

# THE INFORMATION TRADE

How Big Tech Conquers Countries,  
Challenges Our Rights, and  
Transforms Our World

ALEXIS WICHOWSKI



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FIRST EDITION

*Designed by Joy O'Meara and Lucy Albanese*

Library of Congress Cataloging-in-Publication Data has been applied for.  
ISBN 978-0-06-288898-3

20 21 22 23 24 LSC 10 9 8 7 6 5 4 3 2 1

*Where, after all, do universal human rights begin?  
In small places, close to home—so close and so small  
that they cannot be seen on any maps of the world.  
Unless these rights have meaning there,  
they have little meaning anywhere.  
Without concerned citizen action to uphold them close to home,  
we shall look in vain for progress in the larger world.*

—ELEANOR ROOSEVELT,  
former first lady of the United States

*We don't completely blame Facebook.  
The germs are ours, but Facebook is the wind,  
you know?*

—HARINDRA DISSANAYAKE,  
Sri Lankan presidential adviser



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## ONE



# RISE OF THE CITIZEN-USER

In the 1983 film *WarGames*, a baby-faced Matthew Broderick plays an underachieving teen who develops his hacker chops by altering grades in his high school's mainframe. Trying to impress the doe-eyed Ally Sheedy, he accidentally hacks into a live military operation at NORAD, suddenly finding himself engaged in a computer-simulated war exercise to prevent World War III.

The movie was a huge success. It was the fifth-highest grossing film of the year and garnered three Academy Award nominations. But its biggest impact was felt by the computer industry, which desperately needed the boost. In the early 1980s, tech still seemed mystifying and cultish to mainstream America; people didn't really know what to make of computers or the rare few who tinkered with them. In 1983, only 8 percent of Americans owned a computer. Apple's first personal computer, which didn't go on sale until 1984, cost an eye-popping \$2,500—a third of the price of a brand-new car at the time.<sup>12</sup> Cell phones were clunky, ugly affairs, also prohibitively expensive at about \$4,000 a pop, or about \$9,520 in 2019 terms.<sup>3</sup> For the average American in the 1980s, “technology” consisted of TVs, cassette tapes, and Ataris. Until *WarGames* came

along, personal computers were, by and large, a curious luxury.

But the American imagination had now gotten a taste of computers as tools worth their attention, and pop culture responded accordingly. The ultimate manifestation of this moment of tech awakening was when Apple barreled into mainstream American consciousness with their now famous 1984 Super Bowl commercial, directed by *Blade Runner's* Ridley Scott. In the commercial, an athletic heroine races past the dull-eyed masses as she wields a sledgehammer. She launches the hammer at a massive television screen that had enraptured its audience, symbolically destroying the means of control over passive television consumers and introducing them to a tool designed to reinvigorate and empower the individual: the Apple home computer.

In addition to boosting sales for home computers, another gift *WarGames* gave the '80s was the stereotype of the hacker: the image of the obsessive, scrawny teen squirreled away in his parents' basement conducting virtual break-ins for personal gain or juvenile kicks.<sup>4</sup>

This depiction was almost an affront to actual hackers—originally a term reserved for self-motivated technology tinkerers. In reality, most hackers were serious computer scientists, gainfully employed by prestigious research universities like MIT and Stanford. Hackers had been around since the 1950s in a loosely connected community of like-minded programmers. And they changed history: hackers built the US Department of Defense's ARPANET, the predecessor of the World Wide Web, and mainframes at IBM. Hardly goofballs digitally breaking and entering classified data warehouses, hackers were among the early architects of today's technological infrastructure.

The group of original hackers included Sir Tim Berners-Lee, aka TimBL, the British computer scientist who invented the World Wide Web, its first web browser, *and* HTML, the programming language for every website in existence. While studying physics at Oxford in 1976, Berners-Lee cobbled together a computer using an old TV and a soldering iron—the very portrait of a hacker in action.<sup>5</sup> His contemporary Richard Stallman (aka rms), a software engineer and digital activist,



launched the Free Software Movement and the GNU operating system, which would later become a part of Linux, the most widely used operating system on the planet. Android phones all run on a version of Linux: that's 88 percent of internet-enabled mobile devices—approximately 4.4 billion worldwide.<sup>6</sup> Stallman, who on his personal website lists among his hobbies “affection,” “international folk dance,” and “puns,” is known as much for his philosophical intensity as his programming chops. His Free Software Movement gave rise to open source software—that is, software whose inner workings aren't proprietarily protected, like the web browser Firefox and the website builder WordPress—and he's arguably one of the forefathers of the very concept of information-sharing as a practice, not just an ideal.

Over the years, dozens of hackers—almost all of them university professors or professionally employed engineers, with the exception of Bill Gates in the early years of Microsoft—contributed to the rise of the web as we know it today. It wasn't until the 2000s that the teen hacker college-dropout trope would become a reality, with Facebook founder Mark Zuckerberg as poster child. And these programmers were serious about their work and serious about their culture: the “hacker ethos” was a code to live by, a topic of debate and deliberation, and most of all, a point of pride. To be a hacker was to uphold a set of values and a way of life.

The hacker ethos, which was both pragmatic and idealistic, consisted of six basic tenets.<sup>7</sup> First, hackers believed that access to computers should be universal, regardless of skill level or intent for use. Because they viewed computers as tools for empowering the individual, they believed that every individual should have access to one. Second, they fervently adhered to the notion that information should be free. This is reflected in the early days of the internet, when, indeed, all information online *was* free. It was only after the World Wide Web was commercialized in the mid-1990s that websites began charging for content—a move that was anathema to hacker ideals.

Third, hackers held a deep mistrust of centralized authority of any

kind. This is also reflected in the way the internet works: it's a decentralized system, running on millions of computers across the globe. There's no one person or organization who can "turn off" the internet—redundancy is a safeguard built into the very foundation of the web. Fourth, hackers believed that they should be judged by skills and abilities, not official credentials. Being a college dropout is worn almost as a badge of pride in the software industry, and over 50 percent of employed programmers in 2015 didn't have a computer science degree.<sup>8</sup>

The final two tenets are the most idealistic: that one can create art and beauty with code, and that computers should be used to change life for the better. While there is no shortage of malevolent hackers now, nor was there in the early days of the web, the hacker ethos took seriously the idea that tech is a tool that can be used for good or ill, and it is up to the coder him- or herself to make the moral choice to apply programming skills for creative, artful, and positive ends.

As universities across the country began to gain access to ARPANET, hackers started collaborating with one another virtually, sharing code and problem-solving tactics. And so by the '80s, serious hackers had started to band together, resulting in a frenzy of invention and innovation. This energy and the hacker ethic were captured by journalist Steven Levy when he published his 1984 book, *Hackers: Heroes of the Computer Revolution*. Thirty-five years later, this book is still lauded as the manifesto of its era. But when it was published, critics viewed the "hacker ethic" as a historical anomaly, an oddball set of ideals that died before they even got a chance to get going. The *New York Times* review recoiled at the book's account of programmers plying their skills on games like Frogger. Christopher Lehmann-Haupt concluded that "if the point of the entire computer revolution was to try to get a frog across a road . . . then it's not only unsurprising that the hacker ethic died; it isn't even sad."<sup>9</sup>

Hackers themselves disagreed. Far from seeing the hacker ethic as dead, they took the book *Hackers* as a catalyst that inspired them to, for the first time ever, physically come together, bringing the hacker ethic to

the table for discussion and celebration. This took the form of the first-ever “Hackers Conference,” organized by the publisher-activist Stewart Brand, Apple cofounder Steve Wozniak, and others. On November 1, 1984, 150 of the most talented programmers, engineers, and designers gathered at the Headlands campsite, a campus of the Yosemite National Institutes, in Sausalito, California, to meet face to face and discuss their craft.<sup>10</sup>

Most people have at least heard of Apple and its cofounder Steve Wozniak; Stewart Brand is less well known, but worth knowing about. Brand wasn’t a hacker. He didn’t even know how to code back then. But he’d launched something called the *Whole Earth Catalog* in 1968, and in its way it epitomized the hacker ethic.

It was, on one level, a traditional catalog; you could mail-order stuff from it just as you could from the Sears or JC Penney (or any other) catalog. But it stood out from others of its kind in key ways—first, for what it sold. For a world Brand described as needing to go “back to basics,” his catalog offered, fittingly, a range of back-to-the-land type stuff. Wares had to fit at least one of four criteria: they had to be useful as tools, relevant to independent education, high quality or low cost, and easily available by mail. Under this umbrella, *Whole Earth* sold materials for and published articles on everything from “earthworm technology” (for aerating farm soil) to “cooking with fire” (for outdoor and off-grid living); it also offered—under the “useful as a tool” and “relevant to independent education” categories—ads for the first Apple computer.

It was really the articles accompanying the goods it sold that defined *Whole Earth* as the start of a movement that empowered individuals—not just as part of collectives or communes, but as people capable of existing wholly and fully on their own two feet. *Whole Earth* promoted the individual on every level: logistically, with teachings on how to build fires and yurts; physically, with articles on DIY agriculture and hydration devices; and intellectually, with essays from the most forward-leaning and controversial thinkers of the day, from Buckminster Fuller and Carl Sagan to the Dalai Lama and members of the Black Panther Party. *Whole*

*Earth* was recognized as revolutionary in its time: for example, it's the only catalog to ever win the National Book Award.<sup>11</sup> Brand's publication elevated the citizen not as a consumer, but as a vessel of power, a being capable of shedding the trappings of "modern" (1960s) life and finding fulfillment by going back to basics. A reflection on our place in the universe, *Whole Earth* acknowledged how even 1960s technology was emerging as the next force of nature we would be forced to reckon with.

So it's not surprising that Brand, of all people, came up with the mantra for a generation of citizen-users. At that 1984 Hackers Conference, Brand, a balding blond man clad in a leather vest over a black-and-white gingham button-down shirt, made an offhand comment in a panel discussion with Wozniak that perfectly put into words an idea whose time had come.

"On the one hand," Brand said, "information wants to be expensive, because it's so valuable. The right information in the right place just changes your life." And then he added, "On the other hand, information wants to be free, because the cost of getting it out is getting lower and lower all the time."<sup>12</sup>

The comment was casual, a nod to an audience member who had just voiced frustration over the rise of proprietary software shutting down collaboration opportunities. But the words themselves—"information wants to be free"—struck a collective nerve. That statement would go on to become the rallying cry for a generation.<sup>13</sup>

At the time, Brand was talking about how it would be increasingly difficult to charge money for information once it was digitized and thus easily copied. But as global networked computing became a reality, tech activists adopted the idea as a literal one.

The reasoning behind it goes something like this: Information, once digitized, is easy to share. And digitized information is also easy to manipulate and search, from basic everyday Google queries to sophisticated data mining. This digital information searching reveals all kinds of valuable things, and shockingly fast—from patterns and research material to regular old know-how on how to do things. Since digitized

information can be shared with many people simultaneously, and since it can reveal useful and beneficial things, many people should be able to benefit from it as a kind of public good. As such, information should be free, and freely shared. Thus, information *wants* to be free.<sup>14</sup>

Not everyone agrees with this, least of all net states whose business models today rely on monetizing user content. Ironically, though, it was the forefathers of those same net states who first promoted the “information wants to be free” ethos and hacker code. You can see that ethos in Steve Jobs’s 1980 Apple mission statement: “To make a contribution to the world by making tools for the mind that advance humankind.”<sup>15</sup> It’s reflected in Google founders Sergey Brin and Larry Page’s mission statement in 1998: “Don’t be evil.”<sup>16</sup> It’s in Mark Zuckerberg’s “Move fast and break things” motto, which he adopted for Facebook in 2004.<sup>17</sup> Notably, all three companies have since moved on to more conservative versions of their mission: Google’s is now “Do the right thing”; Facebook’s is, only partly jokingly, “Move fast with stable infrastructure”; and Apple’s has plummeted from inspiring to anodyne, now reading, “Apple designs Macs, the best personal computers in the world, along with OS X, iLife, iWork and professional software.”

Even Stewart Brand himself has tempered his early antiestablishmentarianism. Reflecting on the *Whole Earth Catalog* and its associated movement from a 2018 vantage, he was quick to qualify that it was very much a reflection of its time. “‘Whole Earth Catalog’ was very libertarian, but that’s because it was about people in their twenties,” he said in a *New Yorker* interview.<sup>18</sup> “Everybody then was reading Robert Heinlein and asserting themselves and all that stuff. We didn’t know what government did. The whole government apparatus is quite wonderful, and quite crucial. [It] makes me frantic, that it’s being taken away.”

The hacker ethos matters because it inspired the generation of computer programmers and technologists who would go on to found the net states we interact with today. It is the reason that their companies—Google, Facebook, Amazon, Apple, Microsoft, and Tesla, to name the biggest among them—are driven not solely by their bottom lines, but in

addition by beliefs that their products and services create some form of good in the world. While these firms may not adhere to the hacker ethos in all of their business decisions, it is still an influential force that drives many of those who work at net states and, perhaps at times, still even occupies the minds of their founders.

BEFORE INFORMATION COULD BE FREE, HOWEVER, PEOPLE NEEDED DEVICES to process it.

The problem was, even by the late 1980s, computers had yet to become commonplace home products. Gradually, they were becoming more affordable and more interesting, yes. But still only a small percentage of the population picked them up. By 1989, only 15 percent of American households owned a computer.<sup>19</sup>

Perhaps that's because, without the internet, computers didn't do all that much. You could type, edit, and store documents—a huge improvement over the typewriter; but that was only marginally exciting. You could play games, of course; but those weren't terribly sophisticated just yet. Computer use at home didn't really take off until the World Wide Web landed in the early 1990s. But even then, uptake started slowly.

“If people are to be expected to put up with turning on a computer to read a screen,” mused Microsoft founder Bill Gates in a 1996 essay, “they must be rewarded with deep and extremely up-to-date information that they can explore at will.”<sup>20</sup> But even that wouldn't be enough to keep users happy, he wrote. Imagining what a future internet might look like, Gates went on to suggest, “They need to have audio, and possibly video.”

Keep in mind that in 1996, “turning on a computer to read a screen” was pretty much the most you could look forward to. Even then, with the World Wide Web just a few years old, it wasn't something everyone was eager to experience.

Even for those who had web access—about 18 percent of US households—going online was a huge pain. Dial-up internet connections seemed to take forever—a web page took roughly 30 seconds to

load, even with a 56K modem, which was state-of-the-art for the era.<sup>21</sup>

However, the biggest problem wasn't getting online. The problem was that there wasn't much to do once you got there. In 1996, there were only about 100,000 websites, most of which featured text and text only. Some have offered a few low-resolution graphics, but not too many, as that would have caused the pages to take even longer to load. Without much of interest to keep people online, it's not surprising that the average American in 1996 didn't bother with the internet much, spending about 30 minutes online a *month*—an average of a minute a day.

Given this state of affairs, it makes sense that tech pioneers like Gates spent a lot of time worrying about how to get more people to “put up with” turning on their computers. That phrase summed up most people's relationship with technology back then. It wasn't yet the touch-of-a-button pocket device we enjoy today. With the exception of enthusiasts—20 years ago, the most likely demographic online was white men over the age of 50; only 14 percent of women under 30 used the internet on a regular basis—tech simply wasn't a big part of people's lives. Circa 1996, tech was the Motorola StarTAC flip phone, with its green pixelated text and black screen. Tech was Tamagotchis: virtual “pets” attached to keychains that activated themselves to demand “feeding”—which involved pushing one of three identically mundane-looking buttons—so that they wouldn't die on you. Tech was Hollywood fiction and teenage toys. In sum, tech didn't matter yet; it hadn't yet graduated from mild distraction to grown-up necessity.

Before the turn of the century, what self-respecting grown-ups really focused on was TV. This was the height of the *Friends* era, the years of *The X-Files* and *ER* and *Law & Order*. TV was king, and audiences ate it up: the average household tuned in for more than seven hours a day.<sup>22</sup> Oprah reigned supreme, launching her now-legendary book club in 1996. And people still read actual books. *TIME* magazine praised Amazon, which launched in 1994 selling *only* books, as one of the top websites of 1996, primarily because you could search by nifty features such as “author” or even “subject or title”—or, best yet, you could “read



reviews written by other Amazon readers and *even write your own*” (italics added).<sup>23</sup>

And being able to do this—“write your own” review—signifies why this is where the web starts getting interesting: interactivity arrives. As noted, most 1996-era websites were little more than digital brochures. Interactive features that allowed users to shape their experience didn’t become common until “Web 2.0” emerged almost a decade later.<sup>24</sup> So the option of submitting your own review—contributing your *own* voice to anyone who happened to be on the World Wide Web—was something totally novel. All of a sudden, a person didn’t have to be famous or a news producer to get their opinions in front of the masses; they just had to go online.

While several variables influenced how tech changed for the average user, one of the biggest contributing factors came down to a single product: Microsoft’s Windows 95 operating system, released in 1995. Pre-Windows 95, your computer probably had a black or dark-green background with yellow or bright-green text or, worse, an oversaturation of hyper-rich colors (“pretty” not being the forte of ’90s-era computer engineers—see figure 1.1 below). Windows 95 radically transformed this by bringing a sane-looking design to computing (figure 1.2). It also introduced key features that made the user feel in control, like the task bar along the bottom of the screen and the now-well-known “Start” menu button on the lower left-hand side.

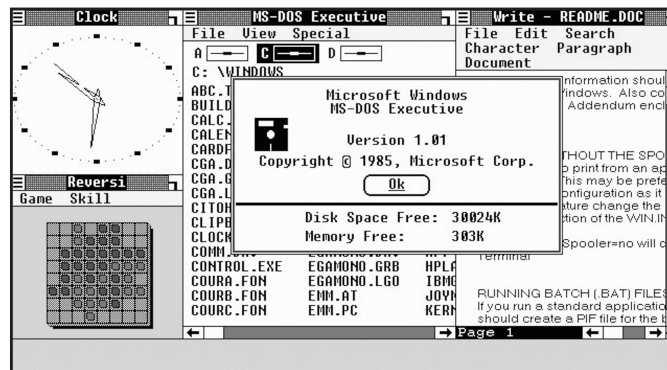


FIGURE 1.1. Microsoft MS-DOS Interface, 1985



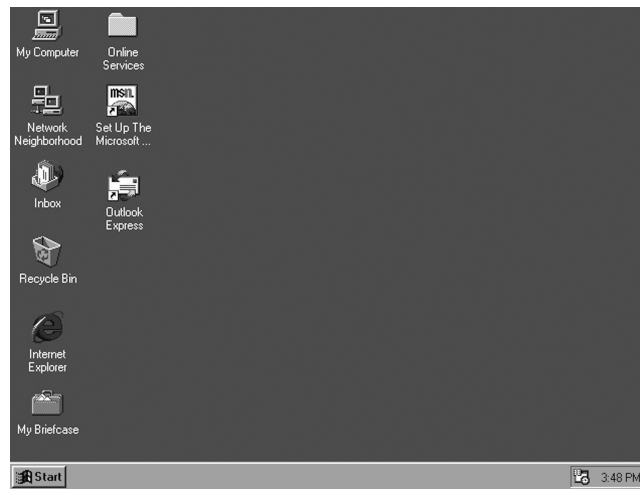


FIGURE 1.2. Microsoft Windows Interface, 1995

Windows 95 and its accompanying internet browser, Internet Explorer, catapulted technology to the next level. It made computing much easier for the average user. With the launch of Windows 95, the cultural attitude toward technology in the United States transformed. All of a sudden, instead of only weird or nerdy types using computers, *everyone* could be a computer user. Not only was it no big deal; it started to become the norm.<sup>25</sup>

By simplifying the browsing experience on your computer and the World Wide Web for the masses, Windows 95 democratized computing. As one reporter reflected, even the introduction of what seems like a simple feature, the “Start” button, brought about transformative change: “In 1995, computers were still mostly for the office and productivity. Windows 95 brought with it a word that consumers understood: ‘Start.’ Start what? Start *anything*.”<sup>26</sup>

One of the things this new feature started was the idea of the computer user as a person with power. Compare computer use to television-watching, for instance. In contrast to how solitary TV-viewing may be today, it used to be a communal experience, a reason for families to gather together. Broadcast networks scheduled set times for shows, and families sat around the TV, together, at exactly the same time, watching

the nightly news or prime-time programs. And with just three major networks to choose from, it was likely that your neighbors were watching the same shows you were—extending the community experience of television-watching from your own home to your broader network. More important, television-watching in the 1990s required consensus: you and your brother and sister and parents all had to agree on what you'd watch. TVs had *audiences*, groups—we as individuals were just some subset of a larger body.

Computers, on the other hand, had *users*. The internet offered us all the gift of personalized choice. We didn't have to confer with our siblings over what website to go to; we just went, by ourselves. It was like hoarding the remote control, every time we logged on. In the early days, with one computer in the house, people still had to take turns going online, which necessitated some level of interpersonal interaction. But once online, our experiences were our own; we were the master of our browsing, the driver of our curiosity fulfillment.

If after Windows 95 people became computer users, with the explosion of websites people became computer *citizens*, empowered entities interacting with other empowered entities. We weren't just website audience members; we were "visitors," each one singular and unique. It's in the language itself: on websites, each set of watching eyeballs is measured as a "unique visitor." We may not have known it yet, but we began to matter to content producers not just as part of a larger audience, but as independent units whose actions could be tracked and monitored and learned from. In less than a decade, we went from television audiences to computer users to website visitor, singular.

Through our interactions with early operating systems like Windows 95, during the AOL / GeoCities / Myspace days of the web, we were not only deepening into our identities as computer users. We were testing out the waters of being citizen-users.

And so Microsoft itself, for a brief moment, was king, not only in how widely its products were used, but in popular culture. People, briefly, loved Microsoft.

Things went south fast.

By any measure, Windows 95 was a smashing success;<sup>27</sup> it sold 7 million copies in its first five weeks.<sup>28</sup> By 1998, industry experts estimated 90 percent of computers ran on some version of Windows; by 2018 this number included over 1 billion devices.<sup>29</sup> And Microsoft's internet browser, Internet Explorer (IE), which users installed, perhaps unwittingly, when installing Windows, was so successful that it essentially killed the other browsers. The first full-color web browser, Mosaic, got folded into what would become the other dominant browser, Netscape Navigator.<sup>30</sup> Netscape enjoyed market dominance for a hot minute, but once the masses got Windows 95 with its bundled IE, Netscape started to tank. That browser's user base declined almost in lockstep with IE's rise.<sup>31</sup> AOL, which had acquired Netscape for a massive \$4.2 billion in 1998, was forced to shut it down just five years later.<sup>32</sup>

The meteoric rise of Microsoft and its college-dropout boy genius founder Bill Gates—he was crowned by *Forbes* magazine the richest man in the world by 1995, a title he would hold for 13 of the next 17 years<sup>33</sup>—got the attention of just about everyone, especially government regulators. On March 3, 1998, the Senate Judiciary Committee called several tech industry leaders to a hearing, including Gates.

Senator Orrin Hatch asked Gates the question at the heart of the hearing—mirroring questions still being asked 20 years later to newer quasi-monopolies like Facebook and Google. Hatch asked, “Is there a danger that monopoly power is or could be used to stifle innovation in the software industry today or, perhaps more importantly, looking forward?”<sup>34</sup>

Turns out the hearing just lay the groundwork for what was to come. Two months later, Microsoft got slapped with an antitrust lawsuit by the Department of Justice and 20 state attorneys general for, in effect, holding a monopoly and engaging in anticompetitive practices.

While companies as large as Microsoft get sued with some regularity—by conservative estimates, Microsoft has been sued over 50 times (for patent infringement, by its competitors, by the US government

alone at least five times, and even by companies it's invested money in)<sup>35</sup>—an antitrust suit is a big one. Antitrust cases have a history of taking down giants: they're what forced the breakup of the telecommunications behemoth AT&T ("Ma Bell") in 1982<sup>36</sup> and oil industry titan John D. Rockefeller's Standard Oil in 1911.<sup>37</sup> In short, while some lawsuits are regarded by massive corporations as flies to be swatted, or, more to the point, settlements to be paid out (Microsoft has paid out an estimated \$9 billion in settlements over the years), an antitrust case is rightly regarded as a potential bear on your doorstep, with the power to take down even a colossus like Microsoft.

And here the youthful Gates did himself no favors. In what has become the textbook example of how Silicon Valley folks should *not* behave in Congress, Gates's deposition was his undoing in the eyes of the public. As reported by *Fortune's* Joseph Nocera, who summarized the deposition after watching the entire 12.2 hours of it, "What couldn't have been clear in the snippets you saw on TV was the sheer awfulness of the thing in its totality. The long pauses before Gates answered the simplest of queries. The hint of contempt in his voice. His repeated refusal to even try to explain straightforward statements."<sup>38</sup> Gates came across to TV viewers as "snarky, combative, petulant, and eager to engage in needless semantic arguments."<sup>39</sup>

Public opinion, of course, has no bearing on the outcome of court cases—in theory at least. Microsoft fought this case for 19 years and, if you ignore the hundreds of millions of dollars in lawyers' fees, actually ended up getting little more than a legal slap on the wrist.<sup>40</sup> But in the eyes of the public, the Gates/Microsoft trial was damning. While their products were as popular as ever, Microsoft and Gates went from being held aloft as America's ideal for innovation to just another big bad business out to bilk the American consumer.<sup>41</sup> Microsoft simply wasn't cool anymore.

But that didn't actually matter. America was already hooked.

By the early 2000s, the internet, though still accessible to only 43 percent of Americans and just 5.8 percent of the global population, was

well established as the place to be. Web 2.0—websites that permitted interactive engagement versus just being digital brochures—had finally arrived. But within this same decade, a new trend emerged that threatened to upend the order we'd just begun to get used to: a collection of content producers such as newspapers, magazines, and music services started experimenting with charging money for their content.

This did not sit well with “information wants to be free” believers. So in June 2003, a group of friends in Sweden became official internet activists when they launched Piratbyrå—“the Bureau of Piracy.” Originally, Piratbyrå was little more than a protest in response to Sweden's establishment of Antipiratbyrå, the official copyright enforcement agency.<sup>42</sup> The protest organization's mission was not to organize internet piracy per se, but rather to encourage the spread of information regardless of intellectual property rights.

Its mantra was strikingly similar to Brand's “information wants to be free” movement: “Use what you know for good. Spread it further. Sow what you want. Add, delete, change and improve.”<sup>43</sup> Self-described as a “loosely organized think-tank, a website, a philosophical greenhouse or FAQ guide to digitization,” Piratbyrå pioneered what would become one of the most popular activities online in the early 2000s: free file-sharing.<sup>44</sup>

Twenty-five years into the internet era, it might be difficult to fathom how much work went into sharing intellectual property such as music, movies, TV shows, and games before the web. You had to physically go to a store, buy the original whatever, then take however many hours needed to make a physical copy onto a video or tape cassette or, eventually, CD or DVD in order to make a single copy to share with one friend. Most Americans who were online at the time will likely remember the 1999 rollout of Napster as world-changing: here was a music-sharing service that allowed, for the first time ever, massive and free file-sharing online with strangers from all over the world, thus eliminating the need to physically store copies of your favorite movies or playlist on anything but your computer.<sup>45</sup> Shortly thereafter, “The Pirate Bay,” or TPB, was

born—the largest BitTorrent site in history (BitTorrent being the name of the protocol that permits the transfer of massive files such as movies and albums). With 300 million users and counting, and despite having been taken down multiple times over the years for copyright infringement, TBP is still operational to this day.<sup>46</sup>

As might be expected for an organization that blatantly encourages what is technically intellectual property theft, TBP has had its ups and downs with the law. More than 60 police officers raided TPB's Stockholm data centers in 2006, promoting hundreds of protesters to take to the streets in Stockholm and Göteborg.<sup>47</sup> The raids successfully took the site offline—but only for three days. Its devoted followers moved it to another reserved domain name to get it up and running again (using one of the about 70 domain names that TPB reported they have reserved for such contingencies).<sup>48</sup> Then came the real crackdown: in 2009, the police came after the TPB for copyright infringement.<sup>49</sup>

Undeterred, the movement created first by Piratbyrån and advanced by The Pirate Bay—the organization of the “information wants to be free” principles set forth by Stewart Brand decades earlier—went on to do something almost unprecedented in modern social movements: it made the leap from merely conducting online activism to inspiring a set of international political parties that have won hundreds of elections worldwide.

As might be expected with a group of antiauthority activists, these parties don't all coordinate with each other. And some actively disavow the others. But they all operate under the same umbrella: the Pirate Parties International.

Since the first Pirate Party officially formed in Sweden in 2009 on a platform of the “protection of human rights and fundamental freedoms in the digital age,”<sup>50</sup> the movement has spread to 68 other countries. And they've actually managed to insert themselves into the traditional political establishment. To date, the Pirate Party has racked up 547 separate electoral victories across the globe at the local, state, national, and even international organizational levels. At the time of this writing, it even

has four seats in the European Parliament, the elected legislative body of the European Union.<sup>51</sup>

Thus far, the Pirate Party's biggest victory has been in Iceland. In 2016, the so-called Panama Papers revealed that the family of the prime minister of Iceland had apparently been hiding millions of dollars in offshore accounts, triggering public accusations that they were dodging Iceland's substantial personal income tax rate of up to 46 percent of one's earnings. The prime minister resigned as a result of the public uproar.<sup>52</sup> Shortly thereafter, running on an antiestablishment platform, Iceland's Pirate Party won 15 percent of the vote, which was sufficient for an invitation to form a government. (For context, seven parties ran in that election, making a 15 percent win a substantial victory.)<sup>53</sup>

"Information wants to be free" had clearly transcended the hacker ethos to become an organizing principle for citizens around the globe who wanted to make the leap from protesting government to becoming a part of it.

The hackers were now in charge.

AT THE SECOND ANNUAL WASHINGTON IDEAS FORUM ON OCTOBER 1, 2010, Eric Schmidt, Google's CEO for sixteen years, reminded an audience of journalists, policy-makers, and politicians what was going on. "With your permission," he said, "you give us more information about you, about your friends. And we can improve the quality of our searches."<sup>54</sup>

"We don't need you to type at all," Schmidt continued. "Because—with your permission—we know where you are. With your permission—we know where you've been. And—with your permission—we can more or less know what you're thinking about."

Nervous laughter broke out across the room, prompting Schmidt to quickly interject, "Now, was that over the line? Is that *right* over the line?"

The "line" Schmidt referenced alluded back to something he had

said earlier in his remarks. “There’s what I call ‘the creepy line,’” he had said. “And the Google policy about a lot of these things,” referring to far-future technologies, like brain implants, “is to get right *up* to the creepy line, but not cross it.”

Back in October 2010, Google had not quite crossed the creepy line. None of the tech giants had: in the fall of 2010, the global love affair with Facebook—still primarily a friends-connection network—was in full effect. In the fall of 2010, half a billion people logged on to Facebook to play FarmVille and Mafia Wars and to make use of the “Like” feature (introduced only the previous year) on each other’s posts, photos, and comments.<sup>55</sup> In the fall of 2010, Facebook still felt innocent and hopeful, epitomized by the December 2010 launch of the Arab Spring. That movement’s early protests were largely organized via Facebook, which *Atlantic* author Rebecca Rosen referred to as “the GPS for this revolution.”<sup>56</sup>

In 2010, technology was still exhilarating. We were enamored of our smartphones, Apple’s iPhone being less than four years old and still in the category of craved-for tech, owned by just 33 percent of Americans.<sup>57</sup> The notion that personal technology use might be bad for us—as suggested by early research into “internet addiction” and “Facebook depression”—was, back then, still a novel and academic debate, not yet something taken seriously in popular culture.<sup>58</sup> Social media, especially once accessible through personal devices like smartphones, was going to be a democratizing force, we thought, with the promise that social media comprised “long-term tools that can strengthen civil society and the public sphere.”<sup>59</sup>

In 2010, our technology—our iPhones and Facebook and Google—were still going to empower us. Amazon, which had morphed from bookseller to everything-seller, was just going to make it easier for us to buy anything we wanted. Microsoft was just going to power our office work. And then there was Tesla, bursting onto the scene with moon-shot projects to get us into space and traveling on Earth at hypersonic speed—the Jetsons of the pack, futuristic and sexy and exciting.



In 2010, technology had yet to become creepy. It was glorious. We were blissfully unaware of the complications it would bring.

By 2019, we've become well aware. We're aware that we are more than net states' user bases; we've become their population as well. Our real lives are becoming more integrated with our digital ones. "With our permission," we've allowed our lives to become reliant on net states in certain areas, trusting them to manage our data rights, defend us from cyberattacks, and sign on to diplomatic treaties for our protection. Our relationship with net states comes with unenumerated benefits and unexpected responsibilities.

As net states "know" us more—as Schmidt said, knowing where we've been, where we are, and what we're thinking about—we are increasingly dependent on them in ways we couldn't have anticipated. Thus, our roles as citizen and user are merging.

To understand how citizen-users engage with their *net* states, it's helpful to first look at how citizens engage with their *nation*-states. In our social media-fueled age, we commonly hear how citizens make up "the public sphere." This phrase in its current usage can be traced back to German sociologist Jürgen Habermas,<sup>60</sup> who coined it in his dissertation, which was published in German in 1962 and translated into English in 1989.<sup>61</sup> In this work, Habermas described the history of how citizens came to emerge as a real check against government.

The story goes that by the mid-1800s, a class of middle-class educated citizens in Europe ("the public," as opposed to the aristocracy) began to engage in discussions about not just their daily lives, but also subjects relating to the broader public good: what Habermas called "rational-critical debate." En masse, these conversations would emerge as what we generally refer to as "public opinion": the broad set of ideas and sentiments that a nation holds about political issues. Public opinion would, in theory, serve as a check on government. With legislators informed and influenced by what the public thought, they would legislate in such a way as to reflect what the public wanted. And so goes the theory of democratic societies in general: the public expresses its opinion

and then—critical step here—*votes* for people who will make laws in accordance with those opinions, resulting in a happy, healthy society.

There are some problems with Habermas's version of the public sphere, not least of which is the issue of inclusion. His 1960s manuscript about activities in the 1830s considered "the public" to be, frankly, wealthy white men. But the issue I want to direct your attention to is not *who* is part of the public sphere, but *what we do* as members of the public sphere.

Electorally speaking, Americans are notoriously bad at taking action. Only 61 percent of Americans voted during the 2016 presidential election,<sup>62</sup> a 20-year low for that type of election.<sup>63</sup> Worse, only 36 percent of Americans voted during the 2014 midterm election, an abysmal 72-year low.<sup>64</sup> Put another way, when asked whom we want to represent us nationally, 4 out of 10 opt out. When asked whom we want to represent us locally—these are the representatives who are ostensibly members of our communities, our cities, our states—7 out of 10 of us don't bother to weigh in.

These turnout rates have serious real-world implications, among the largest being that our elected leadership is decided by a handful of people, statistically speaking. For instance, Donald Trump's victory in the 2016 presidential election is credited to approximately 80,000 votes in three states: that's smaller than the population of an average three-square-mile neighborhood in Brooklyn, New York.<sup>65</sup> While the uniquely American quirks of the electoral college influence these outcomes as well, if every eligible citizen voted, the political landscape both locally and nationally would likely look very different.

It may seem an odd comparison to make, but contrast these voter turnout rates to cell phone purchase rates. As of 2019, 96 percent of Americans over the age of 18 own cell phones, and 81 percent of those are smartphones.<sup>66</sup> We go through the bother of upgrading our smartphones every 21 months, or about once every two years.<sup>67</sup> Compare this to the act of voting in presidential elections, which takes place once every four years.

The difference between going through the trouble of getting a better phone and going through the trouble of getting a better elected representative is pretty basic: one is tangible, the other abstract. Our phones fulfill many in-the-moment purposes: they're navigation devices, music players, cameras, internet access points, and, of course, actual telephones. On the other hand, voting doesn't feel connected to most of our lives—on any basis, let alone a daily one. As a culture, our country is increasingly less connected to other people in general: a third of Americans haven't even met the neighbors who live directly next door to them.<sup>68</sup> If we don't even share words with the people who live right next to us, how many of us, then, interact with our congressional representatives, who represent roughly 700,000 people in a district? In short, we are very much in touch with our technology. We are far less so with our democracy.

One obvious follow-up question about citizen engagement is whether merging elections *with* technology might help. There's no obvious answer, however, and understanding why requires considering what it takes to be a citizen and what it takes to be a tech user.

WE USE OUR PHONES FOR MANY REASONS, BUT THOSE CONSIDERATIONS generally boil down to trying to improve something about our lives: to check the weather, to find information we need, to reach out to someone we care about, to read articles or books or the news, or to discover something we didn't know before. We also use our phones for less lofty reasons, such as to avoid boredom (93 percent of 18- to 29-year-olds) or even specifically to avoid having to interact with people around us (47 percent).<sup>69</sup> Given how much we already use our phones, then, the big question is this: If we could vote in elections on our phones, would we?

It turns out that the question of why people do or don't vote is complex, and introducing technology into the mix only makes it more so. According to a RAND Corporation report in March 2018, plenty of countries around the world already have e-voting, but that doesn't necessar-

ily translate into better voter turnout.<sup>70</sup> Research tells us that people who vote generally do so not because it's convenient, but out of a sense of civic duty.<sup>71</sup> Conversely, people who don't vote aren't generally deterred by having to physically go to a polling site. Rather, they don't vote because they don't feel as if their vote matters.

In other words, whether we vote comes down to power—specifically, whether we feel that we have the power to effect change. Some of us do feel powerful with respect to our votes, as though by voting we're acting as civically engaged participants in our democracy. Others among us feel the opposite—powerless—as if we as individuals are ultimately irrelevant to the outcome of the vote and so there's no point in even bothering.

Power matters, because if there's anything net states give users, it's a sense of power. Look no further than Apple's branding of its wildly successful series of tech gadgets: the iPhone that kicked off the smartphone revolution in 2007, the iPad, iTunes, and so on. There's a key indicator there: "I." Me. You. Unlike political representation, tech is not an abstract concept. No, it's tech for you and you alone. You are the center of your digital universe, and you've got the products that make it so.

This is a massive shift from how technology was experienced by users in the past. As recently as 2007, when the iPhone hit the market, 90 percent of American homes shared landlines. A caller phoned, and anyone in the household could answer. Nowadays, people sharing a household—the most intimate social unit we have—generally still have to divvy up their physical space and everything in it. But not our tech. We have to share the contents of our refrigerator—literally, our food supply—with other humans; but not our tech. Not anymore.

Next to our clothing and shoes, tech is the sole area of the home that is, in 2019, entirely personalized. And, like our clothing and shoes, we increasingly wear our tech on our person—in our pockets or, more often than not, simply in our hands: 50 percent of millennials report holding their phone in their hands not just when in use, but throughout the entire day.<sup>72</sup>

Which brings us back to voting and citizenship. For most of our recent history, we were *always* citizens, regardless of whether we thought about it and regardless of whether we exercised our rights. Conversely, we were only *occasionally* tech users. To use tech, we had to take some sort of action to engage with a digital device.

That all changed in the past decade. Increasingly, even when we're not taking action we are tech users. Google tracks our location through our cell phone even when it's in our pocket (and, in some cases, even when we've opted out of location-tracking or our phone is turned off).<sup>73</sup> The apps we've downloaded collect our data, even when we're not using the apps. "The more data [tech companies] get, the more useful it is," reported Abhay Edlabadkar, founder of Redmorph, a company that develops apps to block trackers on your phone. "Within the limits that your app has asked for, it can collect and scoop up as much data as it can."<sup>74</sup>

All of this happens in the background, without needing our action to initiate use or even requiring us to pay attention. Information about where we are, who we're with (by our physical proximity to other users), the information we seek (through our searches), and even our mood (by the nature of the content we post) is streamed, tagged, and, more often than not, bought and sold by the tech companies we've invited into our lives: 7 out of 10 smartphone apps share our personal data with third-party services (more on that in chapter 3).<sup>75</sup>

Here is the key: *we* did this. We bought the devices. We signed up. We logged on. We signed terms of service or user agreements with every bit of tech that we own.

Net states have their own version of our Constitution's Bill of Rights: the terms of service. We just don't generally bother to read them—and for good reason. According to a study done by Norway's Consumer Council, it would take, on average, 31 hours to read all the terms of service on an average person's smartphone<sup>76</sup>—more time than it would take to read the New Testament of the Bible.

What's more, terms of service and user agreements change, often and unseen. Even if we paid attention to such things—and we histori-

cally have not—we may not have known they were changing.<sup>77</sup> Until the internet is subject to some sort of regulation by the US Congress and international equivalents, this is unlikely to change—unless we, as citizen-users, make a change.

The good news is, we've already overcome one of the biggest hurdles to effecting change with respect to net states—a hurdle we've not yet overcome with our nation-states: engagement. Americans may not be engaged with our political process, but we are very much engaged with our tech.

We are the master of our universe of tech. We don't have to rely on some proxy to represent our interests—we are the keepers of our relationship with our technology. It is specifically ours, after all: like clothes and shoes, our particular profiles are molded to our highly personalized habits and preferences.

What's more, engagement doesn't mean taking any special action. We don't have to vote to effect change with our net states. We—as members of the citizen-user public sphere—create public opinion through every post, every “like,” every tweet, every search, every website we visit and shop from and access. Our *habits* are our votes. Individually, changing our habits has an enormous impact on our relationship with net states in daily life. A collective change of our habits can make or break the very existence of a tech company, for they are only as strong as their user base. Their population. Their citizen-users. Us.

Inventor Buckminster Fuller frequently contributed to Stewart Brand's *Whole Earth Catalog*, sharing his musings on everything from life on Earth to an interplanetary future. In one essay, he wrote, “Whether humanity will pass its final exams for . . . a future is dependent on you and me, not on somebody we elect or who elects themselves to represent us. We will have to make each decision both tiny and great with critical self-examination—‘Is this truly for the many or just for me?’”<sup>78</sup>

In our net state citizenship, our every decision is simultaneously for ourselves *and* for the many. We simply need to remember that we are more than ourselves. We are part of a public sphere, influencing, in this

case, the net states that govern our existence digitally and the ways that the digital world extends into real life.

We're no longer a people "putting up with" computers. We're wearing them and inhabiting them. This gives the keepers of our digital lives great power over us. It is only fitting that we, in turn, demand that this power be used judiciously. Content may still be king for users, but as *citizen-users*, we owe it to ourselves to pay attention to more than content. In some cases, net states like Microsoft are taking action to protect us. If we keep watch, we can also take note of when they fail to.

Like the citizen, the citizen-user has responsibilities as well as rights—to keep informed, to keep engaged, and to vote—in this case, with our actions and with which tech we use. As Adlai Stevenson once said, "As citizens of this democracy, you are the rulers and the ruled, the law-givers and the law-abiding, the beginning and the end." With so much of our lives played out in the digital sphere, we must remember that we are both in charge and overseen; the rulers and the ruled. In our hyper-individualized existences, we'd have no one to blame but ourselves if we didn't keep our rights as well as our responsibilities in mind.