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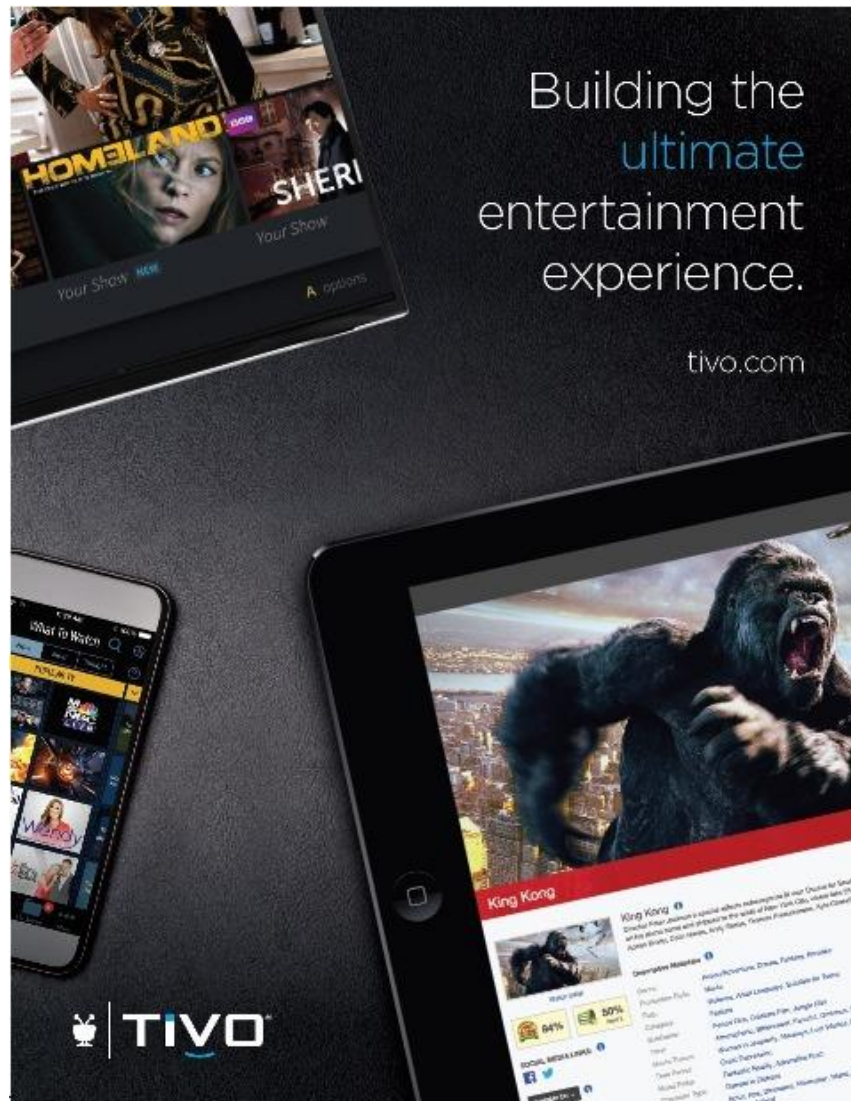
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In the technology industry, the sharks have never long been safe from the minnows. Over much of the last 40 years, the biggest players in tech — from IBM to Hewlett-Packard to Cisco to Yahoo — were eventually outmaneuvered by start-ups that came out of nowhere.



The dynamic is so dependable that it is often taken to be a kind of axiom. To grow large in this business is also to grow slow, blind and dumb, to become closed off from the very sources of innovation that turned you into a shark in the first place. Then, in the last half decade, something strange happened: The sharks began to get bigger and smarter. Nearly a year ago, [I argued](#) that we were witnessing a new era in the tech business, one that is typified less by the storied start-up in a garage than by a posse I like to call the Frightful Five: Amazon, Apple, Facebook, Microsoft and Alphabet, Google's parent company.

Together the Five compose a new superclass of American corporate might. For much of last year, their further rise and domination over the rest of the global economy looked not just plausible,

but also maybe even probable. In 2017, much the same story remains, but there is a new wrinkle: The world's governments are newly motivated to take on the tech giants. In the United States, Europe, Asia and South America, the Five find themselves increasingly arrayed against legal and regulatory powers, and often even against popular will.

The precise nature of the fights varies by company and region, including the tax and antitrust investigations of Apple and Google in Europe and Donald J. Trump's broad and often incoherent criticism of the Five for various alleged misdeeds. This is the story that will shape the contours of the next great era in tech: Five huge companies that can only get bigger are set against governments that increasingly see them as a clear threat to governing authority. So, happy New Year.

Let's start with some stats. In 2017, the Five are bigger than ever. As in 2016, they are half of the world's 10 most valuable companies, when measured by stock market value. Their wealth stems from their control of the inescapable digital infrastructure on which much of the rest of the economy depends — mobile phones, social networks, the web, the cloud, retail and logistics, and the data and computing power required for future breakthroughs.

Meanwhile, the Five are poised to jump beyond their corner of the lagoon. Over the last few years they have begun to set their sights on the biggest industries outside tech — on autos, health care, retail, transportation, entertainment and finance. The Five aren't exactly immune to business cycles. Apple's sales were flat last year, and after a monster 2016, Alphabet's stock price hit a plateau. The Five also aren't entirely safe from competition from start-ups, and one of the persistent features of the tech industry is that some of the most perilous threats to giants are the hardest to spot.

Still, at the moment, thanks to smart acquisition strategies and a long-term outlook, the Five sure do look insulated from competition from start-ups; today's most valuable tech upstarts, like Airbnb, Uber and Snap, could grow quite huge and still pose little threat to the collective fortunes of the Frightful Five. What has changed is public perception. For years, most of the Five enjoyed broad cultural good will. They were portrayed in the news media as forces of innovation and delight, as the best that American capitalism had to offer. The exceptions were Microsoft, which reached towering heights through corporate ruthlessness in the 1990s, and Amazon, which got under people's skin for, among other things, **making books cheaper and more widely accessible**, thereby hurting bookstores.

But generally people loved tech giants. They had gotten huge just the way you're supposed to in America — by inventing new stuff that people love. And even their worst sins weren't considered that bad. They weren't causing environmental disasters. They weren't selling cigarettes. They weren't bringing the world to economic ruin through dangerous financial shenanigans. After I noted the Five's growing invincibility last year, the biggest pushback I got from people at these companies had to do with the moniker I had given them: Why hadn't I called them the Fabulous Five?

Over the last year perception began to change. Familiarity breeds contempt; as technology wormed deeper into our lives, it began to feel less like an unalloyed good and more like every other annoyance we have to deal with. Silicon Valley grew cloistered, missing people's unease with the speed with which their innovations were changing our lives. When Apple took on the Federal Bureau of Investigation last year over access to a terrorist's iPhone, many in tech sided with the company, but **a majority of Americans thought Apple should give in**.

During the long presidential campaign, Mr. Trump said a lot of things that people in tech found ridiculous. He vowed to call on Bill Gates to help him shut down the parts of the internet that terrorists were using. He promised to force Apple to make iPhones in America. He suggested that The Washington Post was running critical stories about him because its owner, Jeff Bezos, was scared that Mr. Trump would pursue antitrust charges against Mr. Bezos's main company, Amazon. Few in the tech industry supported Mr. Trump, but the industry's antipathy seemed to matter little to the public.

For years, most of the Frightful Five were given the benefit of the doubt as economic disrupters that were undercutting the cultural and economic power of the big industries that many people despised — entertainment giants, cable and phone companies, and the news media, among others. "During the periods where incumbents are battling disrupters, in general the U.S. has done a good job of encouraging disrupters," said Julius Genachowski, the former chairman of the Federal Communications Commission who is now a partner at the Carlyle Group, a private equity firm. That describes the general direction of policy during the Obama administration. The tech giants were less giant for much of the Obama years, and various parts of the United States regulatory and legal infrastructure sought to protect and nurture them.

During Mr. Genachowski's term at the F.C.C., and then again during the term of his successor, Tom Wheeler, the commission passed rules favoring "network neutrality," which declared that telecommunications companies could not favor some kinds of content online over others. It was a policy broadly favored by tech companies. But as Mr. Genachowski noted, as the disrupters grow, the dynamic often shifts. "The next part of the arc is that disrupters become very successful and in some ways turn into incumbents, and then you see two things — battles between incumbents and other incumbents, and a next generation of disrupters tackling incumbents," he said.

That's where we are now. The Five have become incumbents themselves, and they are more likely to be treated as such by governments, who will look to both sides of the ledger — their benefits to society as well as their potential costs — when deciding how to police them. But there's a twist: With the Five, unlike in previous eras of tech, it is not clear that there are many potential disrupters among today's start-ups. The battles for dominance in cloud services, artificial intelligence and data mining, voice-activated assistants, self-driving cars, virtual reality and most every other Next Big Thing are being waged among the Five.

That could likely raise the hackles of regulators and lawmakers even more; and depending on your position on corporate power versus governmental power, things could be fabulous, or frightful. – **New York Times**

Amazon.com Inc. is looking to build on the momentum of its Fire TV sticks and set-top boxes by bringing the Fire TV interface—with the Alexa voice-controlled assistant—to lower-end third-party 4K TV sets. At the CES tech show in Las Vegas, Seiki LLC, Westinghouse Digital LLC and Element Electronics Corp.—self-styled “affordable” brands—announced a [lineup of Fire TV Edition 4K TVs](#). All three brands of TV sets are manufactured by China’s Tongfang Global Ltd.

Amazon, mainly known for proprietary hardware-software pairings such as the Kindle e-reader and Fire tablet, recently began sharing its interfaces with third parties, starting with Alexa voice control. Though now found only in a handful of products outside Amazon’s brand, many more are coming in the year ahead.

Teaming with budget brands to grab a toehold in the highly competitive TV market is a proven strategy. Roku Inc., one of Amazon’s biggest rivals in streaming TV sticks and set-top boxes, has spent the last two years partnering with China’s TCL Corp., Hisense Co. and Haier Group, Best Buy Co.’s Insignia house brand and Sharp, to get its streaming software onto millions of TVs. Roku said that as of December 2016, TVs running Roku software [accounted for 13% of U.S. smart TV sales](#).

“Amazon is going after the same base as Roku, cheap TVs from brands that desperately want to find success in the U.S. and Chinese markets,” said Joel Espelien, a senior analyst with the Diffusion Group research firm. “The high-end is locked up. Sony and Vizio are committed to Google, and both LG and Samsung have their own smart TV operating systems that they’re committed to. So for Amazon, there’s nowhere to go but the low end.”

Amazon’s Fire TVs, built by Seiki, Westinghouse and Element, will range from 43-inches to 65-inches in size, available only in 4K resolution. Seiki and Westinghouse are set to demonstrate their Fire TV television sets at CES this week. The new TVs will go on sale later this year, but the companies aren’t disclosing pricing now. (Roku TVs, by comparison, are available in HD and 4K resolutions, range in sizes up to 65 inches, and prices up to \$1,300.)

Consumers have grown to expect cheap TVs to come with basic streaming services, such as YouTube and Netflix, Mr. Espelien said. “For no-name TV brands like this, you get a well known brand slapped on the box,” he said of Amazon and its partners. “If you’re an Amazon customer and you’re looking for a new TV, this might help you give a no-name brand a shot.”

It’s also a way for Amazon to further expand the influence of its Alexa AI assistant. Each Fire TV set will come with a microphone-equipped remote to summon Alexa. Primarily, the assistant can be used on the TV to find what to watch: Launch apps with commands like “Open HBO Now” or “Launch Hulu;” play specific content with requests such as “Watch ‘Last Man on Earth.’” Alexa can even be used to skip around in a show, if you say “rewind 60 seconds” or “next episode.”

In addition, the Alexa assistant can perform a similar [set of skills](#) to those found in an Amazon Echo. At CES in Las Vegas, TV makers paired with other major tech companies. Notably Haier, one of Roku’s TV partners, announced that it’ll sell a line of [smart TVs running](#) Alphabet Inc.’s Google Chromecast software later this year, in sizes ranging from 43 inches to 75 inches. – **Wall Street Journal**



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