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NEWS



TESLA SEMI, iPHONE X, AR/VR
SAMSUNG S8, SPACEX, BITCOINS
A BREAKTHROUGH TECH YEAR



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TV APP
AN "ENTIRE
POP CULTURAL
EXPERIENCE"
IS IN THE WORKS

ADVANTAGES OF AN 'APPLE VIDEO'
STREAMING SERVICE







APPLE-MADE TV SHOWS AND FILMS MAY ON THE WAY

Apple has often declared the fourth-generation Apple TV set-top box “the future of television”, but there have been recent flickers of evidence that Apple’s ambitions in television could extend far beyond this little home hub. These ambitions could encompass the production of original TV shows for the promotion of a video streaming service and indeed, Apple hardware. Could TV, rather than smartwatches or augmented reality, be the place for Apple’s next big revolution?

AN “ENTIRE POP CULTURAL EXPERIENCE” IS IN THE WORKS

The current version of Apple TV was released in October 2015 and has since received software updates enhancing its onboard operating system tvOS. In December, **Apple released a new app, simply called ‘TV’**, allowing users to browse content from various providers through the same portal on iPhones, iPads and Apple TVs. Apple has also dipped its toes into original content, having helped to develop **a new version of Carpool Karaoke** and reportedly, **dark Dr. Dre drama Vital Signs**.

That iteration of Carpool Karaoke will be released for users of the streaming service Apple Music, while Vital Signs evidently could have similar availability. However, in January, The Wall Street Journal reported that **Apple was seeking to make further original content** that would also become available through Apple Music. Apple is thought to be preparing to launch that content later in 2017 - and the proposed projects “don’t have any particular relationship to music”.



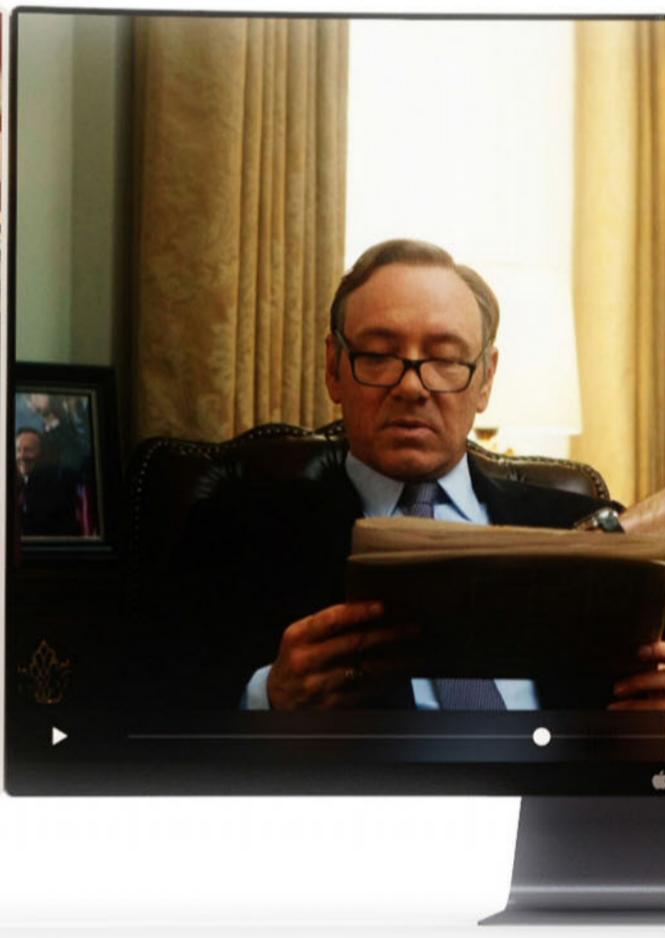


In fact, the Cupertino company is believed to be aiming to make shows along the lines of HBO's *Westworld* and Netflix's *Stranger Things* - while there are also "more preliminary" plans for original films. A few days after these revelations, Apple executive Jimmy Iovine admitted: "At Apple Music, what we're trying to create is **an entire cultural, pop cultural experience**", adding: "If *South Park* walks into my office, I'm not going to say you're not musicians, you know?"

WHY APPLE COULD BENEFIT FROM LAUNCHING 'APPLE VIDEO'

Still, it looks like Apple's move into original content is intended to augment the appeal of Apple Music in its fight against Spotify rather than directly take on Netflix or Amazon, now both established producers of acclaimed audio-visual content. This seems a wise strategy, given that Apple would reportedly require an annual expenditure of hundreds of millions or even billions of dollars to compete with those companies. However, for Apple, one big benefit of making original content could be getting its previously rumored video streaming service off the ground.

In 2015, it was claimed that **Apple had entered discussions with networks including CBS** about bringing exciting content to a television subscription service for Apple customers. Those talks ultimately stalled as Apple failed to reach agreements with content providers. Apple executive Eddy Cue later downplayed the prospect of Apple offering such a service that would provide strictly the best for a low monthly fee, insisting: "As a matter of fact, I'm not a big fan of the skinny bundle."



WHAT WE CAN ALREADY ENJOY ON APPLE TV



However, in **an opinion piece for 9to5Mac**, Zac Hall has suggested that an “Apple Video” - as he calls it - streaming service could help to plug a few holes in Apple’s TV app. Last year, Apple introduced a feature called Single sign-on (SSO), allowing tvOS 10 and iOS 10 users to unlock numerous channels with just one authentication process. However, Hall has observed that Apple Video could provide SSO to users who would otherwise have to wait for their cable provider to co-operate with Apple.

Furthermore, the selection of third-party content that can be browsed in the TV app is patchy right now. Content from a number of big-name companies, including HBO, ESPN and Disney, can be perused in this way. However, cable providers like Time Warner Cable and Comcast remain unsupported - while **Netflix, which has not embraced Single sign-on, is only partly integrated with the app.** By making more of its own content, Apple could provide more content for ready access in the TV app without the need for tricky and awkward negotiations with other providers.





HOW APPLE'S ORIGINAL CONTENT PLANS COULD UNFOLD

While rumors don't suggest that Apple is intent on seriously rivaling Netflix and Amazon with its own output of original and exclusive content, such a strategy would seem a natural evolution following the shows already launched solely on Apple Music. These have included **Taylor Swift: The 1989 World Tour Live** and **808: The Movie**, a documentary about the influential 1980s drum machine. So, what further material could Apple be lining up?

Brian Blau, an Apple-following analyst with Gartner, told NPR: **"Having original content is a strategy that is simply just going to bring people back to Apple."** He cited the company's "unique opportunity" to become "more competitive with these other original content providers that potentially have been drawing Apple users away from the Apple ecosystem". So for a hint of what is to come from Apple, should we look at what Netflix and Amazon have been making?

Statistics from the measurement service Symphony cite the 2016 viewer figures for





Netflix original shows like Fuller House and Orange is the New Black as almost 16 million for each. Making these shows apparently paid off handsomely for the company - which, last quarter, recruited about seven million new subscribers globally. That progress had been beyond Wall Street's expectations and Blau believes that, in the case of Apple, "this sort of TV and video and music content I think is just going to be one more pillar that they're going to be able to stand on over time."

This could be especially the case should Apple strike gold with a really big hit - one that could help pick up subscribers for an 'Apple Video' service and maybe even sell iPhones, iPads and Apple TVs. Hollywood producer Art Linson reckons that Netflix and Amazon have excelled with their own original content due to taking a more experimental approach forgone by cautious Hollywood studios. Apple might need to be similarly bold, using writers and directors with "the emotional ability to move us as viewers," in the words of producer Sid Ganis.





TREATS ALREADY BEING SERVED UP ON APPLE TV

But all of that is looking far into the future. While we're still waiting for Apple to provide its own content, what can we already enjoy on what the company enthusiastically calls "the future of television" - yes, the fourth-generation Apple TV? The answer: **lots of great stuff**. Major apps currently available natively on the device include Fox Now, HBO Now, HBO Go and CNN Go. Some other notable apps, including Fox News and Amazon Video, are available to enjoy on the set-top box through the AirPlay feature,

through which content can be streamed from an iOS device.

Other Apple TV apps from well-known media companies include YouTube, Hulu Plus, Showtime, iTunes, Vimeo, Watch ESPN, Watch Disney Channel, NBC, Nic, Nat Geo TV, CNBC and Bloomberg TV. None of those apps require AirPlay, making the Apple TV appealing even for people without iOS devices. Could that appeal grow yet further later this year, when Apple is rumored to be set to officially announce content of its own? We'll have to wait and see, but we're already excited.







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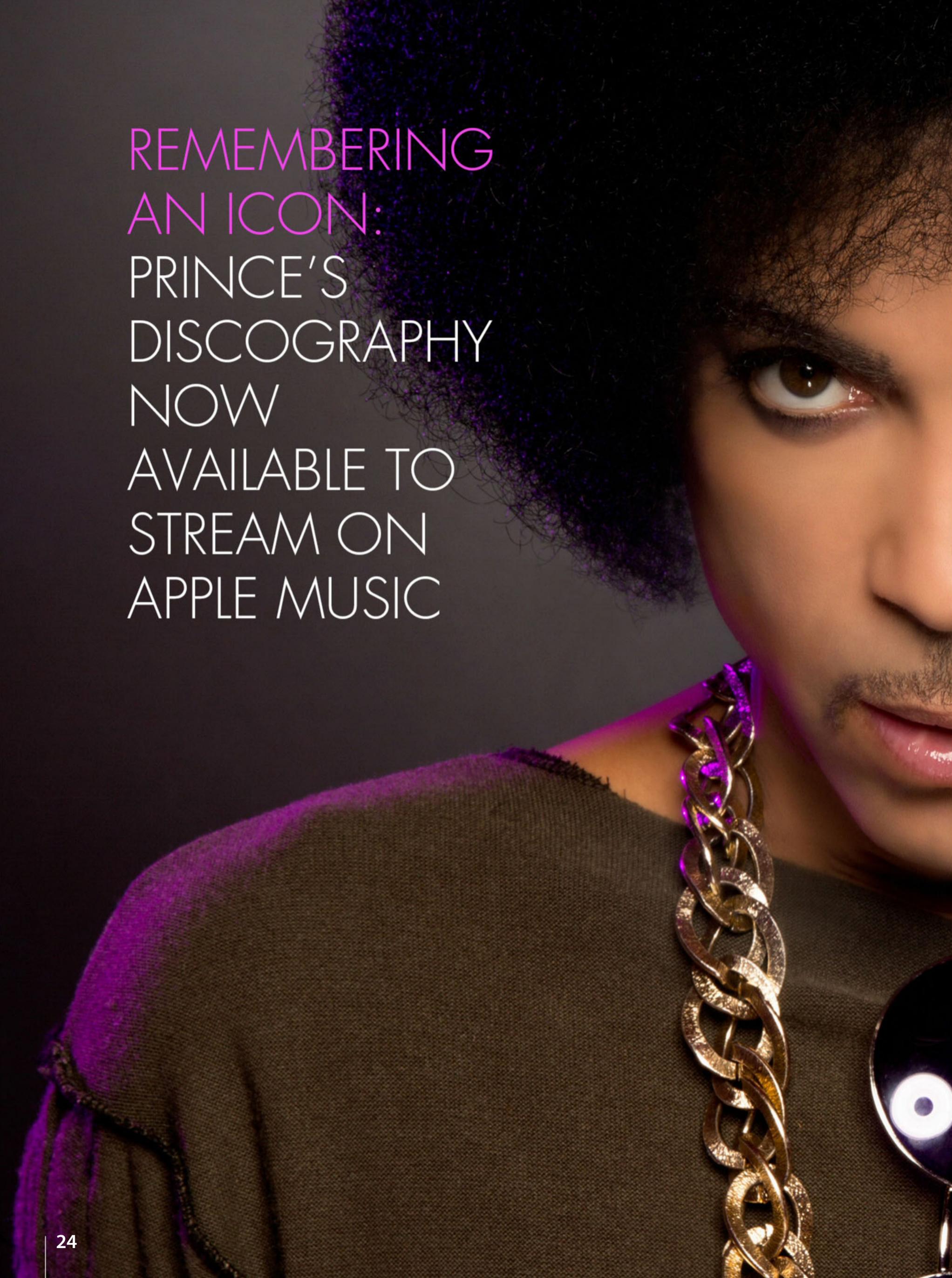


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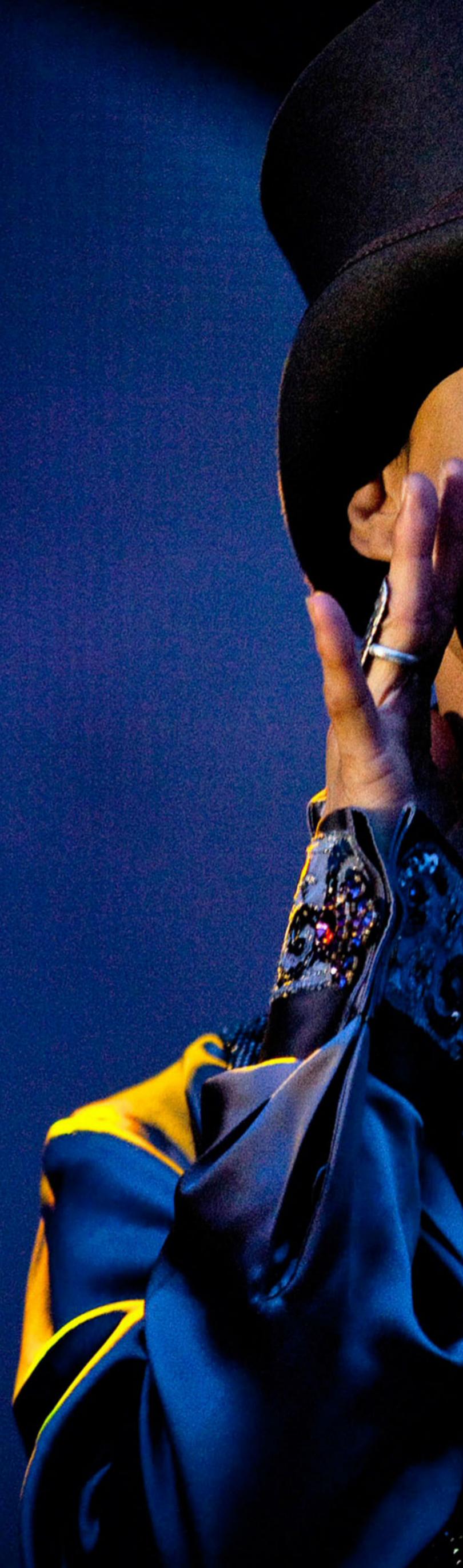
A close-up portrait of Prince, showing his iconic large afro hairstyle and a thick gold chain necklace. He is wearing a dark, textured garment. The background is dark with some purple lighting effects.

REMEMBERING
AN ICON:
PRINCE'S
DISCOGRAPHY
NOW
AVAILABLE TO
STREAM ON
APPLE MUSIC



IT'S OFFICIAL: PRINCE RETURNS TO
ONLINE STREAMING SERVICES

For many, (the artist formerly known as) Prince was more than just a musical artist. He was an icon, a sex symbol, a rebel, a prodigy, an innovator who brought us an oeuvre that transcended boundaries of musical style, textures, and genres. He was known for his flamboyancy both on and off stage, playing with signifiers of gender and defying racial stereotypes that led the Los Angeles Times to crown him the “first post-everything pop star.” Taking influences from artists and musicians including the likes of Miles Davis, Joni Mitchell, Jimi Hendrix, Chuck Berry and David Bowie, every album that Prince released showed growth in style and musical diversity. Through a constant experimentation with different sounds, Prince went on to be revered as a contemporary artist who brought differences together to form one cohesive whole.





PAYING TRIBUTE TO A TRUE VISIONARY

To coincide with the 59th Grammy Awards, which saw a tribute to the late star from artists **Bruno Mars and The Time**, streaming services such as Apple Music, Spotify and Pandora announced the release of Prince's catalog of hits which were previously only available through Tidal. Now subscribers can listen again to a number of Prince's greatest hits including **'Purple Rain,' 'Let's Go Crazy'** and **'When Doves Cry'** as well as outtakes, demos, live recordings and the opportunity to follow specially curated playlists that pay tribute to such a visionary artist. This digital showcase has come as a sigh of relief for many of Prince's fans who have petitioned for his music to return to such streaming services for months. Prince's contract with Warner Bros expired in 1996, and after that, he went on to experiment under his own label by selling music directly to fans through his website. Then, as of a 2014 contract between the two, Warner Bros again owned the licensing rights to the majority of the discography which is what we'll see on Apple Music and other streaming services. The rest of his music, including albums released after 1996, will be auctioned off by Prince's estate and are said to be priced at between **\$40-50 million** with the three label giants Universal Music, Sony Music and Warner all due to compete in what is likely to be a tight battle.

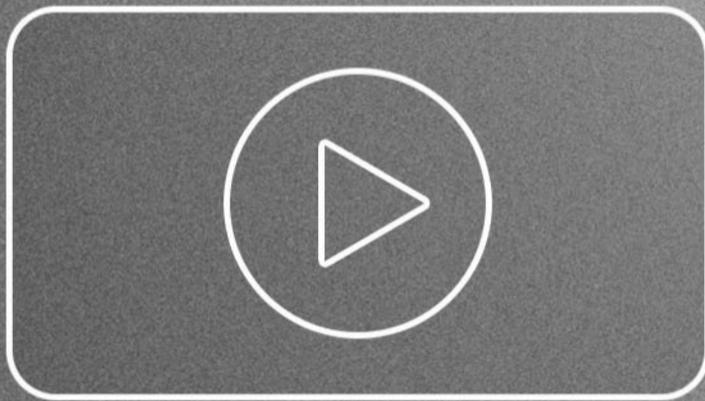
So, why now? Prince was known for constantly clashing with record labels (and later digital music companies) for one reason or another. Before his death in 2016, Prince issued a request for all streaming sites to take down his music, giving Jay-Z's platform Tidal exclusive rights for





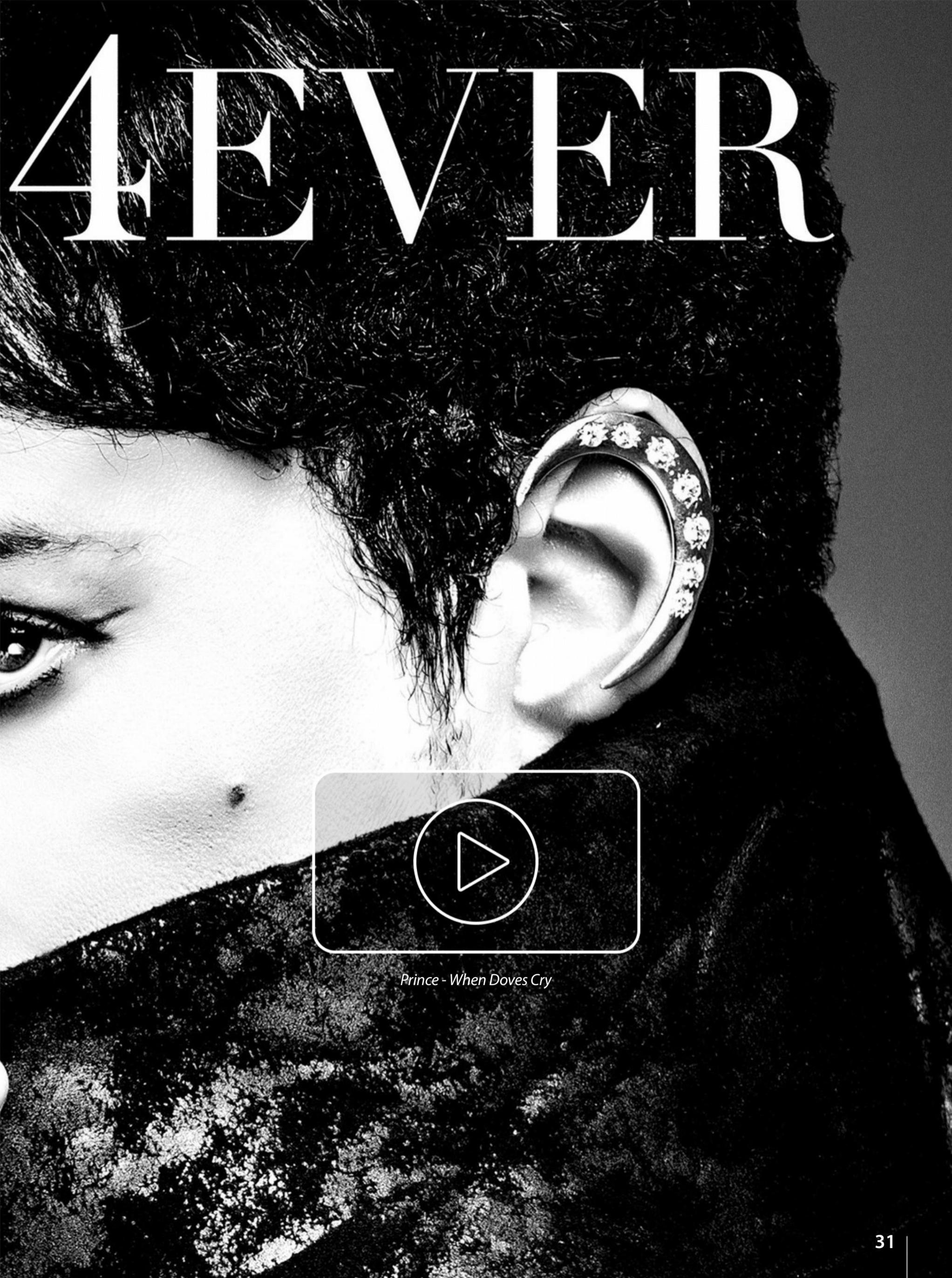
Prince - Purple Rain Live 2007

PRINCE



Prince - Let's Go Crazy LIVE! (REMASTERED)

4EVER



Prince - When Doves Cry





the next 19 months. This happened in 2015, and since then, Warner Bros have continued to petition to return the catalog to popular streaming sites. In a statement released on Sunday, the company thanked Prince's estate for helping to achieve this.

"Prince recorded his most influential and popular music during his time with Warner Bros., and we are deeply aware of our responsibility to safeguard and nurture his incredible legacy," Chairman and CEO Cameron Strang said.

"Warner Bros. is thrilled to be able to bring Prince's music to his millions of fans around the world via streaming services, fittingly on music's biggest night."

APPLE MUSIC CONTINUES ITS IMPRESSIVE EXPANSION

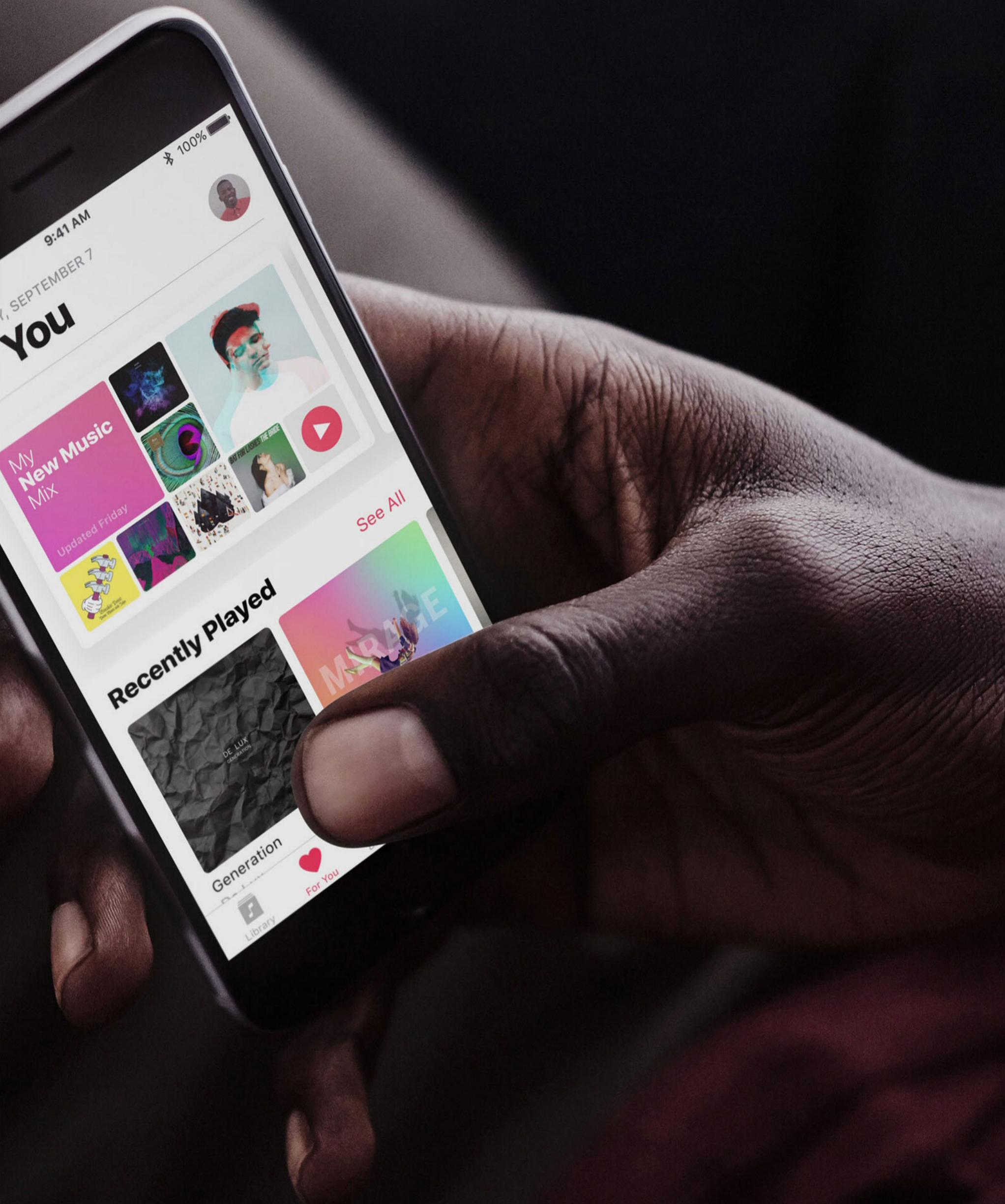
As of October 2016, **Apple Music was said to have at least 20 million subscribers, which** isn't a vast amount compared to Spotify's base of 40 million, but impressive when considering this much younger streaming service only went live in June 2015. Now available in more than 100 countries worldwide including the U.S, Canada, the U.K, Australia, Japan, India, and Brazil, with a \$10 per month subscriber fee, users are allowed access to the entire iTunes library of roughly 40 million songs, 24-hour radio stations and a vast amount of expertly-curated playlists. There is even an option for a three month free trial alongside a **family plan** that comes at a discounted rate. Other competitors such as Amazon's Music Unlimited and Tidal are no match for Apple Music, which also allows users to integrate their iTunes library

with their Apple Music library, meaning that transferring previously ripped CDs or albums already purchased in the iTunes Store has never been easier. Additionally, as long as your device has enough space to hold them all, you can save as many songs as you want to listen to offline. This is a great option for those who want to keep track of their data consumption or who are traveling with their phone in Airplane mode.

An especially impressive feature of Apple Music is that it will recommend music based on your tastes. So if you're a fan of Prince, expect to see similar artists in your For You section thanks to intelligent algorithms that are, according to Apple, built by real people. These people will soon know your musical preferences intimately, continuously improving and curating new playlists for you every day that can depend on your mood, likes or artists that your 'recently played' have taken their inspiration from.

Something that Apple has put a lot of emphasis on is the streaming service's **24-hour live radio station Beats 1**, which gives you access to





broadcasts from DJs based in New York, Los Angeles and London and again, curates and delivers songs, news and interviews with artists you're interested in. Recent updates with this feature now allow you to listen to Beats 1 shows off-air with on-demand episodes that you can add to your music library or download to listen to offline. There's also a social networking aspect to Apple Music via Connect. This lets you follow your favorite artists who will **share exclusive content with their fans**.

There is a great joy in the discovery section of Apple Music, which lets subscribers choose from lists of new music, curated playlists, videos, top charts, and genres. Choose a list to explore, and you'll be faced with an elegantly designed interface that showcases album artwork in the same way as the app store. The **A-List playlists** bring together over 50 songs of a particular genre, all of which are covered by the cost of your subscription. Plus signs next to songs allow you to save them quickly and easily to your ever-growing library and even create your own playlists with the added personalized touch of including photos.

Most of all, Apple Music gives you the opportunity to have an excess of high-quality music at your fingertips, so much so that it may become an addictive pursuit for those of us who get our thrills from discovering new artists. Now, more than ever, the capability to stream music wherever we are is something that could lead us into a sense of prolonged captivation, however musically diverse and enriching that may be.

by Benjamin Kerry & Gavin

Listen on
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SAMSUNG
WOWS
TECH
CROWDS
WITH
GALAXY S8
HANDSETS

GALAXY S8
REVEALED:
WHAT DOES IT
MEAN FOR IPHONE?





SAMSUNG

SAMSUNG

HOW THE iPhone 8 COULD BUILD UPON AND LEAPFROG THE S8

It's always exciting when Samsung unveils new flagship phones. The South Korean electronics giant is, after all, considered Apple's only major rival in the smartphone game. However, with the recently announced Galaxy S8 and Galaxy S8+, Samsung has positioned itself as a likely frontrunner in what could be another paradigm shift in smartphone design and technology - and, so rumor and speculation suggest, Apple should soon be joining that revolution with the iPhone 8.

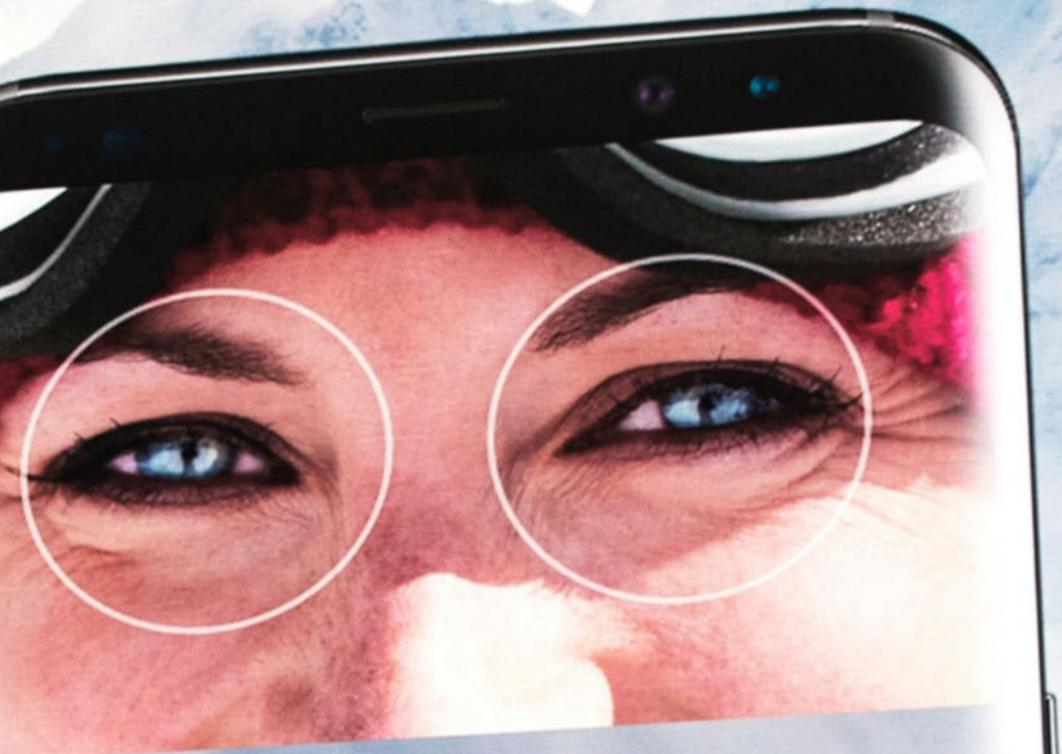
IMPRESSIVE SMARTPHONES, BUT ARE SOME CRACKS SHOWING?

For those smartphone users entrenched in the Samsung and Android ecosystems, there is a lot to like about the Galaxy S8 and Galaxy S8+. The display, in particular, will make a big impression. The display sizes - 5.8-inch and 6.2-inch, respectively - have been bumped up from the 5.1-inch and 5.5-inch panel sizes of last year's Galaxy S7 and Galaxy S7 Edge. However, the handsets overall aren't significantly larger, with significantly shrunken bezels leaving the screen taking up 83% of the face.

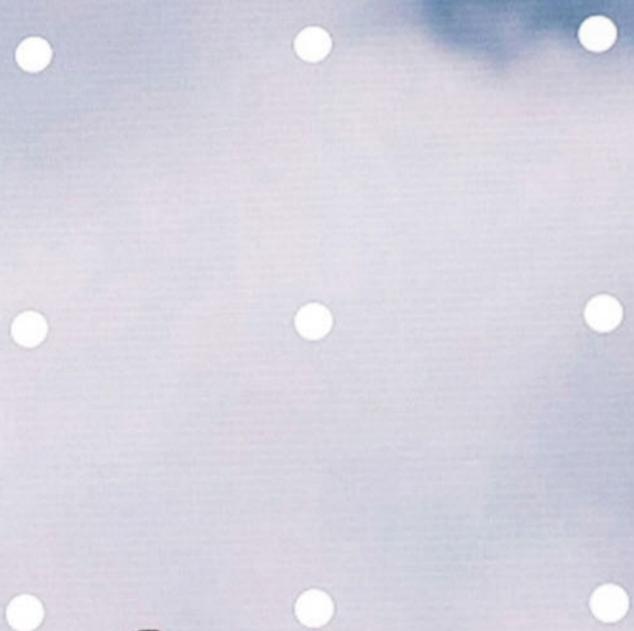
What has similarly helped is that the Galaxy S range has now completely done away with flat displays. The S8 and S8+ both integrate screens that curve at the sides, allowing all owners to take advantage of the software features designed for use with those curves but previously reserved for Samsung's Edge and Note phones. Samsung has also given the S8 a Samsung-specific virtual assistant, Bixby, plus facial recognition technology and a relocated fingerprint sensor.



Image: Drew Angerer

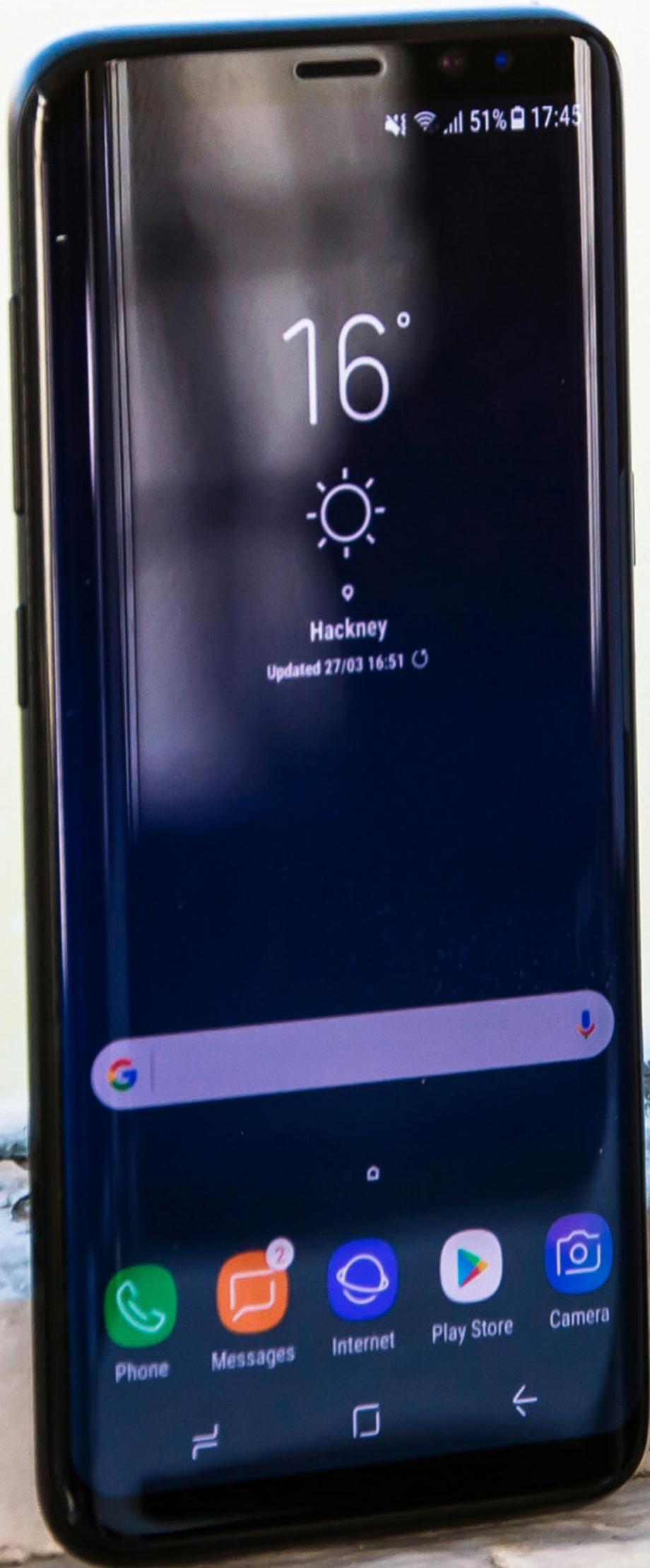


Use irises or draw pattern



EMERGENCY CALL







However, all three features come with caveats that have prevented Samsung earning entirely universal acclaim from critics despite their clearly favorable early impressions. Bixby - Samsung's rival to Apple's Siri - has particularly glaring shortcomings. In a **"hands-on" article for CNET**, Jessica Dolcourt calls Bixby "a mishmash of voice assistant, Google Now cards and Google Goggles optical recognition" that is "confusing, limited and, at this admittedly embryonic stage, very incomplete."

THE S8'S CRACKS START LOOKING BIGGER

Dolcourt has also taken issue with the fingerprint reader's placing, which has been moved to the phone's back. While this shift has apparently been necessitated by Samsung's pursuit of much thinner front bezels, the precise positioning looks sloppy; Dolcourt has remarked that it "sits so close to the rear camera that I fear you'll smudge the lens when you're just trying to unlock the phone". This has actually occurred during tests of a pre-final unit, she added.

Meanwhile, despite introducing facial recognition into its phones for the first time, Samsung is taking only tentative steps with technology that, the company has admitted, can't entirely replace fingerprint recognition just yet. It can currently only be used to unlock the phone; the ability to make Samsung Pay payments in this way has been omitted. This is understandable given that **one YouTube user has already managed to fool the technology with an image of his face, AppleInsider notes.**



SAMSUNG

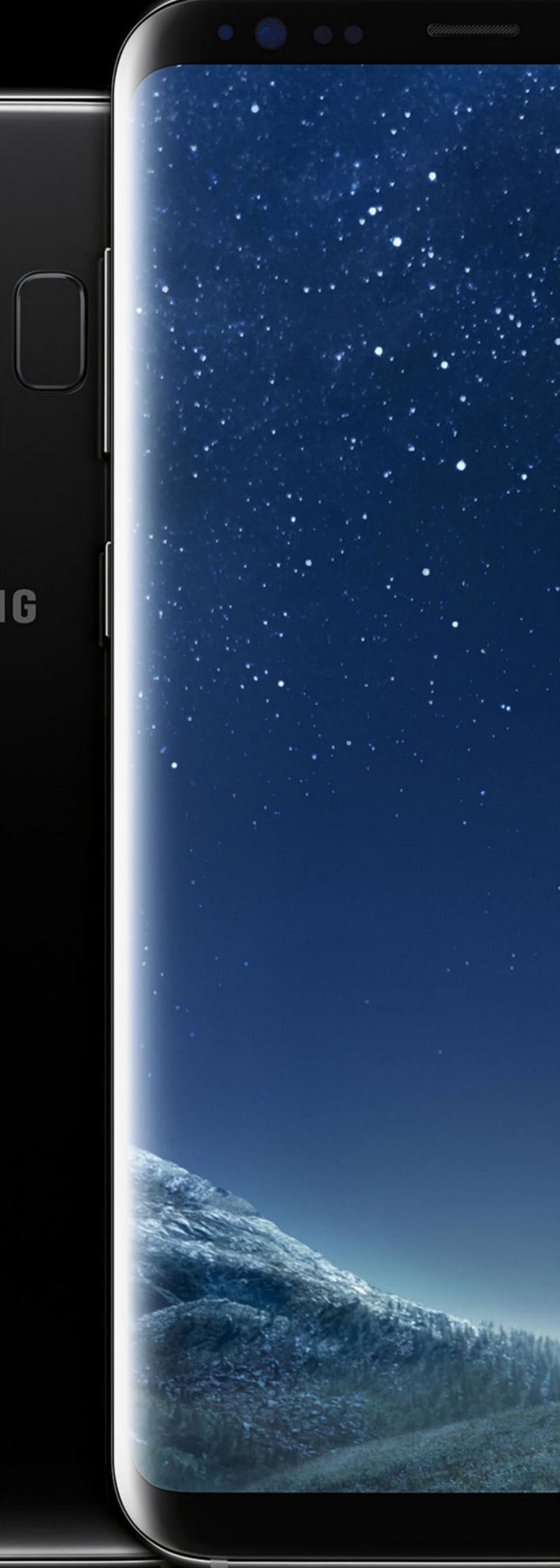
Image: Drew Angerer



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ANOTHER ROUND IN APPLE'S YEARS-LONG FIGHT WITH SAMSUNG

Dolcourt phrases it well as she concludes: "For now, I'm cautiously optimistic about the S8 as an all-rounder that helps Samsung recover from its charred reputation." The scandal, which unfolded just last year, of exploding Galaxy Note 7 devices has likely induced caution in Samsung itself. However, the S8's obvious drawbacks have left it looking like something of an unfinished revolution that Apple could more fully realize with the "iPhone 8" expected to arrive later this year.

Apple and Samsung have a long history of fierce competition, and not just in endeavoring to outperform the other in smartphone technology, innovation, and sales. In January, the U.S. Court of Appeals for the Federal Circuit reopened the legal dispute in which Apple has, for years, accused Samsung of copying the iPhone's design for the Galaxy S phones. While, by now, it has been ruled that Samsung did infringe Apple patents, there remains disagreement over how much in damages the South Korean giant should pay its American-headquartered rival.

Digital Trends recently chronicled the history of the spat - the genesis of which was sown in 2010, when Apple warned Samsung that its smartphones and tablets were infringing Apple patents. The next year, Apple launched its lawsuit against Samsung - and, while a U.S.-based trial court jury awarded the Cupertino firm damages of \$1 billion in 2012, this amount has been repeatedly revised by subsequent trials. In 2015, Samsung agreed to hand over





\$548 million; however, it has challenged its requirement to pay \$399 million of this, deeming that figure excessive.

HOW THE iPhone 8'S QUALITY COULD SURPASS THE GALAXY S8'S

Over a hundred designers and educators back Apple in this legal tussle, while numerous Silicon Valley companies, intellectual property professors, and non-profits support Samsung. Thus, it's not obvious when this case should finally come to a close. However, it could be in the smartphone market that Apple will get to enjoy a crucial triumph over Samsung much sooner. This is because, with the iPhone 8, Apple looks capable of filling many of the holes that Samsung left gaping in the Galaxy S8 and Galaxy S8+.

Like the S8, the iPhone 8 is expected to considerably trim the bezels. **As 9to5Mac notes, the iPhone 8 should have a stainless steel frame holding together a glass casing,** resulting in a design much like that of the iPhone 4. In pursuing Jony Ive's goal for an iPhone resembling a "single slab of glass", Apple should embed the Home button into the display. However, this wouldn't have to mean relocating the Touch ID sensor to the back, S8-style. **A patent recently awarded to Apple and reported by 9to5Mac** shows how ultrasonic imaging could help keep the sensor front-facing.



The iPhone 8 could also better the S8 in respect of camera features. Despite the dual-lens rear camera having proved one of the biggest selling points of the iPhone 7 Plus, Samsung has chosen to stick with a single-lens rear camera for both S8 models. Furthermore, following recent reports that the iPhone 8 will integrate 3D-sensing camera technology, Apple could use this to implement facial recognition that, compared to the S8's, is less likely to be tricked by mere images of faces. It could instead scan the depth of field and so discern when a face seems peculiarly flat...





AUGMENTED REALITY: THE iPhone 8'S BIGGEST SECRET WEAPON?

That's before we even move onto what could be the most obvious reason for Apple to give the iPhone 3D-sensing cameras: augmented reality. Apple CEO Tim Cook has not been shy about his company's enthusiasm for this emerging technology, which allows images and graphics to be laid over a view of the real world that, in an iPhone, could obviously be camera-captured. **In an interview with *The Independent***, Cook called AR "a big idea like the smartphone," clarifying that the two are not "about a certain demographic, or country or vertical market", but instead "for everyone".

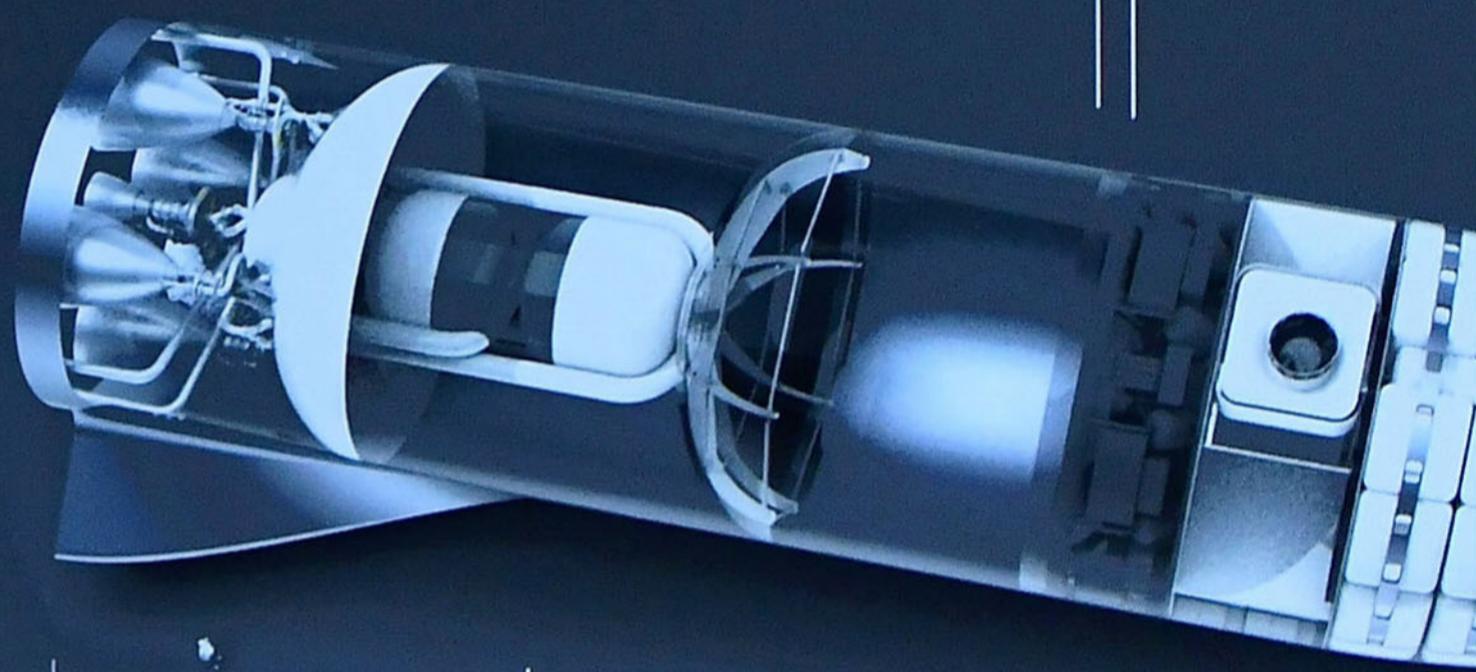
It's still not obvious that Apple is indeed planning to start rolling out AR features with the iPhone 8. Cook has cautioned that "there are things to discover before that technology is good enough for the mainstream". However, Samsung has continued its trend of copying Apple - with such moves as the "plus" in the larger S8 model's name and introducing a blue color like **that previously rumored for the iPhone**. A strikingly-designed iPhone 8 with AR features at the forefront could help Apple to, with its innovation drive, leap past Samsung and once again leave it in the dust.

by Benjamin Kerry & Gavin



ENGINES

PROPELLANT TANKS

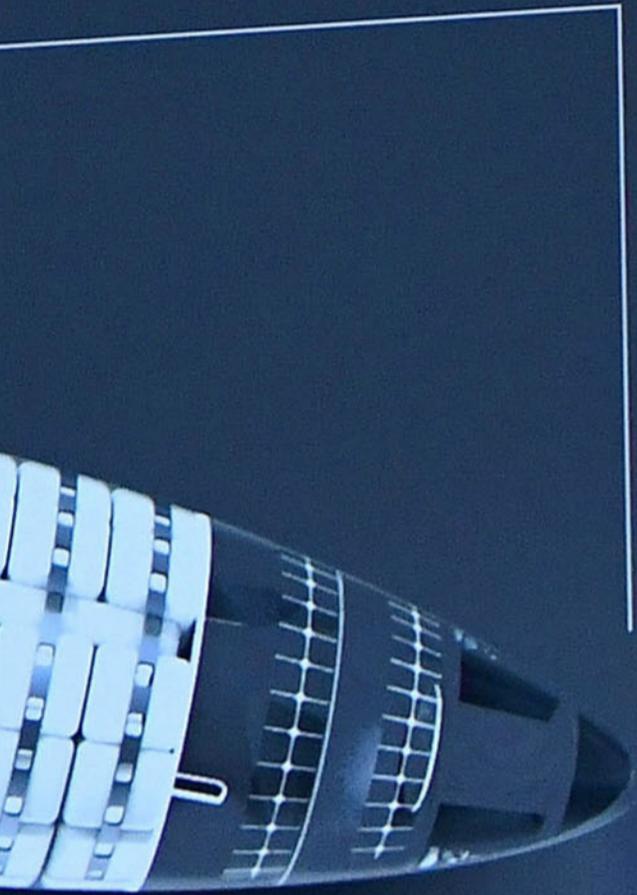


DELTA WING



SPACEX: ROCKET FOR MOON, MARS AND NY-TO- SHANGHAI IN 39 MINS

PAYLOAD



SpaceX chief Elon Musk's elaborate plan for a mega-rocket to carry astronauts to Mars may have some down-to-Earth applications.

At a conference in Australia last Friday, Musk said if you build a ship capable of going to the moon and Mars, why not use it for high-speed transport here at home. He proposes using his still-in-the-design phase rocket for launching passengers from New York to Shanghai in 39 minutes flat.

Los Angeles to New York, or Los Angeles to Honolulu in 25 minutes. London to Dubai in 29 minutes.

"Most of what people consider to be long-distance trips would be completed in less than half an hour," Musk said to applause and cheers at the International Astronautical Congress in Adelaide.

A seat should cost about the same as a full-fare economy plane ticket, he noted later via Instagram.

Friday's address was a follow-up to one he gave to the group last September in Mexico, where he unveiled his grand scheme for colonizing Mars. He described a slightly scaled-down 348-foot-tall (106-meter-tall) rocket and announced that the private space company aims to launch two cargo missions to Mars in 2022.

"That's not a typo," he said, pausing, as charts appeared on a large screen. "Although it is aspirational."

Two more cargo missions would follow in 2024 to provide more construction materials, along with two crewed flights. The window for launching to Mars occurs every two years.

For the approximately six-month, one-way trips to Mars, the SpaceX ships would have 40 cabins, ideally with two to three people per cabin for a grand total of about 100 passengers. Musk foresees this Mars city growing, and over time "making it really a nice place to be."

Scott Hubbard, an adjunct professor at Stanford University and a former director of NASA's Ames Research Center, calls it "a bold transportation architecture with aspirational dates." A demonstration of some sort in the 2020s will add to its credibility, he said in an email. And while more details are needed for life-support systems, "Kudos to Elon and SpaceX for keeping the focus on humans to Mars!"

Former NASA chief technologist Bobby Braun, now dean of the college of engineering and applied science at the University of Colorado at Boulder, also sees Musk's plan as a step in the





right direction, building on technologies SpaceX already has demonstrated, like reusable rockets.

“While the timeline and capabilities are certainly ambitious, I’m bullish on U.S industry’s ability to carry out challenging and far-reaching goals,” Braun wrote in an email. “It’s great to see the private sector lead in this way, and I hope we see more of it.”

NASA is charting its own path to what it calls the “Deep Space Gateway,” beginning with expeditions in the vicinity of the moon in the 2020s and eventually culminating at Mars. The space agency has handed much of its Earth-orbiting work to private industry, including SpaceX, Orbital ATK and Boeing.





BFR | Earth to Earth

Earlier Friday in Adelaide, Lockheed Martin presented its vision for a “Mars Base Camp” in partnership with NASA. Astronauts could be on their way in about a decade, the company said. This first mission would orbit the red planet, rather than land.

Musk intends to finance his \$10 billion Mars endeavor by using a rocket that’s smaller than the one outlined last year. Fewer engines would be needed: 31 versus the originally envisioned 42. Its lift capability would be 150 tons, more than NASA’s old moon rocket, the Saturn V.

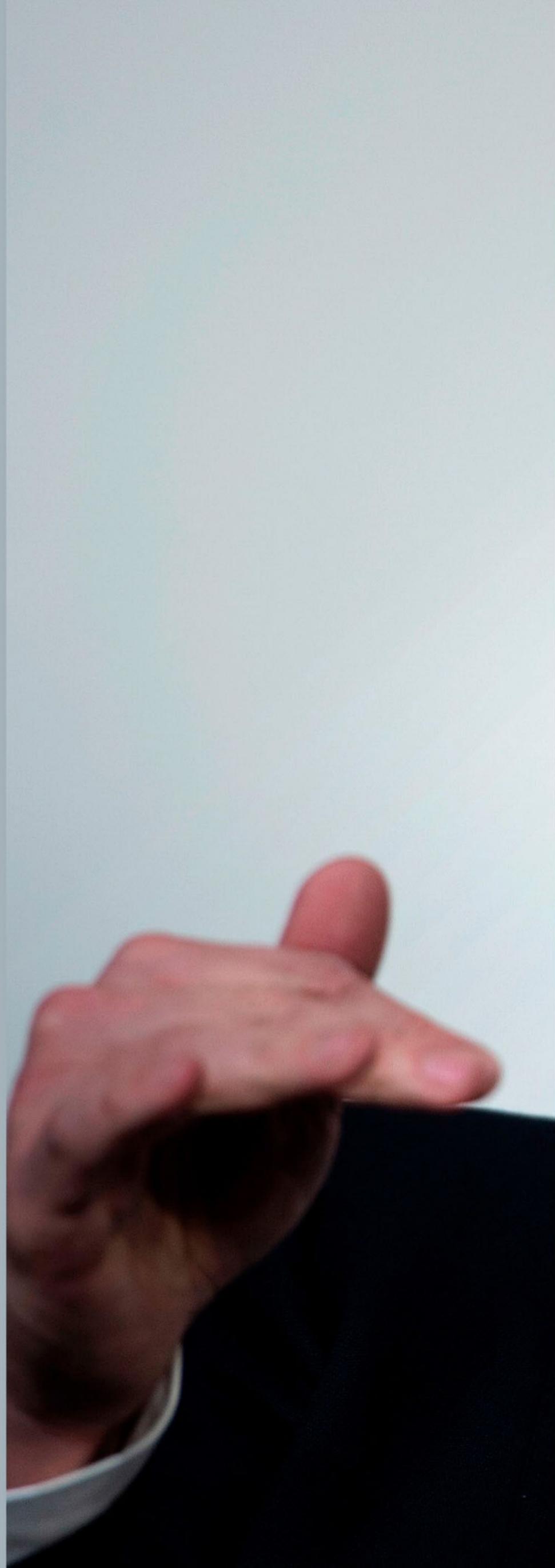
He wants one type of booster and spaceship that can replace the company’s current Falcon 9 rocket, the soon-to-fly Falcon Heavy rocket designed for heavier satellites, and the Dragon capsule presently used to deliver cargo to the International Space Station, and, as soon as next year, station astronauts.

That way SpaceX can put all its resources toward this new system, Musk said. Revenue from launching satellites, and sending supplies and crews to the space station, could pay for the new rocket, he said.

Musk said the same spaceship for moon and Mars trips — long and cylindrical with small shuttle-like wings — could fly to the space station. He said the mega-rocket could be used to establish a lunar settlement, with spaceships being refueled in Earth orbit versus creating a vital fuel depot at Mars.

The mega-rocket doesn’t have a name but for now is called BFR. The B is for big; the R for rocket. As for the F, well, you get the idea.

Online: SpaceX



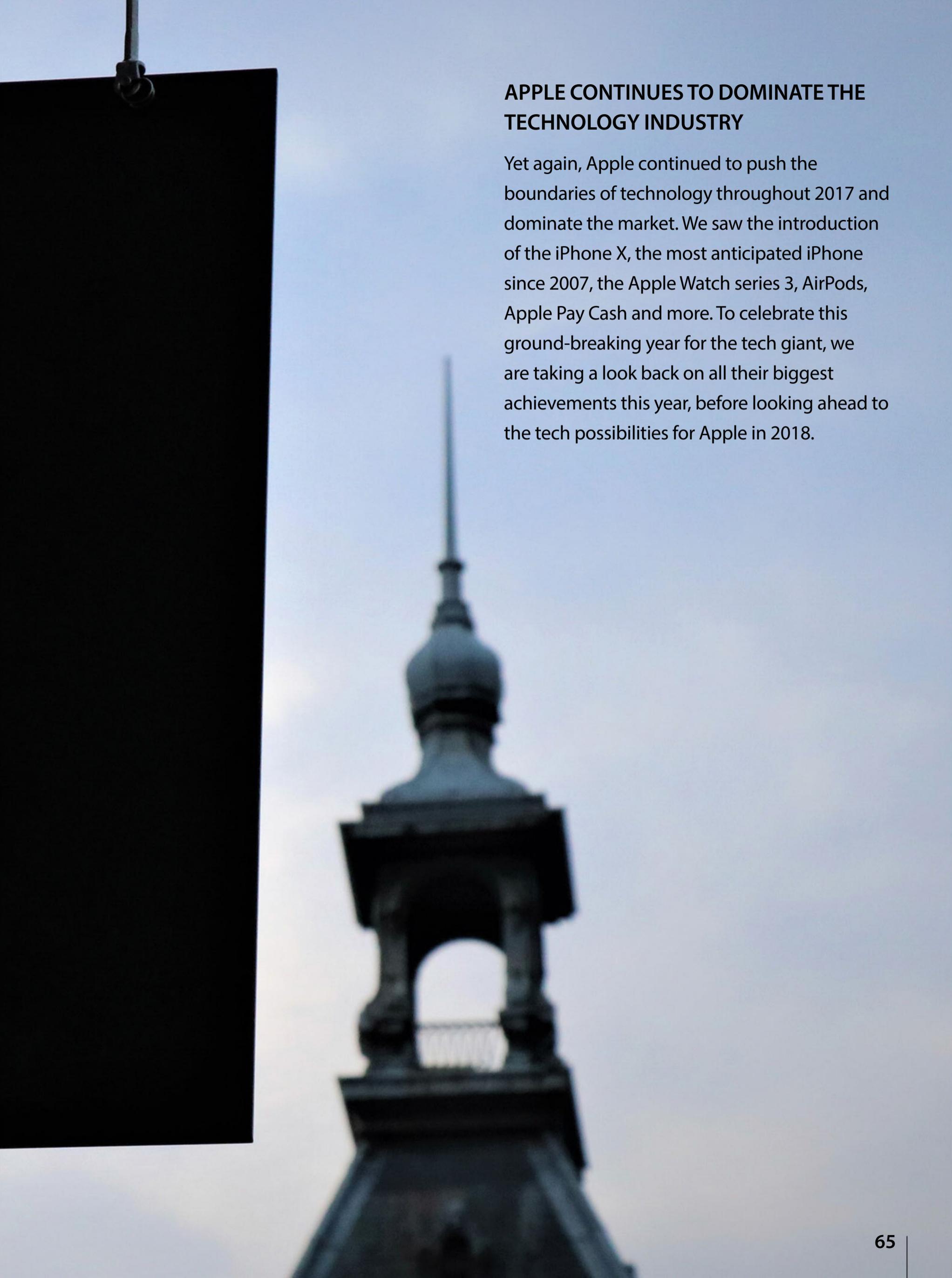




**2017 IN
REVIEW:**
ANOTHER
GROUND-BREAKING
YEAR FOR APPLE







APPLE CONTINUES TO DOMINATE THE TECHNOLOGY INDUSTRY

Yet again, Apple continued to push the boundaries of technology throughout 2017 and dominate the market. We saw the introduction of the iPhone X, the most anticipated iPhone since 2007, the Apple Watch series 3, AirPods, Apple Pay Cash and more. To celebrate this ground-breaking year for the tech giant, we are taking a look back on all their biggest achievements this year, before looking ahead to the tech possibilities for Apple in 2018.



iPHONE X: THE MOST IMPORTANT iPHONE TO DATE

The iPhone X was long rumored before it was officially released, with many speculating it would mark the 10-year anniversary of the first ever iPhone. Apple took a big risk with the latest phone, and it marks the biggest ever jump between models. It features a radical all-glass design, which Apple claims is the most durable glass to ever appear on a smartphone. This all-glass design enables wireless charging and **Apple has given a sneak preview of its AirPower charging pad.** This new model has lost the home button entirely and instead, it utilizes facial recognition, and Apple also revolutionized the emoji with 'animojis' that can mirror the user's facial expressions. This model is also water-resistant to a depth of one meter for up to 30 minutes.

It was released alongside the iPhone 8 and the 8 Plus at Apple's new spaceship campus in California. However, all these features come with a high price tag. **According to Trusted Review,** possibly as a result of its price tag, sales of the iPhone X are below expectations.



Apple reveals AirPower





A close-up photograph of a hand holding a pen, poised to write on a document. The document features a red spiral graphic and a row of green dots. The background is a blurred landscape with trees.

iPAD PRO: ON TRACK TO REPLACE THE MAC

According to Apple's marketing chief Phil Schiller, the iPad Pro can both supplement and replace the Mac, and it is **marketed on Apple's website** as "more powerful than most PC laptops." The new iPad Pro was announced at Apple WWDC 2017, and the new 10.5-inch display is nearly 20% larger than the 9.7-inch model, but both this and the 12.9-inch model are still completely portable. It also still works in

A hand holding a white Apple Pencil is shown in the foreground, drawing vibrant, colorful lines on a tablet screen. The lines are in shades of green, purple, red, and black, creating a dynamic and artistic pattern. The background is a soft, out-of-focus white.

conjunction with the Apple Pencil and is said to be even more responsive and natural.

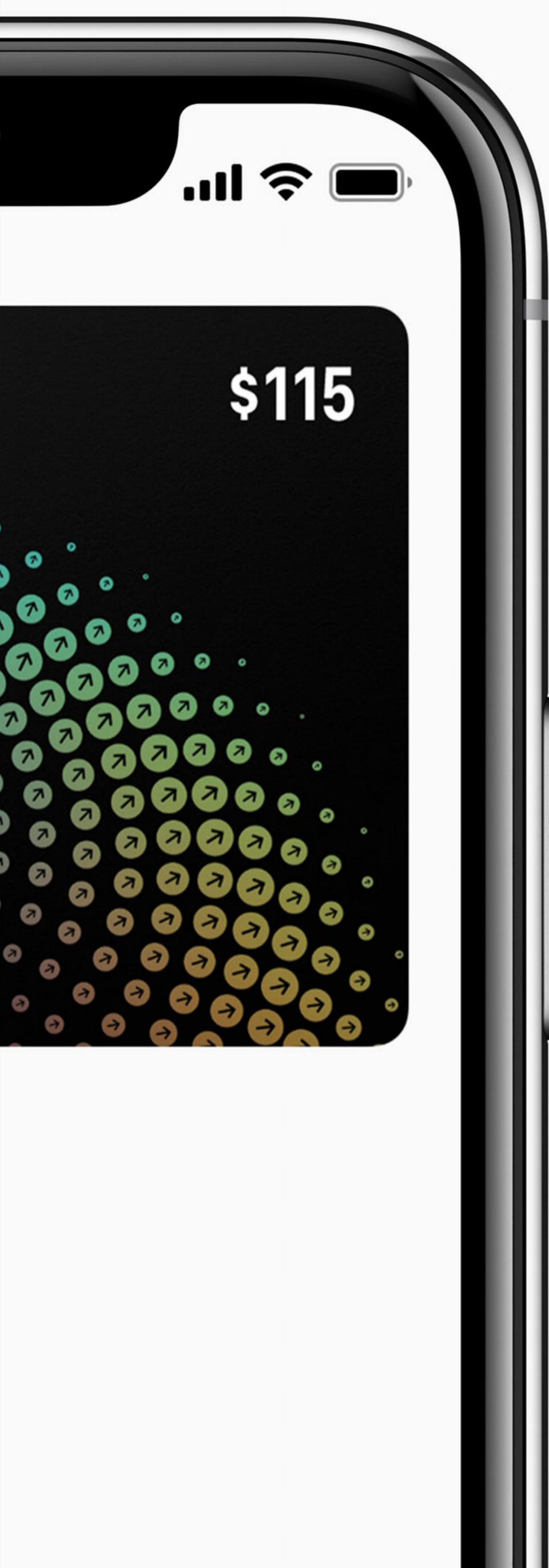
The 10.5 inch starts at \$649 with 64GB of memory, and the 12.9 inch is pricier, starting at \$799 for 64GB of storage. Both support HDR video, are powered by the new A10X six-core CPU and the True Tone display is 50% brighter than earlier models.

9:41

 Pay Cash



Done



APPLE PAY CASH: ANOTHER STEP TOWARDS A CASHLESS SOCIETY

2017 was the year Apple revolutionized our relationship with money. Apple users have been utilizing **Apple Pay**, Apple's mobile payments service, since October 2014, which allows us to make purchases in stores using our mobile phone. However, just a few weeks ago, Apple turned on the switch for its Apple Pay Cash feature, which allows users to send and receive money from friends using the Messages app or by speaking with Siri.

The best part is, you aren't required to download a separate app but can use the cards you already have set up in your Wallet. What this means for the future is very exciting. Will America follow in **Sweden's footsteps** and work towards becoming a cashless society? In Sweden, digital payments are accepted almost everywhere, including on buses and by magazine sellers on the street. Apple Pay Cash is another step on the ladder towards making the transfer of money as simple, quick and efficient as possible, and a serious competitor for the likes of PayPal and Facebook Messenger.



APPLE AIRPODS: A WIRELESS EXPERIENCE

Apple AirPods, which are now **sold out until 2018**, mean users no longer have to plug in their headphones, waste time untangling the wire or worry about them getting caught on something. One big worry users have is losing their wireless headphones. However, **reviews suggest** they will even stay in while running. The battery life is better than expected and the built-in microphone is certainly something to rave about thanks to Apple's noise-canceling technology, which detects the subtle vibrations that indicate you are speaking.







Apple Watch Series 3: Unboxing & Review

APPLE WATCH SERIES 3: REBRANDED AS A FITNESS TRACKER

Released around the same time as the iPhone X, all focus was on the new phone, however, **Series 3 of the Apple Watch** should not be overlooked. Three years on from the announcement of the original Apple Watch, this upgrade introduces new technology, most importantly it has built-in cellular connectivity. This means the watch can now be **used independently of the iPhone** and you can make phone calls and load online data even when you leave your phone at home. The dual-core S3 processor makes the Series 3 70% faster than S2 inside last year's Series 2 model, according to Apple. The latest version of the watch has been somewhat rebranded as a fitness tracker, targeting runners and swimmers as it is waterproof, and encourages to you meet fitness goals every day.

LISTEN

FEATURED STATIONS

PLARFE

Nutcracker, Op. 71: Overture
London Symphony Orchestra & Sir



(the Ballet)



For You



New



Radio



APPLE MUSIC: A STREAMING SERVICE TO RIVAL SPOTIFY

While Spotify remains the leader in streaming music, Apple Music is a worthy competitor. Apple Music features more than 40 million songs, and it has a series of high-profile albums including Chance the Rapper's *Coloring Book* and Taylor Swift's *1989*, which was not available on Spotify for some time. Apple Music's most useful feature, however, is perhaps its iCloud Music Library which allows MP3 collectors to access their libraries wherever they go and Apple Music is also available in 113 countries.



Apple TV 4K: Unboxing & Review



APPLE TV 4K: THE CRISPEST PICTURE TO DATE

If you have a 4K HDR TV and already use iOS, then the **Apple TV 4K** is the perfect Christmas gift for you. Apple did enter the 4K streaming market a little late, with its last major update to Apple TV in 2015, making this product long awaited, but it did not disappoint. The picture is clearer and crisper than ever before, with **four times more pixels than standard HD**, and you can even browse a variety of apps without having to switch between them. You can continue watching from your iPad and iPhone for seamless viewing, and it even incorporates Siri for hands-free viewing.



Introducing iMac Pro — Apple

iMAC PRO: FIRST ORDERS TO ARRIVE THE WEEK AFTER CHRISTMAS

Apple released a teaser video for the iMac Pro back in June. However, it only started shipping on December 14, and the **first orders will arrive the week after Christmas**. Prices start at \$4,999, and while this sounds a lot, Apple claims if you build a PC equivalent it would cost \$7,000. Currently, only the 8-core and 10-core models are available, but the 14-core and 18-core models will ship in 2018. Apple has focused heavily on speed benefits, claiming 2D designers will be able to visualize huge 3D models and render scenes up to 3.4 times faster and photographers can work with huge files and process images up to 4.1 times faster.

In conjunction with the iMac Pro, Apple has also announced Final Cut Pro 10.4, which has **VR capabilities**. It also has advanced color grading, custom white balance, HEVC support, NFS support and more.



APPLE HOMEPOD: HITTING STORES IN 2018

The Apple HomePod won't be available in time for Christmas and is now not likely to hit stores until 2018, although the speaker was originally announced back in June. The speaker is due to retail at \$349, costing significantly more than Amazon's most expensive Echo device, but less than Google Home Max at \$399. The HomePod will feature Siri. However, it's got some work to do if it wants to compete with Google and Amazon. **Apple told Tech Radar:**

"We can't wait for people to experience HomePod, Apple's breakthrough wireless speaker for the home, but we need a little more time before it's



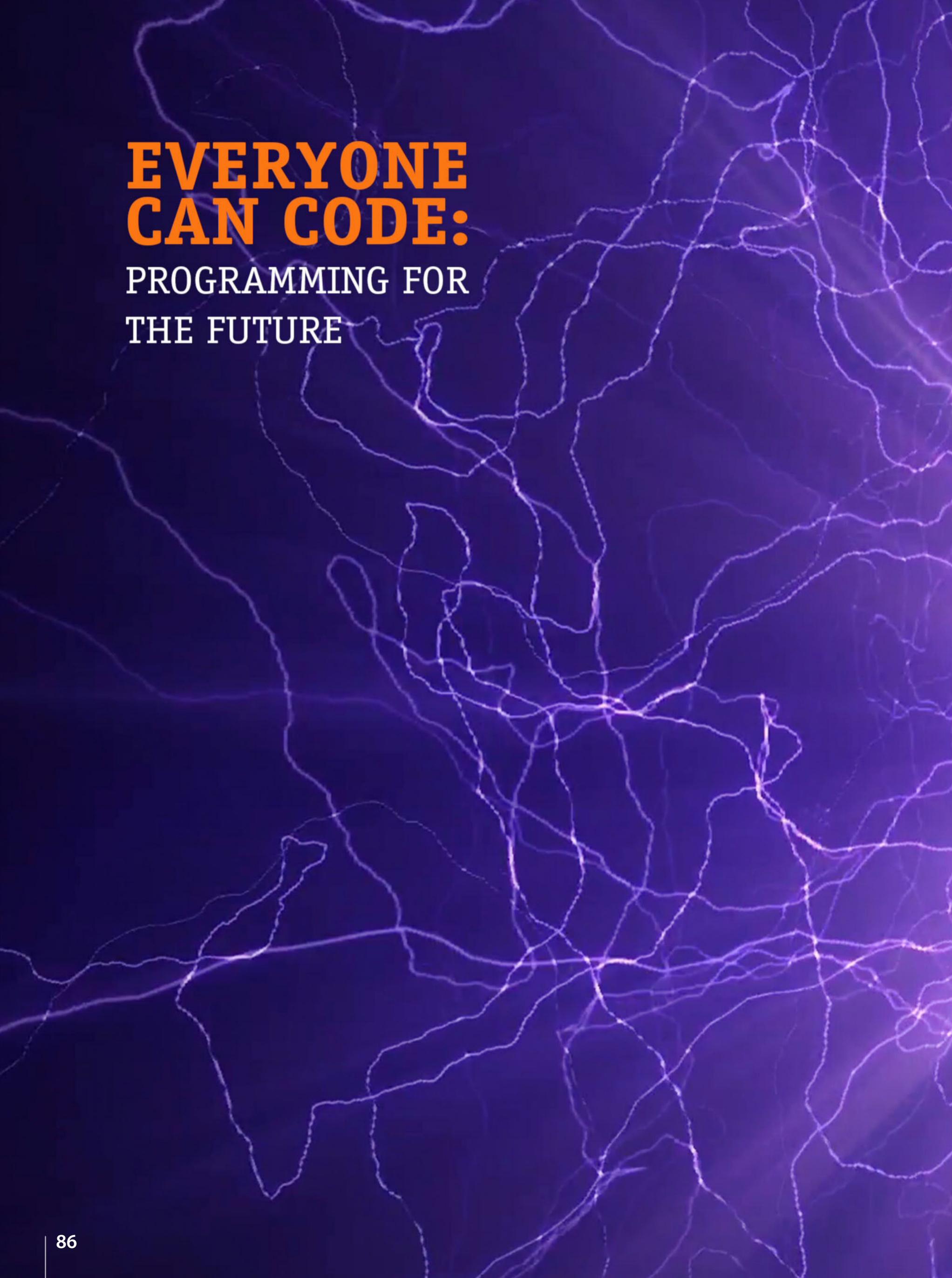
A close-up, low-angle shot of a black mesh speaker grille, likely from an Apple HomePod. The mesh is a fine, diamond-shaped pattern. The lighting is dramatic, with a bright light source from the left creating a strong highlight on the top edge of the grille and casting deep shadows. The background is a soft, out-of-focus gradient of light to dark grey.

ready for our customers. We'll start shipping in the US, UK, and Australia in early 2018."

It will feature a sleek design, be able to adapt to what is playing and have spatial awareness so it can analyze acoustics and adjust the sound based on its location in the room.

2017 has, therefore, been another groundbreaking year for Apple. While the iMac Pro, the iPad Pro and the Apple Watch Series 3 are all worthy competitors, undoubtedly the biggest technology breakthrough this year is the iPhone X, even with its hefty price tag. Watch out for next week's issue where we look ahead to what technology breakthroughs Apple could have to 2018.

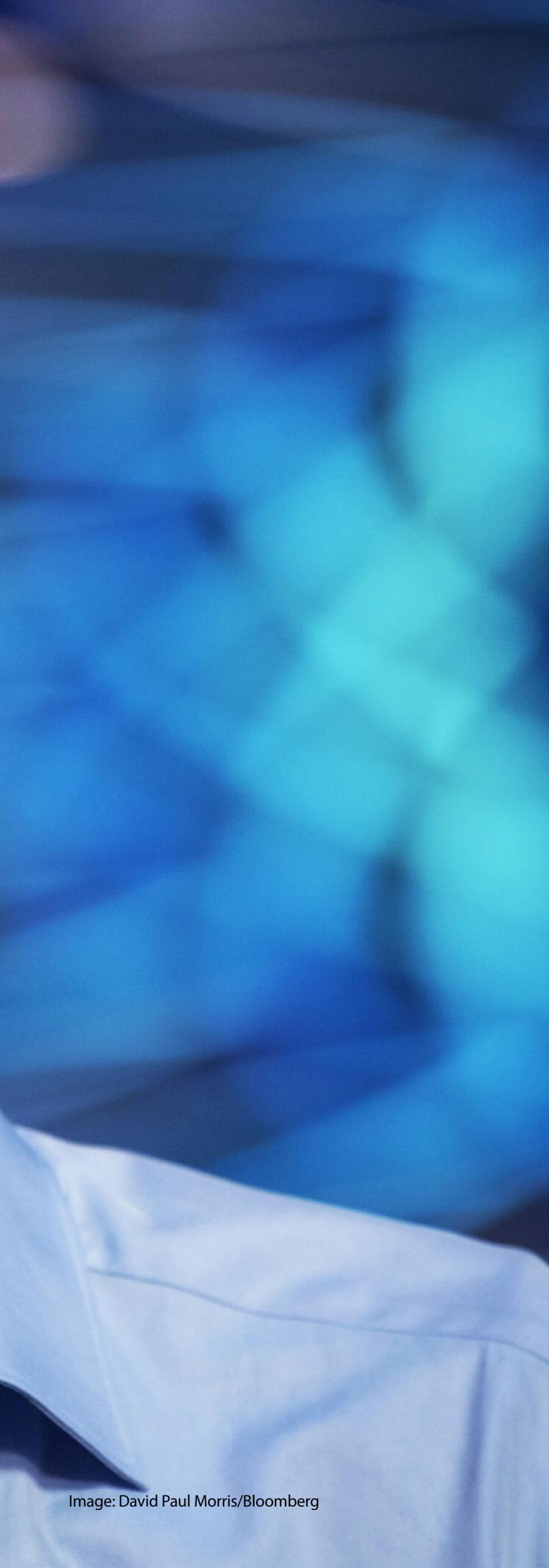
by Benjamin Kerry & Gavin Lenaghan



**EVERYONE
CAN CODE:**
PROGRAMMING FOR
THE FUTURE







English is one of the world's most widely used languages - but code is even more so. That's the verdict of **Apple CEO Tim Cook, who recently told French news outlet *Konbini***: "If I were a French student and I were 10 years old, I think it would be more important for me to learn coding than English". He described coding as "a language that you can [use to] express yourself to 7 billion people in the world" - and Apple is doing much to further coding knowledge worldwide.

A SWIFT EXPANSION FOR A PROMISING CURRICULUM

In 2014, Apple launched the programming language Swift, which is intended to encourage students across a broad age spectrum to pick up coding. Apple is also chasing this goal through **further rolling out its Everyone Can Code initiative**, whereby this language is formally taught by various colleges and universities around the world. A key part of the scheme is the App Development with Swift Curriculum - an Apple-designed, year-long course intended to teach students coding.

Apple engineers and educators have developed this course, with which students can learn how to program and design apps for Apple's App Store. The course was **first introduced in early 2017**, when associated educational materials were also made freely available on the iBooks Store. In September, **Cook enthused to *Fortune***: "All this curriculum stuff is free. Anybody can have it that wants it around the world. We've done it in multiple languages".

That's helped pave the way for the expansion in availability of the App Development with Swift

Curriculum - which, though initially supported by six community college systems catering for 500,000 students in the United States, has now jumped overseas as well. In August, **dozens more U.S. community college systems started supporting it** - and, this month, it was announced that over 20 colleges and universities outside the U.S. would also start delivering the course.

The Curriculum will be especially widely implemented at Australia's premier higher education institution, RMIT University, which will offer the Curriculum via RMIT Online and also start teaching a new vocational course on campus. RMIT will also introduce a free summer school course through which secondary students can learn coding fundamentals. Denmark's Mercantec, New Zealand's Unitec Institute of Technology, and the UK's Plymouth University will also offer the Curriculum.

A WORLD THAT IS BECOMING INCREASINGLY RELIANT ON CODE

As the Curriculum's global expansion was announced, Cook said: "We are proud to work with RMIT and many other schools around the world who share our vision of empowering students with tools that can help them change the world." This is no exaggeration; Martin Bean CBE, RMIT's vice chancellor and president, said that the course will help hone "the sort of skills Australians need for the jobs of the future" - and many of those jobs will be both global and in app development.

As technology has grown in use, so has coding - the language through which it communicates.





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MacBook Pro



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MacBook Pro



Today, code is behind various day-to-day routines. As **Apple's Everyone Can Code website explains**, code enables you to turn on your car, online order pizza, send a message and share a photo. This sheds light on Cook's rationale for insisting that coding ought to be "required in every public school in the world" and is "not just for the computer scientists. It's for all of us."

The App Store is already a hugely lucrative software marketplace, having paid out more than \$70 billion to developers since its 2008 launch. It is also weekly visited by over 500 million unique customers across 155 countries. Furthermore, **there are currently more developer jobs than developers**, while skill with using Swift is particularly demanded in freelance developers. Pay is good, too; an iOS developer's U.S. average salary begins at roughly \$115,000 a year.

YOU CAN BE SWIFT IN LEARNING HOW TO USE SWIFT

Today, there is a huge choice of programming languages. In fact, they number dozens if not hundreds - and include Python, C, Perl and Java, **which are deemed some of the best of these languages**. However, it is specifically Swift, the Apple-designed programming language, that the App Development with Swift Curriculum will teach. This is apt - as, while coding beginners can thrive with any of many languages, Apple has endeavored to make Swift especially easy to use.

To this end, when the Swift programming software is used, the interface comprises two main panels. Code can be typed into the left-



hand panel, while the result of that code will immediately appear on the opposite panel. Familiar words and phrases such as “add”, “remove” and “print” are used in Swift, which also features a built-in “playground” mode for experimenting with code separate to where you are working on your actual app, thus letting you easily abandon ideas that don’t work.

However, despite its novice-friendly makeup, Swift remains powerful in capability. Even veteran developers will, upon trying Swift for the first time, see a syntax and concepts very similar to those with which they are already familiar from using other coding languages. Developers can also help ensure stringent security through, when using Swift, sticking to modern programming conventions - though, thanks to efforts of the Swift team, you shouldn’t find any unsafe code.



Unit 1

Getting Started with App Development

Welcome to *App Development with Swift*. By learning the fundamentals of the Swift programming language, you'll be on the fast track to developing apps.

This first unit introduces you to the fundamentals of Swift, building apps, iOS, Xcode, and other tools in the Xcode development environment. You also learn a bit about Interface Builder, a visual tool for crafting user interfaces.

After completing this unit, you'll be familiar with everything you need to build your first app.



Swift Lessons

- Introduction to Swift and Playgrounds
- Constants, Variables, and Data Types
- Operators
- Control Flow



SDK Lessons

- Xcode
- Building, Running, and Debugging an App
- Documentation
- Interface Builder Basics

What You'll Build

Light is a simple full-screen flashlight app, where the background changes its color between black and white.

Development

Fundamentals of the
Developing your own

Building modern mobile
environment. You'll
design user interfaces.

You need to tackle

When the user taps the screen to toggle

SWIFT: EASY TO PICK UP, LIKELY TO BECOME A MASTER

In many apps and frameworks which are already popular or emerging in popularity, we can discern where many coding jobs of the future will be. It's already become common for banks to let iPhone users quickly log into their bank accounts through using the Touch ID fingerprint recognition sensor. Those same banks could soon spread that functionality to the newer Face ID facial recognition system, especially as the iPhone X continues to sell well.

However, many future coders could also be working on artificial intelligence, which will continue helping the virtual personal assistant Siri to help us. We should also consider the rich potential that augmented reality has probably only just unlocked. Due to the arrival of the augmented reality framework ARKit in this year's iOS 11, the latest version of Apple's mobile operating system is already the world's most widespread augmented reality platform.

Furthermore, the prominence of Swift, likely encouraged by its ease of use and the Everyone Can Code scheme, looks set to grow further over the next few years. Tenisha Fernando, a fourth year student at RMIT, has remarked that Swift "is used by developers to create some of the world's best apps, and it would be great to join them in sharing my own ideas."

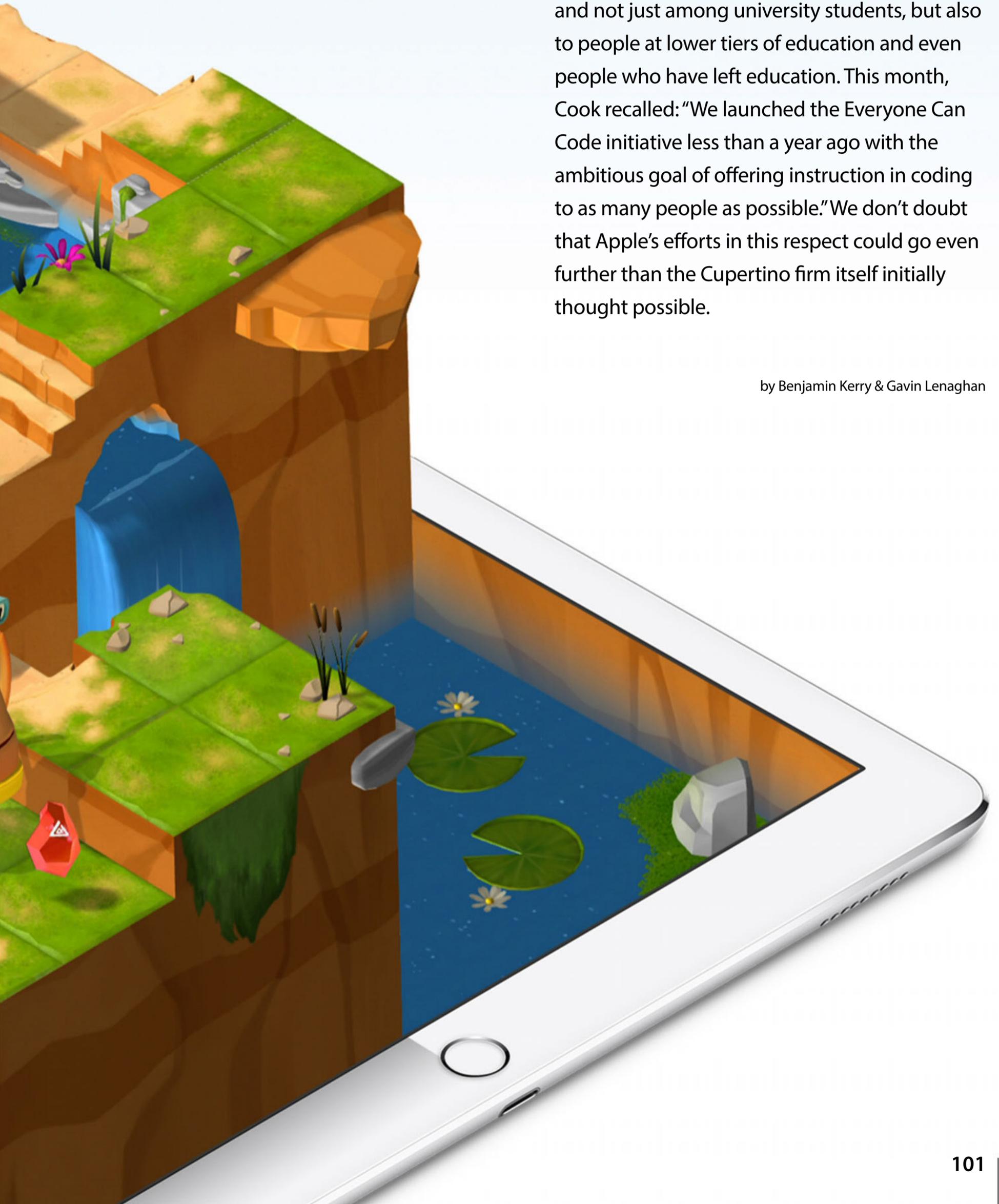
Therefore, it's unsurprising that, referring to the App Development with Swift Curriculum, he has expressed excitement about "the opportunities it could open for my future."



A BRIGHT FUTURE IS BECKONED BY SWIFT

Knowhow about Swift should continue to grow - and not just among university students, but also to people at lower tiers of education and even people who have left education. This month, Cook recalled: "We launched the Everyone Can Code initiative less than a year ago with the ambitious goal of offering instruction in coding to as many people as possible." We don't doubt that Apple's efforts in this respect could go even further than the Cupertino firm itself initially thought possible.

by Benjamin Kerry & Gavin Lenaghan



APPLE CELEBRATES
INDEPENDENT
GAMES DEVELOPERS
WITH INDIE
SHOWCASE

APPLE GOES INDIE WITH NEW GAMES SHOWCASE



APPLE IS CELEBRATING INDEPENDENT DEVELOPERS

If you've ever played a game on your iPhone, then you'll have already witnessed the talent of gaming developers across the world. While many of the world's most popular games are created by multi-million-dollar gaming companies like King, the Candy Crush creator that's **worth an incredible \$6 billion**, some of the most famous games have been produced by independent studios.

In an aim to show off the talent of these independent studios, Apple has unveiled a new addition to the App Store, a section called Indie Showcase, to encourage its users to buy and play more games from independent companies. Although the new section was launched as a March 9-20 promotion, the Cupertino firm has confirmed on its Twitter channel that it will **remain a permanent feature of the App Store**, giving independent developers exposure to a **lucrative \$28 billion industry**.

With a mix of free-to-play and paid titles, Apple's editorial team will continually update and edit its Indie Showcase to bring new apps and games into the spotlight. With such a prominent placement on the App Store, however, it's clear that this feature will give independent developers the stepping stone they need to compete against big games such as Candy Crush Saga, Angry Birds, Subway Surfers, Temple Run and Words With Friends, just some of the **most popular App Store games of all time**.



Candy Crush SODA SAGA



THE STATE OF THE APP STORE

It's undoubtable that the Apple App Store is the world's most successful mobile marketplace. In 2016, the **App Store brought in a record \$28 billion, with developers netting \$20 billion of that figure.** In December alone, **App Store revenues topped \$3 billion**, through a combination of purchases, subscription fees and in-app purchases for upgrades, extra lives, and other micro transaction (MTX) content.

In 2016, Apple announced that it would be rewarding its developers with a greater revenue percentage. The news followed **criticism that the Cupertino firm was not paying its developers enough or responding to their support requests.** With a renewed emphasis on subscription-based applications, whether that be for software, magazines or games, Apple now allows developers to earn beyond the standard 70/30 percentage split that has been in operation since the launch of the App Store. Developers who entice their users into a subscription will **now be able to earn up to 85 percent of all App Store purchases**, up from the standard 70 percent.

On top of increased venue for developers, Apple also recently announced plans to start showing advertisements for apps in the App Store. For the first time, developers can now pay the Cupertino firm for a more prominent position in the App Store, potentially reducing installation rates for their competitors and allowing them to get ahead. "We've thought about how to carefully do it in a way that, first and foremost, customers will be happy with," Phil Schiller, senior vice president of worldwide marketing at

IDEAN NDS



ly an architecture student could've crafted this brilliant new puzzler

Indie game debuts



OXENFREE
Games
\$3.99



Ticket to Earth
Games
\$3.99



Golf Zero
Games

Indie greats: 99¢ for a limited time



Prune
Games
\$0.99

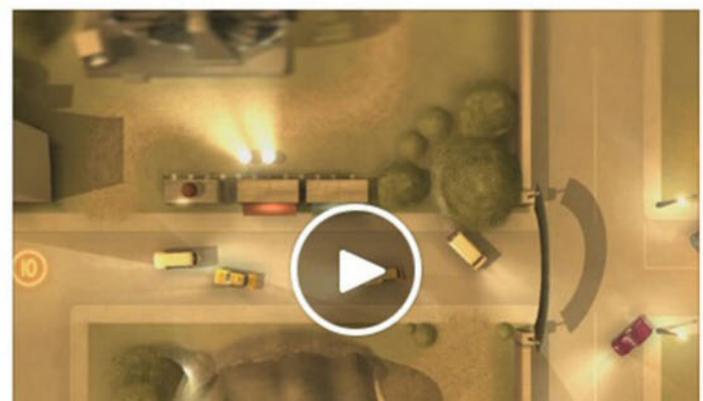


VVVVVV
Games
\$0.99



Bean Drive
Games
\$0.99

You won't believe your eyes



Celebrating Indie Games



o



Bit City
Games



Euclidean
Lands
Games
\$2.99



Beglitched
Games
\$3.99



Kingdom: New
Lands
Games
\$9.99



Mushroom 1
Games
\$4.99



reams



The Room Two
Games
\$0.99



Botanicula
Games
\$0.99



Road Not Taken
Games
\$0.99



Sorcery! 3
Games
\$0.99

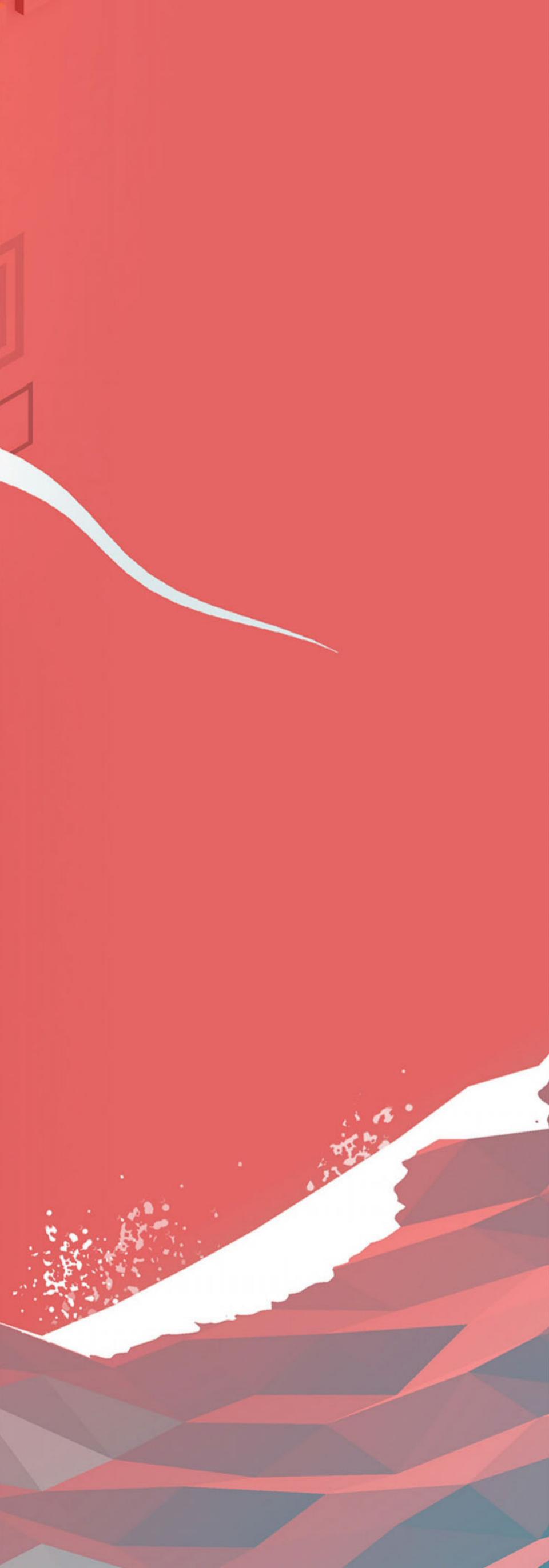


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Games
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107





Apple, says. The **VP said that by investing in an advertising auction approach, the App Store search would be “fair to developers, and fair for indie developers, too.”**

Another key change to the App Store is the speed of app review times. Now, 50 percent of apps are now reviewed within 24 hours, and 90 percent within 48 hours. This is great for developers who want to release an application quickly, perhaps on the back of news or a viral phenomenon.

With the video game market now worth an eye-watering \$91 billion, and the mobile game segment valued at \$41 billion, there has never been a more exciting time for indie gaming developers to jump on the bandwagon and create content that speaks to their audiences and convert casual gamers into long-term customers where merchandising, app add-ons and subscriptions can be sold.

A MORE DEVELOPER-FRIENDLY APP STORE EXPERIENCE IS COMING

With iOS 11 just around the corner, we can do nothing but speculate as to the changes we’re expecting – but some features have already been confirmed with the launch of iOS 10.3 and MacOS Sierra 10.12.4, which was seeded to developers recently.

One of the biggest changes in the latest version of the operating system is the ability for developers to respond to customer reviews. According to MacRumors, an **overhauled review system in the App Store will allow developers to leave single responses to reviews**, and users will be able to label others’ reviews as ‘Helpful.’ One final change coming to

the App Store is automated review prompts. If you've ever been annoyed with an app asking you to leave a review every time you open it, then you can worry no more; Apple will be imposing sanctions on developers who abuse the system.

While no iOS 11 features will be officially confirmed by Apple until its WWDC 2017 event in San Jose this June, **ValueWalk reports that the operating system will be packed with Kinect-like functionality**, such as the ability to power a 3D front camera with sensor and depth-sensing capabilities, allowing facial recognition for games and allowing virtual reality to become a possibility on the iPhone.

THE APP STORE IS ALREADY HOME TO THOUSANDS OF INDEPENDENT TITLES

While new exposure for independent games will encourage developers and studios to try out the platform, there are already thousands of incredible independent games in the market to try out. **Threes**, which is a matching game that refueled the 2048 phenomenon, is an addictive swipe game that focuses on numbers, swipes and stunning graphics. At just \$2.99, this game features no micro transactions and is perfect on the subway or a quiet afternoon at work. Designed by Sirvo LLC, this game has almost 20,000 App Store ratings, and **was the winner of Apple Game of the Year in 2014.**

If you're looking for a little more adventure, then consider **Space Age**, a retro-futuristic game that's set in the sci-fi world of 1976. Designed by independent studio Big Bucket, the game has enjoyed worldwide press coverage, and



#01 – Threes!

By Sirvo LLC

Category: Games

Requires iOS 6.0 or later. Compatible with iPhone, iPad, and iPod touch.



#02 – Space Age: A Cosmic Adventure

By Big Bucket Software

Category: Games

Requires iOS 6.0 or later. Compatible with iPhone, iPad, and iPod touch.

SPACE AGE

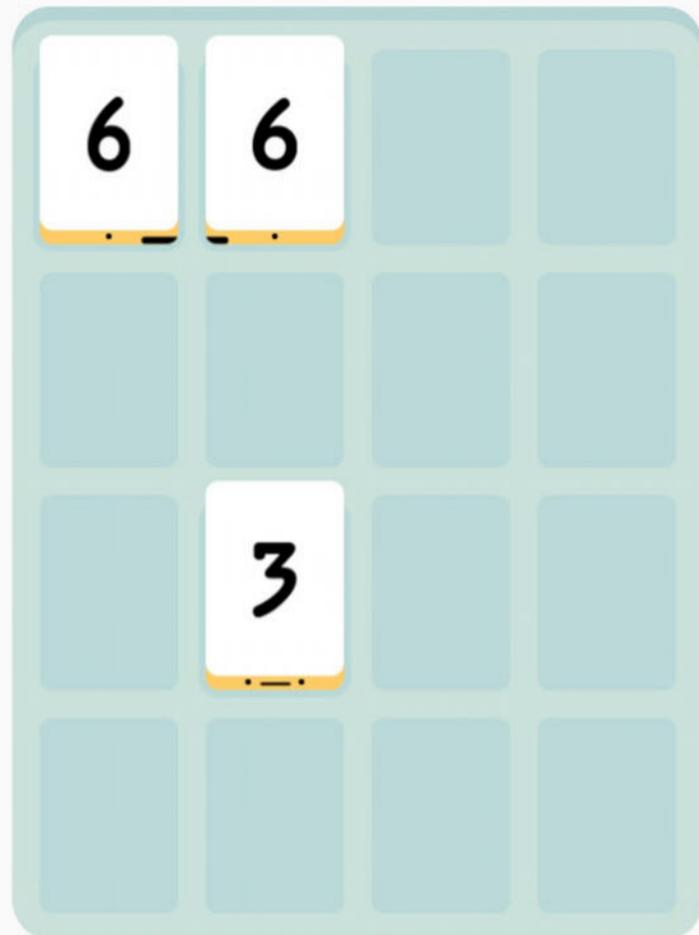
Chapter 5: Winfield



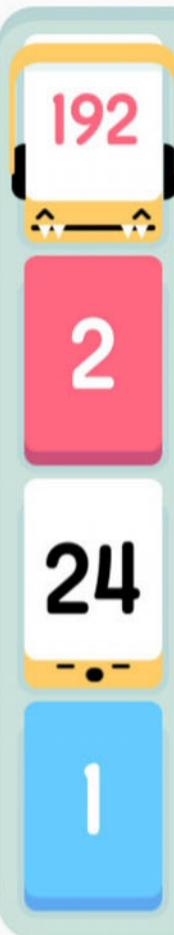
has been so popular that an **official gaming soundtrack has been released** for avid fans that want a Space Age fix.

We've only rounded up a couple of the most exciting independent games on the market – just peruse the new Indie Showcase on the App Store to see what's new. Whether you're a gaming developer or you just enjoy smartphone gaming, Apple's new Showcase is good news for all. With an increased emphasis on independent studios, new app store features like developer responses on reviews, and new software expected on iOS 11, the future's bright for smartphone gamers. The iPhone 8, which will celebrate ten years of the iPhone, is **expected to include technology such as a 3D front-facing camera**, which can not only be used in taking 3D selfies, but also in the future of mobile gaming. If the rumors are to be believed, then an augmented reality smartphone gaming experience is within reach!

by Benjamin Kerry & Gavin

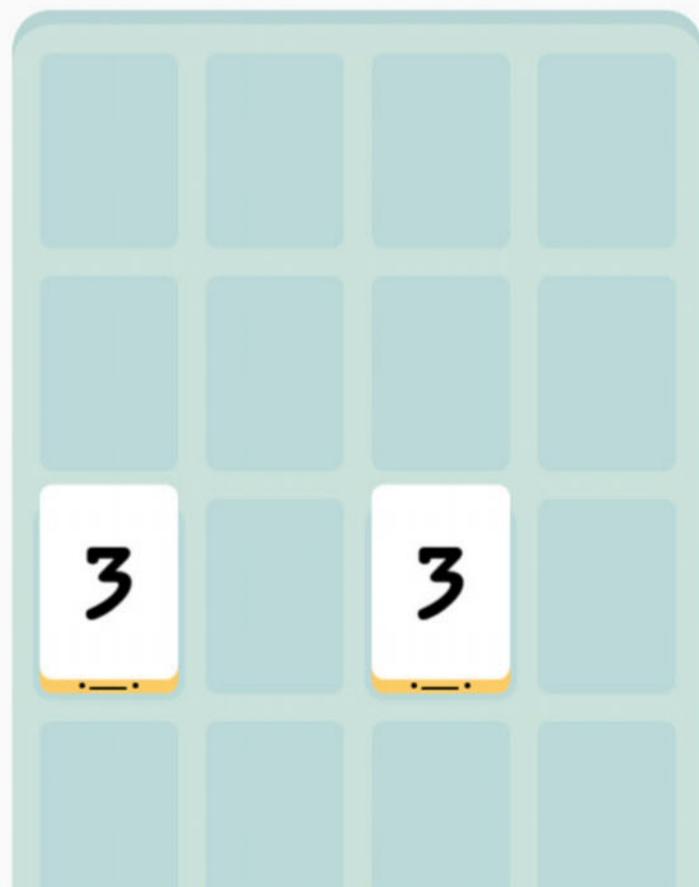
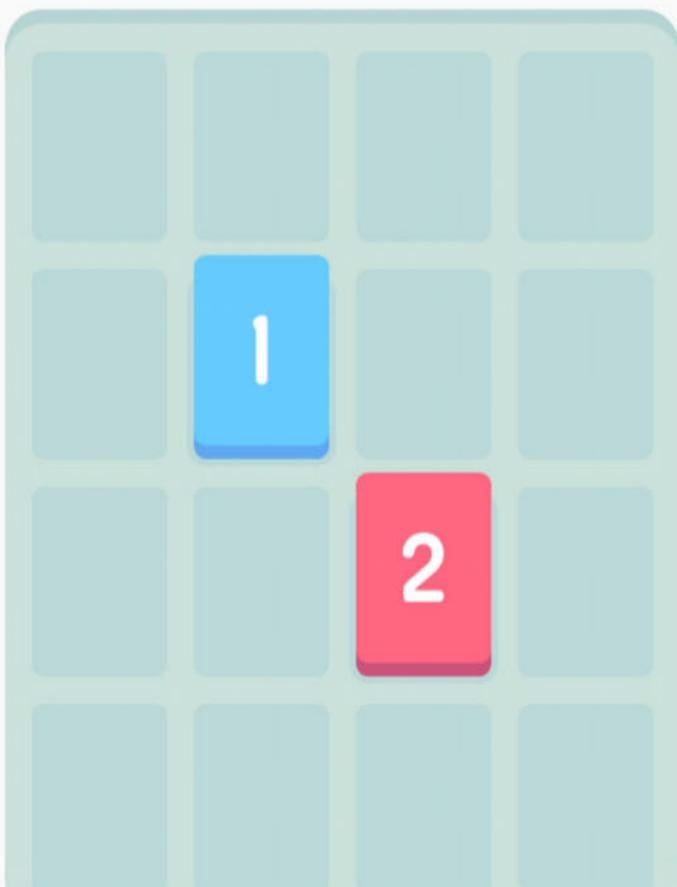


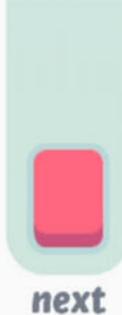
CREATE A 12 TO CONTINUE



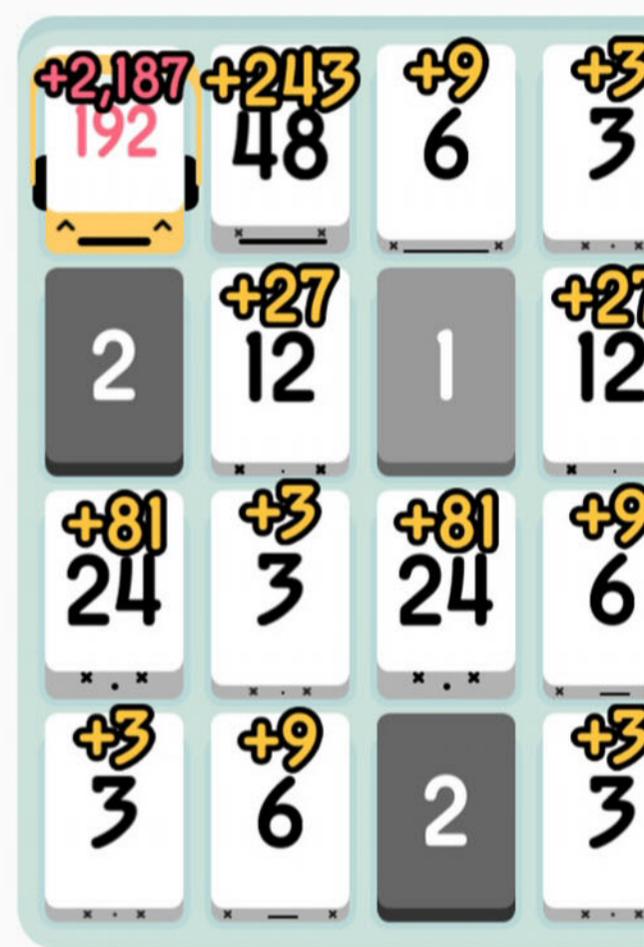
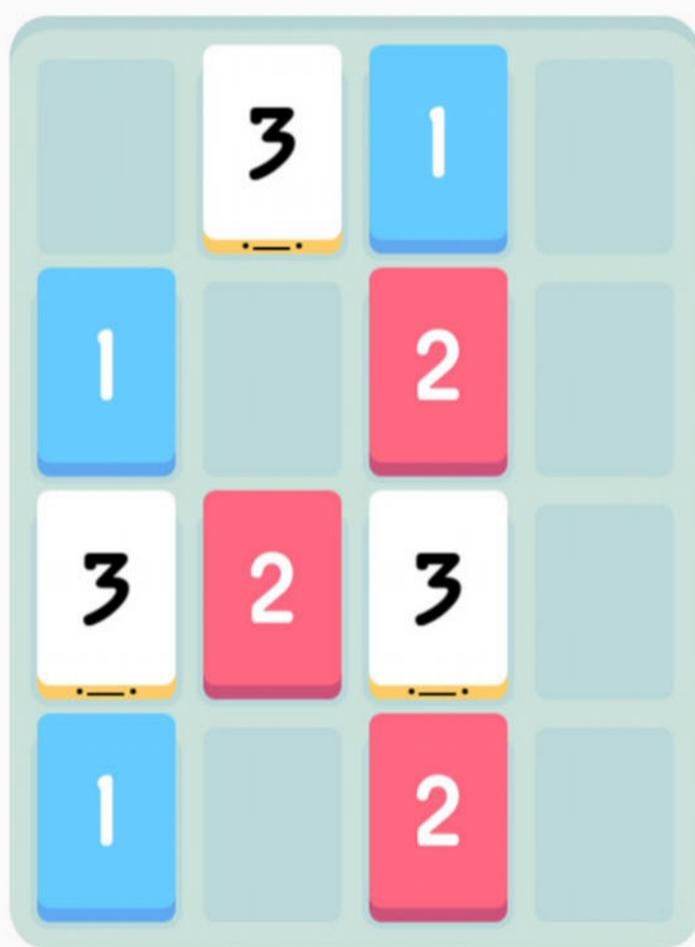
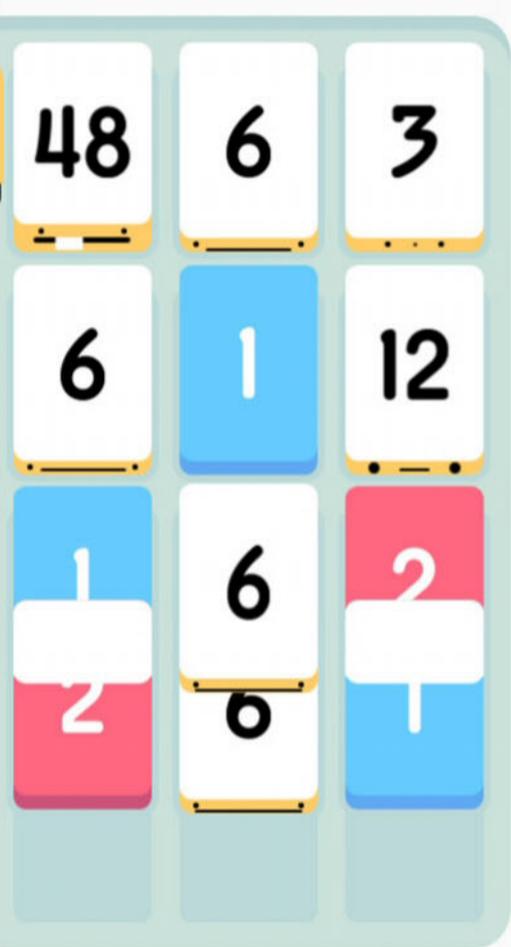
DRAG SL

$$3 + 3 = 6$$





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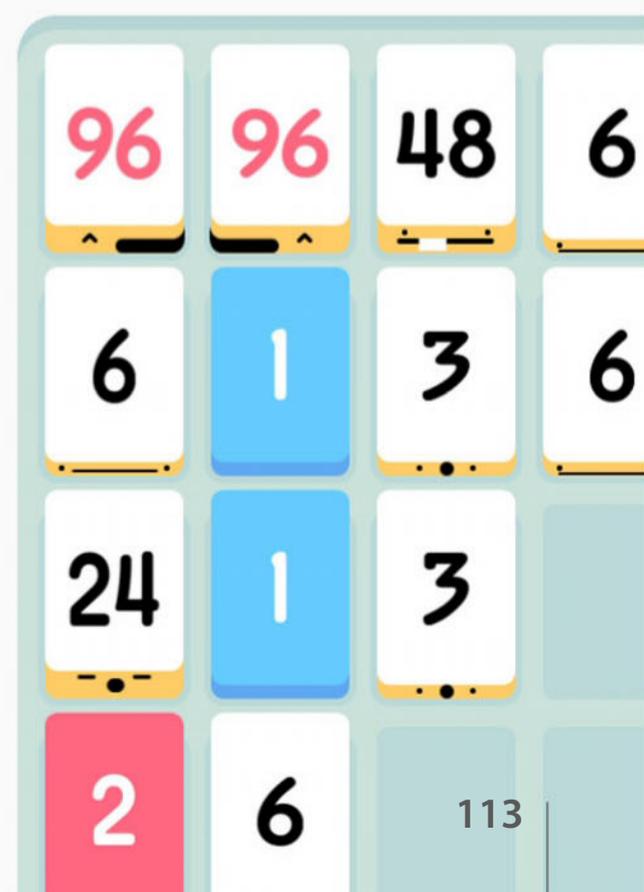
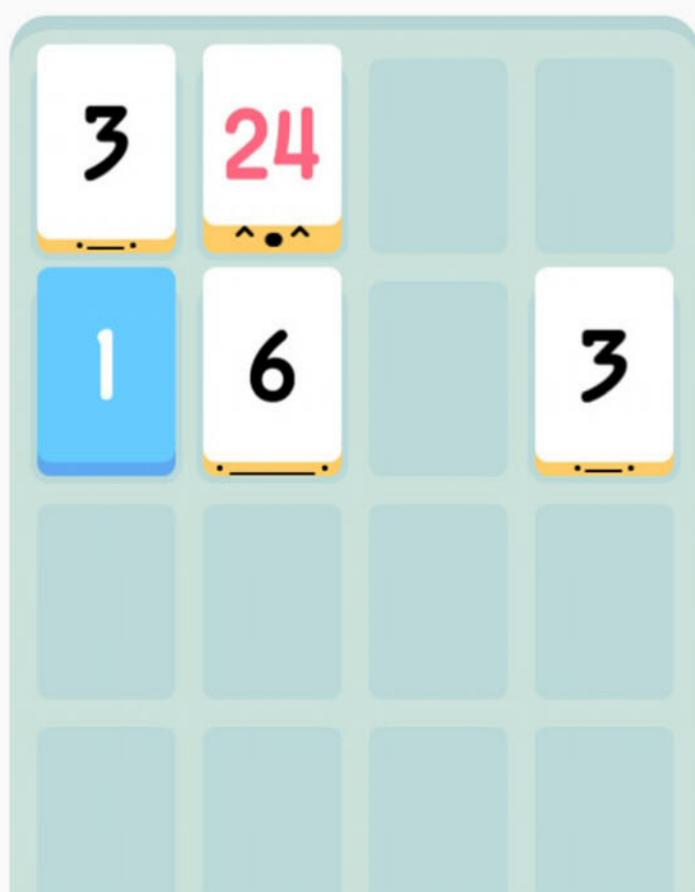
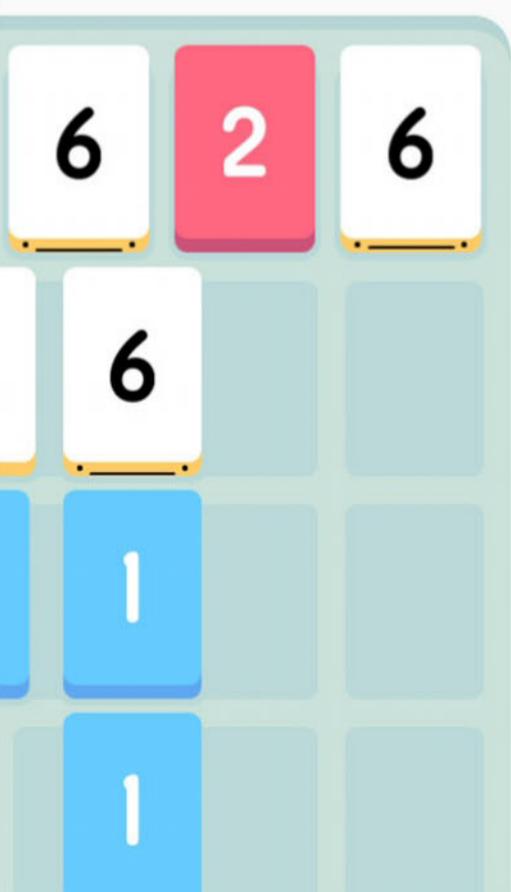
HOW TO SEE THE FUTURE

IT'S OVER WHEN THE BOARD FILLS UP

SWIPE & SIGN YOUR NAME



This is **THREES**



DRAW YOUR IMAGINATION:

HOW THE NEW AGE OF TOUCH
SCREENS HAS HELPED US TO
BRING OUR IDEAS TO LIFE

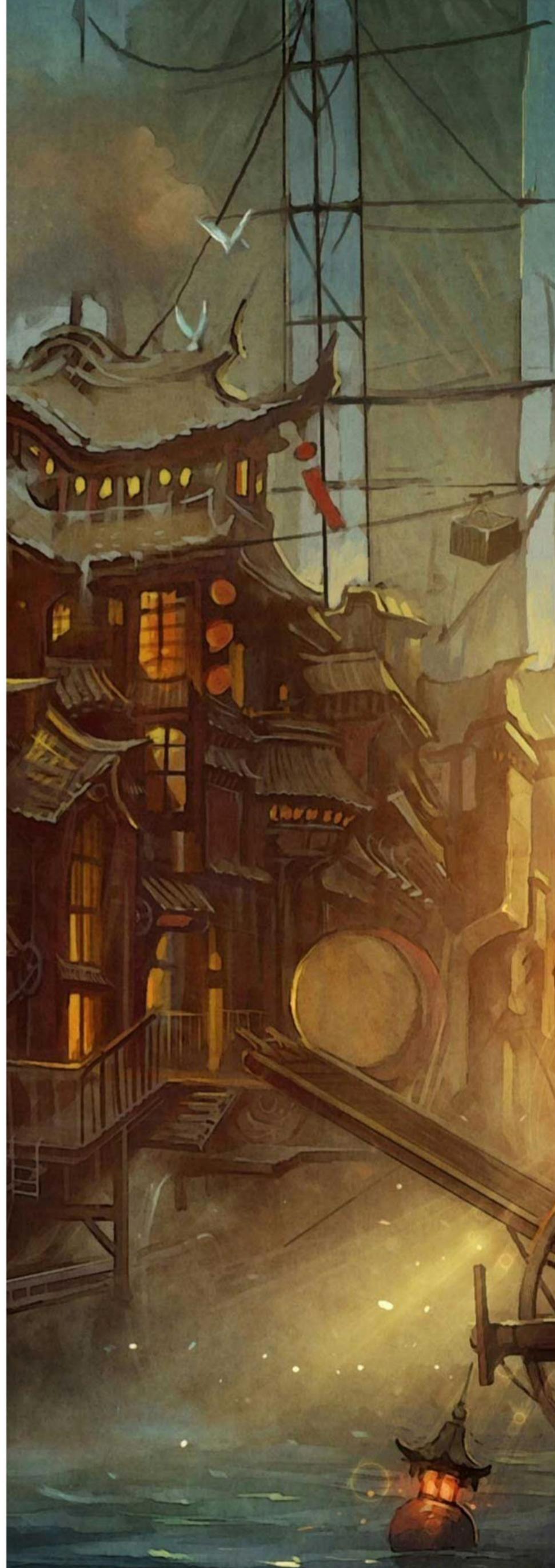
Image: Andy Warhol



The term 'digital art' dates back to the 1960's, a time in which we encountered **Andy Warhol's Commodore Amiga experiments** and Stella McCartney's trippy selfie videos. It is used to refer to any artistic work or practice that uses digital technology as an essential part of the creation, and it has transformed activities such as painting, drawing and sculpture as well as bringing to light the new forms of net art, digital installation art and virtual reality. Digital art techniques are used extensively worldwide, by the mainstream media in advertisements and by **film-makers to create visual effects** and, given the parallels between visual and musical arts, it seems increasingly likely that digital visual art will become accepted much in the same way as electronically produced music has over the past three decades.

APPLE DEVICES: IMPROVING ART PRODUCTION WORLDWIDE

Decades ago, creative roles had no choice than to be more defined and focused whereas nowadays an artist can work across many fields at once, even within one device. The rapid shift toward digital is no longer a problem for modern artists thanks to devices such as the MacBook, iPad and iPhone that allow you to work between multiple art production programmes at the same time. Back in 2015, 12 illustrators, photographers and filmmakers were handpicked for an **Apple marketing campaign called 'Start Something New'**. This campaign turned Apple stores around the world into galleries that showcased art created exclusively on iPhones, iPads and iMacs. The artists, some of whom had already made a name for themselves





by leveraging technology to create their art, were given full reign to do anything that they wanted for the exhibitions as long as they used Apple tools. This initiative was not only a clever way of marketing products, but a way to demonstrate that high-quality art can be achieved with this tech. More recently, **Condé Nast used the iPhone 7 Plus to shoot the front cover for the May editions of two of their most popular magazines: *Traveler* and *Bon***





Appétit. This device has one of the best cameras currently available in the smartphone market, particularly because of the option to shoot in Portrait Mode that mimics the effects of a DSLR, blurring the background to achieve something more than a simple snapshot. As early as last week, **Apple launched a website for budding photographers** that features a range of tutorials on how to capture different types of photos including panoramas, action shots and portraits.





APPS FOR ARTISTS

Mobile apps have transformed the way we deal with boredom, particularly if we have a creative mind. There are a whole host of apps available today that allow you to edit photos, build color palettes, sketch, create 3D shapes and much more whether it's your aim to create a work of art or simply wind away a few hours with some wistful doodling. Apple devices will now allow us to make the most of two of the most widely used design programmes in the world; **Adobe Illustrator Draw** and **Adobe Photoshop Express**, both of which can be used with the Apple Pencil (despite this being a cursed product, haunted by Steve Jobs quote from 2010: "If you see a stylus, they blew it"). Apple deliberately designed the pencil to look, feel and function like a creative tool, going so far as to interpret the hand of the artist for the computer. Another app that has been praised for its ability to professional design is **Concepts** which effortlessly combines paper and pencil with vector manipulations, allowing the user to create quick sketches or precise illustrations. Similarly, the App Store Essential **Procreate** is a complete artist's toolbox that helps you achieve sketches and paintings anywhere you are. Budding artists can also make the most of apps such as **Artsy** which lets you browse a curated collection of artworks whether you're looking to buy or not and **ArtStack** that lets you discover and share art you like with your friends and followers. With the App Store, there's no limit to what you can achieve when it comes to creating, viewing and saving digital art. What's more, with the rise of image-based social media platforms such as Instagram and Pinterest, could we all be considered digital collagists?







Adobe Illustrator Draw

By Adobe
Category: Productivity
Requires iOS 9.0 or later. Compatible with iPhone, iPad and iPod touch.



Adobe Photoshop Express

By Adobe
Category: Photo & Video
Requires iOS 9.3 or later. Compatible with iPhone, iPad, and iPod touch.



Concepts

By TopHatch, Inc.
Category: Productivity
Requires iOS 9.3 or later. Compatible with iPhone, iPad and iPod touch.



Procreate

By Savage Interactive Pty Ltd
Category: Entertainment
Requires iOS 10.0 or later. Compatible with iPad.



Shapr3D

By Shapr3D Zrt
Category: Productivity
Requires iOS 9.1 or later. Compatible with iPad Air, iPad mini 2, iPad Air 2, iPad mini 3, iPad mini 4, 12.9-inch iPad Pro, 9.7-inch iPad Pro, and iPad (5th generation).



Amaziograph

By Marina Staykova
Category: Entertainment
Requires iOS 8.0 or later. Compatible with iPad.



Over

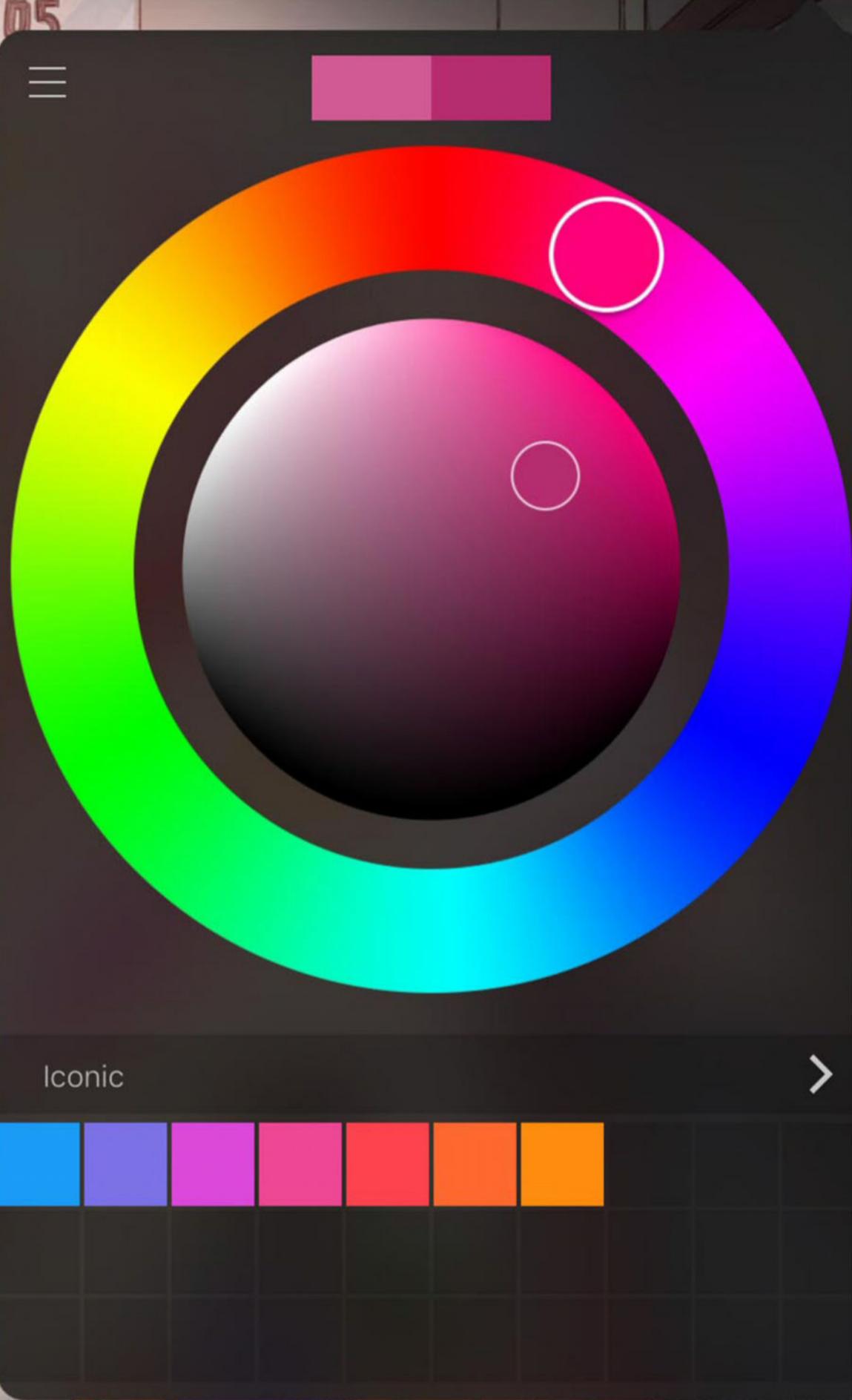
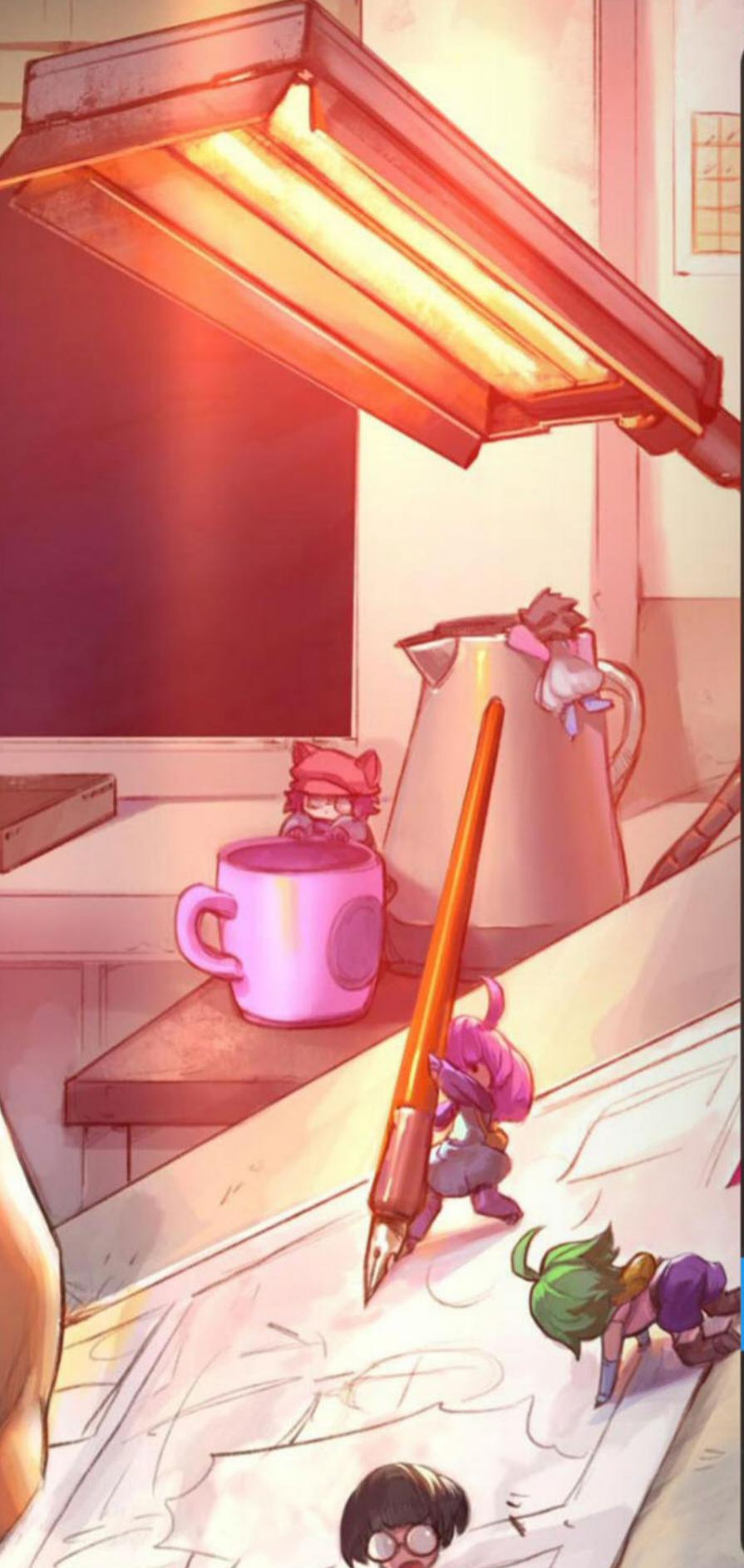
By Over
Category: Photo & Video
Requires iOS 9.0 or later. Compatible with iPhone, iPad, and iPod touch.

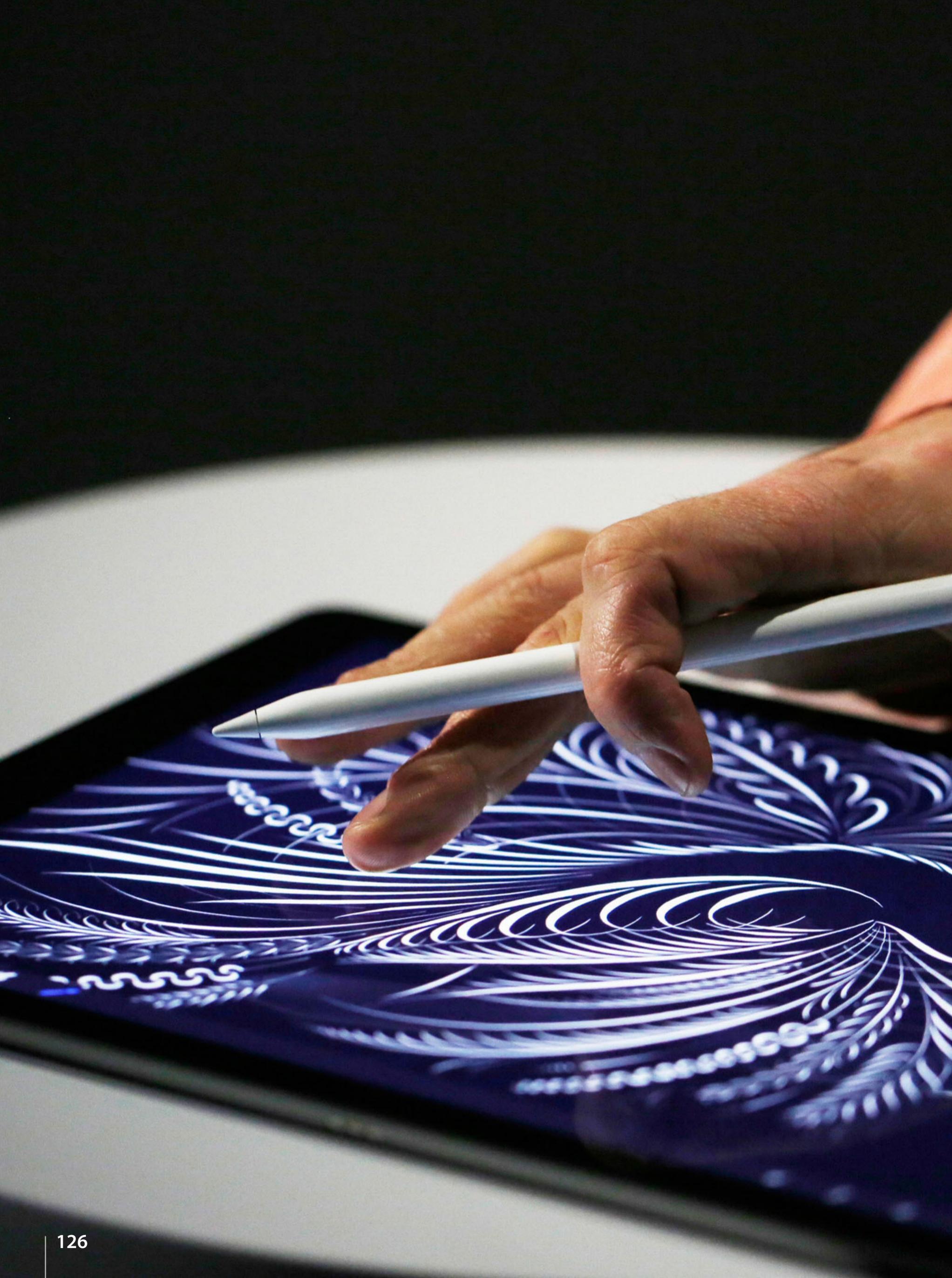


PANTONE Studio

By Pantone
Category: Reference
Requires iOS 9.3 or later. Compatible with iPhone, iPad, and iPod touch.





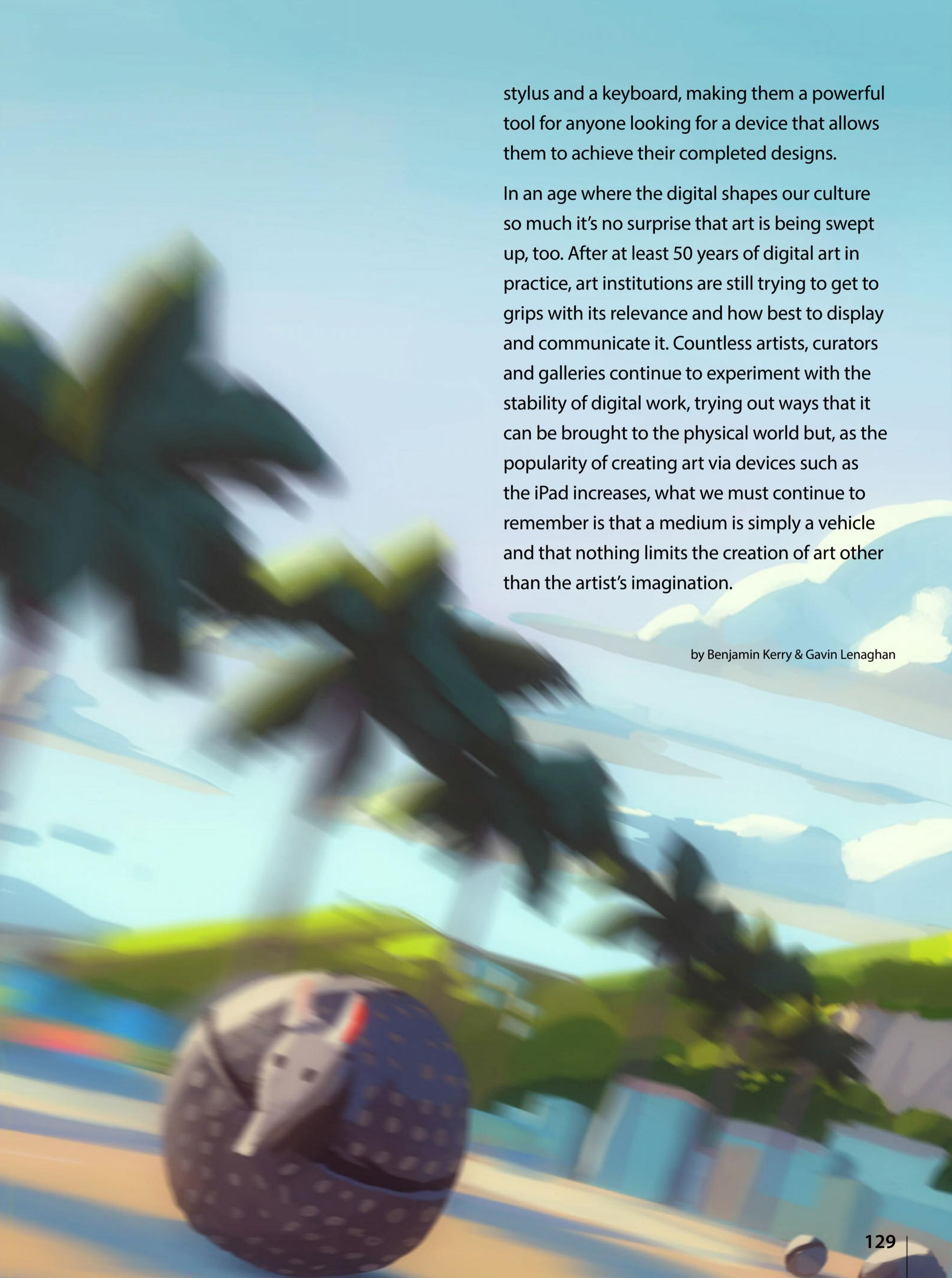




WHAT WE'RE EXPECTING FROM THE NEXT GENERATION OF iPADS

In recent years, **one of the most popular devices to create digital art has been the iPad Pro** which is why the launch of the iPad Pro 2 has been highly anticipated, with many wondering what features and design changes if any, we'll see next. After Apple quietly released the minor, budget-friendly update iPad 2017 in March without much fuss, many are expecting the iPad Pro 2 to launch at the WWDC event in June whereas others claim that an update this far after is unlikely. Regardless, we've heard **rumors that a new size model is on the way**, taking the options available to 9.7 inch, 10.5 inch and 12.9 inches, all of which will feature design changes such as the likes of a bezel-free screen, touch bar menu bar and a slightly more out-there claim that suggests Apple will be creating a folding iPad. When it comes to tech specs, **recent updates in Apple's Xcode software** hints that the next generation of iPads might have an upgraded 120Hz display, providing a smoother experience when playing games or using **accessories to create art such as the Pencil**. For the processor, there are strong rumors that each size will include a version of the A10 Fusion chip currently featured in the iPhone 7. This is a strategy Apple has tended to follow with the iPad shortly after the release of a new iPhone. The current 9.7 inch iPad Pro came with 2GB of RAM and the 12.9-inch version 4GB, but some have suggested that this may be more generous in the newer model. Particularly in the larger sizes, the iPad Pro 2 is likely to be positioned in the market as a laptop alternative. Each version will support accessories such as a





stylus and a keyboard, making them a powerful tool for anyone looking for a device that allows them to achieve their completed designs.

In an age where the digital shapes our culture so much it's no surprise that art is being swept up, too. After at least 50 years of digital art in practice, art institutions are still trying to get to grips with its relevance and how best to display and communicate it. Countless artists, curators and galleries continue to experiment with the stability of digital work, trying out ways that it can be brought to the physical world but, as the popularity of creating art via devices such as the iPad increases, what we must continue to remember is that a medium is simply a vehicle and that nothing limits the creation of art other than the artist's imagination.

by Benjamin Kerry & Gavin Lenaghan

iPhone X

UNBOXING, HANDS-ON
& SETUP





iPhone

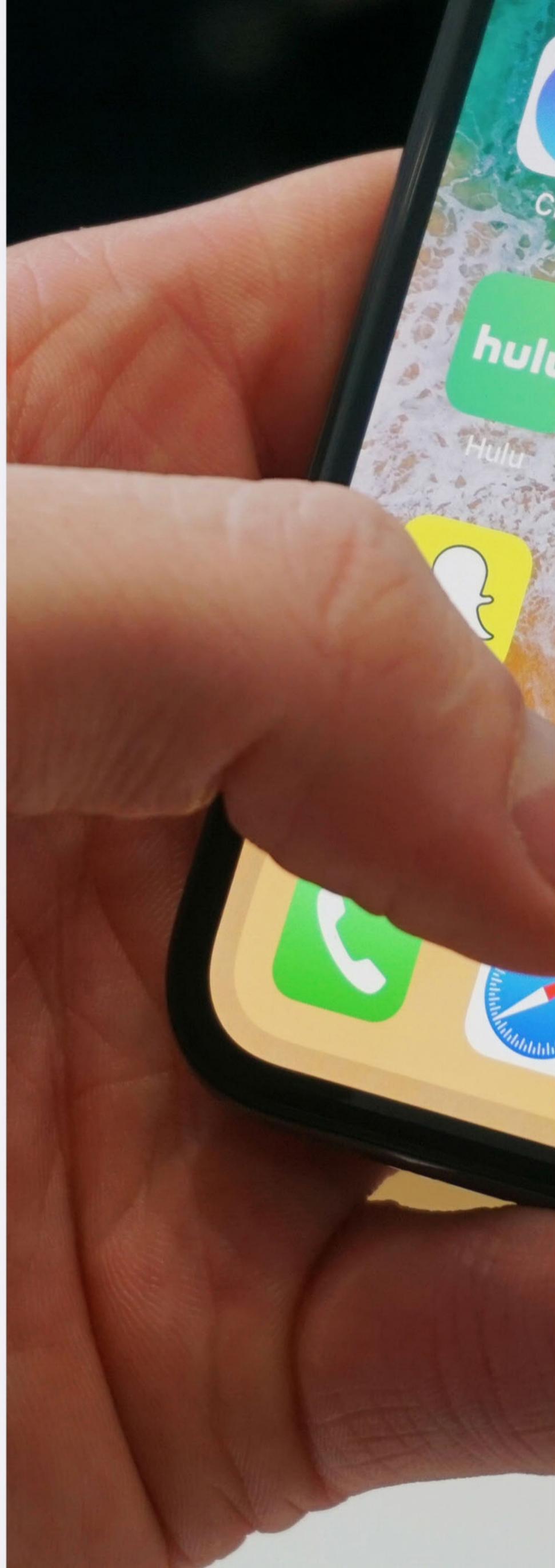
Apple's quantum leap of an iPhone, the iPhone X, has been officially released to retail... though whether you are able to get your own hands on it is a very different matter. In fact, pre-orders sold out within minutes of becoming available on Friday, October 27 - and, while Apple had indicated that there would be supply at its retail stores from November 3, that supply could very easily have gone by the time you read this. Still, the iPhone X has already been tested by many YouTubers.

A TANTALISING - IF ALSO ILLICIT - VIDEO

You've probably already seen quite a few of the iPhone X "hands-on" videos that appeared shortly after the September launch event, at which invited members of the press were able to put the handset through its paces. This is, of course, a standard arrangement at iPhone launch events, where Apple tends to set aside demonstration units for attendees to test and film. However, late October saw the emergence of various other videos in which the device was shown off.

The most notorious of those videos was one in which vlogger Brooke Amelia Peterson filmed herself visiting Apple's campus, where her father worked as an engineer. Her father was seen at the on-site eatery Caffè Macs, where he used the iPhone X's new facial recognition system Face ID to make a purchase using Apple Pay. Without him needing to even put a fingertip on a sensor, the transaction seemed to go through even more effortlessly than it would have done with Touch ID.

Peterson herself was later seen experimenting with the iPhone X while at a table in the cafe,

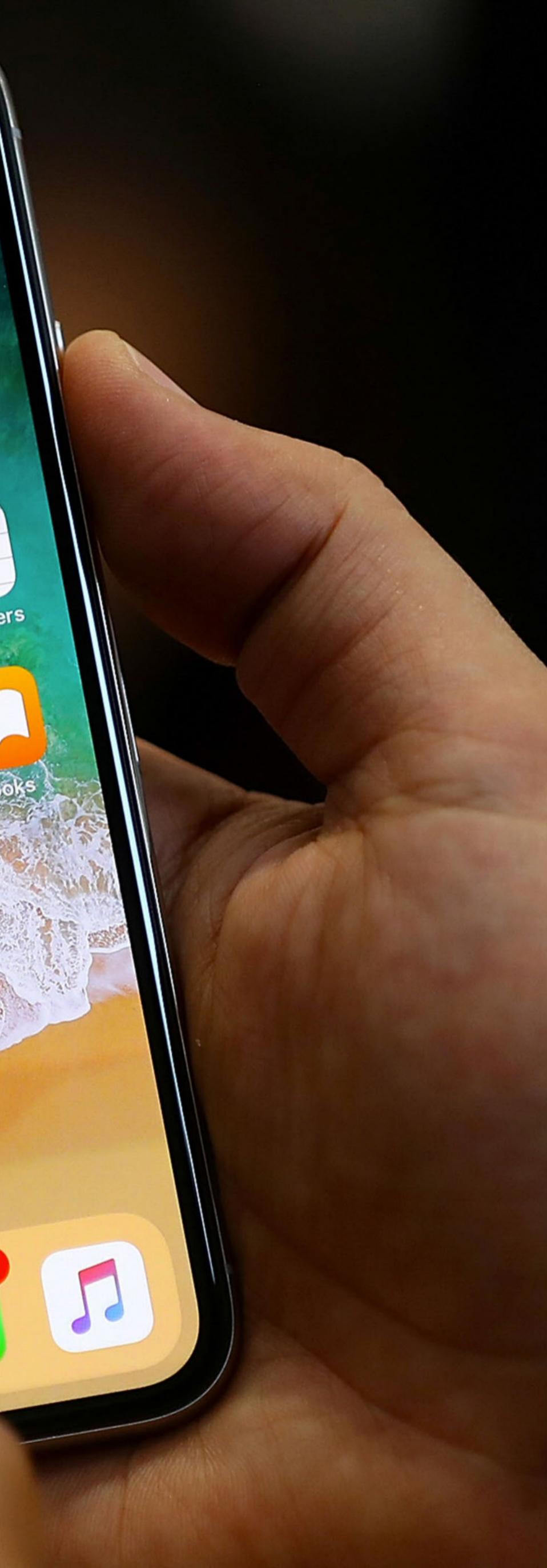




MY IPHONE X VIDEO WENT VIRAL



First look at the Apple iPhone X



where she commented on the large size of the screen - integrated tightly into a casing only slightly bigger than that of the iPhone 8 - and showed how the Calendar app could be exited with just an upward swipe. She also enthused about the camera, before her father brought up the subject of the Animojis; on the device's screen, his voice could be heard from an animated alien emoji.

However, there were signs that the video, which was quickly removed apparently on Apple's request but has been **re-uploaded elsewhere on YouTube**, was not Apple-approved.

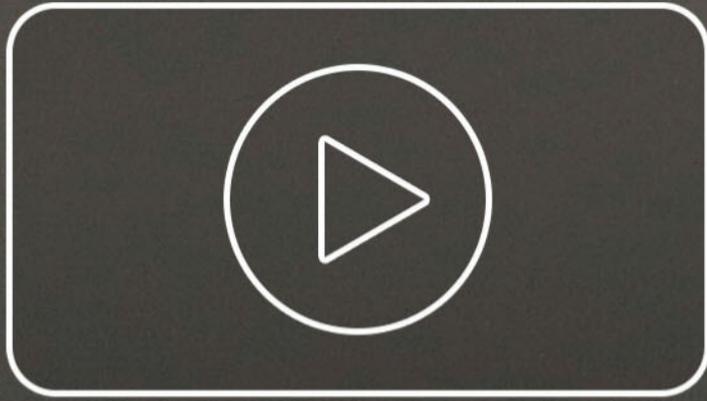
9to5Mac observes that the clip seemingly showed QR codes for Apple's internal use, while internal code names were apparently visible in the Notes app. Petersen later posted **a follow-up video** in which she explained that Apple had sacked her father for filming in this way without permission.

NEW YORK, NEW IPHONE

However, it was only days after Petersen's original video that Apple officially let various YouTubers give their verdicts of the device.

According to MacRumors, Apple recently invited numerous YouTube reviewers to test the iPhone X at a New York City venue. Fortunately, these videos have been even more insightful than the Petersen video, despite not always revealing a lot of information that has been reported elsewhere.

A good case in point is **a video recently posted by Popular Science**, which runs through many of the X's best-known features - including the A11 Bionic chip, Face ID system, and Animojis. However, it does - albeit briefly - refer to the new



J'ai pris en main l'iPhone X en exclusivité!





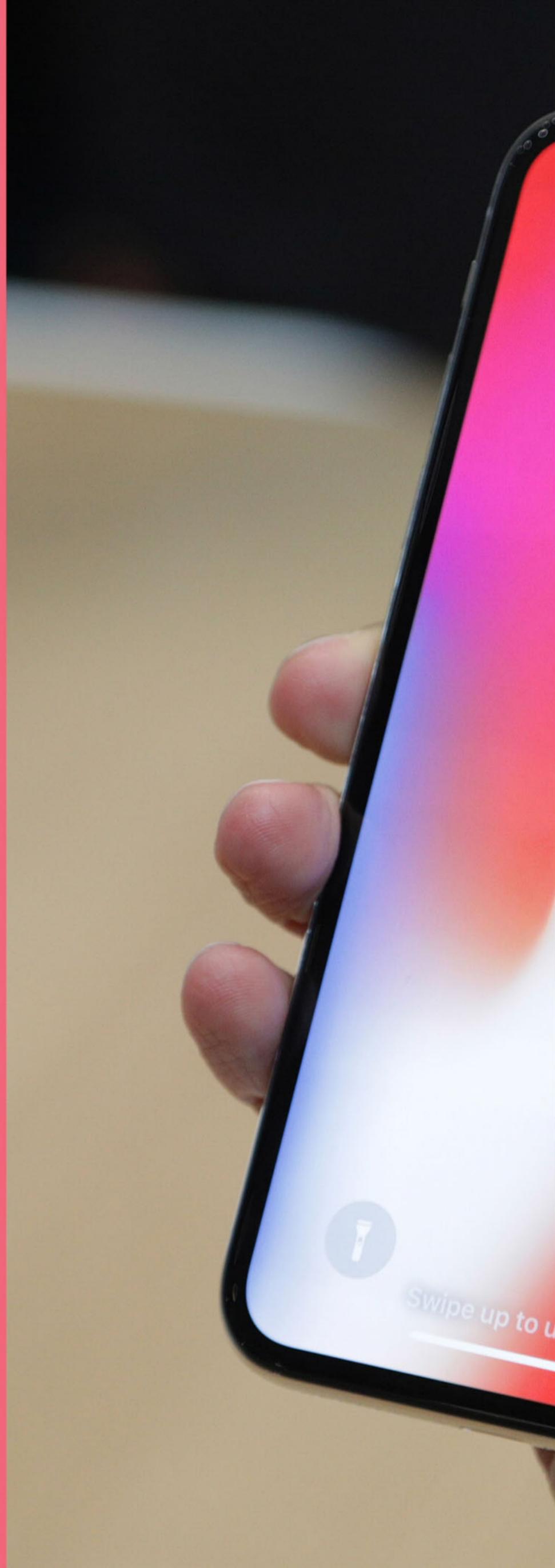
touch gestures intended to help users overcome the Home button's absence. Meanwhile, the **video shared by French YouTube channel TheiCollection** is only slightly more useful if you aren't well-versed in the French language.

A FACE ID LIKE THUNDER

However, we get a much closer at those new touch gestures in **a comprehensive hands-on review presented by Thunder E of Booredatwork.com**. For example, bringing up the multitasking view requires the user to swipe up from the bottom but stop halfway - rather than continue upwards, as would be the case when returning to the Home screen. It's also possible to scroll through already-open apps - while keeping each app full-screen - by swiping along the bottom of the display.

Thunder E did, however, express concern that these new gestures felt "a little bit counter-intuitive", adding that "it's going to get difficult for some people". Things get even more complicated when you want to reach your Action Center, which is accessible with a swipe down from the top-right corner. Meanwhile, swiping down from the left will lead to the Notification Center. Still, he acknowledged that the Home button's familiarity was a factor in the initially awkward feel of navigation on the X.

He also detailed the functionality of Face ID, though he did mistakenly say that, if a user grows a beard, they might have to go through the Face ID setup process again. It was during Apple's September keynote that executive Phil Schiller indicated the technology's ability to still recognise a face even once a beard has formed there. On the subject of that setup





iPhone X Hands-on Experience!



How to Setup FaceID on the iPhone X!





process, it looks like you might find it even more straightforward to use than the Touch ID equivalent...

In a separate and much shorter video, Thunder E showed how the process works. Face ID can be activated in the Settings app, through which you can bring up a camera prompt where a view of your face appears in a circle. You then just have to rotate your face within the circle, as the prompt asks. There are green indicators that will let you know if the scan has been sufficiently thorough. Repeated rotating in the right way will eventually see your face digitally mapped out.

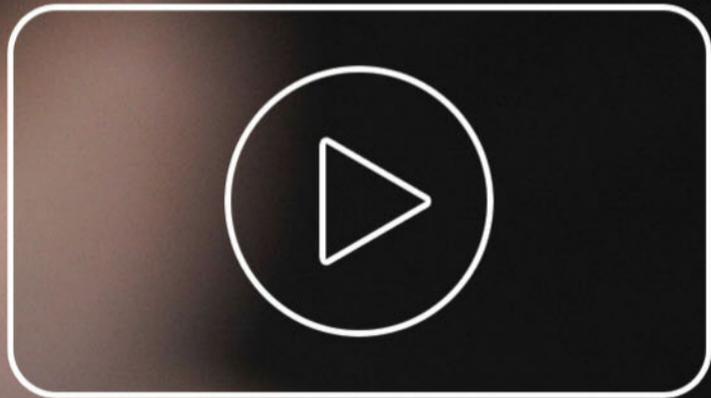
Thunder E went on to demonstrate how Face ID is actually used for unlocking after the setup procedure is complete. You just have to look at the device, and an on-screen padlock symbol will change to show that the unlocking has been successful. Then, you simply need to swipe up to see the Home screen and those app icons. You can also go back into the Settings app to have your face remapped - though Face ID's recognition reliability hints that this may not often be necessary.

WHAT IS THE iPhone X'S MOST REVOLUTIONARY FEATURE?

While Thunder E's videos are probably the best of the bunch, Mark Watson, who runs the YouTube channel Soldier Knows Best, gave a **video verdict of comparable intricacy**. His video is particularly worth watching for its close-up look at the sleek white back of the silver iPhone X and the Animojis, which he jokingly called a "new revolutionary feature that I think everyone across the world is going to be using, it's really going to change the cellphone game". Clearly not a man for hyperbole...

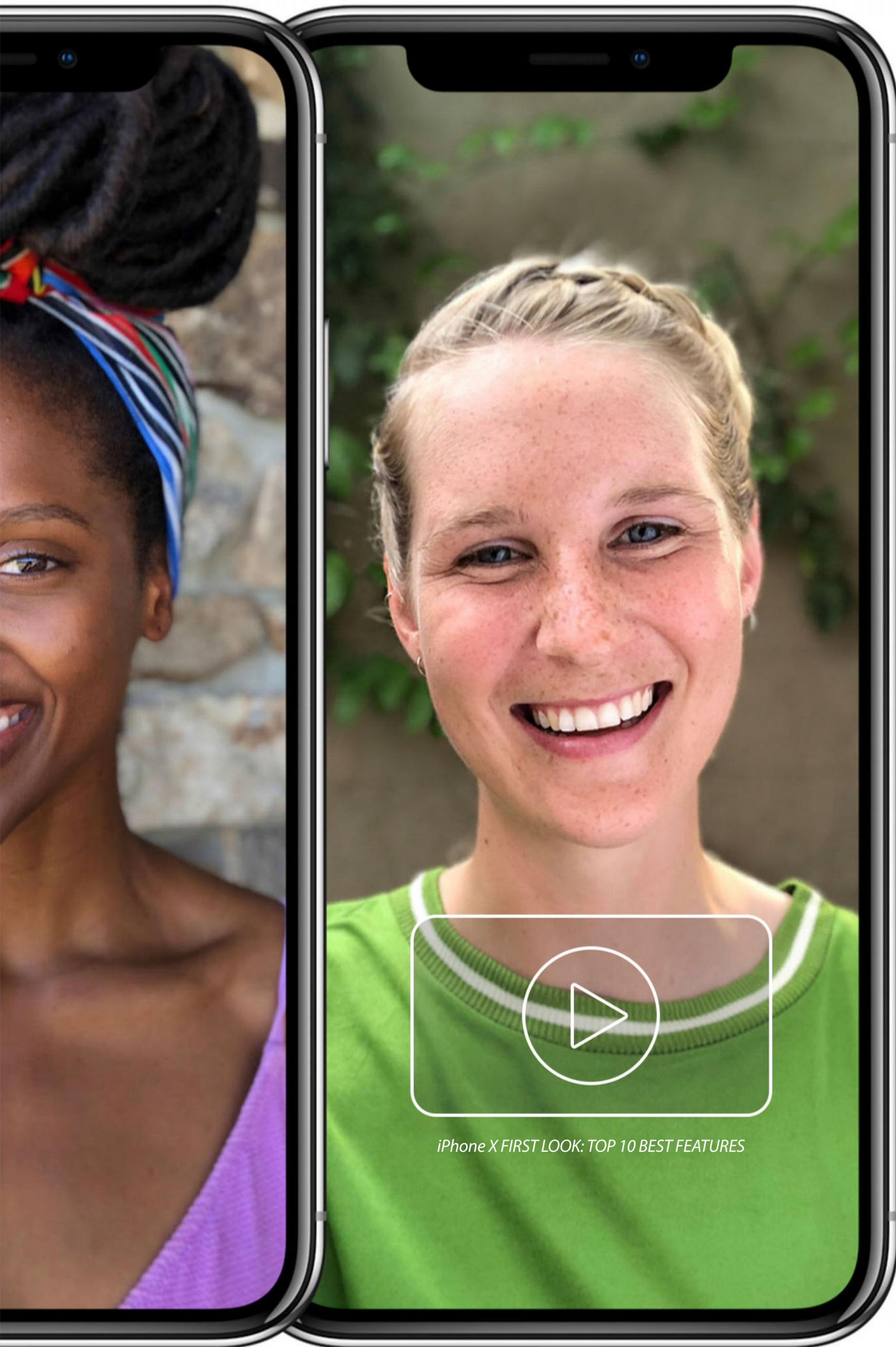
Another video that is rather lighter on detail and insight, but still a lot of fun to watch, is **the video presented by the Canadian FASHION Magazine's Sam Beckerman**. She gives a run-down of her ten favourite iPhone X features - including, unsurprisingly given her eye for style, the Portrait mode for selfies.





Exclusive iPhone X Experience with Apple!





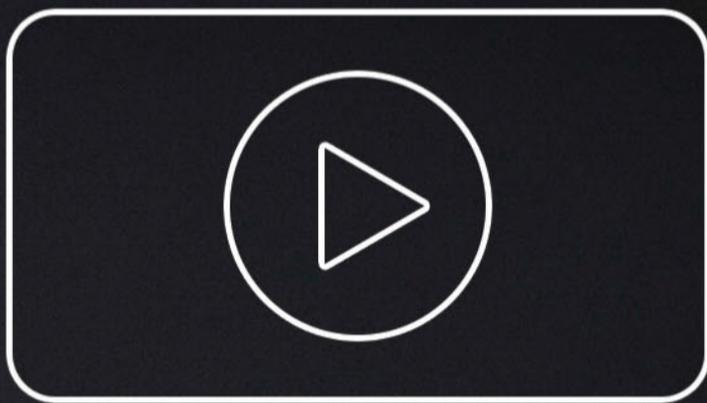
iPhone X FIRST LOOK: TOP 10 BEST FEATURES

A GOOD JOBS WITH THE iPhone X

Despite evident concerns about the potential difficulty of using the touch gestures, it's clear that there remains much feverish excitement about the iPhone X. It's not hard to see why, in **their own video for Highsnobiety**, Brian Farmer and Noah Thomas are impressed. In reaction to the smooth performance of the augmented reality framework ARKit on the iPhone X, Thomas gushes that "Steve Jobs is looking down and he's proud of the team." We certainly wouldn't disagree.

by Benjamin Kerry & Gavin Lenaghan





Apple's iPhone X: Here's Your First Look at it In Action







SPACEX SAYS IT WILL FLY 2 PEOPLE TO MOON NEXT YEAR

SpaceX said it will fly two people to the moon next year, a feat not attempted since NASA's Apollo heyday close to half a century ago.

Tech billionaire Elon Musk - the company's founder - announced the surprising news.

Two people who know one another approached the company about sending them on a weeklong flight just beyond the moon, according to Musk. He won't identify the pair or the price tag. They've already paid a "significant" deposit, he noted.

Musk said SpaceX is on track to launch astronauts to the International Space Station for NASA in mid-2018. This moon mission would follow about six months later, by the end of the year under the current schedule, using a Dragon crew capsule and a Falcon heavy rocket.



Image: Jae C. Hong



The moon mission is designed to be autonomous - unless something goes wrong, Musk said.

"I think they are entering this with their eyes open, knowing that there is some risk here," Musk told reporters in a telephone news conference, a day after teasing via Twitter that an announcement of some sort was forthcoming.

"They're certainly not naive, and we'll do everything we can to minimize that risk, but it's not zero. But they're coming into this with their eyes open," said Musk, adding that the pair will receive "extensive" training before the flight.

Musk said he does not have permission to release the passengers' names, and he was hesitant to even say if they were men, women or even pilots. He would only admit, "It's nobody from Hollywood."

The passengers would make a long loop around the moon, skimming the lunar surface and then going well beyond, perhaps 300,000 or 400,000 miles distance altogether. The mission won't involve a lunar landing, according to Musk.

It's about 240,000 miles to the moon alone, one way.

NASA will have first dibs on a similar mission if it so chooses, Musk said. The space agency learned of his plan at the same time as reporters, and was busy preparing a statement following the announcement.

"This should be a really exciting mission that hopefully gets the world really excited about sending people into deep space again," he said.

The crew Dragon capsule has not yet flown in space. Neither has a Falcon Heavy rocket, which is essentially a Falcon 9 rocket with two strap-on





boosters, according to Musk. He said there will be ample time to test both the spacecraft and the rocket, before the moon mission.

Musk expects to have more moon-mission customers as time goes by.

Just late last week, NASA announced it was studying the possibility of adding crew to the test flight of its megarocket, at the request of the Trump administration. Such a flight to the lunar neighborhood wouldn't happen before 2019 at best - if, indeed, that option is even implemented.

Musk said anything that advances the space exploration cause is good, no matter who goes first.

"This should be incredibly exciting," he said.

SpaceX is also working on a so-called Red Dragon, meant to fly to Mars around 2020 with experiments, but no people - and actually land.

Online: SpaceX





HOPE FOR PREEMIES AS ARTIFICIAL WOMB HELPS TINY LAMBS GROW

Researchers are creating an artificial womb to improve care for extremely premature babies - and remarkable animal testing suggests the first-of-its-kind watery incubation so closely mimics mom that it just might work.

Today, premature infants weighing as little as a pound are hooked to ventilators and other machines inside incubators. Children's Hospital of Philadelphia is aiming for a gentler solution, to give the tiniest preemies a few more weeks cocooned in a womb-like environment - treating them more like fetuses than newborns in hopes of giving them a better chance of healthy survival.

The researchers created a fluid-filled transparent container to simulate how fetuses float in amniotic fluid inside mom's uterus, and attached it to a mechanical placenta that keeps blood oxygenated.

In early-stage animal testing, extremely premature lambs grew, apparently normally, inside the system for three to four weeks, the team reported Tuesday.

“We start with a tiny fetus that is pretty inert and spends most of its time sleeping. Over four weeks we see that fetus open its eyes, grow wool, breathe, swim,” said Dr. Emily Partridge, a CHOP research fellow and first author of the study published in Nature Communications.

“It’s hard to describe actually how uniquely awe-inspiring it is to see,” she added in an interview.

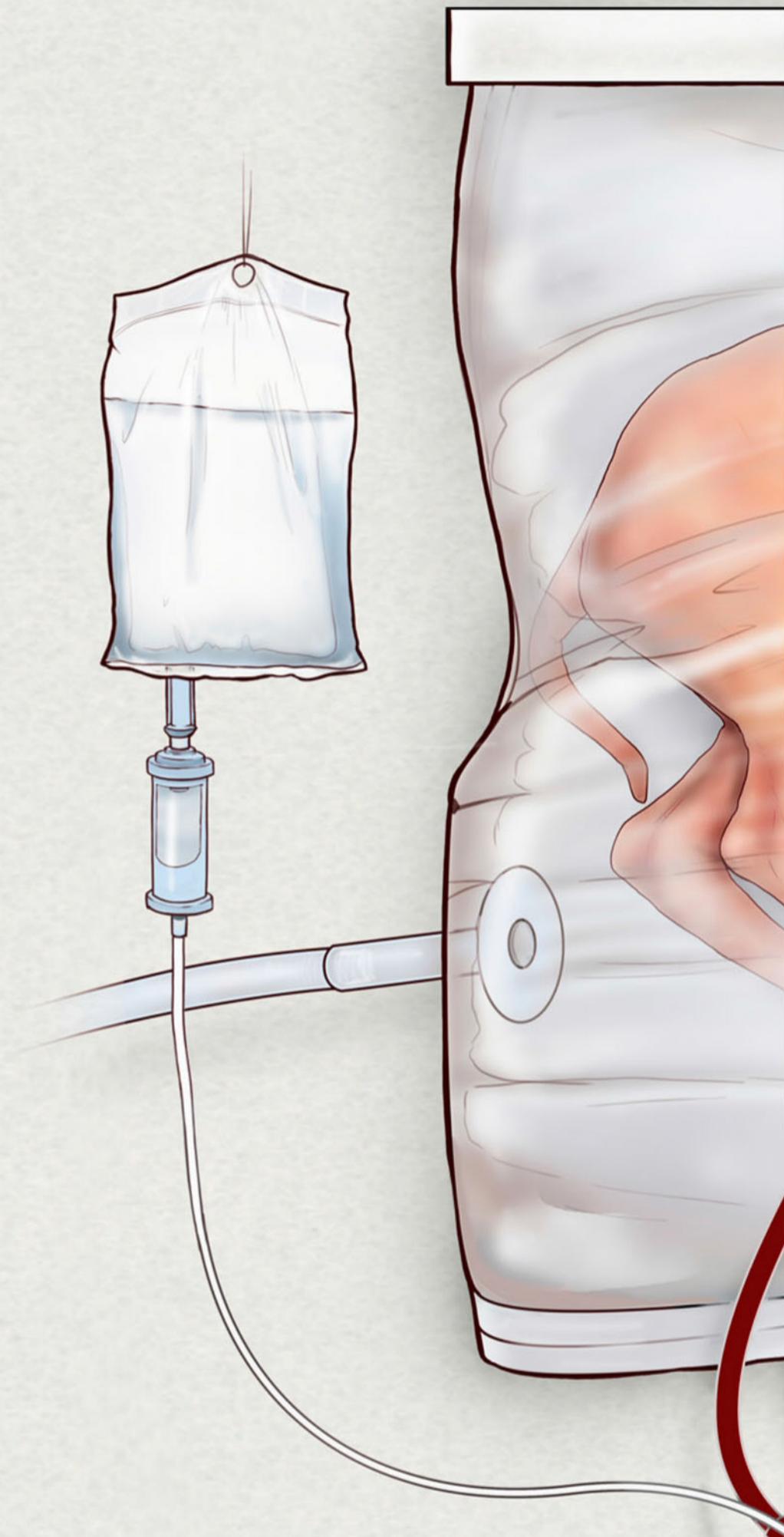
Human testing still is three to five years away, although the team already is in discussions with the Food and Drug Administration.

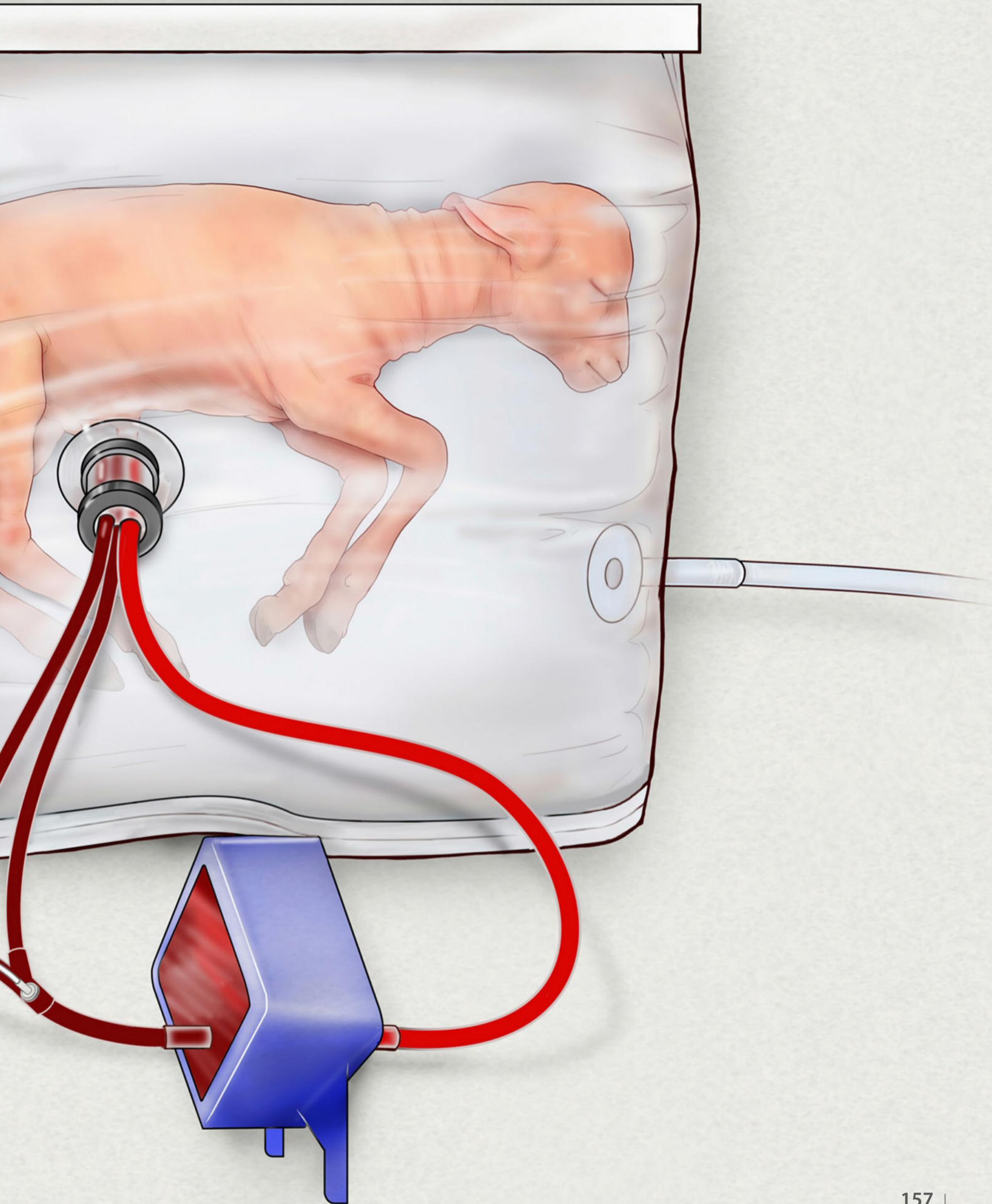
“We’re trying to extend normal gestation,” said Dr. Alan Flake, a fetal surgeon at CHOP who is leading the project and considers it a temporary bridge between the mother’s womb and the outside world.

Increasingly hospitals attempt to save the most critically premature infants, those born before 26 weeks gestation and even those right at the limits of viability - 22 to 23 weeks. Extreme prematurity is a leading cause of infant mortality, and those who do survive frequently have serious disabilities such as cerebral palsy.

The idea of treating preemies in fluid-filled incubators may sound strange, but physiologically it makes sense, said Dr. Catherine Spong, a fetal medicine specialist at the National Institutes of Health.

“This is really an innovative, promising first step,” said Spong, who wasn’t involved with the research.





One of the biggest risks for very young preemies is that their lungs aren't ready to breathe air, she explained. Before birth, amniotic fluid flows into their lungs, bringing growth factors crucial for proper lung development. When they're born too soon, doctors hook preemies to ventilators to keep them alive but risking lifelong lung damage.

Flake's goal is for the womb-like system to support the very youngest preemies just for a few weeks, until their organs are mature enough to better handle regular hospital care like older preemies who have less risk of death or disability.

The device is simpler than previous attempts at creating an artificial womb, which haven't yet panned out.

How the "Biobag" system works:

- The premature lambs were delivered by C-section and immediately placed into a temperature-controlled bag filled with a substitute for amniotic fluid that they swallow and take into their lungs.

"We make gallons of this stuff a day," said fetal physiologist Marcus Davey. It's currently an electrolyte solution; he's working to add other factors to make it more like real amniotic fluid.

- Then the researchers attached the umbilical cord to a machine that exchanges carbon dioxide in blood with oxygen, like a placenta normally does.

- The lamb's heart circulates the blood, without the need for any other pump.

The researchers tested five lambs whose biological age was equivalent to 23-week





human preemies, and three more a bit older. All appeared to grow normally, with blood pressure and other key health measures stable and few complications during the weeks they were inside the womb-like device.

The study didn't address long-term development. Most of the lambs were euthanized for further study that found normal organ development for their gestational age. One was bottle-weaned and is now more than a year old, apparently healthy and living on a farm in Pennsylvania.

Flake stressed that the womb-like system isn't intended to support preemies any younger than today's limits of viability - not what he calls the more "sensationalistic" idea of artificially growing embryos.

He acknowledged that parents might question the approach, but notes that the preemies always could be whisked into standard care if they fared poorly in the new system. And while he said further adaptation of the device is needed before it can begin human testing, he envisioned parents being able to see the baby and even piping in the sound of mom's heartbeat.





REALITY: APPLE'S FUTURE IS IN AUGMENTED TECHNOLOGY

THE FUTURE OF APPLE: CARS, SIRI, SATELLITES AND SPACE

Image: BMW



25
km/h

25 km/h

12:05

Navigation

Position

← N A99, ISMANING,
BAYERN
Breite:
48° 10' 38"N
Länge:
11° 46' 01"O
Höhe 530 m

MODE

A satellite in space, viewed from a low angle. The satellite has a large, silver, parabolic dish antenna in the foreground, and a large, rectangular solar panel array extending from the main body of the satellite. The background is a dark blue space filled with stars and a bright light source, possibly the sun, creating a lens flare effect.

SATELLITES FOR EXTENDING INTERNET ACCESS

If you have been keeping a close eye on all of the recently circulating rumors about what Apple is currently cooking up, you could easily become excited thinking what the company's development laboratories must look like.

Basically, imagine some kind of tech equivalent of the colorful and vibrant world of Willy Wonka's chocolate factory - where augmented reality glasses, self-driving cars, satellites, and possibly even spaceships are being thoroughly tested by excited Apple staffers...

Truth be told, the picture that we have just painted is probably more of a best-case scenario than a faithful reflection of what is actually happening behind those closed doors. Maybe the more outlandish of those ideas are, like Willy Wonka's "square sweets that look round", just the stuff of fantasy... for now. Still, why shouldn't Apple at least work towards realizing sky-high ambitions? Furthermore, there have been more and more leaks of evidence that it actually is.

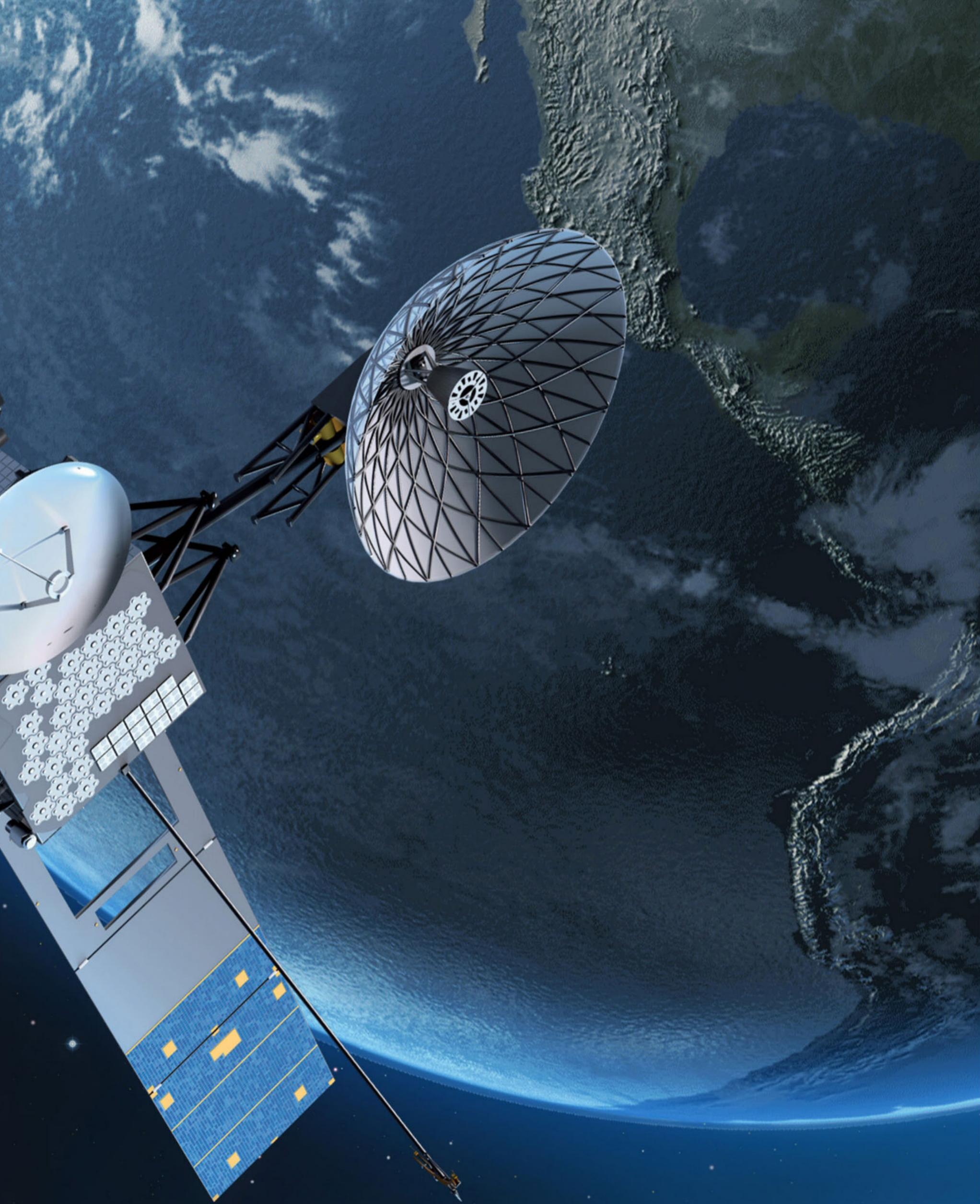


Image: NASA's Goddard Space Flight Center

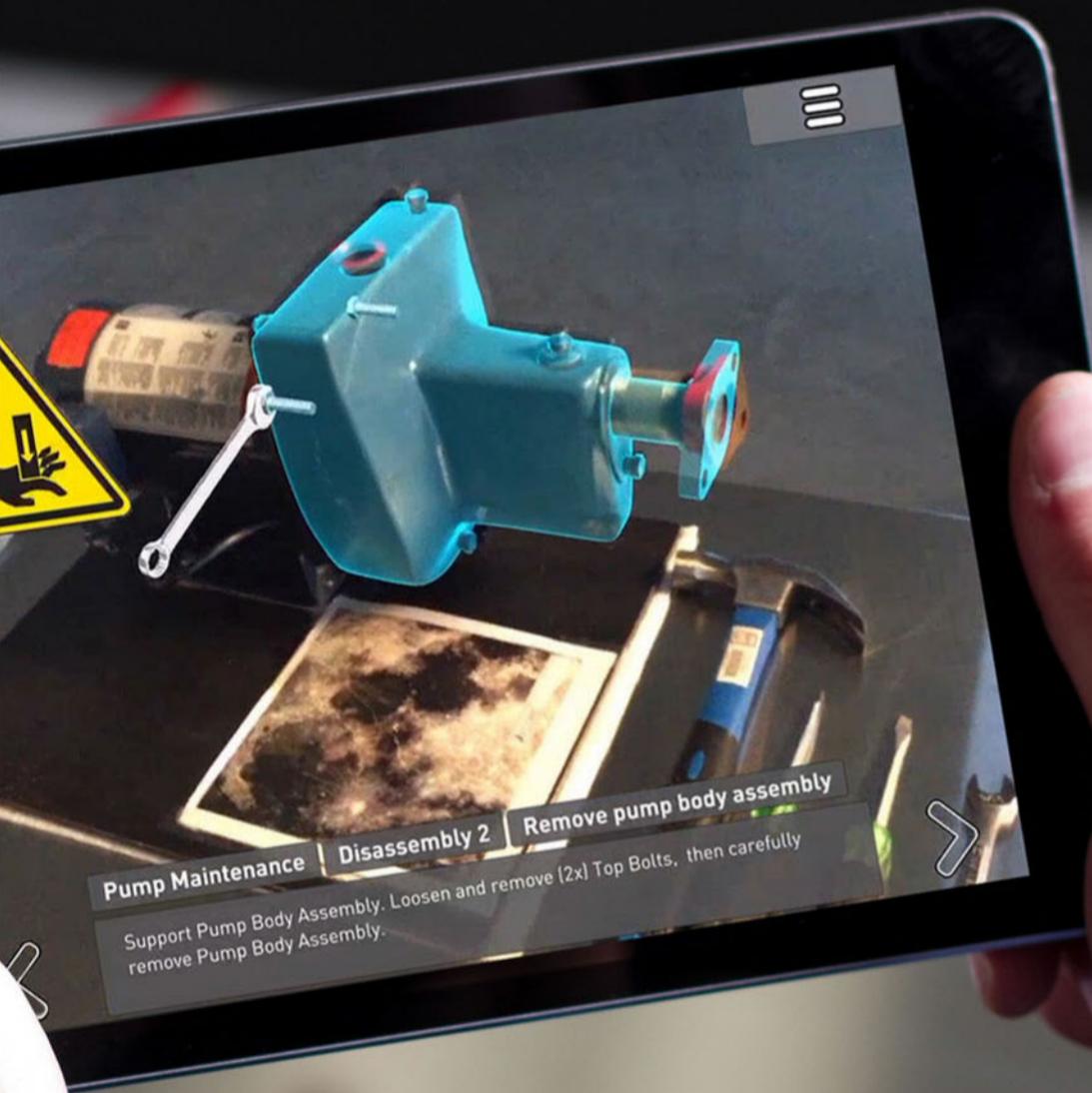
THE NEW - AUGMENTED - REALITY

There have been increasing murmurings that the “iPhone 8” could help in dramatically changing the smartphone game - one reason being that it will feature, in analyst Gene Munster’s words, “augmented reality as its foundation”. Apple CEO Tim Cook has hardly been shy about his enthusiasm for AR, a technology which allows digitized images to be overlaid on a view of the real-life world. In October, **he called AR “profound” and “broad-based” in a way unlike virtual reality.**

With Apple having recently acquired **numerous AR companies including Metaio, PrimeSense and RealFace**, Munster believes their new Cupertino parent to have a lead in this technology. He told CNBC that **he expects AR to “lay the foundation of the next computing paradigm”** - and, judging from **a recent *Bloomberg* report**, the technology could make its Apple debut in the iPhone 8. The site has cited “hundreds of engineers” working on Apple’s AR efforts.

While still relatively light on revelations, the report claims that Apple is developing “several AR products, including digital spectacles that could connect wirelessly to an iPhone and beam content - movies, maps and more - to the wearer.” However, in the wake of the failure of the similar Google Glass, Apple seems understandably eager to take its time to get its own offering right. Bloomberg concedes: “While the glasses are a ways off, AR could show up in the iPhone sooner.”









FORMS THAT iPHONE-BASED AR COULD TAKE

Bloomberg lists various AR applications that Apple is exploring - including taking a photograph before changing its depth or that of specific objects in the image. Alternatively, an object, like a person's head, could be isolated in the picture and tilted 180 degrees. Also reportedly in the works is the Snapchat-like ability to use AR to place digital objects and effects on a person in an image.

The depth-sensing features seem very plausible in light of a slightly earlier prediction that the iPhone 8 would feature a front-facing camera system enabling a complete feature set of 3D sensing. **That prediction was made in February by KGI Securities analyst Ming-Chi Kuo**, who said that this "revolutionary" system would draw upon PrimeSense algorithms. Meanwhile, those Snapchat-style functions could tie in with Apple's recently-released video-editing app Clips.

AR GLASSES COULD ALREADY BE PROTOTYPED

So, the iPhone 8 could plausibly provide a taste of augmented reality technology to be more fully realized by Apple's AR eyewear project. Bloomberg speculates that the glasses, like the Apple Watch, will probably be iPhone-tethered, allowing the smartphone to "do the heavy lifting". 3D content could be beamed to the spectacles, the other applications of which could be vast. "To be successful in AR, there is the hardware piece, but you have to do other stuff too: from maps

to social to payments,” Munster opined, calling Apple “one of the only companies that will be able to pull it off.”

The glasses probably already exist in prototype form, according to **a leaked document quoted from by Gizmodo**. The document, put together by an Environment Health and Safety contractor and mistakenly submitted to hundreds of Apple staffers,

mentions two particularly intriguing incidents. In one, an employee “reported eye pain after working with new prototype”, while another worker “experienced discomfort in her eye and said she was able to see the laser flash at several points during the study”. The study lead later “secured prototype unit for analysis”.

The mention of a laser is tantalizing, but **Cult of Mac insists, in reference to the prototype**



involved, that “it’s pretty safe to say that it’s not an iPhone with lasers”. It can’t be completely ruled out that Apple’s AR glasses could integrate some virtual reality features - especially as the development team includes engineers who were involved with Facebook’s Oculus VR project, according to Bloomberg. Still, the evidence suggests that Apple is currently prioritizing AR over VR.

One man who could especially help Apple in doing that is Jeff Norris, an ex-employee of NASA’s Jet Propulsion Lab. There, he was heavily involved in devising new techniques for using augmented reality to control spacecraft - and, earlier this year, **he took up a senior managerial role on Apple’s augmented reality team, according to Bloomberg.** This is the team working on the AR headwear.







THE APPLE CAR AND SIRI SPEAKER

Two Apple projects that have been rumored to be in development but attracted little publicity lately are Apple's electric car initiative and the Amazon Echo-like Siri-housing speaker. However, recent developments have shed new light on how both could be shaping up. Having made a public-records request, *Business Insider* recently obtained documents showing Apple's development of an "Automated System" that could serve various useful purposes in self-driving cars.

"The development platform uses hardware and software to monitor surrounding objects and events," wrote an Apple official on a government form, adding that this technology is "capable of sending electronic commands for steering, accelerating, and decelerating and may carry out portions of the dynamic driving task". Apple is clearly being careful to ensure that the car will be safe when in use; indeed, the company has planned to train staff in procedures including how an autonomous car's manual control can be regained should this be necessary.

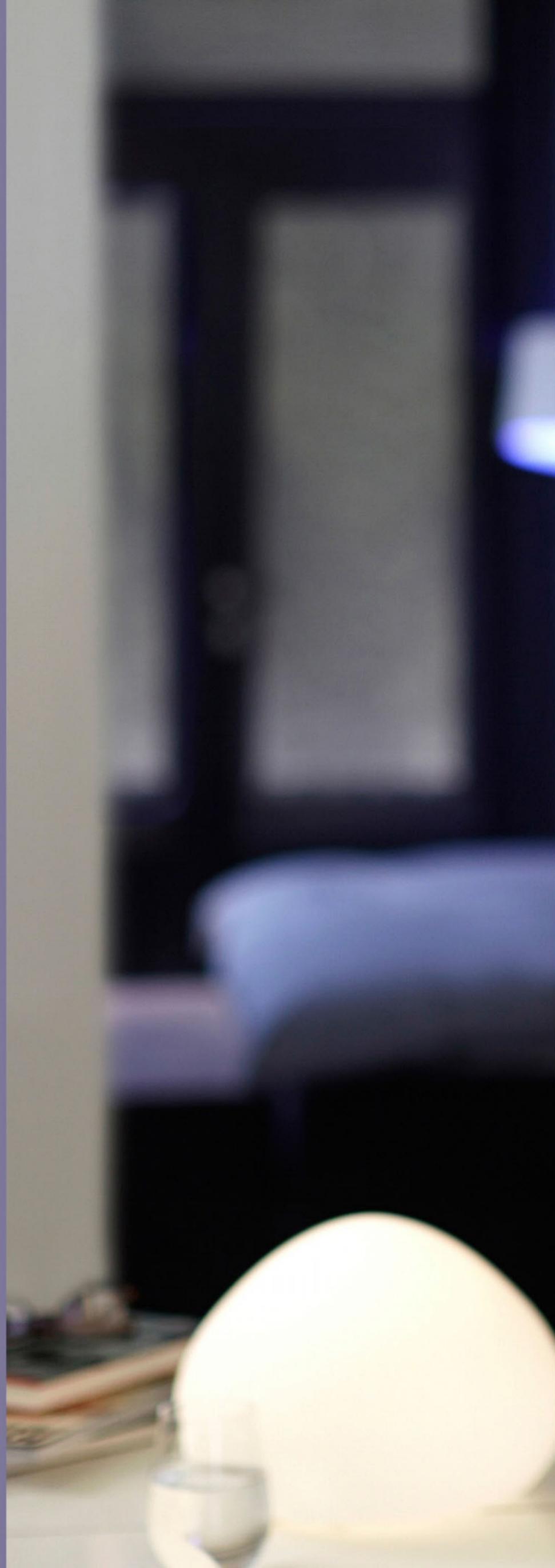
Also coming to light recently have been some intriguing details about the specific people involved in putting Apple's autonomous driving software to the test. One of those people is a former NASA researcher once given the job of developing a self-driving vehicle intended for exploring one of Jupiter's moons. This is revealed, as *AppleInsider* reports, in a report from *The Wall Street Journal*, which noted other testers to be engineers previously of NASA's Jet Propulsion Laboratory. Another tester was involved with automotive supplier Bosch's early attempts at making a self-driving car.

As well as enter the autonomous car market, Apple could also soon bolster its presence in the home automation market on the back of that Siri speaker. Rumored for possible release later this year, it could, due to Siri's ability to detect a specific person's voice, avoid **an issue recently faced by Google's virtual personal assistant technology**. Burger King recently ran a 15-second television commercial including the utterance of the query "OK Google, what is the Whopper burger?"

That question was intended to trigger Google Home speakers and Android phones to begin reading the burger's Wikipedia page. Fortunately for many people, Google speedily disabled the trigger in Home speakers through registering the sound clip. However, the incident shows how Apple could already have a head-start on Google if, as previously hinted, the Siri speaker arrives soon.

APPLE COULD BE HEADING INTO SPACE

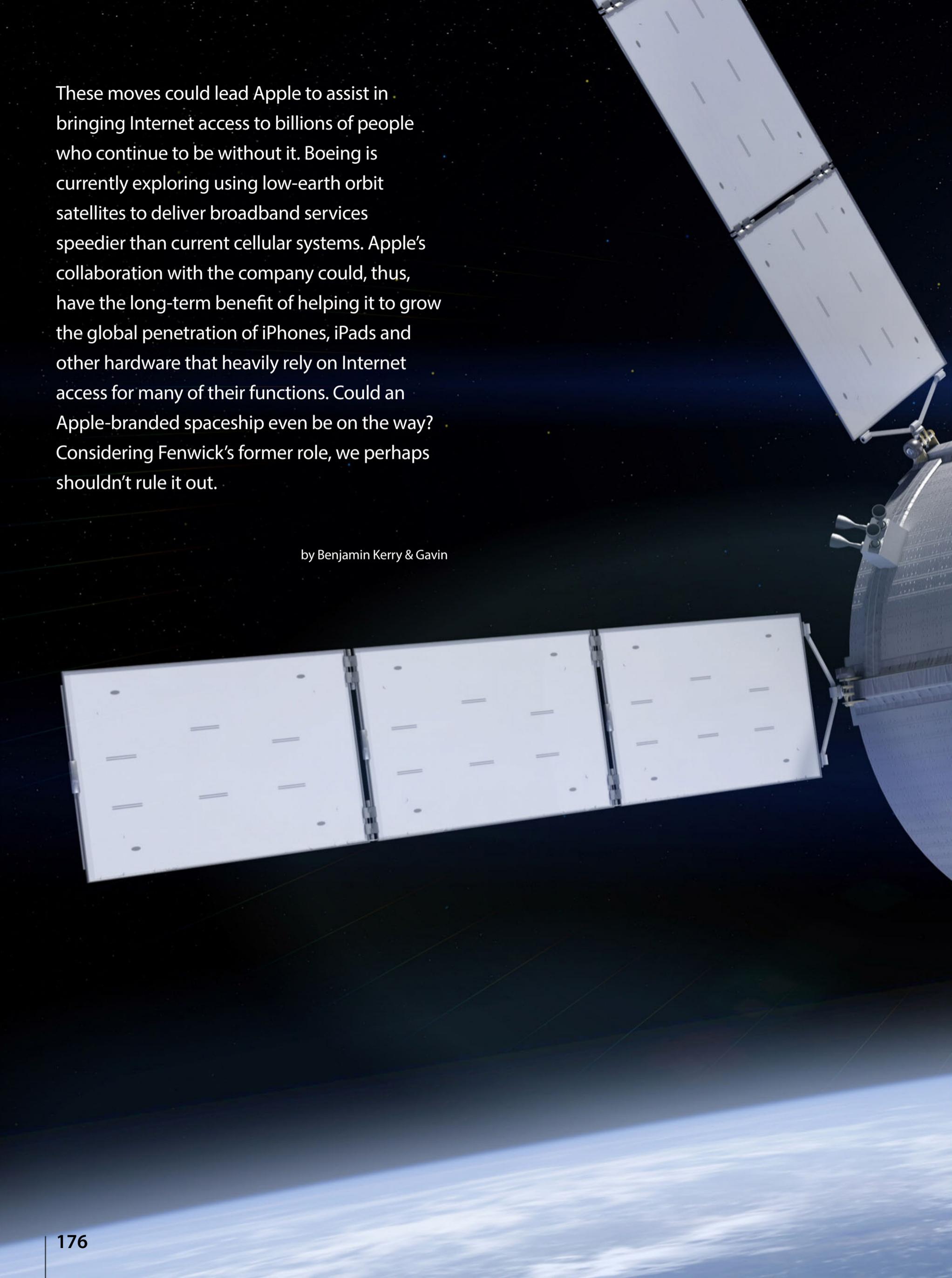
Apple could have an even more ambitious project with which it will look to the skies... literally. **Bloomberg has reported Apple recruiting two highly-regarded satellite executives from Google**. John Fenwick, former head of Google's spacecraft operations, and Michael Trela, who led the search giant's satellite engineering team, have joined Apple "in recent weeks" and will be involved with "a new hardware team". Apple has also talked with aerospace company Boeing about possibly investing in its project to provide, via over a thousand satellites, broadband Internet access.

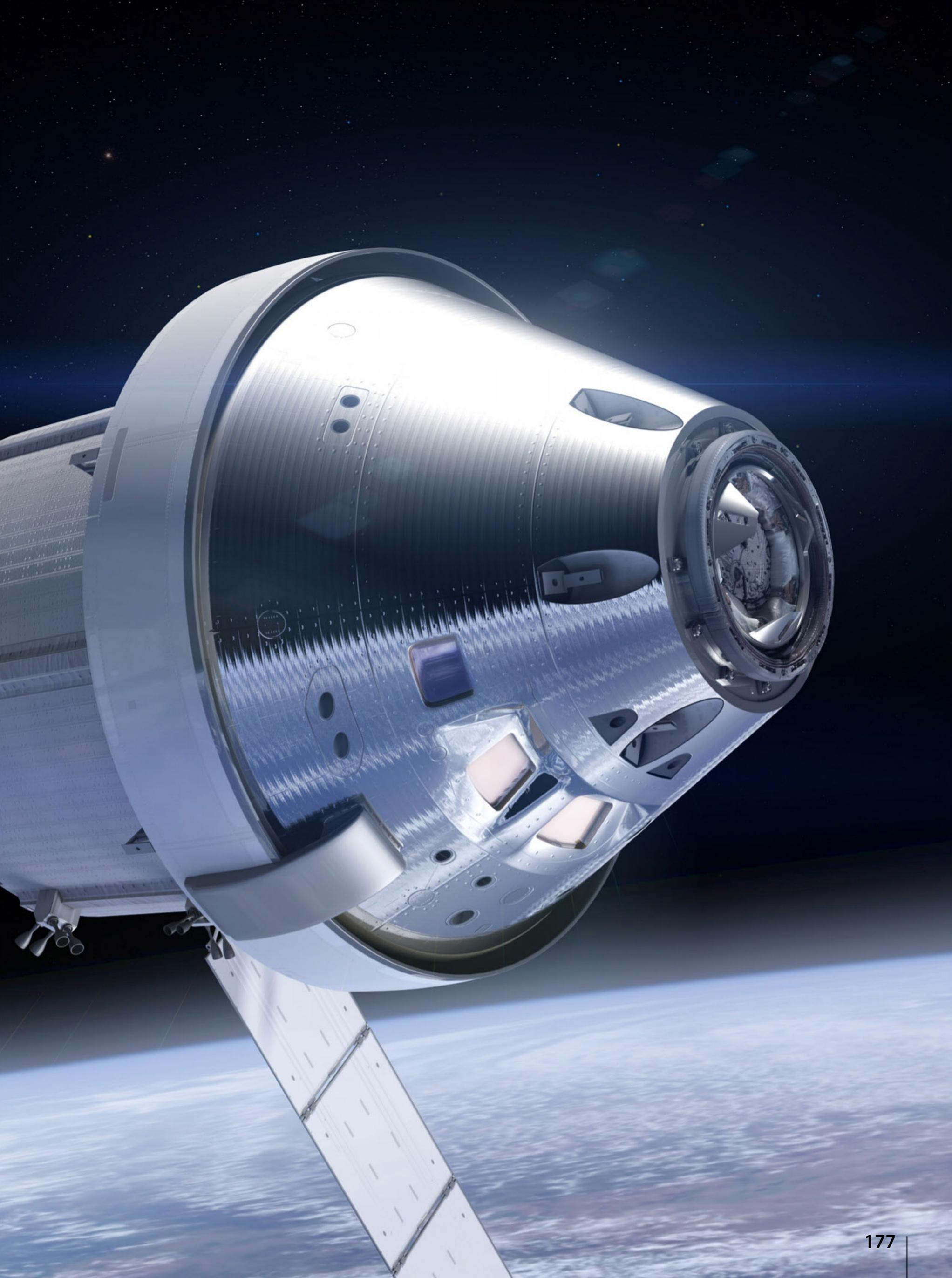




These moves could lead Apple to assist in bringing Internet access to billions of people who continue to be without it. Boeing is currently exploring using low-earth orbit satellites to deliver broadband services speedier than current cellular systems. Apple's collaboration with the company could, thus, have the long-term benefit of helping it to grow the global penetration of iPhones, iPads and other hardware that heavily rely on Internet access for many of their functions. Could an Apple-branded spaceship even be on the way? Considering Fenwick's former role, we perhaps shouldn't rule it out.

by Benjamin Kerry & Gavin









TESLA WANTS TO ELECTRIFY BIG TRUCKS, ADDING TO ITS AMBITIONS

After more than a decade of making cars and SUVs — and, more recently, solar panels — Tesla Inc. wants to electrify a new type of vehicle: big trucks.

The company unveiled its new electric semitractor-trailer last week near its design center in Hawthorne, California.

CEO Elon Musk said the semi is capable of traveling 500 miles (804 kilometers) on an electric charge — even with a full 80,000-pound (36,287-kilogram) load — and will cost less than a diesel semi considering fuel savings, lower maintenance and other factors. Musk said customers can put down a \$5,000 deposit for the semi now and production will begin in 2019.

“We’re confident that this is a product that’s better in every way from a feature standpoint,” Musk told a crowd of Tesla fans gathered for the unveiling. Musk didn’t reveal the semi’s price.

Even so, the company already is starting to get orders. Wal-Mart Stores Inc., the world’s largest retailer, said in a statement that it has pre-ordered five Tesla units in its Walmart U.S. division and 10 units at Walmart Canada. Midwest retailer Meijer said it has reserved four trucks. And Arkansas trucking company J.B. Hunt said it has reserved “multiple” tractors that it will deploy on the West Coast but didn’t specify how many.

Tesla unveiled its new electric semitractor-trailer Thursday (16) night near its design center in Hawthorne, California. CEO Elon Musk said the semi is capable of traveling 500 miles on an electric charge - even with a full 80,000-pound load. (Nov. 17)

The truck will have Tesla’s Autopilot system, which can maintain a set speed and slow down automatically in traffic. It also has a system that automatically keeps the vehicle in its lane. Musk said several Tesla semis will be able to travel in a convoy, autonomously following each other.

Musk said Tesla plans a worldwide network of solar-powered “megachargers” that could get the trucks back up to 400 miles of range after charging for only 30 minutes.

The move fits with Musk’s stated goal for the company of accelerating the shift to sustainable transportation. Trucks account for nearly a quarter of transportation-related greenhouse gas emissions in the U.S., according to government statistics.





But the semi also piles on more chaos at the Palo Alto, California-based company. Tesla is way behind on production of the Model 3, a new lower-cost sedan, with some customers facing waits of 18 months or more. It's also ramping up production of solar panels after buying Solar City Corp. last year. Tesla is working on a pickup truck and a lower-cost SUV and negotiating a new factory in China. Meanwhile, the company posted a record quarterly loss of \$619 million in its most recent quarter.

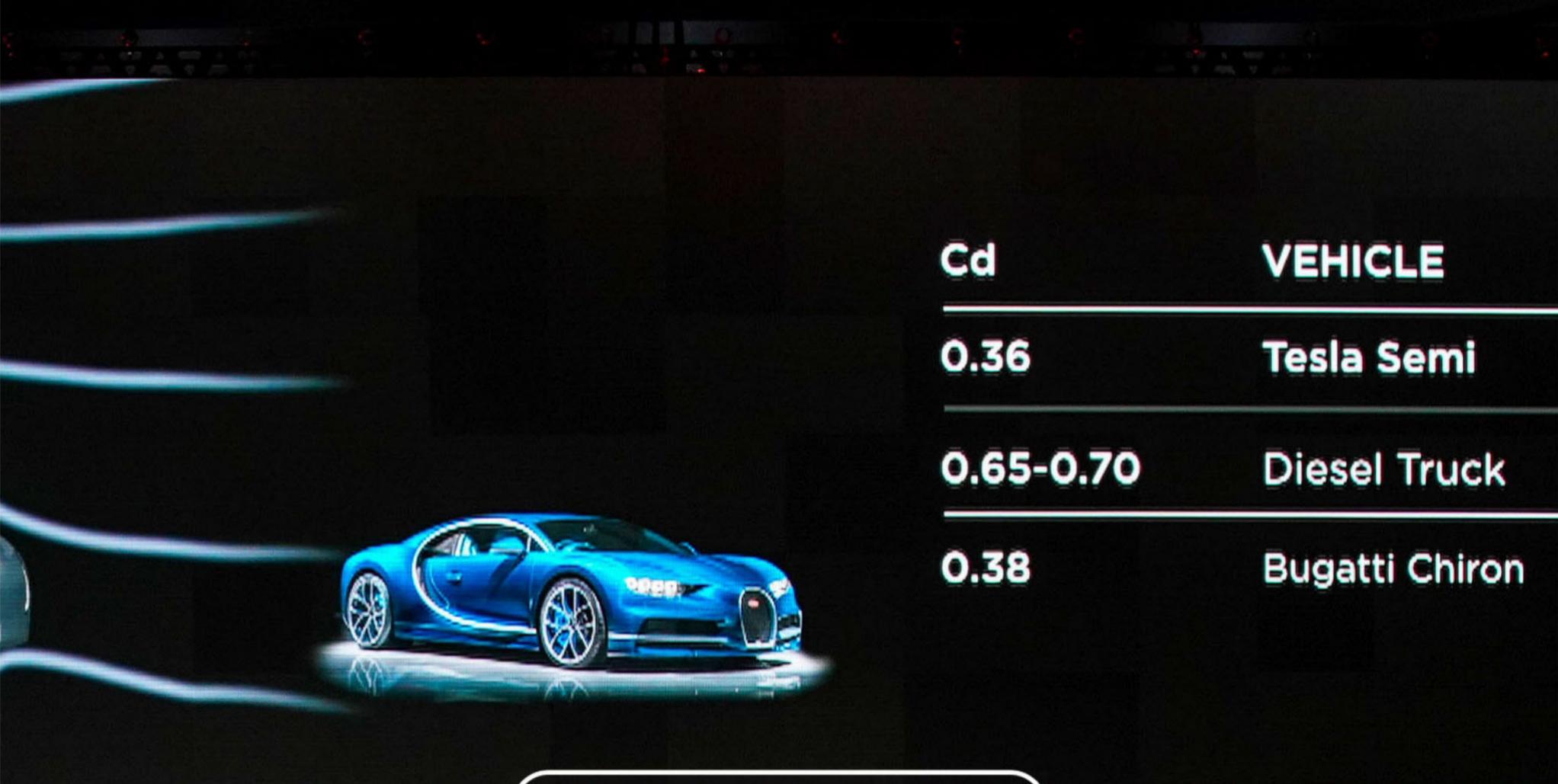
On Thursday night, Tesla surprised fans with another product: An updated version of its first sports car, the Roadster. Tesla says the new Roadster will have 620 miles of range and a top speed of 250 mph (402 kph). The car, coming in 2020, will have a base price of \$200,000.

Musk, too, is being pulled in many directions. He leads rocket maker SpaceX and is dabbling in other projects, including high-speed transit, artificial intelligence research and a new company that's digging tunnels beneath Los Angeles to alleviate traffic congestion.

"He's got so much on his plate right now. This could present another distraction from really just making sure that the Model 3 is moved along effectively," said Bruce Clark, a senior vice president and automotive analyst at Moody's.

Tesla's semi is venturing into an uncertain market. Demand for electric trucks is expected to grow over the next decade as the U.S., Europe and China all tighten their emissions regulations. Electric truck sales totaled 4,100 in 2016, but are expected to grow to more than 70,000 in 2026, says Navigant Research.





Cd	VEHICLE
0.36	Tesla Semi
0.65-0.70	Diesel Truck
0.38	Bugatti Chiron



Tesla Semi truck and Roadster event in 9 minutes



B A M F P E R F O R M A N C E





But most of that growth is expected to be for smaller, medium-duty haulers like garbage trucks or delivery vans. Those trucks can have a more limited range of 100 miles (160 kilometers) or less, which requires fewer expensive batteries. They can also be fully charged overnight.

Long-haul semi trucks, on the other hand, would be expected to go greater distances, and that would be challenging. Right now, there's little charging infrastructure on global highways. Without Tesla's promised fast-charging, even a mid-sized truck would likely require a two-hour stop, cutting into companies' efficiency and profits, says Brian Irwin, managing director of the North American industrial group for the consulting firm Accenture.

Irwin says truck companies will have to watch the market carefully, because tougher regulations on diesels or an improvement in charging infrastructure could make electric trucks more viable very quickly. Falling battery costs also will help make electric trucks more appealing compared to diesels.

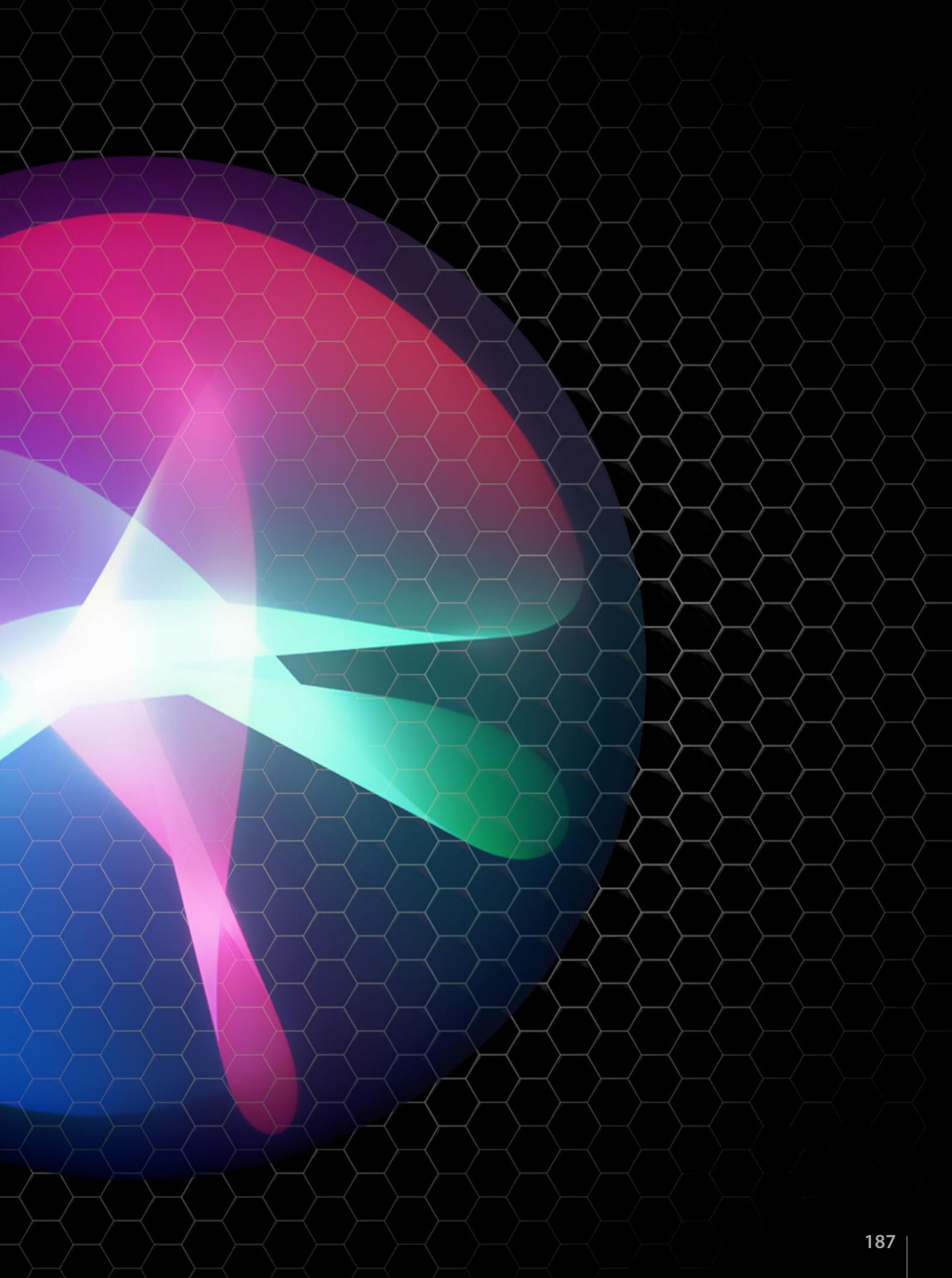
But even lower costs won't make trucking a sure bet for Tesla. It faces stiff competition from long-trusted brands like Daimler AG, which unveiled its own semi prototype last month.

"These are business people, not fans, and they will need convinced that this truck is better for their balance sheet than existing technology. It probably is, based on the specs provided, but this isn't necessarily a slam dunk," said Rebecca Lindland, an executive analyst at Kelley Blue Book.

Musk said Tesla will guarantee the semi's powertrain for one million miles to help alleviate customers' concerns.

DEEP LEARNING: A NEW CORE FOR APPLE?

AI ADVANCEMENTS
ACROSS VARIOUS
APPLE PRODUCTS





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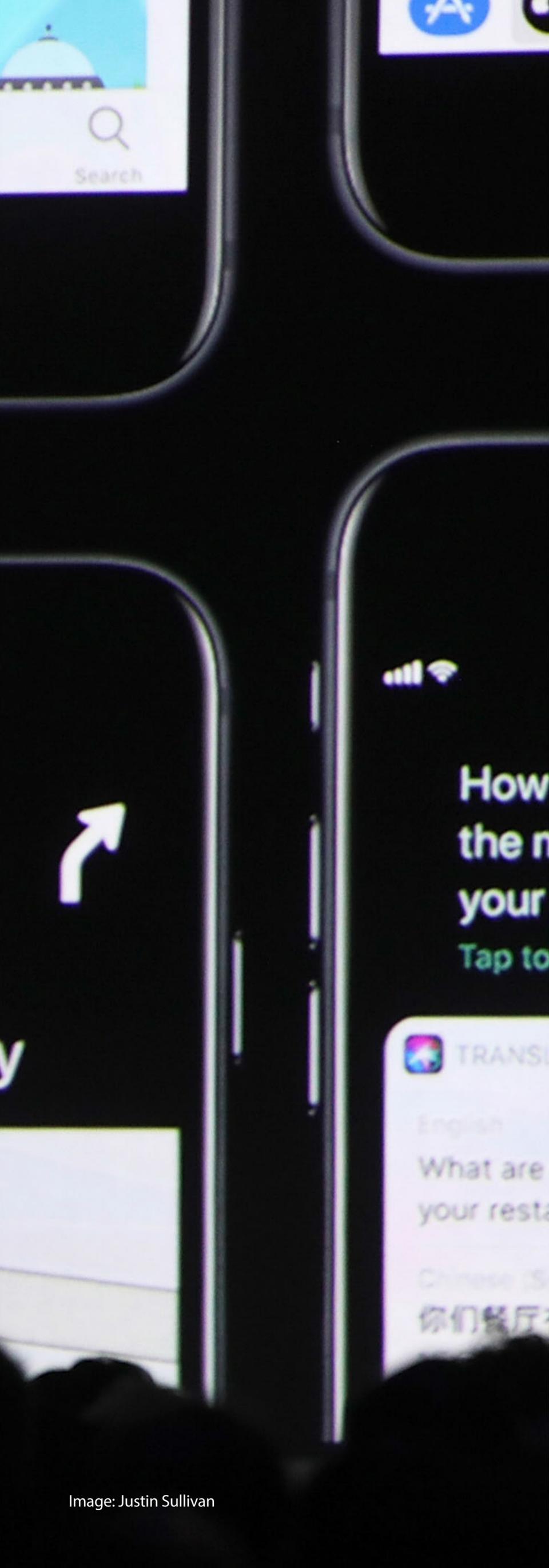
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Today Games Apps Updates

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Apple's WWDC launch keynote this year was undoubtedly its most exciting in years, being packed to the rafters with announcements about both software updates and new hardware. We learned about not only the expected updates to iOS, macOS, and watchOS, but also the Siri-powered HomePod smart speaker and stunningly powerful new iPads. However, you might have overlooked the large extent to which all of these will be driven by the AI advancement known as deep learning.

HOW MACHINE LEARNING AND DEEP LEARNING WORK

Deep learning is a strand of machine learning, a term that was often bandied about during Apple's two-and-a-half-hour presentation. Machine learning indicates a pivotal change in approaching artificial intelligence; it posits that, rather than pour data into machines in the effort to teach them everything, we should instead simply give them access to data before leaving them to learn for themselves. It gives machines a more human-like approach to learning that has made artificial intelligence's development more efficient, **says big data expert Bernard Marr for *Forbes*.**

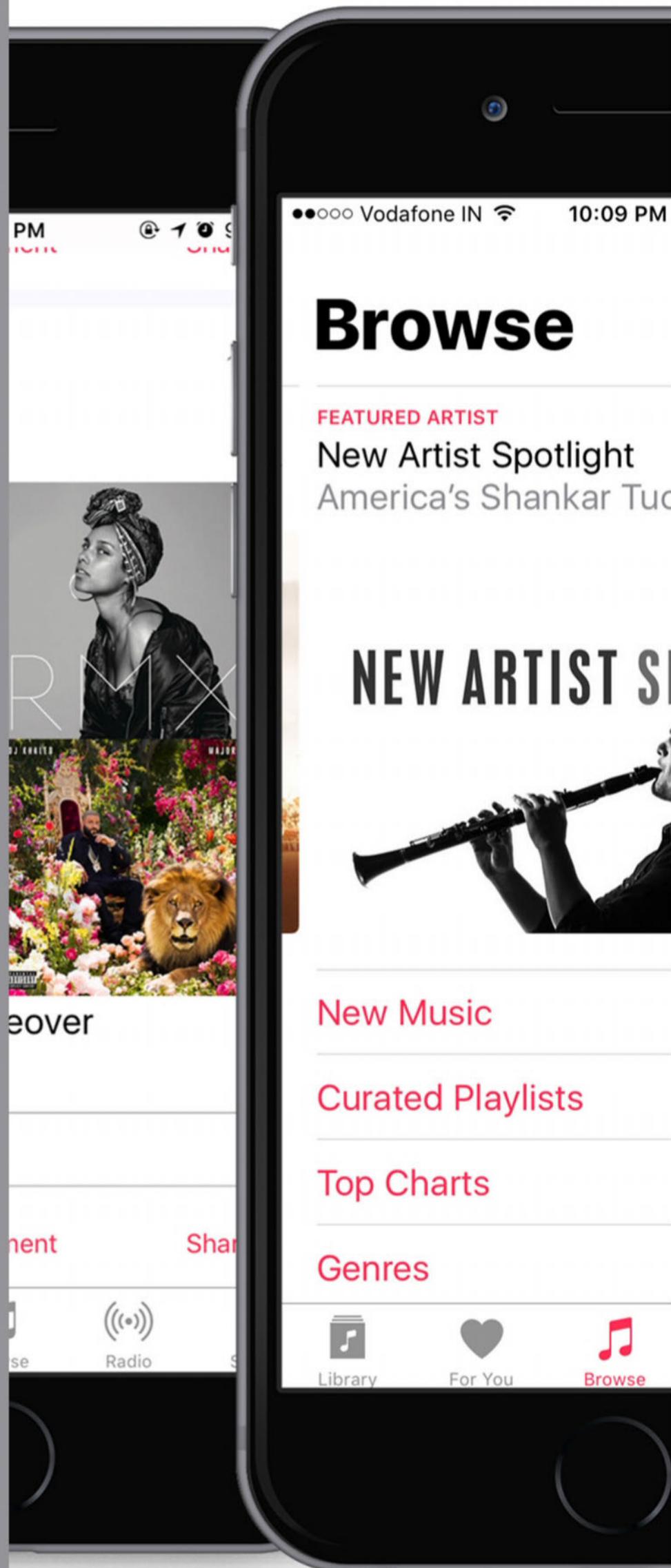
However, in **a follow-up article for *Forbes***, Marr explains how deep learning has even further strengthened the beneficial effects of machine learning. With deep learning, abundant data is put into a computer system and through neural networks. These networks analyze the data before classifying it. That data could be in any form - such as text, speech, audio, or video - and used to arrive at conclusions akin to those reached by humans, albeit very, very quickly.

Marr cites various examples of how deep learning could be put to practical uses. These include a system that could analyze cars driving along a public road and, through taking account of such factors as different vehicles' shapes, sizes, and engine sounds, attempt to classify cars by their make and model. This is machine learning; however, deep learning could enable that system to, over time, consume fresh data and use it to learn from mistakes. Therefore, the system's probability of correctly detecting a particular car's model and make would grow in future.

MACHINE LEARNING WAS HERE, THERE, AND EVERYWHERE AT WWDC

For even more examples of how deep learning can help us, we could look to Apple itself. Siri is becoming much smarter in iOS 11; keeping your Apple Music preferences in mind, she will be able to play songs that you have never previously heard but are likely to love. In the News app, she will suggest stories that apparently align with what interests you, and - with the QuickType keyboard - estimate the time that you should soon be meeting a friend. In the Photos app, meanwhile, she will sort your photos into albums without needing to be manually fed context about these images.

Siri's intelligence in discerning your music tastes will be especially vital to the HomePod, which Apple has billed as primarily suited to personalized music-listening in the home rather than home automation tasks. However, all of the above-mentioned AI enhancements will be present in the new 10.5-inch and 12.9-inch iPad Pro models - and, of course, this fall's new



Library

Edit

Playlists >

Artists >

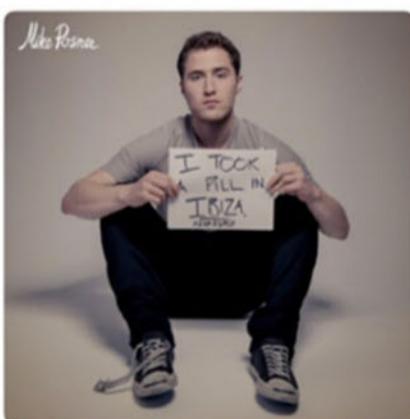
Albums >

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Recently Added



Radio



Library



For You



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FRIDAY, 09 JULY

For You

Recently Played



Leave This Town
Daughtry



Future Classics
Vini Vici

Friday's Playlists

Because you listen to Sia



For You

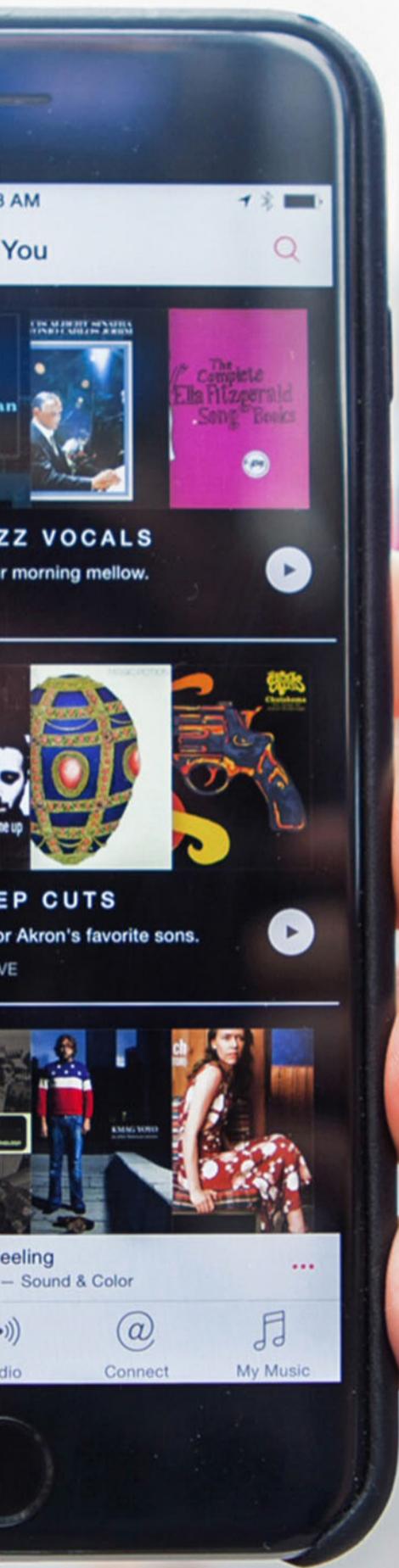


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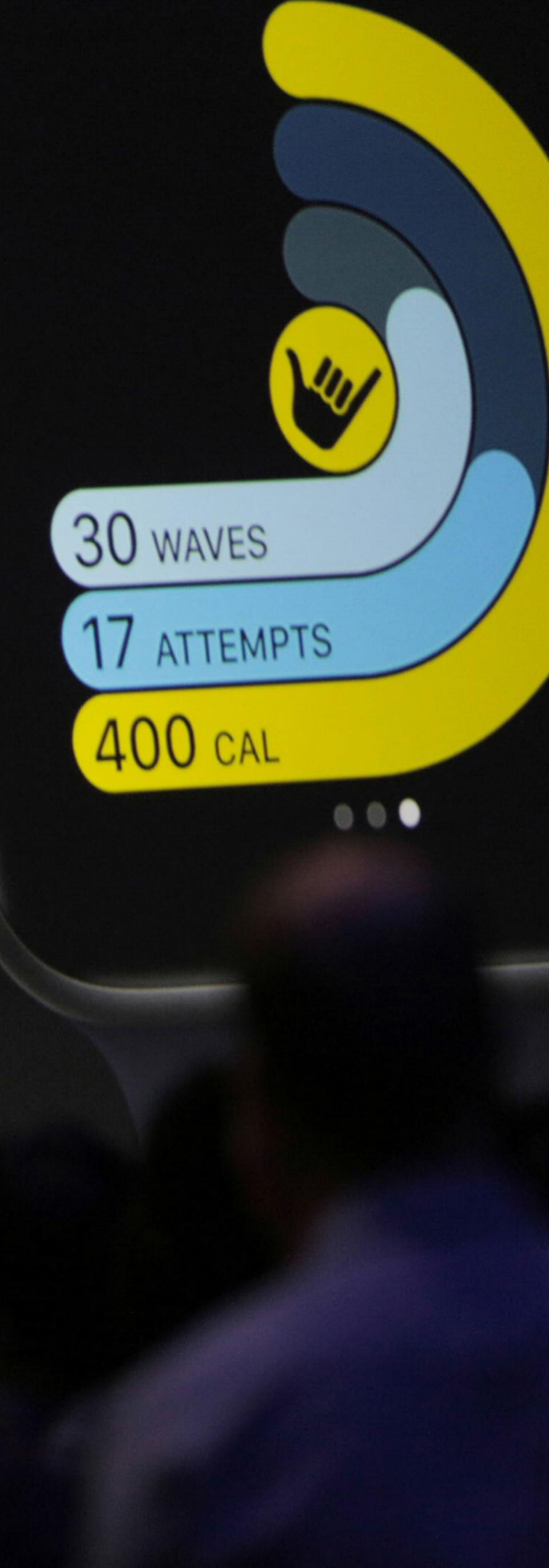


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iPhones. The Apple Watch, too, will get a new face on which such content as traffic information will be customized in real time.

Furthermore, it's not just Apple's own software that deep learning will be able to enrich. In its keynote, Apple also unveiled a new API for developers: Core ML. This machine learning framework will allow a wide range of apps to complete ML tasks, including face recognition and text analysis, six times more quickly than what Google's competing AI processor is capable of. On its Developer website, Apple claims that Core ML supports "**extensive deep learning with over 30 layer types**".

DEEP LEARNING HAS EXCITING IMPLICATIONS FOR APPLE PRODUCTS

It isn't difficult to see how deep learning could continue to realize a broad array of possibilities for apps - both Apple's and those of third parties. Cardiogram recently reported how, on the Apple Watch, **deep learning can be used to detect the heart conditions cardiac arrhythmia.**

Also, Marr notes that deep learning is helping with the development of medicines that are genetically tailored to different genomes; Apple could yet provide data to further assist such health-based applications.

However, Apple's little-wavering approach to privacy means that, with Core ML, what data is drawn upon for deep learning purposes will be stored not in the cloud, but instead on customers' devices. This could call for more efficient chips to prevent a deterioration in all-round performance - and, indeed, such chips are coming from major Apple supplier TSMC. As

reported by *Patently Apple*, the Taiwan-based company has reported its intent to integrate extreme ultraviolet lithography technology in its chips. This technology will enable more efficient use of deep learning.

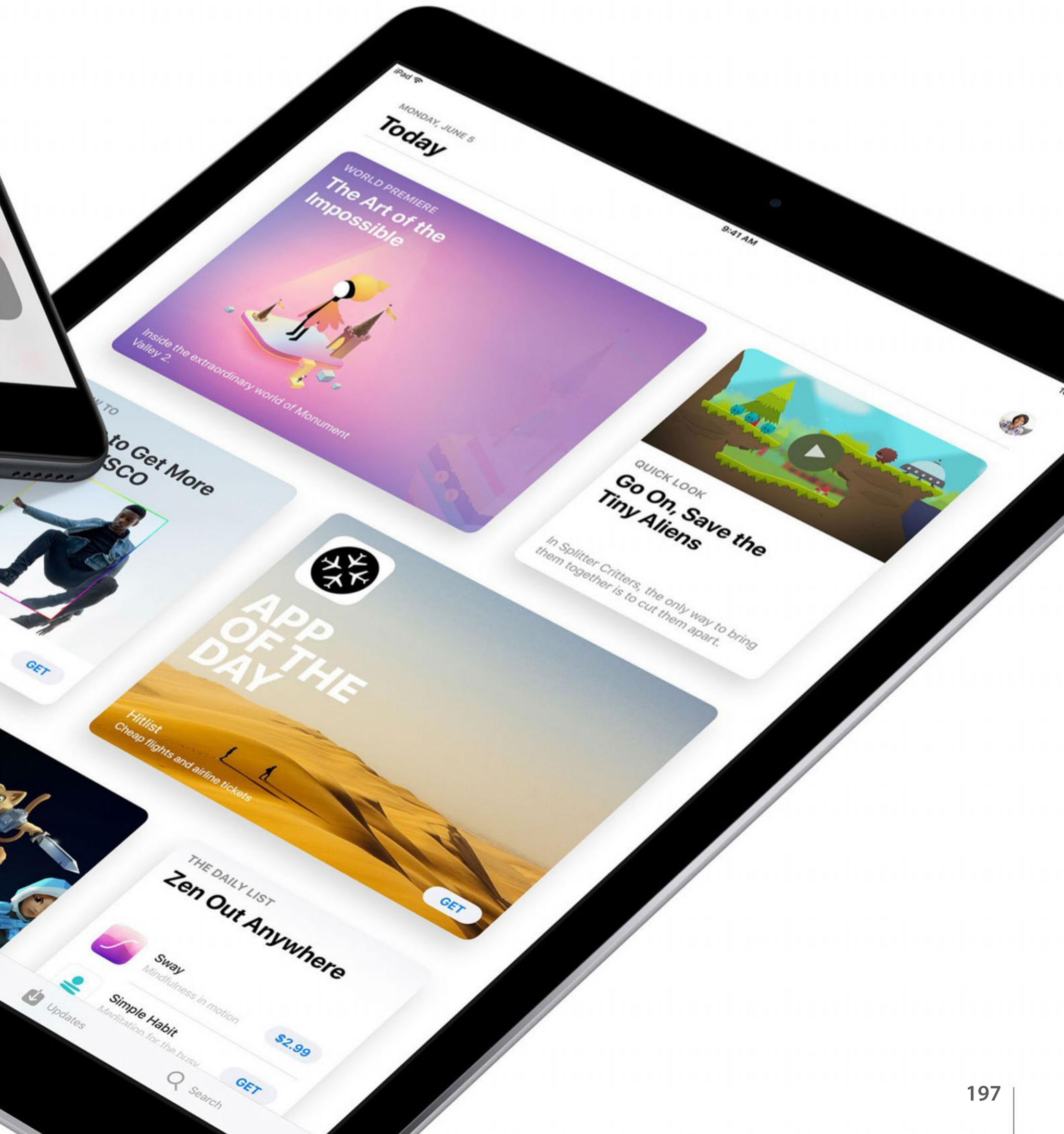
HAVE APPLE'S AI EFFORTS HIT A SPEED BUMP?

There do remain significant obstacles for Apple to overcome in its drive to further hone its deep learning efforts. In June, *ExtremeTech* cited claims, made in a report by *The Wall Street Journal*, that Apple's reluctance to harvest user data has hindered its attempts to improve Siri. Google Assistant, for instance, can understand context more effectively due to leveraging the huge amount of user data at Google's disposal. Last year, Apple did launch SiriKit, an API allowing developers to integrate their apps with Siri; however, it is deemed more restrictive than the API for Amazon's Alexa.

Apple's culture of secrecy has also deterred potential heavyweight recruits from the AI field. Such experts like to join companies that routinely publish their research, though Apple has at least slightly loosened a gag in this particular area. In October, the Cupertino corporation hired the Carnegie Mellon professor and deep learning expert Russ Salakhutdinov. He **told *The Washington Post*** that, this month, Apple will have its second academic paper on AI published; the first was published in December. Richard Zemel, a machine learning professor at the University of Toronto, has remarked about the greater visibility of Apple staff at academic conferences.



Still, will all of this help Apple to close a gap that, despite launching the first voice assistant on a phone back in 2011, it has allowed to open between itself and Google and Amazon? Apple analyst Gene Munster told The Washington Post that Apple “understand that in the future, every



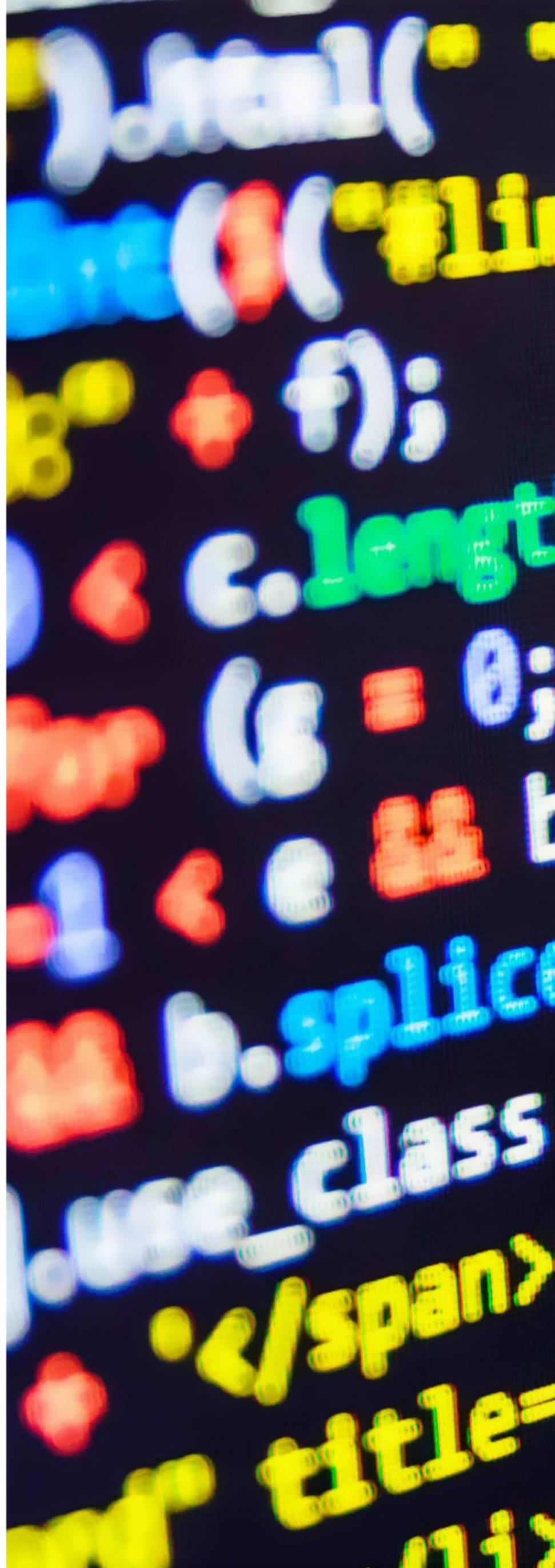
company is going to become an AI company, and they are in a particularly tough spot." However, he also remarked: "The good news is that if we look at how AI is going to impact the world, it's still early days - there is plenty of time to catch up."

HOW APPLE CAN PLAY THE LONG GAME IN AI

Apple has good reason not to delay in its efforts to catch up in the emerging AI revolution. After all, the deep learning-friendly technology in TSMC's chips will not be available exclusively to Apple. However, Daniel Gross, once an Apple executive focusing on AI, remarked that Apple's strong commitment to privacy will have helped it to build consumer trust. He remarked to *The Washington Post*: "I think Google and Facebook will have to answer to a world where a similar product that is offered is more privacy-preserving."

Apple's stance could even help many of its users overcome the modern difficulties of staying truly anonymous in a setting as public as the Internet. **Fast Company** cites the **example** of artist Curtis Wallen - who, even utilizing such techniques as spending with the cryptocurrency Bitcoin, struggled to create a completely new identity for himself. "There isn't anything inherently criminal in valuing privacy," Wallen said. "This shouldn't be what it takes to feel safe." In our next issue, we will look at how Apple's deep learning efforts can, with cryptocurrency, tackle the privacy dilemma.

by Benjamin Kerry & Gavin Lenaghan



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Q&A: INTERNET EXTREMISM AND HOW TO COMBAT IT

In the wake of Britain's third major attack in three months, Prime Minister Theresa May called on governments to form international agreements to prevent the spread of extremism online.

Here's a look at extremism on the web, what's being done to stop it and what could come next.

Q. What are technology companies doing to make sure extremist videos and other terrorist content doesn't spread across the internet?

A. Internet companies use technology plus teams of human reviewers to flag and remove posts from people who engage in extremist activity or express support for terrorism.

Google, for example, says it employs thousands of people to fight abuse on its platforms.

Google's YouTube service removes any video that has hateful content or incites violence, and its software prevents the video from ever being reposted. YouTube says it removed 92 million videos in 2015; 1 percent were removed for terrorism or hate speech violations.

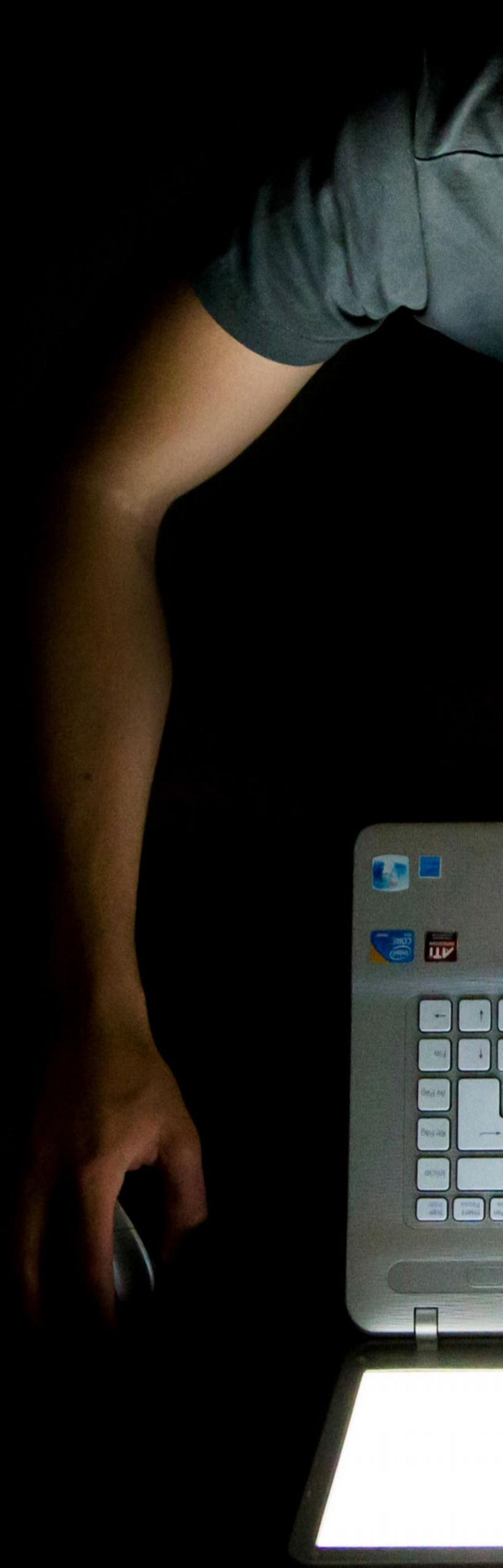
Facebook, Microsoft, Google and Twitter teamed up late last year to create a shared industry database of unique digital fingerprints for images and videos that are produced by or support extremist organizations. Those fingerprints help the companies identify and remove extremist content. After the attack on Westminster Bridge in London in March, tech companies also agreed to form a joint group to accelerate anti-terrorism efforts.

Twitter says in the last six months of 2016, it suspended a total of 376,890 accounts for violations related to the promotion of extremism. Three-quarters of those were found through Twitter's internal tools; just 2 percent were taken down because of government requests, the company says.

Facebook says it alerts law enforcement if it sees a threat of an imminent attack or harm to someone. It also seeks out potential extremist accounts by tracing the "friends" of an account that has been removed for terrorism.

Q. Why are technology companies clashing with governments over extremist communications?

A. Since Edward Snowden's 2013 disclosures about National Security Agency surveillance, several tech companies have started encrypting - that is, scrambling them to thwart spies -





instant messages and other data so tightly that even the companies can't read them. Governments are not happy about that.

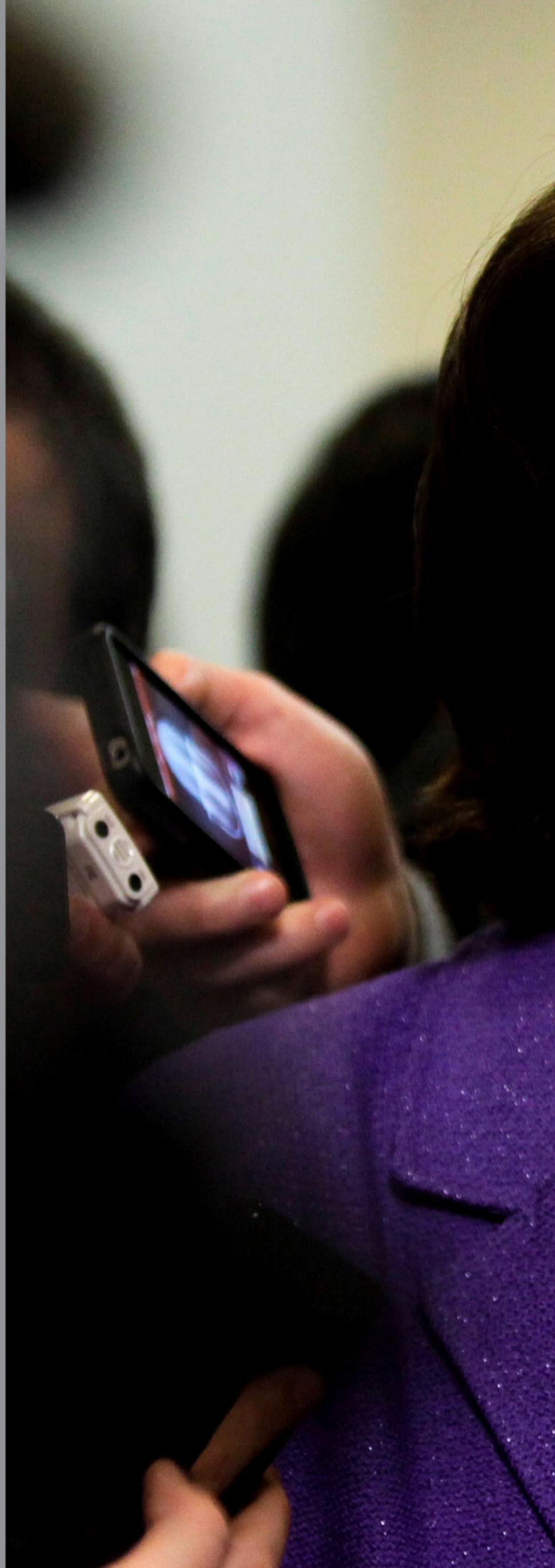
After the 2015 mass shooting in San Bernardino, California, and again after the Westminster Bridge attack, the U.S. and U.K. governments sought access to encrypted messages exchanged by extremists who carried out the attacks. Apple and Facebook's WhatsApp refused, noting that they didn't hold the keys needed to unscramble such messages. Both governments eventually found other ways to get the information they wanted.

Some in government - including former FBI Director James Comey and Democratic Sen. Dianne Feinstein of California - have argued that the inability to access encrypted data is a threat to security. Feinstein has introduced a bill to force companies to give the government so-called "backdoor" access to encrypted data so that investigators could read messages on these services.

Q. Shouldn't tech companies be forced to share encrypted information if it could protect national security?

A. Weakening encryption won't make people safer, says Richard Forno, who directs the graduate cybersecurity program at the University of Maryland, Baltimore County. Terrorists will simply take their communications deeper underground by developing their own cyber channels or even reverting to paper notes sent by couriers, he said.

"It's playing whack-a-mole," he said. "The bad guys are not constrained by the law. That's why they're bad guys."





Building backdoors into encryption could also weaken it in ways that hackers, criminals and foreign agents could exploit. That could potentially jeopardize all sorts of vital data, from personal communications and documents to bank accounts, credit card transactions, medical history and other information that people want to keep private.

But Erik Gordon, a professor of law and business at the University of Michigan, says society has sometimes determined that the government can intrude in ways it might not normally, as in times of war. He says laws may eventually be passed requiring companies to share encrypted data if police obtain a warrant from a judge.

“If we get to the point where we say, ‘Privacy is not as important as staying alive,’ I think there will be some setup which will allow the government to breach privacy,” he said.

Q. Is it really the tech companies’ job to police the internet and remove content?

A. Tech companies have accepted that this is part of their mission. In a Facebook post earlier this year, CEO Mark Zuckerberg said the company was developing artificial intelligence so its computers can tell the difference between news stories about terrorism and terrorist propaganda. “This is technically difficult as it requires building AI that can read and understand news, but we need to work on this to help fight terrorism worldwide,” Zuckerberg said.

But Gordon says internet companies may not go far enough, since they need users in order to sell ads.



“Think of the hateful stuff that is said. How do you draw the line? And where the line gets drawn determines how much money they make,” he said.

Others say the focus on tech companies and their responsibilities is misplaced. Ross Anderson, a professor of security engineering at the University of Cambridge, says blaming Facebook or Google for the spread of terrorism is like blaming the mail system or the phone company for Irish Republican Army violence 30 years ago. Instead of working together to censor the internet, Anderson says, governments and companies should work together to share information more quickly.

Former Secretary of State John Kerry also worries about placing too much blame on the internet instead of the underlying causes of violence.

“The bottom line is that in too many places, in too many parts of the world, you’ve got a large gap between governance and people and between the opportunities those people have,” Kerry said Sunday on NBC’s “Meet the Press.”

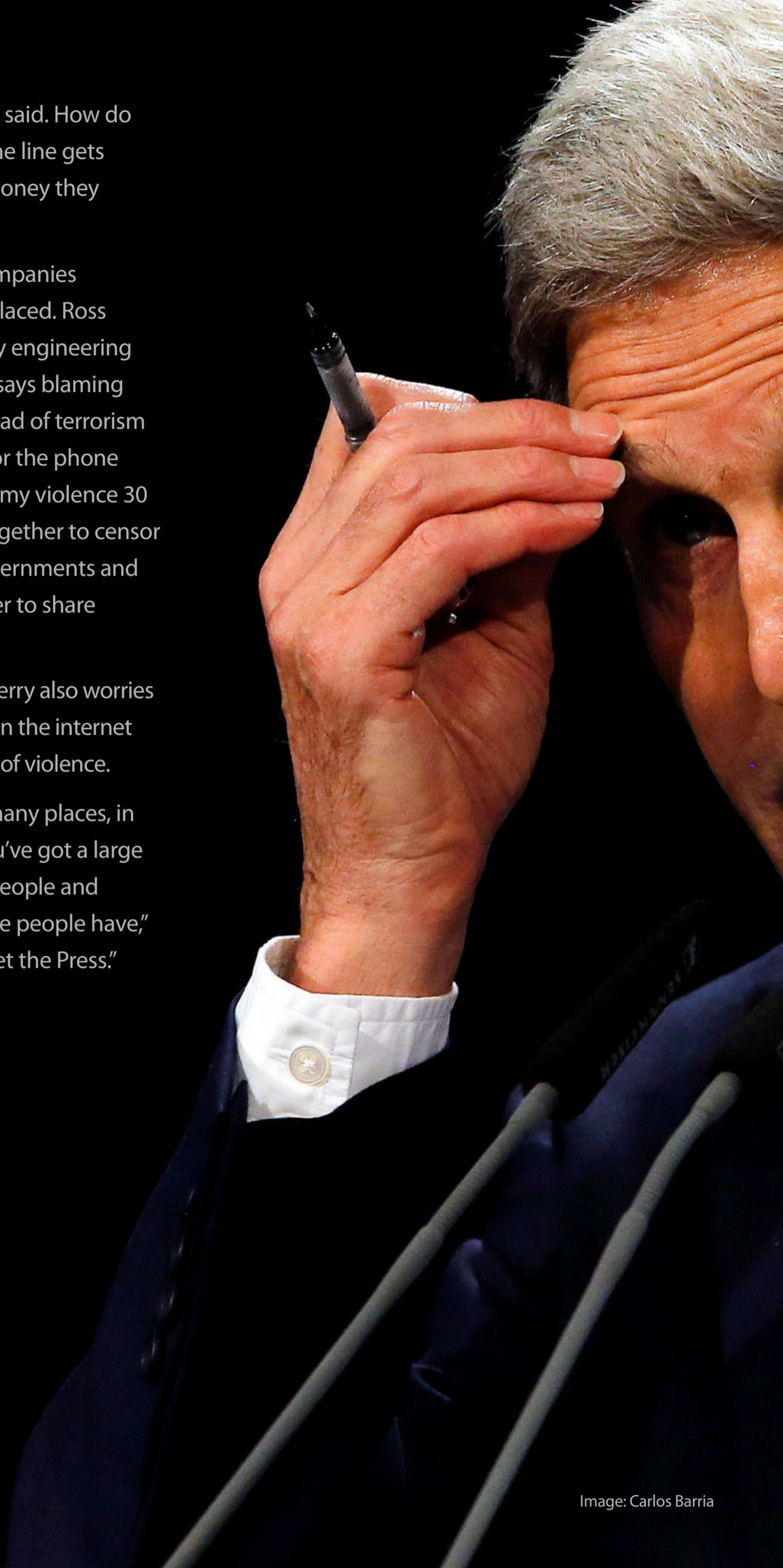


Image: Carlos Barria





Image: Dan Kitwood

PRICE OF BITCOIN SURGES PAST \$10,000 THRESHOLD

The price of bitcoin surged through \$10,000 this week, adding to its ten-fold jump in value this year and fueling a debate as to whether the virtual currency is gaining mainstream acceptance or is merely a bubble waiting to burst.

The cost of buying one bitcoin as measured by the website Coindesk rocketed 10 percent through \$10,000 early Wednesday and hit a high of \$11,377 — having started the year below \$1,000.

The vertiginous rise in the price of bitcoin and other virtual currencies this year has divided the financial community on their merits and whether — or when — the value might come crashing back down.

The CEO of JPMorgan Chase has called bitcoin a “fraud,” as it is not based on anything other than software code and is not backed by any monetary authority.

Other executives, including International Monetary Fund chief Christine Lagarde, say virtual currencies should not be dismissed and could have useful applications, such as a means of payment in countries with unstable currencies.

Some countries, like China, have tried to stifle bitcoin exchanges. But in a move that gave further credibility to the virtual currency, the U.S. exchange operator CME Group said last month that it plans to open a futures market for the currency before the end of the year, if it can get approval from regulators.

Bitcoin was created about a decade ago as an alternative to government-issued currencies. Transactions allow anonymity, which has made it popular with people who want to keep their financial activity, and their identities, private.

The digital coins are created by so-called “miners,” who operate computer farms that verify other users’ transactions by solving complex mathematical puzzles. These miners receive bitcoin in exchange. Bitcoin can be converted to cash when deposited into accounts at prices set in online trading.

Whereas virtual currencies were initially used primarily as a method of payment, in recent months they have become a hot investment among speculators.

Daniele Bianchi, an assistant professor of finance at the Warwick Business School in England, says that the price increases are due to rising demand but also to the fact that the supply of bitcoins is kept fixed. There are currently only 21 million that can be mined in total.





Bianchi also noted that trading in bitcoin is becoming more professional and open to the general public. He believes virtual currencies are “here to stay” and expects the price to rise higher still.

“The increasing demand pressure from investors and speculators makes the case for an even further increase in bitcoin prices in the near future,” he said.

Others are far more skeptical.

Neil Wilson, a senior market analyst at ETX Capital in London, says bitcoin is “following the playbook for a speculative bubble to the letter.”

A new market enjoys a boom when professional investors start entering the market. That’s followed by euphoria as others rush in to partake in the gains. Wilson says bitcoin could rise a lot further, but says it is merely a question of when, not if, the bubble bursts.

“This sort of thing never, ever lasts,” he said.





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