https://qz.com/1140466/all-the-best-arguments-for-repealing-the-federal-communication-commissions-net-neutrality-rules-proposed-by-ajit-pai/

QUARTZ

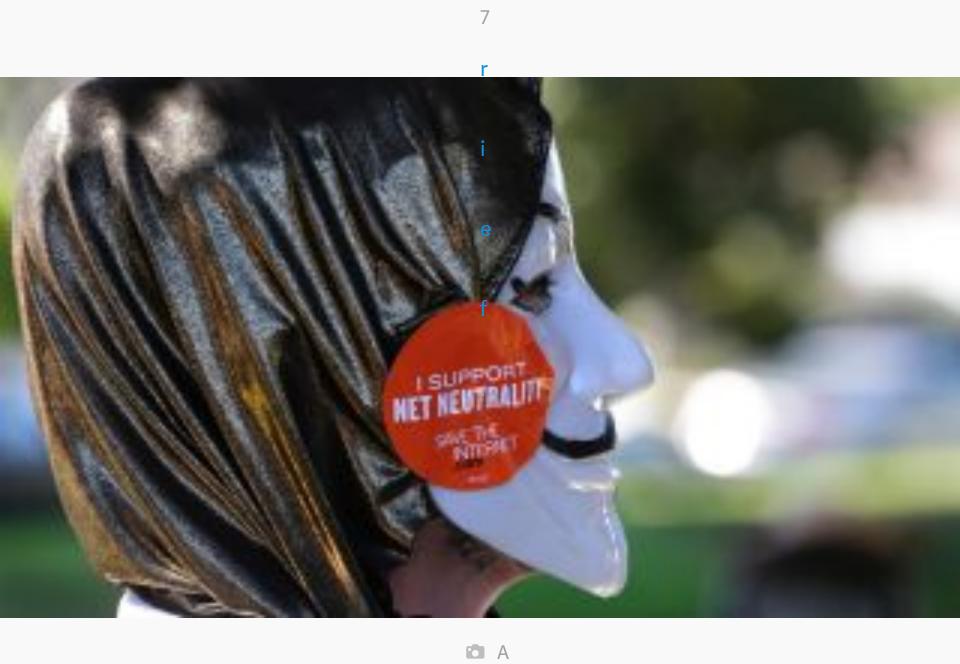
EVERYONE CAN'T AGREE

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Update: The Federal Communications Commission on Thursday (Dec. 14) successfully voted to repeal the Open Internet Order, an Obama-era rule protecting net neutrality. Split along party lines, the vote hands FCC chairman Ajit Pai a major victory and potentially allows US telecoms to block, slow, or charge more for certain content. Read more about the decision and opposition to it here.

Voters of every political persuasion agree: we need net neutrality (pdf). The political debate is how to enforce it.

Here, the divide is stark. Democratic policy makers assert the threat of regulation is needed to keep the telecoms in check. Without it, quasi-monopolists can raise prices, extort companies trying to reach their customers, and create anticompetitive internet "bundles" similar to cable TV. Republicans argue the market needs to operate more freely so companies can innovate. Regulators such as the Federal Trade Commission (FTC) will catch abuses of voluntary net neutrality principles as they arise, they say.

We don't know what will happen if the repeal of current net neutrality rules goes forward (it already faces legal challenges). It's never been tried. In some form or another, the Federal Communication Commission (FCC) has enforced net neutrality since the 1990s. But we can look to economists for predictions. They have a few arguments to suggest that relaxing net neutrality rules might improve the market for broadband services. Unfortunately, the most vocal proponent for eliminating them, FCC chairman Ajit Pai, has not made them. In **public statements**, Pai, a former lawyer for Verizon, has argued that broadband investment is declining because of the 2015 Open Internet Order "micromanaging the internet," and the US needs a return to "light-touch rules." Neither of these statement is entirely true.

Investment has dropped slightly over the last two years, but it's not clear why. Telecoms (as industry CEOs freely admit) do not change their investment plans based on net neutrality rules, and have show no inclination to invest windfall profits if they are changed. As for the "light-touch" regime of the last two decades, it was always backed up by a very big stick of utility-style regulation, an authority that the FCC has steadfastly refused to relinquish, until now.

Yet good faith arguments about net neutrality tradeoffs exist. Quartz organized some of the main reasons being cited in support of repealing net neutrality, as well as their limits.

Partisans should pause before claiming victory, warn economists publishing this spring in the Journal of Economic Perspectives (pdf): "The thrust of the conclusions from economic analysis tilt against simplistic declarations in favor or against net neutrality," they wrote. "This suggests that bold and sweeping recommendations and interventions, given the current state of empirical knowledge, have a substantial chance of being misguided."

Less regulation equals more investment

This is the central justification cited by the FCC and industry advocates for repealing net neutrality. They argue that regulatory overreach has dampened investment in rural broadband and underserved communities. Even a critic of net neutrality, New York University economist Nicholas Economides, concluded in a 2012 study that under certain conditions "the ability to price discriminate increases [ISP's] incentives to invest" (pdf).

Jonathan Banks, a law and policy expert at US Telecom, also points to Europe, which has more regulation than the US, and where infrastructure investment is lower. He says declining broadband investment in the US was plausibly if not definitively linked to new net neutrality rulings in 2015. For US investment trends, he said, "so far, nothing looks good." Critics of this argument say it ignores telecoms' actual investment in infrastructure (not clearly correlated with net neutrality decisions) and industry executive's own assertions. In 2005, a Verizon spokesman said net neurality principles would not stall investments in their network ("Our plans haven't changed"). Inn December 2015, AT&T's CEO told investors the FCC's decision to reclassify them as a utility under Obama (Title II) after years of uncertainty would not hinder future business plans (although he later amended this in a January earnings saying Title II was "suppressive to [industry] investment," even it did not affect AT&T's infrastructure spending which rose 4.5% in 2016 over 2014). This year, Comcast also claimed the FCC's treatment of broadband providers "harms investment and innovation" even as it increased its investment by 10.2% in the first quarter of 2017.

Different pricing models will spur competition

This is markets 101. Companies trying out new business models and products forces other firms to compete. Prices fall, quality rises, and customers benefit. Heavy regulation often favors incumbents (see AT&T), therefore relaxing net neutrality rules deters new entrants.

"These [net neutrality] regulations are plucked from a policy regime that created anti-competitive mischief and stifled innovation," Thomas Hazlett, a former FCC chief economist, argued in the New York Daily News. He points to the fact that internet services such as Skype and FaceTime are only possible because of a 2004 deregulation ruling (pdf). Something similar happened with T-Mobile, argues Ben Thompson of Stratechery. After the Department of Justice blocked its sale to AT&T in 2011, the company began to compete by rolling out new features such as no-contract pricing and phone financing forcing the rest of the industry to follow. That could be a model for the broadband industry.

That's possible, but is by no means assured. Very limited competition exists among internet providers in many markets. No competition at all exists in many more. At the moment, more than 56 million households lack any choice for their wired 25MB broadband connections. Relying on competition in this environment is risky, critics charge.

Over-regulation is costly

This argument is simple: the costs of regulation are clear, and the benefits are not. This argument, favored by some economists, posits that in the absence of clear harm, regulators should take on hands-off approach. Who knows what people will come up with? Those like **Tyler Cowen** at Marginal Revolution **say** that they don't trust the FCC to fairly administer rules under Title II, and would prefer to entrust net neutrality protections to the market and the FTC: "I would rather take my chances with the market, even with some monopoly power at the cable end."

Instead, argues Thompson of Stratechery we "should stick to *ex-post* instead of *ex-ante* until there is compelling evidence of systematic abuse."

What's the counter-argument? Telecoms have been held in check not just by regulators, but by the threat of regulation. There is a history of net neutrality abuse (although US Telecom says the number of incidents is small, relative to the size of the industry). The advocacy group Free Press counts ten significant violations of net neutrality since 2005. Back in 2014, the communications firm Level 3 accused six internet service providers (ISPs) of degrading internet services for companies like Netflix, a process known as paid peering, to secure payments. "They are deliberately harming the service they deliver to their paying customers," the firm reported. "They are not allowing us to fulfill the requests their customers make for content."

The repeal will remove much of the federal government's authority to deal with these issues.

Today's robust internet is the result of an unfettered market

It's true regulators have managed to beat back ISPs attempts at bad behavior in the past. The two most prominent cases directly related to net-neutrality were short-lived. One was an attempt by internet provider Madison River Communication to block a competing Voice over Internet Protocol (VoIP), which was stopped once the FCC stepped in. The other was Comcast's undisclosed throttling of Bit-Torrent, which was halted after a public outcry.

The Federal Trade Commissions could avert some abuses. The FCC's draft proposal calls for the FTC to (pdf) "protect consumers online from any unfair, deceptive, and anticompetitive practices without burdensome regulations, achieving comparable benefits at lower cost."

But it's worth noting that the Title II authority (stripped away under Pai's

proposal) is the only way the FCC can claim legal right to combat net neutrality violations, according to the courts, and it was crucial leverage in earlier decisions. It's also not clear if the FTC will have authority to enforce net neutrality principles since it relies on policing company's voluntary commitments, and anti-trust and anti-competitive authority, neither of which would apply to many net neutrality issues.

The fact is we don't really know how telecoms will behave if freed from these regulations in the internet-era because we've never really experienced it. The internet exists in its current form today because it took shape under the four principles of net neutrality the FCC formally articulated in 2005.

Consumers are entitled to access the lawful Internet content of their choice.

Consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement.

Consumers are entitled to connect their choice of legal devices that do not harm the network.

Consumers are entitled to competition among network providers, application and service providers, and content provider

Under the repeal proposal, much of this will become voluntary.

Discriminating on price leads to increased innovation

Incumbents already have built in advantages to favor their content: they can pay for private networks (Google) or install their own servers within ISP's

infrastructure (Netflix). This argument contends that startups, instead of worrying about getting shut out by preferential pricing for packages, should welcome the possibility of differentiating through whatever programs internet providers might offer. The chance that they'll be shut out entirely is low since ISPs simply want the most users as possible, and degrading their selection is bad for business.

It also precludes charging less to households that only use basic internet services like email. Companies that want fast internet can pay more while those who don't need it can pay less, argues Michael Katz, chief economist at the FCC from 1994 to 1996. A 2016 review of economics research on internet regulation found these households would probably be better off without net neutrality.

The counter? "Right now we don't see companies like Microsoft, Google, and Amazon coming to AT&T begging for prioritization," Nicholas Economides, an economist who studies net neutrality at New York University told Quartz. "Instead, we see AT&T coming and saying we want a new revenue stream, so we can't create artificial scarcity and make more money."

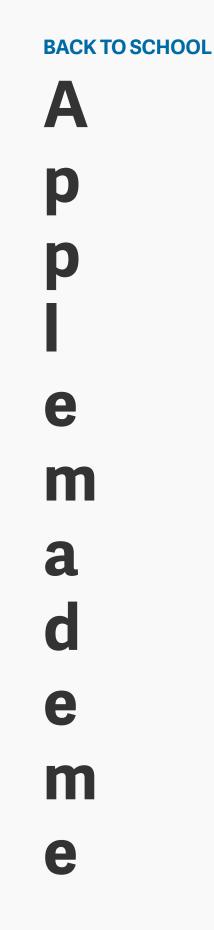
Don't let agencies seize authority. Let Congress do it!

US rules on "network neutrality" have flipped six times in the last decade. The FCC, under a future administration, could reclassify telecoms as utilities yet again. Congressional legislation could solve this problem by laying out clear guidelines and agency authority, so this argument goes. "Only Congress can put net neutrality on a sound legal footing," argues Berin Szóka, president of the think tank TechFreedom.

Unfortunately, the legislative body has been paralyzed for years when it comes to ambitious bi-partisan bills. That doesn't seem be changing anytime soon. Too

bad, say advocates. It's better to force the issue with Congress that overextend the FCC's authority.

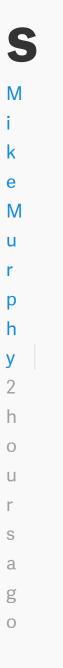
Privately, even net neutrality advocates say a clear decision by Congress could clear up the matter. But, they charge, net neutrality is too important to be held hostage to Congress' dysfunction and agency regulation is up to the job. We'll find out soon which argument wins out.

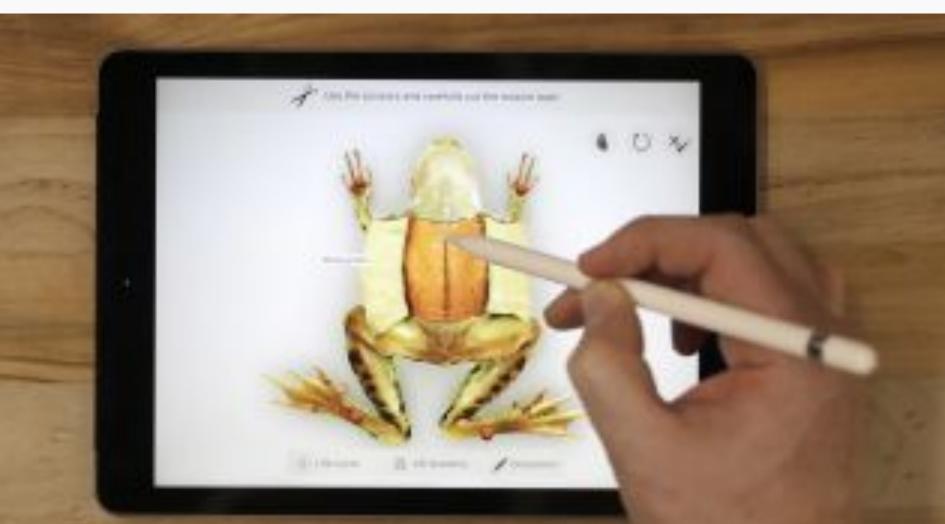


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CHICAGO

The bell rang and I started panicking. There were people everywhere, but I didn't know anyone. I had my schedule from the administrators, and I needed to find classroom 125. I turned one way, and there was the auditorium. I turned the other way, and it was the cafeteria. I was late. Eventually, I found my class, late, and was one of the last students to arrive. The teacher had already begun. It was 11am, and I already wanted to go home.

This was not, in fact, a nightmare recounting my first day at school, but part of Apple's education-focused event. The company invited journalists, analysts, and educators to Lane Technical College Prep high school on the northwest side of Chicago to debut a new low-cost iPad and educational software. It hopes that these products will outmaneuver Google and its partners for a greater share of the burgeoning grade-school education market.

After a presentation, with the likes of Apple's head of marketing, its head of retail, and—why not—Al Gore in attendance, Apple dispatched reporters and others out into classrooms to test out some of the things it announced onstage. My classroom had a few tables dotted with iPads in it. A group of former teachers were there to walk us through the software. Much like they would be in a real classroom, the iPads were locked by the teacher, so I couldn't do anything on the one in front of me until an authority figure unlocked it. I tried to force it to reset and I couldn't do that either. I'm lucky I didn't get detention.

The head teacher first walked us through how to use Apple Clips, the company's Snapchat-like video recording app, to write a poem inspired by the Fibonacci sequence. We had to add a video introduction, a little poster on what the video was about, and record the last frame of the poem (the rest had been completed for us). Even with the help of the teachers circulating around the room, my project partner and I failed spectacularly to get Clips to recognize our voices, or to reorder our clips before saving.

Apple wouldn't let us take photos or videos in the room, but it seems that its educational software had a small loophole: I could save my clip and export it over AirDrop, Apple's proprietary software for sharing files between Apple devices, to my phone. We almost certainly would've gotten an F, no doubt paired with a frowny face, for this:

After the Clips demo, the teacher opened GarageBand on all our iPads, and asked us to record a quote from John F. Kennedy about space exploration. We had to arrange some pre-recorded sound loops and royalty-free audio (including Neil Armstrong's first words on the Moon), and then record ourselves saying Kennedy's quote over the top. AirDrop was still on, so you can now enjoy my terrible JFK impersonation:

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Our teacher then enthusiastically asked the class, "Who wants to learn how to code?" There were some half-hearted grumblings from a room filled mainly with people who hadn't been in a classroom for anything other than a PTA meeting in decades. We continued on.

A tutorial showed us the basics of Apple's Swift Playground app, which it built to show younger students that learning to code can be fun. Apple helpers brought small robots out of cupboards and put them on every table. We connected them to the app, and could program them to dance, using pre-loaded commands. It was exceedingly easy to tap on pieces of code and get it to run, but quite difficult to edit the code, given that the app is all touch-based, and there's no keyboard.

One of the teachers informed me that there were tons of commands I could use to make the robot dance, so I scrolled all the way to the end of the list and found one called <code>swagger()</code>. I put it at the end of my dance sequence, and fired up the little robot. He jiggled and shook as he went through my commands, and when he got to swaggering, he did the splits, fell over, and his foot popped off. The teacher was not impressed. I was pretty sure at that point that I wasn't going to pass this class.

Mercifully, it ended soon after that. I was supposed to go to another demo on augmented reality apps. I decided I didn't feel like dissecting a virtual frog, so I cut class and headed to the cafeteria to write. Again, much like real high school, I kept to myself and sat on my own. It's amazing how little changes.

That is, except everything else about school. When I left high school more than a

decade ago, I was still handing in essays on floppy disks. (Editor's note: In my day they were actually *floppy*.) Apple now has multiple courses teachers can follow to teach code and creative arts using its products, and some 30 million US students now use Google services and products each year. Apple's Chicago event, which seemed determined to remind us how hard school can be, showed that the classroom has changed, and that the company can change with it.

Apple has been pushing the iPad as a computer replacement for years, and with today's software updates, which give teachers more ability to track, assist, and assign students, it may finally have something to chip away at Google's dominance in the educational market.

But as I write this—which I consider homework from today's class—I didn't fire up an iPad to do it. I opened up my personal MacBook Pro laptop, some form which has been my staple computer since my high school days. The new iPad isn't water-resistant, it isn't rugged (it will need a case in a school setting), and it doesn't support Apple's smart keyboard case. And yet, it still costs as much as any Chromebook laptop when you throw in the cost of the Pencil stylus.

I can see how the new iPads make taking notes and recording videos easier, but I can't really see how I'm supposed to research and write on an iPad, or do any real coding. Considering the price and lack of flexibility of the device, I'm not sure how many schools will either.

Read next: Apple is going to war with Google for dominance in US classrooms

FACING THE MUSIC

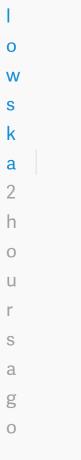
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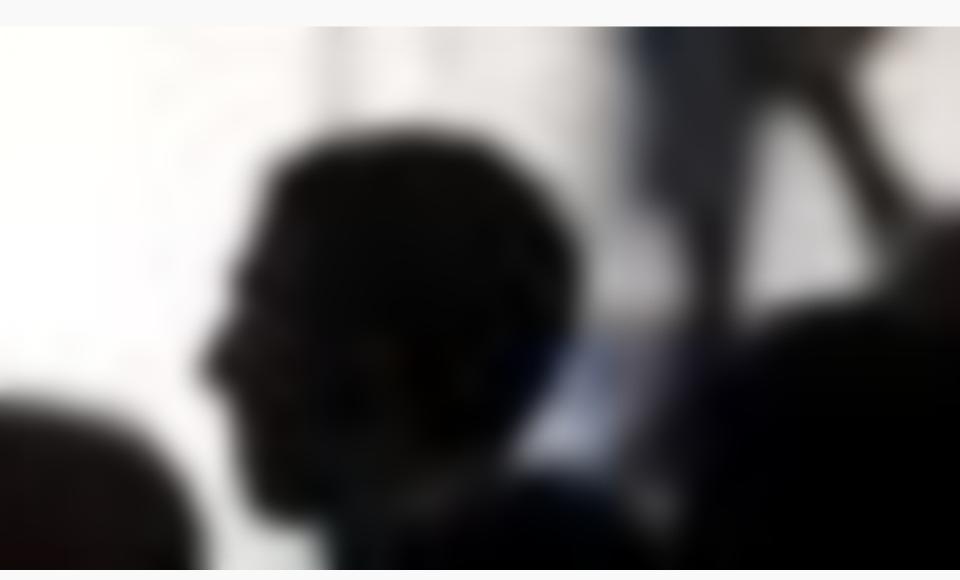
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Facing pressure from lawmakers, users, advertisers, and investors following the Cambridge Analytica scandal, Facebook CEO Mark Zuckerberg has reportedly agreed to make an unprecedented appearance before the US Congress to explain the mess his company has caused.

Facebook has sent lawyers or lower-level executives to Congress in the past. But this time, it will be Zuckerberg fielding questions from lawmakers, according to CNN, based on information from anonymous sources. The Senate Judiciary and Commerce committees have both invited the CEO, and it's not clear which hearing he is slated to attend. Facebook has not confirmed the news, and a spokesperson for the commerce committee told Recode that nothing was set in stone.

In an interview with CNN last week, Zuckerberg said the company would send "who will have the most knowledge," and that the person this label fit best could be him. Zuckerberg does not like to give interviews, and his public presence is highly managed, so the testimony is bound to be a big test for the 33-year-old executive.

There are other reasons why Facebook has avoided sending top brass to face lawmakers in the past. In November, ahead of a hearing on Russian meddling on the platform during the 2016 election, an expert on congressional testimony told Quartz that lawyers were more knowledgeable than executives about details of the situation, and would be more skilled at avoiding incriminating the company. The risk of a bad showing from Zuckerberg or Sheryl Sandberg would also be a PR nightmare. Now it seems that the pressure to see Zuckerberg is at a tipping point, and his failing to appear could be worse than the sight of him stumbling through questioning.

The Senate Judiciary committee also asked Google CEO Sundar Pichai and Twitter chief Jack Dorsey to testify, and Zuckerberg's decision will surely put pressure on the two other executives to show their faces.

Meanwhile, Zuckerberg has declined to testify in front of the UK committee on media and digital affairs, despite having been invited three times. Damian Collins, head of the committee called the refusal "absolutely astonishing."

Zuckerberg's decision to heed the request of US over UK lawmakers may reflect the difference between the respective markets each country represents for the company. The US generates more revenue for the company than any other region by far. And the threat of regulation in the US is particularly scary for Facebook, which already faces stricter rules in Europe.

Facebook's business has been hit by the scandal, and news of the testimony quelled some worries.

"While this will not be a pleasant experience for Zuckerberg and his team going in front of Congress, it is a necessary smart strategic step for Facebook to head to the Beltway as the public fury continues to grow around the Cambridge data leak, which represents the darkest chapter in the company's 14 year history," Daniel Ives, analyst for GBH Insights, wrote in a note to investors.

In the US, Facebook is also under investigation by the Federal Trade

Commission, which could result in hefty fines, and faces a probe from the attorneys general of Massachusetts and New York.

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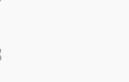
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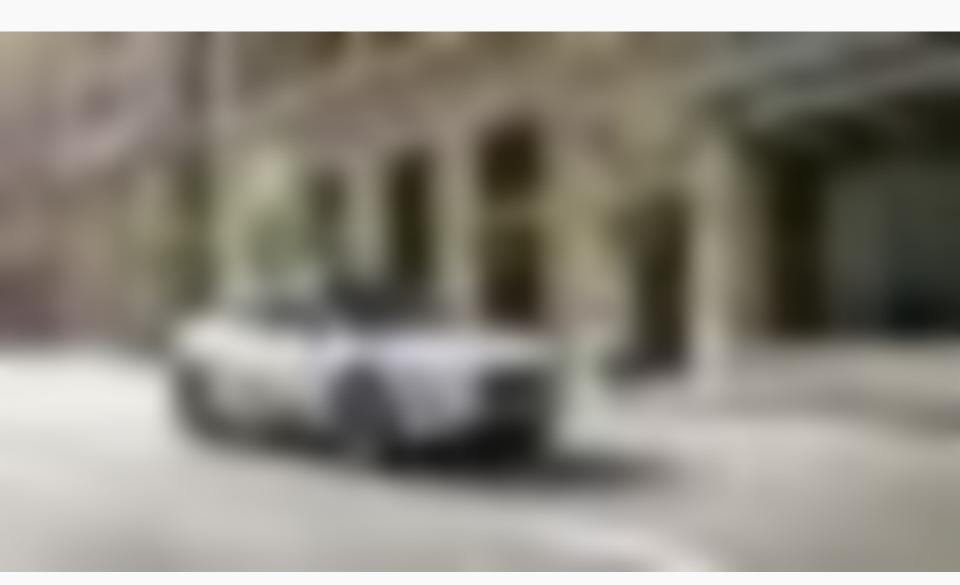
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Alphabet's autonomous driving company, Waymo, announced today that it's getting into the ride-sharing business—and that it's building a special car to do it.

The company partnered with Jaguar Land Rover to make a completely autonomous, electric car, called the Jaguar I-Pace. Waymo is launching the service first in Phoenix, Arizona. Anyone can hail a ride from the autonomous car in the city starting later this year, though the Jags will not be for sale for the general public.

Waymo's news comes after the first death caused by an autonomously-driven vehicle owned by Uber just nine days ago, in Tempe, Arizona. When asked about the accident during the press conference, Waymo CEO John Krafcik noted Waymo's extensive testing, saying that consumer confidence is paramount for autonomous cars to be successful.

Some 20,000 new self-driving I-Paces will be added to Waymo's ride-sharing fleet, allowing the company to ramp up to 1 million trips per day over the next two years. Krafcik said the company will announce the second market to receive the service later this year.

Quartz previously discovered documents detailing the company's plans to build

a ride-sharing platform from its autonomous car technology. The company spent 2017 bolstering the software that controls its fleet of autonomous minivans, on average driving four times longer than its competitors without needing a human to take control of the car.

More cars on the road also means more data for the company; every decision an autonomous car makes can be used to train the software powering future models.

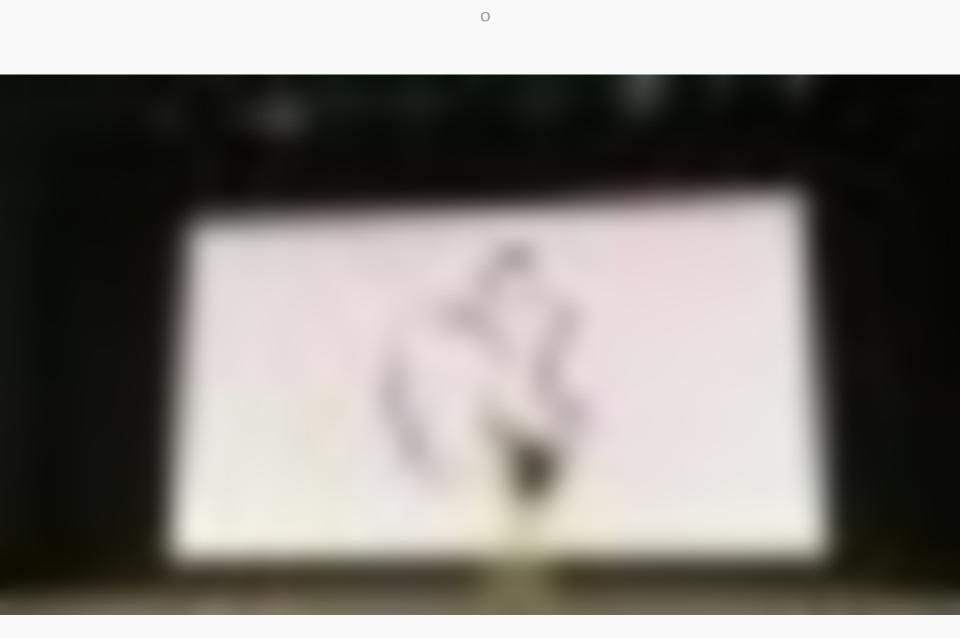


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Google dominates US classrooms with its affordable laptops and free apps like Google Docs. Now Apple appears to be getting serious about recovering some share of the education market.

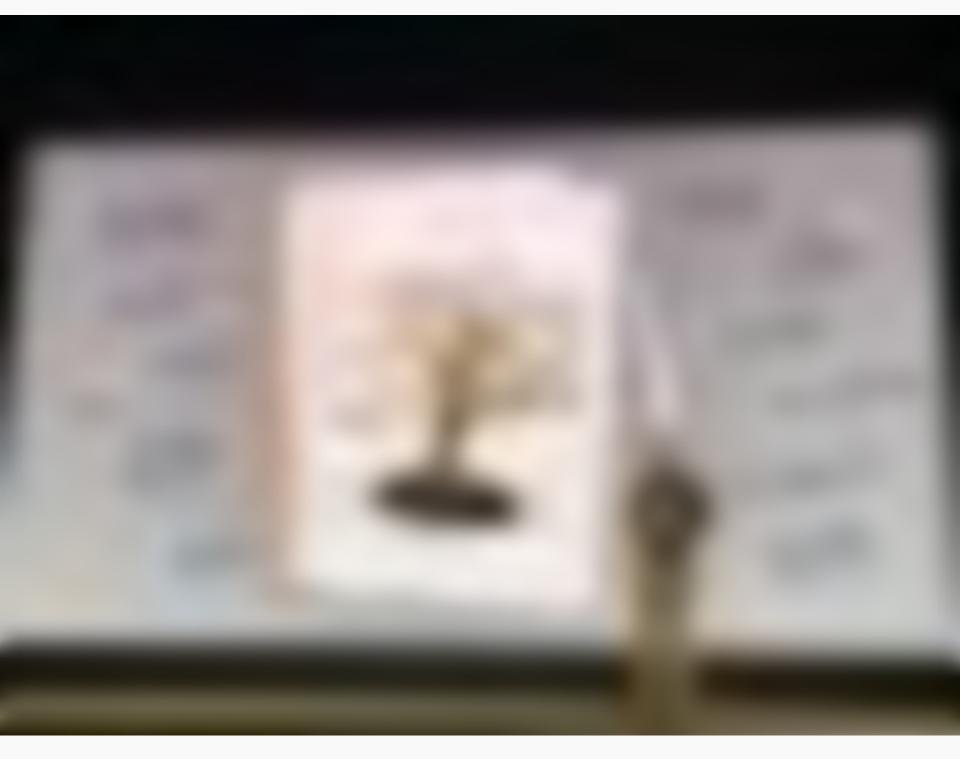
Apple executives announced their latest education products at a Chicago highschool auditorium today (March 27) to an audience of journalists, analysts, educators, and students. The hour-long event had little new hardware on show. "We believe iPad is best at engaging students," a company representative said onstage. But it's not clear that its latest offerings would put a serious damper on Google and its partners' education sales.

Here's a quick rundown of everything Apple announced.

A new iPad

Apple revamped its 9.7-inch iPad that supports Apple's stylus, the Pencil. It features just about everything you'd expect on a tablet of its ilk, including a

Retina HD display, an 8-megapixel camera, Apple's A10 processor, which was first seen in the iPhone 7, a TouchID fingerprint scanner (no FaceID sensors like on the new iPhone X), and a front-facing camera for selfie-taking and Skyping.

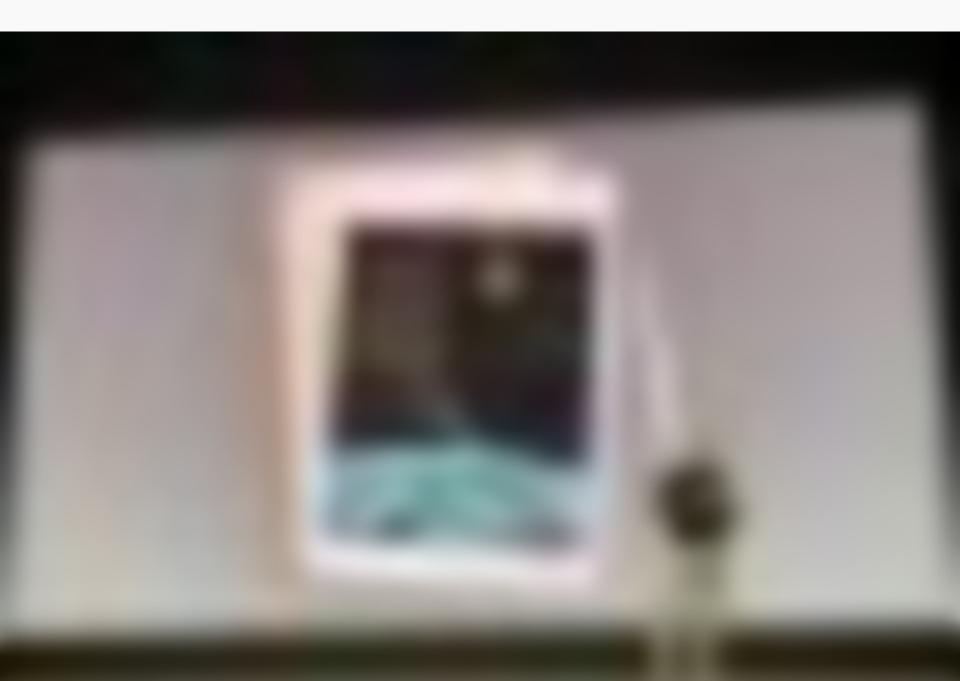


Everything the new iPad has on board. (Quartz/Mike Murphy)

Unlike the more expensive iPad Pro (which starts at \$649), this iPad does not support Apple's Smart Keyboard case. Apple also did not reduce the price of its Pencil stylus (which is still \$99), but did announce that Logitech is making a stylus called the Crayon which will work with iPads, and starts at \$49. The new iPads start at \$329 for a 32GB model. Apple said that teachers and schools will be able to get them for a discounted rate of \$299. It comes in gold, silver, and grey. Sadly, no rose gold.

New software

iWork updates. Apple announced a new suit of iWork apps with tons of updates for schools. It focused mostly on the new version of Pages, where teachers can make textbooks for their students directly on an iPad, as well as mark up documents using an Apple Pencil. Students can collaborate on editing projects together in class over wifi, much like they've been able to on Google Docs for years.



The new iPad, running Pages. (Quartz/Mike Murphy)

Minor apps get minor updates. GarageBand, Apple's music-making app, got minor refreshes, including a royalty-free sound library for class presentations. Clips, Apple's Snapchat-like video app, got new Apple-designed posters and animations that make it easier for students to make mini-presentations on the fly.

Schoolwork. Apple released a new app for teachers to keep track of their students, and basically make digital handouts for homework as easily as they can write an email. The app also lets teachers assign specific tasks to students within educational apps and see how well they're progressing. Obliquely referencing issues in the news right now, Apple harped on the fact that the data in this app is private, seen only by the student and teachers involved. The app will launch in June.

More storage. Apple announced that all iCloud accounts associated with a school will now get 200GB free cloud storage, a massive boost over the 5GB it previously offered. It didn't extend this offer to those who have graduated, and it's worth noting that Microsoft Office 365 subscribers get 1TB of free data.

Everyone Can Create. Apple said that it will soon launch a new curriculum, focused on how the iPad is a powerful creative tool for the classroom. It builds on the Everyone Can Code curriculum it previously launched to encourage students to learn to code.

Nothing else

Apple did not announce any updates to its low-cost laptops, including the MacBook Air, which many had been hoping for. It didn't announce availability for AirPower, the wireless-charging mat it previewed back in September. It didn't even introduce a new version of its Pencil.

There were no surprise reveals at this event, and it was true to its invitation, which said we would "hear creative new ideas for teachers and students."

ls it enough?

The pricing structure effectively rules out the new iPad from being a true competitor to most Chromebooks. Despite what Apple would like us to believe, it is not that easy to type out a term paper on a touchscreen. The new iPad software (more on that below) will definitely make doing project work and taking notes at school far easier. But doing essays, browsing the web, and chatting with friends is a lot easier to do when you have a proper keyboard to type on, and you can easily type on the device on your lap or a table. What's more, if you're buying Apple's new iPad and a Pencil, even with the school discount, the starting price is \$398. Many Chromebooks are the same price or cheaper, and have touchscreens as well as full keyboards.

Then there's the issue of whether schools that have already invested in Google's suite of offerings would be willing to switch back for the sake of Apple's new software and stylus capabilities. Then again, at least iPads have all of Google's apps on them.

Perhaps there's hope. While sitting in the school's cafeteria after the event, one teacher spoke with her colleagues about the new iPad. "It's not like, revolutionary, but it's way more helpful," she said. "The stuff we're asking for, they're listening."