

ARCHOS'
KEYBOARD-
PACKING 101XS
TABLET

MOTOROLA'S
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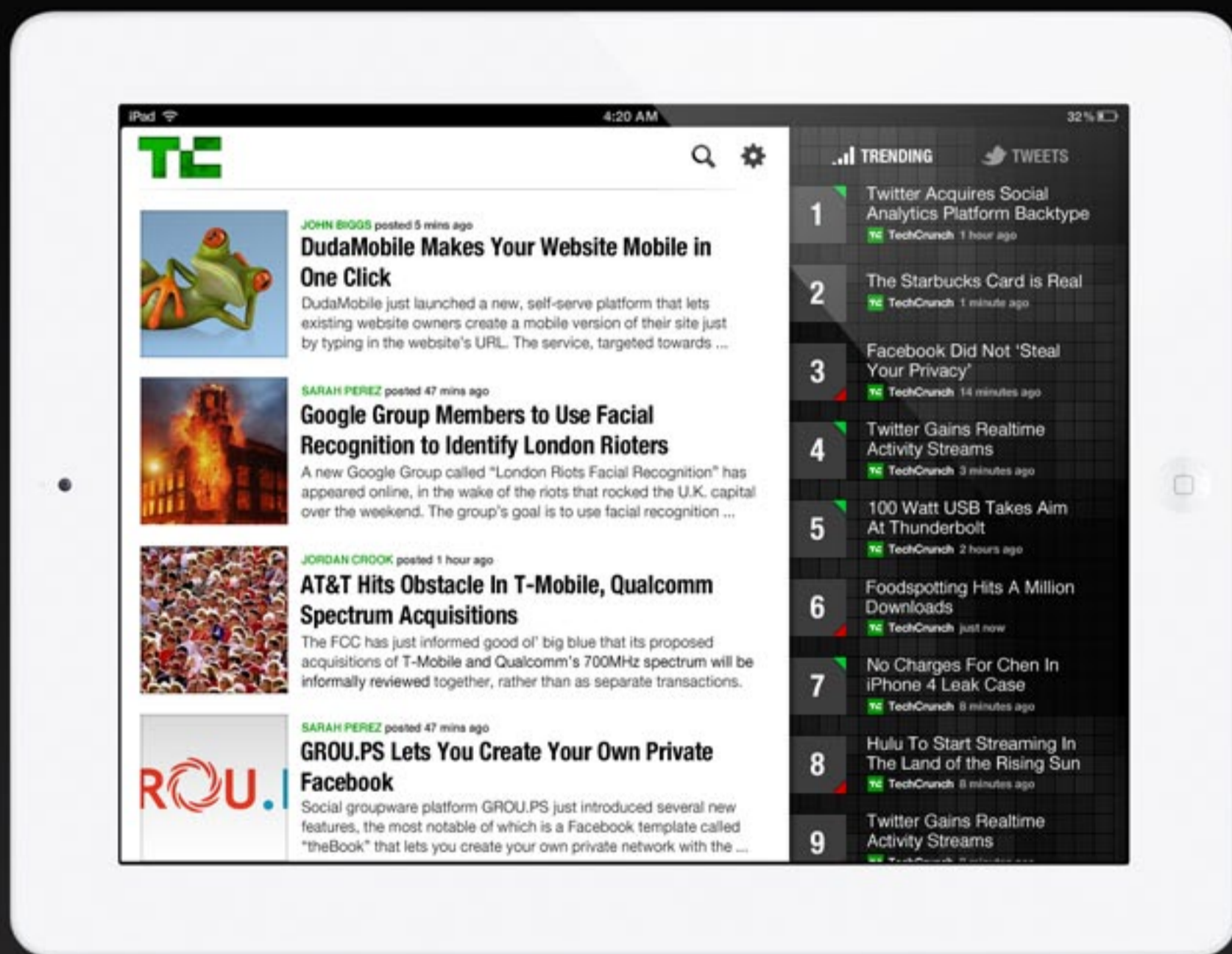
DISTRO

G **38 STUDIOS** **A** **LOST MILLIONS OF** **M** **T** **H** **E** **W** **R** **O** **W** **AND LAID OFF** **H** **UNDREDS OF WORKERS IN** **P** **U** **R** **S** **U** **I** **T** **O** **F** **T** **H** **E** **U** **L** **T** **I** **M** **A** **T** **E** **M** **M** **O** **R** **P** **G** **. N** **O** **W** **I** **T** **S** **C** **O** **L** **L** **A** **P** **S** **E** **S** **A** **S** **A** **C** **A** **U** **T** **I** **O** **N** **A** **R** **Y** **T** **A** **L** **E** **F** **O** **R** **S** **T** **A** **T** **E** **S** **L** **O** **O** **K** **I** **N** **G** **T** **O** **I** **N** **V** **E** **S** **T** **I** **N** **P** **R** **I** **V** **A** **T** **E** **T** **E** **C** **H** **C** **O** **M** **P** **A** **N** **I** **E** **S** **.** **R**



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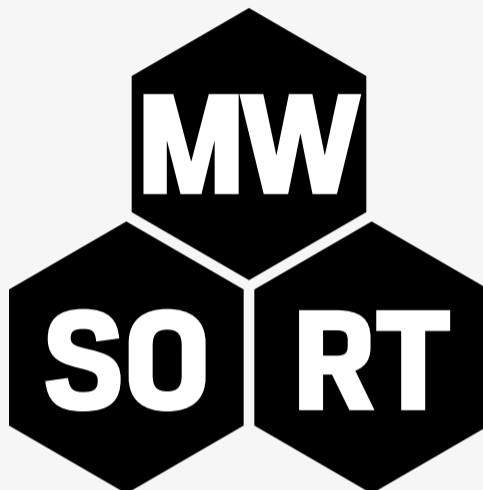


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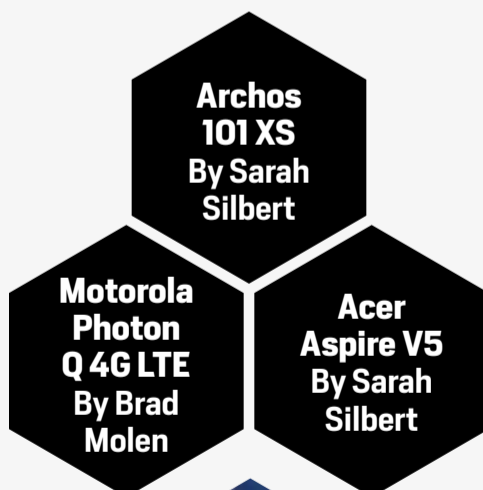
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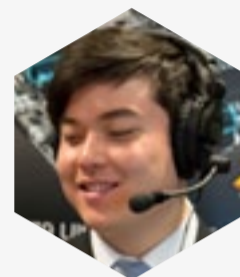
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THAT WHICH LIES BETWEEN TABLET AND LAPTOP



DISTRO
08.31.12

EDITOR'S
LETTER

Not long after we went to press last Friday, the jury in the Apple vs. Samsung trial filed its verdict, much sooner than nearly anyone expected — proving that we should never underestimate how strongly even the bastions of our legal process are workin' for the weekend. While not a complete victory for Apple, it was darned close, that Cupertino company being awarded \$1.05 billion in damages for various examples of infringement, Samsung receiving not a single count in its favor to lessen the blow.

Still, this thing is far from over. While Apple has requested injunctions to stop the sale of those infringing phones still on the market, Samsung is firing up the appeals process. According to some, it has a good case. The jury made some mistakes in filing the damages claim, awarding roughly \$2 million to Apple on devices that were not found to infringe, which could be used to show it was favoring one company over the other. And then, of course, there's the extreme rapidity with which that verdict was turned in. It's anybody's guess how things will turn out now, but it's safe to say you shouldn't unbuckle those seatbelts just yet.

IFA is going on, and Samsung was quite busy on that front too, unveiling a number of new products, most exciting in our book being the Galaxy Note II. This successor to the surprisingly successful phablet offers an even bigger screen (5.5 inches) and a faster, quad-core Exynos processor plus a bigger battery despite being thinner. It has 2GB of RAM, up to 64GB of storage, comes out of the box with Jelly Bean and I want one.

Samsung also unveiled the first in what will surely be a series of Windows-packing ATIV tablets, this one a 10.1-inch slate running Windows RT. But, if you like your tablet with a keyboard — and your Windows with a desktop — you may be more interested in the Series 5 and Series 7 convertibles, which feature removable keyboards, S Pen functionality and a price of \$749 for the lower-end 5 with a keyboard, or \$1,119 for the higher-end 7 model. Both are due in October.

Sony also had a strong presence, unveiling an alphabet soup-like selection of devices, including a new, thinner, \$400 Tablet S and three new Xperia smartphones: J, V and T. The T is the top of the range, with a 4.6-inch, 720p display, NFC



and PlayStation certification, so you can smash boxes in *Crash Bandicoot* on the go. That ships in a few weeks, the others sometime before the end of the year.

ASUS showed off two Vivo Tab devices, one for Windows 8 and one for Windows RT, both bearing more than a passing resemblance to the Transformer Prime, but neither with a price nor a release date. Lenovo and HP also had their own convertibles to show, the IdeaTab S2110 and Envy x2, respectively. Suffice to say, androgynous Windows tablet / laptop things will be all the rage this fall, and I think that's a good thing.

We at Engadget are gearing up for a bonkers September, doing some extra calisthenics to prepare for three major product launches in the first week alone. One of those is Amazon, and we're expecting they'll throw a bunch of new devices at us in one shot, as is that company's style. Last year we got a flurry of new Kindle readers plus the Fire at one event and this year, ahead of the next briefing, both the Kindle Touch and the Fire have gone out of stock on the company's site. You don't have to believe in chemtrails to have a mind about conspiracy theories here.

If I may put my tin foil hat on for a moment, we're expecting a new 7-inch successor to the Fire, likely one that shows a cleaner, thinner, more distinctive design than the "me-too" Fire that launched last year — a device that even a designer working at RIM could mistake for a BlackBerry PlayBook. Word on the street is that the long-awaited 10-inch

version of the Fire will not be unveiled next week, but we are expecting to see at least one new Kindle E Ink reader with some sort of integrated, lighted display, finally closing the gap with the Nook Simple Touch with GlowLight.

Finally, we might just have a good idea of when Windows Phone 8 is launching. ZDNet's Mary Jo Foley believes that the mobile OS, and its first round of devices, will officially launch on October 29th. That's three days after Windows 8 hits an unsuspecting populace, and just one day before the company's BUILD developer conference. Handsets could be available not long afterward.

This week's Distro takes a closer look at the failure of 38 Studios and what it means for the future of public-private partnerships. We have reviews of the Archos 101 XS tablet and Acer Aspire V5 (11-inch), along with the Moto Photon Q 4G LTE smartphone. In Switched On, Ross Rubin describes an interesting approach to add a little depth to 2-D content, while Joshua Fruhlinger describes the surprisingly three-ringed history of smartphones. There's a new IRL, more Recommended Reading and digital sports commentator John Sargent joins us for Q&A. It's all here, and it's all good, so swipe on in, won't you? 



TIM STEVENS
EDITOR-IN-CHIEF,
ENGADGET



ENTER

EYES-ON

DISTRO
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LOMOGRAPHY LA SARDINA SPLENDOUR

Believe it or not, film photography is still alive and well. Lomography's 35mm camera draws from sardine cans and some of the rarest retro shooters for its design — hence its piscatorial moniker. Packing a truckload of features, the compact unit looks quite dapper and can add some spice to a photo session.

THE DAMAGE: \$199





SAMSUNG GALAXY CAMERA



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PRICING:
TBD

AVAILABILITY:
OCTOBER

THE BREAKDOWN:
WE CAN'T SPEAK TO IMAGE QUALITY JUST YET, BUT THIS JELLY BEAN CAM HOUSES A GALAXY-ESQUE TOUCHSCREEN AND DUAL CONNECTIVITY.

Samsung's Galaxy Note II is not the only product to be "Unpacked" at IFA. The Galaxy Camera snagged its share of the spotlight, too. The entire back of the camera is occupied by an edge-to-edge, 4.8-inch, 1,280 x 720-pixel (308 ppi) display. Despite the Galaxy's rather large profile, Samsung opted for a standard 1/2.33-inch BSI CMOS sensor, capable of 16-megapixel snaps. Don't expect top-of-the-line image quality, but the 21x, f/2.8-5.9, 23-480mm lens will let you get far closer to the action than any smartphone on the market today. This latest point-and-shoot falls within the SMART lineup, which means there's surely WiFi, 3G and 4G connectivity on board.

The camera we had was clearly an early prototype, but Samsung has a bit of time left to work out the kinks. Otherwise the experience was quite positive; we found the camera to be very responsive and intuitive, especially if you're already familiar with Android. Upon boot-up, you're met with a typical Jelly Bean home screen with a standard Camera shortcut, located front and center, launching the advanced interface. You can, of course, use the device as a data-only smartphone of sorts as well, surfing the web, responding to email and consuming media just as you would on any other Galaxy.





SONY BRAVIA KD-84X9005

As ever, Sony's IFA press conference was a veritable storm of products, but CEO Kaz Hirai was clearly the most excited about the company's new 84-inch 4K TV, the Bravia KD-84X9005, and after beholding the thing for a bit alongside a scrum of fellow tech journalists in Sony's booth at IFA, it's pretty clear why. The thing is beautiful — and yeah, we can confirm, as Kaz suggested, that you really do want to stick out your hand and touch the picture when you're standing in front of it, particularly when the video cycles through images of the ocean, with water droplets hitting the screen.

At 84 inches, this thing is a beast, with at least a dozen or so folks standing comfortably around it to catch a glimpse of the display. The Bravia is surprisingly thin for something so massive. There are speaker bars attached to either side of the display, with a control panel along the bottom where you'll also find the stand, which consists of two metal bars holding up what's surely a weighty set.



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PRICING:

TBD

AVAILABILITY:

TBD

THE BREAKDOWN:
SONY'S STUNNING
84-INCHER SPORTS
AN UNEXPECTEDLY
SLIM FRAME AND
SMOOTH PICTURE.





PRICING:
TBD

AVAILABILITY:
LATE 2012

THE BREAKDOWN:
THE ENVY X2 TABLET CARRIES A KEYBOARD DOCK IN TOW WHILE PACKING PEN SUPPORT, NFC AND AN 11-INCH DISPLAY.

HP ENVY X2 TABLET HYBRID

HP, one of the last OEMs to share its Windows 8 plans, just announced the Envy x2, an 11-inch tablet that comes with a keyboard dock. And while that form factor may already seem tired, HP is dressing it up with some higher-end features, including an aluminum build, NFC, pen support, Beats Audio and a 400-nit, IPS display. The tablet itself measures about 8.5mm thick and weighs 1.5 pounds, while the dock weighs 1.6. Unlike competing products, the device combines magnets and a mechanical latch to keep the tablet from falling out of its dock.

Under the hood, the x2 runs an Atom-based Clover Trail processor. Though HP isn't ready to talk battery life, we've noticed that every other OEM releasing a Clover Trail device is promising between nine and 10 hours of runtime, so we expect the x2 to deliver comparable performance. What's more, the dock has a built-in battery of its own, so you'll definitely have some reserve power there. Poke around on the dock and you'll find two USB ports, HDMI output and a full-size SD slot. The tablet itself is home to an 8-megapixel rear camera and microSD slot, in case the 64GB of built-in storage isn't capacious enough. **D**



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Truth in Advertising?

The FCC's latest Broadband Progress Report features a flashy new interactive map, but perhaps its most interesting finding is focused on keeping providers honest. According to the report, ISPs now average 96 percent of advertised connection speeds during peak hours, up from 87 percent in 2011. — *Christopher Trout*

ACTUAL SUSTAINED DOWNLOAD SPEEDS AS A PERCENTAGE OF ADVERTISED SPEEDS BY CARRIER

2012 ■
2011 ■





The Best Book Reviews Money Can Buy

By David Streitfeld
The New York Times

The fact that some online “reader” reviews may not come from actual, everyday readers likely isn’t a surprise to most, but the extent of the hidden industry behind those reviews may well be. In this in-depth piece for *The New York Times*, David Streitfeld looks at one individual, Todd Rutherford, who saw a demand for positive book reviews and turned it into a \$28,000-a-month business — albeit one that would disappear almost as fast as it took off once the likes of Amazon and Google got wind of it. As Streitfeld explains, the prevalence of such reviews is hardly dependent on any one business, though — he notes that one University of Illinois researcher in the field estimates that fully one-third of all consumer reviews are fake, and Rutherford himself says that he is now distrustful of all online reader reviews, not just those for books.

PHOTOGRAPH BY BILLY STEELE

**Futurist Stewart Brand
Wants to Revive Extinct Species**
By Kevin Kelly
Wired

As you might expect given a conversation between Kevin Kelly and Stewart Brand, this interview ventures far beyond what the title (a reference to Brand’s latest project) suggests. The two talk at length about the WELL, the pioneering online community that’s now facing an uncertain future, as well as Doug Engelbart’s famous 1968 demo of a graphical user interface and why it’s made Brand “perpetually impatient.”

Technology’s Mental Frontier
By Esther Dyson
Project Syndicate

Will we ultimately accept self-driving cars even if they’re proven to be safer than traditional vehicles? That’s one of the questions Esther Dyson asks here in examining one of the often overlooked holdups to technological progress: ourselves. The answer to that particular question remains to be seen, but Dyson suggests that the broader issue is one that we should all focus more on so as not to forsake long-term benefits for short-term thinking.

**Lunch with RIM CEO
Thorsten Heins: Time for
a Bite, and Little Else**
By Iain Marlow
The Globe and Mail

Thorsten Heins has made himself available for quite a few interviews in recent months, more often than not doing damage control after the latest bit of bad news from the company. Here, Marlow catches up with him after seven months on the job, and finds a man who’s cheerful despite having one of the toughest jobs in the tech industry. That’s not to say he’s not aware of the company’s problems or past mistakes, though, some of which he discusses quite frankly.



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AN ODE TO THE TRAPPER KEEPER



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FORUM

THIS IS THE
MODEM WORLD

BY JOSHUA FRUHLINGER

IT'S BACK TO SCHOOL SEASON, and if you're one of the younger Engadget readers, surely you did a little supply shopping. Perhaps you bought some pens, pencils, paper and notepads. Maybe you even landed a new laptop, tablet or printer. You probably tried to convince your parents that Xbox Live has a live after-school study group that can help you excel in calculus. (Parents: I'm not going to say if it does or not. It's up to you, as involved parents, to look this up on your own. If you don't look it up, then, yes, there is an amazing study group on Xbox Live. Buy your kid that 360.)

But when you went back-to-school shopping, I'm going to guess you didn't buy a Trapper Keeper.

If you know what a Trapper Keeper is, high five. If you don't, it's just a little thing.

It's just the original nerd gadget of the '80s. It's just the greatest pre-tablet gadget ever. It's just a thing that made high school bearable for those of us who would have rather been copying the programs out of the back of Com-



You always knew a fellow D&D-playing, graph paper-using geek from his Trapper Keeper.

pute! magazine. It was a portable vault of note-taking, anime-doodling, geometry-proofing goodness in a \$10 package.

It was the greatest three-ring binder ever created.

The original Trapper Keeper was the king of school supply and paper-work organizers. It was, arguably, an analog computer, in that it housed pencils, pens, a calculator, ruler, protractor and a folder for each of one's classes. It sealed closed with Velcro security, and featured some sort of groovy (or rad, depending on your generation) design. And it used the same exact font for its logo as Apple Computer did for the Apple II.

It was legit. It sported fast cars, early 3D computer renderings, kittens, tigers playing football, space ships, dragons, rainbows, *Sonic the Hedgehog* and *The Ghostbusters*.

It was also a very clear sign that


you were dedicated to education and were subsequently labeled a hardcore nerd. If you had a Trapper Keeper, you were fodder for John Hughes' next teenage drama. The cool kids? They didn't bother with protractors and calculators. They used minimalist, separate folders for each class, usually Pee Chee folders modified to exhibit the best in lowbrow bathroom humor. Cool kids didn't need to carry too much; the kids with the Trapper Keepers were doing their homework anyway — for profit, of course.

You always knew a fellow D&D-playing, graph paper-using geek from his Trapper Keeper.

I'll go one step further. Trapper Keepers — the way they combined all of one's desktop tools — were an early incarnation of the smartphone. Portable, customizable and deeply personalized. Interestingly enough, Trapper Keepers faded from popularity in the '90s just as smartphones made their presence known. Coincidence? I think not.

But wait. It turns out that Mead still makes Trapper Keepers. They've replaced the Velcro with magnets, but otherwise, it looks the same, Apple font included.

But why would someone carry a Trapper Keeper now? Don't kids take notes on laptops and tablets?

Or, please tell me, Engadget readers: Do you still sport a fresh Trapper Keeper on the first day of school? Say it's so. 



THE OLD ADVENTURES OF NEW 3D



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FORUM

SWITCHED
ON

BY ROSS RUBIN

IN THE UNMARKED OFFICE OF 3-D

Vision, Inc., you can see a television or PC display a videogame or movie with a convincing stereoscopic effect. That might not seem very unique. However, the television is a CRT from the 1990s, the video game is *Super Mario* for the Nintendo 64 and the movie is *The Wizard of Oz*, made in 1939.

Despite the growth in 3D television sales, the requirement to wear 3D glasses has loomed as one of the most significant barriers to adoption. 3-D Vision's technology still requires glasses, at least for now. However, with some caveats, it overcomes some of the other, oft-overlooked barriers to 3D adoption by creating 3D video from 2D content on 2D (or 3D) displays. On televisions, this is achieved via a small set-top box — a prototype of which approaches the size and noise level of a mini-fridge — that plugs into the

video source and the TV and converts the video in real-time with virtually no latency. The box should be available early next year.


3-D Vision's technology works by extracting 3D data in the video as opposed to having humans make judgment calls, as is the case with converted 3D movies. It is impressive in both the quality of the 3D effect and the range of devices with which it can work. These include virtually any video source although there won't be much to work with in, say, 2D games from



If 3-D Vision's demos have a fatal flaw, it's ghosting. It's everywhere — on PC monitors, CRTs and plasma televisions — and can be severely distracting.

the Super Nintendo era or even today's talking-head news programs. Rendered animation shows, however, like *Thomas and Friends*, work well. As for output devices, even analog tube-based televisions can display convincing 3D content from 2D films, although the system generates a fair amount of flicker as it struggles to overcome the low refresh rate and interlacing of the once-ubiquitous technology.

It can also work with PCs, tablets and smartphones, although the processing box is not an option when those devices aren't attached to an external display. These viewing platforms require the use of passive glasses as opposed to the active shutter glasses used with televisions. However, even here 3-D Vision's technology has a few advantages. The company claims it is the first approach to generate color 3D with anaglyph-style paper 3D glasses. Also, video remains viewable without the "double-vision" effect when viewed without the glasses, although there is some softening.

If 3-D Vision's demos have a fatal flaw, it's ghosting. It's everywhere — on PC monitors, CRTs and plasma televisions — and can be severely distracting. The company offers a range of reasons for this depending on the scenario — older versions of its processing technology, suboptimal white balancing and ultimately a limitation of today's display technologies. One way to address it might be to dial down the intensity of the 3D effect, a feature offered by the PlayStation 3, Nintendo 3DS, and TVs that can perform in-set conversion. If 3-D Vision can improve on that front, or if consumers are willing to accept it, its technology could welcome a wealth of shutout content and devices to a 3D experience. 



THE SOUND SUMMER OF PSN



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FORUM

REACTION
TIME

BY LUDWIG KIETZMANN

REMEMBER WHEN THE SUMMER LULL signaled a blissful break from the year's onslaught of new games? July was the perfect pit stop, where you'd catch up on that bloated backlog and shake off that vague, gnawing stress that comes from wanting to play everything and knowing you never will. There used to be a gap, right over here.

If things felt lethargic to you in August, you must not have been too keen on the downloadable games finding their way to the PlayStation Store — or the ones getting horribly lost and asking for directions to some nested nightmare in the current Xbox 360 dashboard.

Sony's efforts this year have been especially strong, with several standout games forming a loose alliance around music. The PlayStation Network hosted the debut of *Dyad*, a tumultuous, trippy shooter that puts your brain in a sling-shot and fires it straight down an LED-

lined tunnel. It's a product of Toronto's indie game scene and designer Shawn McGrath, who says it was relatively easy to gain Sony's stamp of approval.

Sony has also made somewhat of a Vita showpiece out of *Sound Shapes*, a vibrant musical platformer from another Toronto talent, Jonathan Mak. The game, which can be downloaded for Vita and PS3 after a single purchase, has been a hit with industry pundits ever since it was first shown off, and has only grown in profile with the addition of musical celebrities like Beck and Deadmau5.



You become acutely aware of what happens when you take *Memento* and replace Guy Pearce and Carrie-Anne Moss with spaceships.

The informal musical trio on PSN gained its third member in *Retro/Grade*, an ingenious side-scrolling shooter that begins with your victory and then plays entirely in reverse. As you attempt to rhythmically repeat your actions and catch all your bullets (lest you create a temporal paradox, obviously), you become acutely aware of what happens when you take *Memento* and replace Guy Pearce and Carrie-Anne Moss with spaceships.

This thematic lineup of PSN games has further distinguished Sony's store from Microsoft's Xbox Live Arcade, and cemented it as a playground for unique, experimental and creative games. That isn't to say PSN has become the exclusive domain for such gems, but it's a reassuring occurrence that's easy to take

5 NEW GAME RELEASES FOR THE WEEK OF AUGUST 31ST



MADDEN NFL 13
Xbox 360, PS3, PS Vita - \$60



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on game
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ROCK BAND BLITZ
XBLA, PSN - \$15



THEY BLEED PIXELS
PC - \$10



Sony's efforts this year have been especially strong, with several standout games forming a loose alliance around music.

for granted and not often seen outside of the more indie-friendly PC. Only on the PlayStation Store will you find *Papo & Yo*, a surreal adventure derived from the designer's troubled relationship with his father, and *Journey*, one of the year's best and most elegantly expressive games.


The summer doldrums — rather, the period formerly known as the summer doldrums — are ideal to showcase all the work Sony has done to curate its store, which feels more and more like an eye-catching boutique next to Xbox Live Arcade's reliable but cluttered mega-mart. It also doesn't help that the latest Summer of Arcade, Microsoft's annual show of promotional favoritism to a month's worth of games, fizzled more often than it inspired.

The XBLA lineup just didn't elicit the positive reception it has in the past, starting with *Tony Hawk's Pro Skater HD*, a wobbly remake that couldn't



**RATCHET & CLANK
COLLECTION**
PS3 - \$30

draw a concurring set of memories from reviewers. *Deadlight* impressed with its style but left many cold with its cumbersome take on the zombie apocalypse; *Wreckateer* had its compliments hinged on Kinect's "when it works" clause; and 5th Cell's shooter, *Hybrid*, had a rough launch that got it temporarily pulled from the Xbox Live Marketplace. The only game that made it through mostly unscathed was *Dust: An Elysian Tail*, a gorgeous side-scrolling action game in the vein of *Super Metroid*.

Crowning the PSN as the victor in this instance is not as important as highlighting the ongoing battle for your time during retail's pre-holiday break. Downloadable console games are increasing in scale, scope and weirdness, and the two biggest digital stores are formulating distinct personalities and predilections. There's a welcome to-and-fro, even if it means the end of our annual summer respite. 



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ARCHOS 101 XS



The **Archos 101 XS** is a typing tablet twofer with a futuristic design and mid-level price, but does it have what it takes under the hood?
By Sarah Silbert

Archos has had its hand in the slate game since the early days of “internet media tablets” and while its products don’t have quite the same brand recognition as, say, Samsung’s, we’ve found the French company’s devices to be some of the best-value tablets available. Budget-minded prices and innovation don’t usually go hand in hand, but in the case of its new 101 XS Android 4.0 tablet, Archos has a few tricks up its sleeve. The slate boasts a keyboard cover and kickstand, along with a magnetic hinge allowing the lid to attach to the display. Arriving in November for \$400, the Archos 101 XS



is a productivity-minded take on slates, complete with a full set of keys and a bundled copy of OfficeSuite Pro. Do the hardware and software add up to a killer combo? Read on to find out.

LOOK AND FEEL

When we first laid eyes on the 101 XS, we really liked what we saw. Archos' idea to build the keyboard into the tablet's case was a clever one, and it's refreshing that the company presents this productivity tool as an integral part of the device rather than as an optional accessory. The design reminds us of Zaggmate's iPad keyboard, which similarly locks onto the tablet for added typing functionality.

Much of the tablet's body is white plastic, which certainly doesn't lend it a premium feel. In fact, the material picks up smudges almost instantly. The rounded, almost kid-friendly edges aren't the markings of a high-end product either, but Archos tempers the cheap materials with a stainless steel frame that surrounds the 10.1-inch display and carries through to the back of the device. Archos says it used more stainless steel on this device than on previous tablets, and it does feel sturdier than last year's G9. The finish may be stainless, yes, but we noticed a disconcerting number of scratches on the backing, and

It's refreshing that Archos presents this productivity tool as an integral part of the device.

that was before we even used the tablet away from our desk. Also decidedly un-high end: Archos didn't hold back with the branding here. The device's name is engraved on the front, while the company's name is stamped across the back.

Though the 101 XS' soft lines and



This tab offers a USB 2.0, micro-HDMI and a miniSD port.



plastic body don't provide much eye candy, we must say the device feels very good in the hand. That's the upside to the rounded edges, of course, but for a 1.3-pound, 0.31-inch-thick device, the 101 is reassuringly sturdy (and hefty, we might add). And though we knock the tablet for a slightly chintzy feel, attaching it to the keyboard cover paints a prettier picture. The so-called Coverboard attaches to the tablet magnetically, and the grayish magnetic strip that runs along the edge of the cover matches the silver bezel surrounding the 10.1-inch display. The silver-and-white aesthetic pulls the package together, and the docked tablet even manages to look a little edgy and futuristic. Ports include a proprietary USB 2.0 connector, mini-HDMI and a microSD card slot (compatible with up to 64GB of external memory).

Taking a closer look at the keyboard case, we have a chiclet-style layout spanning most of the cover's width, with the docking connector and the kickstand sitting up top. The kickstand consists of two parts that lie flat, but pulling it up to a vertical position lets you prop up the tablet when it's docked in the base. We'll get to display quality in a minute, but it's worth mentioning here that the kickstand tilts the tablet back at an angle that requires you to keep the device pretty distant from your body — otherwise, you won't have the best view of the screen.

The Archos 101 XS has a 1,280 x

800 display, and the absence of IPS technology tells you it's not anything to get excited about. Colors aren't particularly bright, and you'll definitely want to bump up the brightness, as the panel is pretty dark by default. Text and images on web pages aren't especially crisp, but the XS' screen is perfectly adequate for surfing the web and firing off emails. And, come on, when a tablet's priced at \$400, we can certainly live without a 1,920 x 1,200 panel. The glossy screen is a glare magnet, but reflections aside, this tablet offers good viewing angles.

KEYBOARD

A keyboard section in a tablet review, eh? The keyboard on the 101 XS is no accessory; it's integral to the slate's design — as in, it's not an optional accessory that costs more, à la the ASUS Transformer Pad's \$150 dock. In addition to upping your productivity, the keyboard cover protects the tablet's screen. It does add a few millimeters of bulk to the 101 XS, though, so the hardware keys are the real value proposition here. In addition to the full QWERTY

The keys are so close together that it's easy to hit an adjacent letter, and the buttons are extremely small.





setup and your standard numbers and arrows, there are keys for all the basic Android functions, including home, back, recently open and shortcuts to the updates bar and apps menu.

Though we appreciate the all-in-one design, the keyboard dock concept hasn't proved itself to be the most ergonomically sound. Other hybrid devices like the MSI Slider S20 and the ASUS Eee Pad Slider suffer from cramped keyboards, since propping up the tablet takes away so much space on the deck. The 101 XS also has this problem: the recessed island-style keys are tiny and feel squished together.

In short, there's a learning curve for typing on the 101 XS. The keys are so close together that it's easy to hit an adjacent letter, and it also doesn't help that the buttons are extremely small. Neither of these issues is a surprise given that the keyboard is built directly into the lid, and while it's ultimately a superior option to the onscreen Android keyboard, it's still no substitute for a full-fledged laptop. We gave an online typing test a whirl to check out our words-per-minute score, and our rate was about 20 points lower than usual, with an increased error percentage, too.

We also tried knocking out a few emails in Gmail, and the keyboard evidently did not want those messages to get sent. While typing a few pithy sentences on the cramped layout, we naturally made a few errors and needed to backtrack and correct our work. Pressing the backspace key, though, routinely takes us up to the recipient field in Gmail. Archos says this is a known bug and it's working on a fix with Google.

PERFORMANCE

Running a dual-core TI OMAP-4470 processor clocked at 1.5GHz with 1GB of RAM and 16GB of internal storage, the 101 XS isn't crafted to compete with higher-powered (often more expensive) Tegra 3 tablets. Still, it performed well in synthetic benchmark tests, outscoring dual-core contenders such as the Samsung Galaxy Tab 2 10.1 and the Acer



BENCHMARK	ARCHOS 101 XS	ACER ICONIA TAB A200	LENOVO IDEATAB S2109	SAMSUNG GALAXY NOTE 10.1	SAMSUNG GALAXY TAB 2 10.1
QUADRANT	3,835	2,053	1,885	5,695	2,602
LINPACK SINGLE-THREAD	55	37.2	31.8	56.6	35.6
LINPACK MULTI-THREAD	85.2	60.4	44.9	160.3	57.1
NENAMARK1 (FPS)	59.8	45.6	53.9	60	29.5
NENAMARK2 (FPS)	52.3	20.4	27.9	58.5	19
VELLAMO	1,381	1,290	1,121	2,394	Would not run
ANTUTU	7,277	N/A	N/A	11,962	N/A
SUNSPIDER 0.9.1 (MS)	1,479	2,251	2,249	1,193	2,222
GLBENCHMARK EGYPT OFFSCREEN (FPS)	61	N/A	29	97	N/A
CF-BENCH	7,750	N/A	5,172	13,157	N/A

SUNSPIDER: LOWER SCORES ARE BETTER

Iconia Tab A200. Pitting the 101 against the new Galaxy Note 10.1 shows the limitations of Archos' tablet, though: the Note's AnTuTu score of 11,962 beats the 101's by more than 4,000 points. But it's one thing to benchmark a device and another to use it.

We didn't encounter many glitches, but the 101 XS just feels sluggish.

Cold-booting into Android 4.0.4 took 42 seconds, which isn't super speedy in the scheme of all slates. The Tegra 3-powered Nexus 7, for example, took 35 seconds, and we still think that's too slow. Once the tablet is up and running, though, it performs smoothly. Playing a few rounds of *Fruit Ninja*, watching YouTube videos and working in OfficeSuite Pro are problem-free. Still, everyday usage highlights the TI-OMAP's modest processing power. We didn't encounter any force-quits throughout our testing, but



the 101 XS just feels sluggish. Loading web pages (no matter how strong the WiFi connection), scrolling through the apps menu and our home screens and launching programs takes a few seconds longer than it should.

BATTERY LIFE

Archos rates the 101 XS' 6,800mAh battery for seven hours of video playback and nine and a half to 10 hours of general use. We ran our video rundown test twice — once before and once after Archos updated its firmware — and the average of the two scores was five hours and 36 minutes (the difference between the two tests was about 10 minutes). Most other slates deliver more longevity: in fact, this is one of the shortest runtimes we've seen, falling short of a few older slates, such as the Acer Iconia Tab A100.

CAMERA

The 1.3-megapixel, 720p webcam on the Archos 101 XS delivers blurry images during video chats. When we rang one friend up on Skype, he couldn't see our image at all, but our voice came through loud enough. Once we got a decent connection, we both saw blurry, pixelated images. Even with a decent WiFi connection, this tablet isn't a reliable pick for video chatting. Plus, the camera's placement, on the left side of the tablet when you hold it in landscape mode, takes some getting used to: it's precisely the spot where we like to grip the slate, so we had to make an effort to not cover

BATTERY LIFE	
ARCHOS 101 XS	5:36
SAMSUNG GALAXY TAB 7.7	12:01
APPLE IPAD 2	10:26
ACER ICONIA TAB A510	10:23
ASUS EEE PAD TRANSFORMER PRIME	10:17 / 16:34 (KEYBOARD DOCK)
SAMSUNG GALAXY TAB 10.1	9:55
APPLE IPAD (2012)	9:52 (HSPA) / 9:37 (LTE)
APPLE IPAD	9:33
ASUS TRANSFORMER PAD INFINITY TF700	9:25
MOTOROLA XOOM 2	8:57
SAMSUNG GALAXY TAB 2 (10.1)	8:56
HP TOUCHPAD	8:33
ASUS TRANSFORMER PAD TF300	8:29 / 12:04 (KEYBOARD DOCK)
ACER ICONIA TAB A700	8:22
ACER ICONIA TAB A200	8:16
SAMSUNG GALAXY TAB 7.0 PLUS	8:09
SAMSUNG GALAXY NOTE 10.1	8:00
AMAZON KINDLE FIRE	7:42
GALAXY TAB 2 7.0	7:38
ACER ICONIA TAB A500	6:55
ACER ICONIA TAB A100	4:54



the shooter up with our fingers. Interestingly, though the earlier G9 sported a rear-facing camera, there's only one cam on the 101 XS.

SOFTWARE

The 101 XS comes with Android 4.0, and this build of Ice Cream Sandwich is straightforward and skin-free. However, the device will be upgradeable to Jelly Bean in October. Archos does preload a fair share of apps, including OfficeSuite Pro 6, which is clearly meant to be used with the tablet's keyboard cover. There's a remote con-

trol app that lets you control other Archos devices on the same network, and the company's Music and Video apps sport an intuitive interface for swiping through albums and movie titles. A Gameloft suite of games, including *Asphalt 6* and *Spider-Man*, is pre-installed, as is a free version of *Fruit Ninja*.

CONFIGURATION OPTIONS AND THE COMPETITION

The 101 XS, set to go on sale in mid-September, will retail for \$400. The tablet gives you a TI-OMAP CPU, 1GB of

Clean colors and styling gives this tab a futuristic look.



RAM, 16GB of internal storage, a 1,280 x 800 display and a 1.3-megapixel camera. That's about all you have for options at the moment, though Archos says it will release 8-inch and 9.7-inch iterations of this tablet by the end of the year.

If it's a 10-inch Android tablet you're after, your options are bountiful. A 10-incher for no more than \$400? That narrows the playing field, but not by much. The \$400 Samsung Galaxy Tab 2 10.1 isn't the most impressive performer (read: it's glitchy), but it gives you nearly nine hours of battery life. It's a bit thicker than the 101 XS (0.41 inches

versus 0.31 inches), but it includes similar specs: a dual-core TI chip clocked at 1GHz, 1GB of RAM and 16GB of storage (for the cheapest model).

There's also the ASUS Transformer Pad TF300, which costs \$379 without the media dock and offers solid Tegra 3 performance. Among mid-range Android tablets, the TF300 is still tops in our book. If you can cross the \$400 threshold, devices with higher-res displays enter the mix. The \$450 Tegra 3-powered Acer Iconia Tab A700 has a lovely, crisp panel and a comfortable design, though we encountered several performance hiccups. The new iPad, starting at \$499,

The docking stand only allows for one viewing angle.



has an amazing 2,048 x 1,536 display, of course, though the Archos 101 XS won't likely be on your list if you need high-end pixel density. Finally, Samsung's new Galaxy Note 10.1, starting at \$499 is an interesting alternative, as it offers a different approach to productivity than the 101 XS. Rather than including a keyboard, it bundles the now-famous S Pen for writing, sketching and taking notes, and the tablet is stocked with high-performing handwriting transcribing software. Still, you're stuck with a 1,280 x 800 resolution on the 10-inch display, and we don't think the pen setup is the most practical for work of the essay-writing, PowerPoint-making variety.

WRAP-UP

Sure, we docked the Archos 101 XS for a few key issues — the uncomfortable keyboard being the primary one — but you know us: we only gripe because we love. The fact is we got a bit starry-eyed when we first met this tablet.

The Coverboard design is smart, even if the plastic feels cheap, and we can't give Archos enough kudos for taking the keyboard beyond accessory status to an important part of the device. The layout isn't the most ergonomically sound, which defeats the purpose of having a built-in keyboard in the first place, but we hope the company can refine this concept to get better results.

Is that an endorsement of any kind? Not exactly. If you have a \$400 tablet budget, there's a wealth of smarter choices out there and many comparably priced options provide better performance and a superior display to the 101 XS. For the time being, we'd say if you want a productivity-minded slate, the best option is still to buy a Bluetooth keyboard case. **D**

Sarah is Reviews Editor, a wannabe tap dancer and a closet film critic.

BOTTOMLINE

ARCHOS 101 XS

\$400



PROS

- Innovative design
- Keyboard included at \$400

CONS

- Cramped keyboard
- Short battery life
- Cheap build quality

BOTTOMLINE

The \$400 Archos 101 XS includes a keyboard dock built into the tablet's cover, but this innovative feature doesn't amount to a good typing experience.



MOTOROLA PHOTON Q 4G LTE



The **Photon Q 4G LTE** is great for getting your QWERTY on, but if that isn't your thing, does this pricey handset still have the right stuff?
By **Brad Molen**

The future of Motorola post-acquisition may still be a mystery, but the manufacturer has managed to stay quite active over the last few weeks: it unveiled the Atrix HD, its first smartphone with an HD display and native ICS build, and there's already much anticipation around Verizon's Droid RAZR HD ahead of the holiday season. For the here and now, however, it's Sprint's turn to soak in the Moto love with the Photon Q 4G LTE. (Say it five times fast.)

Naturally, the name of the phone doesn't leave a whole lot to the imagination. As you'd ex-



pect, it's a follow-up to last year's Photon 4G that trades WiMAX for LTE and adds a full-sized QWERTY keyboard. What the name *doesn't* tell you, though, is that this phone costs a lofty \$200 on contract, and features a qHD Color-Boost display (not to be confused with the Atrix's 720p screen, which uses the same branding). In other words, it's gotta be pretty good to have any success at that price point. How does the latest Googorola device hold up against the rest of Sprint's LTE lineup? Is it worth the premium? Follow us to find out.

HARDWARE

Sprint is one of the most brand-centric carriers in the US (with the exception, perhaps, of Verizon's ubiquitous Droid franchise), so it isn't too surprising Dan Hesse & Co. chose to keep the Photon name with its latest flagship. A quick glance at the device would seem to confirm that its overall design aesthetic is indeed similar to the original Photon 4G, a WiMAX-enabled slate phone released this time last year. Here you'll find the same diagonally cut corners, though the Q's backside looks quite different, as we'll discuss shortly.

For this year's entry to the series, the Now Network has shed the old "4G" (or "faux-G") in favor of a 1900MHz LTE radio. Additionally, this is the first LTE device on Sprint that has global roaming enabled, sporting tri-band (850 / 1900 / 2100MHz) HSPA+

21Mbps / quad-band EDGE to help keep international travelers connected. The catch? The SIM card isn't accessible — something we've seen on both the Samsung Galaxy S III and HTC EVO 4G LTE. This means that you'll have roaming capabilities around the world, but there's no way around paying the hideous per-minute charges. If you were able to unlock the phone and swap the SIM, this could be avoided. Needless to say, you'll want to get used to finding WiFi and calling through third-party services such as Skype, Google Voice and so on.

The Photon Q's corners meet a new textured back side.



This is Sprint's first LTE device with GSM roaming enabled.

Diving into the Photon Q's dimensions, the phone measures 126.5mm (4.98 inches) long, 66mm (2.6 inches) wide and 13.7mm (0.54 inches) thick. Realistically, this is exactly what we've come to expect from QWERTY devices — you'll be looking for a while if you're hoping to buy an über-thin phone with a full slide-out keyboard. They're a lot harder to come by than you may realize; the thinnest device to fit these criteria is Verizon's Pantech Marauder, which registers at 12mm exactly. The Photon also weighs 6.0 ounces (170.1 grams), which, again, isn't as huge a disappointment for QWERTY fans as it is for someone thinking of switching over from a candybar touchscreen device.

At 4.3 inches, this display is the largest we've seen on a phone with a slide-out keyboard. And despite the handset's heft, we found ourselves feeling at home whenever we cradled the Photon Q — it's narrower than the Droid 4 *and* the original Photon 4G (which, by the way, is only 1.5mm thinner than this year's model). What's more, the edges taper inward slightly, creating a comfortable resting place for your fingers. Indeed, we didn't mind the size of the phone at all.

Gone is the fancy kickstand on the back. In its place you'll notice a speaker

grille and an 8-megapixel camera with 1080p video capture and LED flash, all hanging out on a non-removable access plate fashioned out of textured plastic. Remember the sealed hatch in season one of *Lost*? Your memory will definitely be jogged when you start fiddling around with the Photon Q's version. Presumably, this contraption hides a 1,785mAh battery, rear speakers, camera module and embedded SIM card, none of which would be of any use to you without a serious removal effort.

Surrounding that eyesore is a layer of grippy soft plastic that may help prevent accidental drops. We'd prefer to see this same material across the whole back, although the entire body of the phone feels quite solid regardless. But for all of our criticisms of the device's rear, there's one redeeming quality which gives the phone major brownie points: no carrier logo can be found anywhere. Sprint's signature watermark isn't on the back, nor on the front — without turning it on, you may not even be able to tell that it's a Sprint-branded device. No matter how many times anyone tries to convince you otherwise, this is truly the way every phone and tablet should be marked.

Motorola's logo is still stamped on the front of the device, right next to the 1.3-megapixel front-facing camera and below the internal speaker grille. On the left side, you'll notice the signature Webtop connection setup (read: a pair of micro-USB and micro-HDMI ports). Up top there's a 3.5mm headphone jack



The Photon Q 4G LTE is missing something: a Sprint logo.

and a power / standby button located squarely in middle — a compromise for the lefties who might be interested in this phone. Moving to the right side, there's a volume rocker closer to the top, a microSD slot below that and a single-stage camera shutter button at the bottom.

We were disappointed to learn that a \$200 LTE device like the Photon only comes with a paltry 8GB storage built in, which translates to just over 4.5GB of user-accessible space. That doesn't leave a lot to work with, and you'll find yourself in need of a microSD card if you want enough room for high-res pics and videos, not to mention your movie or music collection.

Rounding out the spec list, the Photon Q offers NFC, Bluetooth 4.0 LE + EDR, WiFi 802.11 b/g/n, DLNA connectivity and a noise-cancelling mic. We asked Motorola to confirm that the screen is covered with Gorilla Glass, but given the company's strong history with Corning — not to mention the fact that the original Photon was scratch-resistant — there's a strong chance Gorilla Glass is included here as well.

DISPLAY

Like many of its competitors, Motorola is now attaching its own special brand

(i.e., ColorBoost) to its new smartphone displays. But don't let the name distract you — in reality, this particular screen uses a qHD (960 x 540) non-PenTile TFT panel which, given its 4.3-inch size, translates into a density of 256ppi. Before we even saw the display, we were already disappointed to hear about the choice in resolution. Not that it's terrible for the typical user, but these days a premium device should have 720p if it wants to be competitive.

Before we turn our attention to the viewing experience, we have one small, but important detail to nitpick. While the screen has qHD resolution, your

The Photon Q 4G has a 4.3-inch, 256ppi non-PenTile display.



apps will run at 888 x 540. Why? It's all courtesy of the virtual navigation bar at the bottom of the screen — the black bar that features the back, home and multitask buttons. In this case, a grand total of 72 pixels — which translates into 7.5 percent of the available vertical pixels on the 4.3-inch screen — are lost as a result. (As it happens, this is the same percentage lost on the Samsung Galaxy Nexus.) End of the world? Of course not. But love or hate the idea of a virtual bar, it's still costing you more real estate on the screen.

We were also leery of testing *another* ColorBoost display, since the one on the Atrix HD not only adds a boost of color, but also misses the mark completely and causes every photo and video to appear

saturated. Fortunately, the Photon Q isn't *quite* as saturated — in fact, the video playback experience was better than what we'd expect from a qHD display. Viewing angles are also surprisingly good, offering the ability to see the screen just shy of edge-on. The screen is also easily viewable in direct sunlight when cranked to full brightness.

The slide-out keyboard on this phone is a pleasure to use.

KEYBOARD

Anyone looking to purchase a handset in this category is willing to sacrifice thinness for the ability to type comfortably, accurately and quickly with tactile feedback. If it doesn't perform to expectations, the rest of the phone's selling points are swiftly rendered moot. Fortunately, the Photon Q holds steady, proudly flaunting one of the nicest Android slide-out keyboards we've had the opportunity to play with in recent memory. In fact, it brought back pleasant memories of our precious time with the Droid 4, also made by Motorola. The keys aren't too large or too small. They're raised, offering a decent amount of travel, and they bulge out ever-so slightly. What's more, they're reasonably spaced out so as to prevent



This is one of the finest physical keyboards we've used on an Android device in quite some time.

your fingers from mashing neighboring keys — at the same time, they're not so far apart from each other that you're slowing down your WPM rate.

We also appreciate the layout of the Photon board. Motorola has opted to use the five-row setup, which means you'll get a dedicated number row rather than being forced to become good friends with the shift key. These buttons are laid out in identical fashion to the Droid 4, again choosing to eschew the usual Android navigation keys for other useful functions.

The edge-lit keyboard utilized on the Photon Q isn't a new concept, but Motorola's added a little flourish to the functionality to make it even better: the ability to adjust the backlight brightness to your own desired level. You can also opt for automatic mode, if you prefer, which will change your keyboard's brightness to fit your current lighting. To change your preferences, you can find the adjustment options in the settings menu under Lan-

guage & Input > Keyboard backlight.

As for the slider mechanism, it feels fluid, but not too loose. There's just the right amount of resistance when you push the slider out with your thumbs, and the automatic opener catches just about halfway to escort the keyboard the rest of the way. It feels slightly loose when we close it, but not to the point of concern.

Lastly, how fast do our free-flying fingers go when using the Photon's QWERTY? To answer this question, we downloaded a third-party app that uses a standard test to measure words per minute and we compared our results between the stock virtual keyboard (autocorrect turned off) and the physical one. We also gave our fingers a few days to become accustomed to the latter, just to make sure we were able to work out all the jitters. Our best scores were 40WPM on the QWERTY (with 92 per-



The slightly-raised, evenly spaced keys make it easy to type.



cent accuracy) and 28WPM on the virtual keypad (with 84 percent accuracy). As a disclaimer, it's likely yours truly isn't the fastest typist out there, and we may have achieved better results with a third-party virtual keyboard like Swift-Key, but we wanted to at least demonstrate the difference between the two major input methods in terms of general speed.

SOFTWARE

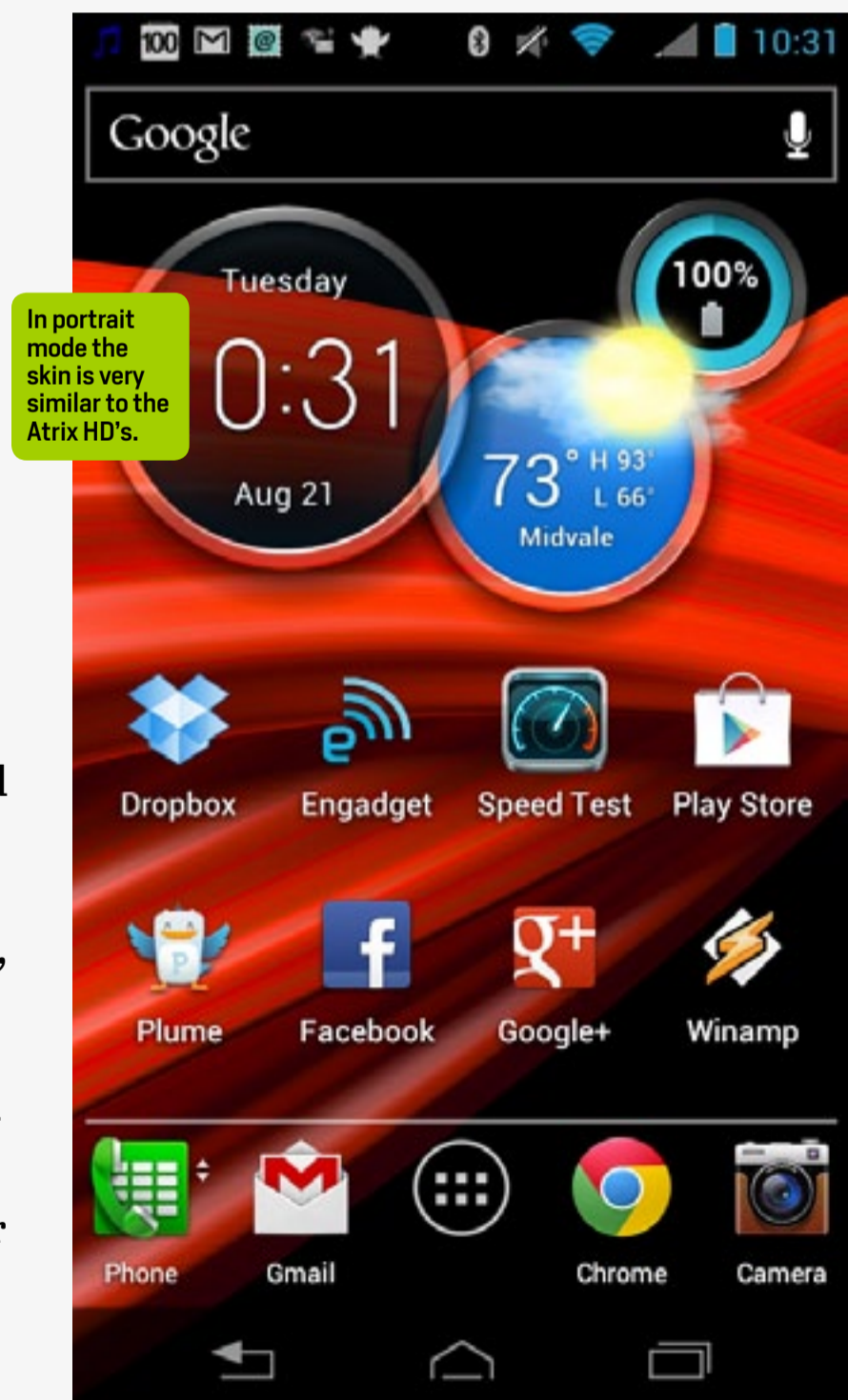
Like the Atrix HD before it, the Photon Q comes loaded with Android 4.0.4. This particular build of Ice Cream Sandwich doesn't offer many surprises, but that doesn't mean it lacks a distinct personality. After all, this is the first time we've seen the UI used on a Sprint device, and this was also our first opportunity to try it on a QWERTY phone.

When using the device in portrait mode, you likely won't see much of a difference between the Photon Q and the Atrix HD — both offer a virtual bar of navigation buttons at the bottom and utilize the same Moto skin. It even uses the same circles widget we saw on the Atrix, which displays the time and date, customized weather preferences and battery life.

It's in landscape mode where the experience starts to feel different. You're still presented with a 4 x 4 grid for your icons and widgets, but the quick access bar shifts to the right side, while the embedded Google search bar is on

the left, although it turns into a set of two buttons here instead. We also have one minor quibble: if you're on a panel other than the main home screen, sliding the keyboard in or out will not only change your orientation — it will throw you back to the primary home panel regardless of what you had been doing prior.

Just like the Atrix HD, several of the Photon Q's stock icons (e.g., phone, text, mail and people) have tiny up /



down arrows to the right. This indicates that you can swipe up or down on the icon and a special widget will pop up. For example, the phone reveals your recent call history, the text widget shows your latest messages and the people widget opens up your favorites list. It's a clever touch, especially if you already have too many other apps and widgets clogging up your screen.

Motocast is nowhere to be found here, but Motorola is still investing heavily in its Smartactions feature — and for good reason. Since its debut on the Droid RAZR, we've been proponents of this automation service, which lets you set up rules for certain situations and locations. What settings need to be changed when you walk into the office? How do you want your phone to behave when you plug your headphones in? What should the Photon Q be doing when it's time to go to sleep? There are plenty of scenarios to choose from, and a host of rules are applicable each time. Automation services add a splash of convenience to the daily grind, and Motorola has done a fine job implementing its own version into its flagship products.

This wouldn't be a true software section without discussing the usual US carrier bloatware that comes pre-installed. As time goes by, it turns out that this section of our review gets shorter and shorter — Sprint committed to dramatically reducing its app count last year, and other companies have followed suit. Sprint ID, Sprint

Indeed, Motorola has unlocked the bootloader on the Photon Q 4G LTE.

Zone, Quickoffice and Voicemail are essentially the only programs contributed by the Now Network, and only one of the four can be disabled.

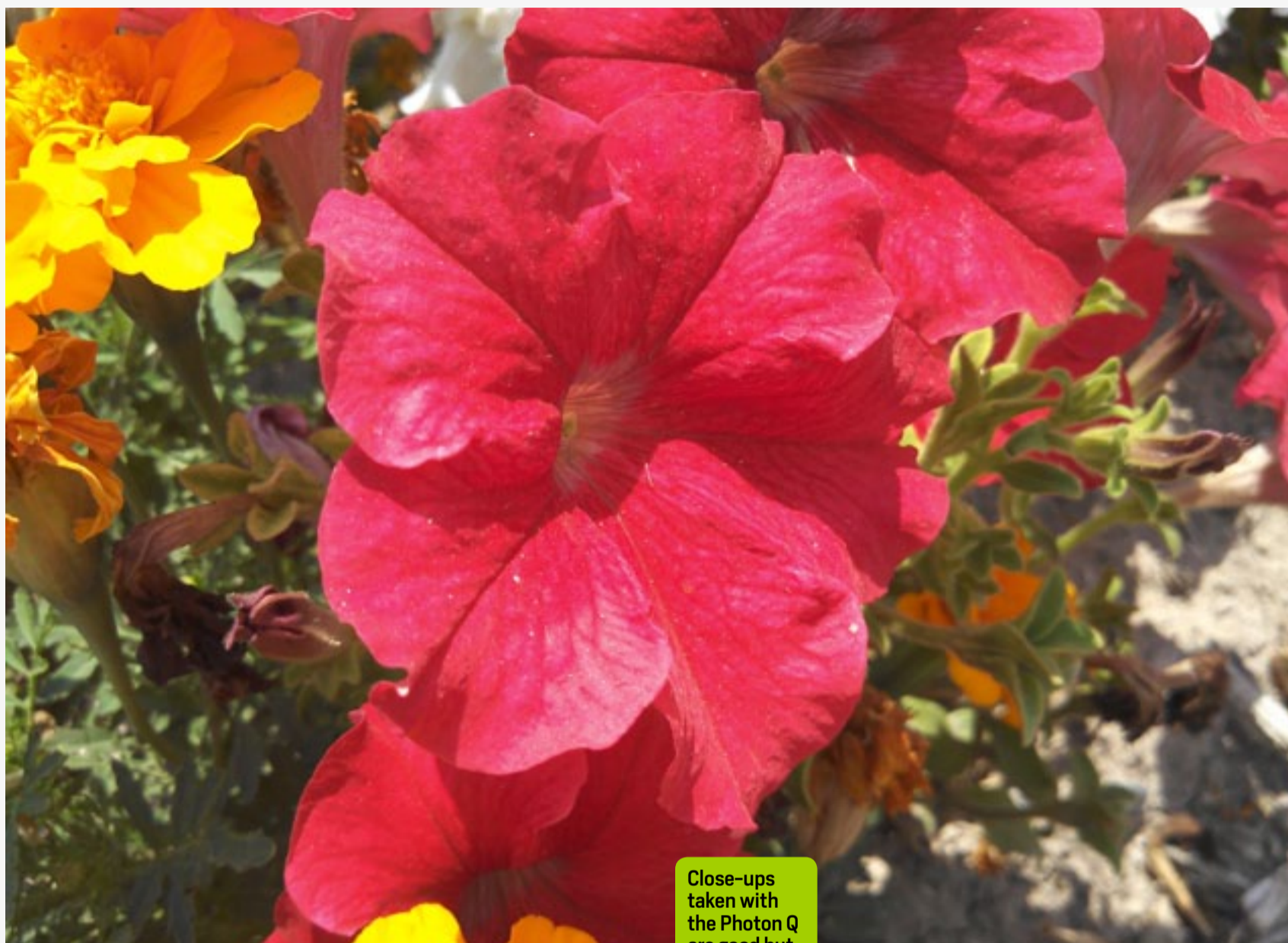
As a side note, it's also important to point out that Motorola is allowing the Photon Q's bootloader to be unlocked (and has announced plans to do so for new devices going forward). In fact, if you're a fan of custom ROMs, the company has put up a website dedicated to teaching customers how to unlock their devices.

CAMERA

If there's one thing we've learned about Motorola over the past year, it's that it loves consistency — when it comes to cameras, at least. Once it started cranking out handsets with 8-megapixel sensors, it hasn't looked back. Unfortunately, it hasn't really looked forward either. Moto's been content to stick with the same 'ol set of optics as the Atrix HD and Droid RAZR before that. Heck, even the Photon's predecessor featured the same spec.

Indeed, the user interface must be part of the company's tried-and-true software, because there have been very few changes since the Atrix HD. The





Close-ups taken with the Photon Q are good but lack detail.

shutter button takes its usual spot on the right, flanked by the camcorder toggle and front-facing cam switch. On the left you'll find the gallery button with a zoom bar underneath. Along the bottom is the usual toolbar of settings, effects, scenes, modes, exposure and flash. When it's switched to the camcorder, however, the scenes section is replaced by "audio scenes," which offers wind reduction and concert settings in addition to the default stereo selection. Time lapse is also available here.

As usual, Motorola sticks to the basics when it comes to image enhance-

ment settings. You won't find white balance, ISO, contrast, HDR, macro mode or a special night / low-light option. In fact, the Photon Q camera doesn't even offer the ability to turn off the shutter sound. It does, however, let you use the volume rocker either as a hardware shutter button or zoom in / out, though the former is rather pointless since the phone has an official button for this very purpose. Sadly, the dedicated shutter key is only single-stage, preventing you from being able to lock focus or exposure prior to taking the shot.

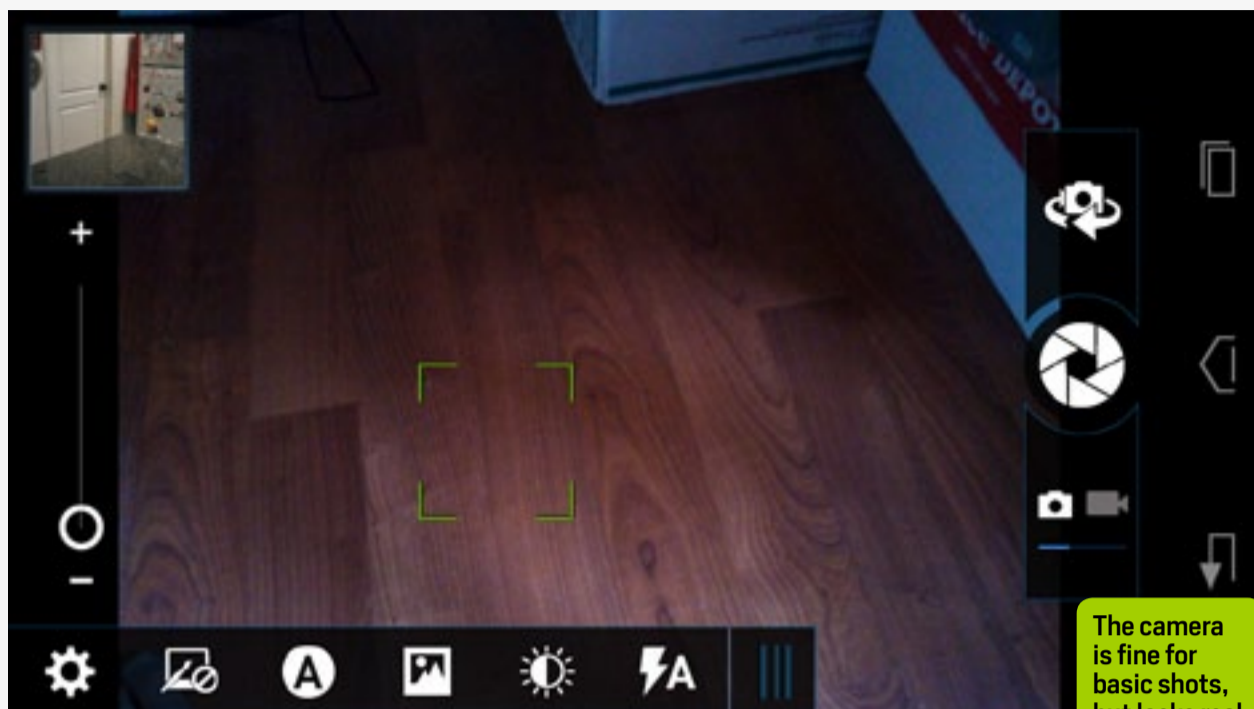
Simply put, the dearth of nifty pho-



tog-friendly settings makes the camera a pretty hard sale. Frankly, it's not good enough on its own — it needs the assistance of these extra tools and enhancements in order to even be considered as a high-end imaging

product. Even without a proper macro mode, for instance, our close-up shots were decent, but they didn't offer the same level of detail we're used to. The lens is capable of focusing on the first attempt if you're about 10cm away, but any objects closer than that will likely require multiple tries to focus or it simply won't do it at all.

Lowlight images didn't come out too well either. Colors appear faded when the LED flash is used. Shots taken without the flash turned out too dark and noisy and we also saw another oddity: the sensor appeared to have continued difficulty processing what little light was coming in. On multiple occasions, the viewfinder would take the background light and replace it with flashes of reds, blues and other colors — all the while showing off even more noise than usual. We found that it was nearly impossible to take an actual picture when this occurred, as the camera app would freeze up as soon as we pressed the shutter key and wouldn't



The camera is fine for basic shots, but lacks real quality.

do anything until the app crashed a minute or so later. The only time we could reproduce this phenomenon was in lowlight situations (in both auto and sunset scenes); we didn't experience any similar concerns when snapping pictures in broad daylight.

Speaking of which, we found our daytime images to be decent, but they're still nothing to write home about. Colors are slightly washed out, especially compared with samples taken with the Galaxy S III. Additionally, while tap-to-focus and continuous focus are both available, we wish Motorola had also added the opportunity to lock focus and exposure.

Overall, the rear-facing camera is an average shooter that appears unwilling to take any sort of limelight away from the Photon Q's other selling points, and quickly becomes one of the most forgettable elements of the entire experience. But what about the front-facing version? Essentially, it's more of the same



— images we took with the 1.3-mega-pixel camera up front actually turned out pretty well, with minimal loss in detail and color.

The Photon Q's 1080p video quality (1,920 x 1,080 at 30fps, MPEG-4 AVC profile at level 4 with a bit rate of 15Mbps) turned out to be better than our still image performance. Although the sensor delivers the same slightly washed-out colors as the stills, the motion here is incredibly fluid, while the audio (lossy AAC with a bit rate of 128Kbps) is crystal clear, thanks to that noise-cancelling mic. We didn't run into problems with continuous focus either, but fortunately you can still tap the viewfinder to retune the focus if necessary. It's not the best HD video recorder in the market, but we were still generally satisfied with it.

PERFORMANCE AND BATTERY LIFE

The engine under the hood is a dual-core Qualcomm MSM8960 Snapdragon S4 processor clocked at 1.5GHz, supported by a gig of RAM and an Adreno 225 GPU. This should come as no surprise to anyone who's followed the latest LTE handsets in the US, since this particular SoC — with its LTE-friendly silicon — has become a commonality between all of them. Essentially, this means you should come to expect the same kind of performance that you'd witness on Sprint's premier devices like the Galaxy S III and HTC EVO 4G LTE. Here's how it holds up in

the benchmark department.

As our benchmark scores suggest, the Photon Q can keep pace with Sprint's other \$200 devices, and our experience certainly backs that up. We couldn't get the device to stutter, and it also didn't stumble during gaming or other intensive tasks. In fact, its graphics performance is a definite highlight: we enjoyed a lengthy *Riptide* session with nary a hiccup. Multitasking? No problem. Ultimately, the MSM8960 lives up to the expectations set by other devices packing the same silicon. The phone's stock browser also performs admirably — its quickness in real life was backed up by some of the best SunSpider scores we've recorded recently. In fact, it's bested by only one other phone: the Atrix HD.

Unfortunately, we can't say the same about its battery life. With the exception of the RAZR Maxx, Motorola seems to have struggled with power management across its product lineup — this was a pain point for the original Droid RAZR and the Atrix HD, for instance. The Photon Q's 1,785mAh battery appears to be a modest improvement, but it still isn't close to the Galaxy S III or EVO 4G LTE. Our endurance test, which entails playing a video on endless loop at half brightness and regularly-scheduled email / social media notifications in the background, lasted six hours and 18 minutes. (We also need to clarify that these tests were taken using an EVDO network, which means the



BENCHMARK	MOTOROLA PHOTON Q 4G	HTC EVO 4G LTE	SPRINT SAMSUNG GALAXY S III
QUADRANT	4,947	5,036	5,130
VELLAMO	2,336	2,347	2,117
SUNSPIDER 0.9.1 (MS)	1,330	1,649	1,882
ANTUTU	6,134	6,942	6,536
GLBENCHMARK EGYPT OFFSCREEN (FPS)	55	56	54
CF-BENCH	9,034	9,562	9,567

SUNSPIDER: LOWER SCORES ARE BETTER

battery could theoretically be closer to the RAZR and Atrix, since both devices were tested in an LTE zone.) In terms of real-world usage, a process that involves an occasional call, regular social media updates, taking a few pictures, emailing, texting and roughly 15 minutes of gaming, we made it through almost 11 hours. It will get you through a business day, but it may not be great for nocturnal types who like to go out for a night on the town.

In terms of call quality, we didn't encounter any issues on EVDO. The RF

The Photon Q's battery will get you through business hours, but probably not a night on the town afterward.

remained steady throughout our tests and we didn't experience any dropped calls or degradation of quality. Again, not having LTE in our vicinity is unfortunate, as we aren't able to test quality (or network speeds, for that matter) at this point. In fact, this may be a critical point for potential Sprint customers to consider: by purchasing an LTE-capable device, you're committing yourself to horrendous EVDO speeds until the 4G service finally arrives at your town. And once you have it, if the next-gen coverage isn't up to par with your expectations, you can disable it in the settings and defer to 3G.

Diving into audio, the loudspeakers weren't challenged for decibels, so we were able to use it comfortably without having to crank the volume up to its maximum setting. Likewise, plugging in a pair of Monster headphones resulted in the same pleasant experience — we enjoyed the music playback, which held



the highs and lows with equal regard. The Photon is capable of playing MP3, M4A, FLAC, AMR, MKA, OGG, WAV, WMA and AAC+ audio formats.

For a device that lacks a 720p display, we were incredibly happy with the videos. We couldn't see any frame skips on 1080p selections, motion was amazingly smooth and we didn't have any concerns with audio syncing. In fact, the only annoyance we encountered was UI-based — the virtual navigation bar disappears every time a video starts, which forces the screen to readjust to the right to make up for it. The video player is capable of recognizing MP4, H.263/264 and 3GPP, though we were unable to play WMV, MPG or MKV selections.

Let's now turn to some of the Photon's other connectivity options. WiFi works very well. When running our protagonist side-by-side with the Galaxy S III, we noticed that the Photon picked up a stronger signal on a consistent basis, though both had satisfactory results. GPS locked into position in less than five seconds, maintained an accuracy of roughly 10 feet and it easily followed us along a navigation route without any odd be-

Sliding out the keyboard felt mostly smooth and solid.



havior or lost tracking signal.

Also, the handset has NFC capability, which allows you to utilize Android Beam by transferring contacts, websites, photos and other files between phones. Google Wallet is also available for download on the Photon 4G, if you intend to use your device for mobile payments.

While the Photon lacks support for MHL, it's not difficult to enable HDMI mirroring mode as long as you have the right equipment: simply plug in the proper microHDMI-to-HDMI cord alongside a standard micro-USB jack. Motorola will also have a one-size-fits-all HD dock accessory available, which will allow you to plug your phone or tablet into an HDTV (or HD-capable computer monitor) to watch movies, stream Netflix or mirror your device for



any other purpose. We even tried gaming with the phone plugged in, which technically works fine, although it's impractical when you need to tilt the device for steering. The dock also features a speaker out port, in case you want to use your phone's music collection for parties. (There ain't no party like a Photon Q party, after all.)

Lastly, the Photon offers Bluetooth 4.0 with LE and EDR, and it pairs flawlessly. Oddly, we noticed that files being transferred back and forth between the phone and our MacBook Pro dragged at a snail's pace when compared to the Atrix HD. While the latter device consistently pulled down average transfer speeds of 150 KB/s (maxing out at around 180), the Photon could only manage 70-80 KB/s. USB data transfers were another story; we were able to push out a 100MB file to our review unit in exactly 10 seconds.

COMPARISON AND PRICING

Let's face it: if you're seriously considering this phone, chances are you're a self-admitted physical keyboard junkie and finding a top-notch Android device with that particular feature is nearly impossible. That's not to say

there's a shortage of QWERTY phones currently available on the Now Network — a quick look at the carrier's website indicates a total of 17 such devices are being sold, including five BlackBerrys, one Windows Phone, one Windows Mobile handset, two BrewMP feature phones and eight Android devices — but the Photon Q 4G LTE is easily the only Android phone worthy of a second glance for power users.

The Photon Q is being sold for \$200 with a two-year commitment, which puts it in the same pricing tier as the Samsung Galaxy S III and HTC EVO 4G LTE. It's also more expensive than the 16GB iPhone 4S (\$150), Samsung Galaxy Nexus (\$100) and LG Viper 4G LTE (\$80). As you can imagine, the Photon's key selling point is its keyboard; if that particular feature doesn't

For power users, this is a strong QWERTY contender.



interest you, its battery, internal storage, display and camera would be reason enough to consider competing flagships like these.

WRAP-UP

Unlike your typical slate — a form factor that comes in a plethora of shapes, sizes, colors and specs — it's much more difficult to find a suitable device that offers a full QWERTY keyboard, if you're hunting for one on the higher end. Sadly, carriers often treat phones with slide-out keyboards as second-class citizens, which means that QWERTY fans will rarely find a truly top-notch product. Indeed, the Photon Q 4G LTE is one of the best phones on the market for its form factor. It performs well and its spec sheet is quasi-respectable, but we can't call it a premier offering for



While pricey, it's still a great choice for keyboard enthusiasts.

Sprint (not with a straight face, anyway). At \$200, this particular handset feels a bit out of place sitting next to heavyweights like the Galaxy S III and the EVO 4G LTE. Chop its price in half, and Motorola will have itself a strong contender in that price range. **D**

Brad is a mobile editor at Engadget, an outdoorsy guy, and a lover of eccentric New Wave and electro. Singer and beatboxer.

BOTTOMLINE

MOTOROLA PHOTON Q 4G LTE

\$200

(ON CONTRACT)



PROS

- Capable of GSM roaming
- Wonderful edge-lit keyboard
- Unlocked bootloader

CONS

- Non-removable battery and SIM card
- Disappointing battery life
- Camera not up to par for a premium device

BOTTOMLINE

The Photon Q is the best QWERTY phone on Sprint, but it comes at a higher-than-expected price.



ACER ASPIRE V5 (11-INCH)



The **Aspire V5 (11-inch)** thin-and-light won't break your back or your budget, but will this laptop really pack the punch you'll need to get the job done?
By Sarah Silbert

Acer first took the wraps off its Aspire V5 series at CeBIT in March, teasing the line of notebooks with designs that are 30 percent thinner than other laptops in their category. A few months later, in June, the company officially unveiled the 14- and 15-inch Aspire V5s, with Ivy Bridge processors and prices starting at \$630. Rounding out that family is the 11-inch Aspire V5 171. We have a bit of an identity crisis on our hands with this guy: though it looks like a netbook and weighs a light three pounds, it packs a Core i5 Ivy Bridge processor befitting a full-fledged machine, *but* it costs a



budget-minded \$550 (\$500 with Acer's current promotion). Many products in this price range are clunky 15-inchers, so where exactly does this Aspire V5 fit in?

LOOK AND FEEL

With a weight of 3.05 pounds and a chassis that tapers from 1.09 to 0.82 inches thick, the Aspire V5 feels very light and manageable — an impression that's reinforced by its compact 11-inch frame. There's something satisfying about gripping a laptop this size — it's not like 13-inchers are even close to unwieldy, but this machine's petite shape makes it easy to tuck under your arm or stash in a messenger bag. The chassis' curved edges are comfortable, but the plastic underside and deck have a slippery feel, which doesn't exactly make for a solid grip. Though the V5 feels sturdy

enough given its light weight, the screen is a bit wobbly. It doesn't take much nearby movement for the panel to dip backward.

You can't expect a \$550 laptop to blaze new trails in the style department, and unsurprisingly the Aspire V5's design is pretty conservative. The palm rest and keyboard deck sport a subdued slate gray finish, while the 1,366 x 768 display is framed by one very glossy bezel. We're not sure whether we appreciate the nod Acer made to a more upscale design feature with its faux-brushed metal lid — it looks nice, yes, but once you touch it, it's pretty obvious it's made of plastic, not aluminum.

Along the left edge of the system, you'll find an Ethernet port, along with VGA, HDMI and USB 2.0 sockets. The

right side is home to the mic jack, one USB 2.0 and one USB 3.0 port, the power connector and a security lock slot.

KEYBOARD AND TRACKPAD

The island-style spread on the V5 is one of the more comfortable keyboards we've tested lately. While the Aspire TimelineX 1830T sported a flat layout,

Left side ports include: Ethernet, VGA, HDMI and USB 2.0.





Well-spaced island-style keys made typing comfortable.

the Aspire V5 has raised keys that are easy to find by feel. We didn't hit an all-time high when it came to words per minute, but we're able to type at a nice clip on this machine. Though the keyboard deck itself exhibits little to no flex, the keys themselves feel a bit jiggy in their sockets. It's not like we're afraid they'll fall out, but they lack the solid, forceful feedback of a more structurally sound setup.

One downside to the keyboard is its size. This laptop's 11-inch design means there's not much space on the keyboard deck for cramming in all those keys. The arrow buttons bear the brunt

We're able to type at a nice clip on this machine.

of this limitation: they're quite shrunk-en, though other keys retain their standard proportions. Another ergonomic gripe: while width is a bit of an issue on this keyboard, so is height; the palm rest is short, which means your wrists are likely to dangle off the edge.

The Aspire V5's Synaptics trackpad

isn't the smoothest. Paging through websites is a sluggish process, as the touchpad doesn't register long, fluid scrolls — just shorter, more controlled ones. This means making your way down a webpage can feel like a stop-and-start ordeal. We had no trouble executing pinch-to-zoom, but there's a delay before the gesture is reflected onscreen. We've had to contend with some pretty erratic trackpads lately, so while the V5's has some shortcomings we at least have to applaud its consistency. No jumpiness, no errant or unregistered clicks.

DISPLAY AND SOUND

Both visuals and audio feel muted on the Aspire V5. When we fired up some HD trailers, colors lacked richness, and oftentimes we needed to ratchet up the brightness. The 1.3-megapixel webcam





It's not flashy, but it's affordable and sized for portability.

also delivers dark images, though it's sufficient for Skype and other video chat clients (we recommend steering clear of harsh overhead lighting). Viewing angles are pretty narrow as well — the 11-inch display's 1,366 x 768 display is a glare magnet. The sweet spot for watching movies is definitely dead-center, as content washes out when you're even a bit to the right or left (or if you tilt the screen slightly back or forward).

Even at max volume, music on the V5 sounds distant and faint. Dialogue in movies also sounds restrained, and audio comes through with a tinny, metallic quality. This machine isn't billed as an entertainment powerhouse and its mediocre multimedia features aren't exactly surprising, but we'd definitely recommend buying some external speakers.

PERFORMANCE

The Aspire V5 runs a 1.7GHz Core i5-3317U Ivy Bridge CPU with 500GB of storage and a generous 6GB of RAM. Those specs add up to some pretty, well, unremarkable, benchmark scores. In PCMark Vantage, it notched 6,152, which is significantly lower than numbers achieved by SSD-equipped

systems. Of course, we don't see an 11-inch thin-and-light every day, so we're not comparing apples to apples when we see how the V5 stacks up to other laptops we've tested. The lack of solid-state storage separates it from Ultrabooks, but it still fares reasonably well. Its max read and write speeds — 104 MB/s and 95 MB/s, respectively — are quite modest compared to SSD-equipped machines, though they're about on par with the Toshiba Satellite U845's I/O performance.

On 3DMark06, the Aspire V5 scored 5,351, which puts this system in line with other machines running Intel's integrated HD Graphics 4000. Many similarly specced systems scored lower, including the Lenovo IdeaPad U310. In real-world terms, you can expect good graphics performance for light gaming. In *Batman: Arkham City*, we saw about



BENCHMARK	PCMARK VANTAGE	3DMARK06
ACER ASPIRE V5 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000, 500GB HARD DRIVE)	6,152	5,351
ACER ASPIRE S5 (1.9GHZ CORE I7-3517U, INTEL HD GRAPHICS 4000, DUAL 128GB SSDS)	12,895	5,071
LENOVO IDEAPAD U310 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000, 500GB HYBRID HARD DRIVE)	10,333	4,550
LENOVO THINKPAD X230 (2.6GHZ CORE I5-3320M, INTEL HD GRAPHICS 4000, 320GB HARD DRIVE)	8,234	4,891
SONY VAIO T13 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000, 512GB SSD)	8,189	3,847
TOSHIBA SATELLITE U845 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000, 512GB SSD)	7,936	4,235
ACER ASPIRE TIMELINE ULTRA M5 (481TG-6814, 1.7GHZ INTEL CORE I5-3317U, INTEL HD GRAPHICS 4000 / NVIDIA GEFORCE GT640M LE 1GB, 256GB SSD)	7,395	9,821
HP SLEEKBOOK ENVY 6Z (2.1GHZ AMD DUAL-CORE A6-4455M, HD 7500G GRAPHICS, 500GB HARD DRIVE)	3,978	3,625

NOTE: HIGHER SCORES ARE BETTER

50 frames per second. That drops considerably in *Call of Duty 4*, where the more detailed visuals bring things down to 20 fps.

But what about everyday performance? That's why you'd consider this machine, right? The Aspire V5 isn't the speediest, smoothest runner. It took 50 seconds to cold-boot, which is annoying, if not unacceptable. Working in two browsers, streaming music on

The Aspire V5 isn't the speediest, smoothest runner.

Spotify and playing a few games taxes the machine: especially when we fired up games, we noticed the V5 getting a bit toasty. So, this laptop isn't for the power user, but that's not to say it's insufficient for more routine tasks like working in Microsoft Office, listening to music and doing whatever it is you do on the internet.

BATTERY LIFE

On our video rundown test, which entails playing a looped video with WiFi on and brightness set to 65 percent, the Aspire V5's four-cell 2,500mAh battery lasted three hours and 31 minutes. (Acer rates the machine for up to five



BATTERY LIFE	
ACER ASPIRE V5	3:31
SAMSUNG SERIES 9 (15-INCH, 2012)	7:29
LENOVO THINKPAD X230	7:19
SAMSUNG SERIES 9 (13-INCH, 2012)	7:02
MACBOOK AIR (13-INCH, 2012)	6:34 (OS X) / 4:28 (WINDOWS)
DELL XPS 14	6:18
HP FOLIO 13	6:08
HP ENVY SLEEKBOOK 6Z	5:51
TOSHIBA PORTEGE Z835	5:49
SONY VAIO T13	5:39
MACBOOK AIR (13-INCH, 2011)	5:32 (OS X) / 4:12 (WINDOWS)
HP ENVY 14 SPECTRE	5:30
TOSHIBA SATELLITE U845W	5:13
ACER ASPIRE TIMELINE ULTRA M3	5:11
LENOVO IDEAPAD U300S	5:08
LENOVO THINKPAD X1 CARBON	5:07
SAMSUNG SERIES 5 ULTRABOOK (14-INCH, 2012)	5:06
ACER ASPIRE TIMELINE ULTRA M5	5:05
DELL XPS 13	4:58
LENOVO IDEAPAD U310	4:57
ACER ASPIRE S5	4:35
SAMSUNG SERIES 9 (13-INCH, 2011)	4:20
ASUS ZENBOOK PRIME UX21A	4:19
ACER ASPIRE S3	4:11

hours of battery life.) In terms of everyday use, we've seen a similar runtime from this laptop. That time isn't very impressive — it's bested by some of the shorter-lasting Ultrabooks like the Aspire S3 — but it's not unheard of for a machine of this size.

SOFTWARE AND WARRANTY

We're getting tired of singing that old "too much bloatware" tune, but it rings true too often, and the V5 is no exception. You'll find plenty of pre-loaded utilities, the most benign of which are Acer's branded programs, such as the Crystal Eye webcam software and Games. We find the pre-installed toolbars in Internet Explorer far more vexing: ads, a radio, shortcuts to two game services and a weather widget are activated by default — and we took that tally after uninstalling the Bing Bar. Of course, there are McAfee pop-ups as well. The V5 comes with Acer's standard one-year limited warranty, which includes hardware support and 90 days of software support.

CONFIGURATION OPTIONS AND THE COMPETITION

This laptop will normally go for \$550, but Acer is kicking things off with a \$50 discount through Facebook. The already-available \$600 Aspire V5 171-6616 is identically configured but isn't available with the \$50-off promotion. But let's talk options. Look at other 11-inch laptops on the market, and you'll



If you're in the market for an 11-inch notebook, the Aspire V5-171-6869 is a solid contender.

quickly see that the Aspire V5 stacks up quite well. While most machines pack AMD chipsets, Acer's model runs an Ivy Bridge CPU and offers 500GB of storage. But let us elaborate — here's a look at some comparable machines.

Sony's 11-inch, \$450

VAIO E is worth a gander, as it offers comparable specs in a new “wrap” design. (The best way to describe it is that the laptop looks like a briefcase when closed.) The processor is only a dual-core AMD E2-1800, but other specs match up with the V5's: a 500GB hard drive and a 1,366 x 768 screen, though 4GB versus 6GB of RAM. If you're open to an AMD chip, you might also consider the HP Pavilion dmlz, which for \$505 offers a 500GB hard drive and 6GB of RAM. Though this machine was announced with a Core i3 CPU, only the AMD option remains available here in the US. And while the dmlz is a tad

The only sweet spot for viewing this screen is dead center.



heavier than the Aspire V5 (3.2 versus 3.05 pounds), we like its patterned lid — and the optional red color scheme.

We recently singled out Samsung's Series 3 11-incher in our back-to-school roundup. For \$450, you get a Core i3-380M processor in a sleek, 2.66-pound body with a sweet block-color design. Still, you only get 320GB of storage, and the CPU belongs to Intel's older Arrandale architecture.

Since the 11-inch Aspire V5 has some internals in common with larger laptops, it's worth considering models with larger displays. The HP dv4, configured to match the V5 with a Core i5 CPU, 6GB of RAM and a 500GB hard drive, goes for \$655, but the entry-level model with 4GB of RAM and a second-gen Core i3 processor costs \$530. Unlike the V5, this machine boasts an optical drive, but it does weigh a heftier 4.79 pounds. Finally, there's the Dell Inspiron 15R, which packs a Core i5 Ivy Bridge CPU, 6GB of RAM, 500GB

and full versions of Adobe Photoshop Elements and Premiere Elements for \$600. Again, you're looking at a heavier machine — 6.05 pounds in this case — but the extra screen real estate and larger six-cell battery may make it worth it for some.

WRAP-UP

If you're in the market for an 11-inch notebook, you could do much worse than the Aspire V5-171-6869. It packs some of the most robust specs amongst machines with its form factor, including a Core i5 processor and 500GB of storage, and we think its keyboard is comfortable considering the limited space. But if you have a little more room in your backpack (and wallet), you can do better with a bigger machine, as you can expect longer battery life and a roomier keyboard. **D**

Sarah is Reviews Editor, a wannabe tap dancer and a closet film critic.

BOTTOMLINE

ACER ASPIRE V5 (11-INCH)

\$500+



PROS

- Light, compact design
- Good specs for price

CONS

- Sticky touchpad
- Cramped keyboard
- Unimpressive battery life

BOTTOMLINE

The Acer Aspire V5 offers solid specs for a budget-priced 11-inch laptop, but that doesn't make it a must-buy.



FALLEN KINGDOM

THE COLLAPSE OF 38 STUDIOS

AND THE PRECARIOUS STATE

OF PUBLIC-PRIVATE PARTNERSHIPS

In 2010, former Major League Baseball player Curt Schilling convinced Rhode Island officials to give his video game company, 38 Studios, a \$75 million loan guarantee. Two years later, the studio filed for Chapter 7 bankruptcy, leaving taxpayers with a multi-million-dollar tab and raising questions about the risks associated with using public funds to support private tech companies. **BY JASON HIDALGO**

PHOTO: JARED WICKERHAM/GETTY IMAGES

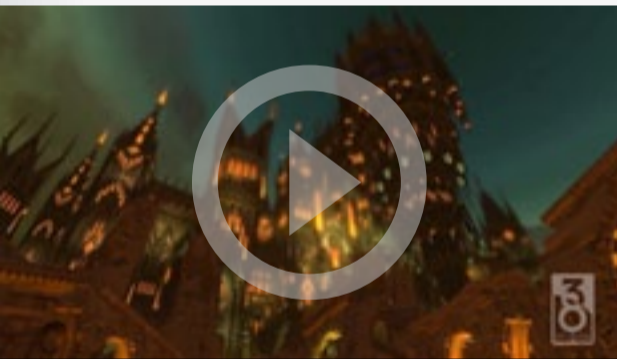


IN A CAREER FILLED with many clutch throws from the baseball mound, former Boston Red Sox ace Curt Schilling's main calling card was a gutsy post-season performance made even more memorable by a blood-soaked sock. It was a pitch made by Schilling outside of Major League Baseball, however, that would prove to be his most daring one yet.

In 2010, Schilling convinced Rhode Island officials to give his video game company, 38 Studios, a \$75 million loan guarantee. A self-professed fan of massively multiplayer online role-playing games (MMORPG), Schilling's dream was to create a worthy competitor to Blizzard's MMORPG juggernaut, *World of Warcraft*. In 2006, Schilling started Green Monster Games, which was later renamed 38 Studios. Luring the company away from Massachusetts was supposed to bring in more than 400 jobs and serve as the linchpin for launching a new tech-based industry in Rhode Island. Instead, the state's taxpayers found themselves left at the table with a multimillion-dollar tab.

Like the vaunted New York Yankees team that Schilling helped slay during his memorable "bloody sock" performance, 38 Studios suffered an epic collapse. With its

ambitious *Project Copernicus* MMORPG still in the works, the company was unable to generate enough revenue to pay for its expenses and quickly burned through \$50 million acquired from the Rhode Island deal. It then defaulted on a \$1.1 million payment due in May to the Rhode Island Economic Development Corporation, which triggered a showdown with Gov. Lin-



Above: A scene from the unreleased *Project Copernicus*.
Below: Schilling and team greet fans at Comic-Con 2010.





Rhode Island Gov. Lincoln Chafee, center, arrives at the state's Economic Development Corp. to discuss funding for 38 Studios.

coln Chafee. Besides losing access to the remaining funds from the Rhode Island deal, the company's very public drama also spooked potential investors. Tapped out financially and left with no extra lives, 38 Studios filed for Chapter 7 bankruptcy in June. Just a couple of years after its landmark deal, the high-flying developer behind the well-received *Kingdoms of Amalur: Reckoning* suddenly became the poster boy for what could go horribly wrong when public money is used to support private companies. The studio's high-profile fall from grace also showed the inherent risks that come with dabbling in the tech sector, said Thomas Cafcas, research analyst for national policy resource center Good Jobs First.

"The tech industry comes with its own number of tricky issues and it's important for any public entity looking to invest in it to really know the sector and what it's getting into," Cafcas said. "It doesn't make sense to get a bunch of money out the door and just go after any deal because it happens to be in tech. You need to do some really good research on how that sector works."





Schilling, center, followed by media as he exits the Rhode Island Economic Development Corporation headquarters.

HIGH STAKES

Rhode Island's buyer's remorse with 38 Studios comes at a time when more and more states are creating programs that use public funds to invest in private companies. The Lone Star State went big on public-private partnerships in 2003 when it created the Texas Enterprise Fund. Since its inception, the program has allocated nearly \$470 million to private companies. Nevada lawmakers got into the act last year with the creation of the \$10 million Catalyst Fund for businesses.

Meanwhile, the emergence of powerhouses such as Google and Apple made companies with a tech pedigree especially prized by states looking to boost their economic chops. In 2005, the Texas Legislature took its bet on private enterprise a step further and created the Emerging Technology Fund. Designed to bring research talent to the state and create new companies by commercializing new technologies, the fund invested more than \$169 million in 133 high-tech firms by 2011. Utah has also gotten into the act, creating a similar initiative known as the Utah Science Technology and



Research, or USTAR, program in 2006.

Nevada — which is trying to diversify an economy heavily geared toward gambling, tourism and construction — is currently trying to kickstart its own tech commercialization efforts through its new Knowledge Fund. The state is also working to free up extra capital for private equity with the launch of the Nevada Capital Investment Corporation, or NCIC Fund. The program can tap up to \$50 million from the state's Permanent School Fund endowment to invest in startups and other private ventures.

The rise in these programs shows how high the stakes are in what has always been a competitive arena, said Steve Hill, director of the Nevada Governor's Office of Economic Development. In Nevada's case, Hill said the new programs are essential in ensuring the state does not get left behind by states with deeper pockets when it comes to attracting companies or creating new ventures.

“If you look at some of the states we're going up against, they're more than willing to provide money up front to attract private enterprise,” Hill said. “These funds allow Nevada to compete.”

A CAPITAL ISSUE

The increase in public-private programs was welcomed by people such as Dave Archer, president and CEO of Nevada's Center for Entrepreneurship and Technology. Cultivating startups can be especially tough in states like Nevada, which doesn't have the same resources or easy access to venture capital that places such as California or New York do, Archer said.

“The Catalyst Fund and the NCIC Fund are two of the best things that have happened in Nevada in the time that I've been here,” he said. “The biggest challenge facing Nevada is that we have very little in the way of risk capital. Our funding capacity is only a fraction of what our actual funding needs are.”

Meanwhile, most of the limited venture money available in the area tends to be in the hands of investors who lack familiarity with the tech sector, said Colin Loretz, co-





Dell was given \$280 million by North Carolina in 2004 to build this Winston-Salem plant. It closed five years later.

founder and CEO of Web-based startup Cloudsnap. Loretz — whose company recently received support from startup accelerator TechStars — ended up going out of state to secure funding from investors in San Antonio and San Francisco.

“What we’ve always found was that there were few funding options in Reno, and most of them didn’t understand what we were

doing,” Loretz said. “They were very, very knowledgeable in more traditional areas such as manufacturing, mining and clean energy, but not cloud services.”

Access to capital became an even bigger issue after the global financial crisis. The near-meltdown of the financial sector significantly led to stricter lending guidelines and curtailed the amount of investment money available for supporting startups.

When Relina Shirley was starting HIDEit Mounts in Southern California with her husband in 2008, she tried to get a small-business loan from a local bank. Shirley was told that her business wasn’t established enough to even be considered for a loan, particularly given the conditions in the market.

The lack of private capital led Shirley and her husband to self-fund their business, which makes cases for video game consoles and media boxes that can be installed behind wall-mounted flat-screen televisions.

The Shirleys managed to slowly grow their business on the internet and recently inked a deal with retailer Micro Center to carry their products in about 30 locations. The volume needed to supply those locations also happens to be the maximum amount that the Shirleys can produce through self-funding.

“The deal with Micro Center actually meant that we also had to invest in retail packaging, and that’s no small expense for us,” Shirley said. “We’re at that pivotal point now where



**“I DON’T EXPECT THE DOG
NOT TO BE A DOG. ALL I CAN
SAY IS: YOU BETTER HAVE
A LEASH HANDY.”**

injecting our own cash into the business is no longer enough if we want to really grow it further. It would be fantastic if there were funding sources out there that we could access more easily right now.”

PLAYING WITH FIRE

Not everyone, however, is supportive of using public money for private enterprise. Paul Lenart, a member of the Occupy Reno movement, eyed Nevada’s new funds with a healthy dose of skepticism. Lenart cited the greed and highly dubious ethics displayed by those in the private sector just prior to the crash of the US housing market and the global financial crisis as reasons why he’s leery about giving public money to private companies.

“I don’t expect the dog not to be a dog,” Lenart said. “All I can say is: you better have a leash handy.”

Controversies involving private use of public funds in several states back some of the concerns raised about such programs. Both the Texas Enterprise Fund and Emerging Technology Fund have been criticized for awarding money to companies that have links to Gov. Rick Perry and his campaign donors.

North Carolina, which approved a \$280 million incentive package from state and local governments in 2004 to woo Dell and convince the company to build a plant near Winston-Salem, saw its officials seething five years later after the company decided to close the facility. The closure led to the loss of 905 jobs.

Another issue involves jobs that don’t match the high-paying positions officials expect a technology company to produce. Cloudsnap’s Loretz, for example, said that good engineers can earn around \$125,000 or so per year depending on their skills and the school or company they come from.

The prospect of keeping high-paying jobs was likely a key reason why Washington, D.C. officials offered up more





Former presidential hopeful, Gov. Rick Perry, has been at the center of accusations over private use of public funds in Texas.

than \$30 million in subsidies to LivingSocial to convince it to stay in the area, said Good Jobs First's Cafcas.

"LivingSocial began as a tech startup in D.C. and basically said it was going to move away if it didn't get some sort of incentive," Cafcas said. "If you look closely, however, the majority of the jobs for this high-tech company aren't so high-tech at all. They weren't

engineers or IT people — they were marketing people who cold-call companies to try and get LivingSocial deals."

In the case of Nevada's new programs, some critics decry the fact that the Catalyst Fund is being distributed through local entities to sidestep a law in the state constitution that prohibits giving public money to private companies. Catalyst Fund recipients are also kept anonymous.

"Public scrutiny is the only regulator of private vice," said Occupy Reno's Lenart. "The fact that they're doing this through loopholes just underlines the underhanded BS of this program. We set up that rule (in the Nevada Constitution) for a reason, and having them go around it while using public money is another way to suck money from people and give it to business."

LESSONS LEARNED

Despite the problems arising in Rhode Island and other states that use public funds for private enterprise, supporters of such ventures point to programs that have seen success. Researchers tied to Utah's USTAR initiative, for example, have brought in \$135 million in grants to the state.

"That's significant because studies show that every \$1 million in research funding the state brings in is worth 20 jobs," said USTAR spokesman Michael O'Malley. "We just had our five-year checkup, and the program is well-ahead on all the key metrics we measure with the exception of licensing revenue."



O'Malley added that the program has also made 136 intellectual property filings and contributed \$81 million to Utah's state gross product.

Meanwhile, Nevada officials said they have learned from the problems experienced by other states and built the necessary protections into their programs. Management of the NCIC fund, for example, will be overseen by a private equity firm, said Nevada State Treasurer Kate Marshall. In addition to handing the reins to a firm with private sector experience and a legal fiduciary obligation to maximize returns, the arrangement also prevents the pay-to-play issues that plagued other public-private programs. Other safeguards include capping management fees and how much money can be invested in one firm, Marshall said.

"As soon as we decided to have a geographically specified investment fund, we were careful about learning lessons from other states and pension funds," Marshall said. "One was to de-politicize this so you don't have an elected official directing money to be invested in his uncle's hotdog stand."

For the Catalyst Fund, the state requires companies to meet certain objectives before any money can be released. Examples include the creation of a certain number of jobs first, said Mike Kazmierski, president and CEO of the Economic Development Authority of Western Nevada.

"We don't ever want to be in a position where we have to claw back anything, so we require the companies to perform first," Kazmierski said. "Once they achieve results, then we can reimburse them."

RISK VS. REWARD

There are times, however, when even performance-based incentives are not enough to prevent problems. Rhode Island, for example, also required 38 Studios to create a certain number of jobs before it could access the funds tied to the state's loan guarantee program. The company ended up hiring more employees to meet the requirement, but bankruptcy filings would later show that the company was already having financial difficulties even as it was hiring more staff. The Rhode Island Economic Development



**“THE THING IS, INVESTING
IS A NASTY, UNFORGIVING
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Corp., the group that set up the 38 Studios deal for the state, declined to comment for this article.

Because the Rhode Island loan guarantee is backed by “moral obligation” bonds, the state can choose to not pay the millions borrowed by 38 Studios. Such a decision, however, comes with a heavy price.

“If the state walks away from its obligation, it would be tantamount to defaulting and it will harm its financial reputation,” Cafcas said. “There’s already some talk out there of credit rating agencies downgrading their credit rating. What was supposed to be a deal that brings in more jobs in the short term could potentially harm long-term job growth in Rhode Island if the cost of borrowing for schools, roads and improving infrastructure goes up.”

The debacle involving Schilling’s company demonstrates why public entities should never be involved in picking winners and losers, several experts said. One reason is that such entities typically do not have the necessary background to make informed judgments on the viability of companies in the private sector.

“Any time you get into the entertainment space, it’s a high-risk proposition because customers are so fickle,” said Walt Borland, president and CEO of the Nevada Institute for Renewable Energy Commercialization. “I mean, when you look at Rhode Island, what unique qualities or attributes does it have to play in the gaming industry? I see nothing that would justify investing \$75 million, which is just an onerous amount of money to spend on a single deal, by the way.”

The risk involved with investing in private entities is also a reason why Darik Volpa, CEO of Understand.com, is wary of taking public funding. Prior to forming his new venture, Volpa was on the board of a company that launched an unsuccessful bid to get incentives from Rhode Island. Volpa said he was against applying for public fund-





Workers remove office items from the building that housed Schilling's 38 Studios, in Providence, R.I.

ing but was outvoted by his colleagues.

“The thing is, investing is a nasty, unforgiving world that’s high-risk and high-reward,” Volpa said. “Private investors understand that, so that’s okay. Philosophically, though, it makes it hard for me to take public funding.”

With other areas going all-in with public-private programs, however, states such as Nevada feel that they have no choice if they want to stay competitive. As states try to position themselves for the more tech-oriented new economy, having public-private initiatives is seen as one way to elbow their way into the ongoing discussion and remain relevant.

“Economic development is a contact sport,” Hill said. “Some of the decisions we make probably won’t work out well, but I don’t think the standard should be to never make a mistake. I think it should be overall, how much good did a program do for the state and was it worth doing it?” **D**



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VISUALIZED

STANFORD'S LINEAR ACCELERATOR'S X-RAY LASER



JOHN SARGENT

The **STARCRRAFT II COMMENTATOR** takes time to talk about his *Mario Kart* skills, Red Bull's influence on eSports and an iPhone named 'Titanic'.

What gadget do you depend on most?

My iPhone — I can already hear my friends smirking as I'm, in general, an Apple skeptic. Unlike my computer though, the difference between the silky-smooth and easy-to-use interface of the iPhone and other phones (at the time I bought it) was large enough that I went with what would give me the least hassle. It keeps me organized!

Which do you look back upon most fondly?

A toss-up between my red and white Super Famicom and my Nintendo 64. The only thing I know for certain is that I will destroy everyone at *Mario Kart* on both of those platforms.

Which company does the most to push the industry?

Interesting wording, and I think it deserves an interesting answer — Red Bull.

As somebody in the eSports industry it's awesome to see companies outside the competitive gaming industry pump money, innovation and effort into staging tournaments and events. As a completely new event, the Red Bull Battlegrounds was a very unique take on a gaming tournament and I hope we see more from them.

What is your operating system of choice?

Windows 7 — the first OS from Microsoft in quite a while that I can say I use in front of my Mac-oriented friends without feeling embarrassed.



“My desktop is known as C.H.L.O.E.2 — and I know someone who named their iPhone ‘Titanic’ as they sync it on a regular basis...”

What are your favorite gadget names?

My desktop is known as C.H.L.O.E.2 — and I know someone who named their iPhone “Titanic” as they sync it on a regular basis, which kept me laughing for days. Genius.

What are your least favorite?

Well, how they got away with the iPad I’ll never know ... but hang on, didn’t Samsung once release a phone called the “:)?” Wasn’t that a horrible decision as well? Oh, and a pet peeve of mine is Canon calling their cameras “Rebels” in the US to make DSLRs sound cooler. Not required, gentlemen. Just confusing.

Which app do you depend on most?

“Errands” on my phone keeps my life in order and keeps my schedule on its toes.

What traits do you most deplore in a smartphone?

Any phone that comes bundled with games the manufacturer assumes I’m going to like — which is an underhanded way of saying I am guaranteed not to like them one bit.

Which do you most admire?

Ease of use. The iPhone wins this hands-down for me, if only because I have to regard iTunes (the bane of my existence) as a separate product.

What is your idea of the perfect device?

Could you imagine a device that detected your mood in the morning and decided what you should have for breakfast? (“Bad sleep, grumpy — give this man something fried.”) That would be my dream gadget, whatever form it takes.

What is your earliest gadget memory?

First-generation, clunky — and timeless — Game Boy. Otherwise known as the way 8-bit music got permanently etched into my head.

What technological advancement do you most admire?

I could answer with something



“Reminding me what I was at the coffee shop to accomplish that day after my fifth Flat White and I’m buzzing like a truck full of bees.”

that isn’t the internet, but then I would be wrong.

Which do you most despise?

“Fully Automatic” mode on any DSLR.

What fault are you most tolerant of in a gadget?

Inflexibility. For instance my phone stubbornly can’t set up multiple profiles (which is arguably an industry standard), but what it CAN do it does well and those happen to be more important.

Which are you most intolerant of?

Instability. If your software is written in such a way that most apps crash it, it’s certainly the phone’s fault.

When has your smartphone been of the most help?

Finding directions while lost in the middle of nowhere. Reminding me what I was at the coffee

shop to accomplish that day after my fifth Flat White and I’m buzzing like a truck full of bees.

What device do you covet most?

My souped-up Alienware M14x that I more or less run my life off of. That, and my sE USB2200a condenser microphone.

If you could change one thing about your phone what would it be?

Not sure if this counts as cheating, but being able to customize the sound experience without going through iTunes. Let me drag and drop MP3s and set what I want as a ring-tone, please! If that does indeed count as cheating, then I’ll go with the ability to have different profiles pre-set.

What does being connected mean to you?

Being seconds away from wherever I am to whatever I need to accomplish, at all times.

When are you least likely to reply to an email?

When I put an e-mail (as opposed to an action) on my to-do list, it mysteriously disappears into the void for weeks.

When did you last disconnect?

Disconnect? What’s that? 



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

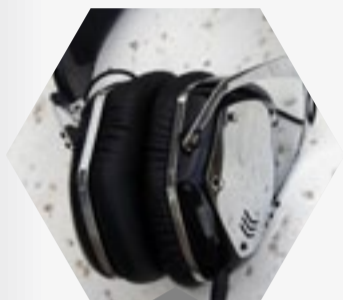
ASUS EEE PAD TRANSFORMER PRIME

THE ASUS TRANSFORMER Prime is one of those “time machine” devices. You know, the kinds of gadgets you’d love to travel with into the past simply to blow people’s primitive minds. With the Prime, I remember being amazed way back in 2011 that such processing power could be shoehorned into a thin, metal tablet. The combination of an optional keyboard, super-bright screen and NVIDIA-powered gaming was simply too much for me to pass up.

It’s been seven months, and much of that initial amazement still remains. After playing games like *Grand Theft Auto III* and the Tegra 3-enhanced *Shadowgun*, I’m convinced we tech enthusiasts live in an exciting time. Yet for all its technical prowess and flexibil-

ity, something’s always nagged me about the TF Prime. I just don’t trust it. Apps can randomly crash and the OS doesn’t always respond to my inputs with the speed I’d expect of a quad-core device. Some apps also don’t respond well if I attach the keyboard dock during use (e.g., mistaking a space bar press and an Enter key command). I generally avoid doing anything hugely important or time-sensitive on my Prime for fear that something will crash at the worst possible moment.

That lack of trust significantly diminishes its usefulness as a work companion, but I have few complaints about the Prime as a purely recreational device. Movies look great, the screen remains usable outdoors (in Super IPS+ mode) and the fact that I can plug in a wired Xbox controller to the keyboard dock is icing on the cake. So, no, it’s not the perfect, all-in-one device I was hoping for, but the Transformer Prime remains hugely impressive. I’d still take it back in time with me and amaze our ancestors with my quirky, but fun, transforming buddy. — *Philip Palermo*



V-Moda
Crossfade LP
headphones



Verbatim
Dual USB
Power Pack



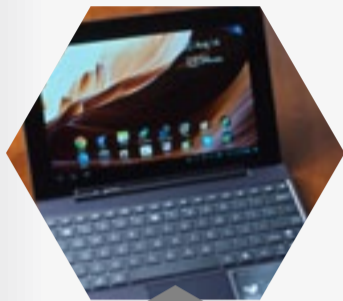
V-MODA CROSSFADE LP HEADPHONES

A COUPLE OF YEARS AGO, I got my paws on a pair of V-Moda Crossfade LP headphones. Since then, they've been a loyal sidekick, providing me company during road trips, long plane rides and even late-night gaming sessions. The biggest reason comes from my affinity for bass. If you like head-pounding low range that shakes off the plaque from your teeth, then the Crossfade LP and its 50mm drivers deliver. I also like the angular design with its leather and metal accents, especially compared to the more plasticky look of other headphones.

The build of the Crossfade LP feels pretty solid — you can flex the steel frame headband and it still retains its shape. The memory foam cushions used in the earpieces also feel soft and comfortable, offering a tight, snug fit overall. Admittedly, the fit might be a tad *too* tight for some folks, as it makes it a bit tough to use with glasses. When traveling, you can't just take it off and rest it around your neck because it feels like you're being choked by a toddler. The fact that you can't rotate the ear cups affects ease of storage as well. I've also noticed some faint hairline

cracks around a few of the screws that connect the ear cups to the headband, though they're just more of a cosmetic issue.

Despite those niggles, I really like how these headphones sound. You'll definitely want to fine-tune your EQ settings so you get the proper separation between ranges as opposed to muddy base overload. Get that adjustment right and the Crossfade LP sounds pretty darn good — you can even push the volume and likely blow out your ears without noticing any distortion. Add in the fact that you can get them for about half of the original \$200 price and it's worth a look for bass junkies. — *Jason Hidalgo*



ASUS
Eee Pad
Transformer
Prime



Verbatim
Dual USB
Power Pack



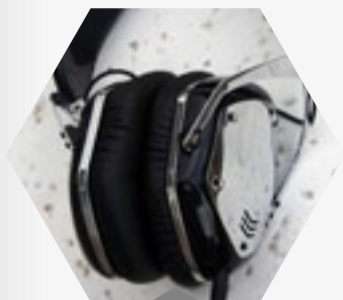
VERBATIM DUAL USB POWER PACK

WHAT'S THE SINGLE greatest way to end mobile device range-anxiety? How about a battery pack (nearly) capable of recharging the 11,666mAh battery nestled inside the new iPad. Verbatim's Dual USB power pack packs a hefty 10,000mAh battery inside a case the size of a small book, but you won't feel that extra 325 grams in your luggage is too much to bear when you need to re-juice your phone, tablet or both on the go. A pair of USB sockets (a normal one and a high-capacity one es-

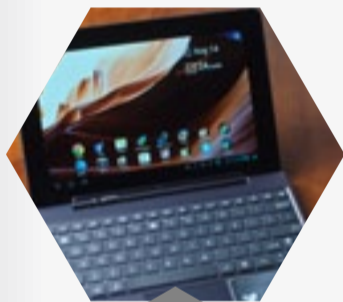
pecially for the new iPad) sit at one end, while three blue LEDs peek out from that piano-black casing when switched on.

If I have a niggle, it's that recharging the battery pack through its mini-USB port is an overnight job and various cables supplied in the box are just too short. But beyond that, I keep this in my bag nearly all the time to make sure that I never have to be "that guy" aimlessly hunting around for an open socket at the local coffee house.

— Dan Cooper



V-Moda
Crossfade LP
headphones



ASUS
Eee Pad
Transformer
Prime



The week that was
in 140 characters or less.

OBAMA'S REDDIT DEBUT, SAMSUNG'S MAGIC, AND THE FAA

@ejacqui

Is it safe to go back to looking at penis-shaped carrots and money-saving tips from 14-year-olds on reddit yet?

@nickbilton

Well wouldya look at that: FAA is [finally] forming a committee to study use of electronics on planes

@phonewisdom

Is this magician Samsung's way of calling their products "magical" without getting sued again?

@siracusa

Unfortunately,
it looks
like Reddit
has been
Baracked.

@JoannaStern

"We heard a lot of
shit about sharing
tonight." Did I
hear that right?!
#samsung

THE STRIP

BY SHANNON WHEELER



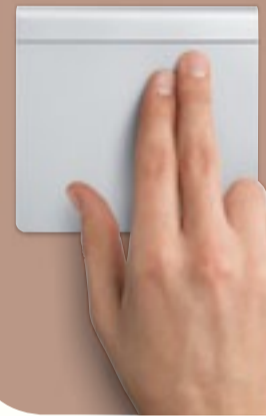
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ESC

TIME
MACHINES

THE FIRST MOUSE

MODERN
EQUIVALENT:
The
Trackpad



Conceptualized at the Stanford Research Institute by Douglas Engelbart in 1963 and prototyped one year later by Bill English, this rodent-like input device was referred to in a 1967 patent application as the “X-Y Position Indicator for a Display System.” Now known simply as the mouse, this device changed the way humans interact with their computational counterparts and helped shape the future of personal computing. The first incarnation came in a wood casing and featured a single clickable button.



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