developing the atomic bomb. In 1939, Lawrence was awarded the Nobel Prize in Physics for his invention and his work with regard to artificial radioactive elements.

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