Online, Underground 💬

The Untold Story of the Original Social Media Revolution

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Online, Underground is an in-progress written history of the first social media revolution, chronicling the culture and technology of online messageboards, from the dawn of computer networking to the present. This document contains a detailed table of contents, as well as four sample chapters from the book.

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An overview of early computer networking technologies and the earliest experiments in networked communities. This section covers the birth of ARPANET and its social applications, PLATO Notes and the creation of the first messageboard and Community Memory. Many of the cultural and technological norms established in this era of history would influence later technologies and are echoed in later chapters.

3. The People's Internet: The Rise and Fall of the BBS Scene

This section discusses the BBS system, the primary means by which users participated in online messageboards throughout the 1980s and early 1990s. Discussed here are CBBS and the invention of the BBS, the proliferation of BBS systems in the mid to late-1980s, the emergence of FidoNet and networking technologies that broadened the geographic scope of BBSes and finally, the BBS's inability to adapt in order to compete with the emerging World Wide Web.

4. Usenet

This chapter will delve into the history, technology, culture and legacy of Usenet, the first truly global messageboard. I'll cover the ways that Usenet's structure mimicked that of its component technologies (UNIX, ad-hoc networking), the way that Usenet helped birth similarly open technologies (Linux, the World Wide Web) and the technological shortcomings that ultimately allowed the web to supersede Usenet. I'll also cover the culture of Usenet, including key events in the evolution of the platform (i.e. "The Eternal September") and the terminology, metaphors and cultural norms established on Usenet that are still in use on many boards today.

5. The Well and ECHO

This section will profile two of the most written and talked-about BBSes of all time: The Well and ECHO. Both boards thrived in the late 1980s and early 1990s and helped shape the discourse around online communication and community. In some ways, the two boards present a study in contrasts. The Well was San Francisco-centric, serving communards, hippies, hackers and other travelers in the Bay Area counterculture. ECHO, meanwhile, was New York City-centric, catering to artists and academics and making a concerted effort to recruit women. The culture, technology and historical significance of both boards will be discussed.

4. AOL, Compuserve, Prodigy

The early to mid-1990s found the internet on the cusp of mass adoption and messageboards transitioning from an underground phenomenon to an established part of online life. Before the proliferation of user-created messageboards, a group of commercial internet service providers like AOL, Prodigy and Compuserve attempted to co-opt the messageboard trend, by using messageboards to market their "walled garden" subscription services. I'll provide an overview of these various boards and tell a few of the more notable stories from this era (i.e. the AOL messageboard lawsuit).

6. The DIY message board

The advent of free, "do-it-yourself" messageboard software like phpBB and vBulletin led to an explosion of messageboards in the late 1990s to early 2000s. I'll explain why these technologies were so revolutionary, provide a taste of the "long tail" of niche messageboards that were created and thrived during this era and take a close look at a few behaviors that arose due to the nature of these new technologies (i.e. the animated .gif as a conversational tool). I'll also take a look at 4chan, a board whose creation harkened back to an earlier era and continues to thrive as a result of a few key social and technological decisions.

7. Stories from the underground

This chapter consists entirely of interviews with messageboard users, discussing the messageboards they've posted on, the nature of their interactions on those boards and the ways that these communities have been meaningful to them. This section covers a wide variety of boards, spanning numerous eras and interests. The hope is that this section will give the reader a sense of the breadth of messageboards that were created in the wake of DIY messageboard technologies and the social value that these boards provided to users.

8. The post-messageboard era

Messageboards are far from obsolete; in fact, many of today's most popular online communities utilize messageboard-like technology. We'll take a look at how messageboards evolved by merging with other technologies to create new hybrid forms and explore the ways that services like Reddit, Quora, StackOverflow and Tumblr have introduced the language and culture of messageboards to a new generation of users. We'll also take a close look at Discourse, a new open-source project that is attempting to reinvent the messageboard for the web 2.0 era by leveraging ideas of openness that hearken back to the days of Usenet.

9. Conclusion

1. Introduction

"Imagine a space so large as to comfortably accommodate everyone in the world. A space in which

everyone is near everyone else, but no one can touch anyone. What do you think people would do there?

They'd talk, of course." - Marshall T. Poe, *A History of Communications*[1]

I came of age in Racine, Wisconsin, a rust-belt town of roughly 70,000 people that had once been a regional manufacturing hub. By the time I was a teenager, in the late 1990s, the town had fallen on hard times, its downtown filled with empty storefronts and boarded-up windows. Like most American teenagers who grow up outside of major urban areas, my friends and I spent our free time bored out of our skulls, aimlessly wandering a landscape that had little to offer us in the way of culture.

That all changed when we discovered punk rock, an art form that seemed to give voice to our suburban frustration, angst and boredom. It helped that punk culture was accessible to us in nearly every way: the music was easy to play, the CDs were affordably priced (unlike the major-label releases sold at the local mall), the shows were inclusive and cheap to attend. Soon, we were playing in punk bands, buying records via mail order and sneaking out to attend shows. There was just one problem: in order to do most of this, we had to drive to Milwaukee, the closest mid-size city. Live music, to the extent that it could be said to exist in Racine, was the exclusive domain of adults, something that happened in the back rooms of a handful of dank bars. Why couldn't we have an all-ages arts space in Racine, one that could serve as the locus of our budding punk community?

There were, of course, a number of reasons why such a thing didn't exist. Luckily, being teenagers, none of us had the good sense to assess the practicality of our idea. Soon, a couple of enterprising friends had pooled together a few hundred dollars and found a landlord willing to rent a vacant downtown storefront to a group of minors. The Tokyo-A-Go-Go was born.

I can still recall the shared sense of excitement we felt once the bare-bones space-- essentially, a concrete-walled room outfitted with a cheap PA system--was up and running. Racine bands finally had a place to play in their own hometown and local kids finally had a place to hang out, hand out flyers and political tracts and discuss the unimportant matters of the day. Best of all, it was a space that members of our community had built without any outside help and subsequently, one where we all felt a collective sense of ownership. The venue's coronation came when some touring bands from out of state scheduled a stop in Racine to play at the venue. Surely, this was a sign that we had built something of lasting value.

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[1] Poe, *A History of Communications*, 237.

Of course, we hadn't. As you might already have guessed, the Tokyo-A-Go-Go didn't last very long. If I remember correctly, it was gone in a matter of weeks. To this day, there are conflicting reports about what finally did in the venue. Some say that a building inspector showed up and demanded that the place be shut down immediately. Others pinpoint the night that a kid accidentally pushed a friend through the room's front window as the moment the experiment ended (despite their initial fundraising success, the kids who ran the club were, apparently, unable to raise enough money to repair the window).

Whatever the reason for its demise, the Tokyo-A-Go-Go taught us all a valuable lesson. If the cost of building something is low enough and the benefits of building it are great enough, you can simply build it yourself. This is, of course, the equation that so many bored kids who came before had arrived at, the "do it yourself" or "DIY" ethos on which punk culture was built. It doesn't matter how small or how niche your community is—if that community wants its own space badly enough, it will find a way build it. Of course, this is easier done in places like Racine, Wisconsin where the transaction costs of setting up shop are low and the benefits, in providing a home to a community that lacks one, are high.

I was reminded of this lesson a few years later when I started spending a lot of time on online messageboards. This was the early 2000s, when it was becoming increasingly easy to find vibrant online communities dedicated to seemingly any topic. Such messageboards provided me with virtual spaces not unlike the Tokyo-A-Go-Go, places where like-minded people would congregate to discuss shared interests. However, unlike the Tokyo-A-Go-Go, messageboards allowed me to connect with people in other small towns or even big cities, to gauge what was considered cool in other parts of the country or world, to feel as if I was a part of a much larger community. It was like stepping into a stadium-sized version of the Tokyo-A-Go-Go, one that was populated by people from all around the globe.

By this point in messageboard history, what I'll call the era of the "DIY webboard," free software like phpBB and vBulletin had made messageboard administration— previously the domain of engineers—a cinch for anyone who was slightly technically-inclined. The transaction costs for creating your own messageboard were now extremely low: all you needed was access to server space, a little know-how and a community of people willing to post with you. And as long as your server space was free (as it effectively was for many college students at the time), setting up your own board wouldn't cost you a cent. As a result, messageboards serving every type of community and every niche interest imaginable sprouted up seemingly overnight. Whether your passion was building computers, collecting frequent flyer miles or raising tree frogs, there was a board out there for you. Of course, not all of these boards survived or thrived. Like the Tokyo-A-Go-Go, many of these boards were short-lived experiments, brief homes for a transient or ephemeral community. Despite this fact, a few boards overcame the network's entropy to become institutions. Much like 924 Gilman Street, a DIY venue that has

served as gathering places for generations of Bay-area punks, some messageboards endured by strength of community alone.

Still, most messageboards existed in a constant state of flux—even the most cohesive communities sometimes had no fixed web address in the long-term. While in college, I spent a lot of time posting on a messageboard hosted by a record label in Omaha, Nebraska, a small, Midwestern city where a group of kids had built a surprisingly robust independent music scene. After a few years, the moderators of this board decided to clean things up and banned a number of users who had engaged in "trollish" behavior, by intentionally annoying or baiting other users. I decided that these trolls were more interesting than the rule-abiding users and decamped with them, to a board that one of the banned users--a college student in a small town in Oklahoma--had established on his own server space. A few years later, when that "admin" decided that he was tired of running a messageboard, I set up my own board, which most of the remaining users migrated to. I still administer and participate in that board and remain in contact with members in locales as far away as London to this day--nearly a decade later. Our community has proven durable, even if the various messageboards we had called home over the years had not.

There are and were a lot of communities out there just like ours, groups of people brought together by shared interests and simple, open-source software. There were people who built communities when the transaction costs were much higher, before the time of DIY messageboard software or even the internet itself, because the rewards of doing so were so great. There were communities that worked to assemble vast archives of information, much of which still shows up in search results today. There were communities that provided support groups, spaces where taboo or personal topics could be discussed and advice sought at all hours of the day and night.

This is the story of those communities and of the people who built and participated in them. As you will see, each of these communities was shaped by the technologies available at the time, cultural norms evolving hand-in-hand with software. As new features became available to users of messageboards, new behaviors arose as a result of those features. As such, in order to understand the communities that made use of messageboards, we will have to consider the technology of the messageboard.

The messageboard is one of the internet's oldest technologies and also, one of its most resilient. Like email, it's one of the web's archetypical forms: it's nearly as old as computer networking itself and remains in use by people all over the world today. Unlike email, however, the story of the messageboard's history and evolution remains largely untold. Part of the reason may be that messageboards have always served as subcultural spaces, backchannels to the web's mainstream. While email has become an integral tool for commerce, productivity and business communication, messageboards have largely been used for personal communication and recreation (messageboards focusing on technical subjects being the exception). In a sense, messageboards were the original social media services, though unlike

Twitter and Facebook, they were never successfully colonized or co-opted by advertisers, marketers or large corporations. And we can continue to see the influence of messageboard technology and culture today, in mainstream services like Reddit, Tumblr and Stack Overflow, services which stand at the forefront of news, culture and knowledge distribution on the web.

In writing this book, I am, of course, standing on the shoulders of giants. I'll be drawing from many of the landmark texts on online communication, including Howard Rheingold's *The Virtual Community*, Michael and Ronda Hauben's *Netizens*, Katie Hafner and Matthew Lyon's *Where Wizards Stay Up Late* and Clay Shirky's *Here Comes Everybody*. In analyzing numerous communities and modes of communication, these works have laid the groundwork for all modern historians of networked culture. I'll be using the tools crafted by these scholars to look at messageboards specifically and to trace their evolution over time.

Over the course of this book, I'll follow the development of messageboards from the early days of networked communication in the 1970s all the way to the modern era, where messageboards have taken on a number of novel new shapes. In order to limit our scope, I will define the messageboard as an asynchronous social information space that is used for many-to-many discussion and accessed via a computer network. This definition includes what are variously referred to as "webboards," "online forums" or "online conferences" as well as early, pre-internet systems like Usenet, BBSes and FidoNet.

Instant messaging and chat technologies will not be discussed, as they provide a means for synchronous (i.e. real-time), rather than asynchronous communication. I also won't be looking at information spaces where the primary goal is not social interaction. So while Wikipedia, YouTube and Live Journal are all arguably social information spaces of a sort, they won't be covered here, as the primary purpose of those services is not discussion. Similarly, groupware and other business and productivity applications like Lotus Notes won't be covered, as the purpose of these systems is to facilitate coordination, rather than discussion. Email-based discussion groups won't be covered in depth either, as they are not discrete spaces so much as distributed systems. Finally, the vast majority of technologies and communities that I discuss in this book will be U.S.-based and English speaking, respectively. Surely, whole books could be written about the messageboard cultures of Taiwan, Brazil, Japan, France and South Korea. I will leave those to experts on the online cultures of those regions.

A number of themes will recur as we move through the history of messageboards. Foremost is the importance of hackers, hobbyists, volunteers and amateurs of all stripes. Unlike with the dominant history of related technologies like the internet, many of the greatest breakthroughs in the evolution of messageboards happened in living rooms and basements, rather than at research universities and government agencies. In the absence of commercial service providers, hobbyists built and maintained their own network infrastructure at significant cost. It's hard to imagine

now but international communications networks like FidoNet survived as self-sufficient communities for years, without need of any corporate, academic or governmental resources. Certainly, such networks contributed to the advancement of the internet in ways that are not often appreciated today.

Second, many seminal communities in the history of messageboards were the result of users *misusing* technology. As we'll see time and again, if a tool can be used to facilitate group discussion, users will bend the tool to suit that need. Systems like PLATO Notes (intended for software bug-tracking), BBSes (intended for collaborative writing) and FidoNet (intended for email) all ultimately found an audience due to their unintended ability to serve as channels for online group discussion.

Finally, it's difficult to overstate the importance of free and open-source software in allowing the messageboard to grow beyond the hobbyist community, transforming it into an underground phenomenon. First, during the BBS era and later, during the era of the DIY webboard, the codebase used to create messageboards branched out into countless versions, platforms, modifications and add-ons. The malleability of the code allowed administrators to craft spaces that addressed the specific needs of their communities, even as those needs evolved over time. And of course, the fact that messageboard software was freely, legally available helped to lower the barrier to entry, encouraging countless messageboard administrators to plant the seeds for a new community.

There is, of course, not enough space to tell all of the stories of all of the various communities that have lived, died and thrived on messageboards over the course of the last few decades. My goal in this book is to trace the evolution of the messageboard and to provide a handful of stories from various eras in its history. Chapter seven of this book consists entirely of personal anecdotes from messageboard users, who describe the boards that they posted on, the reasons that they participated in those communities and the significance messageboards have had in their lives. Hopefully these narratives help to illustrate the variety and vibrancy of messageboard culture as it has existed at various points in time. My aim is to provide a glimpse of a vast, underground network, by giving voice to a few secret histories of messageboards and the users who called them home.

2. ARPANET, PLATO and Community Memory: The Birth of Networked Communities

"For the past 5 years students in my courses have been faced with a surprise on the first day of the semester as I provide explanations on the Syllabus. One of the items is called 'Plato Usage' and is worth 10 points (or 10% of the grade). Students thus find out that they will be expected to participate in an electronic bulletin board activity on PLATO. A show of hands each semester invariably indicates that no one has participated on an electronic bulletin board before. Another show of hands reveals that three quarters of students do not use computers on a regular basis, and some have actually never used one. My first task therefore, is to diffuse the instant anxiety generated by the announcement." - Dr. Leon James, 1991[2]

The ideas that would lead to the development of the internet were first born inside of an unlikely organization: the United States Department of Defense. In the late 1960s, the Department of Defense's Advanced Research Projects Agency or "ARPA" was tasked with building a network that could connect incompatible mainframe computers over long distances, so that they might share information. This was before the age of what would be called the "microcomputer" and later, the "personal computer" and mainframes were the only game in town if you were looking to perform complex calculations or crunch large amounts of data.

At the time, mainframes were quite costly to install, even for the deep-pocketed Department of Defense. Take for example the IBM System/360, a state-of-the art machine first released in 1964. At the time of its release, a "typical large multisystem configuration" of the System/360 could be purchased for a mere $5,500,000.[3] That's the equivalent of over 40 million dollars today. Given such costs, the Department of Defense was eager to find ways to "increase computer research productivity through resource sharing" and thought that networking machines might help the agency avoid "the duplication of computer resources".

There was another factor driving the development of this network as well: fears of a nuclear attack from the U.S.S.R. During the height of the cold war, many officials inside of the Department of Defense feared that any such attack would target the military's communications infrastructure, thereby curtailing their ability to coordinate appropriate defense measures. As such, any network that would be devised would have to be, quite literally, strong enough to withstand a direct nuclear attack.

To solve these problems, the engineers at ARPA devised a networking concept known as "packet switching". Put simply, packet switching allows large files to be broken up into smaller chunks of data, which are sent one at a time and reassembled on the other end of the line. To add robustness to the system, packet switching was combined with a "distributed network"--that is to say, a network with multiple

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[2] Leon, "Course-Integrated Electronic Socializing on Plato."
[3] "System/360 Announcement."

nodes and no center. In such a network, packets of information move from their origin to their destination using the fastest path available. If one of the nodes in the network goes down (due to, say, a nuclear attack), the packets are simply routed around the damaged node via alternative paths and the network as a whole stays up.

Using these radical ideas, the engineers at ARPA launched a network called ARPANET in October of 1969, successfully connecting machines at three California universities (Stanford, UCLA and UCSB) with the University of Utah.[4] Before long, the ARPANET would connect hundreds of machines at universities, military bases and government institutions "between Hawaii and Norway"[5] and would boast over 2,000 users by 1975.[6] It would provide a hugely important channel for research and defense communications for two decades, before eventually being decommissioned in 1990.[7] Packet switching, along with TCP/IP (another set of networking protocols devised by the Department of Defense) would go on to establish the technological foundation for the public internet.

In the years following the launch of ARPANET, engineers would devise applications that would take advantage of the high-speed, long-distance and relatively low-cost communications channel that the network provided. Email made its debut in 1971 and was quickly hailed as what we might now call a "killer app"--in less than two years, 75 percent of ARPANET traffic would be devoted to email.[8] At the same time, a protocol called File Transfer Protocol or "FTP" was first being implemented on a local network at MIT, making its debut on ARPANET in 1973.[9] FTP allowed users to upload and download files to and from remote machines, allowing for the transfer of more than just simple text messages (FTP is still widely used for transferring files over the internet today). In 1977, ARPANET would even get its own protocol for voice calls, though it was reportedly more of a proof-of-concept than a useable technology.[10] Reliable voice communication over a packet-switched network would have to wait for the advent of the Voice Over Internet Protocol (VoIP) in the 1990s.

While ARPANET had been initially designed as a tool for scientific research and one-on-one conversations, it didn't take long for its users to devise applications that would allow them to engage in group communication. On June 7, 1975, an ARPA program manager at the Information Processing Techniques Office by the name of Steve Walker announced a new club for ARPANET users: an electronic discussion group. "This whole thing is a new attempt," he wrote, "I hope from all this to develop a long-term strategy for where message services should go on the ARPANET and

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[4] "ARPANET."
[5] Hauben, Hauben, and Truscott, *Netizens*, 50.
[6] Briggs and Burke, *Social History of the Media*, 264.
[7] "ARPANET."
[8] Ibid.
[9] Bhushan, "File Transfer Protocol."
[10] "ARPANET."

indeed in the DOD. Let's have at it."[11] Initially called the "Message Services Group" and later shortened to "MsgGroup," this club was perhaps the most primitive version of what we would now call an email mailing list or discussion group. To participate in MsgGroup, you would send your message to the group's moderator, who would, in turn, manually email your message to every member of the list (this process was later automated). Unsurprisingly, MsgGroup was a huge hit, lasting for 10 years and eventually totaling hundreds of members.[12] Not everyone on ARPANET was a fan, however. As Howard Rheingold recalls, "Attempts were made to suppress it, because it clearly fell outside even the most liberal interpretation of research-related activities. It is to the credit of the top ARPA managers that they allowed virtual communities to happen, despite pressure to reign in the netheads when they seemed to be having too much fun."[13]

Luckily, the MsgGroup survived and thrived, spawning other discussion lists, including "SF-LOVERS," a science fiction discussion list and "HUMAN-NETS," which discussed the social implications of computer networking. Both of these lists would eventually be seen as some of ARPANET's main draws. While such lists functionally resembled email lists more than messageboards, they were almost certainly some of the earliest instances of a computer network being used for purely social discussion. Though as we'll see, they weren't the first.

PLATO and the Prescience of the Dumb Terminal

Around the same time that Steve Walker and members of MsgGroup were experimenting with electronic discussion groups on ARPANET, a group of engineers at the University of Illinois at Urbana-Champaign (UIUC) were performing their own experiments in the field of electronic communication, using a networked computer system called PLATO. These experiments would introduce a number of new concepts to the world of networked computing, including screen-sharing, multi-player games and instant messaging. More importantly for us, PLATO would give birth to the first messageboard, which would create the basic template from which BBS systems, Usenet and later, webboards, would be built.

The story of the PLATO project shares much in common with that of ARPANET. Beginning in the late 1950s, a group of engineers, physicists, mathematicians and psychologists at the University of Illinois banded together to investigate how computers might enhance pedagogy. Finding a willing benefactor in the Department of Defense, this interdisciplinary team founded the PLATO project in 1960, using the pioneering ILLIAC I mainframe—built at UIUC in the '50s—to power their initial experiments. By the late '60s, the PLATO project had secured long-term funding from the National Science Foundation and had begun to use a technique known as

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[11] Hafner and Lyon, *Where Wizards Stay Up Late*, 200.
[12] Ibid., 201.
[13] Rheingold, *The Virtual Community*, 77.

"time-sharing" to make computer courseware available to relatively large numbers of students.[14] Essentially, time-sharing allowed multiple users to simultaneously make use of a mainframe's computing resources, by using so-called "dumb terminals," whose function was to ferry commands and results between the user and the mainframe. Various users' commands would be executed on the mainframe in the style of a round-robin, allowing the university's limited number of mainframes to be accessed simultaneously (though not quite in real-time) by multiple students. With students from a variety of different departments using these PLATO terminals, the stage was set for a networked communications system to emerge.

It's worth stating that the PLATO system was extremely advanced for its time, allowing UIUC students to interact with computers years in advance of their peers at other schools. The personal computer revolution was still years away and most universities wouldn't house computer labs until well into the 1980s. However, despite how technically advanced PLATO was for its time, the system's bug-tracking mechanism was still fairly primitive. If anyone using the PLATO system encountered a bug in the software, they were instructed to edit a text file called "notes," which contained all of the bugs found in the system to date.[15] One would simply append a description of the issue to the bottom of the file and wait for a member of the system staff to read the description, hunt down and fix the bug and then add a comment to the file indicating that the issue had been resolved. This system worked well enough during the early days of PLATO but by the early 1970s, its limitations were beginning to cause serious headaches for the system staff. Only one person could edit the notes file at a time, a problem that was compounded by PLATO's growing userbase. Perhaps more importantly, there was no security mechanism in place to protect the file, so if someone were to delete the contents of "notes"—either by accident or as a prank—they were free to do so, anonymously.

After a few such incidents, Paul Tenczar, a senior system programmer, decided that a more sophisticated bug-tracking system was needed. In the summer of 1973, he tasked a 17 year-old high-school student by the name of Dave Woolley with building just such a system.[16] His instructions were as follows: create a system allowing users to read and write issues and responses to a database, using an interface where the problem appears at the top of the screen and the system programmer's response appears below.[17]

Tenczar's instructions were certainly quite detailed, laying out both the functionality of the system as well as the visual design of the interface that should be used to interact with it. Woolley, however, had some ideas of his own and given the atmosphere of freedom and experimentation at CERL (the Computer-based

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[14] "PLATO (computer System)."

[15] *PLATO - An Early Online Community*.

[16] Dear, "The Significance of Notes Coming Before Personal Notes."

[17] *PLATO - An Early Online Community*.

Education Research Laboratory, within which the PLATO project was now housed), he felt free to expand on Tenczar's original vision for the system. "It occurred to me that sometimes, one question and one answer wouldn't be enough," Woolley told the audience at the PLATO@50 conference in 2010. "In some cases, you'd need to have some back and forth between the person reporting the problem and the system programmers trying to fix things. Like 'Well, did you try this?' or 'What exactly were you doing when this problem happened?' So I realized that what we needed was a system that would allow people to have conversations. So that's what I created."[18]

Launched in August of 1973 (nearly two years before MsgGroup), PLATO Notes would quickly become one of PLATO's defining features, though for largely unintended reasons. The original version of Notes featured three "notes files"— separate subject areas that predicted the "discussion topics" or "subforums" of modern messageboards. The first, "System announcements" was restricted such that only PLATO staff could post in it (though everyone could read it) and was used to announce new features. The second, "Help notes," was similar to the original notes file, though it expanded on that file's functionality. A user could post a question, bug or feature request and receive answers from fellow users and PLATO system staff alike. The final notes file, "Public notes," was intended for "everything else," whatever that might entail.[19] It was this final note that would invent a new paradigm for electronic communication.

PLATO Notes: the First Messageboard

Given the liberal atmosphere that gave birth to PLATO Notes, it's not surprising that little thought was given to rules—let alone how to establish or enforce them—with regard to the use of Notes. So when users started using the "Public notes" file to discuss topics unrelated to PLATO, the system staff was happy to turn a blind eye. Before long, Public notes had become the most popular section of Notes, a place where users could discuss any topic that came to mind. In the process, it also became the first example of a computer-network-based discussion space, a spiritual ancestor to the online communities and social networks of today.

"After a couple of years, there came a point where there was so much stuff being posted in public notes that it became a real challenge to keep up with it," Woolley said in 2010. "You'd come in in the morning or whenever you came in--for some of us, it was at night--and you'd try to read everything that had been posted and you know, it was a jumble of event announcements and philosophical ramblings and comments about movies and you know, whatever."[20]

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[18] Ibid.
[19] Ibid.
[20] Ibid.

Clearly, the architecture of Notes had given birth to a community, albeit, an unexpected one. Crucially, Woolley's subsequent updates and improvements to the software would foster this community, taking into account the needs of users. As Public Notes' popularity continued to snowball, users started to request some kind of filtering mechanism, one that would allow them to parse through the massive amounts of notes by subject or date. In 1975, Woolley set to work designing just such a feature, though he quickly ran into an intractable problem: not everyone could agree about how the filtering system should work. Some users only wanted to be able to browse notes by subject, while others wanted to the ability to see all of the notes posted in reverse chronological order.[21]

Discouraged, Woolley went back to the drawing board. Luckily, soon after, he caught wind of a project at the University of Illinois at Chicago that got him thinking about Notes in an entirely new way.

> I became aware that there was a group in Chicago, I think it was the U of I pharmacy group--they were developing pharmacy courseware--that had created their own clone of PLATO Notes. It looked exactly like PLATO Notes but it was limited to just their workgroup and they were using it internally for group collaboration. And that's when the light bulb went off for me that what we needed was not a bunch of categories that the system defined but the ability for any group to create their own Notes file for their own purpose and be able to define who had access. So it could be private, it could be public, it could be semi-private, whatever. So I abandoned that version of Notes that I had spent months working on and I started from scratch and created Group Notes, which made it possible to create an unlimited number of notes files. So that solved the categorization problem because now, we could have a whole Notes files devoted to recipes. And it also created the possibility for workgroup collaboration.[22]

This advancement was significant for a number of reasons. First off, it introduced the idea of using a social information space for workgroup collaboration. A UIUC computer science undergraduate and Notes user by the name of Ray Ozzie would later take this concept and run with it, creating the Lotus Notes suite of collaborative business software in the late '80s, before going on to become the CTO of Microsoft.[23] Second, it established an ethos of distributed control that would encourage BBS boards, Usenet and even the DIY webboard systems of the early 2000s to empower their users, by allowing them to establish their own spaces for discussion. Third and most importantly, the advent of Group Notes accelerated the growth of Notes as a whole, leading to an explosion in the diversity of topics around which users could congregate. As Woolley describes in a prescient 1983 essay titled

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[21] Ibid.
[22] Ibid.
[23] "Ray Ozzie."

"Between PLATO and the Social Media Revolution," Group Notes quickly led to a flurry of new activity:

> [T]hrough the PLATO "group notes" feature, people held long-term discussions on just about any subject imaginable: science fiction, women's rights, football, the defense budget, rock 'n roll. People swapped chili secrets in "Recipes", wrote film reviews in "Movies", debated theology in "Religion", and anonymously advised each other on personal problems in "Interpersonal Relationships." The poetically inclined left their latest works in "Poetry", and almost everyone read "Grapenotes" now and then for the latest in a series of bizarre stories by the mysterious "Dr. Graper."[24]

In its earliest stages, PLATO Notes had been used primarily by members of the CERL team. As its popularity increased, students from related disciplines like engineering and computer science joined in the discussions, though it was still a tight-knit group, consisting mostly of people who knew each other outside of PLATO. In those days, there were clear social incentives to not behave poorly on Notes. As Woolley puts it, "If you acted like a jerk, then people would know you were a jerk."[25] Steadily, however, the community grew, eventually including students from many different departments. Soon, Notes users found themselves interacting with other users who they did not know outside of their posts on Notes. This led to the emergence of social dynamics that directly reflected the new types of interactions that the technology allowed for. Kim Mast, Woolley's CERL colleague and high school classmate and the designer of Personal Notes, PLATO's equivalent to email, noted that anonymity on PLATO often served to eliminate preconceived biases from social interactions:

> PLATO, at least initially....it was kind of this great equalizer. Because you'd see all these notes from people all over, that you'd see all the time and you really got to know them pretty well through Notes and [Personal Notes] and all that. But you'd never met them. You never knew what they were like in person and never knew that such-and-such was a quadriplegic or anything like that, anyway. You just saw what they presented in the note...you really learned a lot about what people were doing and what they thought from these very well-written set of notes.[26]

The size and relative anonymity of Notes also had its drawbacks, however. As fun, open and freewheeling of a community as PLATO Notes was, eventually, problems began to emerge that merited attention from the PLATO system staff. "Flaming," the practice of engaging in hostile and sometimes insulting arguments with others, quickly became an issue in the PLATO Notes community. Woolley recalls "vicious flame wars" on Notes, though little was ever done to control such fighting. "It was

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[24] Woolley, "Between PLATO and the Social Media Revolution."
[25] *PLATO - An Early Online Community*.
[26] Ibid.

new," Woolley points out. "We didn't know what we had to do about it or if we had to do anything about it."[27] Just about the only time any moderation of the PLATO Notes was required involved political speech. Woolley recalls one episode in which a controversial note was censored:

> I only recall very few instances where notes that people had posted were actually deleted by the higher powers. And they had more to do with politics, I think. It seems to me that there was a case where…the Shah of Iran was coming to America. And somebody had posted a message on Notes titled "Shah kills". And I believe the PLATO administration had that note removed. And when those things happened, which was quite rare, it did create quite a lot of controversy about whether this should happen. There was a belief in free speech and typically, that was the tradition on PLATO, you could say whatever you wanted. Your name was always attached to it, so people knew it was you saying it. You were responsible for whatever you said.[28]

Interestingly enough, nearly all of the social norms and behaviors that spontaneously sprouted up on PLATO Notes in the 1970s are still familiar today and can be observed in seemingly every online community to varying degrees. This suggests that similar social technologies will result in similar behaviors, regardless of the specifics of the group using that technology. As Woolley puts it, "I think it just demonstrates that people are people and when they have access to something that provides access to these capabilities, they're going to do the same thing as other people do."[29]

Community Memory: Building a Local Network for the Counterculture

Meanwhile, in Berkeley, California, a group of hackers were conducting a very similar experiment, one that would take the ideas pioneered by PLATO Notes outside of the academy and out into the streets. By the early 1970s, the Bay Area had cemented its reputation as an intellectual crossroads, a place where travelers in San Francisco's various countercultural and political movements, academics from the University of California and Stanford and engineers from Silicon Valley's budding semiconductor industry unexpectedly collided.

Perhaps more than anyone at the time, Stewart Brand epitomized this idea of cross-pollination, bringing together scientists, hippies, back-to-the-land communalists and engineers through his various social, artistic and business endeavors. As Fred Turner notes in his biography of Brand, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network and the Rise of Digital Utopianism*, Brand was uniquely positioned to move effortlessly between these worlds and to stitch

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[27] Ibid.
[28] Ibid.
[29] Ibid.

them together. "As he migrated from Stanford to the art worlds of Manhattan and the psychedelic bohemias of San Francisco, Brand became a key link between very different countercultural, academic, and technological communities," Turner writes. "When he founded the Whole Earth Catalog in 1968, he gathered those communities into a single textual space."[30] This last point—about assembling a community—bears repeating.

> Together, the Catalog and the [Whole Earth] Supplement became textual forums within which a geographically dispersed collection of individuals and groups could come together, in text and sometimes pictures, and recognize each other as members of a single community. In a sense, Catalog and Supplement became town squares.[31]

Brand's Whole Earth ventures accomplished in print what many messageboards would later accomplish online: it assembled and nurtured a community of people who shared a set of interests. While on the surface the Whole Earth catalog was simply a catalog of goods, photographs and essays, its real value was to provide a point of entry into an underground network, one where members of various countercultures could trade ideas on a variety of topics. Given this fact, it's hardly surprising that Brand would go on to found an online community that would serve much the same purpose, something that we'll discuss in greater depth in a later chapter.

Despite its seemingly niche sensibilities, the *Whole Earth Catalog* became a runaway success. Ultimately, Brand and his team would produce six semiannual editions of the catalog, which would sell some 2.5 million copies.[32] By 1972, however, he had grown exhausted by the pressures of the publication's success and decided that the *Whole Earth Catalog* had run its course. Brand decided to see the catalog out with a bang, throwing a "Whole Earth Catalog Demise Party" at San Francisco's Palace of Arts and Sciences and inviting 500 members of the Whole Earth community.

In an interesting twist, Brand brought an envelope containing $20,000 in cash with him to the party, the exact amount he had used to start the catalog. His plan was to distribute the cash at the party to help seed new ventures, in an attempt at completing a sort of economic karmic loop.[33] After a discussion with Brand, the night's master of ceremonies, Scott Beach, stepped up to the microphone and explained Brand's proposition to the assembled crowd.

> About fifteen minutes ago, Stewart Brand gave me one of the tools that the Whole Earth Catalog has used. This is $20,000, and he gave it to the people here to be used as a tool.... Use this as a seed. The Whole Earth Catalog ceases.

[30] Turner, *From Counterculture to Cyberculture*, 72.
[31] Ibid., 89.
[32] Ibid., 81.
[33] Markoff, *What the Dormouse Said*.

The seeds have been planted already. Your consensus will decide what will be done with this money. There are microphones, there are causes, there are lots of possibilities.[34]

A lengthy conversation ensued, with over 50 members of the community stepping up to the microphones to share their ideas. The discussion went on late into the night and by morning, a consensus still had not been reached. A decision was made to give the money to an activist named Fred Moore, who would reconvene the final 20 people who were remaining at the party in one month's time to continue the conversation.

It remains unclear whether or not Moore ever convened the promised meeting.[35] There are, however, various accounts of him being courted by numerous groups looking to use some portion of the funds. Moore was ultimately convinced by a band of San Francisco activists who were working to establish a community collective housed in a warehouse in what was then a rough neighborhood in San Francisco's southern half. The collective was called Project One and served as an umbrella organization for numerous sub-projects, including education, community organizing and theater projects, as well as Resource One, a community-based computing initiative. According to Turner, Moore gave the members of Project One "several thousand dollars" to help launch the Resource One project.[36]

Resource One first began when Pam Hart, a UC Berkeley computer science graduate student and Project One activist, convinced the Transamerica Leasing Corporation to donate an unused SDS-940 mainframe system to Project One. The machine was massive—24 feet long, to be exact—and required 23 tons of air conditioning.[37] Still, while it was not quite cutting edge, it was still a mainframe, something few groups outside of academia, business and the military had access to at the time. With the SDS-940 sitting in the basement of Project One's warehouse, the stage was set for a bold experiment in community computing.

The trick, of course, in using the SDS-940 for a community computing project was getting the computing power of the mainframe out of the basement and out into the community. As was the case with the PLATO system, the answer turned out to be a time-sharing system. The engineers who devised this solution were named Efrem Lipkin, Mark Szpakowski, and Lee Felsenstein, mainstays in San Francisco's overlapping hacker and activist scenes. (It's worth noting that Felsenstein would go on to help Moore establish the Homebrew Computer Club, a group that would count among its ranks many future technology pioneers, including a shaggy-looking young hacker named Steve Wozniak, the future co-founder of Apple Inc.) Using 110-baud

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[34] Turner, *From Counterculture to Cyberculture*, 102.
[35] Ibid.
[36] Ibid., 114.
[37] "Community Memory."

modems, Lipkin, Szpakowski and Felsenstein connected the SDS-940 to a terminal housed inside of Leopold's, a record store across the bay in Berkeley.

Lacking access to a proper computer terminal, the trio of engineers chose to use a teletype machine—a sort of networked typewriter that was capable of sending commands to and receiving information from a mainframe. As they had no screens, teletype machines printed their output directly to a roll of paper, a continuous stream of words similar to those used by early dot-matrix printers. The three hackers housed this contraption inside of a cardboard box with a clear plastic top— to protect the printout from spills as well as to muffle the loud noise of the printer. They then drilled holes into the plastic where a user could stick in her hands, allowing for access to the keyboard. With their hardware and networking sorted out, all that was needed was a community application.

The solution, as it turned out, was to simply duplicate the functionality of a community-oriented device that was already being used in the record store: the cork bulletin board. "We wanted to use the computer to create a sort of information flea market," Lipkin told the *SFGate* in 2001. "We were thinking in terms of cork bulletin boards, community-generated newspapers, things like that. We took this mainframe the size of six refrigerators and put it to use."[38] Calling their project Community Memory, Lipkin, Szpakowski and Felsenstein built a space for anonymous, unmediated community discussion, a spiritual ancestor to free-for-all webboards like 4chan. The project went live in August of 1973--the same month that David Woolley released PLATO Notes.

Unlike the PLATO project, Community Memory was driven by a strong set of political and social ideals and was an experiment in both social technology and community organizing. The brochure for Community Memory stated that, "strong, free, nonhierarchical channels of communication--whether by computer and modem, pen and ink, telephone or face-to-face--are the front line of reclaiming and revitalizing our communities."[39] As the network grew, Community Memory terminals were installed in public spaces such as libraries and laundromats, though you couldn't dial into the system from a private machine. In an attempt to make the project sustainable, a simple pricing model was introduced. Reading messages was free, posting a message cost 25 cents and creating a new discussion topic cost a dollar.

Unlike PLATO Notes, Community Memory was totally unmoderated and completely anonymous, its users being only loosely connected by their presence at Leopold's. Users could post new messages using the "ADD" command, search through existing messages using the "FIND" command or simply watch the stream of continuous messages tick by. It was an immediate hit. Felsenstein reported that during the

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[38] "Remembering Community Memory / The Berkeley Beginnings of Online Community."

[39] Agre and Schuler, *Reinventing Technology, Rediscovering Community*, 196.

terminal's first five days at Leopold's, it was in use for 1,434 minutes and was used to post 151 new messages.[40] In keeping with the project's community-oriented goals, it was initially used much like the cork message board that sat above the terminal at Leopold's:

> Word spread, and soon people came seeking important connections. If you typed in FIND HEALTH CLINICS, for instance, you would get information on any of eight, from the Haight-Ashbury Medical Research Clinic to the George Jackson People's Free Clinic. A request for BAGELS--someone asking where in the Bay Area one could find good New York-style bagels--got four responses: three of them naming retail outlets, another one from a person named Michael who gave his phone number and offered to show the inquirer how to make his or her *own* bagels. People found chess partners, study partners and sex partners for boa constrictors. Passed tips on restaurants and record albums. Offered services like babysitting, hauling, typing, tarot reading, plumbing, pantomime, and photography ("MELLOW DUDE SEEKS FOLKS INTO NON-EXPLOITABLE PHOTOGRAPHY/MODELING/BOTH...OM SHANTI").[41]

"All along, there were these typical bulletin board-type messages," Lipkin said in 2001, "someone looking for a couch or for a ride to LA. But then people started playing with it, and posting messages that were almost like disjointed conversations."[42] As with PLATO Notes, users began posting poetry, personal anecdotes and jokes to the system. One user posted a 400-word essay about their experience in the Loma Prieta earthquake.[43] Another established the "Alameda County War Memorial Project," a forum containing information on every deceased veteran in the county, with the goal of providing a means by which, "Friends and family can share their thoughts and reminisces at the memorial screen of their friend or relative."[44]

Perhaps the most unique use of the system, however, was by users who took on outlandish personas and posted in character as a sort of public performance. The first and most notorious of these was "Dr. Benway," a user who named himself after a character from William S. Burroughs' *Naked Lunch* and posted rambling paragraphs that seemed to bear little relation to anything else on the system. "Whoever this demented user was, he began arranging the storage bits inside the XDS-940 into frazzled screeds, flip commentaries on the times spiked with unspeakable visions, calls to armed revolution, and dire predictions of big brotherism--predictions rendered ironically by the use of 1984-style computer

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[40] Levy, *Hackers*, 146.

[41] Ibid., 147.

[42] "Remembering Community Memory / The Berkeley Beginnings of Online Community."

[43] Ibid.

[44] Agre and Schuler, *Reinventing Technology, Rediscovering Community*, 198.

technology in a radical and creative fashion," Steven Levy wrote.[45] Dr. Benway has often been cited as the "first messageboard troll" and while his intent doesn't seem to have been in any way malicious, he was almost certainly the first person to post in character in on a messageboard, predating PLATO Notes' infamous "Dr. Graper" by a few years.

Despite the popularity of the system, after a year and a half, the project fizzled out. By the end, Community Memory boasted a handful of terminals around the Bay Area, some of which even featured screens. Even so, all of the organization's equipment was donated and the project's second-hand terminals--not to mention its server--were constantly breaking down. Exhausted and rapidly running out of funds, the organizers decided to pull the plug on the project in 1975. Still, the influence and impact of Community Memory as a proof-of-concept are hard to deny. From its ashes would spring the Well, one of the most well known pre-internet messageboards, which would attempt to put the ideals of the *Whole Earth Catalog* into practice. Community Memory also predicted the rise of the BBS, a network of local bulletin board systems that allowed users to dial in from the comfort of their own homes. As we'll see in the next chapter, soon every town in the U.S. would have its own messageboard, a development that set the stage for the advent of the internet and the world wide web.

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[45] Levy, *Hackers*, 147.

3. The People's Internet: The Rise and Fall of the BBS Scene

"It both surprises and amazes me that more effort has not gone into documenting the BBS era. During the golden age of bulletin boards (from the early 1980s through the mid-1990s), the modem world was our Internet. It was the way we talked to other computer users, traded programs and met people. The technology behind bulletin boards may seem archaic today – computers talking to each other one at a time at painfully slow speeds over dial up phone lines – but to those of us who lived it, it was an incredible, magical time. It was cutting edge technology that we got to play with every day. For many years the modem world was my world, and a major part of my reality." -- Rob O'Hara[46]

"If a BBS (Bulletin Board System) isn't a democratizing technology, there is no such thing. For less than the cost of a shotgun, a BBS turns an ordinary person anywhere into a publisher, an eyewitness reporter, an advocate, an organizer, a student or teacher, and potential participant in a worldwide citizen-to-citizen conversation. The technology of personal telecommunications and the rich, diverse BBS culture that is growing on every continent today were created by citizens, not doomsday weapon designers or corporate researchers." -- Howard Rheingold[47]

Up until this point, all of the networks that we've discussed have been housed inside of institutions: government agencies, universities and the military. The primary reason for this is that computer hardware was prohibitively expensive in the 1960s and 1970s. In an era when mainframes retailed for millions of dollars and programming knowledge was limited to a select few academics and engineers, only organizations with the ability to marshal significant resources were able to conduct experiments in computer networking (the crafty Resource One being the lone exception to this rule).

In the early 1970s, however, computers started making their way into the homes of ordinary people. The earliest home users were electronics hobbyists, who assembled their own "microcomputers" from kits purchased via mail order. Most of these machines were only able to run binary; input was handled via a series of toggle switches and output via a set of blinking lights. Today, these early machines might seem to have more in common with primitive calculators than modern computers. By the late 1970s, however, a second generation of microcomputers, sometimes referred to as "home computers," had debuted on the market. While you still needed to assemble these machines yourself, many could be connected to a monitor or television set, allowing them to output text and images. In 1976, two Silicon Valley hackers named Steve Jobs and Steve Wozniak started selling a pre-assembled circuit board called the Apple I. While you still had to build your own case and supply your own keyboard, power supply and monitor, the $666 Apple I significantly lowered the barrier to owning a home computer. During the following year, the Commodore PET and Apple II introduced fully assembled, ready-to-use computers to the market for the first time. The personal computer revolution had begun. The next decade would see what computer historian Paul Ceruzzi has

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[46] O'Hara, *Commodork*, 12.
[47] Rheingold, *The Virtual Community*, 131.

described as "the mass distribution of minicomputers into homes and offices nationwide."[48]

In order for networking to make its way into the home, however, more was needed than just personal computers. By the late 1960s, the technology needed to connect computers to one another via phone lines had existed for some time (in fact, modem-like gadgets date back as early as the 1920s, when multiplex devices were used by news wire services). There was just one thing holding back home modems from the mass market: AT&T. Possessing a monopoly on long-distance telephone service in the U.S. at the time (this monopoly was often referred to as "the Bell system"), AT&T was able to hold innovation at bay by prohibiting its users from connecting any non-AT&T equipment to its phone lines. Believe it or not, users at the time were forced to rent a telephone handset from AT&T for a monthly fee, similar to the rental fees many of us now pay to rent modems from our internet service providers. What's more, the AT&T handset was hardly plug-and-play: it had to be installed in your home by an AT&T technician. This all changed in 1968, as legal scholar and telecommunications historian Tim Wu relates in his book, *The Master Switch*.

> In a seminal case in 1968, the [Federal Communications Commission] ordered Bell to allow the connection of the "Carterfone," a device designed to connect a mobile radio to a Bell telephone. Based on the Carterfone advance, the FCC went further and specified something simple but absolutely essential: the familiar RJ-45 telephone jack. You have probably used the phone jack hundreds of times without realizing the hard-fought battle behind it. The modular phone jack made it unnecessary for a Bell technician to come and attach one's phone to the phone line. More crucial, with the phone jack in place, any innovator--any person at all--was suddenly free to invent things that could be usefully attached to the phone line.[49]

This landmark FCC ruling--often referenced as one of the agency's greatest triumphs in championing innovation--turned the American telecommunications industry on its head overnight. All of a sudden, hobbyists, amateurs and entrepreneurs were free to experiment with their phone lines and to build devices and applications that leveraged the extensive national network that AT&T had built. Perhaps most significantly, the Carterfone decision paved the way for the home computer modem.

> That phone jack and the Carterfone decision made it possible to sell to the public devices like fax machines and competitively priced (non-Bell) telephones. They also made possible the career of Dennis Hayes, a computer hobbyist ("geek" is the term of art) who, in 1977, built the first modulator/demodulator (modem) designed and priced for consumers, the so-called Hayes modem. He built, that is, the first consumer device that

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[48] Turner, *From Counterculture to Cyberculture*, 129.
[49] Wu, *The Master Switch*, 190.

allowed personal computers to talk to each other, and with that you can spy the first causal relation between the federal deregulation of the 1970s and the birth of a mass Internet.[50]

By the late 1970s, hobbyists were starting to bring home both personal computers and modems, devices that were increasingly priced within the reach of middle-class American consumers. There was just one problem: with the internet still a decade away, there wasn't much you could use a modem for at home. That all changed one snowy day in Chicago, when two bored hobbyists started working on a project that would change the history of social computing.

CBBS and the birth of the Bulletin Board System

January 16th, 1978 was a very snowy day, even by Chicago standards. Ward Christensen woke up early, between 7:30 and 8am, and started digging out his driveway so that he could commute to his job as a technical sales specialist at IBM. Having made little progress after two hours of shoveling, he decided to throw in the towel and headed back inside.

Seeing how he would be unable to go to work, he phoned up his friend Randy Suess, a fellow member of the Chicago Area Computer Hobbyists' Exchange (CACHE), a hobbyist club similar to the Bay Area's Homebrew Computer Club. Christensen proposed that the two of them spend their day off working on a project that he thought might be useful for members of the club. The two were no strangers to working on networking projects together. The previous year, when he had wanted to send a file to Suess via modem, Christensen had written a simple file-transfer program called MODEM. This program would go on to become XMODEM, a file-transfer protocol that would remain popular among home users for years to come.

The project that Christensen had in mind this time was a piece of software that the club could use to collaboratively work on newsletters. Christensen had already established a "computer club recorder"--a sort of answering machine that club members could call into to find out when the next meeting was or to leave a message with a question. Christensen proposed using the phone line that was being used for the club recorder for something more ambitious: a system that users could dial into with their modems that would allow them to upload articles for the newsletter.

Being a software guy, Christensen decided that he would get to work on the application, while Suess was tasked with handling the hardware side of things. While Christensen worked on the codebase for the application, Suess was busy cobbling together an Altair S-100 microcomputer from spare parts, in order to have a dedicated machine to run the program. After two weeks and 20,000 lines of code,

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[50] Ibid.

they met up to conduct their first test, as Christensen recalls in the documentary *BBS: The Documentary*.

> It took me about two weeks, probably about until the end of the month, before I had some software ready to test. After a little bit of playing around I let a few friends know it was there and [asked them to] try it and get some early feedback on things that it needed. And basically, after the two weeks of designing and testing, we put it online and refined it a little and we called it a month. So February 16th became the sort of arbitrary birth date of it.[51]

Christensen and Suess had built what they called the "Computerized Bulletin Board System" or CBBS for short, the world's first BBS software. Christensen has described the software as mimicking the cork board and push pin bulletin boards that were prevalent at the time, hence the name. As with a physical bulletin board, anyone who used the system could post a new message about any topic. Unlike with a physical bulletin board, however, anyone else could then reply to that message. Eventually these messages could grow from a string of replies into a conversation.

Using this software, Christensen and Suess established what they called "Ward's Board" a bulletin board for members of CACHE that would remain in use for more than a decade. Callers would dial into the board using their home computer and modem. Once connected, they could read the existing messages on the board, post a new message or upload or download a file to or from the board using Christensen's MODEM software. Once the user was done, they would have to terminate the connection to Ward's Board so that the next user could dial in. Because the Altair S-100 running CBBS was only connected to a single phone line, Ward's Board was only capable of accepting one incoming connection at a time.

Christensen and Suess had built something remarkable but limited in scope. It would, however, serve as the seed for the BBS scene, which would make messageboards available to large numbers of people for the first time in history. In order for the CBBS software to make this leap, Christensen and Suess would need to share their work with other hobbyists outside of CACHE. Luckily, the pair had the foresight to detail their process in an article that they submitted to *Byte Magazine*, a publication chronicling "small computers and software" that was popular with the computer hobbyist set. Their article appeared in the November 1978 issue of *Byte* under the title "Hobbyist Computerized Bulletin Board". Crucially, the source code to CBBS was published alongside the article. This meant that anyone with a computer, a modem and the November 1978 issue of *Byte Magazine* could start their own bulletin board. Many such people did precisely that.

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[51] Scott, *BBS: The Documentary*.

The Rise of Regional BBS Scenes

Like with previous systems we've seen such as PLATO Notes, the ARPANET and Community Memory, a system that was initially designed for one purpose was ultimately used for another. "The whole BBS thing was for our computer club to be able to produce newsletters," Suess says in *BBS: The Documentary*, "from wherever it went from then, fine."[52] By 1980, word of Ward's Board had spread and the system had over 11,000 registered users from as far away as Hawaii, Australia and Europe.[53] By this point, the system was being used for general "computer-related" discussion, and Christensen and Suess took pains to ensure that all of the threads on the board remained relevant to the topic. As the duo told *Kilobaud Microcomputing Magazine* in 1980:

> **Microcomputing**: Well, a call to a busy CBBS is a quick way for people out of the country to get a feel for the latest microcomputing news and developments. With all of those diverse users, do you often have to play the role of policeman and censor the material?
>
> **Ward**: Surprisingly, not often. It is easy to do, but we don't delete things very often. Trash on a system is self-perpetuating. If you catch it early, it doesn't grow. As you may have noted if you read the system sign-on, we try to keep the notices to computer-related subjects, so in that way we can exercise some discretion.
>
> **Randy**: Cars for sale and computer dating don't really meet our definition of computer-related.[54]

While Ward's Board worked to retain its focus on computer-related news and discussion, other boards sprang up around the country, many of which focused on different topics. Within two years of the release of CBBS, there were between 200 and 300 bulletin boards in North America, dedicated to the discussion of games, movies, chess and cars, among other topics.[55]

As the concept of the bulletin board spread, the software evolved, eventually branching out into countless variations. While the original CBBS software was geared toward newsletter creation and the uploading and downloading of files, later variants were fine-tuned to serve as frameworks for community and discussion. In many cases, the BBS software itself changed hands on BBS boards, with various engineers and hackers creating what we might now call "forks" of the code, adding personal flourishes that would push the BBS in new directions. Eventually, various

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[52] Ibid.
[53] Derfler, "Dial Up Directory."
[54] Ibid.
[55] Scott, *BBS: The Documentary*.

pieces of BBS software would incorporate features like chatrooms, instant messaging and early online games.

For the next 20 years, bulletin board systems would thrive, serving as the primary reason for home modem ownership until the rise of the World Wide Web and commercial internet service providers in the 1990s. By 1993, it's estimated that there were some 60,000 BBSes in the United States alone.[56] A few years later, at the peak of the BBS craze, it's estimated that there were over 150,000 bulletin board systems operating in North America.[57]

> There are religious BBSs of every denomination, sex BBSs of every proclivity, political BBSs from all parts of the spectrum, outlaw BBSs, law enforcement BBSs, BBSs for the disabled, for educators, for kids, for cults, for nonprofit organizations--a list of the different flavors of special-interest BBSs is dozens of pages long.[58]

A new BBS was established when a so-called "system operator" or "sysop" decided to install BBS software on a machine and make it available for incoming calls via a modem and phone line. To get the word out, the sysop would seek to have his or her board's phone number listed in a directory of local bulletin board systems. These directories were passed around at hobbyist clubs, computer fairs and in electronic form on the boards themselves. Once the board's number was publicly listed, users could start calling in and posting messages. With a little luck, these users could eventually form the basis for a tight-knit community.

Despite the widespread popularity of the BBS throughout the '80s, each system was still a world unto itself, a self-contained community with its own userbase, norms and interests. At the time, long-distance phone companies would bill users differentially based on the area code they wished to call. While it was relatively cheap to place a "local" call to another number within your same area code, calling long-distance to another area code could quickly become very expensive. The same pricing structure applied even when it was your modem that was doing the calling. As such, while early directories listed boards from around the country, as the number of BBS systems rose, these directories became increasingly local, catering to the needs of users who tended only to call the bulletin boards nearest to them. Subsequently, the boards themselves became hyper-local, reflecting regional interests and communities. As Rob O'Hara explains in his memoir of the BBS era, *Commodork*:

> Each and every BBS was its own independent island of information, complete with its own users and conversations. Since users tended to call bulletin boards inside their own local area code (to avoid long distance phone

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[56] Rheingold, *The Virtual Community*, 9.
[57] Scott, *BBS: The Documentary*.
[58] Rheingold, *The Virtual Community*, 9.

charges), each area code had its own pocket of boards and users who existed only within their own little microcosm. Along with its own user base, every BBS had its own unique set up, configuration, graphics, look, feel, and content. Like teenagers with their first car, sysops (system operators, the people who ran bulletin boards) spent many hours modifying and customizing their systems, making each one unique.[59]

While it was possible to call distant boards in far away area codes, it was highly unusual to do so. So unusual, in fact, that sysops were sometimes suspicious of users who registered accounts from 'foreign' area codes.

> Every summer, my family took a road trip to Chicago to visit my dad's relatives. Before our trip in 1987, Charon and I spent the two weeks prior to my family's vacation calling bulletin boards in the Chicago area, registering accounts. Back then, sysops treated callers from other area codes with great respect since those callers were spending their own money to call long distance. Having long distance users call your BBS was considered very prestigious. Suspicious bulletin board owners would often call and verify that long distance callers were indeed who they said they were. We assumed that would occur, and as expected several of the Chicago BBS owners called us at our homes in Oklahoma and verified that we were truly out-of-state callers.[60]

Still, the majority of BBS users stuck to local boards, a fact that had a major effect on the nature of social interaction between users. Since users generally tended to live in the same area code, it stood to reason that they usually lived within driving distance of one another. As O'Hara explains, "Unlike Internet communities that are often comprised of people who have never met one another, it was not uncommon for people to meet each other in person back in the BBS days."[61] So-called "BBS parties" were popular during this era, with users meeting to socialize, trade software (copying via disk drives being much faster than uploading to and downloading from a BBS via modem) and solidify their friendships outside of the BBS world.

BBS Subcultures

Hard to imagine though it might be today, the bulletin board systems of the '70s and '80s were purely volunteer-run affairs. That is to say, users dialed in directly to boards run by other hobbyists, without aid from an internet service provider--or the internet itself, for that matter. On the other end, sysops also ran their boards without the need of a hosting or service provider--serving all of the board's content directly from a machine in their home. Even more so than modern technologies like

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[59] O'Hara, *Commodork*, 14.
[60] Ibid., 55.
[61] Ibid., 99.

BitTorrent, BBS systems were 100% peer-to-peer and were maintained by hobbyists who invested their own time and money to keep the boards up (the one notable exception here is boards that were run by computer stores, which were not uncommon). In this sense, the BBS scene had more in common with electronics hobbyist communities like the HAM radio network than most modern web communities, which generally rely on commercial software and hosting.

Since the primary discovery mechanism for boards was word-of-mouth, the BBS scene was able to thrive with little oversight or notice from the world at large. The underground nature of these boards would come to influence the various types of subculture that would thrive on bulletin boards, ranging from the esoteric (ASCII art) to the illegal (the unauthorized distribution of software).

> Most bulletin boards fell under one of three categories. Some boards were set up mainly as message boards, others were set up for playing online games, and the rest were set up for trading software. It was not uncommon for a BBS to provide all three of those services, but most boards catered to one more than the other two – boards with active file areas usually had message boards filled with pointless drivel, and vice versa.[62]

In recent years, so-called "software pirates" have been actively prosecuted in most western countries, using many of the same legal mechanisms used to punish the theft of hard goods. In the late '70s and early '80s, however, the legal and moral implications of software trading were less clear. Part of the reason may have been the "hacker ethic" described by Steven Levy, which treated the free distribution of code as a virtue, not a crime.[63] The ease with which software could be copied also played a part. By the time BBS boards started to gain traction in the mid-'80s, most computer hobbyists were accustomed to trading software by copying each other's floppy disks at meet-ups. It's hardly surprising, then, that this practice quickly made the leap to the BBS boards. There's some indication, though, that the sysops who ran the boards realized that this activity was hardly innocuous and at the very least, should remain hidden from public view.

> Then there were BBSes that had both public and private areas. On the surface they might look like a legitimate bulletin board, but word would often get out that such boards had a "back room" area that people who played their cards right could get access to. Getting pirate access on those boards required quite a bit of dancing around the topic before ever getting around to the point. Then of course there were all-out, blatantly run warez BBSes. With names like Pirate's Cove, Back Alley Access and Gamez Galore, there was no mistaking these dens of pirated software for anything other than what they were.[64]

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[62] Ibid., 26.
[63] Turner, *From Counterculture to Cyberculture*, 136.
[64] O'Hara, *Commodork*, 56.

Whether ethical or not, the use of BBSes for the purpose of trading software was a direct outgrowth of the technology's design. Ward Christensen and Randy Suess had designed CBBS to easily interface with file transfer software, in order to facilitate the transfer of files for their newsletter. While most subsequent BBS users were not interested in collaboratively working on newsletters, some were more than happy to co-opt BBSes and file-transfer software like XMODEM to feed their appetite for free software. Notably, such activities mark the birth of file-sharing culture, more than 20 years before services like Napster would introduce the concept of file-sharing to the mainstream. Software trading on BBSes also led to the first forms of Digital Rights Management (DRM), as software publishers attempted to use access control technologies to lock out users who hadn't purchased the software. This would eventually lead to a cat-and-mouse game, with crafty hackers seeking to "crack" new protection schemes as quickly as they were released. As this arms race escalated, hackers took to the BBSes to brag about their feats and cultivate a reputation for their ability to quickly deliver cracked software to the community.

There were, however, even less savory activities that occurred on some boards. As with software trading, the underground nature of BBS systems allowed a variety of illegal activities to thrive, largely free from scrutiny. As O'Hara recalls, a variety of different hacker subcultures used BBS boards to trade information. "Aside from piracy (which was so common that people rarely even referred to it as something illegal), many boards displayed the HPAC badge: Hacking, Phreaking, Anarchy, and Carding. Later, HPAC was changed to HPVAC to include Virus programming."[65] Here, "phreaking" refers to the practice of using specific dial tones to trick the phone system into allowing a user to place free phone calls. "Carding," meanwhile, was simply credit card theft. Stolen credit card numbers would sometimes circulate on BBS boards, allowing unscrupulous users to pay off their long-distance phone bills on someone else's dime.

Still, destructive hacking and theft were just one flavor of subculture in the BBS world. Digital artists--a new breed of creators who, like the BBS boards themselves, had emerged alongside personal computers--took to BBS systems to show their work, seek critique and discuss art. The most well known visual art BBS was The Thing, a system hosted in New York City by the artist Wolfgang Staehle. Staehle established The Thing in November of 1991 as a sort of living experiment, an art piece in the form of a community.

> More than a vessel, The Thing was conceived as a contextual art project in and of itself. Staehle modeled it in part after Fluxus pioneer Joseph Beuys' idea of "social sculpture," a kind of inclusive, ever-evolving collaboration with utopian undertones — a snug fit for emergent forms of networked communications — which Beuys would describe as "A social organism as a work of art ... Every human being is an artist who – from his state of

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[65] Ibid., 64.

freedom... learns to determine the other positions of the total art work of the future social order."[66]

ANSI and ASCII graphics--a form of text-based visual art that used text characters to create images--were already an important part of BBS culture, allowing sysops to use visuals and animations to customize their login screens. At the height of the BBS scene, it was not unusual for boards to feature complex ANSI/ASCII images and animations as a means to signal their individuality. Art boards like The Thing pushed these practices into the world of gallery art, eventually showcasing more than just simple text-based works. In 1987, the commercial online service provider CompuServe introduced a new color image format called the Graphics Interchange Format or "GIF". This format quickly became popular for its superior compression algorithm and small file sizes, which led to faster download speeds over slow connections. The format also allowed a user to store multiple images in one file, a feature that was quickly adopted by artists on The Thing and other BBSes in order to produce short, looping animations.

In 1992, The Thing held its first in a series of "online gallery exhibits," consisting mostly of photos and scans of physical works--later shows would incorporate original audio and even video works. Users would dial into The Thing and download the works, which they could then critique and discuss with other users. "I totally gave up showing in galleries after this... I was so hooked," Staehle told *The Verge* in 2013. "It became part of our life. We dialed in two, three times a day to see what was new."[67] Staehle eventually had to add a machine in Düsseldorf to serve users in Europe, dialing into the system at midnight each day (when international phone rates were cheapest) to sync up the machine with his computer in New York.

Much like a physical art gallery, The Thing eventually brokered sales of works and helped emerging digital artists gain recognition outside of the BBS scene. The New York-based artist G.H. Hovagimyan recalls unexpectedly seeing his work in a gallery, after posting it on The Thing.

> One day I was visiting T'Z Art Gallery in Soho (one of many I was courting), and I found myself chatting with the dealer, Thomas Zollner. He was called away to take a private telephone call, and as I sat in his office I glanced over at his computer and was surprised. There on his screen were my "BKPC" images. He was using them as a rotating screen saver. I found this to be quite revealing. Although my work wouldn't move through the standard gallery system, it did circulate on the [BBS]. Zollner had responded to the aesthetics of the piece, not the physical object and its market potential. My art was being exhibited in a gallery, but in an ambient, aesthetic manner.[68]

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[66] "'The Thing' Redialed."
[67] Ibid.
[68] "Tell Me About Your Mother's Tumblr."

The Thing was so significant in the formation of the digital arts scene in New York that in 2013, the New Museum decided to resurrect the system and put it on display as part of its show, "NYC 1993: Experimental Jet Set, Trash & No Star."

Another subculture that quickly found a home on BBS boards was gaming enthusiasts. Certainly, much of the software trading that took place on BBSes was devoted to the distribution of games. Not all of it, however, was illegal. During the '80s and '90s, so-called "shareware" programs were quite common. Independent developers would sometimes make a version of their software freely available and encourage users to distribute that software, as a means of getting the word out in a crowded marketplace. Sometimes, the software in question would be a demo or would only provide access to certain features ("crippleware"), in order to encourage users to purchase the full version.

One such program was the computer game *Doom*, developed by id Software, an independent company based in Mesquite, Texas. In 1993, the company released a shareware version of *Doom* that provided full-access to the first third of the game-- the remaining levels were available for purchase via mail order. *Doom* was widely hailed as a revolutionary title, popularizing concepts like 3D environments, the so-called "first-person shooter" perspective, networked multiplayer gaming and customizable levels. It is estimated that the game was played by some 10 million people within two years of its release--a staggering number, given the relatively small number of people who would have owned a computer capable of running the program at the time.[69] Much of this success has been attributed to the game's shareware version, which was freely distributed and widely discussed on BBS systems around the country.

Software titles like *Doom* weren't the only games that were popular among BBS users, however. An entire genre of BBS-native, text-based games were developed by hobbyists and played on the boards themselves. Most of these games were turn-based text games, similar to pen and paper role-playing games like Dungeons & Dragons, which were also popular at the time. Some allowed multiple users to play simultaneously, if asynchronously, utilizing the same mechanisms that allowed users to hold conversations. A sysop would install the game on the same machine that ran the BBS software and users would access the game through a "door," an interface that allowed BBS users to access external applications running on the same machine. Users of such BBS games were among the first to experience both online gaming and multiplayer online gaming.

Perhaps the most popular BBS game, *Trade Wars*, consisted of gameplay that was reminiscent of the board game Risk but which took place in a *Star Trek*-esque universe. Released as shareware in the early '80s, it quickly spread, spawning numerous versions and clones.[70] *Legend of the Red Dragon*, meanwhile, was similar

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[69] "*Doom* (video Game)."
[70] "Trade Wars."

to traditional fantasy role-playing games and has been described as consisting of a mix of "action and romance".[71] Perhaps the most infamous BBS game of them all, *PimpWars* addressed subject matter that no professional game studio at the time would have dared to touch. A strategy game of sorts, it invited the user to manage a stable of prostitutes in the hopes of maximizing profits. Using the principles of supply-side economics, users attempted to outwit each other, in order to win the game.

> The interface is a series of single-keystroke options selected from various textmode menus, with every action undertaken adding minutes to the clock. Once you hit late night, all you can do is sit back and wait for your employees to earn their commission. The following day, you get to find out what all your careful arrangements (and more to the point, what the other players' careful arrangements *against you*) amounted to.[72]

Due to the game's transgressive subject matter and racial undertones, some sysops decided not to make the game available to their users. Many of those who did restricted access to the game to users over the age of 18. Ironically, this prevented Paul J. Martino, the author of the game, from playing it on many BBSes: "[W]hat's funny about that was that I wrote it when I was 14 and I couldn't play it on a lot of BBSes because they said you needed to be 18!"[73]

FidoNet: "The People's Internet"

As we've seen, BBS systems thrived in the 80s and early 90s, supporting the development of untold numbers of regional computer hobbyist, art and gaming scenes. As remarkable as the widespread popularity of BBS systems was, the geographic scope of each BBS was still limited by the nature of long-distance telephone pricing. Boards were still islands onto themselves, unable to interconnect or share information with other systems. This all changed in 1984 with the creation of FidoNet, a decentralized network that allowed discussion threads to be shared and synchronized between BBS boards in different locations. Sometimes called "the people's internet," FidoNet was often regarded as the DIY/hobbyist alternative to the emerging public internet. In hindsight, FidoNet was in many ways the original "network of networks," a phrase that would be coined to describe the internet in the 1990s.

Like most advancements in messageboard technology, FidoNet was borne out of a need that was largely unrelated to its eventual use. The software behind FidoNet was created in 1984 by Tom Jennings, an engineer at Phoenix Software by day and a BBS sysop by night. Jennings had authored his own BBS software called Fido and

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[71] "Legend of the Red Dragon."
[72] "PimpWars."
[73] Ibid.

remained in close contact with John Madill, a fellow sysop who used Jenning's software to host a board in Baltimore, Maryland. After a few months worth of expensive telephone calls from his home in San Francisco to Madill's home in Baltimore, Jennings began to wonder if there might be a more economical way for the two to exchange short messages. "I just did the math and it wasn't a whole lot of money," Jennings said of the cost of exchanging text messages via modem. "In one minute, you could move a couple of [kilobytes] of text. The economics just weren't that bad."[74]

Jennings decided to build a system that would allow his board to "talk" to Madill's board, in order to automatically exchange small private messages via modem sessions late at night, when phone rates were cheapest. He called this service "Netmail," as it was analogous to the electronic mail systems being used on ARPANET and via the UUCP Unix networking protocol. Eventually, Jennings would build out a set of "piggyback protocols" that would utilize the same networking protocol that he had written for Netmail. Among these was a feature called "Echomail," essentially a public version of Netmail that would allow multiple Fido boards to share a public discussion thread. Crucially, Jenning's Echomail protocol would compress the text files before sending them over the network, thereby reducing the cost of transit and for the first time, making long-distance communication via modem affordable for home users. Netmail never quite caught on but Echomail, its messageboard counterpart, was an instant hit, serving as the "killer app" that drove adoption of both the Fido BBS software and FidoNet.

Despite its utility, Jennings chose to give both the Fido and FidoNet software away for free, only charging corporate customers or those who wanted a physical disk and printed manual.[75] Jenning's cultural and political beliefs likely played a role in this decision: he was an avowed anarchist and was an early participant in the queercore movement, an LGBTQ punk subculture. During his time in San Francisco, Jennings served as the publisher and co-editor of *Homocore*, one of the earliest examples of a self-published queercore zine. Certainly, Jennings was no stranger to the idea of doing it yourself, without the need of any monetary incentive.

Much like the internet of today, FidoNet's architecture was decentralized. That is to say that data could move from one board to another without having to pass through a central location. Using a "hub-and-spoke" model, one board could pass data to a nearby board, which, in turn, could pass that data on to another nearby board. If we consider the proliferation of BBS boards during this time (by the mid-1980s, nearly every city and town in the United States had one, if not more system), it should be clear why this particular network topology was so powerful. FidoNet leveraged the collective footprint of BBS systems across the country in order to provide a cheap means by which to transfer data over long distances. Discussion threads were able to hop from one nearby board to another, incurring relatively minor costs for each

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[74] Scott, *BBS: The Documentary*.
[75] Borsook, "The Anarchist."

individual sysop while allowing those threads to travel cross-country. While FidoNet was initially only available for boards running on the Fido software, it was eventually modified to be compatible with hundreds of different types of BBS software, thereby increasing the network effect and allowing FidoNet to grow exponentially in the years following its release.

To wit, in the six months following the release of FidoNet, the initial network grew from just two nodes to 150.[76] From there, the rate of growth continued to escalate: 400 nodes in 1985, 1,935 nodes in 1987 and 35,787 nodes by 1995.[77] At its peak in 1996, the network would boast over 50,000 nodes total, rivaling the fledgling internet before being superseded by it in the late '90s.[78] A 1996 *Wired* Magazine profile of Jennings describes FidoNet thusly:

> A totally decentralized, easy-to-use, low-cost technology for linking BBSes, FidoNet in turn has grown to be the IRL ["in real life"] information superhighway for BBS operators all over the world. Through a kind of mirroring software, FidoNet allows BBSers on remote boards to participate in each other's conferences and send messages beyond their local server out to the entire system. There are more than 50,000 public and private FidoNet nodes, showing up in places as unexpected as the Canada Post Corp. and the United States Forest Service. And while no one really knows how many more than 50,000 there are, it's pretty likely there are as many FidoNet nodes as there are Internet ones...With FidoNet there is no centralized authority, but there is a power-to-the-people technology, store-and-forward messaging that takes advantage of late-night el cheapo telephone rates in the US to pass data from one board to another. FidoNet can be tweaked so that sysops keeping current with the latest telco pricing structures can route calls across state or national borders to keep costs down.[79]

FidoNet was far ahead of its time in the mid '80s, providing a prototype of a world-wide, decentralized network a full decade before mass adoption of the internet. By the early '90s, FidoNet nodes existed all over the world, in locations as far away as Vietnam. American soldiers stationed in Saudi Arabia during the Gulf War were even able to use FidoNet to keep in touch with loved ones at home--a first.[80] As it grew, however, the limitations of the network began to show. Despite the fact that FidoNet was technically decentralized, in terms of its administration, it was highly centralized. As Thom Henderson, an engineer involved in the early development of FidoNet has stated, "The great irony of FidoNet was that Tom Jennings was an anarchist and believed that everybody should just do their own thing but he

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[76] Scott, *BBS: The Documentary*.
[77] Ibid.
[78] Borsook, "The Anarchist."
[79] Ibid.
[80] Scott, *BBS: The Documentary*.

designed this networking technology that required a central authority to say who was in and who was out."[81]

Initially, the list of FidoNet nodes was maintained by Jennings himself, using post-it notes stuck to his wall. At irregular intervals ("Whenever he felt like it," according to FidoNet co-architect Ben Baker), Jennings would publish the latest node list, informing FidoNet users of other boards that had come online.[82] In 1985, as the network was quickly approaching the 250 node limit that was written into the initial code, the architects of FidoNet held a meeting to decide how to redesign the network to accommodate more nodes. A decision was made to split the network up into regions, based on those used for the NCAA college basketball bracket. As Baker recalls, "[Jennings] had some maps in his knapsack. And he pulled out a map of the U.S. All it had was the outlines of the states. And Tony Clark and I got down there with felt-tip markers and started carving out regions."[83]

While this rearchitecting of FidoNet would make the network's growth during the next 20 years technically feasible, Jenning's decision to centralize the administration of the network would ultimately tear it apart. Eventually, Jennings sought to establish a stand-alone non-profit organization known as the International FidoNet Association (IFNA) to oversee the administration of FidoNet. This proposal, however, was met with suspicion from users who feared that IFNA was simply an attempt by Jennings to exert even greater control over the network. When in 1989, a plan was announced to put IFNA in control of FidoNet's operation at FidoCon (a convention of FidoNet users), many in the audience were incredulous and broke decorum, yelling angrily at Jennings and the other members of the IFNA board. The plan was never implemented and many now pinpoint this debacle as the beginning of the end for FidoNet. As Jennings recalled some years later, this breakdown may have been inevitable, given the network's size and structure.

> When you have a small group of people everyone knows, you might have foibles and differences but I can see you're working on this and so things kind of work out. But when you get to the point where you have people who don't know each other, then you get to the point where people perceive that there's an inside and an outside. And if they're not inside, things are being done to them from the inside and then people scream and yell.[84]

While FidoNet continued to exist following the IFNA debate, much of the network devolved into political infighting in the years that followed, alienating early members and discouraging new ones. A FidoNet sysop named Timothy D. Jasionowski even penned a humorous song to commemorate the IFNA debates,

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[81] Ibid.
[82] Ibid.
[83] Ibid.
[84] Ibid.

titled "The Day the Network Died" (sung to the tune of Don McLean's "American Pie," naturally).[85]

Though the failure of IFNA certainly played a role in FidoNet's eventual demise, it wasn't the only cause. By the early '90s, FidoNet had found itself competing for users with the internet, a network with a similar architecture but with increasingly advanced multimedia capabilities. In 1991, the World Wide Web made its debut, allowing documents to be "linked" to each other using web addresses. In 1992, Tim Berners-Lee, the British computer scientist who had invented the web, published the first photograph to a webpage. In 1993, Mosaic, the first modern web browser, was released. Allowing text and images to be viewed side-by-side, Mosaic predicted the modern web design paradigm and helped popularize the public's perception of the World Wide Web as a "multimedia" experience.

As the web was gearing up for massive growth and innovation, FidoNet had fallen into a period of decline. By the early '90s, Jennings had all but ceased his work on FidoNet, having been soured on the community following the IFNA episode. Even if Jennings had remained engaged, however, it is doubtful that FidoNet would have been able to compete with the web's multimedia capabilities. BBSes were designed as a text-only medium, for a time when bandwidth was scarce and expensive and connections were slow. While many sysops pushed the limits of the medium with flashy ASCII/ANSI graphics and animations, these visuals would come to look increasingly dated next to the web's visual capabilities. And while the early web benefitted from its unification around a single technology--Mosaic, virtually the only piece of consumer software being used to access the web at the time--FidoNet was hopelessly fragmented with regard to technology. Hundreds, if not thousands, of variants of BBS software were in use on FidoNet. As such, any major advancements in the capabilities of these boards would have required either updating the software on a large percentage of these variants or standardization around a small number of them--both of which would have been unlikely.

Ultimately, the structure, organization and technical limitations of both FidoNet and BBSes in general limited their ability to adapt in order to compete with the web. As users began to migrate to the internet, some BBS sysops pivoted quickly to become the earliest Internet Service Providers (ISPs), using their infrastructure and local audience to capitalize on the increasing demand for internet access. Most BBSes, however, simply went offline. While BBSes remain in use today, they are used primarily overseas, enjoying some popularity among young people in Taiwan and Korea. Still, most boards that remain online today are accessed by a fraction of the number of users who once called in. FidoNet also continues to exist, though its size is estimated to be around 200 nodes--just barely larger than it was six months after launch.[86] The majority of these nodes are hosted in Russia and Germany, where

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[85] "The Day the Network Died."
[86] "The BBS Corner - The Fidonet BBS Network."

FidoNet is still regarded by some enthusiasts as a viable, free alternative to the internet.

8. Stories From Underground: A People's History of the Messageboard

As we've seen, over the course of the last five decades, the messageboard has taken on a number of different forms, providing countless communities with fertile ground for discussion, socializing, information gathering, coordination and a whole range of other group activities. No one book could ever hope to catalog every use of messageboards up to the present, however. Not only are messageboards so great in number so as to frustrate any attempt to count them, many of them are embedded far enough underground that they are only known to their users. In an attempt to illustrate the breadth and diversity of messageboard subcultures, this chapter features interviews with ordinary messageboard users, who discuss the boards that they participated in and the significance that those communities had to their lives. The users here span the history of messageboards, from BBSes to contemporary services like Stack Overflow and the topics discussed range from *Star Wars* to sexual orientation, from parenting to computer programming. Rest assured, if there is a topic that human beings like to discuss, there has at one point been a messageboard devoted to that topic. The goal of this chapter is to provide a few snapshots from a handful of those communities, as told by the users who participated in them.

Greg Dorsainville, graduate student, technologist[87]

Greg Dorsainville first cut his teeth on Usenet, when he was a freshman at Harvard University in the fall of 1998. A fellow student recommended Usenet to Dorsainville, which he casually read in order to keep up on topics like video games and sports. When he moved to the Williamsburg neighborhood of Brooklyn, New York in 2003, he found himself, "struggling to find a place to do things or hang out or find people". That all changed one day, when he walked in on his roommate using a messageboard.

> My roommate one day was sitting on the couch just laughing hysterically and she's showing me this—just this picture, I can't remember what it was. But there were just so many images that were absolutely hilarious. People who knew rudimentary clip art, rudimentary Photoshop and just made the funniest things. And I was like, where are you getting these from? And she said, "My friend's messageboard".

The messageboard was called "Sit and Spin" and was a tight-knit community of about 15 friends, which Dorsainville soon joined. The board had been established by Ian Meyer and Ben Running, two Brooklyn-based technologists who would go on to help launch other boards like BCO before working for web startups like Etsy and Buzzfeed. Being a talented programmer, Meyer had written the software for Sit and Spin himself, lending the board a unique look and feel.

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[87] Dorsainville, interview.

Dorsainville instantly realized that Sit and Spin was what he had been searching for. "It was just like an immersive friendship all the time, any time of the day, at work, it was great," he says. Sit and Spin members often gathered offline at bars and parties and quickly developed their own vernacular and in-jokes.

> I never went to camp when I was a kid and so that tight, you live with people, you're living near people integration thing never happened for me. And it doesn't really happen anymore when you're adults. But the messageboard allowed you to have that—you're only with these people all the time in your free time.

Meyer and Running soon realized that they were on to something. "Ben thought, why don't we make this huge? Let's make this for Williamsburg," Dorsainville recalls. In the fall of 2005, the pair launched the "Williamsbord, a messageboard focused on local happenings in Williamsburg, using the source code from Sit and Spin. The board was an instant hit, appearing in *the New York Times* just months after its launch and quickly amassing a user base of hundreds of active posters. According to Dorsainville, the list of topics discussed on the board ran the gamut. "Everything that you care about: politics, sports, art, new feminism vs. old feminism, music, movies, TV shows, health issues, depression, drugs." Dorsainville found that he was drawn the most strongly to topics that he knew little about. "I had a science background, so anything art, anything literature, graphic design. And I learned how to write better—I would write super-long rebuttals to ideas."

Unlike most messageboards of its era, however, the Willamsboard remained locally focused even as it grew. "This was like, the person across the street from you," Dorsainville recalls. Through the board, he established close friendships with neighbors that he otherwise might not have known.

> There was this one woman on the board who was way older than us. She was a guitarist for a bunch of great bands—like Ryan Adams and the Cardinals— and she did a lot of studio work and industry work. And she lived across the street from me. There is no way in hell I would have ever been friends with this person otherwise. And I didn't know it was her but I had interacted with her, just because she lived across the street from me. And when we figured out we were across the street from each other it was just the best friendship! And it's sad to me because we're not that close anymore but it's only because we don't have this constant, everyday thing like that, where I peered into her really ridiculous world of like, trying to tell [electronic musician] Moby that he should quit—just ridiculous things like that!

Due to the board's local focus, most of the users lived in close proximity to each other. Much like in the BBS days, meetups were not unusual. "We did something weird—I know other messageboards don't do this—we had hangouts," Dorsainville recalls. "Where we would be like, let's go to Union Pool." Board relationships sometimes even went beyond friendships. "There was a lot of 'wintercest'--do you

know what that is?" Dorsainville asked. "In Williamsburg, in the winter, the hookups that you have that don't make it to the spring. There was a lot of that."

Despite the fact that local news outlets like *Gawker* occasionally mined the Williamsboard for stories, the community was relatively low-drama, even compared to similar boards like BCO (the Williamsboard's Philadelphia equivalent). Aside from Meyer and Running occasionally deleting posts they found offensive, there was little moderation required. Dorsainville attributes this to the fact that most users lived in close proximity to one another.

> Every other messageboard that I tried to check out, man were they intense! Like scary—I want to say trolls. There was a real intensity to everything—everything mattered. And the messageboard that I was a part of, I guess the reason it wasn't like that was that we were all neighbors.

After a few years of posting frequently on the Williamsboard, Dorsainville decided that he needed to move on. "I felt like I needed to be more productive—or, more purposed—with my time," he says. Around 2009, shortly after starting what he calls his "first real job," Dorsainville decided to quit the Williamsboard. "One of my friends just quit, cold turkey. And I was like holy crap, you can just do that? And I had to quit smoking first and then I quit the messageboard."

Nowadays, Dorsainville spends his free time online using services like Twitter, though he still maintains close friendships with many of his friends from the Williamsboard days. Of the friends he made on the board, he says, "They become your family—I hate saying that term—but like, you live with them."

Heather Velez, graduate student, storyteller, educator[88]

Around 1998, when Heather Velez was 15 years old, she began posting on a web-based messageboard she had been introduced to by fellow users of an AOL chatroom devoted to the discussion of feminist singer-songwriter Ani DiFranco. "It was a community for queer women, LGBTQ, the entire spectrum," Velez says of the messageboard, which was called Strap-On.org. Growing up in "a very small, conservative, Catholic community where it was not okay to question your sexuality," Velez had little access to information about topics like women's rights, feminism and LGBTQ issues. "For me it was a great kind of resource, because I was not ready to be gay in real life," she explains. "I was like, this is fun! I like it here where I can explore all this stuff and I'm still safe in my house, in front of my computer where no one knows."

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[88] Velez, interview.

As with many of the communities we've discussed, while the users of Strap-On.org were initially brought together by their shared interest in LGBTQ and women's issues, their discussions quickly branched out into other topics as well.

> The premise was originally sexuality and sex—like, here's a forum where we can discuss anything that we have issues with. It was still the '90s, so it wasn't as easy to be gay and out. But you kind of get tired of talking about that all the time. So the biggest other kind of topic was music—what new album did Sleater-Kinney put out and who's going to this concert and let's coordinate.

Velez describes Strap-On.org as a "nice, fruitful environment," one where many of the hundreds of users felt grateful to have a space where they could discuss their beliefs and lifestyles with likeminded women. There was very little trolling, flaming or antisocial behavior in general and conflicts that required moderation were relatively tame.

> The problems [the moderators] faced, I think were when someone was offended by the politics of another person. And they kind of had to be the mediator to be like, "We're going to have this debate online but we're not going to let it get out of hand—everyone has their own opinion, they're entitled to it but let's try to make something more fruitful out of this rather than call each other names."

Velez quickly built relationships in the community, establishing friendships that would carry over to other online mediums before, in some cases, crossing over into offline life. "We developed online relationships where we were Friendster pals and we're also chatting on ICQ or AOL and emailing," Velez explains. "And then those online relationships turned into offline ones where we'd meet at concerts and go to house parties in Brooklyn."

Eventually, the messageboard lost steam, due in part, Velez believes, to its deep ties to cultural movements like Riot Grrrl (a subculture that extended the self-determination of punk rock to women), which peaked in the late 1990s. "The community itself felt very much of the moment—in the '90s, with like the whole Riot Grrrl movement and Kathleen Hannah—things were just super exciting and fun then." Around 2001, Strap-On.org was also forced to change its logo after receiving a cease-and-desist letter from the company Snap-On Tools, whose logo they had parodied. This incident is one of the last things Velez remembers of the board, as she and other users migrated to nascent communities like Facebook, where in some cases, their relationships continued. More than 10 years later, Velez still keeps in touch with friends that she made on the messageboard, hanging out with them in person on occasion and following their lives using social media platforms. When I spoke with her, she was planning to attend a Strap-On.org reunion the following week, which had been organized via Facebook. "I'm gonna go because this is going to be awkward and hilarious and I owe it to myself to do it," she said.

In hindsight, Velez looks back on the time she spent on Strap-On.org as a formative period in her adolescence. "It was all very much me coming into my own and realizing, here's this little stepping stone I can use—the messageboard and online— and then I can really get more comfortable with myself before I step out," she explains. "I don't think that if I hadn't found this outlet I would be comfortable with my sexuality. Being able to read people speaking candidly about this stuff and living their lives and knowing that it was possible was really reassuring to me, since I couldn't talk to anyone else in my immediate community."

Robbie Tilton, User interface designer[89]

For the past two years, Robbie Tilton has been an active user of Stack Overflow, a question-and-answer forum for computer programmers. Prior to using Stack Overflow, Tilton had had no experience with messageboards. Stuck on a difficult programming problem, Tilton found himself asking a question on Stack Overflow and was pleasantly surprised with the speed with which he received an answer. He describes the process of soliciting the answer to a question on Stack Overflow in conversational terms, recalling David Woolley's realization that discussing a problem in PLATO Notes would "require some back-and-forth".

> Usually, an answer doesn't just come directly. It sort of involves some back and forth. So you get a question in return and you provide some more code in return and then finally, you get your answer.

After asking and receiving the answers to a number of questions, Tilton began to feel the pull of obligation.

> I think there was a threshold in terms of how many questions you ask in terms of how involved you feel with the forum or the community. So, after you ask ten questions, you feel obligated to give something back. Because all these strangers were so helpful to you—maybe you can be helpful to someone else.

He searched for a topic that he was knowledgeable about, found a question that he could answer and answered it. He's been participating in the community ever since, logging on every other day "at a minimum" and nowadays, answering more questions than he asks. While he admits that he is at least partially motivated by the site's point system, which allows users to earn reputation points and "badges" for good citizenship, the initial sense of obligation he felt toward the community is still his primary motivator.

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[89] Tilton, interview.

I felt like so many people helped me. And it's such a good feeling when you can get an answer to something you don't know. Especially from someone who you have no idea who they are and they don't owe you anything and they don't know you.

Tilton is a talented programmer and designer and swears by Stack Overflow as a tool for learning how to program. He says that were someone to ask him how best to learn computer programming, using Stack Overflow would be his first recommendation.

I think StackOverflow is great in terms of learning. And I think people are scared of asking questions because they think they sound like they don't know what they're doing. But I feel like StackOverflow is a better way to learn how to program than Code Academy. Because it really involves you actually doing something and asking a question based on what you're trying to do and getting the answer in terms of what you're trying to do. And it advances you, rather than reading up on syntax or copy-pasting someone else's example or even copying line-for-line.

Despite the good experiences he's had so far on Stack Overflow, Tilton says he is unsure if he will become involved in another messageboard in the future.

Robin Reid, graduate student and mother[90]

In 2006, Robin Reid gave birth to her first child. In hindsight, she readily admits that she wasn't nearly as prepared for her son's birth as she could have been. One of the few things that she had done to prepare was to read a book called *The Baby Whisperer*, which had been given to her by a friend.

Then I had my child and he came out and I was completely panicked. My father was really sick, so my mom couldn't come. My sister couldn't come--I had nobody here. And I just had this little baby and I was really upset. I was crying and everything. So I read the book but there weren't enough real-life applications…So then, I think maybe in the back of the book it said go to this online forum.

Looking for advice, Reid turned to the Baby Whisperer forum, a messageboard maintained by a group of volunteers who had closely studied the methodology described in the book. Users of the forum would ask questions spanning a variety of topics (feeding, allergies, sleep issues), which would then be answered by the moderators and other members of the community.

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[90] Reid, interview.

Soon after her son was born, Reid says that she was logging on to the site three or four times a day, looking for answers to her questions. "Every problem I had, someone had documented that problem," Reid says. "So you get up at three o' clock in the morning and he's not shutting up and you don't know what to do--that's where I would go. I couldn't call my mom, I couldn't call my sister, I would go to the website."

After a while, Reid started following certain moderators whose advice she found particularly helpful.

> There were certain moderators that I would learn to search for. There were three moderator personalities and there was one where the way she answered questions I thought was very thorough. So if I had a question, I would often sift through for her name to see if she had answered my question.

Reid relied on the site so much that when there were calls for donations to help cover the server costs--the site being 100% volunteer-run--she would always be sure to donate a few dollars, despite her own financial hardship at the time. "I had no money but whatever I could give--not having the website, I just couldn't imagine it," she says. "If that thing had ever shut down--and occasionally, it would--I felt like I was going to be in trouble for the next day."

Despite her reliance on the community for answers, Reid says that she never answered other users' questions on the messageboard. "I always feel like my answers are not good enough," she says. "Now that I think about it, I would never tell you how to raise your baby but that's where I was going--isn't that funny?" Still, she's quick to recommend both the Baby Whisperer book and messageboard to friends who are expecting. "For me it was like the difference between having post-partum depression or giving my child up for adoption," she says. "I was not a good baby mother but I really used this site."

Michael Colombo, music producer, sound designer, writer, electronics tinkerer[91]

Michael Colombo grew up on Long Island, just outside of New York City. In 1995, when he was 13 years old, his older sister moved away to college. As a result, he soon found himself running his own BBS system.

> I had a friend who was a bit of a computer nerd. He was actually quite a genius--he started programming Basic when he was five. And what happened was, in 1995, my sister went away to college. And she was one of those teenage girls who sort of talked on the phone a lot. So for Christmas one year,

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[91] Colombo, interview.

she actually asked for her own phone line, so that she could talk whenever she wanted. And then when she moved away to college, I quickly commandeered the phone line and with the help of my friend, set up a BBS on the phone line...It was the sort of thing where I had the phone line and he had the know-how, so he basically ran me through the software and we figured out how to set it up. And he cobbled together a 286 PC and we ran it off that. So it was really barebones. I don't think we even had a hard drive! We ran the whole thing off of a disk drive.

To get the word out, Colombo dialed into the few local BBS systems that existed in the area and announced that he had established his own board.

There were probably about a dozen of them, at that point--there used to be many more. You would go on to BBSes at the time and they would have a BBS directory and it would be filled with dozens and dozens of dead BBSes. And I remember sifting through them and trying to call each one and sometimes someone would answer the phone! And you'd say, "Whoops, sorry! I guess that one's not up anymore." So it was through that process of winnowing--I would go on and post to the messageboards that I had a new BBS. And I would get users that way.

Colombo soon built a small community that consisted of roughly 20 active users. Not all of his users dialed-in with the same frequency. "You'd have super users who went on every day," he explains. "And then other people who went on once a week. And some people even less frequently than that." Colombo's primary interest at the time was in music, so he designed his board to cater toward music fans.

I think when I did it, I tried to do a music theme. So I made a lot of subforums that were based on music. And then in the files section, we had MP3s, which were the new thing! It was such a big deal because dial-up speeds were so slow, it wasn't even worth it to download a .wav of a song--it was just too big. So MP3s made it more accessible. And then we also had .mod and .s3m files, which were offshoots of MIDI that techno artists did a lot of. And then, there was just the usual banter in the messageboards and that sort of thing. Some people were genuine hackers and that was an interesting world to get into at that age.

While Colombo had not invited the discussions of hacking and phreaking, he soon found himself drawn into these and other BBS subcultures.

I learned a really great history of hacking and phone phreaking. Built into the BBS world were these text documents, all about hacking and phreaking and *The Anarchist Cookbook* and survivalism and what to do when the apocalypse comes--I just devoured it...Realizing that it's not something that's evil but something that's often done out of curiosity was helpful.

Similarly, Colombo found himself fascinated by the world of text-based art and tried to learn the trade himself, in order to customize his BBS' look.

> There were a lot of subcultures in the BBS world that have largely died off or been forgotten that were interesting. BBSes were all text-based. So if you wanted to do any artwork, you had to do it with keyboard characters. And so there was this huge scene of ASCII and ANCI artists...there were true artists doing things with ASCII back in the day, with the extended character set. You could make lines and curves that were seamless using only characters, which was really amazing to see...Some of these "famous" ASCII artists went on to become real artists and designers.

Despite his young age at the time, as the sysop, Colombo was forced to play the role of moderator and occasionally had to mediate conflicts on his board.

> There were some people--I don't think the term had been invented at the time--but they were trolls. They came on and just wanted to be confrontational. I wouldn't delete anyone's posts or I wouldn't delete any users or anything like that. I would go into the messageboards and say something diplomatic to diffuse something that was getting a little too hot.

While this was challenging for him at the time, in hindsight, he feels that being a sysop at the age of 13 was a valuable experience.

> I think I learned how to manage people, which was an important lesson, especially at age 13. I was playing God to a very small universe, in a way. I had the power to do whatever I wanted within the confines of the BBS and I learned that my actions had consequences. I think those were some very important lessons to learn at that age. You're not often given the opportunity to have that sort of role.

After running his BBS for two to three years, Colombo eventually felt the pull of the internet, as so many others did in the late-1990s. Once his parents bought a new PC, Colombo shut down his board and began using the second phone line to dial into the internet instead. As he recalls, there weren't any hard feelings about him shutting down the board--in fact, he kept in touch with many of his old users using the web.

While Colombo is quick to point out that the local nature of BBS technology resulted in some unique social dynamics ("In the BBS days, you could interact with people on the messageboard and then go hang out with them in real life--that's not always possible with people you meet online."), he feels that in some ways, social networking services like Facebook have helped fill the void that the BBS scene left behind. "I think that that same kind of localized dynamic that the BBS provided is brought on to social networking sites but is interleaved and layered in a really interesting way that could have never happened in a local BBS scene," he explains. Having used the internet in the late '90s, he remembers a time when the web

seemed like "sort of this big void" where it was "hard to find things". In Colombo's opinion, services like Facebook have allowed him to more effectively find and connect with people nearby, as well as people who lie just outside of his existing social circles. "Social networking sites like Facebook now sort of narrow it down again," he says. "Where for a while, the web was sort of a sprawling mess."

Allison Burtch, graduate student, journalist[92]

When Allison Burtch was in college, she started to notice a shift in bicycle culture. Prior to about 2000, it seemed to Burtch that there had been "absolutely zero culture for people riding bicycles as a means of transportation" in the United States. Around that time, however, with the advent of the Bicycle Film Festival and Critical Mass, the bicycle hobbyist subculture began to take shape in Burtch's eyes. Around 2005, the increasing popularity of fixed gear bikes--bicycles designed for track racing that had recently become popular with urban cyclists--led to even greater visibility for bike subculture. It was around this time that Burtch first logged onto a messageboard for cyclists.

> I had ridden a bicycle--I had gone to college in California and rode a bicycle to commute. And then in 2006, I borrowed my dad's 10-speek Trek 500. I was never into actually riding fixed gears because they were statistically proven to be very terrible for your knees. But what I was into was a community of meeting up on like, a late Wednesday, and then riding in a huge pack around the city.

Burtch started posting on LAFixed, a messageboard for fixed-gear enthusiasts in the Los Angeles area. For Burtch, the cultural and community aspects of cycling are what drew her into the messageboard, "I mean, it was really just a cool subculture I was interested in." However, while she was a fan of the group rides and meetups, she was less of a fan of many of the regular posters on the board, who she describes as, "a bunch of douchebags who happen to ride bikes." Conversations would often veer off into topics like pornography, which made Burtch feel unwelcome as a woman. "LAFixed, anyone can get on it, so you just have this preponderance of like, teenage--it's just so terrible," Burch says. "It's just also not safe for women, it's just gross."

When Burtch moved to New York City in 2010, she decided to check out the New York equivalent of LAFixed, the NYC Fixed Forums. Burch says that this board was far more exclusive, requiring that new users be personally invited to participate by an existing user. As a result, the level of discourse was much higher in Burch's estimation. "The New York board is so much better, infinitely better," she says.

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[92] Burtch, interview.

This forum, there's just more women on it. I would say the ratio is just different. This has been the best intro to New York for me because there's like apartments, there's jobs, there's the random questions thread. So most of the forums, even though they were supposedly about bikes, they were not actually about bikes. It's just kind of your go-to for community and information.

Burtch describes NYC Fixed as "bar none, the best resource I've had in moving to New York City." One of her favorite threads is the random questions thread, where users ask for advice on all aspects of life in New York City. When asked if the quality of advice is good, she responds, "Oh yeah, the best. Because all of these people have been in New York for so long." She feels thankful that she found NYC Fixed shortly after moving to the city. "It's how I've met people, where I've gotten jobs, all that stuff."

Meetups have long been an important part of bike culture and the NYC Fixed community is no exception. While Burtch says that group rides are not nearly as popular as they were a few years ago, the community still gathers regularly for social occasions.

It's people that I've maybe met on the forum and see them at like bike forum outings or group meetups--like someone's birthday party or whatever. And there was a time when I was really just hanging out with those people but I've kind of moved on to different things. But I can still go to someone's thing and know like 25 people who are there because of the forum.

On an average day, Burch says that the types of threads that appear on the front page are split fairly evenly between bike-related threads and non-bike-related threads.

There's a great news thread. There's a "That is all" thread that is like the fixed gear "/b". It's a thread where you can post whatever you want. It's almost like a status update where people just post weird stuff. And then there's a "Horribles" thread, which is like the best, funniest gifs and whatever. I guess the "For sale" thread and the "Parts wanted" thread are big but I don't have any money for bike parts, so I'm not looking at those.

"I've never been much of a poster, I read more," Burtch admits. "But I'll respond to people I know in real life. I know most of the people who regularly post in real life." Despite this fact, Burtch still checks NYC Fixed regularly. "I check it probably more than Facebook," she says. "40 times a day? I don't know."

Armand Salari,[93] software developer[94]

Salari first started going online as a child in the early 1990s, using Gopher to access websites in the days before the World Wide Web. It wasn't until the late 1990s, however, that he became deeply involved in an online community. It was Salari's love of *Star Wars* and excitement for the 1999 release of *Episode I* of the science fiction film franchise that drew him into the world of messageabords. One day, while he was searching for photos from the set of the yet-to-be-released film, Salari stumbled upon a messageboard devoted to the actress Natalie Portman, who was set to appear in *Episode I*.

> It was an unofficial messageboard--it was NataliePortman.com, I think? It was a fansite someone had registered and it had a messageboard. It was really interesting to be on that site because it was some really hardcore fans of Natalie Portman who would not talk about Natalie Portman--they would talk about anything and everything else. They were some very intelligent people and basically, that was why I stuck around on the site. Just listening and having conversations about anything.

Salari recalls conversations about topics ranging from cars and poetry to political affairs and news. The board allowed Salari to connect with fans from around the globe and build relationships with people from locales he had never visited.

> It was the first time I was communicating with people I knew were in Japan or South Africa or New York City. There were a few people from Australia. Until that point, the only experience I had communicating with people that far away was one-dimensional. It was reading news about what was going on in those areas. It wasn't like, "Hey, how's the weather there?" That was definitely eye opening.

Once *Star Wars: Episode I* was released in 1999, the board was flooded with an influx of new Natalie Portman fans. Unlike the original members of the board, these new users only wanted to discuss matters relating to the actress. As a result, the board split in two. "One was the fan board and one was the board of the old people who didn't really care to talk about Natalie Portman," Salari recalls. Soon afterward, Salari shipped off to college and found himself too busy to visit the messageboard. However, on the morning on the September 11th attacks, Salari returned to the board to check in on the community.

> What was interesting was that the messageboard went down and I remember this because after 9/11, I came back to check it out to see what was going on, see what everyone was saying. I had gone to college at that

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[93] "Armand Salari" is a pseudonym--the interviewee preferred that his real name not be used.
[94] Salari, interview.

point and was busy with other things. But it was a big enough event and I was far enough away from home that I just needed somebody to listen to and see what they were thinking. And the board was down because it was in New York--the server was in New York City. And I remember logging into the chatroom and everyone was freaking out.

Despite the fact that the board was down, the members were still able to convene via an IRC chatroom to discuss the attacks as they happened. When asked why he chose to return to the community on that day, Salari responded, "I just was looking for conversation and news and that was one of the places that I got news."

Around the same time, Salari began posting in a very different forum, a Yahoo! Group called "Cloudmakers" that was dedicated to solving an alternate reality game that was being used to promote the 2001 science fiction film *A.I.*

It was an alternative reality game. It was massively multiplayer because it had to be. You'd watch the trailer and inside the trailer, they would be hidden a phone number. And you'd call that phone number and it would tell you it would call you back. And then it would call you back a few minutes later and it would leave you a message or it would say I'll send you a fax. And people were getting components of faxes and no one would get the whole message, so you would have to share it somehow online. And this forced everyone into a Yahoo! Group--at the time this was the best way of doing it. So, suddenly, there's thousands of people from all over the world on this Yahoo! Group, trying to interpret these clues that the game is giving us. And it involved people going out to locations and waiting at payphones and then reporting back what they heard at the payphone. It was very strange and really awesome.

The game, which is now referred to as "The Beast," was developed by Microsoft to promote the film and is often cited as one of the earliest and most influential alternate reality games. At its peak, in the summer of 2001, the Cloudmakers group had thousands of participants, who generated over 40,000 messages over the course of the twelve weeks during which the game was played.[95] While Salari cites the time he spent participating in the Cloudmakers group as some of the most fun he's had online, he can no longer remember how the game ended. "Honestly, that's the strange thing--I don't remember what the result was," he says. "It was more about the journey than it was about the destination."

A few years later, when Salari became involved in the massively multilplayer online game *World of Warcraft* in the mid-2000s, he continued to use messageboards for group coordination of gameplay.

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[95] "The Beast (game) - Wikipedia, the Free Encyclopedia."

Within World of Warcraft there are servers and realms and the one realm that I was on had several guilds and they were warring factions...I joined this one guild called "Zethros". Zethros was a mature kind of guild, in the sense that the people who were involved were, you know, professors and such. It turns out that one of my friends on that server was in fact the administrator of the program that I was in at San Jose State... Of course, Zethros had an online messageboard where we talked about different raids and different strategies and such. We'd also talk about other guilds and how to respond to their actions.

Unlike on the boards of Salari's youth, the stated topic of discussion on his Warcraft guild's board remained the primary topic. "You kind of glimpsed that people had other lives but it wasn't something you talked about--you talked mostly about Warcraft," he explains. Discussions were taken quite seriously and players who steered the conversation in a direction that was deemed unproductive could face consequences.

It was always a challenge to craft your communications in such a way that it didn't insult people and moved the group towards its goal. So it was really a lesson in diplomacy...Essentially whatever you wrote online would stick with you. So if you wrote something and the guild didn't like it, you could get booted out of the guild for that. There was no taking it back. So, you always kind of have to be diplomatic and understand the collective goal and the collective ethos.

Nowadays, Salari doesn't play as many online games, though he does remain involved in messageboards through his use of the social news site Reddit. In some ways, Reddit reminds Salari of the Natalie Portman messageboard, primarily in its ability to provide serendipitous discoveries.

Like the Natalie Portman messageboard, occasionally you'll find a topic that seems to be about one thing but no one talks about that one thing. So you'll come across a cat video and you'll go in there and read the comments in there and they're all talking about how best to cook a chicken. That's really fun and interesting, the ability to discover really neat new things when you're not looking for them.

Still, to Salari, Reddit doesn't feel like a tight-knit community the way that the messageboards of his youth did.

I don't have a connection with the people anymore. I also don't see my friends on there. I know that I have a few friends on there but it's just way too big to connect with your friends. So it's less of a community and more like a collective of millions of people. And you just kind of add and take what you want from it.

Marina Zurkow, video and media artist[96]

In 1992, Marina Zurkow was working on a number of projects in New York City, primarily as a designer and video producer. While working on a public access political television show, a co-worker introduced her to a local BBS called Echo, short for "East Coast Hang Out". "You know, it was sort of just in the very periphery of life, floating around," Zurkow says of the BBS scene during that time. Eventually, Zurkow's curiosity got the better of her and she procured a 1,200 baud modem in order to dial into Echo.

"It was run by a woman, which was kind of unheard of--I mean, nobody knew what any of this shit was," Zurkow says. "And she gave women free accounts, so, I joined." In hindsight, Zurkow acknowledges that the female-friendly nature of Echo figured strongly into her decision to join.

> Well, I think the whole idea of interfacing with technology was totally alien to most everybody. And to women more so because technology and engineering was always seen as a male domain--I think that's fairly obvious today. But the fact was that it was such a surprise that it was a woman that had started this and that she really wanted more female voices in that community. So yeah, give somebody a free account and they're going to be more likely to experiment. That that's such a signifier of being welcomed and sort of recruited into a community.

Zurkow recalls the community being heavily New York-centric, both in terms of the geographical location of users as well as their interests. Topics that she thinks of as being quintessentially New York--food, art, local politics--tended to be the most popular on Echo. "It was so New York-based that they would have get togethers at the Art Bar on 6th Avenue and people would go and hang out," she recalls. "I went to a couple of those."

Still, Zurkow was something of an outsider in the community, a self-described "lurker" who would log into the BBS to read but rarely to post.

> You know, it's funny. Communities have personalities and they have leaders and they have people who you can see are very invested in participating and having their voice heard. And I never felt like I had that much to say. So I met people through the BBS. And I had private conversations with people. I met a forensic pathologist through Echo and he was very interesting. And we had some good conversations. And I met a few other people in theater. I've never been a big party person. So the idea of participating in a social room with 15 other voices has never really been that interesting to me. I think I'm much more interested in one-on-one conversations.

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[96] Zurkow, interview.

Despite the fact that Zurkow was able to meet and connect with people through Echo, she still harbored skepticism toward the online personae she would encounter--a skepticism that persists to this day.

> There was something about that kind of community that kind of freaked me out in a way. And I still feel this way--I feel this way about online dating sites, for instance--why do you trust somebody enough to meet them in person, just because they say they're who they are? And in a sense, yeah, because the community was relatively small you could kind of check with somebody else. But I remember, there was a lot of drama too. There were breakups and people getting together and all of this kind of stuff and I just stayed away from that. I was on a lot but I had a kind of more lurker relationship to it.

After about a year of participating in Echo, Zurkow got a job working as a design director for SonicNet, an early independent music-centric BBS that was transitioning to the nascent web. "We were so experimental that first year, it was awesome," she recalls. "We were trying to make animated gif music videos--it was crazy!" Due in part to her job, she largely stopped dialing into Echo and found herself spending a lot more time on SonicNet instead.

> Well, I was really active at SonicNet, probably because I was involved in it. So we ran our own, kind of the equivalent of a web-based bulletin board. And those were really active around indie music. And I was involved in the indie music scene in New York for around seven years as an art director and designer and music video director. So, yes, I participated more in that but that was more like, "Who's this band?" and "Are they cool?" and "What are they interested in?" and "What's their aesthetic?" Just sort of your normal early 20s pop culture kind of discourse.

After a year, SonicNet was acquired by Prodigy, which was then keen to bulk up its holdings in the world of online community (a year later, Prodigy would in turn sell SonicNet to Viacom subsidiary MTV). Zurkow left both the company and the community shortly after the acquisition and never returned to the BBS world. She would soon get caught up in the new self-publishing possibilities that the web would offer for artists and designers. Though she was aware of The Thing and other New York-based online artist communities that thrived in the mid-1990s, she never thought to participate.

In hindsight, Zurkow feels that BBSes like Echo reflected the nature of culture and social interaction in New York City, especially when contrasted with west coast BBSes like the Well.

> The west coast spawned much more software development, technological work, more tech-focused communities, less of a sense of community. And New York spawned all this culture work: pseudo online radio, Word.com,

SonicNet, even early RazorFish had it's own sort of cultural vibe. And I think that that's the result of New York being this pedestrian culture and this culture full of really idiosyncratic voices that kind of bump up against each other all the time. And the BBS sort of provided the online version of that.

Bibliography

Agre, Philip E., and Douglas Schuler, eds. *Reinventing Technology, Rediscovering Community: Critical Explorations of Computing as a Social Practice*. Praeger, 1997.

"ARPANET." *Wikipedia, the Free Encyclopedia*, February 7, 2013. http://en.wikipedia.org/w/index.php?title=ARPANET&oldid=536589889.

Bhushan, A. K. "File Transfer Protocol." MIT Project MAC, 1971. http://tools.ietf.org/html/rfc114.

Borsook, Paulina. "The Anarchist." *Wired*, April 1996. http://www.wired.com/wired/archive/4.04/jennings_pr.html.

Briggs, Asa, and Peter Burke. *Social History of the Media: From Gutenberg to the Internet*. 3rd ed. Polity, 2010.

Burtch, Allison, April 16, 2013.

Colombo, Michael, April 1, 2013.

"Community Memory: World's First BBS and ... Online Troll?" *Neatorama*. Accessed March 26, 2013. http://www.neatorama.com/2012/08/07/Community-Memory-Worlds-First-BBS-and-Online-Troll/.

Dear, Brian. "The Significance of Notes Coming Before Personal Notes." *Plato History*, March 15, 2012. http://www.platohistory.org/blog/2010/03/the-significance-of-notes-coming-before-personal-notes.html.

Derfler, Frank, I Jr. "Dial Up Directory." *Kilobaud Microcomputing Magazine*, April 1980.

"*Doom* (video Game)." *Wikipedia, the Free Encyclopedia*, April 14, 2013.

     http://en.wikipedia.org/w/index.php?title=Doom_(video_game)&oldid=550

     354460.

Dorsainville, Greg, April 10, 2013.

Hafner, Katie, and Matthew Lyon. *Where Wizards Stay Up Late: The Origins of the*

     Internet. Simon & Schuster, 1996.

Hauben, Michael, Ronda Hauben, and Thomas Truscott. *Netizens: On the History and*

     Impact of Usenet and the Internet. 1st ed. Wiley-IEEE Computer Society Pr,

     1997.

"Legend of the Red Dragon." *Wikipedia, the Free Encyclopedia*, March 29, 2013.

     http://en.wikipedia.org/w/index.php?title=Legend_of_the_Red_Dragon&oldi

     d=542591504.

Leon, James, Dr. "Course-Integrated Electronic Socializing on Plato." *University of*

     Hawaii, Computing Center Newsletter, October 31, 1991.

     http://www.soc.hawaii.edu/leonj/leonj/leonpsy/instructor/leonplato1.html

     .

Levy, Steven. *Hackers: Heroes of the Computer Revolution - 25th Anniversary Edition*.

     Anv Upd. O'Reilly Media, 2010.

Markoff, John. *What the Dormouse Said: How the Sixties Counterculture Shaped the*

     Personal Computer Industry. Reprint. Penguin Books, 2006.

O'Hara, Rob. *Commodork: Sordid Tales from a BBS Junkie*. robohara.com, 2006.

"PimpWars." *Moby Games*. Accessed April 15, 2013.

     http://www.mobygames.com/game/pimpwars.

PLATO - An Early Online Community, 2010.

> http://www.youtube.com/watch?v=qmuN_RpXn6I&feature=youtube_gdata_
>
> player.

"PLATO (computer System)." *Wikipedia, the Free Encyclopedia*, March 4, 2013.

> http://en.wikipedia.org/w/index.php?title=PLATO_(computer_system)&oldi
>
> d=541099191.

Poe, Marshall T. *A History of Communications: Media and Society from the Evolution*

> *of Speech to the Internet.* 1st ed. Cambridge University Press, 2010.

"Ray Ozzie." *Wikipedia, the Free Encyclopedia*, March 1, 2013.

> http://en.wikipedia.org/w/index.php?title=Ray_Ozzie&oldid=540684303.

Reid, Robin, April 10, 2013.

"Remembering Community Memory / The Berkeley Beginnings of Online

> Community." *SFGate*. Accessed March 26, 2013.
>
> http://www.sfgate.com/news/article/Remembering-Community-Memory-
>
> The-Berkeley-2842143.php#src=fb.

Rheingold, Howard. *The Virtual Community: Homesteading on the Electronic Frontier*.

> revised edition. The MIT Press, 2000.

Salari, Armand, April 2, 2013.

Scott, Jason. *BBS: The Documentary*, 2005. http://www.bbsdocumentary.com/.

"System/360 Announcement." IBM, April 7, 1964. http://www-

> 03.ibm.com/ibm/history/exhibits/mainframe/mainframe_PR360.html.

"Tell Me About Your Mother's Tumblr." *Hyperallergic*. Accessed April 9, 2013.

> http://hyperallergic.com/65968/tell-me-about-your-mothers-tumblr/.

"The BBS Corner - The Fidonet BBS Network." *The BBS Corner*. Accessed April 14,

    2013. http://www.bbscorner.com/bbsnetworks/fidonet.htm.

"The Beast (game) - Wikipedia, the Free Encyclopedia." Accessed April 28, 2013.

    http://en.wikipedia.org/wiki/The_Beast_(game).

"The Day the Network Died." Song lyric database. *Filk.com*. Accessed April 14, 2013.

    http://www.filk.com/songs/THE%20DAY%20THE%20NETWORK%20DIED

    .htm.

"'The Thing' Redialed: How a BBS Changed the Art World and Came Back from the

    Dead." *The Verge*. Accessed April 7, 2013.

    http://www.theverge.com/2013/3/15/4104494/the-thing-reloaded-

    bringing-bbs-networks-back-from-the-dead.

Tilton, Robbie, April 16, 2013.

"Trade Wars." *BBS Wiki*. Accessed April 16, 2013.

    http://bbs.wikia.com/wiki/Trade_Wars.

Turner, Fred. *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth

    Network, and the Rise of Digital Utopianism*. 1st ed. University Of Chicago

    Press, 2006.

Velez, Heather, April 9, 2013.

Woolley, David. "Between PLATO and the Social Media Revolution." *Just Think of It*.

    Accessed March 4, 2013. http://just.thinkofit.com/between-plato-and-the-

    social-media-revolution/.

Wu, Tim. *The Master Switch: The Rise and Fall of Information Empires*. 1st ed. Knopf,

    2010.

Zurkow, Marina, April 30, 2013.