Thou Shalt Love Thy BBS

Distributed Experimentation in Community Moderation

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Abstract

The social history of dial-up bulletin board systems, or BBSs, reveals a period of distributed experimentation in the moderation of online communities. During the 1980s and 1990s, computer owners built dial-up BBSs wherever public switched telephone networks were available. Through the ritual of dialing-in, reading messages, and posting replies, local BBS users came to see these low-cost platforms as valuable community infrastructures. The stability of this emerging online world relied on the voluntary maintenance work of BBS administrators, known in the community as system operators or "sysops." BBS sysops played a vanguard role in the design and administration of social computing systems. Ranging from technocratic tyranny to participatory governance to total lawlessness, the moderation policies and practices of BBS sysops shaped the experiences and expectations of early modem users. In their efforts to cultivate dedicated communities on their small networks, sysops encountered social, political, economic, and technical challenges that would later resurface on mass-scale systems such as America On-Line, YouTube, and Facebook.

Through an archive of how-to documents, legal advice, user policy agreements, and satirical essays, this paper examines a sample of moderation practices taken up by BBS sysops during the 1980s and 1990s. The analysis focuses on moments of contact between sysops and users, including the recruitment, registration, and orientation of new users; the day-to-day regulation of user behavior; and the promotion of select users to "co-sysop" status. These practices unfolded against a backdrop of increasing commercialization. But rather than scuttle existing social norms, the demands of commercialization forced sysops to consider the moral and legal dimensions of community moderation. While some came to see their callers as "customers" instead of "users," others endeavored to create new socio-technical arrangements based on trust, communication, and mutual interest.

Circulated in emails, posted to forums and reproduced in electronic newsletters, a tongue-in-cheek document titled, "The 30 Commandments of BBSing," offers a glimpse into the social life of a typical dial-up bulletin

board system, or "BBS," at the outset of the 1990s.[1] Self-consciously silly in its Early Modern affectation, the list nevertheless conveyed sincere recommendations for neighborly online behavior. The thirty rules ranged from technical practices ("Thou shalt delete thine ancient mail"), to social norms ("Thou shalt not post other users' real names"), to administrative requirements ("Thou shalt not giveth any false information when applying for membership to thy BBS"). In total, the "commandments" portrayed BBSs as novel social spaces that required new norms, new manners, and new common sense.

BBSs were sites of experimentation in community moderation. While the author of "the Commandments" remained anonymous, an introductory paragraph credited a "very intelligent" administrator for dedicating "great thought" to the problems that plagued BBS communities. Indeed, those individuals who set up BBSs did so with little guidance and no formal training in the management of online communities. As conflicts arose, BBS operators responded on an ad-hoc basis, idiosyncratically creating and modifying the rules for their BBSs. Further adding to the experimental spirit of the 1980s, there was little standardization from one bulletin board to the next. Only toward the end of the decade, with the rise of commercialization, did BBS operators begin to adopt boilerplate legal language to proscribe the activities of their users.

Recently, scholars have begun to examine moderation in the context of social media platforms such as YouTube and Facebook (Gillespie, 2018; Roberts, forthcoming). In *Custodians of the Internet*, Tarleton Gillespie argues that setting and enforcing rules about acceptable speech and user behavior is an "essential, constant, and definitional" feature of all social computing systems (Gillespie, 2018, p. 207). And yet, in his analysis of 21st century platforms, Gillespie found relatively little variation in their moderation policies and practices. To address the problems of harassment and misinformation, Gillespie argued, platforms need to focus their innovation efforts on creating opportunities for users to participate in the design and regulation of social spaces; to "share the tools to govern collectively" (Gillespie, 2018, p. 212).

The homogeneity of platform moderation in Gillespie's study is an aberration in the history of social computing. During the 1980s and 1990s, bulletin board system administrators, or "sysops" experimented with an array of moderation policies and practices, ranging from technocratic tyranny to participatory governance to stubborn lawlessness. Indeed, BBS sysops played a vanguard role, shaping both the experiences of early users

1 Four variants of the "commandments" are stored in the collection of BBS materials at textfiles.com (May B. Everyone, 1992; "The 30 Commandments of BBSing," n. d.-a; "The 30 Commandments of BBSing," n. d.-b; "The Twelve Commandments of BBS Users," n. d.).

as well as the future development of social media platforms. In their efforts to cultivate community on small networks, sysops encountered social, political, economic, and technical challenges that would later resurface on the mass-scale systems of the 21st century. To date, however, little historical research has focused specifically on the moderation work of BBS sysops during the 1980s and 1990s. What types of interventions did they undertake? How did they balance technology, policy, and social pressure to guide users' behavior? Did an interest in commercialization conflict with efforts to cultivate a sense of community among users?

Answering these questions depends on textual analysis of a range of primary sources including "born digital" documents such as "The 30 Commandments," source code, executable software, hobbyist magazines and trade literature. This paper relies specifically on the "BBS Textfiles" collection maintained by self-described "free-range" archivist Jason Scott at *textfiles.com*. In a short preamble, Scott explains that the 389 documents in this collection concern "the actual nuts-and-bolts issues, heartaches, triumphs, and wonder of the BBSs themselves." They include advertising, policy documents, editorial essays, personal memoirs, satire, and technical reference, all of which circulated through the BBS networks during the 1980s and 1990s.

In addition to digital sources, this paper draws on the author's own archive of print materials, acquired from used booksellers, flea markets, and swap meets between 2010 and 2018. This collection includes over one hundred technical manuals, how-to guides, reference books, and commercial software packages aimed at BBS users, sysops, and entrepreneurs. Complementing these archival materials are retrospective accounts from former users, typically posted to blogs and forums, or captured by the makers of documentary films (Hoekstra, 2013; Scott, 2005). Although the lived experience of accessing BBSs was ephemeral, the activities of the BBS period left an abundance of trace artifacts to analyze.

Who is responsible for a bulletin board system?

For many internet users, "BBS" is generic terms for an online forum (Raymond, 2003). In this paper, BBS refers to small-scale services hosted on personal computers and accessed over the public switched telephone network. The origin of this type of "dial-up" BBS is conventionally traced back to the technical culture of computer hobbyists in the United States in the late 1970s (Delwiche, 2018; Driscoll, 2014, 2016). Prior to its use in the context of computer networks, "bulletin board" referred to a physical wall designated as a space for posting notices of public interest. In the 1970s,

computer enthusiasts in the United States took up the community bulletin board as an model for information sharing among strangers (Christensen & Suess, 1978). The present analysis is limited to the United States but BBS networks connected microcomputer owners throughout the transnational telephone system (Bush, 1993; Furman, 2017; Liang, Yi-Ren, & Huang, 2017; Reunanen, Wasiak, & Botz, 2015).

The BBS phenomenon flourished in the context of widespread adoption of the home telephone (Federal Communications Commission, 2003). The telephone network provided computer hobbyists with a ready-to-hand infrastructure for data communications. Meanwhile, the geographic reach of each BBS was constrained by the telephone system's billing structure. Telephone companies in the U. S. billed calls at different rates depending on distance and time of day. Placing a call beyond one's local area could be very costly so modem owners tended to limit their activity to geographically proximate systems. As a result, dial-up BBSs developed idiosyncratic cultures reflecting the interests, norms, and values of their local populations.

For enthusiasts and entrepreneurs in the United States, the barriers to starting a new dial-up BBS were relatively low. To begin, one needed a personal computer, modem, telephone line, and host program. While these materials were not cheap, the total cost was roughly comparable to other technical hobbies enjoyed by men of the period such as operating an amateur radio station or tinkering with a classic car (Haring, 2008). Furthermore, no official approval from the telephone company was required to attach a BBS to home telephone line. An individual could conceive, assemble, and launch a new BBS in a weekend. By the end of the 1980s, most metropolitan areas in the US were served by a dozen or more BBSs running out of the homes of hobbyist volunteers.

The people who hosted BBSs were known as "system operators" or "sysops." Initially, the sysop was simply the owner of the BBS, responsible for maintaining the technical infrastructure and paying the bills. Soon, however, sysops discovered that their responsibilities extended into the social lives of their systems. BBSs open to the general public became meeting places for strangers. In moments of conflict, sysops became mediators. They were the makers and enforcers of social policy. Ultimately, the sysop possessed a form of total authority because they lived under the same roof as the host PC. In a moment of frustration, the sysop could always pull the plug and shut down the whole system.

Although the sysop enjoyed almost unlimited control over the system, there remained a peership between sysops and users. In most cases, users and sysops owned comparable machines and held comparable expertise about them. The barriers to creating a new BBS were sufficiently low that

any user or group of users were, in principal, free to depart and create their own system. In practice, the day-to-day costs of operating a BBS were not insignificant, but, on every board, there existed the potential for a user to step into the role of a sysop. The freedom for users to leave a system placed a limit on the sovereign power of the sysop and contributed to a sense of mutual accountability between users and sysops.

One way to approach the history of BBSing is to imagine all of the BBSs in the world as a single, decentralized socio-technical phenomenon, comparable in size to contemporary military and research networks (Driscoll & Paloque-Berges, 2017). While individual bulletin boards came and went, the overall BBS network steadily grew from the late 1970s until the late 1990s. During this period, hobbyists and entrepreneurs operated more than 100,000 BBSs in North America (Scott, 2001). Membership on individual BBSs ranged widely from single-node systems shared among groups of friends to multi-node international systems such as The WELL with as many as 10,000 active users (Hafner, 1997, 2001). Sysops attracted users to their systems based on shared location, interest, and identity. Some organized their boards around particular technologies such as a favorite computer platform. Others, such as the amateur radio-oriented Elmer BBS in Fort Rucker, Alabama, focused on hobbies or professional affiliations (Horzepa, 1985). Still others provided access to information and social spaces for marginalized communities, for example, the Critical Path BBS run by HIV/AIDS activists and the transgender-specific BBSs linked through TGNet (Dame-Griff, 2018; McKinney, 2018).

The history of BBSs traces a period of distributed experimentation in the moderation of online communities. The low cost of creating a new system enabled many people to become moderators who would have remained mere users under other socio-technological and political-economic circumstances. While sysops informally shared tips and techniques, each BBS was wholly independent of the others. Absent any central authority or formal organization, sysop moderation practices varied from one BBS to another. Sysops created their own social policies and administrative procedures, enforced through tailor-made software programs and shaped by a unique balance of authority, autonomy, and accountability.

The practice of BBS moderation

Moderating a dial-up BBS involved a combination of technical, social, and administrative techniques and practices. Out of the box, BBS host software provided sysops with a set of choices for constraining the activities of their users. Depending on the specific host program, the options for moderation

ranged from restricting the use of certain words to creating multiple classes of users, each with its own set of permissions. Even more fine-grained architectural changes were possible in the cases of software like RBBS that provided uncompiled source code (Mack, Goosens, & Azzarito, 1992). Sysops enjoyed considerable freedom in the technical structure of their systems, but there were few examples to guide their design decisions. Quite often, sysops continuously altered their boards' underlying technology in response to unexpected events in the community or direct requests from users. Ideally, this brought the system's software into alignment with the community's social norms, subject to the sysop's final authority. In some cases, however, sysops created explicit policy documents, typically in the form of online bulletins or new user "applications" that established ground rules for the BBS. As with so much of BBS culture, the resulting policy documents reflected the idiosyncrasies of their authors and varied in tone from mere boilerplate to the sarcastic, silly and outrageous.

With the expansion of commercial online services in the early 1990s, the authors of how-to books urged sysops to create explicit policy documents (Rose & Wallace, 1992). In 1993, attorney Herbert Kraft and software engineer Warren Clary published the *BBS Legal Guide*, a software package that provided sysops with template policy documents and annotated copies of relevant legal code, organized by state. Promotional materials for the *Guide* hailed sysops as a group of specialists in need of legal advice to avoid the "big, bad wolves" of law enforcement and personal liability (Kraft & Clary, 1993). On matters of piracy, pornography, libel and taxation, they argued, unprepared sysops put themselves at risk of losing control of their systems.

The "User Rules and Regulations" of the Altered States BBS in Stockton, CA provides an example of a BBS policy document that explicitly proscribed users' activities (Heim, n.d.). Located in a region of California known for the cultivation of marijuana, Altered States offered a range of counter-cultural information and services, including "online psychics" and discussions of occult literature (Hansford, 1993). Set in all capital letters, the "Rules and Regulations" laid out clear guidelines for user behavior in ten short statements. Rhetorically, the rules combined legal terminology with the technical argot of the BBS culture. According to the policy, users of Altered States were required to adhere to any applicable state laws and to avoid engaging in "criminal activities" ranging from copyright infringement to the circulation of child pornography. In their day-to-day interactions with the system, users were also restricted to a single "logon name" or online identity and asked to avoid posting "slanderous or obscene" messages in the "general" conferences (though the rules note that this language may be acceptable in some "special" areas of the board.) The consequences for violators included being kicked off Altered States and having the sysops of

other nearby boards notified. The rules asked users to think of themselves as "guests" on the BBS and to "treat the system accordingly." To gain access to Altered States, would-be callers were required to print out the rules and send a signed copy to the sysop by mail.

In contrast to the legalistic language of the Altered States policy, other sysops took an "anything goes" approach to moderation. Refusing to create or enforce any rules, the sysops of these boards allowed any behavior on their boards so long as it did not damage the underlying system or attract the attention of law enforcement. This unmoderated approach was clearest in the case of so-called "slam" boards on which insulting other users was not only tolerated by sysops, but encouraged. One former user described the nature of a "slam" as "a lengthy insult that was creative or especially demeaning" (Mirage, 2004). While participating in voluntary flame wars was certainly not to every modem owner's taste, the teen boys who populated slam boards were drawn to the hands-off approach of their moderators.

Anything-goes boards were the exception, however, and it appears that most sysops of the 1980s engaged in some form of moderation to constrain the behavior of their users and cultivate a particular form of community. In the absence of formal training, sysops were left to improvise. In the course of typical operation, a BBS provided a few key moments at which sysops might exercise their power and influence as moderators. First, the process of joining a bulletin board offered several opportunities for sysops to introduce first-time callers to the rules and social norms of their systems. Second, sysops aimed to encourage participation among established users by maintaining the technical functions of the BBS and stepping in to resolve conflicts between users. Third, when a BBS grew too large for a single person to moderate, sysops tended to share moderation responsibilities with "co-sysops;" community members who were granted privileged access to the underlying system software.

Intervention 1: Recruiting new users

The character of a BBS community—its norms, conventions, values, in-jokes, and favorite topics—were fundamentally shaped by the people who showed up, day after day, to post messages, download files, and play games. All BBSs involved some type of advertising or recruitment. Unlike videotex systems, the World Wide Web, or, indeed, the voice telephone network, there were no central directories for discovering new BBSs. Likewise, no public search engines existed to aid modem owners in finding new system. Outside of classified ads and BBS listings printed in the back of special

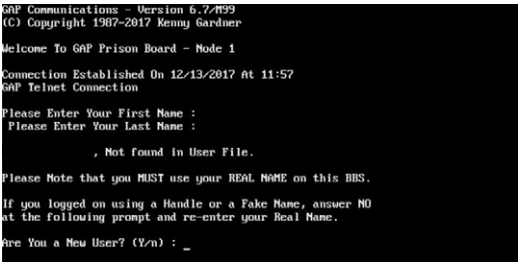

Fig. 1: Default new user prompt on GAP BBS host software. Screenshot taken using The Crow's Nest BBS on December 13, 2017. See: http://ww2.crowsnestbbs.us:8080.

interest publications such as *Computer Shopper*, it was up to BBS sysops and their users to spread the word and attract new callers to the system.

Word of mouth was a powerful mechanism for attracting new users to a BBS. The problem with word-of-mouth, however, is that the word rarely travels beyond the mouths of particular groups of people. This structural limit partially explain why white middle class men tended to dominate most North American BBSs; word-of-mouth spread through their relatively homogeneous social networks. This was not a foregone outcome, however, and some sysops endeavored to create systems that did not simply recreate the demographics of earlier technical hobbies.

For sysops aiming to cultivate a different kind of community, active recruitment was an important part of moderation. Perhaps the two best-documented cases of active recruitment were The WELL in Sausalito, CA and ECHO in New York City, NY. To cultivate a counter-cultural community on The WELL, the moderators invited artists, intellectuals, journalists, and other popular Bay Area figures to act as "hosts" in various forums (Hafner, 2001). In a contemporary account of this system, Howard Rheingold compared the resulting community to a Parisian salon with a more "elevated" discourse than other systems (Rheingold, 1993, p. 42). ECHO sysop Stacy Horn, meanwhile, aimed to attract more women participants to her system. In 1991, Horn provided free memberships to women and by 1993, 37% of the members were women and ~50% of the conferences were hosted by women (Bowe, 1993). Recruitment could be an effective strategy for upending conventional BBS demographics.

Intervention 2: Registration and orientation

In addition to advertising and recruiting, sysops engaged with new users through a process of registration and verification. First-time callers rarely gained access to the full features of a BBS. Instead, the BBS host program

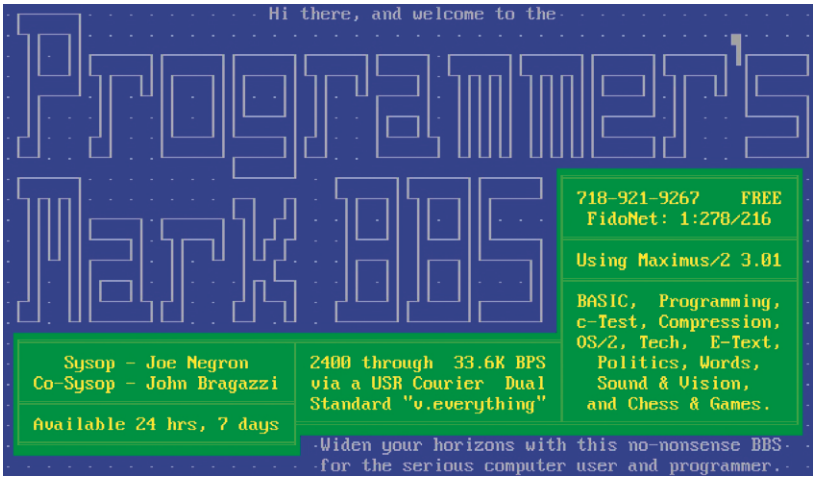

Fig. 2: "Hello" screen from the Programmer's Mark BBS. Retrieved from: www.textfiles.com/artifacts/718/718-921-9267.

routed first-time callers into a registration process and added their information to a validation queue. The registration process typically consisted of a short questionnaire that would be stored on the host machine for review by the sysop. The structure and content of the registration system was entirely under the control of the sysop. The questions that they chose to include were a form of cultural communication that served a tacit screening function. If a user was alarmed or offended by the content of the questions, they were always free to hang up and save everyone the trouble.

Approving, or "verifying," new user applications represented an opportunity for sysops to screen potential community members. For hobbyist sysops, there were no social obligations, legal requirements, or economic incentives for accepting new users. Their BBSs were hosted on privately owned machines, in private residences, and they enjoyed total control over who was allowed online. One common practice involved calling new users on the telephone before granting them access. This technique, known as "voice verification" or "callback verification," provided a unique opportunity for BBS operators to get to know new users, set expectations, and orient users to the norms of the system. In a voice verification system, sysops called each potential new user on the telephone before approving their accounts. Voice verification was so common that it was built into the default settings of many BBS host programs, such as GAP BBS.

Voice verification offered an efficient mechanism for screening and orienting new users to the system. That first telephone call provided sysops with an opportunity to communicate the purpose of the BBS, set some

ground rules, and answer any questions that the user might have. If a sysop could not reach a new user, or felt uneasy while talking to them, they were free to reject the application. To some degree, this brief moment of contact created an implicit social contract between the user and sysop. Each was accountable to each other after that first conversation. If we imagine the BBS as a kind of virtual house party, then voice verification gave users an opportunity to introduce themselves to the host. How many would feel comfortable trashing the place after that?

In addition to voice verification, sysops invented a number of other verification and registration requirements. New users on The Programmer's Mark BBS were asked to mail a self-addressed stamped postcard to the sysop's post office box in Brooklyn, NY (Negron, 1995). The sysop, Joe Negron, would return the postcard with the user's new ID and password. In fact, the postal network was a common medium for verifying new users. After requesting an account on ECHO, Stacy Horn mailed out a welcome letter with a temporary password and a helpful guide to using the system, including a quick reference card for the rather arcane keyboard commands.

Finally, some BBS users were verified simply by meeting the sysop in person. These sorts of face-to-face encounters might happen informally, such as a co-worker asking for access, or they might happen during an organized event such as a swap meet or meeting of a local computer club. Many BBS communities organized regular gatherings for their users, known as "get togethers" or "GTs." Whether meeting at someone's home or in a public place like a coffee shop or bowling alley, get togethers played several important functions in the life of a BBS community. For new users, get togethers offered a chance to meet the sysop and by-pass the voice verification process. Often, established users would invite a friend along to introduce them to the other members of the community. Spending a night hanging out with folks "from the board" helped newcomers to interpret the messages that later appeared on their screens. It gave faces, voices, and senses of humor to the other users.

Recruitment, registration, verification, and orientation are all examples of interventions available to BBS moderators interacting with new users. Each of these practices enabled sysops to shape the growth of their BBSs over time. For new users, these interventions could help to integrate them into the social world of the BBS and cultivate a sense of accountability to the existing community. Indeed, for systems populated by users within a local calling area, the consequences for transgression could spill out of the BBS and into voice telephone calls or face-to-face encounters. Likewise, get togethers presented new users with an opportunity to meet other active users of the system and accelerate the process of acculturation.

Fig. 3: "Your time is up!" cartoon by Ev Cheney, 1986. Retrieved from: www.textfiles.com/bbs/FIDONET/JENNINGS/IMAGES.

Intervention 3: Cultivating regular callers

BBS communities were sustained through the day-to-day interactions of individual people dialing into the system and contributing original messages and files. Unfortunately, because dial-up BBSs used a standard analog telephone circuit, rather than a packet-switched digital connection, most systems could host just one user at a time. While that one user was connected, anyone else who attempted to dial in would hear a "busy signal" and be forced to try again later. As a result, users took turns accessing the system, resulting in an improvised telecommunications carousel.

The social world of a dial-up BBS was embedded in an economy of time. On a single line, each day offered 1,440 minutes of time to share among all of the users. The liveliness of the community depended on the efficient allocation of those 1,440 minutes. If a single user stayed online all afternoon then there would be no opportunity for other users to get online. The forums and file areas would run fallow and the tempo of any online games would slow down.

For sysops of one-liner BBSs aiming to encourage community participation, the core moderation challenge was to accommodate the largest number of people as possible in a given day. This ensured that each time people called in, they would find new messages to read, new files to browse, and new events in the online games they played. To avoid discouraging potential callers, sysops needed to reduce the likelihood of being turned

away by a busy signal. Striking the right balance required a savvy combination of social, technical, and administrative policies. To retain regular callers, sysops had to become managers of the economy of time.

Time limits, data limits, and speed limits were all social policies implemented in and enforced by software. The BBS interface displayed an on-screen clock to users, counting down the minutes and seconds remaining before it automatically dropped their connection. Data limits tended to be structured in terms of a ratio of uploads to downloads. The ratio encouraged users to be selective in their downloading rewarded users for contributing new files. Speed limits, a function of both time and data, emerged in response to the growing availability and affordability of "high speed" modems. These devices added a new dimension to the economy of time. Users connecting at high speeds operated in a fundamentally different temporality from their slower peers. Sysops encouraged the use of high-speed modems to reduce the time that users spend uploading and downloading large files.

Managing the economy of time was an essential practice for maintaining a sense of community on a dial-up BBS. Time, data, and speed limits maximized the availability of the BBS. These policies, built into the architecture of the platform, indirectly stimulated public communication by creating the possibility for a greater number of participants to read and post messages each day. Likewise, time limits could effectively diffuse conflict among users because they enforced a "cooling off" period during which neither party could access the system. Lastly, data transfer policies such as the upload/download ratio played a crucial role in shaping the file trading culture of the 1980s and 1990s. By incentivizing users to upload, they spurred on the exchange of files among BBS users in different regions.

Nearly all BBS software supported speed limits and download ratios but BBS sysops were not obliged to implement them. Some felt that ratios were an unfair burden to place on users, especially those who were paying for access. Stuart Smith, sysop of the engineering-oriented COMP-U-EASE BBS in San Jose, CA, offered a paid subscription option that freed users from the download ratio and provided access to subscriber-only phone lines (Petrzelka, 1991). Meanwhile, the sysops of the Knights In Shining Armor BBS in the rural town of Brooksville, FL required only local callers to keep up a file ratio; long distance callers were exempt. Other sysops did away with ratios altogether. Remarking on the absence of ratios on the MODern Music BBS in Healdsburg, CA, the sysop explained, "NO restrictions or ratios, because I HATE them on other boards" (Hunter, 1993). Inasmuch as ratios encouraged users to circulate files, they rarely involved an evaluation of the quality of uploaded files. As Wally Byczek of the Wallyworld BBS joked in a textfile aimed at would-be sysops, "If you impose an upload/

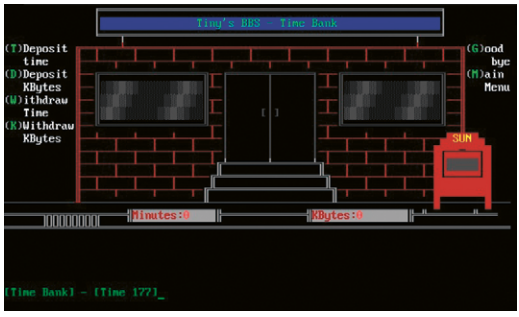

Fig. 4: The "Time Bank" on Tiny's BBS. Retrieved from: http://tinysbbs.com.

download ratio ... then you will receive 2K text files from them. They will download 2Mb of Gif files in return" (Byczek, 1989).

Yet, data and speed limits were common enough that the absence of a "ratio" became a mark of distinction for many BBSs. In 1987, when Rusty and Edwina Hardenburgh endeavored to build "the friendliest BBS in the world," they decided to forgo time limits, byte ratios, and other "hassles" (Hardenburgh & Hardenburgh, 1990). Fellow enthusiasts warned the couple that they were making a mistake by flaunting this moderation norm. Reflecting on the early years of the BBS in 1990, the couple remembered being told that callers would do "terrible things" to a system that lacked any constraints on user behavior. Gratified to find that callers seemed to respect the system and uploaded new files voluntarily, the couple came to believe that a strict technical policy was not needed in a social atmosphere that felt "like home," where callers could "relax ... among friends."

Intervention 4: Promoting users

Sysops were not the only BBS users to bear the responsibility of moderation. On many systems, moderation duties were shared among multiple "co-sysops." While the primary sysop tended to own the hardware and pay the bills, co-sysops accessed the system remotely. Rather than focus on technical maintenance and improvement, co-sysops oversaw the day-to-day social needs of the BBS. In most cases, the co-sysop role was encoded in the underlying host software, granting special permissions to allow co-sysops to approve new users, manage existing accounts, maintain the file areas, or censor the forums.

The cooperative co-sysop model of moderation allowed for a range of routine practices and responses to conflict that were simply impossible in the autocratic model of the single sysop. The T.A.R.D.I.S. BBS in Indianapolis, IN was a community-oriented system founded by a group

of four friends, two men and two women (O'Nan, 2006). In a similar spirit as the science fiction series Dr. Who, from which the BBS took its name, the four co-sysops endeavored to create an atmosphere of fun and friendship by designing humor into the system's interfaces and hosting regular get togethers. The founders were also especially committed to ensuring that the system was accessible to users of screen-reading software. After several years of operation, they maintained a user database with 3,500 registered users, about 750 of whom they believed were "regulars" and 40 of whom called daily.

One thing that set the T.A.R.D.I.S. apart from other BBSs in the Indianapolis area was an area of the BBS that was exclusively for women. The women-only area was moderated by the two women co-sysops and users had to be personally verified to gain access. One former T.A.R.D.I.S. user described the women-only area as an alternative to other systems where women were the targets of unwanted attention from men. In her words, other BBSs could be a "nightmare" with "all sorts of people hitting on you" (Scott, n.d.). Crucially, the men co-sysops stayed out of the women-only area—even though the hardware was stored at one of their houses.

Designating one or more co-sysops created new possibilities for designing and moderating the social world of a BBS. By sharing moderation responsibilities between men and women, for example, the T.A.R.D.I.S. was able to offer a unique environment for women users. For BBSs started by a single user, co-sysops might be promoted out of the general user population. This process of delegating responsibility reflected the mutual accountability of users and sysops. Selecting a regular caller to act as co-sysop signaled that the sysop recognized the expertise of the users, cultivating a sense of shared ownership in the future of the community.

BBS moderation took many forms during the 1980s and 1990s. The breadth of social, technical, and administrative practices undertaken by sysops and co-sysops reflected the independence of each BBS in the overall network. Although users and files moved among systems, each BBS was a world unto itself. This decentralized structure afforded BBS operators considerable autonomy to experiment with various moderation techniques. Sysops recruited, registered, verified, and oriented new users; they crafted policies to facilitate the participation of returning users; and they demonstrated their accountability to the community by appointing co-sysops.

Commercialization and community moderation

BBSs were sites of innovation in community moderation but they were also sites of commercial experimentation. The demands of commercialization and community might seem at odds but, in practice, they often overlapped. Indeed, cultivating a strong community was a prerequisite for commercial success. Unlike social computing enterprises of the dot-com era and after, dial-up BBSs depended on usage and membership fees for revenue, rather than advertising or data-mining. Therefore, sustainability required sysops to attract and retain users who routinely participated in the system by posting messages and uploading files. Consistent with this interdependence, the literature on moderation occasionally blurred the distinction between a successful business and a thriving community.

Initially, North American hobbyists ran dial-up BBSs almost exclusively on a not-for-profit basis. Early commercial systems like The WELL depended on an unusually large membership and the pre-existing reputation of *The Whole Earth Catalog*. Due to the low rate of modem ownership in the United States, few dial-up BBSs could hope to replicate the success of The WELL in the mid 1980s. By the early 1990s, however, a proliferation of low-cost modems and a bloom of interest in "the information superhighway" expanded the population of potential users. As a result, many BBS operators began to consider the possibility of turning their hobby systems into small businesses.

Commercialization forced sysops to convert implicit or informal moderation practices into explicit policies. Trade books from the publishers of technology manuals and textbooks such as Addison-Wesley, InfoLink, and Que, tended to frame moderation through the framework of commercialization (Allen, 1993; Bryant, 1994, 1995; Chambers, 1994; Wolfe, 1994, 1995). One author urged sysops to stop thinking about their community members as "users" and to start thinking about them as "customers" (Bryant, 1994). This single categorical shift had significant consequences for sysop's accountability. While earlier sysop-user relationships were based on a sense of mutual investment in the community, a vendor-customer relationship suggested a different form of obligation. Sysops were becoming service providers.

The language of moderation also shifted in the context of commercialization. The authors of trade literature recommended a rights-based approach. What "rights" do users and sysops have on a BBS? But questions about rights tended to be fairly easy to answer: BBSs were private spaces, operated by private people, using privately-owned machines. If anyone had rights, it was the sysop. Alan Bryant, the author who suggested thinking about users as customers, assured his sysop readers, "The truth is, you

can censor any speech you wish, delete messages that offend you, expel users who say things you don't like—and you have the right to take any of those actions" (Bryant, 1995, p. 211). But, of course, he reminded readers, the culture of BBSing has always been about more than rights. These may not be the correct ethical choices, even if they are legally permissible.

Commercialization invited a discussion of legal rights but it did not absolve sysops of their accountability to the users on their BBSs. "You have the right to set rules," noted Bryant, "And while you don't have to, you should give serious thought to writing your rules down and making them available for callers" (Bryant, 1995, p. 210). Indeed, sysops may not have been bound by law but they were nevertheless bound by a moral obligation to their users. This implicit moral commitment suggested that sysops ought to alert users to rule changes, protect users' privacy, and provide advanced notice if they planned to take the system offline. These moral commitments were even stronger for sysops collecting fees from their callers.

Romantic histories of the internet occasionally portray early community networks as anti-commercial or radically not-for-profit. In fact, many BBS sysops were eager to experiment with novel forms of commercialization and happy to pursue entrepreneurial opportunities. Some of the best-known systems of the 1980s and 1990s, including The WELL, EXEC-PC, Software Creations, and ECHO were run on a for-profit basis. The pursuit of a sustainable business model did not prevent the formation of rich communities on these systems, however. Indeed, the pressure to state explicitly the rules of the system may have served as a form of de facto transparency that allowed users to feel more comfortable committing their time, attention, and money to the system. As a result, the practices of commercialization and community moderation are difficult to disentangle during this period. As Cliff Figallo of The WELL later observed, "The discussion and dialog contained and archived on the WELL are its primary products … The WELL 'sells its users to each other'" (Turner, 2006, p. 146).

Conclusion

The origins of online community moderation are rooted in the history of dial-up bulletin board systems. The owners and operators of dial-up BBSs were dedicated to cultivating community on their systems and undertook a wide range of technical, social, and administrative interventions to moderate the behaviors of their users. This paper represents a small step towards documenting and classifying the various approaches to community moderation taken up by BBS sysops during the 1980s and 1990s. Many of these systems were also commercial enterprises, at least in part. Instead

of advertising or data-mining, they drew revenue directly from users via subscription fees or per-minute charges. Future research might examine how the balance of community and commercial interests on BBSs compared with the same balance on contemporary "walled gardens" such as CompuServe or later social media platforms such as Facebook.

Dial-up BBS sysops enjoyed considerable autonomy in their moderation practices. This freedom was enabled by the relatively low barriers to creating a BBS, the independence of BBSs from one another, the small size of most BBS communities, and the geographic proximity of BBS participants. The scale and geography of BBSs communities are especially important characteristics to consider when comparing BBSs to later social computing systems. By verifying new users over a voice telephone call and hosting in-person "get togethers," BBS sysops made themselves accessible and accountable to their users to a degree that is simply not possible for the operators of mass-scale platforms. The author of the Commandments entreated users to "love thy BBS" because the thriving of a BBS community depended on the active participation, personal investment, and loving dedication of its users.

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