The Ghosts of Antitrust Past:
What the IBM-AT&T-Microsoft Trilogy Can Teach Us About Calls to Break Up Google, Amazon, Facebook, and Apple

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ICLE Antitrust & Consumer Protection Research Program
Issue Brief 2020-04-28

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I. Introduction

Big Tech continues to be mired in “a very antitrust situation,” as President Trump so eloquently put it in 2018. Advocates for more aggressive antitrust enforcement in the tech industry often justify their proposals by pointing to the cases against IBM, AT&T, and Microsoft. In announcing her plan to break up the tech giants, Elizabeth Warren highlighted the case against Microsoft in particular:

The government’s antitrust case against Microsoft helped clear a path for Internet companies like Google and Facebook to emerge. The story demonstrates why promoting competition is so important: it allows new, groundbreaking companies to grow and thrive — which pushes everyone in the marketplace to offer better products and services.

Tim Wu, a law professor at Columbia University, summarized the overarching narrative recently (emphasis added):

If there is one thing I'd like the tech world to understand better, it is that the trilogy of antitrust suits against IBM, AT&T, and Microsoft played a major role in making the United States the world's preeminent tech economy.

The IBM-AT&T-Microsoft trilogy of antitrust cases each helped prevent major monopolists from killing small firms and asserting control of the future (of the 80s, 90s, and 00s, respectively).

A list of products and firms that owe at least something to the IBM-AT&T-Microsoft trilogy.

(1) IBM: software as product, Apple, Microsoft, Intel, Seagate, Sun, Dell, Compaq
(2) AT&T: Modems, ISPs, AOL, the Internet and Web industries
(3) Microsoft: Google, Facebook, Amazon

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3 Elizabeth Warren, Here’s How We Can Break Up Big Tech, MEDIUM BUSINESS (Mar. 8, 2019), https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c.
In other words, by breaking up the current crop of dominant tech companies, we can sow the seeds for the next one. But this reasoning depends on an incorrect — albeit increasingly popular — reading of the history of the tech industry. In this paper I will review the antitrust cases against IBM, AT&T, and Microsoft and discuss what we can learn from them today. In the first section I will explain the relevant concepts necessary for understanding the history market competition in the tech industry.

II. Competition for the market

Entrepreneurs take purposeful action to push the boundaries of innovation in their narrow markets. They also respond to broader technological change by integrating or modularizing different products in the market. This bundling and unbundling is a never-ending process that occurs across time and space. Whether the government distracts a dominant incumbent with a failed lawsuit (e.g., IBM), imposes an ineffective conduct remedy (e.g., Microsoft), or breaks up a government-granted national monopoly into regional monopolies (e.g., AT&T), the dynamic nature of competition in the industry will far outweigh the effects of antitrust enforcers tilting at windmills.

In industries like tech that tend toward “winner takes most” markets, it’s important to distinguish between competition during the market maturation phase — when no clear winner has emerged and the technology has yet to be widely adopted — and competition after the technology has been diffused in the economy. Benedict Evans explained how this cycle works in the tech industry (emphasis added):

When a market is being created, people compete at doing the same thing better. Windows versus Mac. Office versus Lotus. MySpace versus Facebook. Eventually, someone wins, and no-one else can get in. The market opportunity has closed. Be, NeXT/Path were too late. Monopoly!

But then the winner is overtaken by something completely different that makes it irrelevant. PCs overtook mainframes. HTML/LAMP overtook Win32. iOS & Android overtook Windows. Google overtook Microsoft.

Tech antitrust too often wants to insert a competitor to the winning monopolist, when it’s too late. Meanwhile, the monopolist is made irrelevant by something that comes from totally outside the entire conversation and owes nothing to any antitrust interventions.

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In antitrust parlance, this is known as competing for the market. By contrast, in more static industries where the playing field doesn’t shift so radically and the market doesn’t tip toward “winner take most,” firms compete within the market. What Benedict Evans refers to as “something completely different” is often a disruptive product. As Clay Christensen explains in the Innovator's Dilemma, a disruptive product is one that is low-quality (but fast-improving), low-margin, and targeted at an underserved segment of the market. Initially, it is rational for the incumbent firms to ignore the disruptive technology and focus on improving their legacy technology to serve high-margin customers. But once the disruptive technology improves to the point it can serve the whole market, it's too late for the incumbent to switch technologies and catch up. This process looks like overlapping s-curves:

![Diagram of s-curves]

Source: Max Mayblum

We see these s-curves in the technology industry all the time:

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As Christensen explains in the Innovator’s Solution, consumer needs can be thought of as “jobs-to-be-done.”

Early on, when a product is just good enough to get a job done, firms compete on product quality and pursue an integrated strategy — designing, manufacturing, and distributing the product in-house. As the underlying technology improves and the product overshoots the needs of the jobs-to-be-done, products become modular and the primary dimension of competition moves to cost and convenience. As this cycle repeats itself, companies are either bundling different modules together to create more integrated products or unbundling integrated products to create more modular products.

11 Clayton M. Christensen & Michael E. Raynor, The Innovator’s Solution: Creating and Sustaining Successful Growth (editors name(s) eds., edition cited year of publication).
III. Moore’s Law

Moore’s Law is the gasoline that gets poured on the fire of technology cycles.\(^\text{13}\) Though this “law” is nothing more than the observation that the number of transistors in an integrated circuit tends to double roughly every two years, the implications for dynamic competition are difficult to overstate. As Bill Gates explained in a 1994 interview with *Playboy* magazine, Moore’s Law means that computer power is essentially “free” from an engineering perspective:

> When you have the microprocessor doubling in power every two years, in a sense you can think of computer power as almost free. So you ask, Why be in the business of making something that's almost free? What is the scarce resource? What is it that limits being able to get value out of that infinite computing power? Software.\(^\text{14}\)

Exponentially smaller integrated circuits can be combined with new user interfaces and networks to create new computer classes, which themselves represent the opportunity for disruption.

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\(^{14}\) Interview with Bill Gates, Tech. Advisor, Microsoft (1994).
IV. Bell’s “Law of Computer Classes”

A corollary to Moore’s Law, Bell’s “law of computer classes” predicts that “roughly every decade a new, lower priced computer class forms based on a new programming platform, network, and interface resulting in new usage and the establishment of a new industry.” Originally formulated in 1972, we have seen this prediction play out in the birth of mainframes, minicomputers, workstations, personal computers, laptops, smartphones, and the Internet of Things.

Understanding these concepts — competition for the market, disruption theory, Moore’s Law, and Bell’s Law of Computer Classes — will be crucial for understanding the true effects (or lack thereof) of the antitrust cases against IBM, AT&T, and Microsoft. In the next section, I will look at the DOJ’s (ultimately unsuccessful) 13-year antitrust battle with IBM.


The Department of Justice began its antitrust case against IBM on January 17, 1969. The DOJ sued under the Sherman Antitrust Act, claiming IBM tried to monopolize the market for “general-purpose digital computers.” The case lasted almost thirteen years, ending on January 8, 1982 when

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Assistant Attorney General William Baxter declared the case to be “without merit” and dropped the charges.

The case lasted so long, and expanded in scope so much, that by the time the trial began, “more than half of the practices the government raised as antitrust violations were related to products that did not exist in 1969.”

Baltimore law professor Robert Lande said it was “the largest legal case of any kind ever filed.” Yale law professor Robert Bork called it “the antitrust division’s Vietnam.”

As the case dragged on, IBM was faced with increasingly perverse incentives. As NYU law professor Richard Epstein pointed out (emphasis added),

Oddly, enough IBM was able to strengthen its antitrust-related legal position by reducing its market share, which it achieved through raising prices. When the suit was discontinued that share had fallen dramatically since 1969 from about 50 percent of the market to 37 percent in 1982. Only after the government suit ended did IBM lower its prices in order to increase market share.

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17 Other Cases Through the Years, REUTERS BUSINESS (Nov. 5, 1999), available at https://www.wired.com/1999/11/other-cases-through-the-years/.


Table 1

MAINFRAME PRICE PREMIUMS—IBM RELATIVE TO OTHER MANUFACTURERS

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample Years</th>
<th>Estimated Price Premium (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratchford and Ford (1979)</td>
<td>1967</td>
<td>+30 to +40</td>
</tr>
<tr>
<td>Michaels (1979)</td>
<td>1971</td>
<td>+30 to +35</td>
</tr>
</tbody>
</table>

Table 2

GROWTH IN IBM’S SALES AND MARKET SHARE

<table>
<thead>
<tr>
<th>Period</th>
<th>Real Sales</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961–68</td>
<td>+15.1</td>
<td>-0.5</td>
</tr>
<tr>
<td>1968–72</td>
<td>+3.6</td>
<td>-7.8</td>
</tr>
<tr>
<td>1972–79</td>
<td>+4.7</td>
<td>-2.5</td>
</tr>
<tr>
<td>1979–83</td>
<td>+6.4</td>
<td>+3.8</td>
</tr>
</tbody>
</table>

Source: Levy & Welzer


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In an interview with Vox, Tim Wu claimed that without the IBM case, Apple wouldn’t exist and we might still be using mainframe computers:

**Vox:** You said that Apple wouldn’t exist without the IBM case.

**Wu:** Yeah, I did say that. The case against IBM took 13 years and we didn’t get a verdict but in that time, there was the “policeman at the elbow” effect. IBM was once an all-powerful company. It’s not clear that we would have had an independent software industry, or that it would have developed that quickly, the idea of software as a product, [without this case]. That was one of the immediate benefits of that excavation.

And then the other big one is that it gave a lot of room for the personal computer to get started, and the software that surrounds the personal computer — two companies came in, Apple and Microsoft. They were sort of born in the wake of the IBM lawsuit. You know they were smart guys, but people did need the pressure off their backs.

Nobody is going to start in the shadow of Facebook and get anywhere. Snap’s been the best, but how are they doing? They’ve been halted. I think it’s a lot harder to imagine this revolutionary stuff that happened in the '80s. If IBM had been completely unwatched by regulators, by enforcement, doing whatever they wanted, I think IBM would have held on and maybe we’d still be using mainframes, or something — a very different situation.  

Set aside the fact that we do still use mainframe computers (and that IBM still dominates that market). The idea that regulators are the reason PCs were able to disrupt the mainframe market is patently absurd. Steven Sinofsky, a former Microsoft executive and current Andreessen Horowitz board partner, had a different take on the matter, attributing IBM’s (belated) success in PCs to its utter failure in minicomputers (emphasis added):

IBM chose to prevent third parties from interoperating with mainframes sometimes at crazy levels (punch card formats). And then chose to defend until the end their business model of leasing ... The minicomputer was a direct threat not because of technology but because of those attributes. I’ve heard people say IBM went into PCs

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23 Steven Sinofsky, Twitter Thread, https://threader.app/thread/1105546034996899840
because the antitrust loss caused them to look for growth or something. Ha. PCs were spun up because IBM was losing Minis. But everything about the PC was almost a fluke organizationally and strategically. The story of IBM regulation is told as though PCs exist because of the case.

The more likely story is that IBM got swamped by the paradigm shift from mainframes to PCs. IBM was dominant in mainframe computers which were sold to the government and large enterprises. Microsoft, Intel, and other leaders in the PC market sold to small businesses and consumers, which required an entirely different business model than IBM was structured to implement.

VI. ABB – “Always Be Bundling” (or unbundling)

"There’s only two ways I know of to make money: bundling and unbundling." - Jim Barksdale

In 1969, IBM unbundled its software and services from hardware sales. As many industry observers note, this action precipitated the rise of the independent software development industry. But would this have happened regardless of whether there was an ongoing antitrust case? Given that bundling and unbundling is ubiquitous in the history of the computer industry, the answer is likely yes.

As the following charts show, IBM first created an integrated solution in the mainframe market, controlling everything from raw materials and equipment to distribution and service. When PCs disrupted mainframes, the entire value chain was unbundled. Later, Microsoft bundled its operating system with applications software.

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The first smartphone to disrupt the PC market was the Apple iPhone — an integrated solution. And once the technology became “good enough” to meet the average consumer’s needs, Google modularized everything except the operating system (Android) and the app store (Google Play).

Source: Clayton Christensen²⁶

Source: SlashData\textsuperscript{27}
Another key prong in Tim Wu’s argument that the government served as an effective “policeman at the elbow” in the IBM case is that the company adopted an open model when it entered the PC market and did not require an exclusive license from Microsoft to use its operating system. But exclusivity is only one component of a negotiation. In an interview with *Playboy* magazine in 1994, Bill Gates explained how he was able to secure favorable terms from IBM (emphasis added):

> Our restricting IBM’s ability to compete with us in licensing MS-DOS to other computer makers was the key point of the negotiation. We wanted to make sure only we could license it. We did the deal with them at a fairly low price, hoping that would help popularize it. Then we could make our move because we insisted that all other business stay with us. We knew that good IBM products are usually cloned, so it didn’t take a rocket scientist to figure out that eventually we could license DOS to others. We knew that if we were ever going to make a lot of money on DOS it was going to come from the compatible guys, not from IBM. They paid us a fixed fee for DOS. We didn’t get a royalty, even though we did make some money on

Source: Jake Nielson\(^28\)

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the deal. Other people paid a royalty. So it was always advantageous to us, the market grew and other hardware guys were able to sell units.\(^\text{29}\)

In this version of the story, IBM refrained from demanding an exclusive license from Microsoft not because it was fearful of antitrust enforcers but because Microsoft made significant concessions on price and capped its upside by agreeing to a fixed fee rather than a royalty.

**VII. United States v. AT&T (1982)**

The case against AT&T began in 1974.\(^\text{30}\) The government alleged that AT&T had monopolized the market for local and long-distance telephone service as well as telephone equipment. In 1982, the company entered into a consent decree to be broken up into eight pieces (the “Baby Bells” plus the parent company), a process which was completed in 1984. The government required the company to divest its local operating companies and guarantee equal access to all long-distance and information service providers (ISPs).\(^\text{31}\)

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\(^{30}\) *Other Cases Through the Years*, [WIRED](https://www.wired.com/1999/11/other-cases-through-the-years/).

As the chart above shows, the divestiture broke up AT&T’s national monopoly into seven regional monopolies. In general, modern antitrust analysis focuses on the local product market (because that’s the relevant level for consumer decisions). In hindsight, how did breaking up a national monopoly into seven regional monopolies increase consumer choice? It’s also important to note that, prior to its structural breakup, AT&T was a government-granted monopoly regulated by the FCC. Any antitrust remedy should be analyzed in light of the company’s unique relationship with regulators.

Breaking up one national monopoly into seven regional monopolies is not an effective way to boost innovation. And there are economies of scale and network effects to be gained by owning a national network to serve a national market. In the case of AT&T, those economic incentives are why the Baby Bells forged themselves back together in the decades following the breakup.

33 Supra note 19.
As Clifford Winston and Robert Crandall noted,

> Appearing to put Ma Bell back together again may embarrass the trustbusters, but it should not concern American consumers who, in two decades since the breakup, are overwhelmed with competitive options to provide whatever communications services they desire.\(^\text{35}\)

Moreover, according to Crandall & Winston (2003), the lower prices following the breakup of AT&T weren’t due to the structural remedy at all:

> But on closer examination, the rise in competition and lower long-distance prices are attributable to just one aspect of the 1982 decree; specifically, a requirement that the Bell companies modify their switching facilities to provide equal access to all long-distance carriers. The Federal Communications Commission (FCC) could have promulgated such a requirement without the intervention of the antitrust

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authorities. For example, the Canadian regulatory commission imposed equal access on its vertically integrated carriers, including Bell Canada, in 1993. As a result, long-distance competition developed much more rapidly in Canada than it had in the United States (Crandall and Hazlett, 2001). The FCC, however, was trying to block MCI from competing in ordinary long-distance services when the AT&T case was filed by the Department of Justice in 1974. In contrast to Canadian and more recent European experience, a lengthy antitrust battle and a disruptive vertical dissolution were required in the U.S. market to offset the FCC’s anti-competitive policies. Thus, antitrust policy did not triumph in this case over restrictive practices by a monopolist to block competition, but instead it overcame anticompetitive policies by a federal regulatory agency.  

A quick look at the data on telephone service in the US, EU, and Canada shows that the latter two were able to achieve similar reductions in price without breaking up their national providers.

Source: Crandall & Jackson (2011)\textsuperscript{37}

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VIII. The paradigm shift from wireline to wireless

The technological revolution spurred by the transition from wireline telephone service to wireless telephone service shook up the telecommunications industry in the 1990s. The rapid change caught even some of the smartest players by surprise. In 1980, the management consulting firm McKinsey and Co. produced a report for AT&T predicting how large the cellular market might become by the year 2000. Their forecast said that 900,000 cell phones would be in use. The actual number was more than 109 million.

Along with the rise of broadband, the transition to wireless technology led to an explosion in investment. In contrast, the breakup of AT&T in 1984 had no discernible effect on the trend in industry investment:

![Graph of real investment in communications and broadcasting, 1970–2009. Source: BEA](image)

The lesson for antitrust enforcers is clear: breaking up national monopolies into regional monopolies is no remedy. In certain cases, mandating equal access to critical infrastructure may be warranted. Most of all, technology shocks will upend industries in ways that regulators — and dominant incumbents — fail to predict.

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38 Thomas W. Haxlett, *We Could Have Had Cellphones Four Decades Earlier*, REASON (July 2017), https://reason.com/2017/06/11/we-could-have-had-cellphones-f/.
IX. United States v. Microsoft Corp. (2001)

The DOJ and 20 state AGs sued Microsoft on May 18, 1998 for unlawful maintenance of its monopoly position in the PC market. The government accused the desktop giant of tying its operating system (Windows) and its web browser (Internet Explorer). Microsoft had indeed become dominant in the PC market by the late 1980s:

But after the introduction of smartphones in the mid-2000s, Microsoft’s market share of personal computing units (including PCs, smartphones, and tablets) collapsed:

Source: Asymco

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Steven Sinofsky pointed out why this was a classic case of disruptive innovation rather than sustaining innovation: “Google and Microsoft were competitors but only by virtue of being tech companies hiring engineers.” After that, almost nothing about what was being made or sold was similar even if things could ultimately be viewed as substitutes. That is literally the definition of innovation.”

X. Browsers

Microsoft grew to dominance during the PC era by bundling its desktop operating system (Windows) with its productivity software (Office) and modularizing the hardware providers. By 1995, Bill Gates had realized that the internet was the next big thing, calling it “The Internet Tidal Wave” in a famous internal memo. Gates feared that the browser would function as “middleware” and disintermediate Microsoft from its relationship with the end-user. At the time, Netscape Navigator was gaining

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market share from the first browser to popularize the internet, Mosaic (so-named because it supported a multitude of protocols).  

Later that same year, Microsoft released its own browser, Internet Explorer, which the company bundled with its Windows operating system. Internet Explorer soon grew to dominate the market:

Steven Sinofsky described how the browser threatened to undermine the Windows platform (emphasis added):

Microsoft saw browsers as a platform threat to Windows. Famously. Browsers though were an app — running everywhere, distributed everywhere. Microsoft chose to compete as though browsing was on par with Windows (i.e., substitutes).

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45 [Netscape Navigator](https://en.wikipedia.org/wiki/Netscape_Navigator); [Mosaic (Web Browser)](https://en.wikipedia.org/wiki/Mosaic_(web_browser)).

46 [Internet Explorer](https://en.wikipedia.org/wiki/Internet_Explorer).

That meant doing things like IBM did — finding holes in distribution where browsers could "sneak" in (e.g., OEM deals) and seeing how to make Microsoft browser work best and only with Windows. Sound familiar? It does to me.

Imagine (some of us did) a world instead where Microsoft would have built a browser that was an app distributed everywhere, running everywhere. That would have been a very different strategy. One that some imagined, but not when Windows was central.

Showing how much your own gravity as a big company can make even obvious steps strategically weak: Microsoft knew browsers had to be cross-platform so it built Internet Explorer for Mac and Unix. Neat. But wait, the main strategic differentiator for Internet Explorer was ActiveX which was clearly Windows only.

So even when trying to compete in a new market the strategy was not going to work technically and customers would immediately know. Either they would ignore the key part of Windows or the key part of x-platform. This is what a big company "master plan" looks like ... Active Desktop.

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Regulators claimed victory but the loss already happened. But for none of the reasons the writers of history say at least [in my humble opinion]. As a reminder, Microsoft stopped working on Internet Explorer 7 years before Chrome even existed — literally didn’t release a new version for 5+ years.  

One of the most important pieces of context for this case is that other browsers were also free for personal use (even if they weren’t bundled with an operating system). At the time, Netscape was free for individuals. Mosaic was free for non-commercial use. Today, Chrome and Firefox are free for all users. Chrome makes money for Google by increasing the value of its ecosystem and serving as a complement for its other products (particularly search). Firefox is able to more than cover its costs by charging Google (and others) to be the default search engine option in its browser.

By bundling Internet Explorer with Windows for free, Microsoft was arguably charging the market rate. In highly competitive markets, economic theory tells us the price should approach marginal cost – which in software is roughly zero. As James Pethokoukis argued, there are many more reasons to be skeptical about the popular narrative surrounding the Microsoft case.  

48 Sinofski, supra, note 23.

range across features, products, and markets, including server operating systems, mobile devices, and search engines. Let’s examine a few of them.

### A. Operating Systems

In a 2007 article for *Wired* titled “I Blew It on Microsoft,” Lawrence Lessig, a Harvard law professor, admits that his predictions about the future of competition in computer operating systems failed to account for the potential of open-source solutions:

> We pro-regulators were making an assumption that history has shown to be completely false: That something as complex as an OS has to be built by a commercial entity. Only crazies imagined that volunteers outside the control of a corporation could successfully create a system over which no one had exclusive command. We knew those crazies. They worked on something called Linux.  

According to Web Technology Surveys, as of April 2019, about 70 percent of servers use a Linux-based operating system while the remaining 30 percent use Windows.

### B. Mobile

In 2007, Steve Ballmer believed that Microsoft would be the dominant company in smartphones, saying in an interview with *USA Today* (emphasis added):

> There’s no chance that the iPhone is going to get any significant market share. No chance. It’s a $500 subsidized item. They may make a lot of money. But if you actually take a look at the 1.3 billion phones that get sold, I’d prefer to have our software in 60% or 70% or 80% of them, than I would to have 2% or 3%, which is what Apple might get.

But as Ballmer himself noted in 2013, Microsoft was too committed to the Windows platform to fully pivot its focus to mobile:

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If there’s one thing I regret, there was a period in the early 2000s when we were so focused on what we had to do around Windows that we weren’t able to redeploy talent to the new device form factor called the phone.\textsuperscript{53}

This is another classic example of the innovator’s dilemma. Microsoft enjoyed high profit margins in its Windows business, which caused the company to underrate the significance of the shift from PCs to smartphones.

C. Search

To further drive home how dependent Microsoft was on its legacy products, this 2009 WSJ piece notes that the company had a search engine ad service in 2000 and shut it down to avoid cannibalizing its core business:

Nearly a decade ago, early in Mr. Ballmer’s tenure as CEO, Microsoft had its own inner Google and killed it. In 2000, before Google married Web search with advertising, Microsoft had a rudimentary system that did the same, called Keywords, running on the Web. Advertisers began signing up. But Microsoft executives, in part fearing the company would cannibalize other revenue streams, shut it down after two months.\textsuperscript{54}

Ben Thompson says we should wonder if the case against Microsoft was a complete waste of everyone’s time (and money):

In short, to cite Microsoft as a reason for antitrust action against Google in particular is to get history completely wrong: Google would have emerged with or without antitrust action against Microsoft; if anything the real question is whether or not Google’s emergence shows that the Microsoft lawsuit was a waste of time and money.\textsuperscript{55}

The most obvious implications of the Microsoft case were negative: (1) PCs became bloated with “crapware” (2) competition in the browser market failed to materialize for many years (3) PCs were less safe because Microsoft couldn’t bundle security software, and (4) some PC users missed out on


using first-party software from Microsoft because it couldn’t be bundled with Windows.\textsuperscript{56} When weighed against these large costs, the supposed benefits pale in comparison.

\section*{XI. Conclusion}

In all three cases I’ve discussed in this series — AT&T, IBM, and Microsoft — the real story was not that antitrust enforcers divined the perfect time to break up — or regulate — the dominant tech company. The real story was that slow and then sudden technological change outpaced the organizational inertia of incumbents, permanently displacing the former tech giants from their dominant position in the tech ecosystem.

The next paradigm shift will be near-impossible to predict. Those who know which technology — and when — it will be would make a lot more money implementing their ideas than they would by playing pundit in the media. Regardless of whether the future winner will be Google, Facebook, Amazon, Apple, Microsoft, or some unknown startup company, antitrust enforcers should remember that the proper goal of public policy in this domain is to maximize total innovation — from firms both large and small. Fetishizing innovation by small companies — and using law enforcement to harass big companies in the hopes for an indirect benefit to competition — will make us all worse off in the long run.

\textsuperscript{56} Id.