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## THE BIG BANG

### The Mosaic Web Browser and Netscape

**N**etscape Communications Corporation held an initial public offering, or IPO, on August 9, 1995. Netscape shares were originally to be priced at \$14 per share, but at the last minute the price was lifted to \$28 per share. When the markets opened at 9:30 A.M. Eastern Time, Netscape's stock did not open with it. Buyer demand was so great that an orderly market could not immediately be made. Interest from individual investors was so overwhelming that callers to the retail investment firm Charles Schwab were greeted by a recording that said: "Welcome to Charles Schwab. If you're interested in the Netscape IPO, press one." At Morgan Stanley, one retail investor offered to mortgage her home and put the proceeds into Netscape stock. The first Netscape trade did not hit the ticker until around 11 A.M. The price of that first trade was \$71, almost triple the offer price.

Over the course of the day Netscape, with the ticker symbol NSCP, reached \$75 before ending the day at a respectable \$58.25. Netscape had only existed as a corporation for sixteen months. Since its inception, it had generated revenues of only \$17 million. It had nothing in the way of profits on its balance sheet. But at the end of trading that day, the stock market valued the company at \$2.1 billion.

These days we're used to embryonic technology companies debuting on the stock market to soaring valuations, but in August of 1995, such an event was almost unheard of. The financial press was in awe, if skeptical. On its front page

the next day, the *Wall Street Journal* said, “It took General Dynamics Corp. 43 years to become a corporation worth \$2.7 billion. . . . It took Netscape Communications Corp. about a minute.”<sup>1</sup> Plenty of commentators were shocked that a company that had yet to make any sustained profit could be valued so highly. Still others were puzzling over what this “Internet” thing even was, and why it was making people rich. As August 9 also happened to be the day that Jerry Garcia of the Grateful Dead died, a joke made the rounds on Wall Street: What were Jerry Garcia’s last words? Answer: “Netscape opened at what?”

A lot of the chatter was about the sudden, unprecedented and remarkable creation of wealth. Cofounder Jim Clark’s 20% stake in the company was worth \$663 million on the day of the IPO. Early Netscape employees were worth millions of dollars (on paper at least), including the company’s baby-faced, twenty-four-year-old cofounder, only a few months out of college, who was suddenly worth \$58 million.

A few short months later, in December 1995, Netscape’s stock price would hit \$171 a share, more than six times the price at the IPO. A few weeks after this milestone, that same twenty-four-year-old, Marc Andreessen, would grace the cover of *Time* magazine.

There are occasionally events that signal the arrival of a new force in culture (say, the Beatles on *The Ed Sullivan Show*) or serve as the demarcation line between historical eras (September 11, 2001, for example). The Netscape IPO was just such a moment in time. Today, young twenty-somethings dream of coding their way to billion-dollar fortunes. Today, the phone in your pocket is more powerful than every computer involved in the moon landing. Today, it’s possible to know, in real time, what your high school crush had for lunch. Netscape set the groundwork for this reality. The Netscape IPO was the big bang that started the Internet Era. That picture of a barefoot Marc Andreessen on the cover of *Time* was what started young geeks dreaming of Silicon Valley riches. Netscape would not define the Internet Era—or even survive it—but it was the first of its kind, and in many ways it was the template for all the people and companies that would follow.



THE MODERN WEB ERA began in Champaign, Illinois. The University of Illinois at Urbana-Champaign is world-famous as a leading research institution in the field of computing. The ORDVAC and ILLIAC, two of the earliest computers in the world, were built there in 1951; the university was granted Unix license number one by Bell Laboratories in 1975; and in 1985, the National Center for

Supercomputing Applications (NCSA) was established there. In the famous science fiction movie *2001: A Space Odyssey*, the homicidal HAL 9000 computer states that he “became operational” in Urbana, Illinois, on January 12, 1992, partially as a nod to the university’s prominence in the field.

When the National Science Foundation took over the operations of the Internet in the 1980s, the University of Illinois was a key part of the Internet “backbone,” that superstructure of digital pipes that allowed the network to function.<sup>2</sup> By 1992, when the superfast T3 network was launched as the successor backbone for the Internet, the NCSA and the university were sitting on some of the fastest computer connections in the world. In other words, by the early 1990s, there wasn’t a better place in the world if you wanted to be swept up in the revolution of the World Wide Web.

It helped that the NCSA was relatively flush with cash and resources in the early 1990s. It had gotten a large amount of funding thanks to the recently passed High Performance Computing Act of 1991, more commonly referred to as the “Gore Bill.”\* All the wired infrastructure, all the superfast computing machines and the small army of undergraduate and graduate students the NCSA employed to assist with research projects, were paid for and paid by, in part, the government.

“NCSA was heaven,” remembers one of the students working there in the early nineties, Aleks Totic. “They had all the toys, from Thinking Machines to Crays to Macs to beautiful networks. It was awesome.”<sup>3</sup>

Another student programmer, Jon Mittelhauser, would remember, “We were all just kids hanging out in the basement of what was called the software development group.”<sup>4</sup> The professors who ran the research programs that were the NCSA’s bread and butter assigned the projects, and the pool of “kids” in the basement coded away to the profs’ specifications.

In 1992, one of those kids was a twenty-one-year-old by the name of Marc Andreessen. Born in Cedar Falls, Iowa, on July 9, 1971, Andreessen grew up in New Lisbon, Wisconsin (pop. 1,450),<sup>5</sup> where his father was a feed salesman and his mother was a shipping clerk at Lands’ End. Computers fascinated Andreessen when he was a child, and he taught himself how to program at an early age. But he was no prodigy. Built large, at six feet two, with a loud, excitable personality, he was not exactly a wallflower, and it set him apart. Another NCSA student programmer named Rob McCool remembers of Andreessen, “All of the [computer science students] I’d come across were all quiet, kind of nerdy types. And here’s this gigantic Scandinavian guy with a

purple computer and he's wild-eyed and telling me about all this stuff that's gonna be great."<sup>6</sup>

Andreessen was voluble and enthusiastic, but he also had an antiauthoritarian, independent streak that his peers came to appreciate. When a research team Andreessen and McCool were part of got hung up on a coding problem relating to an assigned project, Andreessen simply junked the existing framework and hacked together his own solution. "And I was like, 'Dude, really? Can you do that?'" McCool remembers. "And he was like, 'Yeah, well, my boss hasn't noticed yet.'"<sup>7</sup>

Andreessen had joined the NCSA as a part-time student programmer, doing menial coding work for \$6.85 an hour. The researcher who hired Andreessen was Ping Fu, who had had a hand in the groundbreaking "morphing" computer graphics featured in the recent feature film *Terminator 2: Judgment Day*. Andreessen's main task at the NCSA was coding Fu's visualization projects. But what really caught Andreessen's imagination during those hours in the NCSA basement, the computing technology that he was telling McCool and others was "gonna be great," was that latest and greatest thing on the Internet: the World Wide Web.

With the NCSA's fast computers and even faster Internet connections, Andreessen and the other kids in the basement were perfectly positioned to catch the wave of the Web when it took off. In fact, the NCSA was just the sort of academic research organization that Tim Berners-Lee was fervently hoping would adopt his invention. At this point in the web's development, Berners-Lee had just recently open-sourced his project to the world, in the hopes that he could "let a thousand flowers bloom" by inviting others to contribute to the project's development. At the time, there were maybe a couple hundred software developers in the entire world experimenting with the web, and they all hung out and exchanged ideas with Berners-Lee on a Usenet newsgroup called WWW-Talk.

In November 1992, there were only a few dozen WWW servers in the world. By the end of that same month, one of them happened to be at the NCSA, courtesy of Marc Andreessen.<sup>8</sup> On November 16, 1992, Andreessen showed up in the WWW-Talk message group for the first time, joining the various conversations about HTML, web servers and web design and generally volunteering to pitch in on the grand project of moving the web forward.<sup>9</sup>

Moving forward meant a better web browser. A browser is a software application that allows a user to both navigate and view the web. Berners-Lee

himself had coded the first browser back when he had invented the web. But, as a part of his new crowdsourcing efforts, he had thrown the door open to anyone who wanted to try their hand at coding a better one. Dozens of developers around the world accepted the invitation, and several of them turned out to be students around the same age as Andreessen. At the University of Kansas, several students created the text-based Lynx browser. Pei-Yuan Wei developed the ViolaWWW browser while pursuing a degree at UC Berkeley. If you wanted to make a splash in the early web community, the way to do it was to code and release a better browser, and Marc Andreessen wanted to make a splash.

Andreessen himself would later describe the early web this way:

PC Windows had penetrated all the desktops, the Mac was a huge success, and point-and-click interfaces had become part of everyday life. But to use the Net you still had to understand Unix. . . . And the current users had little interest in making it easier. In fact, there was a definite element of not wanting to make it easier, of actually wanting to keep the riffraff out.<sup>10</sup>

Andreessen's big idea in the winter of 1992–93 was to let the riffraff in. He wanted to release a simpler, more user-friendly browser. He wanted it to be point-and-click and windowed. He wanted to make the web look familiar to someone who was comfortable using a personal computer, as opposed to the Unix workstations most of the researchers on the web were used to. And, crucially, he wanted the web to look as sexy as it felt to people like him who were enthusiastic converts. He wanted to add pictures. Says Aleks Totic: “[Andreessen] was like, ‘Oh, there could be newspapers on the Net and all this information can be out there for everyone. How phenomenal could that be?’”<sup>11</sup> In short, Andreessen had a vision for the web in which someday everything would be possible: graphics, news, commerce, even cat videos.

So, Andreessen turned his special brand of infectious enthusiasm on his fellow NCSA coders. The first person he targeted was his colleague Eric Bina. Bina was older than Andreessen (almost thirty) and a full-time, salaried NCSA employee. Bina was also a much better programmer than Andreessen was. Bina initially begged off the project, but Andreessen's enthusiasm and persistence eventually won him over. The “browser project” that Andreessen and Bina undertook began sometime in December 1992. Bina wrote the majority of the original code, but the features were also what made their browser such a leap forward, and it was Andreessen who was coming up with the features.

In a little over a month of nearly round-the-clock coding, they had their

browser ready. It was called X Mosaic. On Saturday, January 23, 1993, the official “0.5” version of the browser was posted to the Internet on the NCSA’s servers. The accompanying release note from Andreessen himself said:

By the power vested in me by nobody in particular, alpha/beta version 0.5 of . . . X Mosaic is hereby released.

The last line of the message was the FTP address telling others where they could go to download and install the browser themselves. Within days, no less a web authority than Tim Berners-Lee forwarded and endorsed Andreessen’s announcement:

An exciting new World-Wide Web browser has come out, written by Marc Andreessen of NCSA.

This browser was called “X Mosaic” because it was designed to work with X Window, a graphical user interface popular with users of Unix machines. It was designed for the computers that researchers and academics used. In other words, it was preaching to the already-converted web choir. And that was not what Andreessen was after, of course. Using X Mosaic as a proof of concept, he turned his enthusiasm on others in the NCSA basement to get them to write versions of his browser for the computers that the riffraff used.

NCSA’s young programmers signed on to program these versions, each according to his own platform of choice. Jon Mittelhauser and Chris Wilson developed the PC version. Aleks “Mac Daddy” Totic and Mike McCool wrote the Macintosh port. And since X Mosaic handled only the consumption end of the web experience, the growing team thought it would be a good idea to tackle the delivery end as well. Thus, McCool’s twin brother Rob wrote Mosaic web server and publishing software that would eventually be released alongside the browsers.

The kids in the basement did their thing and then released it out into the world. That was how the web worked in 1993; that was what Tim Berners-Lee had hoped would happen. If someone had a better way of doing things, they coded it up and made it available for other people to try. If others liked it, they downloaded it. If they didn’t, well, they didn’t. And if these users had problems, found bugs, had ideas for improvements or wanted to contribute new features, then they got in touch with the creators over email or the Usenet message boards and bitched about it. The kids at the NCSA, surrounded by empty pizza boxes and soda cans, released updated versions—and then maybe a week later they

released another updated version based on user feedback.<sup>12</sup> The process was very communal and very real-time.



WITHIN EIGHTEEN MONTHS, Mosaic was the biggest thing on the web, and probably the biggest thing on the Internet at large. In January of 1993, shortly after Mosaic launched, the number of websites in existence was in the hundreds. By the end of 1994, the number of websites in the world had passed tens of thousands.<sup>13</sup> In a similar time frame, the number of web hosts had risen tenfold.<sup>14</sup> In a way, one could argue that Mosaic helped make the web, and vice versa. As the first browser designed for the common computer user, Mosaic had a symbiotic sort of chicken-and-egg relationship with the web. For millions of PC and Mac users, Mosaic was their first glimpse of the web. Once they saw what the web could do, they wanted to go off and code their own websites.

Within those first eighteen months of launch, Mosaic probably delivered 3 million browsers into users' hands.<sup>15</sup> That may seem like a small number, but then, there probably weren't many more than 3 million people on the web before that point. Toward the tail end of 1994, Mosaic was adding as many as 600,000 new users every month. It is safe to say that by that point the vast majority of people surfing the web did so via a Mosaic web browser.

The key innovation of the Mosaic browser was Andreessen's insight that in order to make the web sexier, he simply had to release a browser that enabled the sexiness he imagined. On February 25, 1993, mere weeks after Mosaic's initial beta launch, Andreessen was on the WWW-Talk message boards making a proposed addition to HTML of an "inline" image tag that would allow for images to be coded directly into web pages. Prior browsers opened images—and really any non-HTML file type—as a separate window. Inline images would make web page design more akin to the page layout of a magazine or newspaper.

Adding color and sexiness to the web was part of what made Mosaic take off, and part of what made the web take off at exactly the same time. But even the web's creator was among those who felt that Andreessen's penchant for multimedia was a little much. Andreessen later admitted, "Tim [Berners-Lee] bawled me out in the summer of '93 for adding images to the thing."<sup>16</sup>



"HE ONLY WANTED TEXT," Andreessen has said of Berners-Lee's objections when they finally met face-to-face at the World Wide Web Wizards Workshop in



Cambridge, Massachusetts, the first true developer conference. “He specifically didn’t want magazines. He had a very pure vision. He basically wanted it [the web] used for scientific papers. His view was that images are the first step on the road to hell. And the road to hell is multimedia content and magazines, garishness and games and consumer stuff. I’m a Midwestern tinkerer type. If people want images, they get images. Bring it on.”<sup>17</sup>

For his part, Berners-Lee has denied that images discomfited him. “Of course we did approve of images, in fact we had images on the Web before anybody else,” he has said. But then he adds, “Like diagrams in talks for example.”<sup>18</sup>

Years later, even Mosaic cocreator Eric Bina would admit that he had reservations about adding images and multimedia to the web. At the time, he was mainly concerned about bandwidth issues (this was the era of dial-up modems; images could take entire minutes to load onscreen) but he was also worried that he and Andreessen were opening the floodgates to frivolity and junk. “And I was right! People abused it horribly,” Bina said later. “But Marc was also right. As a result of the glitz and glitter, thousands of people wasted time to put in pretty pictures and valuable information on the Web, and millions of people use it.”<sup>19</sup>



THE MILLIONS OF DOWNLOADS to users around the world meant that Mosaic was probably the most successful software product ever designed for—or released on—the Internet up to that point. By the end of 1994, it was clear that the World Wide Web was rapidly taking over the Internet at large. For the millions of Mosaic users, the web almost *was* the Internet. But then, those millions of users were not exclusively the academics and researchers the web had been designed for. Increasingly, they were also home computer users; business computer users; the uninitiated; the uninvited; the riffraff. Mosaic had become the most successful project in computer science by leaving the computer scientists behind and appealing to the mainstream. *Fortune* magazine named the Mosaic browser one of its products of the year (alongside the Wonderbra and Mighty Morphin Power Rangers), writing, “This software is transforming the Internet into a workable web . . . instead of an intimidating domain of nerds.”<sup>20</sup>

As these things tend to go, the popularity of Mosaic, and the nerd celebrity of the Mosaic team especially, started to create friction within the NCSA. The higher-ups at the center had originally thought of Mosaic as just another software project, very much fitting into their larger purview as a computing



research institution. But, over the course of 1993, the status of the Mosaic browser project changed; it became a major NCSA priority. At first the NCSA bigwigs didn't seem to "have any clue who we were, and we liked it that way," said Jon Mittelhauser, but once Mosaic took off, "We suddenly found ourselves in meetings with forty people planning our next features, as opposed to the five of us making plans at 2 AM over pizzas and Cokes. Aleks, who had basically done the Mac version [on his own], suddenly found out that there were three or four other people working on it with him, according to the NCSA. And they were like his bosses, telling him what to do."<sup>21</sup>

Chris Wilson was another of the NCSA student programmers who would later go on to work at Microsoft and develop the first Internet Explorer browsers. "I think that Marc and some of the other guys there really wanted to see NCSA just drop everything else like a hot rock and go totally support the web and scale up to do it," Wilson says. "If you were in a startup and you saw one of your products getting so much attention and having so much potential, absolutely you'd figure out how to do that, right? You'd go mortgage your house."<sup>22</sup>

In fact, the Mosaic team already was functioning like a software startup in all but name, while the NCSA was still thinking of the browser as a glorified research project. Increasingly, this conflict in vision extended to the very structure of the core team of programmers. The part-time student coders were muscled out as the higher-ups assigned seasoned, full-time employees to the project. It was suggested to Andreessen especially that, for the good of the project, he should step aside and let more experienced hands take over. "Don't you think it's time to give someone else a chance to share the glory?"<sup>23</sup> he was asked.

In December of 1993, Mosaic and the web made the front page of the *New York Times*. NCSA director Larry Smarr was pictured and quoted: "Mosaic is the first window into cyberspace," he said.<sup>24</sup> Neither Marc Andreessen nor anyone else on the Mosaic team was even mentioned.

"[Andreessen] had to lead at NCSA," says Aleks Totic. "And if he couldn't lead, he had to leave."<sup>25</sup>

Andreessen was due to graduate that same December. He didn't even bother to pick up his diploma. By the end of 1993, just a year after launching the Mosaic browser, Marc Andreessen was in Silicon Valley looking for work.

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THE SILICON VALLEY that Marc Andreessen found himself in by early 1994 was

actually at a historical low ebb, considering what was in store. The short but sharp recession of 1990–91 hit the technology industry hard. PC shipments fell by 8% in 1991, the first such drop in recorded industry history.<sup>26</sup>

“I thought I had missed the whole thing,” Andreessen would later say of his arrival in California. “The overwhelming mood in the Valley when I arrived was that it was done. The PC was done, and by the way, the Valley was probably done because there was nothing else to do.”<sup>27</sup>

Forget the Valley, in 1994, what was the something else that Marc Andreessen could do? To us now, the answer is obvious: form a startup; get venture capital backing; release a product; gain millions of users; go public; become a billionaire. This is only the obvious path to modern minds because of the “something else” that Marc Andreessen would do in 1994: cofound Netscape, the first true Internet company, the first real “dot-com.” At the time, there was no template for Marc Andreessen to do a web startup, because Marc Andreessen hadn’t created that template yet.

“I had some idea that I wanted to be part of a new company,” Andreessen says, “but I didn’t even know what a VC [venture capitalist] was.”<sup>28</sup>



JIM CLARK IS FAMOUS in Silicon Valley history for having founded three different billion-dollar companies. By the beginning of 1994, Clark was just departing billion-dollar company number one: Silicon Graphics (SGI). Jim Clark’s tenure at Silicon Graphics was not ending on a happy note. Despite being the founder, despite being largely responsible for the development of modern computer-aided design and computer graphics (those dinosaurs in *Jurassic Park*? You can thank Silicon Graphics for those), despite turning SGI into a multibillion-dollar publicly traded enterprise, Clark found himself edged out of his own company.

And that wasn’t the worst of it. What really stuck in Clark’s craw was the fact that he wasn’t filthy rich. Clark believed he had built SGI into a technology powerhouse that rivaled the likes of Microsoft and Oracle. And yet, he had nowhere near the wealth of Bill Gates or Larry Ellison to show for it. The need to raise venture capital in the early years of SGI’s development had repeatedly diluted Clark’s ownership share so that, despite Silicon Graphics’ billion-dollar valuation, Clark had a net worth of only about \$20 million. He had billionaire envy.

Clark told SGI and the press that he wanted to start a new company. He resolved that this time he would do things his way, and he would hold on to enough equity to become a billionaire. The trouble was. Clark didn’t know what

his new company would do, exactly. He had some vague ideas about creating software or hardware for interactive television, what was being called the information superhighway. The information superhighway was supposedly the next big thing, and that was exactly what Clark wanted to be a part of. He even went so far as to have exploratory meetings with companies like Time Warner and Nintendo. After all, if interactive TV was the next big thing, then you could do worse than have the founder of Silicon Graphics helping you build the set-top boxes.

But really, Clark was just casting around for anything that would give him a second act. And this meant that he was open to ideas. Any ideas. He turned to his friend Bill Foss, a veteran Silicon Valley engineer; did Foss know anyone smart Clark could talk to?

“Well, what about Marc Andreessen?” Foss asked Clark. “He just moved to Palo Alto from Illinois.”<sup>29</sup>

By way of explaining who Andreessen was, Foss loaded a version of the Mosaic browser onto Clark’s computer. Clark must have been impressed; shortly after his first session using Mosaic was over, he sent the following note to Andreessen’s personal email address:

Marc:

You may not know me, but I’m the founder and former chairman of Silicon Graphics. As you may have read in the press lately, I’m leaving SGI. I plan to form a new company. I would like to discuss the possibility of your joining me.

Jim Clark.

Sometime in early 1994, Jim Clark and Marc Andreessen met at 7 A.M. at a coffee shop in Palo Alto called Caffe Verona. Andreessen had found a job at a Palo Alto–based company named Enterprise Integration Technologies, working on Internet security products. Even while gainfully employed, Andreessen certainly knew who Jim Clark was, and he was very interested in whatever new venture he might be cooking up.

Andreessen would later remember that it was the first time he had been up that early in several years. Clark told him that he was looking to start a new company. He didn’t know what kind of company it would be yet, but he was looking for people to help him figure it out.<sup>30</sup> Clark must have been impressed with Andreessen, because he invited the young engineer to join a small group of Clark’s trusted associates, including Bill Foss, who would meet on a regular basis at Clark’s house to kick around ideas.

During one such contab, at about one in the morning in late March 1994, Clark said to Andreessen simply, “You come up with something to do and I’ll invest in it.”

“Well, we could always build a Mosaic killer,” Andreessen told him.

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MORE THAN ANYONE ELSE in the world, Marc Andreessen knew that the next big thing was the World Wide Web. The information superhighway might have been what all the smart, big money people like Clark thought was going to be next, but Andreessen understood that Clark didn’t have to chase dreams of interactive TV or cut deals with cable companies—the future was already here, and millions of people were already using it.

It came down to simple numbers. Andreessen showed him that users of the web were doubling every few of months at that point—absolutely exponential growth. Clark didn’t know how someone could make money off that growth exactly, but he figured with numbers like that, there had to be a way. Andreessen had proven with Mosaic that a web browser was a pretty darned good way to piggyback on that growth explosion. As Clark came around to this point of view, the notion that thrilled him the most was the idea that they could pounce on this opportunity first. Let the rest of the world develop the information superhighway. He and Andreessen would deliver it before anyone else was any wiser.

What would eventually become Netscape was formally incorporated as Mosaic Communications Corporation on April 4, 1994. The first order of business was locking down a software team capable of coding a better browser. Andreessen had been careful to keep in touch with his former colleagues back in Illinois, so it was just a matter of getting the band back together.

“Marc basically sends mail, says, ‘Hey, I met Jim Clark. He’s a cool guy. He’s looking to start up a company. And I’m talking with him about what we should do,’ ” says Jon Mittelhauser.<sup>31</sup>

“One thing led to another,” remembers Aleks Totic. “And he said, ‘We’re not going to do a Nintendo network, I think we’re going to do the web.’ ”<sup>32</sup>

Clark and Andreessen flew back to Urbana-Champaign and checked into the University Inn. They met their quarry (the original Mosaic team: Eric Bina, Aleks Totic, Jon Mittelhauser, Rob McCool, plus two additional outside engineers, Chris Houck and Lou Montulli) at a pizza place near the University of Illinois campus. Clark offered the men identical \$65,000-a-year salaries, one week’s paid vacation in Tahiti on Clark’s own yacht, and, more important,

100,000 shares of stock in the new company.

“So, we go out to this place and they’re basically like, ‘Yeah, let’s do Mosaic, except let’s make a company out of it,’ ” says Rob McCool. “He [Clark] has this Jedi Mind Trick speech where he brings us all upstairs and we all come down saying, ‘Yes, we’re going to make a company! It will be great!’ ”<sup>33</sup>

Clark told the team: “Within five years, if things go the way I hope they will, it is my objective that you make over ten million [dollars].”<sup>34</sup>

Clark typed up identical agreement letters on his laptop and had them printed on the University Inn’s fax machine. The whole team signed on and retired to a bar named Gully’s to celebrate.

“We didn’t really know much about Jim Clark,” says Aleks Totic. “But we trusted Marc. He gave us all these papers to sign. We just met him for one night. Next morning, we all walked in and quit. That was on Thursday. On Saturday, we were in California picking out apartments.”<sup>35</sup>

Today, recent college graduates from around the world dream of heading to Silicon Valley and finding their fortune. The original Mosaic crew was the first to make this journey. They didn’t know they were the vanguard of a newfangled gold rush. They were, literally, corn-fed midwesterners. They were used to making six bucks an hour for their coding and had little inkling that software development could pay much more than that. When Jim Clark dangled a high-five-figure salary in front of them, they almost thought he was joking.

But the midwestern kids showed up in California to find that 11,699 square feet of real office space had been secured for them above a Mexican restaurant at 650 Castro Street, the main drag in the town of Mountain View. Work quickly commenced on a new web browser that would be better than Mosaic. Mac, Windows and Unix versions of the new browser would be developed simultaneously. The browser code and the server code would be rewritten, with a focus on greater speed, greater stability and better features. In other words, this was to be a proper product, not just a research project.

Their first effort had been a bit of a hobby, a lark project. At the NCSA, “we were students; we were just having fun,” Mittelhauser recalls. “We had no thoughts about quality, really. That was the coolest thing about doing Netscape after Mosaic. We literally started from scratch and were able to avoid many of the same mistakes (while of course making new ones).”<sup>36</sup> This time they would do it better and get it right. All hands were tasked with speedily producing what the team of young coders had dubbed “Mozilla,” suggesting that the new browser was a monster set to devour their previous brainchild, Mosaic.



THE COMPANY THAT WOULD BECOME Netscape was the first web company, the first true dot-com. In so many ways, it blazed a trail and set a template for what we think of as a modern technology startup. Details we take for granted about the modern tech industry can trace their roots to the Netscape story, whether accidentally or by design. One of the ways this manifested was in the corporate culture of the young company. Everything was about speed, about what Jim Clark would call “Netscape Time,” but would later be widely adopted by the media as “Internet Time.” For most of the twentieth century, the “product cycle” was something that happened in a comparatively leisurely, plodding, measurable pace. But as has become common to the point of cliché over the last twenty years, in the Internet Era, change—whether to products, industries or entire economies—would come literally overnight.

With Mosaic, the NCSA kids had stumbled upon something that truly represented a new method of software development, a new ethos for product development. Software, at the time, meant floppy discs or CDs sold in cardboard boxes at retail. Jim Clark came from the world of machines and hardware, where development schedules were measured in years—even decades—and where “doing a startup” meant factories, manufacturing, inventory, shipping schedules and the like. But the Mosaic team had stumbled upon something simpler. They had discovered that you could dream up a product, code it, release it to the ether and change the world overnight. Thanks to the Internet, users could download your product, give you feedback on it, and you could release an update, all in the same day. In the web world, development schedules could be measured in weeks.

It was this new paradigm for product development, more than anything else, that was Netscape’s first contribution to the modern idea of “a startup.” Marc Andreessen described it this way: “You keep kicking versions out the door, making them better. Any individual product is less important than the basic idea. If a beta turns people off, you put out a beta that turns them back on.”<sup>37</sup> Jim Clark eagerly embraced this new way of doing things. “You didn’t build some physical thing, move it down an assembly line, box and shrink-wrap it, and stick it on a store shelf,” Clark wrote in his autobiography. “You conceived of it in your head, produced it in a computer, and tossed it up for grabs on the Net.”<sup>38</sup>

This new paradigm demanded an almost 24/7 work schedule, another now ubiquitous feature of Silicon Valley that Netscape would enshrine. During the period of the new browser’s development, a young programmer named Jamie



Zawinski regularly posted to an online diary. These entries (which would be considered blog posts today) captured what it was like to be a member of the team. He described working for as many as thirty-nine straight hours, catching catnaps under the desk in his cubicle, missing meetings because of fatigue, hoping to catch his “second or third or eighteenth wind.”<sup>39</sup>

Software engineering has always been a pursuit that lends itself to intense bouts of work, long bursts of productivity when you come up for air and realize you’ve been coding for days straight. In a way, we can’t blame Netscape for the high-intensity template that it would bequeath to our collective understanding of startups. Even though so many of the breathless news clippings from the time focused on the all-nighters and the frat-house hijinks of the Netscape offices, these were, after all, young men fresh out of college. That’s just what they knew.

“We [were] working around the clock because that’s what you used to do before,” says Aleks Totic. “Four years later, five years later, the entire valley [would] be living the same lifestyle. But those people actually have lives. We really didn’t have any lives outside of the office so of course we’re going to be at the office all the time! I mean, I had no furniture. Why should I ever go home?”<sup>40</sup>

Lou Montulli says, “The press just take what they think is most interesting, juicy and fascinating out of their limited time and they publicize that. Especially post-Netscape, in 1998, 1999, every startup was trying to do the things they read about in magazines.” Montulli admits that his own schedule was inhuman at the time. “I would catch about four or five hours of sleep at the office . . . wake up and do another 20 hours and then go home and sleep for about 12 or 15 hours and then start the whole cycle again. I wouldn’t recommend doing that to your average startup. Unfortunately, a lot of startup people think that that’s the way it should be done because of all the publicity we had.”<sup>41</sup>

Other features that now define Silicon Valley startups include the informal working environment and the insane perks that companies seem to dole out freely. Netscape pioneered this informal work culture as well, but in retrospect you have to wonder if it was all just a matter of motivating twenty-something male software engineers.

Netscape had foosball and air hockey and networked computer games and anything else postcollege bros thought was cool circa 1994. The most notorious intracubicle competitions were the bouts of chair football, gladiatorial contests pitting contestants against each other while riding atop their rolling desk chairs. Chair football was brutal, and sometimes even bloody. “We probably took out



about ten chairs [because of] that game,” recalled Bill Foss, who had joined the company as an advisor.<sup>42</sup>

“There was a huge movement to play multiplayer Doom [in the office],” remembers Rob McCool, referencing the then-popular first-person shooter video game. “It got to the point where they started having to threaten disciplinary action; making policies of no gaming before 5 P.M. and that kind of stuff.”<sup>43</sup>

One person who was seldom participating in any of these hijinks was Marc Andreessen. Nor was he participating in the all-night coding sessions. Now, in California, at a real company, developing a real product, Andreessen’s role was different. Jim Clark had made good on his offer to build a company around Andreessen’s ideas. From the earliest days, Andreessen was referred to as the new company’s cofounder.

Andreessen had been dragooned into becoming the public face of the new enterprise. Rosanne Siino, a PR manager who had followed Clark over from SGI, knew she had a good story on her hands. “I thought, I’ve got the Internet, which is hot; I know I can make a big deal out of that. I’ve got Jim Clark, who is hot,” Siino remembers. “And then I’ve got this twenty-two-year-old wonder kid. No matter what, it’s going to get a lot of coverage.”<sup>44</sup> Soon, Andreessen and Clark were being featured like a dynamic duo in articles like *Fortune* magazine’s “25 Cool Companies” list. *Fortune* dubbed Andreessen “the hayseed with the know-how.”<sup>45</sup> The *San Jose Mercury News* featured Andreessen in an article titled “He’s Young, He’s Hot, and He’s Here.” Toward the end of 1994, *People* named Andreessen one of its “Most Intriguing People,” alongside a young golfer named Tiger Woods.<sup>46</sup>

At the same time, Andreessen and Clark were settling upon the business strategy the new company would pursue. To this end, the pair increasingly looked to the obvious inspiration at that time: Microsoft. Microsoft’s operating systems had a monopoly hold on the personal computer market. DOS and Windows were the platforms that the vast majority of the computer world had to build off of and exist on. If you were a programmer and you wanted to create a program that would reach the greatest number of users, then you worked with Bill Gates’s platform. Sometimes that meant paying a toll to Gates, and sometimes it didn’t. But either way, you played ball with Microsoft or you found yourself and your program relegated to the hinterlands of the computing world.

Andreessen and Clark began to think of the web browser as a sort of platform for the web. Why couldn’t the web browser be the DOS/Windows for the Internet? The key was to become the market standard, which meant being

first. But becoming a platform also meant enticing developers to develop for your platform. Almost from the very beginning, Andreessen and Clark wanted their web browser to enable an ecosystem that other programs, and even other companies, could be built off of. Throughout its life, Netscape would embrace open-source culture and practices. If they were the first browser to introduce support for an innovation, they didn't make that advance proprietary. They allowed the new feature to be used by others, hoping it would become standard, and hoping they would get credit for the innovation and for being first. A good example of this was the Secure Sockets Layer (SSL) technology, which Netscape would pioneer. This is the encrypting technology that makes secure interactions on the web possible. Netscape's browser would be the first to feature this technology, but Netscape left the underlying standard free for others to use and support. This open attitude toward the technology is what allowed the first ecommerce activities to begin flowering across the web. Netscape benefited as the underlying platform that was the most trusted and valued by users. Netscape also eagerly supported and incorporated the advances of others—for instance, the Java programming language when it emerged. Netscape would even encourage others to build add-ons and plugins that would interact with Netscape's own software, adding features and functions that Netscape itself couldn't dream up.

Throughout the Internet Era, company after company would become obsessed with the idea of creating or owning a platform. If you are a platform, you can create an ecosystem of developers and software and apps all dependent on the underlying platform. To own a platform is to own the ball field, the rule book, the turnstiles, and the broadcast rights. Netscape did not originate the obsession with platforms, but it would provide the template.

While he and Andreessen were busy hashing out product and strategy, behind the scenes Clark was busy forming a company that would be ready for the big leagues. Experienced engineering managers were brought in to oversee the development team. Clark knew he wanted a world-class CEO (he himself was content to be chairman of the board), and he swung for the fences, setting his sights on Jim Barksdale, the much-in-demand former vice president and chief operating officer at FedEx, and currently the CEO of McCaw Cellular.

Clark also raised capital for the company, though he put that off as long as he could. Having been burned by his SGI experience, for many months Clark funded operations out of his own pocket, keeping a firm grasp on his sizable equity stake. When the time finally came for investment, Clark's reputation secured funding on very favorable terms from the premier venture capitalist in Silicon Valley, John Doerr, a partner at Kleiner Perkins Caufield & Byers.

SILICON VALLEY, JOHN DOERR, a partner at KLEINER PERKINS CAULFIELD & BYERS. Kleiner Perkins (as the firm is generally known) had directed venture capital funding for such early technology giants as Compaq, Intuit and Sun Microsystems, and Doerr himself would go on to fund web companies such as Amazon and Google, among many others, in the coming years.

The people were in place. The funding was in place. The browser was deep into development. The final question was an important one: how to make money? Andreessen and Clark eventually settled on a seemingly radical strategy: the product would be free. Well, in a winking, knowing sort of way. Upon release, the web browser would be available for anyone to download so-called beta versions (“beta” means an early version of the software; a work in progress). However, if you wanted to own the standard version of the software—the final one, with all the bells and whistles and customer support—it would cost \$39. (Even this was fungible. Anyone would be able to download the full version of the software on a trial basis for ninety days. After that, you were supposed to pay up.)

“At the time, it was a crazy idea, to build this software but just give it away,” says Rob McCool. “They were going to give away the browser and charge a lot of money for the server.”<sup>47</sup>

“Essentially, the razor and razor blades model,” says Netscape engineer Lou Montulli.<sup>48</sup>

This was a savvy move. At the time, everything on the Internet was free. If he wanted to be among the first to ask users to pay for web-based software, Andreessen knew he had to tread lightly. The idea was to hook users on the free beta version, and then to ask them to pay up for the finalized product, a “pro” version. If corporations wanted to get into the act, they would have to pay up—to the tune of thousands of dollars—for the servers to make the web work within their organizations. Being free would help the browser gain market share, which was the sine qua non of his platform strategy. If the new browser could quickly match Mosaic’s then 90% market share, then they would become the de facto standard that all other browsers would be measured against.

“It’s basically the Microsoft lesson, right?” Andreessen asked. “If you get ubiquity, you have a lot of options, a lot of ways to benefit from that. You can get paid by the product that you are ubiquitous on, but you can also get paid on products that benefit as a result.”<sup>49</sup>

For his part, Clark’s overarching imperative remained speed: speed of development, and speed to market. Clark was impatient, but he also believed that this was a once-in-a-lifetime market opportunity—if they could only get big

enough fast enough, problems like “making money” would take care of themselves. But they had to be first to market—or at least, second to market. Mosaic was still a glorified research project that could be usurped by a more polished product. At least, that was what Mosaic was for the time being.



THEY WERE RIGHT TO HURRY. In May 1994, the original NCSA Mosaic browser code was licensed to a company named Spyglass, Inc., which had been formed to commercialize NCSA technology. It turned out that by poaching their student workforce, Clark and Andreessen had awoken the NCSA to the financial value of the web browser as a product. Spyglass would use the NCSA’s technology to begin a lucrative business creating browsers and licensing them to various outside companies.

At around the same time, the University of Illinois threatened to sue on the NCSA’s behalf, claiming that the new browser was being built using Mosaic’s original code. It also hadn’t escaped the university’s notice that Clark and Andreessen’s company had originally called itself *Mosaic* Communications. In a preliminary attempt to appease the university and avoid litigation, the name of the company was changed to Netscape, and the programmers submitted to what amounted to a forensic auditing of their work, despite the fact, as Jon Mittelhauser says, “We didn’t *want* to take any of [the old Mosaic] code, that’s the thing! We *wanted* to start from scratch. We wanted to do it right.”<sup>50</sup>

As this was going on, on October 12, 1994, the marathon sessions of hard work in Mountain View paid off. A beta version of the new web browser, version 0.9 of a program eventually called Netscape Navigator, was made available on the web for anyone to download at midnight.

“When we announced it on [the WWW-Talk message boards, the same place the Mosaic browser had been launched] we had a different sound effect for different downloads,” Aleks Totic recalled. “We’re all sitting in this room, listening for the sounds and as soon as the email goes out there’s some guy in Australia trying to download it and you hear the smashing glass. Then a couple of minutes of silence. And then a cannon. And it started getting faster and faster. We were all just sitting there drinking beer and coding a little bit and listening. And within like five or six hours there was just a cacophony of explosions and croaks and lightning and cannons. Because people were downloading it from all over the world and we’re like, ‘OK. We’ve got something.’ Everybody loved it.”<sup>51</sup>

Netscape Navigator was a generational improvement over the other browsers

then available. Navigator was fast, even working under the constraints of the slow modem speeds that were standard at the time. By some measurements, Navigator could load a webpage ten times faster than Mosaic. Early reviews from users and from the media were rapturous. *Businessweek* said that Navigator could “make the Internet a mass medium for home shopping, banking and a host of other services.”<sup>52</sup>

Over the next few months, beta versions, and then the official 1.0 version, were downloaded about 6 million times.<sup>53</sup> The Navigator browser quickly gained a reputation for being fast, stable, and feature-rich. It included so many web innovations that weren’t supported by existing browsers that a unique new phenomenon began. Website after website on the still immature web started posting little buttons that read “Best viewed in Netscape Navigator” with a link that sent you to the download page. Just as had happened with Mosaic, webmasters and web creators wanted to show off the cool new things that Navigator allowed them to do, so they steered their users to the new browser organically.

It was estimated that 20 million people were on the Internet at the time of the beta release of Navigator. This represented amazing growth in the eighteen months since Mosaic’s own beta release. In what felt like no time, Navigator quickly eclipsed Mosaic: at the start of 1994, the original Mosaic and its variants controlled 95% of the web browser market. By the end of October, a mere two weeks after release of the beta version, Navigator had captured 18% of the market, and by early 1995, Navigator was used by 55% of web surfers. By 1996, 45 million copies of Navigator had been downloaded, representing a full 80% of the browser market.<sup>54</sup> By that point, Mosaic’s share of the browser market had shrunk to a mere 5%.<sup>55</sup>

“Now people take for granted that they’ll put out a version of something and a million copies will be downloaded in a week,” Netscape employee John Giannandrea said. “But nothing like that had ever happened before.”<sup>56</sup> As John Naughton said in his *A Brief History of the Future: From Radio Days to Internet Years in a Lifetime*, “Netscape had effectively launched an era when you could finish a product one day and have hundreds of thousands of users the next. The old era of two-year product cycles was over.”<sup>57</sup>

Indeed, no sooner was Navigator 1.0 out the door than the team started work on version 2.0. The product launches couldn’t come soon enough. The company had burned through much of the \$13 million that Clark and Kleiner Perkins had invested thus far. But the cash-flow issue would be resolved by the official arrival of Jim Barksdale as CEO

ARRIVAL OF JOHN BARKSDALE AS CEO.

Barksdale brought old-school business acumen to the young company. In the few short months that their main product left beta and existed in the marketplace for the first time, Netscape was on track to do \$3 million in revenue for the first quarter of 1995. But Barksdale quickly discovered that he could do better. Early in his tenure, he sat down with Bill Kellinger, who ran the sales department. At that point, the sales team consisted of three overworked phone representatives who were handling more than a thousand calls a day. When Kellinger showed Barksdale these call-volume numbers, the new CEO was aghast. In effect, Netscape was turning away paying customers because there weren't enough people to answer the phones. "If I give you more people," Barksdale asked Kellinger, "how much more revenue can you do?" Kellinger figured that if he put another three people on the phones, making a total of six, he could triple Netscape's revenue. "You mean you can do nine million dollars in the second quarter?" Barksdale asked incredulously.<sup>58</sup>

Kellinger got his extra phone reps. Second-quarter sales reached nearly \$12 million.

Where were these sales calls coming from? Well, corporate America, just as Marc Andreessen had hoped. The "sort of free" strategy backed up by official licenses was paying off.

"We could look at our server logs and we could tell who was coming in and using the browser," says Jon Mittelhauser. The sales and marketing team examined those logs and would say, " 'Oh, Oracle has 20,000 people using.' Call up the IT guy at Oracle and say, 'You've got 20,000 unlicensed copies, you owe us X dollars.' We were making millions of dollars off of browsers."<sup>59</sup> Browsers that were ostensibly free.

By the end of 1995, Netscape would collect approximately \$45 million in browser revenue alone.<sup>60</sup> This growth forced the young company's human resources department into overdrive, as the head count topped 250 by the summer of 1995. It would double that number by the end of the year. Based on the impressive growth statistics, CEO Barksdale was able to rustle up a second, \$17 million investment round that included publishing companies Knight Ridder, Hearst and Times Mirror, as well as the cable company TCI. Netscape was valued at \$150 million. Barksdale also put the legal issues with the University of Illinois to bed by settling out of court. Netscape agreed to pay the university \$2.2 million in damages, with an additional payment of \$1.4 million depending on future business deals. The university split the money with Spyglass, the Mosaic licensee. Netscape offered to pay with shares of the

company in lieu of cash, but this was rebuffed. That refusal would cost the University of Illinois tens of millions of dollars when Netscape had its initial public offering.

And an IPO was definitely coming. In May 1995, Spyglass filed to go public. That was all the impetus Jim Clark needed: at the June meeting of Netscape's board of directors, he began agitating for Netscape to do its own IPO, and the sooner the better. CEO Barksdale and the chief financial officer, a former Morgan Stanley banker named Peter Currie, weren't so sure. The traditional rule of thumb was that a company didn't go public until it had three years of solid revenue growth; Netscape only had two quarters of any sort of revenue at all. It was also tradition for a company to show at least three quarters of profitability before an IPO; Netscape was on track to see profitability, but not until the end of the year. *And then* there was the small fact that the company wasn't even a year and a half old at that point. When Clark's own Silicon Graphics had gone public in 1986, it had been in business for five years!

Jim Clark wasn't concerned with any of these traditional measuring sticks. At his urging, Netscape filed papers for an initial public offering on June 23, 1995, four days before Spyglass's debut on the markets. Clark reasoned that Netscape had majority market share in a young software market that seemingly had nothing but growth in its future. A user base of more than 5 million had to have some value to Wall Street. And software companies were the darlings of Wall Street at the time. Software is a high-margin business; a hit software product can be a gold mine, and investors were eager for a new breed of startups.

Netscape was not the first company to go public without significant profits (or even revenue) to speak of. Speculative enterprises like mining, energy and pharmaceutical companies often IPO early in order to raise money on the promise of a big score sometime in the future. But Netscape was the highest-profile of a new breed of company that was looking to profit off the promise of the Internet. The splash would popularize the notion that the web and the Internet were new markets of unusual possibility and unique prospects. The web could potentially be a motherlode of a marketplace, and because of this, Internet companies would be held to different standards of valuation. In the dot-com frenzy that would follow, numerous IPO candidates could and would point to Netscape as a company that had gone public with zero revenues, only to ride the parabolic growth of the Internet to hundreds of millions in revenue in a few short years. Just as important, Netscape made it okay to go public even if you were only a few months old. Better to raise all the money you could and grab as much market share as possible before competitors could beat you to it.



Another key enabler of the Netscape IPO was the fact that Wall Street was buying into Marc Andreessen's platform strategy. The investing community believed Navigator was building a platform on the web, and therefore, Netscape could become the next Microsoft. "A lot of people had missed out on the Microsoft IPO because they didn't believe in PCs" said Frank Quattrone, a Morgan Stanley banker who would help take Netscape public. Buying Netscape stock as soon as it IPOed was, in a lot of people's estimation, a once-in-a-lifetime chance to jump on board the Microsoft of the next technology era.<sup>61</sup>

Every IPO is preceded by what is called a "road show," where the principals in the firm go around the country pitching their company as an investment to stock analysts, investors, mutual funds, pension funds and the like. Netscape's road show was like the world tour of a pop star. In New York, people were turned away when a 500-person ballroom was filled to capacity. Many in the crowd showed up not to ask questions about the company, but to find out more about the Internet in general.<sup>62</sup>



THE AUGUST 1995 NETSCAPE IPO was the biggest thing Silicon Valley had seen in a while. For the first time in years, there was fire in the Valley again. Netscape seemed to have bottled it, and Wall Street was ready to buy it.

The morning of the IPO, Jim Barksdale had given strict instructions that Netscape employees should not discuss the stock price and should instead keep working like it was business as usual. When Jim Clark got into the office that morning, he noticed that his own personal assistant had ignored the injunction and put a live electronic ticker tape above her desk. Clark decided not to reprimand her (she was a shareholder too, after all).

"It was exciting," remembers Jon Mittelhauser. "We yelled and screamed and all that stuff. Then an hour later we were back to work. Because none of us really understood what was going on. And all of us had something we were in the middle of doing."<sup>63</sup>

For his part, Marc Andreessen wasn't even awake. He had been up until three the night before, working. When he woke up at 11 A.M. Pacific Time and logged in to Quote.com, the stock was finally trading, so he missed all of the drama of the delayed open. "Then," Andreessen remembered, "I went back to sleep."<sup>64</sup>

Andreessen went back to sleep a multimillionaire. A few short months later, when Netscape's stock price peaked at \$171 a share, more than six times the

price at the IPO, so were all of those “kids” from the NCSA basement. Their 100,000 shares apiece were worth almost \$17 million, more even than the \$10 million that Jim Clark had promised. By that point, Clark’s own 20% equity stake in the company meant that he had achieved the billionaire status he had coveted for so long.

Netscape was Clark’s second billion-dollar company, after SGI, but it wasn’t just the bigwigs who were getting rich—it was the engineers and the secretaries as well. In his rush to go big and hire big, Clark had been generous with everyone he wanted to recruit. Here was the start of the cherished dot-com-era idea that all you had to do was pick the right company and get in early enough—so that even you, a lowly engineer, could make millions of dollars off of stock options. Netscape started the gold rush for everyone and everything, for engineers, for IPOs, for stocks, for cockeyed business plans. More than anything, the speed of Netscape’s ascent shocked people. It had taken twelve years before you could begin to talk about all the millionaires Microsoft had minted. Netscape had done it in fifteen months. Wall Street and Silicon Valley had learned a valuable lesson; the web and the Internet in general was the Wild West, a land grab. The key was to get established first and dominate your market before competition could even notice. Andreessen’s platform strategy seemed to be a proven concept. Early profits were not important at all. Revenue was important, but not entirely a requirement. The more valuable thing was to show a sense of “Netscape speed,” the ability to be nimble and a willingness to chase markets and market share; to sense your moment of opportunity and be willing to go after it immediately. As the journalist and author Michael Lewis described it later, “You had to show that you were the company not of the present, but of the future. The most appealing companies became those in a state of pure possibility.”<sup>65</sup>

Netscape had made entrepreneurship cool in America for the first time in a long time. For most of the previous few decades, kids aspired to be rock stars, athletes, or maybe astronauts (and stockbrokers, briefly during the 1980s). But few people had thought that starting a business could turn you into a rock star, let alone provide a decent path to fabulous wealth. All of a sudden, here was a high-profile Cinderella story wherein a bunch of college kids had taken a chance, gotten rich, and become—to the financial press at least—famous. Andreessen’s *Time* cover story ran on February 19, 1996. Fourteen years earlier, on February 15, 1982, the *Time* cover boy had been a twenty-six-year-old tech superstar named Steve Jobs. The headline in 1982 read: “Striking It Rich.” It signaled to the world that the first Silicon Valley revolution/gold rush was in full

swing. In 1996, Andreessen was pictured barefoot and snarling (or yawning, depending on your interpretation) sitting under the headline: “The Golden Geeks.” For those who were listening, and for those of a certain technological persuasion (and perhaps for those of a certain age), the message was loud and clear: a new revolution was on, and a new gold rush. Netscape laid the groundwork for the cult of the entrepreneur that is still with us today, and an entire generation took notice.

Significantly, the Netscape story wasn’t all hype. In eighteen months, Navigator reached an installed base of 38 million users.<sup>66</sup> From \$17 million in revenue at the time of the IPO, Netscape would surge to \$346 million in sales the very next year, 1996, and \$533 million in 1997.<sup>67</sup> In three years, Netscape grew revenue to levels that it had taken Microsoft almost fourteen years to reach. By some measures, Netscape was one of the fastest-growing companies in history. People believed that Netscape *would* become the next Microsoft, the colossus of the new, coming Internet Era. A browser like Navigator would be the Internet’s operating system, replacing the old PC operating systems like Windows. Navigator 2.0, appearing shortly after the IPO, integrated email and newsgroup features, and added support for plugins, which allowed third parties to integrate ever more sophisticated features. Navigator was now, as one Netscape product manager put it, “a real platform that people could actually write applications to.”<sup>68</sup> It was Microsoft’s tried-and-true platform strategy, but for this whole, new, limitless digital realm. The press was already calling Marc Andreessen “the new Bill Gates.”

There was just one problem. Why would Bill Gates willingly cede his throne atop the technology industry? Why would he allow his platform to be supplanted by a new one without a fight? In fact, one final but key reason Netscape had raced headlong toward an IPO was that Netscape management was terrified of Microsoft. They knew Netscape had to get as big as it could and gain as much market share as possible before Bill Gates and Microsoft woke up to the Internet in general and the potential of the web browser market in particular. In his autobiography, Clark likened Gates to the evil Lord Sauron from *Lord of the Rings*, “whose all-seeing eye searched ceaselessly for any threat to his tyranny.” As the business press beat the drum that Netscape could be the new Microsoft, Gates couldn’t help but hear of this new threat to Microsoft’s then-total hegemony. And if he had somehow missed all of these messages, Gates had to have heard a particular, infamous jab from Marc Andreessen himself. A few weeks after the IPO, Andreessen was quoted in *InfoWorld* magazine saying that Netscape would turn Windows into “a mundane collection of not entirely

debugged device drivers.”<sup>69</sup>

\* So named because Senator Al Gore introduced and championed the legislation. One could insert a joke here about Al Gore inventing the Internet, but the Gore Bill played a crucial role in the early experiments we’re about to discuss, as Marc Andreessen himself would later credit.