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A Prehistory of Social Media

Over the past few years, I've asked dozens of college students to write down, in a sentence or two, where the internet came from. Year after year, they recount the same stories about the US government, Silicon Valley, the military, and the threat of nuclear war. A few students mention the Department of Defense's ARPANET by name. Several get the chronology wrong, placing the World Wide Web before the internet or expressing confusion about the invention of email. Others mention "tech wizards" or "geniuses" from Silicon Valley firms and university labs. No fewer than four students have simply written, "Bill Gates."

Despite the internet's staggering scale and global reach, its folk histories are surprisingly narrow. This mismatch reflects the uncertain definition of "the internet." When nonexperts look for internet origin stories, they want to know about the internet *as they know it*, the internet they carry around in their pockets, the internet they turn to, day after day. Yet the internet of today is not a stable object with a single, coherent history. It is a dynamic socio-technical phenomenon that came into being during the 1990s, at the intersection of hundreds of regional, national, commercial, and cooperative networks—only one of which was previously known as "the internet." In short, the best-known histories describe an internet that hasn't existed since 1994. So why do my students continue to repeat stories from 25 years ago? Why haven't our histories kept up?

The standard account of internet history took shape in the early 1990s, as a mixture of commercial online services, university networks, and local community networks mutated into something bigger, more commercial, and more accessible to the general public. As hype began to build around the "information superhighway," people wanted a backstory. In countless magazines, TV news reports, and how-to books, the origin of the internet was traced back to ARPANET, the computer network created by the Advanced Research Projects Agency during the Cold War. This founding mythology has become a resource for advancing arguments on issues related to censorship, national sovereignty, cybersecurity, privacy, net neutrality, copyright, and more. But with only this narrow history of the early internet to rely on, the arguments put forth are similarly impoverished.

What this origin story leaves out are the thousands of people running highly local networks of personal computers (PCs) who created early online communities at a grassroots level. Because they foreshadowed the intensely personal and interactive blogs, forums, and social media platforms that emerged later, exploring how these communities developed and sustained themselves not only provides a fuller history of the internet, but offers insights into how we might build healthier online communities that are more just, equitable, and inclusive.

Birth of the modem world

Even though most people access the internet through a personal computing device such as a laptop or smartphone, personal computers—or microcomputers, as they were also known at the time—are virtually absent from the conventional telling of internet history. ARPANET, which connected a limited number of large, powerful research computers, predated consumer PCs by nearly a decade, and the internet protocols (TCP/IP) that allow computers to communicate were not widely available for Macintosh or Windows until the mid-1990s. To understand how

the internet became a medium for everyday life, we need a history that accounts for the creation of personal computer networks and their convergence with the internet.

At the core of this history is a rather strange peripheral: the dial-up modem. In the 1980s, "modem" referred to a device for converting a stream of digital pulses from a computer into an audible signal for transmission over a standard telephone line, allowing computers to relay information via telephone. But modems did not become a standard feature of personal computers until the mid-1990s, and as a result, the modem became a technology of distinction among computer enthusiasts in the 1980s. Modem owners knew themselves as a separate class of computer users, capable of traversing the emerging byways of cyberspace. The networks that they frequented came to be known, collectively, as the "modem world."

The modem world developed in parallel to the ARPANET family of networks. Whereas ARPANET was created by professional researchers in university and government labs, the modem world was driven by community-oriented amateurs and entrepreneurs—hobby radio groups, computer clubs, software pirates, and activist organizations. Despite their shared interest in computer networking, these were, with rare exception, distinct spheres of social and technical activity.

The predominant form of PC networking was the bulletin board system, or BBS. Hosted on off-the-shelf microcomputers running homebuilt software, bulletin boards systems provided a low-cost infrastructure for people interested in exploring the possibilities of online community. The earliest BBSs were populated by microcomputer enthusiasts trading technical information and chatting about their hobby. Later, they linked a more diverse group of PC owners, including communities bound together by interests and identities that were otherwise excluded from mainstream media systems. Dial-up BBSs made community networking accessible to the grassroots and the peripheries of computer culture.

Feel free to leave a message

The modem world is not without a mythology of its own. By most accounts, BBSs emerged out of the famously snowy winter of 1978, when Ward Christensen and Randy Suess created the Computerized Bulletin Board System, or CBBS, using a home-built S-100 microcomputer and a brand-new Hayes modem. Christensen and Suess were members of a local microcomputer club, known as the Chicago Area Computer Hobbyist's Exchange, or CACHE. The club's newsletter was a vital source of information—but club members had to be cajoled into submitting new articles, and there was no easy way to provide access to earlier issues. Inspired by a cork

bulletin board used for public notices at CACHE meetings, Christensen and Suess set about building an online database of newsletter articles. They installed the system at Suess's place and had it running by early February. Almost immediately, hobbyists from outside Chicago began to call in to check out the system and swap messages with one another, transforming the "computerized" bulletin board into a public forum. Within a few months, CBBS was fielding dozens of calls from around the country, and new bulletin boards had sprouted up in Atlanta and San Francisco.

CBBS was the archetypal dial-up BBS. It was a clever technical system with an accessible interface and friendly personality. The CBBS "host" computer was hooked up to a single telephone line and could handle just one user at a time. To get online, potential users needed a telephone modem and some kind of data terminal. Early on, most people called in from paper-based teleprinters, but these were soon replaced by PCs with video displays and "terminal emulation" software. Upon successfully connecting to CBBS, the user's terminal would spring to life, hammering out "WELCOME TO CBBS/CHICAGO … WARD AND RANDY'S COMPUTERIZED BULLETIN BOARD SYSTEM." The welcome message also included instructions on navigating the system and encouraged new users to call Christensen or Suess at home to report any problems with the hardware or software. They were told to jump right in: "Feel free to leave a message on any hobbyist computer related subject."

The functional simplicity of CBBS belied its power as an organizing tool for the hobbyist community. In November 1978, *Byte* magazine ran a special issue on communications featuring an article by Christensen and Suess that explained the technical architecture of CBBS and invited readers to take the system for a spin. Thousands of readers did, and soon new bulletin boards were being announced around North America and Europe. Each new BBS tweaked the core concept of the computerized bulletin board, adding features for trading files or playing games, implementing rules regarding user behavior, and expressing the local culture and personality of its owners. Most were free to use, save for the cost of placing a long-distance call. BBS enthusiasts ran their phone bills into the hundreds of dollars just to experience these novel outposts on the burgeoning electronic frontier.

Creating communities, one BBS at a time

The movement grew beyond hobbyists in 1979, when two new commercial online services launched with the hope of attracting PC owners. By the end of the year, The Source, based in Northern Virginia, boasted 3,000 customers dialing from 260 US cities. Subscribers paid an hourly rate of $15 during the day and $2.75 at night for access to international news, stock market data, real estate listings, and restaurant reviews. Meanwhile, the time-sharing firm

CompuServe Inc. created MicroNET, an online service aimed at personal computer enthusiasts. Whereas The Source emphasized access to information, MicroNET promised access to computing power. From 6 p.m. to 5 a.m., MicroNET subscribers paid $5 per hour to write and run programs on mainframe computers attached to the CompuServe network. Yet it was neither information nor access to computers that kept subscribers paying the hourly fees. CompuServe and The Source became important community spaces for early modem owners. The discussion forums, software archives, and "CB simulator" chat channels on these systems served as a kind of informal backbone to the emerging network of local BBSs.

The summer of 1983 brought the rise of a new stereotype: the tech-savvy teen. In movie theaters, the Cold War thriller *WarGames* showed its two young protagonists using a modem and microcomputer to change their grades, download games, and almost start World War III. It was the first time that Hollywood had

shaped the social norms of the BBS. Trolling and flame wars took on a different character when the person on the other side could be your neighbor, classmate, coworker, or friend.

Through the 1980s, the distribution of BBSs roughly followed the distribution of people. Modem owners living in densely settled cities had a broader choice of local BBSs to call than people living in smaller towns did. In metropolitan areas, the concentration of boards encouraged sysops to specialize, resulting in BBSs that served communities of interest within the city. People who wanted to talk about amateur astronomy found their way to one board; people who wanted to trade pirated software found another. Those who were interested in both topics could create separate profiles on each board, thereby selecting, revealing, and disclosing different aspects of their online identities. No such luck for rural users: if you were the only amateur astronomer in your area, there might not be anyone on the local boards for you to chat with.

To bring users from different regions together, the modem world needed a way for users of one BBS to

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depicted computers and computer networks as tools of exploration, play, personal identity, and teen mischief. Over the next year, BBSs and commercial services alike saw a surge in new users as teens attached modems to their home computers. But what did the middle-aged hobbyists and teen newcomers have to say to each other? And what teenager could afford to pay for the commercial services? Soon, modem-equipped teens were hosting bulletin boards of their own, adapting the technology to meet their interests and needs.

Unlike the nationwide commercial services, BBSs tended to serve a local population of users since few hobbyists could afford to routinely call long-distance. System operators were keenly aware of the local nature of BBS culture. In a sense, sysops were inviting strangers into their homes. With the host computer sitting on a nearby desk or in a closet, they could hear the whirr of the hard drive and see the flickering lights of the modem as callers dipped in and out. Most boards encouraged the use of pseudonyms, or "handles," but relationships between users and sysops frequently crossed the boundary between on- and offline. Many sysops hosted parties at their homes or a favorite watering hole where users of their BBS could hang out. These opportunities for face-to-face interaction

communicate with users of another without the burden of long-distance dialing. In 1984, the first BBS-to-BBS connections radiated out of the Bay Area home of Tom Jennings, a microcomputer expert, dog lover, skateboarder, and queer punk. With the help of John Madill, a BBS sysop in Baltimore, Jennings developed a technique that allowed two BBSs running his "Fido" software to automatically fetch messages and files from one another. After a year in operation, more than a hundred Fido BBSs were active on the network and "FidoNet" became an open standard for exchanging files and messages between BBSs. Soon, "netmail" messages were bouncing from Maryland to St. Louis, Texas to Hawaii, England to Indonesia. With its open standards and clever design, FidoNet became a platform for experimentation. Sysops organized new methods for efficiently routing messages and created "gateways" to exchange mail with corporate and university networks. By the end of the decade, the international FidoNet had become a people's internet, unmatched for its low barriers to entry and global reach.

On average, the demographics of the modem world fit the stereotype of the 1980s computer geek: young, white, middle-class males. But as PCs became more common, BBS technology spread beyond enthusiasts to serve other

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groups of people with a more urgent need for alternative media. By the start of the 1990s, BBS networks organized around shared identities, cultural interests, and political commitments had become especially vibrant spaces for socializing, organizing, and sharing resources. AfroNet offered wide-ranging discussions of Black interest. GayCom connected BBSs for gay and lesbian people. TGnet was dedicated to transgender identity, health, and culture. AEGIS carried information about living with HIV and AIDS. PeaceNet, EcoNet and GreenNet supported the peace and environmentalist movements. Of course, we should avoid an overly romantic portrayal of this period. The political potential of BBS technology was also embraced by white power groups, militias, anti-Semitic conspiracy theorists, and other right-wing extremists. Some of the earliest coverage of BBSs on television focused on the adoption of BBSs by neo-Nazi groups in the United States and Canada. Misogyny, homophobia, and white supremacy plagued the modem world, just as they do today's social media platforms.

On-ramps to the information superhighway

From Alaska to Bermuda, Puerto Rico to Saskatchewan, every telephone area code in the North American Numbering Plan played host to at least one dial-up BBS. In 1991, when future vice president Al Gore described the "information superhighway," many longtime computer users imagined a souped-up network of BBSs. At the time, only about a fifth of Americans had access to a computer at home, and even fewer knew how to get online. Initially, BBSs promoted themselves as a local, friendly alternative to costly nationwide systems like CompuServe, Prodigy, or America Online. They would be the on-ramps, rest stops, and service stations on the information superhighway.

But the process of privatizing the state-sponsored internet was messy. Lacking any central authority or advocacy organization, the interests of BBS users and sysops were hardly considered at all. Compounding that lack of representation, longtime internet advocates were generally unfamiliar with the technology and culture of dial-up networks. The ARPANET family of networks ran on a fundamentally different infrastructure from consumer-oriented BBS networks, and relatively few people were expert users of both. BBSs were not so much ignored by institutions of power as they were overlooked.

Between 1994 and 1995, the World Wide Web—and not the BBS—became the public face of cyberspace. On television and in print, journalists touted graphical browsers like NCSA Mosaic and Netscape Navigator as the internet's future. As hype mounted, investment capital flooded the data communications industry. But instead of BBSs, the money and attention flowed to firms linked to the nascent Web. Finally, when a moral panic over "cyberporn" threatened to burst the dot-com bubble, BBSs provided a convenient scapegoat. BBSs were old and dirty; the Web was new, clean, and safe for commerce. To avoid the stigma, enterprising BBS operators quietly rebranded. Seemingly overnight, thousands of dial-up BBSs vanished, replaced by brand-new "internet service providers." In the United States, the term "BBS" fell out of use.

Experimenting with the future

The people who built the modem world in the 1980s laid the groundwork for millions of others who would bring their lives online in the 1990s and beyond. Along with writing code and running up their phone bills, BBS operators developed novel forms of community moderation, governance, and commercialization. When internet access finally came to the public, former BBS users carried the experience of grassroots networking into the social Web. Over time, countless social media platforms have reproduced the social and technical innovations of the BBS community.

Forgetting has high stakes. As the internet becomes the compulsory infrastructure of everyday life, the stories we tell about its origins are more important than ever. Recovering the history of the modem world helps us to imagine a world beyond—or perhaps after—commercial social media, mass surveillance, and platform monopolies. Endlessly modifiable, each BBS represented an idiosyncratic dream of what cyberspace could be, a glimpse of the future written in code and accessible from your local telephone jack. Immersing ourselves in this period of experimentation and play makes the internet seem strange again. By changing how we remember the internet's past, we can change our expectations for its future.

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