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## BILL GATES "GETS" THE INTERNET

## Microsoft and Internet Explorer

Netscape was right to fear Microsoft. These days, it's almost impossible to imagine how completely Microsoft dominated the computer industry at the dawn of the Internet Era. Bill Gates's company had been founded right at the dawn of the personal computer revolution. Like other pioneers of the PC era, Gates had a vision for a computer ecosystem of billions of machines, and all he wanted was for every one of those machines to have his software on them. Microsoft's corporate motto was, famously, "A computer on every desk and in every home." Early employees say that the original motto (before the lawyers advised Microsoft to tone it down) was: "A computer on every desk and in every home, *running Microsoft software.*"

By the early to mid-nineties, Microsoft's operating systems were on 70% to 90% of the computers sold around the world. This dominance meant that by 1994, Microsoft could boast a \$38.5 billion market cap; its market valuation would soon surpass longtime tech-industry standard-bearer IBM.<sup>1</sup> In the previous five years, Microsoft's annual profits, revenues and stock price all quadrupled.<sup>2</sup>

At least at first—and to Netscape's great relief—Bill Gates was not even remotely paying attention to the Internet. Almost all of Microsoft's resources were at that point being marshaled toward the development of a program codenamed "Chicago," the greatest update to Microsoft's operating system to date. Better known as Windows 95, this release would represent the absolute pinnacle of Microsoft's primacy in the tech industry.

If you had asked Bill Gates in 1994 if Microsoft was prepared for the next wave of computing, he would have said yes: that next wave would be named Windows 95. But if you pressed him further and asked about a different *kind* of computing, about something more networked and interactive—about something, in short, like what the Internet would become—he would have said, "Absolutely." But he wouldn't have used the term "Internet" to describe the future as he saw it. He might have mentioned a personal favorite acronym, IAYF (Information at Your Fingertips) or used a term like "information superhighway." As far as he was concerned, Microsoft already had that locked

up as well.



IF YOU WERE ALIVE in the early 1990s, chances are you remember the term “information superhighway.” It was bandied about in all corners of the media. It was the Jetsons-like futuristic media technology that many in various industries were convinced would change the world. You could be forgiven for assuming that the information superhighway *is* the Internet, or at least, the Internet is what the information superhighway became. But that is wrong.

The information superhighway was the fever dream of the telephone industry and the cable industry and the computer industry and even of Hollywood. The idea was that we’d all be linked together via a Frankenstein-like combination of the television and the PC. We’d be able to shop from home, and exchange video chats with each other, and rent movies on demand and receive personalized news and media based on our interests. I know. Sounds exactly like the Internet we know today. But all of this was supposed to happen on your television.

TVs were going to become interactive. More than a decade before our phones got “smart,” the tech gurus and the big-money guys were convinced that televisions would become “smart” and *that* would be the innovation that would really change everything. The colossus of the cable industry, John Malone, announced a future of five hundred channels, shopping and movies on demand. Media titans like Time Warner’s Gerald Levin predicted: “Once you digitize the material, then the consumer can summon the material at will. It’s profound: not the technology but the psychology.”<sup>3</sup> Raymond Smith, CEO of Bell South, opined, “The three principal consumer communication devices—computer, TV and telephone—are margining into one, and as they do, so too are the distinctions among once-separate business.”<sup>4</sup> On April 12, 1993, a special issue of *Time* magazine headlined: “The Info Highway: Bringing a Revolution in Entertainment, News, and Communication.”

Why was everyone so sure that television was going to be the medium that delivered interactivity to the mainstream? When Smith was asked this by *Wired* magazine, he replied: “Because that’s where the people are. You’ve got to start with entertainment,” Smith said. He simply could not envision that computer networks would be able to deliver this anytime soon. And even if they could, “you’re not going to watch television on a little monitor. You’re going to watch it on a big set. That’s what you’ll use when you want entertainment, and you’ll use the PC and keyboard when text is more important.”<sup>5</sup>

To a large degree, Bill Gates shared this vision. He came from the world of computers, but even to him, computers were still hopelessly nerdy. Television was decidedly mainstream, technologically sophisticated and, crucially, high bandwidth. Gates believed that the networked future would come via the TV because that was where the bandwidth was; 14.4 modems, clunky dial-up connections—these could not deliver the multimedia extravaganza Gates was envisioning. But high-bandwidth coaxial cable (or maybe DSL lines from the telecom companies; or maybe satellites)—could do the trick. Gates shared the vision of an interactive, smart-television world. In industry circles, Gates began to evangelize IAYF heavily as the future of all of these overlapping industries. He agreed that the living room was the logical place for this to happen. That’s where the eyeballs were and that’s where the existing infrastructure was.

Throughout the early 1990s, Gates took meetings with all and sundry, from film studio moguls to telecom executives. All of this was in aid of one common goal: making sure that no matter what the telcos, cable companies and Hollywood studios had planned, Microsoft would be a part of it. It was a repeat of the playbook that had won in computing: Bill Gates just wanted his software in every device that took up pride of place in the living room.

Gates was not alone in chasing this interactive television dream. If you read business and technology magazines from the period, all the way through the summer of 1995, the articles were all about the information superhighway, the convergence of telephony, television and computing, and which corporate conglomerate would come out on top. All around the country, hundreds of millions of dollars were poured into interactive-television initiatives. The biggest project, and the one to get the most attention, was Time Warner’s Full Service Network in Orlando, launched to 4,000 homes in January 1995.<sup>6</sup> It was made possible via hardware from Jim Clark’s Silicon Graphics, which helped build the set-top boxes. The service had movies on demand, interactive video games, print content from Time Warner’s stable of magazines, and a virtual shopping mall where couch potatoes could order items from the Sharper Image, Crate and Barrel, the U.S. Postal Service, a Dodge dealership and a local supermarket.

“I challenge anybody to say that video-on-demand isn’t what the consumer wants,”<sup>7</sup> Jerry Levin, CEO of Time Warner, declared. He could have just asked the consumer. One by one, all of the interactive TV experiments failed spectacularly. A GTE test in El Cerrito, California, was designed for 7,300 households. Only 350 ever signed on.<sup>8</sup> The bestselling item in the vaunted Full Service Network virtual mall? Not new cars or groceries, but postage stamps.

The “interactive TV” aspect of the information superhighway was largely a

bust. But this didn't concern Bill Gates too much. He didn't care who won the mad scramble to deliver this golden future: cable, telephone, satellite or other. Microsoft would sit back and let others lay the groundwork and infrastructure of a fully connected IAYF world. Once all the kinks were worked out, Microsoft would swoop in and overlay its next-era platform on top of everything and take a generous cut for doing so. It was a strategy that had worked for Microsoft time and again in the 1980s: let others do the hard work of proving a market, then come in and dominate it once the dust had settled. Various industry estimates said that true broadband wouldn't become common in North America until the turn of the century (an accurate prediction, as it turned out.) Gates believed he had time to wait. The networked world he was envisioning couldn't happen until broadband was ubiquitous. The future wouldn't happen overnight.



EXCEPT, OF COURSE, IT HAD.

It all came down to this: no one in tech, no one in media, no one from Bill Gates to Jerry Levin to Hollywood ubermogul Barry Diller had realized what Marc Andreessen and Jim Clark had realized: *the information superhighway was already here*. The Internet and the World Wide Web *were* the information superhighway. The revolution was now, and it was being delivered not by the television, but by the computer.

Part of this misjudgment was probably just generational bias. Bill Gates (born 1955), Barry Diller (born 1942), Jerry Levin (born 1939), John Malone (1941), and all the rest were baby boomers or near-boomers. They had grown up in the Age of Television. For these men, it was taken for granted that television was the apotheosis of mainstream technology, the cultural force that united all of late-twentieth-century society. Like any good computer hacker, Bill Gates had used the Internet in the 1970s and '80s. In fact, when Gates developed Microsoft's first-ever software product (a version of BASIC to be used on the Altair, the first personal computer), he had used FTP on Harvard University's computers to beam his work for storage on Carnegie-Mellon's computers. But to Gates, the Internet was like Unix: it was a technology for geeks. What average computer user could be bothered to figure out something arcane like FTP?

The Internet was not for mainstream users, as far as Bill Gates was concerned. Microsoft was a company that thrived by selling carefully controlled user experiences. Microsoft had come to prominence by making computing more mainstream and user-friendly. That was why Gates's vision for the information superhighway developed by Microsoft and its big media partners would be a safe and controlled technology, palatable to mainstream users, and

would be a safe and controlled technology, palatable to mainstream users, and above all, managed.

What Gates missed most crucially was how the latest iteration of the Internet, the World Wide Web, was different. It was, in fact, more user-friendly, and more robust than anyone realized at the time. Gates simply missed that the Internet had undergone the equivalent to the personal computer/GUI revolution that Microsoft itself had delivered in computing. The web could deliver on all of the promises of the information superhighway, and it delivered on those promises in the democratic, utopian way that so enthused early adopters of the web like Marc Andreessen. The information superhighway was interactive, sure. It let you talk back to your TV. But it didn't allow you to *create* your own television program. The web, by contrast, allowed users to consume content, and create it. Any user. Anywhere. Any kind of content. And anyone could do so outside the control of a major media corporation or gatekeepers like the cable companies or Microsoft.

A young Microsoft executive named Brad Silverberg, who joined the company in 1990, put it this way, “If you’re Microsoft in the middle of 1995, the world is pretty good! You’re king of the hill! The technology world revolves around you! Why would you ever want the world to change? Understandably, you don’t.”<sup>9</sup>

But the world had changed, and it took Gates a little while to understand this. The best illustration of this comes from the book that Bill Gates agreed to write sometime in the early 1990s called *The Road Ahead*. It outlined Gates’s own vision of the future of technology. Published in November 1995, the index of the hardcover edition had 68 references to the term “information highway,” 46 references to the term “Internet” and 4 references to the World Wide Web.

About a year later, the paperback version was released, and it had been heavily rewritten. In the paperback version of the book, “information highway” got only 39 references. The Internet, conversely, got 169. The web suddenly had 59 mentions. Why the change? Between the hardcover and paperback editions, Netscape happened.

“The Internet was the information highway everyone was looking for,” Netscape’s Jim Barksdale said. “They just hadn’t recognized it.”<sup>10</sup>

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BUT THERE *WERE* PEOPLE at Microsoft who recognized it. They were younger Microsofties, a bit older than the Marc Andreessens of the world, but generally of the same Gen X age cohort. These younger executives and engineers, in

various ways, and in sporadic, uncoordinated efforts of agitation, would begin a slow but steady drumbeat to wake Microsoft up to the web revolution. They did so in, probably, the only way that change can be made in large corporate environments: via the quiet, measured insurrection of memorandums.

James Allard, born in 1969, took it upon himself to become Microsoft's first intermediary to the net/web revolution. Before this time, Microsoft made little contribution to the development of the web and the Internet at large. Microsoft had no seats on standards committees. It had no one participating in the WWW-Talk forums. Allard began representing Microsoft at early Internet confabs, like the Internet Engineering Task Force, and made sure that Microsoft became a founding member of the Internet Society. In early 1993, Allard started an in-house Microsoft discussion group on the Internet called "inetdisc."<sup>11</sup> Out of 14,400 Microsoft employees at the time, 5 people joined. Undeterred, Allard printed a batch of Microsoft business cards that read JAMES ALLARD, PROGRAM MANAGER, TCP/IP TECHNOLOGIES.<sup>12</sup>

On January 25, 1994, around the time that Marc Andreessen was first getting to know Jim Clark, Allard wrote an internal Microsoft memo titled "Windows: The Next Killer Application on the Internet." The memo outlined the recent explosion of growth on the Internet and of Mosaic. Allard asserted that the Internet represented a great opportunity for Microsoft. "By embracing current technologies available on the Internet," Allard proposed, "we position Windows as the choice system for interactive Internet services and prepare for the shift to the native IAYF (Information At Your Fingertips) technologies offered [by Microsoft Products]."<sup>13</sup>

One of the people cc'ed on the memo was Steven Sinofsky. Sinofsky was another young Microsoftie enamored with the Internet. As the technical assistant to the CEO, Sinofsky's purview was to keep Bill Gates abreast of industry and technology trends. Also a Gen Xer and heavy Internet user in his college days, Sinofsky had given Gates a personal tutorial on an array of Internet tools as recently as October 1993, including a browsing session on the nascent World Wide Web. At the time, Gates was intrigued but not overly impressed.

At the time of Allard's memo, Sinofsky had taken part in a recruiting trip to his alma mater, Cornell. In between interviewing bright young prospects for possible employment with Microsoft, he couldn't help but notice how prevalent the Internet had become in everyday campus life. At least among these college kids, things like email, web browsers and newsgroups weren't opaque, fringe technologies. Seemingly overnight, they had become mainstream. On Valentine's Day, February 14, 1994, Sinofsky wrote a memo of his own, with

the title “Cornell is WIRED!”

Around this same time, Microsoft began hedging its bets when it came to trends in networked computing. Microsoft studied the existing consumer online services like Prodigy, CompuServe and America Online. These services had nothing to do with the Internet or the web (more on that in the next chapter) but they were training a small yet growing population of pioneers to begin to settle cyberspace. Microsoft began development of an online service of its own, a service that would eventually be known as the Microsoft Network, or MSN. It was slated to launch alongside Windows 95.

At a strategic retreat for upper-level Microsoft management on April 7, 1994 (two days before Netscape was officially founded), Gates began to entertain the possibilities of the Internet in a more serious way. “Everywhere I go, people ask me about how Microsoft will be on the Internet,”<sup>14</sup> Gates said to launch the retreat. But did this mean simply enabling Internet tools within the forthcoming Windows 95? To Gates’s mind, the biggest question of all was how Microsoft could make money on the Internet. Seemingly everything on the Internet was free. This was not a small point to overlook. Gates could see how Microsoft could make money on the information superhighway, by serving as the gatekeeper and toll collector. But the freeware, ungoverned, unsettled Internet didn’t seem to offer a similar opportunity.

Allard and Sinofsky were ready to argue these points. Sinofsky had put together a comprehensive 300-page catalog of Internet items he had collected, designed to show the breadth of what was already out there.<sup>15</sup> These curios included sites that were beginning to host not just images but also streaming and downloadable music and video. Allard followed up by evangelizing for incorporating the Internet into everything Microsoft would be doing for Windows 95.

Two weeks after the executive retreat, Gates issued a memo summarizing key talking points. Gates wrote: “We want to, and will, invest resources to be a leader [in] Internet support, fully understanding that if we are wrong about this it will have been a mistake.”<sup>16</sup> But at least they would be covering their bases.

In short order, a couple of related events would further evolve Gates’s thinking. As a part of dipping its toe in the Internet waters, the idea of a Microsoft web browser was discussed in earnest, spearheaded by a young Microsoft engineer named Ben Slivka. In August 1994, Slivka began “cataloging” key Mosaic interface features as a way of determining the basics Microsoft would need to master in order to launch a competitive browser.<sup>17</sup> At



the same time, Microsoft started shopping around for existing solutions and entered talks with a small software company called BookLink Technologies, which had a Windows-based browser called Internetworks. Suddenly, in November 1994, BookLink announced that the entire company had been acquired for \$30 million. The buyer was none other than America Online, the online service that MSN was intending to supplant.

Thirty million dollars for a browser? “That woke us up,” said Brad Silverberg, one of the executives in charge of Windows 95 development. “We had to be a lot more aggressive, a lot more lively. Time was ticking faster in this new world.”<sup>18</sup>

Moving to plan B, Microsoft tentatively reached out to Netscape to learn about their Navigator browser; maybe that could be licensed for Windows 95. Here Microsoft received another shock. Netscape rebuffed Microsoft’s overtures completely, and somewhat rudely. Netscape did not have any intention of doing business with Microsoft.

Who were these Netscape guys and what did they have against Microsoft? Why weren’t they willing to do business? It was puzzling.

And then of course came the release of Netscape Navigator itself. Suddenly, all the pieces fell into place. With the launch of Navigator came the millions and millions of downloads and all the attendant media attention. As *Fast Company* put it, “Virtually overnight, Netscape was perceived as the defining company of the Age of the Web.”<sup>19</sup> Much of the related hype Netscape received came with those pointed barbs that seemed to be aimed squarely at Microsoft. All those headlines suggesting Marc Andreessen as the next Bill Gates? That couldn’t help but turn Gates’s head.

Nothing got under Gates’s skin like discovering a software market he did not have dominant control of. Netscape had proven that web browsers were an enormous market. Furthermore, lots of people inside and outside of Netscape were already seeing what Marc Andreessen had seen: the browser could be a software platform capable of supplanting traditional operating systems like Windows. If, in the future, people could live their lives and do their work entirely online, then what would be the need for a desktop OS?

Yet another memo, this time from Slivka, still agitating for the browser project. Slivka’s missive cut right to the greatest threat that the Internet posed to Bill Gates’s vaunted business model. Its title read simply “The Web Is the Next Platform.”

On May 26, 1995, Gates wrote his own memo to senior Microsoft

executives, entitled “The Internet Tidal Wave.” It would become one of the most famous documents of the Internet Era. In it Gates announced that the number-one priority for Microsoft, in every facet of its business, was now the Internet. Every product manager should stop what they were previously doing and start considering how the Internet could affect their products, or how their products could make an impact on the Internet.

Gates was not afraid to acknowledge his past reticence. But he made clear those days were over:

I have gone through several stages of increasing my views of its importance. Now I assign the Internet the highest level of importance. In this memo I want to make clear that our focus on the Internet is crucial to every part of our business. The Internet is the most important single development to come along since the IBM PC was introduced in 1981.

And Gates made clear who the first target would be as Microsoft now changed direction.

A new competitor “born” on the Internet is Netscape. Their browser is dominant, with 70% usage share, allowing them to determine which network extensions will catch on. They are pursuing a multi-platform strategy. . . . We have to match and beat their offerings.

Microsoft would jump on the Internet in a big way, and Netscape was enemy number one. Many of the young guns inside the company who had been banging on the Internet drum for a while, wondered if it might be too little, too late. “It kind of felt like, it’s great that Bill is now finally lending support to the Internet,” recalled Brad Silverberg. “But at the same time it felt like he was the last executive in the company to come around.”<sup>20</sup> Better late than never, Internet capabilities were hastily added to the already delayed Windows 95. An extra \$1.5 billion was set aside for web research and development.<sup>21</sup> And the crash program to develop a Microsoft web browser, the key goal of Slivka’s agitation, was given the highest priority.

But with this browser project, Microsoft would have to confront, both culturally and structurally, the ways that Netscape and “Internet Time” had changed the rules of the game. Microsoft was very much used to the old methods of multiyear product development schedules. Development of what would become Windows 95 had begun way back in 1991. The program was originally to be called Windows 93, in fact. To be sure, a full operating system was a more complicated thing to develop than a web browser, but Microsoft was notorious

for spending four years on a project with multiple delays. This sort of thing simply wouldn't fly if Microsoft had any hope of challenging Netscape in the browser market.

So, Microsoft did what it had to do: it cut corners. Having lost BookLink to AOL and having been rebuffed so arrogantly by Netscape, Microsoft was forced to turn to the most logical remaining choice: Spyglass, Inc., the company approved by the University of Illinois to commercialize the original Mosaic web browser. Microsoft signed a \$2 million licensing agreement with Spyglass to use Mosaic code for Windows 95. Irony of ironies, the code that would be the basis for Microsoft's web browser (and the weapon Microsoft would soon wield against Netscape) was a descendant of the same code written by Marc Andreessen and Eric Bina a few years before at the NCSA.

The original Internet Explorer team was a commando unit of five or six programmers, including Slivka, and led by Silverberg. Their orders were to get the browser done, quick and dirty if necessary. They would follow the traditional Microsoft game plan: the first version would be a copycat product that didn't have to be great; it just had to be good enough. Subsequent versions would be better. "We needed to get something into market quickly as a placeholder," Silverberg recalled later.<sup>22</sup> Once they put their stake in the ground, Microsoft would revert to form and throw everything it had at the problem until a Microsoft browser could be truly competitive.

Bill Gates had one more favorite trick up his sleeve to level the playing field quickly. On its release in August 1995, Microsoft announced that Internet Explorer would be free. Not kinda-sorta free, wink-wink free, like Navigator was. But 100% free to anyone and everyone, even corporate users. As Gates himself admitted, "One thing to remember about Microsoft, we don't need to make any revenue from Internet software."<sup>23</sup> The intention was to bundle Internet Explorer as a component of Windows 95. Microsoft wanted users to think of Internet Explorer as a core function of Windows. It would be a routine part of the OS, just like screen savers or disc compression utilities or file managers. Internet Explorer would sit prominently on every Windows machine, a smiling blue "e" icon on every desktop that ran Windows.

This was not a small consideration. When Windows 95 finally launched on August 24, 1995 (two weeks after the Netscape IPO), it was possibly the largest product launch in history. Computer stores around the world opened at midnight and lines of eager customers queued up to be the first to nab a copy of the program. Comedian Jay Leno joined Bill Gates onstage to emcee the official launch event. ("To give you an idea of how powerful Windows 95 is," Leno

joked, “it is able to keep track of all of O.J.’s alibis at once.”)<sup>24</sup> In New York, the Empire State Building was lit up in the colors of the Windows 95 logo. And famously, the Rolling Stones were paid a reported \$14 million for the use of their song “Start Me Up” in Windows 95 commercials. All in all, Microsoft spent around \$300 million making sure that Windows 95 was a blockbuster.

Having Internet Explorer piggyback on Windows 95 was therefore a powerful strategic move. The Internet was still very young, and plenty of users would encounter it for the first time via Windows 95. The first versions of Internet Explorer were not very well reviewed, and compared poorly to Netscape Navigator when it came to features and performance. But Internet Explorer was right there automatically on every Windows machine. To get a copy of Navigator, conversely, you had to search it out and download and install it yourself—not an easy feat for Internet newbies.

After joining battle with Netscape, Microsoft copied its foe and began to iterate relentlessly. Versions 2 and 3 of Internet Explorer were developed concurrently. By Internet Explorer 3.0, reviewers were beginning to say that Microsoft had at least a competitive browser. This all had a gradual but accumulative effect on Netscape. At first, Netscape Navigator’s share of the browser market remained dominant, but Internet Explorer started making inroads, increasing from virtually nothing in 1995 to 20% in 1996 and 40% in 1997. There was little Netscape could do in the face of the Microsoft onslaught. Sentiment in the industry and on Wall Street began to turn. “Microsoft may still be No. 2 in the Internet race, but it’s rapidly closing the gap,” *PC Week* declared.<sup>25</sup>

Netscape’s entire Get Big Fast strategy had been predicated on making the Navigator browser the de facto standard before competitors like Microsoft noticed. The hope was that they could achieve a market share and a mind share that would be impossible to dislodge. But within eighteen months of setting off the big bang that announced the coming of the Internet Era, it looked as though even the head start Netscape had managed to earn might not be enough to fend off Microsoft’s muscle. “People aren’t asking anymore if Microsoft will be killed by the Internet but whether Microsoft will dominate the Internet,” a market researcher from Gartner Group told *Newsweek*.<sup>26</sup> Steve Jobs told *Wired* in 1996, “If you don’t cross the finish line [if competitors couldn’t outmaneuver Microsoft] in the next two years, Microsoft will own the Web. And that will be the end of it.”<sup>27</sup>