The Power of Big Tech Peaked During the Pandemic; Disruptive Forces Are on the Rise

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Defending Digital Series, No. 6: Big Tech was essential in getting America through the Covid-19 pandemic, but during the 2020s and ‘30s, technological, competitive, and societal shifts can be expected to rein in the influence of today’s digital leaders, as consumer markets mature, and as other national and international priorities take center stage.

For decades, competition in the IT industry has followed a remarkably consistent pattern. Every 15 years or so, a new wave of innovation spawns a new generation of market leaders. Whether it was minicomputers in the 1970s and ‘80s, personal computers in the 1980s and ‘90s, the Internet in the 1990s and ‘00s, or smartphones and social media in the 2010s and ‘20’s, the dynamic has been the same. Companies entering the market with a clean sheet of paper and a total focus on the future have bypassed even the most powerful of incumbents. The very success of those incumbents made it hard for them to accept that their world was fundamentally changing. Responding in a timely and effective manner proved even harder.

As we look at the 2020s and into the 2030s, the digital landscape is shifting once again. During the COVID-19 pandemic, Alphabet, Amazon, Apple, Meta, Microsoft, and Netflix played an essential role in helping us work from home, receive necessary goods and services, keep in touch with friends and family, and stay entertained. For reliably providing these vital societal services, they have earned their riches. What would America have done without them?

But going forward, there are many scenarios that could greatly reduce the centrality of “Big Tech.” Indeed, most of them are obvious to anyone who wants to see them. They can be grouped into three main types of change—shifts in technology, shifts in global competitiveness, and shifts in societal priorities. Although some of these shifts are more certain than others, someday we will look back and see that Big Tech peaked during the pandemic, with the post-COVID world increasingly defined by a new set of players and dynamics. The recent sharp declines in tech stock share prices may be early evidence that the market is sensing these changes.

SHIFTS IN TECHNOLOGY
Technology innovation has always been the main source of digital disruption, and once again there is a clear shift underway. The key technology drivers of recent years—smartphones, Internet services, ecommerce, and streaming media offerings—are all relatively mature, which is why the Big Tech players are increasingly turning on each other. Amazon and Apple are now
taking on Netflix in streaming entertainment. Apple is challenging Alphabet and Meta in privacy and data usage. Amazon, Microsoft and Alphabet are fighting it out in cloud. Apple and Alphabet continue to push each other in smartphones. Microsoft (Bing), Apple (Siri), and especially Amazon (both Alexa—which is based on Bing—and Amazon’s retail search bar) are challenging Alphabet in search, and so on.

In contrast, the Internet of Things, robotics, autonomous systems, smart grids, wearable devices, AR/VR, and other capabilities are still in their very early stages. Many of these next-generation systems—such as self-driving cars—will need to respond rapidly to real-world events, and thus can’t afford the latency built into traditional cloud-based architectures. Instead, they will use “edge” technologies that allow computing and data storage to reside much closer to their actual physical world sources—imagine a Tesla-managed service that combines both car-to-car and cloud-based capabilities. The volume of this type of machine-to-machine data traffic will eventually surpass that from humans. That Elon Musk is now the world’s richest person—and can buy Twitter on a whim if he wants to—seems symbolic of this emerging technological wave, which in all likelihood will be at least as transformative as those of the past.

Less certain, but potentially even more disruptive, is the so-called Web 3.0 movement, an envisioned decentralized Internet grounded in cryptocurrencies, blockchains, Non-Fungible Tokens (NFTs), and other peer-to-peer (P2P) services. This approach is the exact opposite of today’s centralized cloud-based model, where the major Big Tech companies are powerful gatekeepers for e-commerce, app stores, digital advertising, customer profiling and other applications. In a Web 3.0 world, there would be few if any such gatekeepers, with power and wealth migrating back to product providers and content creators.

Of course, cryptocurrencies are often dismissed as hype, even a pyramid scheme. But the wild price swings of Bitcoin, Ethereum, and countless others tend to obscure the real value that digital currencies can provide in simplifying payment clearing, reducing the need for currency conversions, and similar financial automation. Despite their recent falls, today’s cryptocurrencies are still worth some $1.4 trillion—more than Amazon and about the same as mighty Alphabet. If Ethereum succeeds in eliminating the need for energy-intensive “miners” by shifting from a proof-of-work to a proof-of-stake architecture, its value will probably spike once again. Bitcoin is less likely to make this important technological shift anytime soon, but it has often bounced back from big price drops and its fixed supply could still prove to be a powerful hedge against ever-growing government indebtedness. It’s not far-fetched to believe that the global value of whichever digital currencies prevail might someday rival that of the major cloud players.

More broadly, technologists have long speculated that peer-to-peer (P2P) architectures will be used in many areas beyond digital currencies. They imagine a future where there are Facebook-like services without a Facebook-like intermediary or Twitter-like messaging without Twitter (see Mastodon.social). Ditto for Uber without Uber, Spotify without Spotify, Airbnb without Airbnb, telecom networks without telecom providers (via P2P mesh architectures), an even Amazon retail without Amazon. For the latter, imagine a search engine that connects consumers, manufacturers and delivery services, eliminating the need for giant Amazon-like warehouses. While most P2P systems have been slow to catch on and still face many implementation challenges, today’s cloud gatekeepers will remain tempting targets for many years to come.

In short, there are multiple scenarios for technology-driven Big Tech disruption.
SHIFTS IN GLOBAL COMPETITIVENESS

But as important as these technological shifts might be, for the first time in the history of the information technology industry the most immediate and profound disruptions may well be geopolitical in nature. The rise of China will challenge Silicon Valley as never before, especially given today’s growing U.S.-China tensions. To cite just a few possibilities, during the 2020s China could conceivably:

- Shut down Apple’s factories and/or banish it from China's vast domestic market;
- Limit or end Amazon’s access to Chinese-made goods;
- Adopt Chinese alternatives to Alphabet’s Android operating system and/or Microsoft’s Windows and Office systems;
- Disrupt America’s social media companies through services such as TikTok and Shein;
- Manufacture semiconductors or quantum computers that are superior to those of Intel and/or Arm;
- Take over Taiwan, and limit Western access to the most advanced semiconductors; and
- Provide its e-commerce, social media, surveillance, digital Yuan, drones, 5G, and other technologies throughout Asia and other parts of the developed and developing worlds.

And that’s just China. While policymakers are now well aware of America’s dependence on China, our similar dependence on India is rarely mentioned. But today, just about every large American firm relies heavily on India for its back-office operations either through India-based companies such as Infosys, TCS, Wipro, and HCL, Western companies such as IBM, Accenture, and DXC, which do much of their actual work in India, or through their own India-based operations. The presence of Indian talent in Silicon Valley and America’s elite universities is also pervasive, and this will likely increase as the presence of Chinese nationals and students if the United States declines. It’s only natural that India will leverage its growing power by expanding across the value chain, generating more of its own companies, reshaping the terms of trade, and other strategies.

More broadly, Silicon Valley will increasingly have to share the global innovation stage, as advanced technologies are developed in China, India, South Korea, Japan, Israel, Singapore, Brazil, Europe, Russia, Iran, and elsewhere. Additionally, many countries now prefer to have their own versions of Uber, Amazon, Airbnb, PayPal, et al., and will develop complex webs of laws and regulations that make globalized services more difficult. The recent Digital Markets Act in Europe is a potent example of new rules aimed directly at reducing the power of the leading U.S. firms. Many more such rules will likely follow as support for digital sovereignty rises and faith in globalization declines.

SHIFTS IN SOCIETAL PRIORITIES

Perhaps self-driving cars, robots, blockchains, and P2P architectures won’t ever catch on and perhaps Big Tech will either fend off or successfully coexist with an increasingly powerful China. But even if both of these scenarios occur, developments in the wider global economy will still tend to significantly reduce the power of Big Tech. The digital boom of the last 15 years has been mostly driven by consumers, with Alphabet, Amazon, Apple, Meta, Microsoft, and Netflix all having their roots in consumer products and services.
But the markets of the 2020s will be shaped by more industrialized forces—supply chain resiliency, energy availability and affordability, potential shortages of food, raw materials, minerals, and clean water, the risks of climate change, sustainable products and packaging, infrastructure modernization, worker shortages, increasing automation, reducing inequalities, aging populations, ballooning government debts, and ongoing and potential conflicts. These challenges can make consumer services and digital advertising seem trivial in comparison, and in this sense, the future might be less of a digital disruption and more of a major shift in economic focus.

Moreover, the major Big Tech players have mostly avoided these difficult societal issues thus far, and when they have engaged the results have often been disappointing. Looking ahead, we should expect that the businesses which effectively address the most important societal challenges will be the leaders of the 2020s and beyond, just as Big Tech and Big Pharma have been during the pandemic. (On the other hand, if Big Tech companies help address these new challenges too, they will have earned their riches once again.) President Xi has been clear about the need for China to shift from a consumer economy to a more broad-based and resilient society, and while America certainly doesn’t have to follow China’s approach, it’s a message U.S. policymakers should also embrace.

FROM OFFENSE TO DEFENSE
None of the above is meant to minimize the importance of Big Tech or predict any sort of imminent demise. Far from it. History clearly shows that industries and companies can recede in economic centrality, and still be very large and successful entities. For example, Microsoft and Intel both missed the mobility and dot-com booms, yet both are still rich and powerful firms. There is still plenty of life left in ecommerce, smartphones, search, cloud computing, and social media—in the United States and around the world—and the major Big Tech players show few signs of complacency.

But the technological, competitive, and priority shifts of the 2020s and ‘30s will make it increasingly difficult for Big Tech to maintain the global dominance it has enjoyed in recent years. American policymakers should expect that over the longer term the market will address many of their current digital fears, and recognize that previous policymakers often intervened after companies had already passed the peak of their powers and entered a period of relative decline. Given their long run of astonishing success, it’s easy to overlook the fact that Big Tech is vulnerable. But eventually, the great disruptors of every era have had to shift from offense to defense. Given that there are now multiple paths to fundamental change, odds are that this history is now repeating itself.
About This Series

ITIF’s “Defending Digital” series examines popular criticisms, complaints, and policy indictments against the tech industry to assess their validity, correct factual errors, and debunk outright myths. Our goal in this series is not to defend tech reflexively or categorically, but to scrutinize widely echoed claims that are driving the most consequential debates in tech policy. Before enacting new laws and regulations, it’s important to ask: Do these claims hold water?

About the Author

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ENDNOTES

1. All market cap values as of May 9, 2022; crypto value from https://coinmarketcap.com/