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The Stephen Elop Interview

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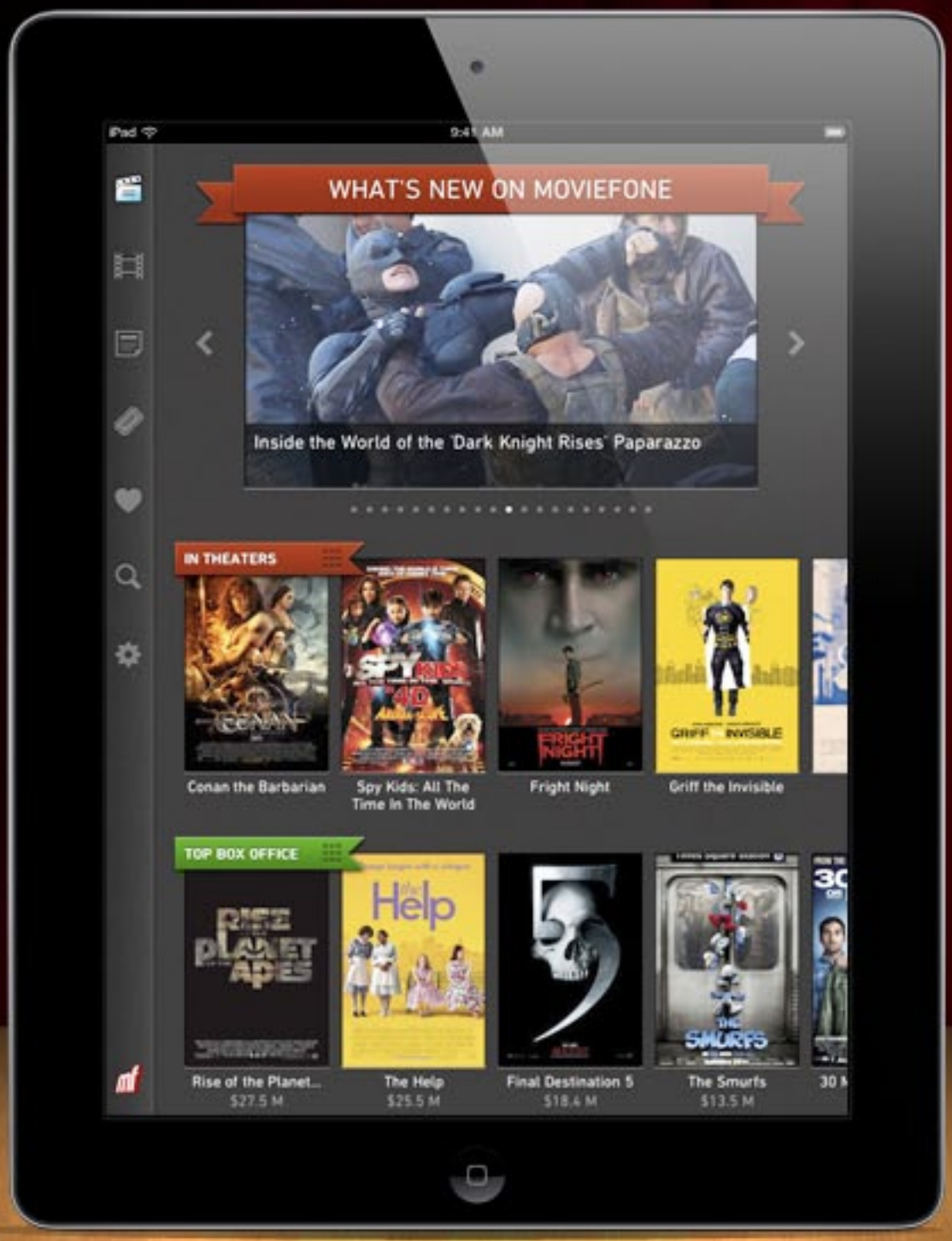

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Kindle Fire heats up and Adobe Flash goes cold

editor's letter

This is it — the anticipated release of the Kindle Fire has come. It's the $200 tablet that some think will revolutionize the market. I don't quite share that opinion, as you'll see in my review later in this issue, but I am quite impressed with what Amazon has managed to do for less than half the cost of most tablets made by brands you recognize. I'll try not to spoil your later reading here, but it's safe to say that the Fire is most impressive as a media consumption device — it makes it easier to find and acquire stuff to watch, read or listen to than any other device out there. That could be a dangerous thing if you lack budgetary fortitude.

Some of the biggest news of late actually dropped toward the end of last week, with Adobe confirming that it's more or less giving up on Flash for mobile devices and on smart TVs. The company, of course, pointed the finger at Apple's stubborn lack of support for the technology, while Apple fans naturally saw this report in a rather different, more vindicating light. The truth lies somewhere in between, but RIM for one is pledging to continue support for Flash on the PlayBook at least, and presumably on its upcoming BBX-based smartphones as well.

Speaking of things that BlackBerries will keep supporting despite Apple saying they're obsolete, RIM confirmed to us that it is still "committed to the keyboard," promising that its current obsession with touchscreens won't obviate the need for devices with great tactile inputs. That's a very good thing, because without the great keyboard on the 9900 and 9790 we'd be hard pressed to find any reason to look fondly on the company's latest lines of devices.

Microsoft's Xbox turned 10 this week, which for me brought back memories of many hours spent gripping those giant controllers while playing co-op *Halo* with a good friend. I was one of the few who really, genuinely liked the size of those things, and I was pretty enamored with the console itself, too. It was never quite a blockbuster success, but it paved the way for the Xbox 360, which, it's safe to say, has been.

We also heard a new round of rumblings about that console's successor, what's commonly referred to as the Xbox 720. Supposedly that new device will be announced at the upcoming Con-

sumer Electronics Show in Las Vegas. That's CES to you and I, and it's already shaping up to be a big one. At first pass, it would seem much more likely that MS would wait until E3 in the summer to roll out its new toy, but with consoles leaving their gaming roots and moving much more into the realm of home entertainment overlords, a CES unveil might make good sense.

Google had a big event in Los Angeles of all places, taking the "beta" off of Google Music and finally revealing a partnership with all three of the major record labels (EMI, Universal, and Sony Music) plus a flotilla of independents. There will be 13 million songs available on the service and, even more interestingly, Google is opening things up to let truly independent artists sell their wares. It's called the Google Music Artist Hub. Big G will take 30 percent of the proceeds on anything sold — a much better deal than your average label will dish out to newbies.

The company also took the time to inform us that over 200 million Android devices have been activated, a number that is steadily climbing thanks to a whopping 550,000 activations daily. That is a truly massive number.

Logitech lamented that it ever laid eyes on Google TV, calling it a "great concept" that was a total failure at retail...

Finally, to round things up, Apple released iOS 5.0.1, a bug-fix that pledges to remedy the battery woes iPhone users have been suffering since hopping on to this most recent major revision. Logitech lamented that it ever laid eyes on Google TV, calling it a "great concept" that was a total failure at retail, ultimately costing the company $100 million. That total failure will still find support for the company, and a Honeycomb update is promised before the end of the year. Finally, Nokia indicated that it's getting back into the tablet game, with a Windows 8 powered device coming by June of 2012.

In this week's Distro you'll hear from that company's President and CEO, Stephen Elop, who sat down with us to chat about the recently unveiled Lumia 800, 710 and Asha devices along with his thoughts on leading the massive restructuring that's been necessary to shift the company from Symbian to Windows Phone. We also have my reviews of two great tablets, the Samsung Galaxy Tab 8.9 and the Amazon Kindle Fire, and we'll take a look at the refreshed Galaxy S II Skyrocket and Lenovo's U300s Ultrabook. Finally, we have yet another installment of IRL for you and Ross Rubin will give some insight on how the Fire and Nook Tablet will impact the tablet wars. That's a lot of great content, so kick back, dig in and enjoy.

TIM STEVENS
EDITOR-IN-CHIEF,
ENGADGET

Send your letters to the editor with your name, city and state or country to distroletters@engadget.com.

This way in

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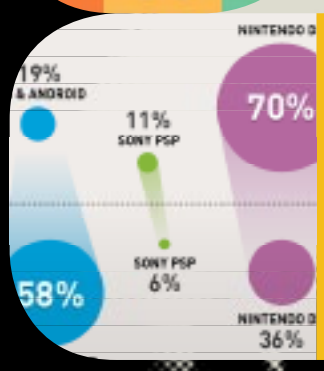

THE WEEKLY STAT
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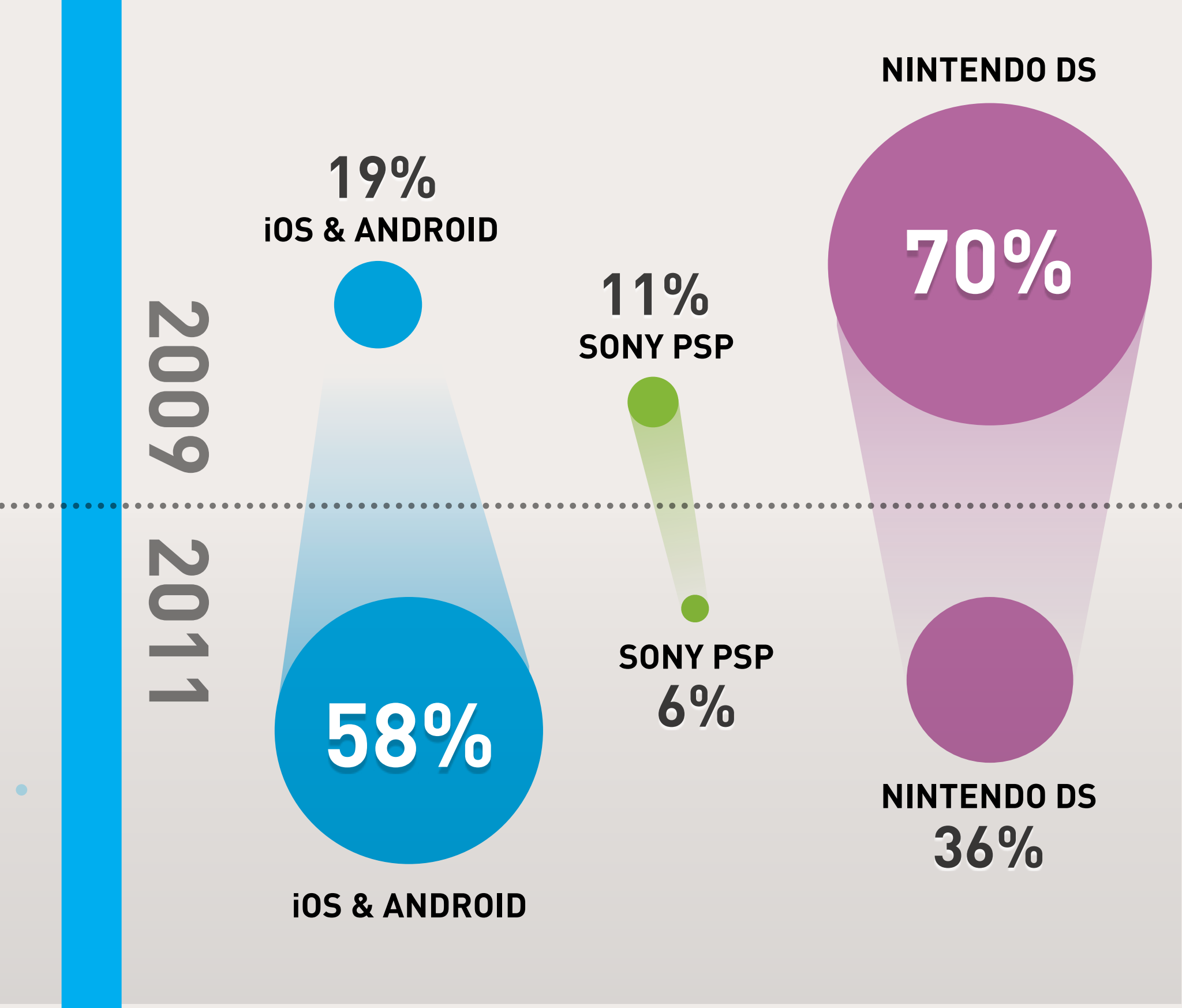

Timber! iOS and Android take 60 percent cut of mobile gaming dollars

The last time we reported on these figures, paid iOS and Android games were chipping away happily at the US market share of those two old oaks, Sony and Nintendo. Well, peer through the cloud of leaves and sawdust and you'll see that the job is done: the two newcomers will generate $500 million more than DS and PSP titles this year, according to stats from Flurry. — Sharif Sakr

the weekly stat

DISTRO EXCLUSIVE
READ IT HERE FIRST

BETWEEN A NOOK AND A HARD PLACE

SWITCHED ON

In the 1988 comedy *Coming to America*, a blatant McDonald's rip-off named McDowell's draws the legal ire of the empire built by Ray Kroc. In explaining his pathetic defense that includes noting that McDowell's uses golden arcs instead of golden arches, the eatery's manager notes that while both the Big Mac and his Big Mick both include the 1970s jingle-immortalized ingredients of two all-beef patties, special sauce, lettuce, cheese, pickles and onions, the McDowell's flagship burger bun has, in fact, no sesame seeds.

BY ROSS RUBIN
ANALYST

This state of differentiation isn't a far cry from what characterized some of the earliest 10-inch Honeycomb devices — a few fractions of an inch of thickness, a higher-quality display, a full-sized USB port, an hour or two of running time and some bundled apps constituted how many of the tablets asserted their competitiveness. Of course, there was the ASUS Transformer, with its keyboard add-on and its follow up, the Eee Pad Slider, which finally brought an integrated one. But whether it's been from a lack of options for manufacturers or disadvantages of the overall Honeycomb approach, larger Android tablets have made limited inroads versus the similarly sized iPad and are now going after it more aggressively on price.

A few Android tablet makers such as Acer, HTC and Samsung — which has returned to the tablet screen size it pioneered with the Galaxy Tab 7.0 Plus — sought out smaller sizes such as seven inches. This seemed to be a greener field in which to grow, as Apple has all but vowed not to create an iPad in that screen size. Indeed, it was only a few months ago that RIM tried to command the same price as the iPad for its 7-inch PlayBook.

Ross Rubin (@rossrubin) is executive director and principal analyst of the NPD Connected Intelligence service at The NPD Group. Views expressed in Switched On are his own.

Within the past few weeks, though, that has all changed as those old rivals from internet book-selling days — Amazon and Barnes & Noble — have moved forth from the limitations of e-paper and released their (most, in the case of Barnes & Noble) full-fledged tablets. Seeking to build businesses from content and software, their prices are below $250 and the still-attractive Nook Color hanging on to meet the Kindle Fire's $200 price point. Many were so optimistic about the Kindle Fire (or pessimistic about most of its competitors) that they predicted the tablet would be the number-two tablet this holiday season before it was released or even revealed.

Apple may be down on the 7-inch form factor, which is not as satisfying for Web browsing or magazines, to name a few types of media. However, it serves well for a range of experiences such as books, music, e-mail, many games, and of course video, which has become Amazon's next media battleground. (Before tablets stole their thunder, seven inches was a popular screen size for the leading portable video device: portable DVD players.)

Without a doubt, the competition is finding itself increasingly squeezed on the high end by the iPad's maturity and at the low end by e-reader progeny. Both Amazon and Barnes & Noble have done a great job in promoting their products to their millions of customers. The Kindle products have been a home page staple for one of the Web's most visited sites. And Barnes & Noble is redoubling its Nook sales efforts, including television advertising and a new store section devoted to the tablets.

On the other hand, as Amazon and Barnes & Noble move into the broader world of tablets, they (particularly Barnes & Noble) move further away from the core customer base (including avid readers) that helped make their e-readers successful. Would the Kindle Fire look so competitive if Amazon had created a $399 10-inch version in the shadow of the iPad, 10-inch Galaxy Tab and other Honeycomb tablets?

There's no magic in matching the Kindle Fire's price; Lenovo has already done this with its IdeaPad A1. The key challenge for other tablet makers lies in the market's youth and malleable definition. Apple essentially defined it last year with the iPad and Microsoft will attempt to redefine it next year with Windows 8. In the range of smaller screen sizes, though, the success of the Kindle Fire and Nook tablets could form a consumer expectation of a tablet that is not a broad computing experience like the iPad, but a media experience that weighs heavily on a set of integrated services provided by the same entity providing the content. That could become a far harder barrier to break through than a price point.

Samsung Galaxy Tab 8.9

BY TIM STEVENS

What is the optimal size for a modern-day tablet? Is it 10 inches? Is it seven? Or, is it something smaller, like the economy-sized smartphone, the Galaxy Note? We can't say for sure, but we surely can say that Samsung is as much in the dark as we are. Like a gadgety Goldilocks traipsing between an endless sea of options, it seems unable to make up its mind, splitting niches into sub-niches and then cleaving those in twain again with a seemingly endless array of fractionally different tablets.

Today we're looking at the Galaxy Tab 8.9. This powerful slate exists because, apparently, the Galaxy Tab 10.1 is too big and the Galaxy Tab 7.0 Plus is too small. Is the $449 8.9 just right, then? Read on to find out.

Hardware

If you're familiar with the Gal Tab 10.1 you'll find the slightly svelter 8.9 a particularly comfortable beast. Where many companies are struggling to find a corporate image and common style

to apply to all their devices, Samsung here had no problem simply shrinking down the elder tablet's overall design by about 12 percent. It's only when they're side-by-side that you can see a few subtle differences — most notable being the repositioning of the speakers from the sides to the bottom where they now flank Samsung's proprietary connector.

The 8.9 uses a plastic backing with a faux brushed metal texture. It matches what's currently applied to the 10.1's rear end and definitely has a nicer feel than the smooth plastic we got on some of the earlier 10-inchers. It's given a dark, bluish hue Samsung calls Metallic Gray, though we're not seeing much in the way of metal flake. With that as your only color choice your only options for customization lie on the capacity front: 16 or 32GB, neither of which can be expanded through microSD.

Dimensionally, the 8.9 is only slightly smaller than its big brother. It measures 9.1 x 6.2 x .34 inches and weighs in at .99 pounds (230.9 x 157.8 x 8.6mm and 447g, if those are your units of choice). That compares to 10.1 x 6.9 x 0.34 inches and 1.24 pounds, making it only moderately more svelte and a

TABLET	BATTERY LIFE
Samsung Galaxy Tab 8.9	9:21
Apple iPad 2	10:26
Samsung Galaxy 10.1	9:55
Apple iPad	9:33
HP Touchpad	8:33
Lenova IdeaPad K1	8:20
Motorola Xoom	8:20
T-Mobile G-Slate	8:18
Lenova ThinkPad Tablet	8:00
Archos 101	7:20
Archos 80 G9	7:06
RIM Blackberry PlayBook	7:01
Acer Iconia Tab A500	6:55
Toshiba Thrive	6:25
Samsung Galaxy Tab	6:09
Velocity Micro Cruz T408	5:10
Acer Iconia Tab A100	4:54

hair less heavy. (Our calipers measured it as being thinner, too, but only by a few fractions of a millimeter.) This compares favorably to another 8-inch option, the Archos 80 G9, which is 3mm thicker and 18g heftier.

That difference between this and the 10.1 doesn't sound like much on paper, and if you stack them up it doesn't look like much either. But, in the hand, you notice it. It just feels slightly more balanced, slightly more palmable than the bigger one. It isn't as nice to walk around with as a 7-inch tablet — still our favorite size for tableting while strolling between gates at the airport — but it is a noticeable improvement in the hand compared to the 10.1.

Though smaller, the 8.9 still packs 1,280 x 800 pixels in its 16:9 PLS TFT LCD, so you're giving up size but gaining pixel density. You are, however, gaining both compared to the 8-inch Archos 80 G9, which makes do with just 1,024 x 768. The three megapixel camera around the back and two megapixel unit up front appear to be the same as the one that came before, while the power button and volume rocker are positioned in their familiar locations — the upper-left.

That 8.9-inch display impresses, not with the stunning contrast of Samsung's Super AMOLED Plus displays but still managing to look quite good. As mentioned above the pixel density is slightly higher than on the 10.1, which does give text and other high-contrast shapes a slightly smoother appearance. Viewing angles are good and, overall, this is definitely a top-notch panel in here. Still, we have to wonder why Samsung stuck this with a TFT screen while reserving its especially stunning Super AMOLED Plus display for that mythical no-show, the Galaxy Tab 7.7.

Performance and battery life

The 8.9 features the same 1GHz dual-core processor and 1GB of RAM as its 10.1-inch predecessor, so no surprise, then, that performance here is similar to what we saw on the 10.1 — though not necessarily identical. Quadrant gave us an average of 2,341, which is


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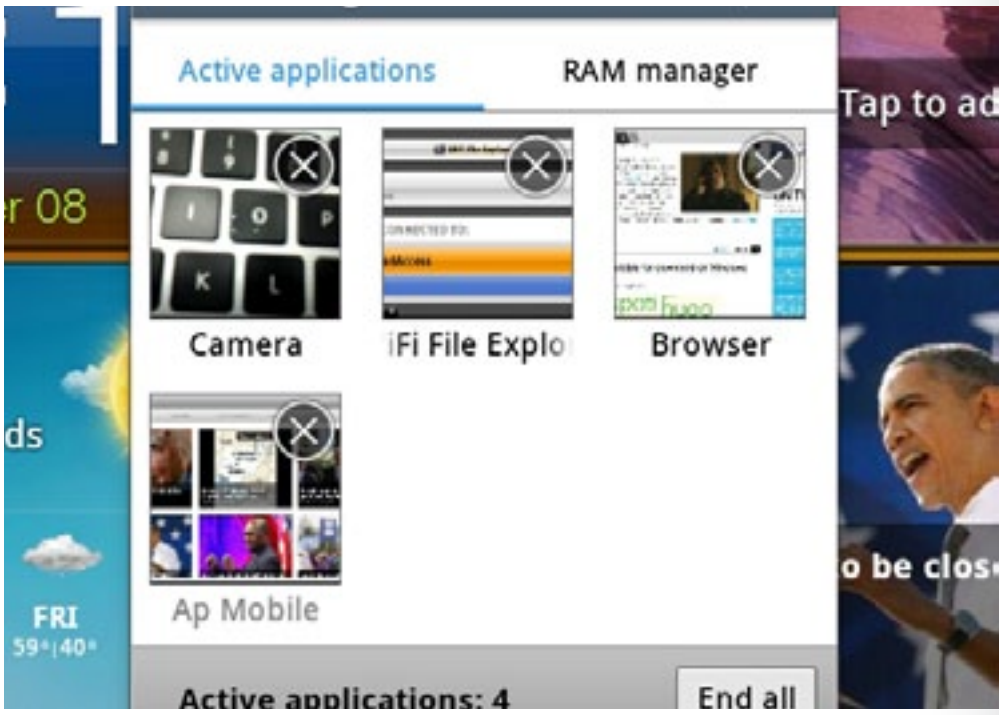
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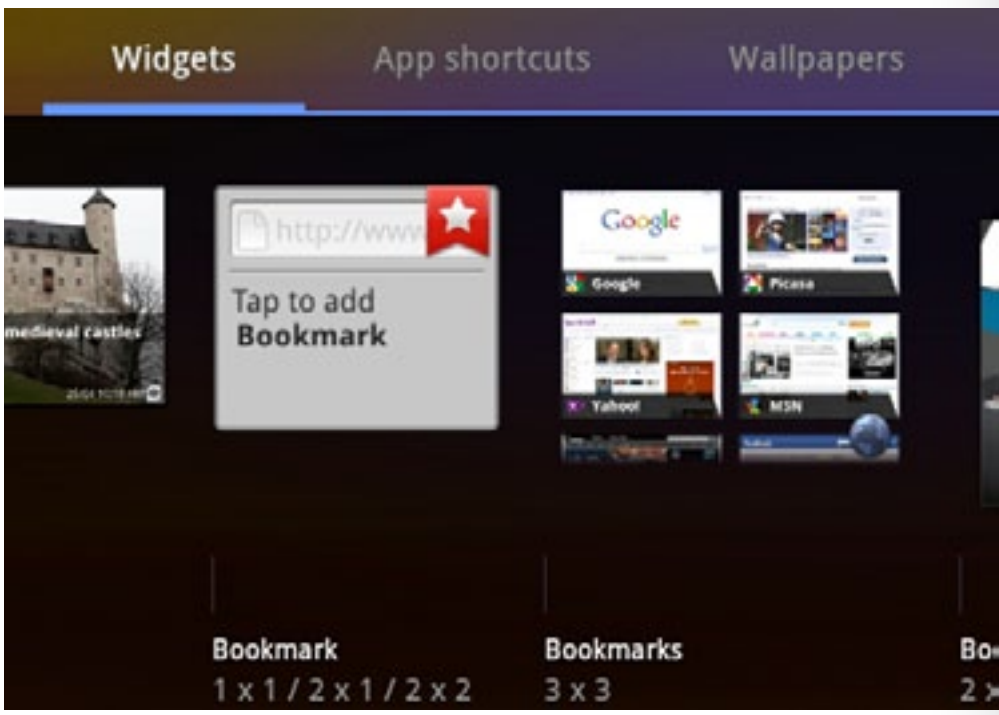
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Bookmarks
3 x 3

Real-world impressions back up the benchmark findings. The 8.9 feels exactly the same to use as the 10.1.

surprisingly higher than the 1,800 or so the 10.1 puts down. It reached a Linpack Single score of 26.846, though Linpack Multi wouldn't give us consistent enough scores to warrant inclusion, and Neocore also refused to cooperate. Nenamark netted 38.1, Nenamark2 18.1 and Sunspider clocked in at 2,295, just a tick slower than the 10.1's 2,200. It boots from cold in 35 seconds.

Real-world impressions back up the benchmark findings. The 8.9 feels exactly the same to use as the 10.1. In back-to-back testing of the two occasionally the 10.1 would load an app slightly more quickly, sometimes the 8.9, but neither had a conclusive advantage over the other. Unless you had them both sitting side-by-side you'd never tell any difference, and even when we did we had to be really paying attention.

When it comes to longevity the 8.9 does not disappoint — though it doesn't *quite* live up to its predecessor. The 10.1 (with a 7,000mAh battery) scored a very impressive 9:55 on our intensive video rundown test, almost matching the 10:26 of the iPad 2. The 8.9, with its 6,100mAh battery, managed 9:21. That's well more than the seven hours managed by the Archos, and plenty enough for all but the most punishing of flights.

Camera

Not to sound like a broken record, but the camera assemblies here appear to be identical to what we saw on the 10.1 — that is to say, it takes acceptable shots, but you won't be retiring your DSLR. Nor your compact, for that matter.

Software

The Galaxy Tab 8.9 runs Honeycomb 3.1, featuring the same TouchWiz customizations found on the bigger 10.1. We already detailed them quite comprehensively before, so we won't waste too much time doing so here again. But, we will say that the additions to the OS here are generally welcome, and the easy to access utilities for taking notes and calendar make this a rather more useful machine than it might be otherwise.

Beyond that, the Honeycomb build here has the same quirks as any other build of Google's OS. It's still something of a mixed bag of an OS that we find occasionally clunky and unintuitive to navigate, but again that hasn't changed significantly since before — and it won't change until these devices are updated to Ice Cream Sandwich. When will that happen? Samsung isn't saying.

sample images

The competition

There aren't a huge number of contenders in this, the greater-than-seven-but-smaller-than-nine-inch department. Currently it's really this or the Archos 80 G9, which has a .9-inch smaller screen, a lower resolution, worse battery life and a chunkier construction. But, it is considerably cheaper ($300 for 8GB, $320 for 16GB) and seems to offer slightly improved performance. The strongest competition, though, comes in at 1.9-inches smaller — in the form of the $430 T-Mobile Springboard (which offers shorter battery life but a nicer display), the $400 Galaxy Tab 7.0 Plus, or the compellingly cheap Kindle Fire and Nook Tablet. We'll have full reviews of those last two soon but, at just $200, Amazon's offering is going to be tough to beat.

Wrap-up

The Galaxy Tab 8.9 exists in a gadget niche so small we weren't convinced it needed to exist. Despite that, the thing fills it admirably well. Given the choice between taking along this guy or its bigger sibling we'd almost universally take the 8.9. The loss in screen size is barely noticeable since the resolution is kept the same but the difference in handheld usability is tangible.

That said, those of you buying a tablet exclusively for couch surfing would likely be a bit more comfortable with the slightly larger display. Whichever you choose, cost won't be much of a factor. The 16GB version here is $449 and 32GB, $549. Each is just $50 less than its 10.1-inch counterpart. Is a 10 percent price reduction fair for a 10 percent size reduction? Ultimately that decision lies with you.

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

BOTTOMLINE

Samsung Galaxy Tab 8.9 — $449

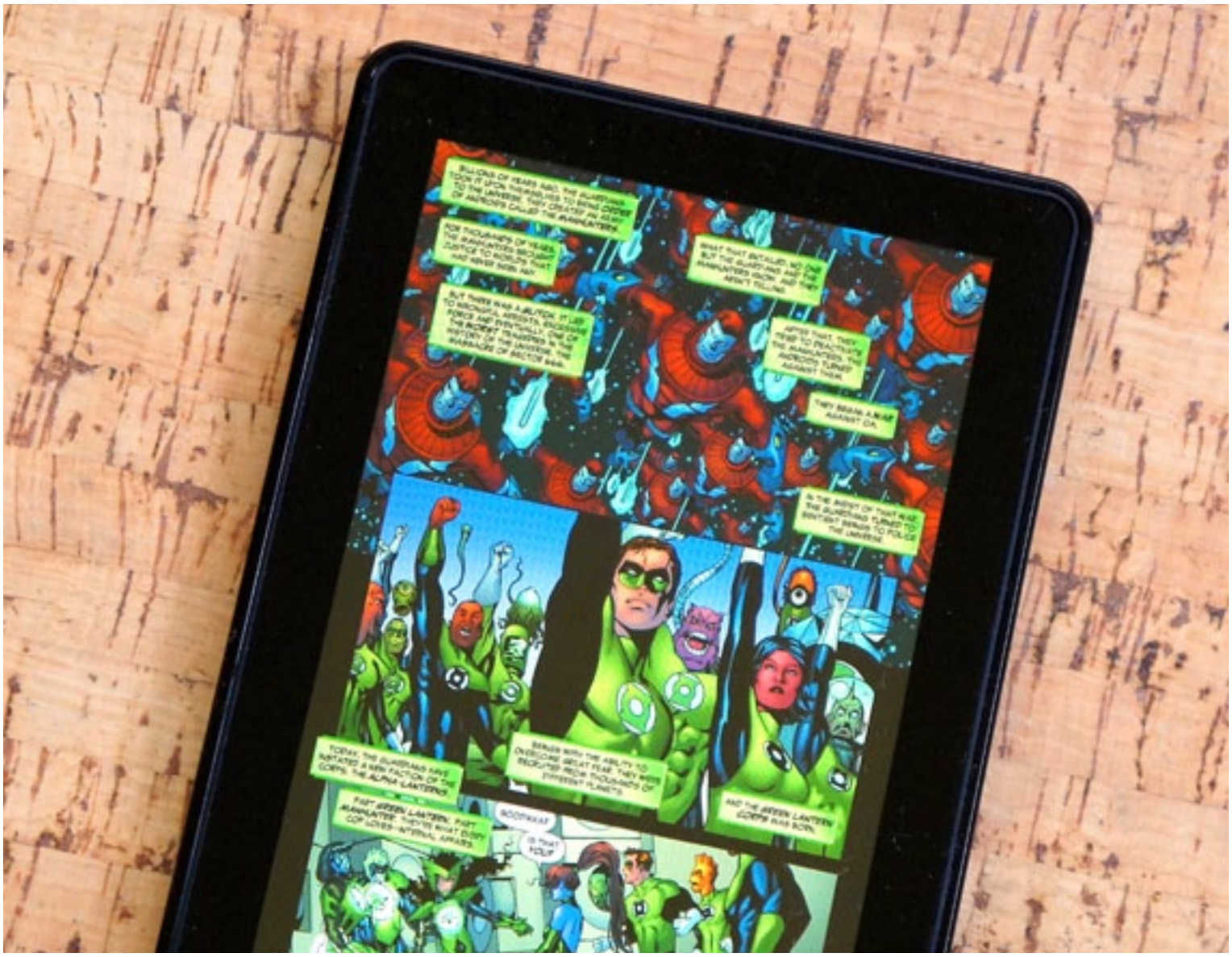
PROS

- Solid, clean design
- Bright screen with higher ppi than 10.1
- Great battery life
- Genuinely useful TouchWiz customizations

CONS

- Minimally cheaper than the 10.1
- 1GHz chip soon to be outclassed

Samsung's Galaxy Tab 10.1 is a little smaller, a little lighter and a little cheaper than the 10.1, but it's also a little bit better.



Amazon Kindle Fire

BY TIME STEVENS

It seems like ages since Amazon introduced us to the $199 Fire at a hectic New York City event, but in truth that was only about six weeks ago. Maybe our perception of time is warped because we've been hearing talk about this 7-inch Android tablet for months now. Maybe it's because Amazon launching a tablet seemed like such a natural thing to do after Barnes & Noble paved the way with its Nook Color. Or, maybe it's just because the gadget Amazon shipped looks nigh-identical to the 7-inch BlackBerry PlayBook that we've had for, well, ages.

For whatever the reason, what Amazon has delivered is a device that is intimately familiar yet mysterious — a simple, minimalistic exterior design, hiding a flashy, seemingly quite trick customization that's sitting atop a decidedly ho-hum Android Gingerbread build. Our questions leading up to this review were many: How will it handle sideloading? Are the battery life and performance better than the

PlayBook? Can a tablet that costs two hundred bucks stand a chance against those that cost two and three times as much? Read on to find out.

Hardware

The Kindle Fire is not identical to the PlayBook on the outside, but it's pretty damned close. Turn off the screens then put a little black tape over the BlackBerry logo on RIM's slate and, at a glance, there's almost nothing between them. The Fire is a simple, black thing with nothing in the way of styling pretenses. In fact, one could say it has nothing in the way of styling whatsoever.

Flip it over and you'll see the word "kindle" subtly embossed across the back, only really visible if you hold the tablet at an angle in some light. Otherwise the matte, rubberized back absorbs too much and you can't spot that one bit of styling indulgence the designers allowed themselves here. There's an extremely subtle "Amazon" print below too and, beyond some scribbles from the FCC, that's it.

Pretentious this isn't, and neither is it a handful. Measured in inches it comes in at 7.5 x 4.7 x .47 (that's 190 x 120 x 11.4mm), making it 0.4 inches shorter, 0.1 inches narrower and 0.07 inches thicker than the PlayBook. At 413g (14.6oz) it's slightly lighter, too, but still far from a featherweight — it's noticeably heavier than the 345g Galaxy Tab 7.0 Plus.

But, for that extra heft you get an extra feeling of quality. Like the PlayBook, this thing feels incredibly solid, as if Amazon simply put a chisel to a big piece of slate, gave it a good whack and then put the resulting slab into a Frustration-Free box. The rubberized back may not look or feel particularly posh, but the entire assembly is reassuringly stout.

The slight step down in size here compared to the PlayBook comes at the expense of the bezels, which are slightly more trim on the Fire — at least on three sides. Held in portrait, the 7-inch, 1,024 x 600 IPS LCD is shifted ever so slightly toward the top. The slimmed-down black bars make no room for a front-facing camera and there are none to be found around back. So, while you won't be buying one of these for its looks, neither does it care much about yours.

That non-removable, soft-touch back extends about two-thirds of the way up the edges of the device, the rest covered by shiny black plastic that flows up and around to the edge of the Gorilla Glass. Situated between those two layers are a pair of thin speakers that will send tinny, hollow audio out only on the right side when you're holding this as you would watching a movie. Those with more than one ear will want to make use of some headphones, which are not included.

Bring your own and you'll find their receptacle on the opposite side, where the 3.5mm audio output is located. That's situated immediately next to a micro-USB port and a small power button. And that's it. There's just that one button to be found, meaning you'll have to delve into the software whenever you

want to adjust volume. There's also no HDMI output for playing all of the great content Amazon throws your way and seemingly no ambient light sensor, as the tablet can't auto-dim its screen.

Internals

Things are similarly barren on the inside. It's the same dual-core 1GHz TI OMAP processor that powers the PlayBook, but here it's paired with only 512MB of RAM and a mere 8GB of storage, of which about six and a half will be available to you and your ever-growing multimedia collection. Ostensibly, you won't need much since Amazon so thoughtfully lets you re-download anything you've bought any time you want, and is quite happy to stream all your music to you as well. But, if you're the type who likes to load down your tablet before spending a few hours or days offline, you might find this single, tiny capacity a bit restrictive. It's a shame Amazon doesn't offer a $250 16GB version, and a $300 32GB option too.

If you are streaming content you'll be doing it over WiFi, as there's no 3G option yet. The tablet supports 802.11b/g/n on 2.4GHz and had no problem picking up and staying connected to wireless networks that weren't necessarily offering up full signal strength, but we kind of wish there were a 5GHz option. Bluetooth might have been nice, too.

Display

Again, this is a 1,024 x 600 IPS LCD

panel that measures 7-inches from one corner all the way over to the opposite one. Those are the same specs as on the PlayBook and, as far as we can tell, this is the same panel. That's a reasonably good thing, because while it won't wow you at its maximum brightness, color reproduction is good and viewing angles are just as broad as you'd expect from an IPS panel.

What isn't so impressive is the 169ppi pixel density. With more and more smartphones starting to offer 1,280 x 800 resolutions in displays that are four and five inches we might have hoped for a bit more here. Suffice to say the LCD in the Fire is good — but it stops short of being great.

It's also a very, very different experience if you're coming from any of the company's other Kindles. E Ink displays offer a lower resolution and significantly reduced color depth (from this LCD's 16 million rainbow hues down to about 16 shades between black and white), but the Pearl display's reflective nature means it's just like reading paper and is very easy on the eyes. That is, of course, if you have enough light.

An LCD brings its own backlight to the party, meaning you can easily read the Fire in pitch blackness if you're so inclined — just remember you'll have to manually dial down the brightness before doing so.

TABLET	BATTERY LIFE
Amazon Kindle Fire	7:42
Apple iPad 2	10:26
Samsung Galaxy 10.1	9:55
Apple iPad	9:33
Samsung Galaxy Tab 8.9	9:21
HP Touchpad	8:33
Lenova IdeaPad K1	8:20
Motorola Xoom	8:20
T-Mobile G-Slate	8:18
Galaxy Tab 7.0	8:09
Lenova ThinkPad Tablet	8:00
Archos 101	7:20
Archos 80 G9	7:06
RIM Blackberry PlayBook	7:01
Acer Iconia Tab A500	6:55
Toshiba Thrive	6:25
Samsung Galaxy Tab	6:09

Battery life

This is one area where the Fire can't hope to compete against its Kindle predecessors that got the market suitably warmed up. Those readers, with their power-sipping processors and incredibly efficient E Ink screens, have longevity measured in months. We sadly have to resort to measuring in hours and minutes here, but we still have reasonably good news to report.

In our standard video rundown test the Fire managed seven hours and 42 minutes. That's 12 minutes more than the seven and a half hours Amazon promises it can deliver when playing video, reaffirming our belief that there is truth

in advertising. Sometimes.

That figure compares favorably to the roughly seven hours the PlayBook managed but comes in 27 minutes below the healthy eight hours and nine minutes eked out by the Galaxy Tab 7.0 Plus.

Performance

As mentioned above, the Fire gets by with the same silicon that powered the PlayBook: a dual-core 1GHz TI OMAP chip, but here paired with only 512MB of RAM. Perhaps it's the step down from the standard 1GB, or perhaps it's the heavy-handed software overlay running atop Android, but the Fire never delivers smooth, seamless performance.

While Amazon's own carousel of recently used items is slick and smooth, we had inconsistent results with APKs we sideloaded on here. Amazon's own media players work well, but third party ones that offered better compatibility with file formats universally did not. That said, 2D games like the omnipresent *Angry Birds* ran without issue, and simple 3D games like *Fruit Ninja* had no problems either.

Given the Fire has no access to the Android Market many of our favorite benchmarks were unavailable to us. We were able to sideload Nenamark and Nenamark 2, but running the second caused the Fire to crash. Hard. After resetting the device (it takes just over 30 seconds to boot, for the record) we opted to stick with web-based benchmarks.

Of those, the Fire achieved a respectable average score of 2,440 on SunSpider 9.1. Given the mysteries of Amazon's Silk browser, which offloads at least some of the rendering to the company's servers in the cloud, we're not 100 percent confident in that score — especially since browser performance itself didn't wow us (more on that in a moment). But, as it's meant as a test of client-side rendering, it should be fair.

Software

You wouldn't know it, but the Fire is running Android 2.3 Gingerbread. That's the phone-friendly version of the OS that hasn't shown up in a top-tier tablet for quite some time. But don't fret that too much as it's been quite comprehensively buried here. So, let's start with what's been piled on.

Interface

Your first experience with the Fire will be with a beautiful lock screen showing close-up imagery of abstract things — heads on a typewriter, freshly sharpened pencils, well-used fountain pen nibs. Writers will feel inspired by these poignant pics but anyone who likes customizing their home screen won't. There are no widgets to trigger here, just a thin arrow that you must drag left to get in. It's situated too high, in the middle of the screen, making it a bit of a clumsy reach. Choose to lock your device with a numeric code and you'll be stuck with the even more unfortunate Gingerbread number pad, which doesn't scale well on a display this size.

Unlocked, you're greeted with what Amazon calls the carousel. It's an endless stack of icons representing whatever you've most recently done — apps you used, books you read, movies you viewed — it's all here in a big pile. Drag your finger across and those icons flip aside much like Apple's iconic Cover Flow and this is, ultimately, an easy way to get back to where you were — so long as wherever you were wasn't that far away.

However, it quickly becomes a little too deep to be all that useful, especially if you're hopping back and forth between books and movies (as we reviewers are wont to do). The solution is to pull anything you like out and pin it to your favorites, which start occupying the shelves below this main carousel. This makes for easier access, but we wish we could split the carousel itself into multiple shelves — separate stacks of icons for most recent books, most recent magazines, most recent movies, and so forth.

A bigger problem is the carousel being a bit too sensitive to touch. You swipe left or right through the carousel and then tap whatever you want to launch. But, if your finger moves even a pixel or two in any direction when tapping the chosen item won't launch. The list will instead scroll just a bit and then pop back. You have to be annoyingly precise to get your chosen thing to launch.

Apps and content are co-mingled here and throughout the rest of the interface, categorized into the following sections: Newsstand, Books, Music, Video, Docs and Apps. Finally, there's the Web tab, which launches the Silk browser — which we'll discuss below.

You can guess what you'll find where, and the layout of each section is similar. Tap on Newsstand, for example, and you'll be presented with a list of all the magazines and newspapers you've purchased. On top is a toggle with two options: Cloud and Device. When "Cloud" is selected it shows all content you've purchased, whether it be online or off. Tap anything that hasn't been cached locally yet and it'll instantly start downloading.

Switch over to "Device" and, surprise surprise, you'll find only the things that are actually on your Fire, presented in the same sort of bookshelf aesthetic that is continued throughout the interface. The more things you add, the taller your bookshelf gets. You can sort by recently viewed or by title, but you can't reorganize and put your favorite mags up to the top like you can on the home page.

Up top, the screen is a simple notification bar showing your name on the left, the current time in the middle and, on the right, a gear, a WiFi signal indicator and a battery strength gauge. Tap on these and you'll get a quick slide-down set of toggles and sliders that let you enable or disable the rotation lock and WiFi, while also letting you adjust volume and screen brightness. Reminder: this is the only way to adjust volume on the device!

Tap the "More" button and you'll get to the full list of settings, a rather comprehensive suite of toggles that's nearly as broad as those Android has to offer, but re-skinned and somewhat restricted. For example, you can sideload other keyboard apps without any problem, but, since you can't get to the Android setting where those keyboards are selected, you'll never be able to actually use them.

Tap on the left side of the status bar (where it says your name) and you'll get a list of current things happening in the background — downloads and installs and the like. If you're an Android user you might find it confusing that you can't simply swipe down from the top to get this list. You might also be lamenting the lack of buttons.

Most apps on the Fire take up the full screen, hiding the notification bar. To get that back, and to display a little navigation bar on the bottom, you usually have to tap somewhere in the middle of the screen. That done, the navigation bar appears and you have access to the Home, Menu, Search and Back buttons. Sideloaded apps are much the same, except you need to tap on a skinny gray up-arrow on the bottom of the screen. The tap-tap-tapping to hide and display menus is all a bit clumsy and not particularly intuitive. We'd have preferred a nice set of gestures for navigation, as found on the PlayBook or TouchPad.

Finally, there's no concept of task-

switching here. Apps you've been using recently do remember their state and bring you back where you left them, but there's no way to, for example, do a long press of the home key and jump from one to the next. You'll always have to go back to that carousel and scroll your way through.

Browser

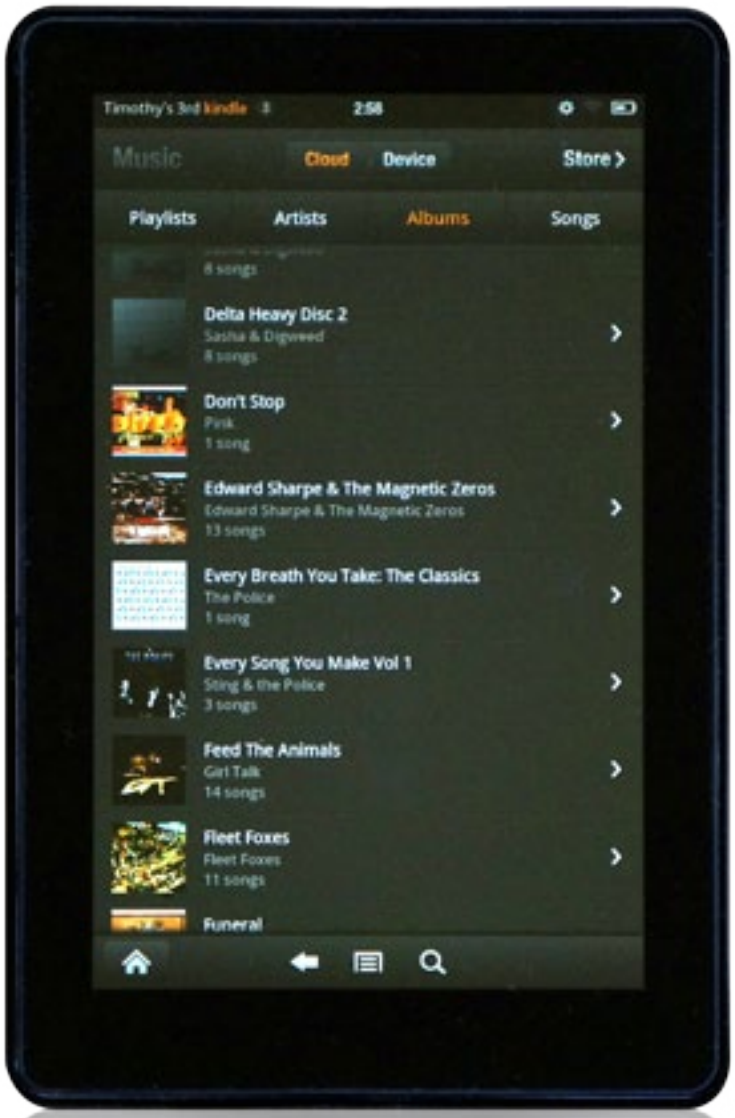
Much has been made of the Fire's Silk browser and its remote rendering, ostensibly reducing the workload on the tablet itself and shuffling some of the heavy lifting off into the cloud to provide better, faster rendering. Does it work? Well, it's not the fastest browser in the West, but it is mighty quick given its limited internals.

Stacked up against an iPad 2 the Fire routinely got beat in rendering pages — but often not by much. We also stacked it up against Samsung's Galaxy Tab 7.0 Plus, which was often slower. Finally, we couldn't resist pitting the Fire against the PlayBook, and we found those two to be neck-and-neck in most tests.

So, the Fire is a fine rendering machine, not the fastest in the world but able to keep up with the best without any ugly dithering or visual artifacts to indicate the content's remote-rendered nature. However, if we move past pure rendering speed, interacting with pages definitely seemed occasionally sluggish. Pinch-zooming was a bit jumpy and scrolling somewhat laggy. It's not a bad performer, but Silk doesn't quite live up to its smooth name.

In terms of interface, Silk is comfortable and intuitive enough. The address bar at the top disappears as you scroll down, but a simple tabs list is always present, enabling you to quickly jump from one to another. A simple bookmark button in the menu bar brings up a bookmark interface that's quite similar to the stock Android browser. A simple grid of pages representing your favorites, and just hit the big "+" on the one you'd like to add.

Recently visited pages also show up in the carousel and, like anything else, can be added to your favorites for quick return viewing. Annoyingly, though, there's no way to add a page directly to your favorites from the browser itself. You need to browse to that page, exit



to the home screen and then do it from there. A bit of a bother, that.

Keyboard

The Fire's stock keyboard is a relatively simple affair that offers suggestions as you type above the top list of keys. The suggestions are of course helpful, but the typing experience itself is a little cramped when the tablet is held in portrait mode. A particular annoyance is the spacebar on the keyboard, shifted off to the left thanks to an unfortunately placed period button. If you're the sort who exclusively hits the space bar with your right thumb you might find.yourself.typing.sentences.like.this. It's naturally a good bit more roomy when held in landscape, but even then the offset spacebar poses a bit of a challenge.

If you can get over that, it's a bit more comfortable to use than the stock Android keyboard, and the word suggestions are genuinely helpful — especially for finding punctuation. There's nothing in the way of auto-correction, though, so if you want the suggestions to help you'll have to reach up and grab them yourself.

Music playback

If you've been using Amazon's cold storage for your tunes you'll be presented with your entire library the moment you boot up your Fire. Of course, none of those tunes will actually be on your Fire, but you can quickly stream them at will. Streaming takes just a few seconds to start and, when you want to take things offline, with just a few taps you can download a song, an album or even an entire artist's worth of tracks. This makes it very easy to get your library where you want it.

As with the other sections, purchasing music is very easy — perhaps too easy for those whose buying impulses outweigh their budget-keeping abilities. There's a "Store" link that's always present in the upper-right, calling for you to click it should you find your Ryan Adams collection is a few discs short of comprehensive. Purchases can be pushed to your tablet or your happy pocket of cloud storage and pricing is generally quite reasonable.

The actual music playback is simple enough, with the album art taking up

the left half of the screen and playback controls on the right. Thankfully there's a volume slider right here, but that won't do you much good if you need to tweak the volume when the screen is off.

Audio quality through the integrated speakers is far from inspiring. Again, they're both placed on one side, so the resulting output is decidedly monotastic. Even at max volume the amplitude here is underwhelming. Sound quality is decent, but a bit hollow, as one might expect.

Swapping over to your own 'buds or headset obviously helps, but we still weren't impressed by the audio fidelity. There's a very, very subtle pop when playback starts and something of a constant hiss in the background during playback, even when the music is paused. Audiophile quality this isn't.

Video playback

As with music, all your purchased or rented films are easily visible, whether downloaded or not. If they're not, a quick tap brings them down — but you won't want to ingest too many. After purchasing the two-hour *Crazy, Stupid, Love* (we're suckers for a sweet rom-com) we found it to take 560MB of our Fire's storage. With about 6.5GB at your disposal you'll have room for 10 movies — and then nothing else.

Thankfully, though, you won't need to download them. With a quick tap you can stream your purchased content and save the local storage — if you have a suitable connection. Whether downloaded or streamed the quality of the footage wasn't great, with plenty of compression noise providing muddying scenes with quick transitions. It didn't look *bad*, but those who've sworn off anything but Blu-ray and its sky-high bitrates won't go five minutes here without grimacing.

Amazon of course also offers an ever-growing selection of streaming content for free through its Primed service. The offerings aren't quite up to par with what Netflix can serve you, but the assortment isn't far off. Sadly, though, none of this can be downloaded for later viewing and, should you find yourself pining for the library offered by another service, both Netflix and Hulu Plus will be available.

Again, the presentation here is simple and the controls intuitive enough, naturally hidden most of the time during playback, but without HDMI output there's no way to get this video content onto a larger display. We asked Amazon if wireless video streaming might be in the cards, but the response is that instead the company would like you to try streaming your video content through any of a number of other devices that can pull Amazon content. So, here's to hoping you own one of those, too.

Magazine reading

Magazine reading is definitely a huge part of what Amazon's hoping people will love about the Fire, but our feelings here definitely fall more toward like. Amazon has lined up 400 full-

color offerings for you to peruse, so chances are you'll find something that suits your fancy.

We downloaded a few photo-heavy folios, like *Esquire* and *House Beautiful*, to sample the reading experience and in general found it to be good — but not great. Here the 7-inch display becomes a bit of a problem, just feeling a little too small and not packing enough pixels to clearly render small text. We constantly found ourselves zooming in and out to read. You can switch over to Text View, which pulls all the text out into a much more enjoyable full-page view — but then you lose all the beautiful formatting and presentation that make magazines so engaging in the first place.

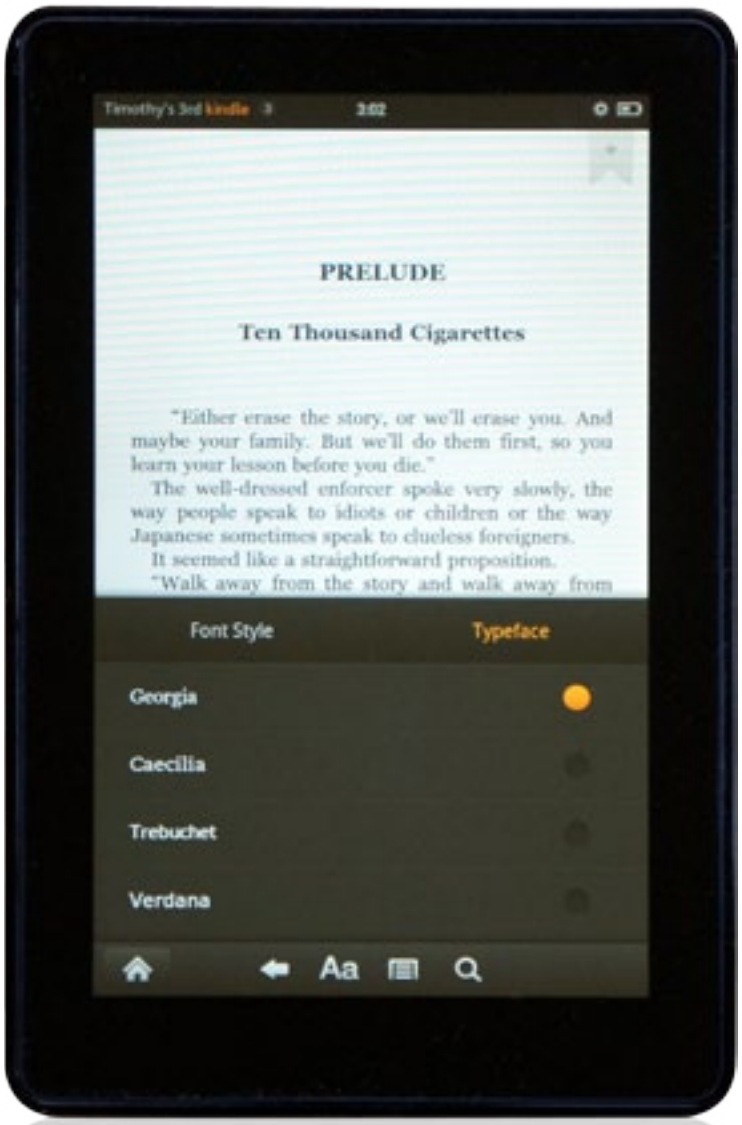
Thankfully page turning is quick and responsive and pinch-zooming reasonably so, but overall we just felt a bit restricted here, leaving us longing for that supposed 10-inch Fire. (Might we suggest Bonfire?)

Comic reading

Amazon made a big deal about its partnership with graphic novel publishers for the launch of the Fire, and rightfully so. Comics have tried to go digital many times in the past and have yet to find a solid following — at least among those willing to pay money for them. So, what's the reading experience like here on the Fire? Occasionally great, but it can't shake the occasional clumsiness that muddies things here.

As with magazines, text is often squashed too small to be read — even if its drawn in bold, sure penstrokes. Shockingly, though, you can't pinch-zoom to get a closer look! You have to double-tap on whatever section of the screen you want a closer look at. You then get a popup window with a closer view of that section and, from there, you can tap or swipe your way from one panel to the next. This is a little annoying if you just want to zoom in on one section and then zoom back out again, but it sure beats not being able to read the text.

Other than that annoyance comics are a great addition. The Fire's screen does a great job recreating the bold colors and simple lines that make them such a joy to read.



Book reading

This is, of course, not just the Fire. It is the Kindle Fire and, as such, reading is a big part of its game. You'll quite naturally have access to all the textual content you've purchased through Amazon in the past, all your bookmarks neatly synced here so you can pick up wherever you left off. Like with the other sections you can get a quick look at all your content available in the cloud plus that which is already downloaded, and moving a book from one to the other takes just a tap.

The Kindle store is of course also easily accessible, which enables you to download book samples if you're not quite sure if a certain writer's prose will please your palate. Also, Amazon has just started the Kindle Owners Lending Library for Prime subscribers, which lets them borrow one book a month for free.

The reading experience is about what you'd expect. By default you get black text on a white background, but if you find that a little too squint-inducing you can flip and get white text on black — or even brown text on a yellow. You can dynamically change font size, line spacing and margins, and you have eight fonts to choose from in case the serifs on the stock typeface rub your Helvetic sensibilities the wrong way.

To turn the page you either swipe your finger left or right or tap on the appropriate edge of the screen. Unfortunately, you can't tap on the bezel, a feature we'd have liked, and the new expanded tap zones in the Kindle Touch don't work here. With that device the "next" tapping region takes over much of the middle of the screen. Here that real estate is needed to bring up the menu.

Other

The Fire includes a version of Quickoffice out of the box, but it's capable only of reading Word-like, Excel-esque and PowerPoint-ish documents. If you want to edit or create you'll need to spring for the $14.99 Pro edition.

There's a simple email app included here as well. It isn't nearly as good as Android's iconic Gmail app, but it does work well enough and will sync with your Gmail account without much

bother. You are able to send messages with attachments, if you're so inclined.

Competition

Sure, there are plenty of other 7-inch tablets out there, but at $200 it's hard to find a direct comparison. The best of the moment seems to be the Samsung Galaxy Tab 7.0 Plus, which we've been testing and generally liking. But, a starting MSRP of $400 makes that hard to compare — even though it's thinner, lighter, faster and has full access to the Android Market. Another option is of course RIM's BlackBerry PlayBook, which at $349 is getting closer. In general we found the PlayBook to offer snappier performance, but that device hasn't exactly seen a flood of support lately and, while it is more feature-rich than the Fire, it has an even more limited app selection. The T-Mobile Springboard from Huawei is a compelling choice, a device that we surprised ourselves by liking quite a bit in our recent review. It's running straight Honeycomb and is available for just $180 — if you don't mind a two-year agreement. $430 off-contract is a bit harder to swallow.

Accessories

The Kindle Fire doesn't come with much in its Frustration-Free yet almost comically oversized box. (It's larger than the container Samsung chose to hold the Galaxy Tab 10.1.) Inside you'll find a micro-USB power adapter for charging and... nothing else. No micro-USB data cable is provided and, while we're guessing you have one or two dozen to spare at this point, the Fire is targeting a whole new demographic of tablet buyers. We'd guess many of them don't have a single one. The assumption is that they'll just get all of their media through Amazon, and that's probably a safe one.

Amazon offers a selection of cases and covers that range from simple cloth sleeves to rather more advanced (and expensive) Leather covers with integrated stands. We were provided with the $29.99 Zip Sleeve in Charcoal to try, which is simple and slim and does a good enough job protecting the stout slab within, but doesn't wow with functionality like Apple's SmartCover. If that one's not to your liking there are plenty more in various colors from various third parties — most of which cost

a good bit more.

It's worth noting that none of these cases have integrated Bluetooth keyboards. That's not because these companies are assuming nobody would want to do that much typing on here anyway (again, probably a safe assumption), it's because, of course, the Fire doesn't offer Bluetooth in the first place.

Wrap-up

The Kindle Fire is quite an achievement at $200. It's a perfectly usable tablet that feels good in the hand and has a respectably good looking display up front. Yes, power users will find themselves a little frustrated with what they can and can't do on the thing without access to the Android Market but, in these carefree days of cloud-based apps ruling the world, increasingly all you need is a good browser. That the Fire has.

When stacked up against other popular tablets, the Fire can't compete. Its performance is a occasionally sluggish, its interface often clunky, its storage too slight, its functionality a bit restricted and its 7-inch screen too limiting if you were hoping to convert all your paper magazine subscriptions into the digital ones. Other, bigger tablets do it better — usually at two or three times the cost.

So, the Kindle Fire is great value and perhaps the best, tightest integration of digital content acquisition into a mobile device that we've yet seen. Instead of having a standalone shopping app the entire tablet is a store — a 7-inch window sold at a cut-rate price through which users can look onto a sea of premium content. It isn't a perfect experience, but if nothing else it's a promising look into the future of retail commerce.

Tim Stevens is Editor-in-chief at Engadget, a lifelong gamer, a wanna-be racer, and a born Vermonter. Thanks to Francois Simond for additional information on the Kindle Fire.

BOTTOMLINE

Amazon Kindle Fire — **$199.99**

PROS

- Incredible price
- Very solid construction
- Easy access to lots and lots of premium media

CONS

- Middling performance
- No Android Market access
- Occassionally clumsy interface

Amazon's first tablet can't quite match the experience of the competition, but for half the price it doesn't have to.

Nikon D3S, iPod Classic and Klipsch's Image One headphones

BY ENGADGET STAFF

Welcome to IRL, an ongoing feature where we talk about the gadgets, apps and toys we're using in real life and take a second look at products that already got the formal review treatment.

We almost don't want to talk about our tablets and phones this week, just because one or two show-stoppers here and there have made pretty much everything we own seem wholly inadequate. So we'll tell you about the stuff we won't be trading in anytime soon. For James, that means a good pair of over-ear headphones, for Darren it's a $6,000 camera and for Daniel it's a 40GB iPod with "Dan Cooper is awesome" engraved on the back (19 year-olds, *right?*). No complaints this time: just a trio of Engadget editors sounding off on what's been worth it.

Making other cameras look ordinary

Thanks a lot, Nikon. And by "thanks a lot," I mean "thanks for making every camera that's *not* a D3S seem subpar." I worked alongside Nilay back in 2010 writing up a review of Nikon's flagship, and while Canon just recently dished out its newest gun-for-hire, the D3S still remains on top of the heap in Nikonland. For me, it has completely and thoroughly changed my perception of photography. In the worst possible way.

Truth be told, I can't even pick up a mirrorless camera or a low-end DSLR with-

out seeing how high I can jack the ISO. The D3S allows me to shoot at 10,000 ISO with practically no noise to speak of when compressed down to a web-suitable size, and even blown-up posters look like gems. In fact, I detest flashes now. Hate 'em. I always wonder: "how much better would this shot look with just natural light and the D3S' ISO range?"

But look, I get it. It's a $6,000 camera. It makes sense for a dramatically small amount of people. But in the five-plus years I've been writing for Engadget, I've only seen a smattering of true game-changers. Even two years after the release of the D3S, it remains a champion. It's *still* changing the game. And it has allowed me to take countless photos that would've been impossible with any other DSLR in the sub-$6K range.

I refuse to travel with checked baggage. I was recently gone a month with nothing but a backpack and a roll-a-board. Even though the D3S + lenses takes up a good 50 percent of my carry-on space, it's still worth it. Three shirts, a bodacious camera rig and a prayer that washing machines will come my way — it's the only way to roll. *— Darren Murph*

40 well-kept gigabytes

When you grow up poor, you look after the things you have. I still use my fourth-generation 40GB iPod as my primary portable music device and I can't see that changing. It was a Christmas present from the whole family ($600!) in 2004, but no sooner had it been bought than it was rendered obsolete by the iPod photo. (Apple seems to time its releases out of contempt for my buying cycles — I bought both of my iMacs a month before it announced newer and greater models. But I digress.)

Life with the 4G is beautiful: it's as responsive as it was the day I opened the box. I can't imagine replacing it because it meets all of my needs. It's currently on its second aftermarket battery pack and as long as they remain available, I'll keep swapping them out. The reflective back scratches very easily but has withstood seven years with me and even bounced back into position when I bent it in my ham-fisted first attempt to replace the battery. The screen and clickwheel all work as well as they did on day one and it's survived numerous drops, bumps and fiancées holding the slip-case upside down. The only effort I have to make is to never leave it in the car overnight, since the temperature drop causes functioning to cease — to the point where spending

two days recharging and then reloading the library is the only solution.

It's saved my bacon a few times, too. A 40GB portable hard drive (back in 2005, remember) when your Windows box dies and you've got coursework due is something of a godsend. While I've always got my iPhone with me, I refrain from using it for music in order to prevent wasting its already impoverished battery life — which is why my antiquated iPod never leaves my side.

— Daniel Cooper

Balanced sound, top-notch comfort

Headphones are often considered nothing more than just an accessory, not a gadget in their own right. Most people don't get past the pair that came with their media device, and it's such a shame to think about the countless hours of sub-standard audio that has needlessly been tolerated. Worst of all, upgrading your ears is easy so there really is no excuse!

As a music-loving tech journalist I've been lucky enough to try out more headphones than one person would naturally ever encounter, and the variety on offer can be somewhat baffling. Despite all of this, there is one set of cans I keep coming back to time and time again: the Klipsch Image One. I already owned a pair of their excellent in-ear S4i headphones, so I made the leap to the over-ear Image One with confidence. The sound quality — which is obviously of primary importance — manages to get the balance between clinical and pumped-up just right. While I think headphones should be as transparent as possible, I also think they should allow that transparency to be heard properly, which these do well. Many other headphones are so

wrapped up in being transparent, that they forget the basics such as comfort, and blocking the outside world. But the Image Ones are a joy to wear, even for extended periods — they sit almost perfectly atop your ear providing decent isolation along with that comfort.

Looks-wise these aren't exactly head-turners, but they are, at least, modern and ergonomically sound — cool enough to feel like you're at least a little bit down-with-the-kids. Plus, there is an iDevice friendly remote on the cord which makes quick volume changes and track-skipping easy. Personally, I'm in the habit of controlling things directly on the device, but that's simply a matter of preference. In short, there is no single reason why I keep choosing these over everything else in my collection, but the fact that I do tells me their brilliance lies in their all-around competence.

— James Trew

Lenovo IdeaPad U300s

BY DANA WOLLMAN

Review enough Ultrabooks and you'll start to wrestle with the idea of value. We've seen cheap ones that don't perform well and expensive ones that do. Things get *really* dicey when you throw in machines that cost a bit less, look good and perform well, but are nonetheless flawed in some key way — like having a sticky keyboard or a track-pad with a mind of its own.

For more than a week we've been testing the Lenovo IdeaPad U300s and, at the risk of spoiling this review, it's made it even tougher for us to stack up one imperfect Ultrabook against another. What to do with a well-made, speed demon of a machine that boots in less than 20 seconds but starts at $1,095 without an SD slot, high-res display or backlit keyboard? Are the U300s' stately looks, brisk performance and sound ergonomics enough to make up for a handful of absent features?

Look and feel

The thing about the U300s is that it's

not trying to be sexy, per se. Your first clue might be that instead of tapering to a razor-thin point, all MacBook Air-like, it narrows only slightly, taking on the shape of a closed book. In fact, the lid and bottom side jut out a little farther than the edges — a design choice that evokes pages stuffed between two covers. While we can't say that translates to any kind of ergonomic advantage when you're gripping its 2.95-pound frame in one hand, this is indisputably an understated, carefully thought-out design.

But the U300s is also pared-down and tasteful where other Ultrabook makers (we're looking at you, ASUS) perhaps went overboard. Like the Air, it's fashioned out of a single piece of aluminum — a smooth sheet that blankets the lid, bottom, bezels and interior. Other than a small metal logo on the lid and four tiny feet on the bottom, it's completely unadorned: no screws, no doors, no superfluous branding. Just a discreet, spun metal power button, a small, engraved IdeaPad logo, a sprawling trackpad and a bunch of perforated dots on the front edge that glow white when you turn on the machine and plug in the AC adapter. If you wanted to spice things up you could get the U300s in "Clementine Orange," though we like it even in staid charcoal ("Graphite Gray," officially).

One caveat: we learned the hard way that despite being anodized and sandblasted, the aluminum shell is actually quite susceptible to scratches (a long-standing gripe we have with the Air and other Macs, by the by). If you plan on slipping this inside a bag like we did, consider buying a sleeve to go with it.

Other than that, the U300s is as well-made as the MacBook Air or UX31 (and much more so than the chintzy Acer Aspire S3). It just appeals to a different sensibility. If the Air is a trendy status symbol and the UX31 is for fashionistas daring enough to rock a spun metal lid, the U300s falls into a third, safer category: it's timeless, about as classic as a cashmere sweater or stainless steel watch. It's simple, but not plain; premium, but far from gaudy. And while that might not be enough to satisfy people who get off on superlatives like

"thinnest" or "lightest," we're going to come out and say we're pretty smitten.

Except for this: it's the only Ultrabook we know of that doesn't have a memory card slot. Yes, it has all the other ports you'd expect on a machine this size, including USB 2.0 and 3.0, HDMI and a dual headphone / mic port. Still, every other system in this class has one. Even worse, we already dinged Lenovo once for omitting an SD slot (and backlit keyboard) from last year's IdeaPad U260. Why, Lenovo, why?

Keyboard and trackpad

Though the U300s' keyboard doesn't look any more promising than the other shallow, chiclet-style 'boards we've seen on recent Ultrabooks, it's obvious that Lenovo put its ThinkPad know-how to good use here. Now before you get too excited, we have to tell you that the keys have flat caps, and won't mold to your fingertips the way a ThinkPad's would. Still, as you'd expect from a Lenovo keyboard, it's sturdy, well-spaced and cushy enough that you needn't worry about whether you're pressing the buttons hard enough. We've recently tested a lot of laptops with shallow keyboards that left our wrists tense — it takes work, after all, to make sure each and every key press registers. Here, our hands felt relaxed, and our fingers almost always hit the right keys — a feat, since the Tab, Caps Lock, Shift, Backspace and Enter buttons are all undersized.

Like the Air, the U300s somewhat justifies its high price tag by doting so much attention on something as unavoidable as the keyboard. Still, for the money, it should have been backlit. The MacBook Air and UX31 come standard with it and here, it's something you'll miss even if you opt for the higher-end $1,495 configuration.

The U300s has an expansive glass trackpad that at first blush matches the

All in all, it has the best touchpad of any of the new Ultrabooks we've tested. Then again, that's not the most ringing endorse-ment, now is it?

MacBook Air's in both size and smoothness. We took to it quickly, but then again, we'll be the first to admit that our standards sank a little after suffering the Zenbook UX31's wonky drivers.

The U300s has a low-friction surface that makes it easy to drag the cursor across the screen and pull off multi-touch gestures. Lenovo also worked in some more unique gestures besides plain old pinch-to-zoom. You can also use four fingers to open a master control window with floating aero cards, showing all the windows and docs you have open. You can also swipe left or right with two fingers to scroll through wallpaper, and move four fingers left or right to scroll between items.

All in all, it has the best touchpad of any of the new Ultrabooks we've tested. Then again, that's not the most ringing endorsement, now is it? More than a few times, we felt some drag, and the cursor didn't go exactly where we wanted it to. Two-fingered scrolling works reliably, but you have to learn to apply a little pressure — more than you would on a Mac trackpad. (Pinch-to-zoom, at least, is comparably easy.) We hate to say it, but as good as it is, it doesn't quite unseat Apple here. Which is a shame, because with several well-made, high-performing models hitting the market, the biggest thing holding these upstarts back continues to be ergonomics — shallow keys and flaky trackpads.

Display and sound

Lenovo stuck the U300s with a 13.3-inch, 1366 x 768 panel, which is likely to rub some shoppers the wrong way, given that the MacBook Air has a 1400 x 900 display and the Zenbook UX312 steps up to 1600 x 900 pixels. Truth be told, the pixel count wasn't a problem for us as we scrolled through different websites and watched 720p videos at full screen. Still, all of the other Ultrabooks with such low-res displays (namely, the Aspire S3 and Toshiba Portege Z830) start at two hundred dollars less.

As for viewing angles, we had more luck dipping the display backward than we did forward. If we were on an airplane and the guy in front of us decided to lean all the way back, we'd be stuck with an almost unwatchable washed-out picture. We did have an easier time watching from off-kilter side angles, though the contrast ratio grew too severe as we got close to a 180-degree angle.

And, Lenovo included Intel Wireless Display, something we hadn't seen on an Ultrabook until now. In case you

haven't been following along, it allows you to mirror your display on a TV or monitor, which includes streaming 1080p video. While we've seen Best Buy bundle some laptops with the necessary adapter, in this case you'll have to pay $100 or so for a box like this that will interface between your TV and WiDi-enabled laptop. Without re-treading old ground too much, we'll remind you guys that every time we've tested WiDi we have been impressed by the fast, painless setup and fluid streaming. If you were to put your laptop right next to your TV, you might notice that the images on the two screens don't match up, but assuming you keep your notebook out of sight, you enjoy some pretty smooth video playback.

The SRS speakers on this machine deliver acceptable, innocuous sound. Rap songs sound slightly tinny, sure, but the sound system handles other genres, such as pop music, well. Still, it doesn't come close to the alarmingly loud Bang & Olufsen speakers on the UX31. The speakers here will get you through a *Lost* marathon and a one-person dance party, but it won't rise above the din of your next house party.

Performance and graphics

If you get the same $1,495 configuration we tested, you'll be treated to a 1.8GHz Core i7-2677M CPU, 4GB of RAM and a 256GB SSD. And we think it's pretty fair to say this guy plays in the same league as other Ultrabooks like the MacBook Air and Zenbook UX31. Its PCMark

Vantage score of 9,939 is sandwiched between what we saw from these other two laptops, and the margin is less than 600 points in both cases. On the other hand, while its 3DMark score of 3,651 nearly matches what we're seeing on the Portege Z830 (full review coming soon), the Air and UX31 are in a class of their own, with respective scores of 4,223 and 4,209. This despite the fact that all of these Ultrabooks pack Intel's integrated HD 3000 card.

And how does that JMicron 616 SSD fare? In the disk benchmark ATTO, read speeds peaked around 250 MB/s, while write rates topped out at just under 200 MB/s. In practice, the system felt plenty fast, though benchmark junkies might not be inclined to shrug off the fact that the UX31's SATA III hits read / write speeds of 550 MB/s and 500 MB/s, respectively. Rest assured, though, that's still worlds better than what you'll get with the S3, whose 5,400RPM drive maxed out at 80 MB/s reads and 75 MB/s writes.

So is the U300s the fastest? Perhaps not. Nevertheless, numbers don't

tell the whole story and in any case, it *feels* zippy. Lenovo promises it boots in about 20 seconds thanks to RapidDrive SSD technology, and indeed, we timed an incredible 18-second boot. With that kind of horsepower, it's no surprise that the U300s had no problem keeping up while we carried on with our usual routine of juggling browser tabs, downloading and installing programs and streaming web video. With that kind of real-world performance, we're not sure how many people will be able to tell the difference between the U300s' high four-digit PCMark score and the UX31's five-digit accomplishment.

Before we sign off on performance, we would be remiss if we ignored the U300s' heat management: it stayed cool, even once we started playing 720p videos at full screen. That's thanks to the same kind of breathable keyboard found in the last-gen U260, as well as Intel's Advanced Cooling technology, which Lenovo gets to use exclusively. We also didn't find ourselves distracted by fan noise, as is sometimes the case with laptops we praise for expelling heat so effectively.

Battery life

When it comes to battery life, too, the U300s performs similarly to its competitors, though it's by no means the most longevous. In our standard rundown test (movie looping, WiFi on, bright-

	PCMARK VANTAGE	3DMARK06	BATTERY LIFE
Lenovo IdeaPad U300s 1.8GHz Core i7-2677M, Intel HD Graphics 3000	9939	3651	5:08
Toshiba Portege Z830 1.4Ghz Core i3-2367M, Intel HD Graphics 3000	5894	3,601	5:49
ASUS Zenbook UX31 1.7 GHz Core i5-2557M, Intel HD Graphics 3000	10,508	4,209	5:41
Acer Aspire Ultrabook S3 1.6 GHz Core i5-2467M, Intel HD Graphics 3000	5,367	3,221	4:11
13-inch, 2011 MacBook Air 1.7 GHz Core i5-2557M, Intel HD Graphics 3000	9,484	4,223	5:32 Mac OSX 4:12 Windows
Samsung Series 9 1.7 GHz Core i5-2537M, Intel HD Graphics 3000	7,582	2,240	4:20
Lenovo IdeaPad U260	3,858	1,153	2:56

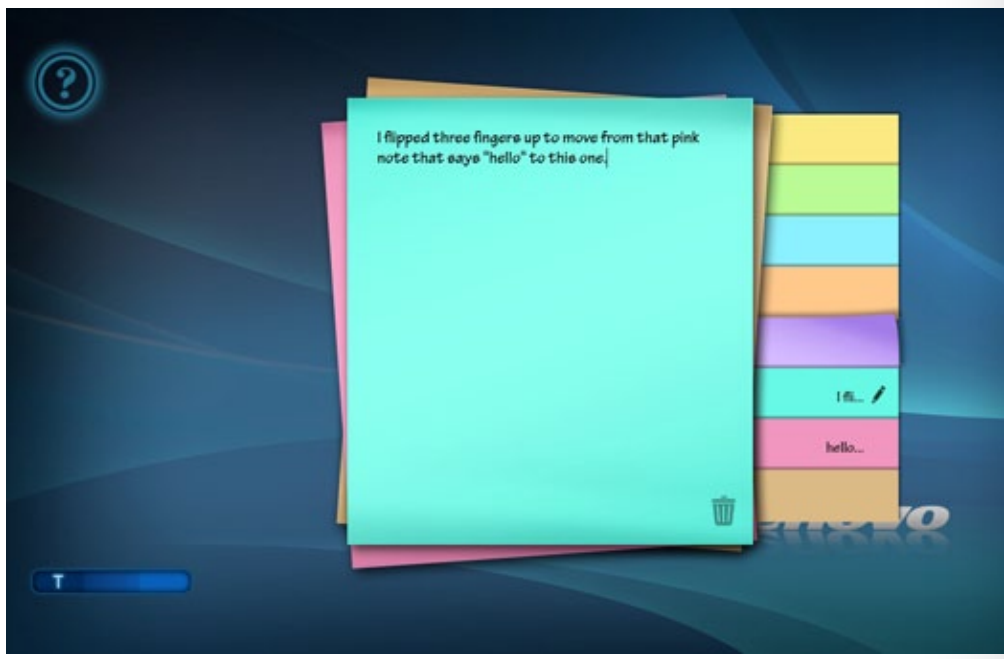
The higher the score the better. For DMark06, the first number reflects score with GPU off, the second with it on.

ness fixed at 65 percent), it lasted five hours and eight minutes. That's better than the S3's runtime of four hours and eleven minutes. Hell, it *tramples* the U260's pathetic three-hour runtime, but still, the Air, UX31 and Z830 all last at least 25 minutes longer, if not 40. Again, that's not a bad showing, but if you buy this it's not going to be because you heard this thing offers out-of-this-world runtime.

The U300s also borrows the same RapidCharge technology used in the ThinkPad X1, and promises to recharge to 50 percent capacity in just 30 minutes. That sounds about right, and dovetails with the lightning-fast rebound we observed with the X1. And here, you'll get 90 minutes extra battery life to begin with, which makes this tech feel like less of a crutch to compensate for weak runtime.

Software

We're happy to say Lenovo didn't saddle this thing with much bloatware. Aside from Google Chrome and a trial version of Microsoft Office 2010, it's refreshingly devoid of unwanted programs. It doesn't even come with security software, save for Microsoft's spartan Security Essentials software. That's only bad news if you're the kind of Darwin Award winner who spends $1,500 on a Windows laptop and then lets it roam around the cesspool of the interwebs, sans prophylactics. We suppose you'll download your security suite of choice pretty soon after unboxing it anyway.



In addition, Lenovo bundled some apps of its own. There's the sticky note program Easy Notes, in which you can swipe up or down with three fingers to cycle through different notes. Personally, we appreciated having them in a neat, color-coded list as opposed to having them pepper the screen like chicken pox. It's especially nice that you can see the first few characters of each note, even if it's not the one you have open, and it's also helpful that these virtual scraps of paper come in assorted colors by default (in Mac OS X, for instance, the notes are all the same color until you change it, which can make all those miscellaneous pieces of information bleed together).

Then there's Lenovo OneKey Recovery for backing up data and restoring it in the event something goes terribly, terribly wrong. What can we say? It's idiot-proof, holding your hand through either the back-up or recovery process. Then again, this is the entire kit and caboodle you're backing up here; if you want to cherry pick certain folders, you may as well sign up for a service like Mozy. Another perk: the U300s comes with Computrace's LoJack module embedded, though it's up to you to activate the service if you want to use it to track your missing laptop and wipe the contents remotely.

Configuration options and the competition

The U300s is available in two flavors, starting at $1,095 with a 1.6GHz Core i5-2457M CPU, 4GB of RAM and a 128GB SSD. Then, of course, there's the $1,495 number we tested, which keeps the integrated Intel graphics and 4GB of RAM, but steps up to a 1.8GHz Core i7-2677M CPU and 256GB of solid-state storage.

For those who want a bit more oomph, there's the IdeaPad U400, which can be configured with twice the RAM and either a Core i5-2467M or Core i7-2667M CPU. It's rated for up to seven hours of battery life, can accommodate up to 1TB in storage and has a slot-loading DVD-RW drive. Then again, if you need an optical drive on your slim laptop, the U300s and its brethren probably aren't exactly what you're looking for anyway.

And here comes the part where we stack all that up against what the other Ultrabooks have to offer. Needless to say, it's a fairly small fraternity right now, with the Air, UX31, Aspire S3 and Portege Z830 being among the only other models this thin, powerful and affordable.

As far as specs go, we've already made our feelings known: the U300s should offer more features for the money, or perhaps Lenovo should just react to the market and cut the price. The 13-inch MacBook Air starts at $1,300 with a backlit keyboard, and both it and the

UX31 have high-res screens (1440 x 900 and 1600 x 900, respectively). And again, most other laptops — even the cheapies — have SD slots.

Other than that memory card reader, the U300s has a strong selection of ports. With USB 2.0 and 3.0, HDMI and an audio socket, the only thing it's missing besides the SD slot is an Ethernet jack. And really, the only Ultrabook we know of that combines *all* that is the Portege Z830. Otherwise, the UX31 has mini-HDMI and mini-VGA and ships with Ethernet and VGA adapters. The Air has two USB sockets, discrete headphone and mic ports and Thunderbolt, which is hard to get that excited about when there aren't that many peripherals compatible with that standard.

But if we're talking intangibles, the U300s still manages to mop the floor with much of the competition. The company got both the keyboard and trackpad right, and that counts for a lot. And while its performance and battery life don't best the competition, they're at least similar — virtually indistinguishable in real-world situations, to be hon-

est. If it were us, we'd rather spend hours working on the U300s than the UX31 or the S3, thanks to the superior keyboard and touchpad. And yes, the U300s' pad could still use a touch of fine-tuning, but it's far closer to matching the experience you will get with the MacBook Air.

Wrap-up

At its current price ($1,095 and up), the IdeaPad U300s isn't the best value, but it is one of the better Ultrabooks we've seen thus far. People comparing this side-by-side against other skinny laptops will note that it doesn't have a high-res display, backlit keyboard or memory card slot — things Lenovo left out of last year's U260, as well. By those metrics, both the MacBook Air and UX31 win, handily.

Like Apple, though, Lenovo is inviting you to pay more for what it knows is a polished, painless experience. In that sense, your $1,095 will be well spent — the U300s is fast with good battery life, Intel Wireless Display and the best keyboard / trackpad combo we've seen on an Ultrabook. That doesn't mean Lenovo's off the hook: the Air has a slightly more fine-tuned trackpad *and* it brings an SD slot, sharper display and backlit keys. Still, the U300s is a success where it really counts, and in areas where other Ultrabooks have struggled. We'll keep our hopes up that Lenovo adds an SD card and backlit keyboard the next go 'round, and in the meantime, we suspect the company will sell a few more of these if it trims the price to undercut all the other guys who offer better specs for your buck.

Dana Wollman is Reviews Editor at Engadget, a marathoner, lover of puns and a native Brooklynite.

BOTTOMLINE

Lenovo IdeaPad U300s — **$1,095+**

PROS	CONS
• Tasteful design, well-made	• No SD slot
• Comfortable keyboard, smooth trackpad	• No backlit keyboard
• Insanely fast boot time, runs cool	• Low-res display

On tap here: fast performance, a tasteful design and the best keyboard / trackpad we've yet seen on an Ultrabook. It's too bad, then, that at this price it's missing key features like a memory card slot, higher-res display and backlit keyboard.

DISTRO EXCLUSIVE
READ IT HERE FIRST

Stephen Elop: Reinventing Nokia

BY TIM STEVENS

Hot on the heels of Nokia World 2011, Tim Stevens sat down with Nokia's outspoken CEO, Stephen Elop, to talk about the company's commitment to Windows Phone, Lumia's stateside debut, Android fragmentation and the death of MeeGo.

interview

TIM STEVENS:
You're coming off of a pretty big launch for you at Nokia World just a couple weeks ago in London where you showed off your first Windows Phone devices. We got a lot of information about European launches and worldwide launches, but not a lot for the American audience. Can you give us any more information about when we might be seeing those devices or perhaps some other devices on these shores?

STEPHEN ELOP:
So first of all, you're right, Nokia World for us in late October was just a fantastic milestone, because we were able to show off the first Nokia Lumia devices, both for Windows Phone, for our own differentiation, just some beautiful products. We were also able to share a number of new products that we're introducing for our mobile phones environment as well as location based services, music and a whole variety of things. So it felt

like a new dawn for Nokia. We're really pleased to be able to do that, and, yes, people are watching very closely. What are we doing from a launch perspective? We're starting in Europe with 6 countries, adding a few countries later this quarter and then what we said is, early in 2012, we're coming into the United States. We're taking a very deliberate strategy of moving region by region, in particular to make sure that as we enter each region, we're entering with the products, technologies and services that are right for those regions. Because we understand that the American consumer has certain aspirations, certain requirements that we need to meet uniquely and we're lining up very well to do that. So early in 2012 you should see some very exciting Lumia products from us.

TIM: Ok, so we're not going to get any more specifics about these products than that today, then?

ELOP: Only here? Now? No, sorry.

TIM: So, certainly you have something of a challenge here in the American market because at this point Nokia doesn't exactly have strong brand awareness. What sort of things are you going to do to improve that ahead of those launches?

ELOP: Well, it starts, first of all, very much with great products. We have to make sure the products themselves are being well received, that consumers really begin to understand what they represent and the early feedback obviously from the Lumia launch a couple of weeks ago is very positive overall. We're very pleased with the feedback we're seeing, the reviews that are landing and so forth. What we'll be doing as we ramp up into a launch is sharing more and more information about the products we'll be launching here in the US. Clearly, because this is an important launch for us, we'll be making the necessary investment in marketing to ensure that not only is it in the various forms of media people are experiencing, what we're offering, but also as we begin the introduction to make sure that right down to individual retail sales professionals who are presenting the products, that they've been properly trained, that they've seen these devices and that they've been able to experience them themselves. So that when you walk into a store, there's someone knowledgeable who can say, "Yeah, you may be used to static application grids that have been around for a few years but here's a new experience, here's a new point of view, and it comes from a great company, Nokia." And we think that's going to help a lot.

TIM: So this isn't so much about selling Windows Phone as it is about selling Nokia hardware as well?

ELOP: Well, I think that you have to sell the whole experience. The whole experience is a combination of beauti-

> **... Nokia has a long history of producing very fine products when it's very focused on something. So we've placed a very strategic bet on this strategy.**

fully designed hardware. It's about the promise of the Nokia brand and what it stands for. It's about the operating platform, for sure, but it's also about all of the services that support it, the services like navigation, location based services, music, search. It's that whole package that people are really purchasing today, which is why we talk about it being a war of ecosystems rather than a battle of devices, and we'll very much be presenting that whole Lumia experience which includes the Windows Phone platform from Microsoft.

TIM: That package, that the ecosystem is hugely important for Nokia at this point, that Nokia has made a huge commitment to Windows Phone... In fact, we got a quote from Chris Webber from, I think, earlier this year, President of Nokia USA saying, "The reality is that if we are not successful with Windows Phone, it doesn't matter what we do," which effectively makes it sound like this is kind of a make-or-break deal for Nokia, at least in the United States.

ELOP: It's a very strategic move and I think when I get asked the question about, "How does one make Windows Phone successful? How does one make Nokia successful?" It's by making sure we're doing our best work, uniquely for and totally focused on that. We're not trying to do all sorts of platforms and different things, we're saying we're gonna make this one great and Nokia has a long history of producing very fine products when it's very focused on something. So we've placed a very strategic bet on this strategy.

TIM: And now, here in the United States of course, carrier pricing is what's very important. What sort of deals are you working to put in place? Can you give us any more information as far as carriers or pricing or anything like that at this point?

ELOP: All we're saying at this point is that we're working with multiple operators. So, working with them to make sure we have competitive products, competitively priced at appropriate levels. It's also the case, as I said earlier, that we have to be thoughtful about

what is important in the US market. There's various things today in terms of application capabilities and the number of apps that are there, that's clearly an area of focus, but, for example, one of the things we announced at Nokia World was this unique relationship with ESPN, where, for those people that are interested in sports, we'll have unique content and unique capabilities on the Nokia Lumia devices that are served up by ESPN, different than and in addition to anything you can see on the other platforms. So we've been very thoughtful about how we can do things that are unique and relevant for the US market.

TIM: What does ESPN get out of being exclusively partnered with Nokia? That was one thing that we were wondering: why would they effectively lock themselves to Nokia Windows Phone devices?

ELOP: It's a great question and of course when one comes to understand Nokia and its reach on a worldwide basis and to understand the aspirations of a company like ESPN to have a broader footprint. While Nokia in the US has much work to do, in other regions in the world we're the strongest brand, and I mean strongest of any brands, not just mobile devices. And so the opportunity to introduce something like ESPN to many people around the world is something that's of advantage to them as well. So, in some ways, ESPN helps us in the US and we can help ESPN in many other markets including the US as we introduce these devices.

TIM: Windows Phone is known to be pretty restrictive in terms of what you can do. Certainly on Android you can skin that and basically do whatever you like. Windows Phone is much more restrictive. Is this how Nokia is going to look to distance themselves [with] custom offerings like Drive and like ESPN?

ELOP: We are absolutely going to use hardware, software and applications and services to differentiate the Nokia Lumia experience, and that's relative to Android and Apple, but also within the context of Windows Phone. Although our highest priority, clearly, is to compete with Android and compete with Apple. So there's no question about that. In terms of the Android environment being less restrictive, that has some challenges and I think some of those challenges are apparent when you look at the different and competing user experiences. And so what does it stand for? What does it really look like, and how should I think about that? That fracturing that you're seeing, that fragmentation that's clearly being introduced and is causing more difficulties now is something that we're trying to strike a balance with. It is the case that the live-tile experience, that unique user experience that comes on a Windows Phone device that we're so proud of, that is the type of experience, and here's an example of it...

TIM: The 710?

ELOP: The Nokia Lumia 710… This type of experience is iconic in this type of environment, and so, while one could say, "Well let's change that around to make it different." In fact, this is what is iconic for this particular environment and that's something we want to preserve and protect, and not let go in all sorts of different directions, because all of a sudden then its value would be diminished.

TIM: Now on Android, though, do you think that skins are adding to the equation, that they're actually making phones easier and better to use for the consumers or are they simply adding confusion and fragmentation. You mentioned fragmentation, which is, of course, the buzz word — do you really think that's something that's holding Android back or that it's helping?

ELOP: Fragmentation is *not* a buzzword. I think it's a very real concern that in any operating environment one has to be concerned about. There have been previous quasi-open approaches of operating platforms. You may remember something called J2ME. And I know, in my previous lives, when we were trying to establish some capabilities on J2ME and discovered that at the point we entered there were 70 different variants of this, scattered all over, making it very difficult to develop in a consistent

way. Of course, what we want to do for developers is to make sure that there's a consistent platform that allows them to build something that they know can reach all of the corners of the Earth and that's part of our promise.

TIM: Fragmentation is definitely an issue but what about skinning? Skinning is a form of fragmentation that's making Android look differently, but is that visual differentiation a positive or a negative from a consumer's standpoint?

ELOP: Well, I think it depends on the skinning and whether someone's done a good job, but, at the highest level, when you're trying to say, "Hey, this is what a particular operating platform should stand for, here are the user interaction models." If each one of those platforms is different, then ultimately, the developer, to what standard are they delivering? Or is it the case that your application is going to be to a standard that's different than any of the skinning, thereby confusing the consumer? We believe strongly in, whether it's a consistent industrial design, user experience design, that there are certain models that have to be well preserved for the developers and ultimately for the consumers. So, in the end, if everyone's skinned in different directions, I think that's a real problem.

TIM: Do you have a personal preference of stock Android versus any of the other skins that are available?

ELOP: No, I always *experiment* with all of the competitive devices. The only thing that consistently surprises me is how much I have to relearn every time I use a different device. You can see the underpinnings there, but more and more of the skinning is just more and more of a problem.

TIM: Now, obviously, there's been some major work at Nokia to get to the point where you are today and indeed there have been some major cuts, effectively shedding off some of the Symbian developers and thousands of jobs have been lost. That must have been a very difficult thing for you. How did you face that challenge?

So, in the end, if everyone's skinned in different directions, I think that's a real problem.

ELOP: Anytime we're making a decision that affects an employee or a community or anything like that, that is the hardest decision, that is the one that is most agonizing, because it's not about looking at numbers, it's about realizing that it's individuals that you're affecting. At the same time, we also have

the obligation to make sure that the rest of the company thrives, that everybody else has a chance for employment, that we're doing the right thing, not only for our employees, but for our shareholders. So you have to strike that balance, and responsible business people have to make those decisions. So it's difficult. The one thing I'm *very* proud of is that, as a result of the structural changes we're making, the strategic changes, you are seeing results, more than people expected, sooner than people expected, at a higher level of quality than people expected, already in the early days of the implementation of the strategy. And that's ultimately how we'll be judged — is if we made the right decisions that lets Nokia compete more effectively and move into this new dawn from a position of strength.

TIM: Another apparent cut on the software front is the MeeGo operating system, which is on the N9. We just got an opportunity to review the N9 and we all loved the device, we all loved the operating system. Is that something that we might see get life because... I guess the question is, are you surprised by the response with the N9?

ELOP: No, not at all. What we've been very deliberate about, and we've said this repeatedly, is we believe there are certain elements of the N9, certain things that make the N9 the beautiful device that it is, and that includes the industrial design, the Swype user experience that we've introduced, as well as the development environment, the Qt platform that is part of the N9 product. What we've also said is each of those three critical elements that defines the N9, that brings it to life, will live on in future Nokia products. Now, that became quite apparent at Nokia World in one example, where we showed this device — the Lumia 800 — and everyone said, "Oh, man, you took the beauty of the industrial design of the N9 and landed Windows Phone on it," and that's precisely what we did. So that's an example of how some of the elements of the N9 will live on. We've also given some clues about the Qt development platform. On the same week as Nokia World, we had a Qt developer conference—I believe it was in Germany. We had the largest ever turnout of developers for the Qt development environment, and why is that? In part because we said that Qt would serve as the foundation for delivering applications to the next billion. In other words, our mobile

phones business, primarily in emerging markets and so forth, huge market opportunities for developers and for Nokia, alike. So we've signaled that Qt lives on and has a very big opportunity ahead of us. We haven't signaled about the user experience, but we have put it on record that you will see that live on. So stayed tuned.

TIM: So you see that moving down market, then, instead of on very high-end devices?

ELOP: Like I said, stay tuned. It's going to be very interesting. We've tried to take the gestalt, if you like, of the N9, what makes it unique and at the end of the day, the underlying plumbing and elements are important but there are certain things that really resonate. The reason you said it was a beautiful device is not because of a particular memory manager, it's because of particular parts of the experience, and we've identified those with our consumers and we'll have them live on.

TIM: In the past, Nokia has done many special edition phones, very high-end phones, things like that. Is there something that we might see, a new generation N9 running MeeGo, a limited edition device for phone connoisseurs?

ELOP: The idea of having devices for connoisseurs, high-end devices and specialty devices is something that you will still see from Nokia; there will be

examples of that. What we've said about the underlying MeeGo environment, however, is that for now it's moving into the lab. Who knows what comes out of the lab. Stay tuned for that, but, nonetheless, you'll see some interesting specialty things over the years ahead.

TIM: Could we see Nokia effectively developing hardware that's running multiple operating systems? For example, HTC has many devices that you can purchase that have been very subtly modified as you go from Windows Phone to Android. Could we see you doing something similar like that for higher-end devices or are we only going to be seeing Windows Phone on the higher-end for Nokia going forward?

ELOP: Our strategic focus is on Windows Phone, and what I'm trying to do

as we go through this transition is not to become a company that's trying to do a bit of everything, or provide that opportunity. But first and foremost, as we go through this challenge period, is say, "Look, we've got to do this as best we can, maximum effort on those." So I would, in the near term, say we're going to be focused on, for the smartphone area, Windows Phone and obviously other work for the emerging markets.

TIM: The Lumia 800, which we have here, is obviously something of an offspring from the N9. At what point did those two branch? Presumably they have some kind of a family tree in common, some kind of a similar ancestor of a prototype. At what point did the two development plans split?

In terms of the family element of it, the real family element is in the industrial design, the manufacturing process.

ELOP: In terms of the family element of it, the real family element is in the industrial design, the manufacturing process. Everything down to the individual milling of these tiny little holes for the speakers, the manufacturing processes and how to do that at scale, that's the commonality that passes through this. Now, when we were in the process of coming to agreement with Microsoft, we were thinking right from the beginning that if we do this, if we go in this direction in partnering with Microsoft, what is the route for getting the first products to market? What design language? How do we do that? And, of course, we were well along the road with the design language that you see in both the N9 and the Lumia 800, and we said, this is something that is *so* Nokia, this is something that we are so proud of, let's use this. So right from the beginning of our time with Microsoft, which we began formally in February, signed the deal in April, but we knew in February that, okay, we're going to be taking advantage of something that we have invested a great deal in. And I think that this is one of the great strengths of Nokia. Whether it's in industrial design, whether it's in the photography and the use of high-end optics, whether it's in audio and all sorts of different areas, we have a *whole* collection of assets that we can use for differentiation and clearly we are bringing those to our Windows Phone products.

TIM: So it's not necessarily a common architecture between the two, more a common design? Common attitude?

ELOP: That's the correct way to think

about it, because it is different chipsets and things like that. So from an engineering perspective, it is different inside a Lumia device than it is in an N9.

TIM: How, then, did we lose the front-facing camera, for example, on the 800 versus the N9?

ELOP: We had to make some decisions for the markets that we were first entering into, what elements were most important balanced against price points we wanted to achieve, and also knowing what future devices and capabilities were coming. So all of those factors were brought together and we made a series of decisions as how to proceed.

TIM: One of the other things that was lost was NFC, which is common in the N9 and it's not supported on Windows Phone at this point. There's also some other things like the dual-core processor, which is not supported on Windows Phone. Is that frustrating for you that Windows Phone is lacking support for features that are more and more common on Android devices, for example?

ELOP: No, it's not frustrating because we have good visibility into, and huge influence over, the future of Windows Phone.

TIM: So you know what's coming.

ELOP: I know what's coming. I know

what's ahead. I also know in different markets at different timing, what's important, thus the sequence in launch. So I have a good sense of that. One of the things that I think is really important, though, is, at the end of the day, what really needs to land well is the quality of the overall experience. So when people talk about different processors, dual-core, single-core, all very important questions, but when I compare the quality of experience of a Nokia Lumia 800 and how well it's been tuned and optimized, and put it side by side with devices that purport to have "more power," I'll put our experience against any other experience all day long. Of course for the consumers, at the end of the day, this is what they're going to be experiencing and doing a good job on that really makes a difference.

TIM: That's only going to get you so far, at some point Windows is going to have to support dual-core processors. Is that something we can expect for Apollo? How much do you know about the next version?

ELOP: I know a lot about the next version, but I can't share all the details with you.

TIM: How much power do you have to shape that? For example if you wanted to tell Microsoft that NFC is dead and Bluetooth 4.0 is really going to be the next big thing, is that something that you think you could lobby Microsoft to do?

ELOP: So, *lobby* it's more than lobby—we work jointly. We jointly plan both the future of both the software and the hardware strategies. So we have a common team of people who works through those and those people collectively have to listen to consumers. They also have to imagine things that consumers may not yet know is important, but we think will be important and we want to set a direction or have innovation. They have to bring those factors together and they have to balance all that against physics, in terms of how many engineers for what period of time. With what degree of risk will it take to deliver a product with a certain necessary quality? And so those people in a room have to make decisions: this is more important than that; this has to go before that. That's a constant discussion, but it's obviously very important in our relationship, and we are an active and *very* involved participant in that process.

TIM: So if you guys are this… tight, wouldn't it make sense for Microsoft to just exclusively work with Nokia, and basically focus on you and have you guys do the hardware? Let them do the software and have this beautiful partnership that can make amazing devices?

ELOP: We think it's advantageous to the ecosystem to have other partners, as many partners as we can. You saw

recently in an announcement between Microsoft and Samsung where Samsung was turning up its investment in and support for Windows Phone. That's good news for Nokia, because one has to think strategically in terms of who's the competition, and the competition isn't an HTC Windows Phone or a Samsung Windows Phone. It is very much Android and Apple. We have to think that way and so our relationships with a company like Samsung get complicated. They have Android devices — I want to compete really hard with those. They have Windows Phone opportunities — I want to partner with them and collaborate to see how best we can support the ecosystem. And we happen to be a very large customer of theirs from a component side. So you can imagine the discussions, they're complicated, but that is today's business environment, and you have to think in a nuanced way through all of that.

TIM: Do you think that other partners are at all concerned with this partnership between you and Microsoft? Are they afraid of you getting preferential treatment? Are you getting any preferential treatment?

ELOP: I can't speak to what they feel or what they fear or whatever. I think what they are saying most right now, is thank goodness that there is another ecosystem that's welcoming partners, that's establishing relationships in a way to move it forward, because as you see the patterns with Android and the recent acquisition of Motorola, or the *proposed* acquisition of Motorola, questions are being raised. What does this mean in the Android ecosystem? And I don't know the answer to that. No one, perhaps, knows at this point how that plays out, but thank goodness there's another opportunity, and of course you hear that from other operators and so forth. So I think that this opportunity with Windows Phone is a good one and needs to be pursued.

TIM: You launched two Windows Phones at Nokia World, the 800 and the 710, which is a slightly cheaper device but not *exactly* cheap. You also had the

S40 device — the Asha devices — which are more intended for developing markets and that type of thing. Do you think that at some point Windows Phone will move down to the extremely low-cost devices? Will we be having Windows Phone devices in developing nations?

ELOP: First of all, our intent with Windows Phone is to cover a broad range of price points. So that means moving down, but also the possibility to move up as well. There's a broad range of opportunity that exists there, and that's a very deliberate part of our strategy with Microsoft, is to make sure that they're covering a broad range of price points. Now, that being said, regardless or independent of Windows Phone or any other operating platform, there is a challenge and that is in terms of how far down you can go in price. There's always going to be some point below which you have to do something a little bit different. Because the way that the price of the devices is moving down is by reducing memory, reducing processor, reducing screen, reducing graphical capability. Whatever, you're taking stuff away to drive the cost of the device lower and lower. So whatever your premium experience is on each of the operating platforms, whatever that premium example is, that means that below a certain price point you can't deliver that premium experience, because you don't have the processor or memory or whatever is necessary to deliver it. So you have to make a decision, below that price point, whatever it is, you need something else. It could be a scaled back version, it could be something entirely different, but you have to address those markets differently. And each of the different operating platforms has to deal with that reality. It's a statement of physics more than a statement of business decision.

TIM: And that something else is S40 for you right now.

ELOP: Today it's S40.

TIM: How much longer do you think that will be the case?

ELOP: That it's S40? Well, S40 is a very important platform for us. Tens of millions of devices shipped every quarter — I expect that to continue for a long period of time and at the same time, we announced, as part of our strategy announcement back in February, that we are investing more in the development of activities in that low-end space. We haven't said how precisely, but we've clearly signaled that something's going on there, so an opportunity for more discussions in the future.

TIM: How about the Chinese market? We've seen issues with Microsoft and Windows Phone in the Chinese market due to social network integration. Is that something that you can give us some information on? How you might will be able to bring Windows Phone to China?

> **We're helping Microsoft and working with them to make sure that we land well in the Chinese market, in a way that works for the Chinese market.**

ELOP: As we said a couple of weeks ago, we will be bringing Nokia Lumia experiences to China in the first half of 2012. We believe that in order to do that successfully, you have to properly adapt to the local market conditions and environments. Nokia, as a very large player in the Chinese market is really well positioned to know how to do that, that's expertise we bring to the Windows Phone environment. We're helping Microsoft and working with them to make sure that we land well in the Chinese market, in a way that works for the Chinese market.

TIM: So we might expect a customized version of the Windows Phone operating system itself with some functionality extracted?

ELOP: What you should expect is that in any environment there are certain things that need to be done to make it a complete experience. That could be the provision of different services that are unique to a particular market, it could be different billing methods, it could be different radio stacks and so forth.

TIM: Nokia effectively introduced the world to mobile gaming with the game *Snake*. Is that something that we might see on a Windows Phone at some point?

ELOP: You know, there's been talk about it, but I'm not sure if that's going to be immediately on the agenda. But the broad response to that is we're very deliberately bringing unique Nokia experiences to the Lumia platform. At Nokia World, you saw that with location based services, you saw that with unique music capabilities, you saw that with our ESPN partnership. So a number of examples of how, yes, whether it's a particular game or a particular experience in general, we will be bringing that uniquely to the Nokia Lumia environment.

This interview was originally filmed as a segment for the Engadget Show, it has been transcribed and reformatted for publication in Distro.

Samsung Galaxy S II Skyrocket

BY BRAD MOLEN

Who knew AT&T's version of the Samsung Galaxy S II had a younger, larger brother on the way? Just a hair over a month after the carrier launched its flagship Android device, it's already set for another go-round. This one, the Galaxy S II Skyrocket, offers a larger display and "true" 4G connectivity using LTE — yes, it's a pioneer blazing a new trail to Ma Bell's wild and untamed frontier, right alongside the HTC Vivid. It's time to answer the burning questions: what kinds of speeds are possible on AT&T's LTE network? Is the series' legendary battery life up to snuff on the next-gen network? Join us to find out.

Hardware

By being a member of the Galaxy S II family, you've already come to know

what to expect in the Skyrocket's hardware. The usual suspects are present: 1GB of RAM, an eight megapixel rear camera with an LED flash and 1080p video capture, a two megapixel front-facing camera and a WVGA Super AMOLED Plus display with a tried-and-true RGB matrix. Yet each device that bears Sammy's Galaxy S II logo still adds a few unique characteristics to give it a personality of its own, and the Skyrocket's definitely no exception.

The Skyrocket is known as the Samsung Galaxy S II LTE in other parts of the globe for its obvious inclusion of next-generation network connectivity, a feature that certainly helps the phone stand out from the rest of the pack. It, like the HTC Vivid, has the heavy burden of ushering in a new era of smartphones on Ma Bell's lineup — not unlike the LG CU500, the pioneer for HSDPA (3G) on Cingular a distant five years ago.

The Skyrocket brings back recent memories of T-Mobile's design sensibility. On the front it offers a 4.5-inch WVGA Super AMOLED Plus display and brandishes the same rounded corners and four capacitive touch nav buttons on the bottom. Underneath the

glass, it follows T-Mo's lead by switching from the stellar 1.2GHz dual-core Exynos CPU to a 1.5GHz Qualcomm APQ8060 (a Snapdragon S3) — likely due to the lack of LTE support on Sammy's homegrown SoC. It also has virtually the same dimensions, measuring in at 5.11 x 2.71 x 0.37 inches (129.8 x 68.8 x 9.49mm), making it thicker than the T-Mobile iteration by 0.1mm. With the international model measuring 8.49mm and the Epic 4G Touch 10mm, this puts the Skyrocket near the beefy end of the GS2 spectrum. Oh, and did we mention beef? At 4.6 ounces (130g), the Skyrocket is actually lighter than the 4.77-ounce (135g) T-Mobile model and stays even with Sprint's Epic 4G Touch.

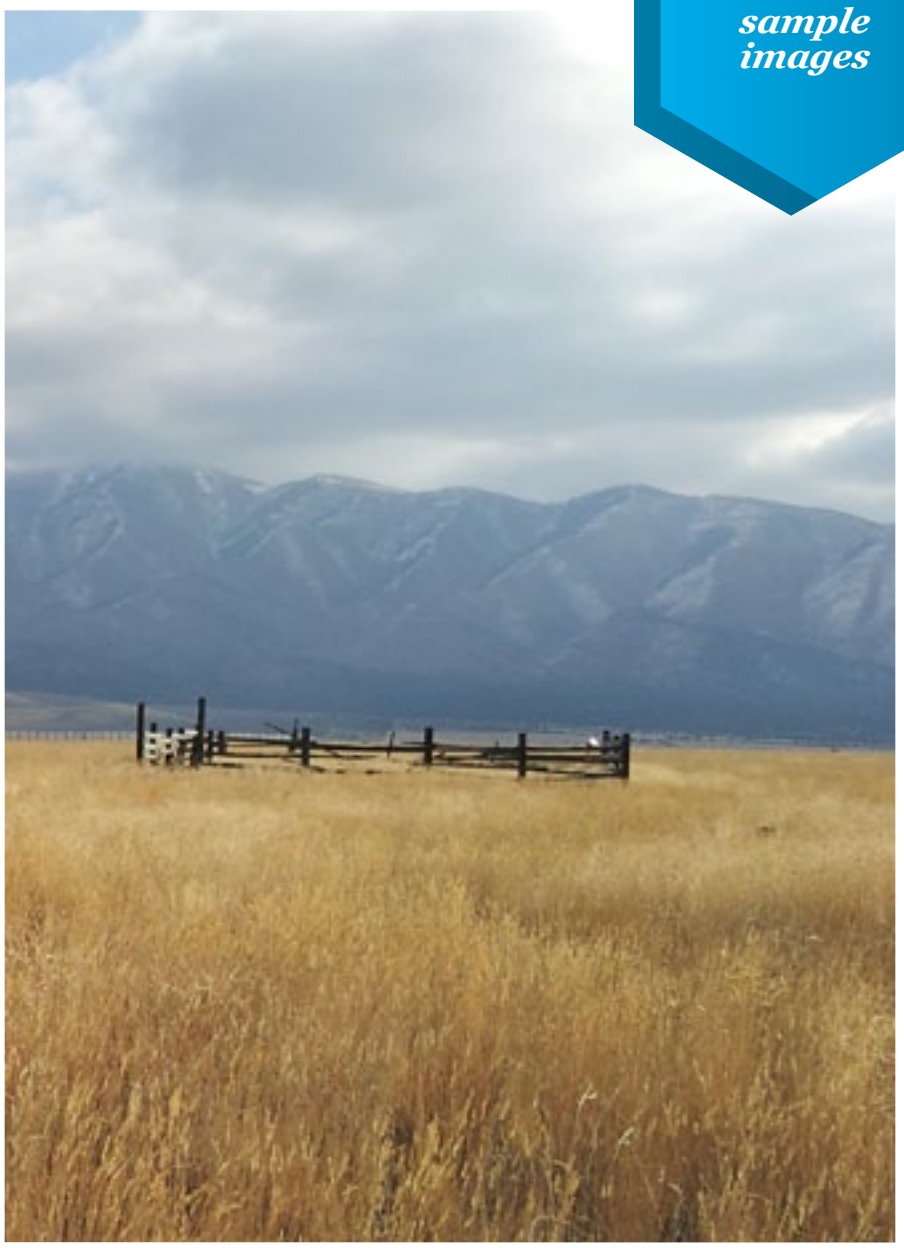
But even with its extra heft, we didn't seem to mind. Sure, coming out with the thinnest phone is all the rage these days, and we enjoy a wafer-sized device as much as the next person. However, level of comfort is more noticeable than fractions of a millimeter, and we felt right at home with the Skyrocket, with only one major exception: its battery cover is as smooth as a baby's cheek, making it incredibly slippery in our hands. We appreciate the textured back found on the other phones in the series because they add just enough friction to keep the device from getting dropped. On the bright side, at least Samsung and AT&T refrained from giving the Skyrocket a glossy finish, which would've made the handset a surefire fingerprint magnet. It actually reminded us of the battery cover found on the T-Mobile Galaxy S 4G.

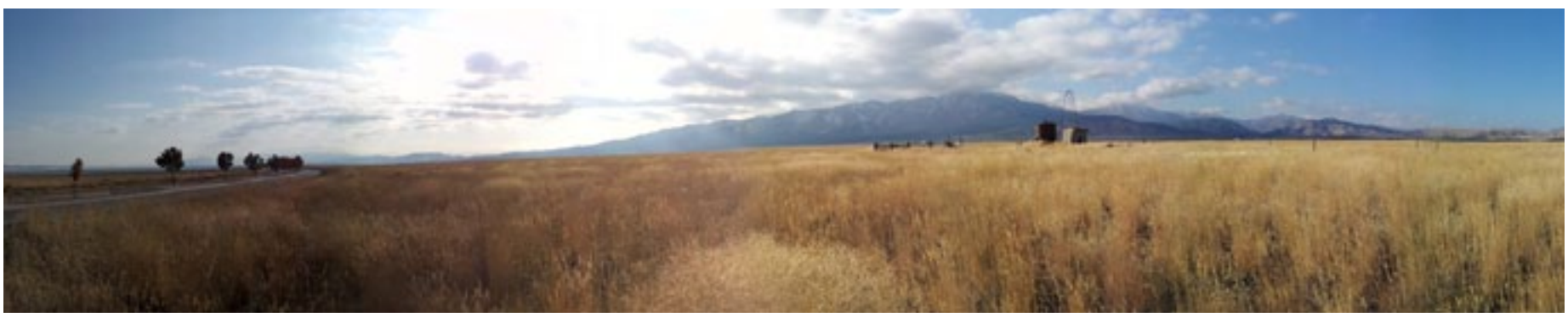
As to be expected, the Skyrocket's Super AMOLED Plus display is always worthy a mention. Our minds still haven't been changed about the gorgeous non-PenTile screen, though we're looking at the horizon with hesitancy as new handsets featuring 720p HD resolution are making their debut this holiday season. The RAZR's qHD PenTile display pales in comparison to the Super AMOLED Plus found on every Galaxy S II, but the 1,280 x 800 resolution on the Galaxy Note would defeat either device soundly in a bar fight. And it's only getting better: the HTC Rezound, for instance, sports a full HD display on a 4.3-inch screen, resulting in 341ppi — which, if you recall, is higher than the iPhone's Retina Display. Regardless of how beautiful the Skyrocket's screen is, keep in mind that it's now two steps behind the top-of-the-line — a fact that display connoisseurs likely won't overlook, especially when they're forking out $250 for a brand new handset that they'll commit to for two years. How's it going to compare with the state-of-the-art devices that come out at CES 2013, just a little over a year from now?

Camera

Since the imagery has stayed identical within the Galaxy S II's family, the Skyrocket's camera retains the same eight megapixel sensor and innovative UI. This means the sensor had a few struggles in the narrow dynamic range, causing washed-out images in direct sunlight and murky ones in low-light conditions. In-between, however, only the 12MP Nokia N8 camera rivals

sample images





this series' imagery.

Fortunately, you have a plethora of settings you can tweak to make the best of those extremes, such as white balance, ISO, metering, focus mode, exposure and contrast, among plenty of others. And even better, you can customize your preferences, giving you the chance to put the ones you use most into a handy sidebar on the left side of the screen.

The Skyrocket also has the same stellar 1080p video capture performance we've grown used to loving in the series, with quality that matches its counterparts. But just like on the T-Mobile version, the camera would occasionally take an extra second or two to find its focus in the middle of a video. This happens mainly when changing scenery, as we noticed that the focus generally locked when filming a location for a lengthy amount of time.

Software

What shows up on the screen is part of the experience that has become so familiar to us as we've progressed through each Galaxy S II review. The dissimilarities between this and the rest of the group are few and far between. The Skyrocket comes with Android 2.3.5 preinstalled (versus 2.3.4 on the non-AT&T iteration) dressed up with TouchWiz 4.0 on top. These days, seeing an Android version start with a two may feel like a disappointment, but AT&T has come out on record declaring that it will for sure be updated to Ice Cream Sandwich — we just have no idea of when that will happen. For now, however, the user experience was identical to that of its predecessor. As before, we loved the opportunity to shove whatever apps we wanted into special folders in the App Menu, eliminating a huge amount of clutter from our valuable screen real estate.

There were only a few minor course corrections in the lineup of pre-installed apps. Mog Streaming Radio is one such newcomer — likely to accentuate the device's fast downloading and streaming capabilities. Alas, these types of programs may prove to be too much for your tiered data plan to handle, so you'll definitely want to be careful and keep a close eye on your monthly internet use.

Keeping Mog company in the land of bloatware is the usual suite of AT&T

apps (including FamilyMap, Navigator, LiveTV, MyAT&T, Featured Apps and Yellow Pages), as well as Qik Lite, NFS Shift, Amazon Kindle and Quickoffice. Samsung throws in Social Hub, Media Hub, AllShare, AP Mobile, CIty ID, Kies Air and News & Weather. A handful of the apps are uninstallable, but be prepared to tuck the majority of them away into special folders.

We grew disappointed that one tiny, yet important, feature was left out of the UI: an LTE on / off switch. The HTC Vivid's missing it as well. Bumping up our connectivity to the next G is great, but it happens at the expense of battery life, so it'd make perfect sense to have a way to automatically shut that option off... right? Much to our chagrin, no built-in switch could be found on the Skyrocket. Granted, there's a way to access the phone's test mode and turn it off manually when necessary (by dialing *#*#4636#*#* — use at your own discretion), but as we saw on similarly switch-deficient devices like the HTC Thunderbolt, it's not a guaranteed fix and is more of a hassle than it's oftentimes worth. Additionally, a few third-party switches exist for Verizon's LTE devices, but none appear to be available for the Skyrocket yet. Regardless of the alternate solutions, customers deserve the ability to choose whether or not they want to take advantage of AT&T's "true" 4G service, without having to memorize special codes or wait for special apps to do it.

Much like its predecessor, the Skyrocket comes with NFC — Near-field Communication — built into the battery, but the firmware mysteriously omits the spectacular feature. Okay, that's not *entirely* true: we found a lonely NFC service app laying dormant in the application management tool, taking up virtually no storage space. We're positive there's a method to the madness here, and its purpose will likely be made known unto us at a later date; perhaps AT&T's mobile payment plans will see daylight soon.

Performance and battery life

As this is Samsung and AT&T's first daring adventure into the world of LTE, it'd be a dirty shame if we didn't touch upon the device's performance in that realm. Of course, the difficult part was actually finding a market to test it in. And we don't say this to be facetious — truth is, with the next-gen network only working in nine cities as of this writing, none of our editors live within close range of AT&T's LTE service. That'll change in due time, of course, but in the meantime we sent one of our mobile editors to Boston to put the Skyrocket — as well as the HTC Vivid and Jetstream — to the test.

The results were rather mixed. At its best, the Skyrocket delivered top speeds of 21Mbps, which sounds ridunkulously fast — until it gets compared to the 32Mbps downloads the Vivid pulled down at the same place and time. At its worst, it couldn't pick up an LTE signal, resorting back to HSPA+ even though the Vivid and Jetstream easily managed

BENCHMARK	GALAXY S II SKYROCKET	AT&T GALAXY S II	T-MOBILE GALAXY S II	HTC VIVID
Quadrant (higher is better)	3,334	**3,372**	2,576	2,129
Linpack (MFLOPS, higher is better)	50.6	**55**	42	44.5
Linpack (MFLOPS, higher is better)	77.4	**81**	70	50.9
Nenamark (fps, higher is better)	**59.8**	**59.8**	**59.8**	47.3
Nenamark2 (fps, higher is better)	**54.1**	N/A	53.8	26.6
Neocore (fps, higher is better)	57.7	**59.8**	57.0	58.0
Sunspider (ms-lower is better)	3,115	3,369	**2,407**	4,095

to find three bars of reception. It took multiple hard resets before the device finally succumbed to our wiles and revived its connection to LTE (As a disclaimer, AT&T had some difficulty provisioning the SIM cards in our review units properly, so we'll try to give it the benefit of the doubt until we can do some additional tests). We'll admit that it's difficult to know if this a consequence of the included hardware or simply first-day network hiccups, since we wasted no time in checking out the brand-new service the moment it was commercially available. That said, the Vivid still seemed to manage consistently faster speeds. (To that end, we did receive a screenshot from Justin, a reader in Dallas, who bought a Skyrocket this week. His results were much better than ours, as he's been pulling down max speeds of 55Mbps.)

Another wild card in the Skyrocket's performance is the 1.5GHz Qualcomm APQ8060 (Snapdragon S3) CPU and accompanying Adreno 220 GPU, the same SoC setup as we saw on T-Mo's flavor. How does it hold up against the almighty Exynos processor found in so many of the other members of the Galaxy S II family? Pretty well, actually. While we've had a strong admiration for the processing prowess of Samsung's homegrown silicon, the Skyrocket's chip

isn't anywhere close to a slouch either. In fact, unless you're paying close attention, you probably won't even notice a difference at all. The Qualcomm-powered device handled itself well throughout our menial myriad of tasks and didn't skip a beat.

The Skyrocket booted up in 25 seconds and was incredibly responsive from that time forward. Not once did the phone crash during our graphics-intensive activities, nor did it hiccup at any point in our multitasking. Animations were smooth as butter, as was the touch responsiveness.

While the Vivid proffers faster network speeds, Sammy's LTE gem took the cake in all of the benchmarks by a hefty margin in every category but one. We know, we know: benchmarks aren't a real-life scenario and can be adversely affected by the fact that one offers a qHD display versus the other's WVGA. But we still have a hard time believing that two phones using an APQ8060 CPU — and are separated by a mere 0.3GHz — would result in Quadrant scores that are 1,200 points apart.

Being the pioneer on AT&T's 4G Oregon Trail means we're also now able to learn exactly how the carrier responded to potential battery life concerns. After all, CEO Ralph de la Vega decreed last month that all of his company's LTE phones would utilize a tech called "circuit switch fallback" to conserve power and keep the devices thinner. Did it work?

Whether or not we have Ralph's new tech to thank, it seems to make a difference on the Skyrocket. Its 1,850mAh juicepack may play a huge role in keeping the phone powered on for a healthy period of time, but regardless, we tested the battery on both LTE and HSPA+ and came away happy in each instance. When trying out LTE, most of our time was spent running speed tests and syncing social networks and email. We began this pattern of use around 10:30AM and still had 60 percent remaining five hours later — and actually retained a charge into the next day. Naturally, heavier usage will drain the battery much faster, but we're confident that using the Skyrocket moderately in an LTE area will get you through your full workday and may even keep you going until bedtime. We weren't able to run through our standard tests during our brief time in Boston, so we can't give a truly scientific answer, but it definitely holds a longer charge than any Verizon 4G phone we've reviewed (as a side note, the Skyrocket held its power longer than the Vivid, so mileage may still vary from phone to phone).

And that's not all. Conducting our full battery rundown test in an HSPA+ area, we managed to eek out nine and a half hours of life before the Skyrocket gave out. Moderate usage — continuously checking emails, doing our share of social networking, downloading apps and taking pictures — landed us an entire day and even remained charged overnight. Indeed, we determined that LTE still has a detrimental effect on

AT&T's smartphones, but we were just as impressed with this device's battery life in both scenarios.

With the addition of the Skyrocket to the Android lineup, AT&T has graciously given potential buyers a dilemma: you can choose between the 4.3-inch Galaxy S II without LTE, or a larger, 4.5-inch one that offers that higher connectivity. The size difference isn't that significant, and neither is the variety in processing power. What's a person to do? One factor to consider when choosing between the two is the tradeoff you get on battery efficiency. As we mentioned earlier, even though the Skyrocket's backwards compatible to 21Mbps HSPA+, the device doesn't have a homegrown LTE on / off switch — so if you're in a "true" 4G coverage zone, it's going to suffer from a lower lifetime than you would get on the HSPA+ only version. It comes down to whether your need for longer battery outweighs your cravings for blazing-fast downloads.

Its ability to find your locale won't have an influence on your decision, however, because the GPS is just as good on the Skyrocket (if not better) as it was on the rest of the series. We were incredibly impressed by the speed at which the Skyrocket's GPS locked in our location. While most devices do the job perfectly well, this one had our spot pegged in three seconds — less time than it took to load the maps — and was accurate within eight meters with no outside assistance at all.

Call quality? No problem. As with the other members of the family, we heard

the other line clearly with no static and the speakerphone is definitely on the loud side — for both making calls and playing back media such as movies or music. As always, network quality varies from place to place and may have an effect on dropping calls, but we didn't lose a conversation once in our abode, which consistently hovers around three to four bars of signal.

Wrap-up

When we reviewed the HTC Vivid, we almost gave the Samsung Galaxy S II Skyrocket a mini-review of sorts: we compared the two LTE pioneers side by side, and while the Vivid has its fair share of strong points, we prefer the latter. It's thinner, lighter, trumps its rival in benchmarks, offers TouchWiz UI instead of Sense and wins hands-down in battery life. Of course, we've come to expect this kind of turnout with Sammy's flagship series, and we're glad to see it continue into the realm of "true" 4G.

If you've been trying to decide on which Samsung Galaxy S II to plunk down your hard-earned cash on, the Skyrocket certainly complicates the choice you have to make — especially if you're sticking with AT&T as your carrier. After all, you're looking at two incredibly similar devices that come with high recommendations. Ultimately, it comes down to two factors: display size and network speed. If you like the larger screen and wouldn't mind taking advantage of some LTE goodness when it comes to your town, you likely won't go wrong by taking this Skyrocket for a flight.

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

BOTTOMLINE

Samsung Galaxy S II Skyrocket — $250

PROS

- Solid battery life in both HSPA+ and LTE areas
- Thinner and lighter than expected
- Strong CPU performance
- Ice Cream Sandwich-ready

CONS

- Slippery back makes it difficult to grasp well
- NFC is included, but diabled

The Skyrocket delivers the same high quality experience as the others in the Galaxy S II series, offering LTE on AT&T's network at the same time.

2011 REJECTED Google DOODLES

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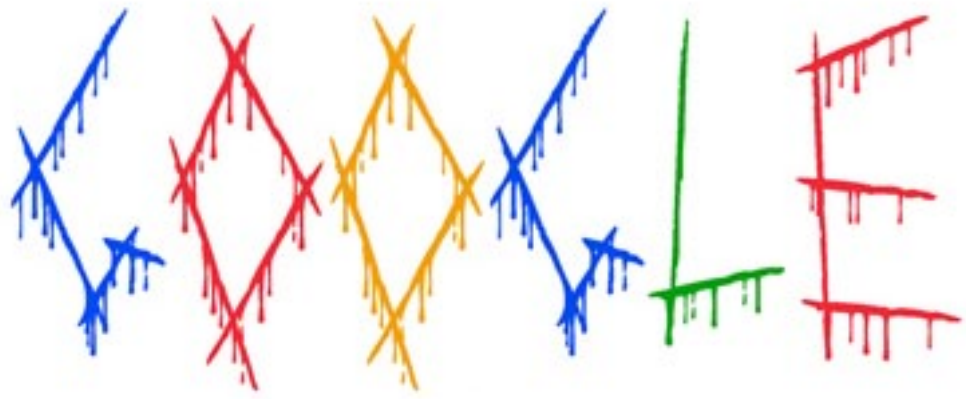

July 29
National Heavy Metal Awareness Day

August 26
Macaulay Culkin's Birthday

the last word - Box Brown

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