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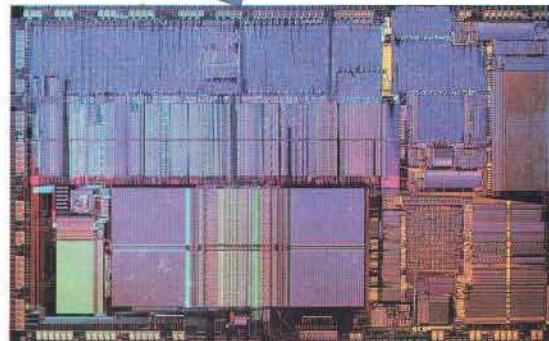**Develop for Windows or
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STATE OF THE BBS NATION

Behold the lowly bulletin board,
now encompassing the globe

Lamont Wood and Dana Blankenhorn

en years ago, it was a hobby—the modem version of ham radio. As soon as technically savvy computer hobbyists managed to acquire dual floppy disk drives, they were likely to put their machines on-line, making them bulletin board systems (BBSes). They would appoint themselves the *sysops* (system operators) and invite their friends to dial in with 300-bps modems and exchange files and messages. Today, the word *hobby* hardly applies. BBSes are a way of life for thousands of people. For some, it's a business, perhaps even a career.

Forget dual floppy disk drives. Nowadays, it's common to find sysops with several gigabytes of storage. Free files? You'll find BBSes with thousands of files, even tens of thousands. BBSes with multiple phone lines are common, often with one personal computer per line, networked together (some have dozens). As for modems, 9600 bps is seen everywhere. In fact, it's common for a BBS to support multiple 9600-bps modem standards by using both a USRobotics dual-standard HST modem and a Hayes V-Series modem.

Now, there are global hierarchical networks of BBSes that consolidate and retransmit hundreds of thousands of kilobytes of messages daily—with personal computers. Many corporations unflinchingly pay millions for mainframes, staffs, and special networks to accomplish the same result.

Demographics
The falling price and rising sophistication of computers and modems has brought sysop status within reach of everyone. This ubiquity, however, makes a head count of current BBSes difficult to come by.

David Burke of Hartford, Connecticut, heads the nascent North American Association of Bulletin Board Operators (NAABBO). He believes that 16,000 public BBSes exist in the U.S. alone, or about 100,000 if you count those in the private and corporate sectors. (Unfortunately, the sysops resist organization—only three joined NAABBO in the first seven months of its existence.) Tim Stryker, president of Galacticomm, a maker

of multiuser BBS software in Fort Lauderdale, Florida, says that most of his customers are companies or agencies that use BBSes to send information or software to remote locations.

USRobotics, meanwhile, admits that it has sold high-speed modems to "more than 5000" sysops. Hayes also claims sales in the thousands. Still, there remains an enormous turnover among BBSes. A list of 9600-bps BBSes given out by Hayes was surveyed recently; most of the lines were either changed, busy, or disconnected. Mark Leff, a Cable News Network reporter who tracks BBSes in the broadcast industry, estimates the annual turnover on his list alone at over 25 percent. Extrapolating Leff's experience nationwide, it's clear that all BBS population figures are only estimates.

But it's also clear that thousands of people have chosen to become sysops. Why? Money isn't the answer. About half of the BBSes don't charge their callers. The rest either charge about $50 per year or a few cents per hour. A handful have acquired staffs and appear to have become profitable ventures. The rest are probably lucky to break even.

The act of being essentially in the publishing business attracts many people, and they aim their BBS at a particular profession or interest. Indeed, whatever your interest, you will probably find a BBS dedicated to that subject. There are even BBSes where you can trade broadcast-quality graphics files.

For others, BBSes have replaced public socializing. Sysops inevitably talk about the the thrill of meeting people from all over the nation and the world, on-line. "I met my wife through the BBS and got a condo for the honeymoon from another sysop in Florida," says Chicago sysop Loren D. Jones.

Turning a Profit
Such motivations may become obsolete as the BBS movement turns into the BBS business. Some sysops, who run new-wave BBSes with multiuser BBS software, are up-front in saying that they plan to make money. Today, anyone can put up a 16-line, real-time chat BBS for an initial investment of about $10,000.

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Meanwhile, the spread of old-breed, single-line BBSes has slowed; membership in the International FidoNet Association grew by only 500 last year, half the previous year's figure.

And the regulatory environment may begin to scare off amateurs. The FCC could crack down on a BBS at any time. In Broken Arrow, Oklahoma, police arrested Jeff Jirka when he offered graphics files they deemed too graphic. (He drew a $500 fine and two years' probation on obscenity charges.)

But probably the most unsettling threat comes from phone companies that want to classify potentially profitable BBSes as businesses. In Houston, Southwestern Bell has attempted to classify all Texas BBSes as businesses and thus subject to business rates of $35 per month per line. (Residential rates are $16 per month.) Southwestern Bell officials have been meeting with the Coalition Of Sysops and Users Against Rate Discrimination (COSUARD).

Action on a similar tariff in Oklahoma awaits the outcome of the Texas case. COSUARD argues that even multiline BBSes that request donations are usually run by amateurs, while Southwestern Bell says that charging a subscription makes a BBS a business. Merely asking for a donation may be acceptable, but all multiline BBSes must pay business rates, says Bell's lawyers. The dispute continues.

A Closer Look at BBSes

Plenty of BBSes look like they're here to stay. The Exec PC Board in Shoreham, Wisconsin, is probably the world's biggest public BBS. Sysop Bob Mahoney says he gets 3000 calls per day, averaging 25 minutes each, on 90 lines in the basement of his home. By the time you read this, however, he'll have 150 lines in a new office. Wisconsin Bell had to dig a quarter-mile-long trench to bring in the new lines.

Mahoney charges $20 for three months' membership, or $60 a year. For this fee, you receive 7 hours on-line weekly and 4 megabytes of downloads, with a 4-to-1 time and byte credit for uploads. Mahoney has his own BBS software written in Microsoft C that can scan 20,000 files by keyword in 2 seconds. He uses 80386-based IBM PC ATs with Industry Standard Architecture buses, connected by a LAN under Xenix. He favors US-Robotics and the V.32 standard modems.

By day, the BBS is busy with Fortune 1000 executives looking for good shareware. By night, it's busy with entrepreneurs and hobbyists. Mahoney advises other sysops to "put together a business plan. Computer people tend not to do that."

In Denver, meanwhile, Jack Rickard runs *Boardwatch*, a newsletter about BBSes. He also "publishes" *USA Today DecisionLine* and the *Newsbytes News Service*, which are special-interest electronic news services to other BBSes. "Most of the systems I know of are trying to break out of the hobby mode and become paying propositions," he says. He agrees that the bulletin-board movement is finally becoming a business, reminiscent of newsletter publishing: "In another three years, it will be common for people to make money. There's a market for

people who can sell information at $35 to $50 a year."

In Toronto, Ron Sachse runs Metropolis Online using the Galacticomm Major BBS software. He has been working with 36 lines but has plans to go to 44. The BBS is incorporated as a Canadian business. "The word that would summarize our board is *info-tainment*," he says. "We're providing a sort of local version of CompuServe" at $1 (Canadian) per hour. He offers the usual free files and a multiplayer adventure game called Infinity Complex. He gets about 1000 calls per day. The BBS is adding on-line shopping and will rent space to vendors.

Chatting is the most popular service on Metropolis. "We have a lot of handicapped people on our system—people who are legally blind and deaf," Sachse says. "They tell us that for the first time they feel normal—they're on a par with non-handicapped people."

For the younger audience, there's the Celebration Station, a small BBS—326 users and five lines—in Bluehill Falls, Maine. Paul Stookey may be one of the more idealistic sysops in America, and he's probably the most famous, as the "Paul" of the folk group Peter, Paul, and Mary. Stookey says that when he was growing up in Dorsey, Maryland, in the early 1940s, "one of the neatest things you could have was a clubhouse. Maybe you had a password. There you saw friends who shared the same interests and made the same discoveries." Stookey calls his BBS "an electronic clubhouse." He hopes to add software that will make signing-on analogous to visiting a spacestation.

"I started a young person's board because I see an opportunity to turn a technological threat into a comfortable form of world communication," he says. Stookey is moving from Galacticomm software into a custom time-slicing system. He's looking for a company to underwrite his costs and provide his BBS with a toll-free line.

BBS Networks

A sign of the sophistication of the BBS movement is the advent of "echo networks." Echo networks are associated BBSes that systematically and regularly share files and conference messages with each other. Daily, thousands of hobbyists upload and download hundreds of kilobytes of information to each other—information that was itself gathered and consolidated from scores or hundreds of individual sources.

Each network has public "echo conferences," often a hundred or more, in which users can post messages about the conference topic, be it WordPerfect or the weather. An echo conference is a conference whose contents are shared among the participating BBSes in an echo network. Somewhere in echo-land there is a moderator for each conference, who edits the discussion to keep it civil and on-topic. Conferences devoted to a particular computer product are often moderated by the vendor's customer support staff.

A sysop can subscribe to one or more echo networks and choose which conferences within the network he or she wants to carry. Every day (usually) the sysop uploads the latest messages in

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> **W**hatever your interest, you will probably find a BBS dedicated to that subject.

BBSes MENTIONED

Metropolis Online: (416) 292-8757
Exec-PC Board: (414) 964-5160
Celebration Station: (207) 374-2303
Sound of Music: (516) 536-8723
Canadian Remote Systems: (416) 629-0128

those conferences to a regional hub, and, during the same call, downloads any new traffic for his or her conferences from the hub—consolidated material that the other sysops uploaded that day. Then, at least once a day, the regional hub calls the national hub and makes its own uploads and downloads, but on a bigger scale. Thus, by being part of an echo network, your local BBS can have conference postings from all around the continent (and the globe), current within two days. There are at least five major echo networks: FidoNet, Relaynet, Interlink, SmartNet, and Canada Remote Systems.

Like the other relay networks, FidoNet is not a legal entity but simply the sum total of the BBSes who subscribe to its practices. It is, however, the oldest and biggest. The International FidoNet Association estimates it has about 6000 members—mostly in the U.S., but a lot now in Europe and elsewhere. "If there is an executive director of FidoNet, I am it," says Ken Kaplan of St. Louis. Originally founded in 1984 as an inter-BBS point-to-point mail network, it soon acquired a sophisticated routing system, with global zones, regional networks, and local nodes. Kaplan now refers to himself as Net 100, Node 22, Zone 1.

Echo conferencing was added in 1986. "Basically, what happened then was that usage quadrupled overnight—people started finding tremendous applications for it," Kaplan says. He estimates that FidoNet now carries about 500 echo conferences. Sysops use every kind of hardware imaginable, from dual-floppy systems to VAX minicomputers. Each regional network has its own procedures for certifying sysops.

Interlink is run by Andy Keeves in Mt. Vernon, New York, where he is also the 40-year-old head of Cyllon Systems. He counts about 100 BBSes and about 100 conferences. Communications use QMail running on PC Board BBS software.

Approximately a year ago, Interlink and SmartNet came into existence as a result of the breakup of Memphis-based PCB Echo. Keeves says that Interlink differs from other networks in that it works hard to be professional: Moderators quell the chatter in the technical conferences. "We're trying to attract top-caliber callers," says Keeves. To join Interlink, a sysop has to have been running a BBS for a year or more, developing what Keeves calls a "serious tone."

At the center of the network is Keeves' own eight-line BBS, each line supported by a workstation attached to a Novell LAN. He uses mostly USRobotics HST modems. The network has about 1 gigabyte of storage. He describes his hub BBS as being "close to self-supporting."

SmartNet was also born about a year ago during the fission of the PCB Echo system. Paul Waldinger runs the national hub out of Oceanside, New York. The BBS is called Sound of Music. Waldinger runs both general-interest conferences and product-oriented conferences moderated by vendors. SmartNet now has about 250 subscribing BBSes and carries about 100 conferences. It also exchanges material with Canada Remote Systems and Relaynet.

Waldinger says that he sees 2 to 3 megabytes of traffic each night, relayed through eight regional hubs, using QMail and PC Board software. To handle it, Sound of Music has 2.3 gigabytes of storage on nine workstations connected by a 10NET Ethernet. The system connects to nine phone lines through various brands of 9600-bps modems. Backed by a staff of three, Wal-

dinger edits all traffic for objectionable material. Users pay $75 per year, but echoing sysops are charged nothing. The board also maintains 15,000 free software program files.

Waldinger, a 39-year-old computer consultant, says he hopes to eventually turn a profit and make the board his career. "It's electronic publishing—the electronic version of a magazine. A lot of sysops think along those lines," he says.

Meanwhile, the second largest BBS in North America—the 74-line Canada Remote Systems (CRS) in Toronto—is also the hub of a Canadian echo network called Canada Conference Mail. Jud Newell, vice president of CRS, says Canada Conference Mail has ties to about 100 Canadian BBSes and carries 127 conferences. It also has a gateway to SmartNet and echoes selected conferences from FidoNet. Like SmartNet, it relies on QMail and PC Board software.

Newell and his wife started CRS in 1981. It is now a money-making concern with a staff of eight. CRS has about 7500 subscribers paying $65 to $175 (Canadian) yearly, depending on the amount of access each receives. The users have access to the system's 60,000 programs, clip-art files and macros, plus various news services. CRS gets 4000 calls a day; daily echo traffic to SmartNet alone runs to 700K bytes. The traffic is supported by 74 workstations connected with a Novell LAN. The file servers on the CRS LAN have a total storage capacity of 4 gigabytes.

Newell reports no regulatory problems within Canada, but adds, "Although about the time we told the phone company that we needed seven phone lines because we had seven kids, it started getting suspicious." He now pays business rates as a matter of course. He has no qualms about carrying personal mail—unlike many U.S. sysops, whose concern over privacy leads them to defer such mail to the commercial networks.

And then there's Relaynet, operated out of Bethesda, Maryland, by psychiatrist Dr. Bonnie Anthony. Relaynet counts about 260 BBSes in the U.S. and Europe and about 138 conferences. Instead of PC Board software, the system is based on a package called PC Relay, noted for adding reference numbers to all messages and for having been written by a 15-year-old boy during his 1988 spring break.

As you would expect from Anthony's background, Relaynet has more social-oriented material, including an on-line version of Alcoholics Anonymous. "Our entrance requirements differ from most—we'll take anyone," she says. "We can support boards with a wide variety of software, and we're not afraid to take on teenage sysops." The Bethesda hub gets up to 800K bytes of material a day from 24 regional hubs and from selected conferences on SmartNet, Interlink, and FidoNet. At her hub, Anthony uses a LANtastic network with three workstations and six phone lines. She has 320 megabytes of storage.

The Commercial Side

With so much going on in the BBS nation, it's no surprise that the commercial world has taken notice. For instance, Tymnet and Telenet, the two main national data networks, now offer services designed to link users to distant BBSes. Users dial into the network through a local phone number, the service routes their calls to a network port near the BBS they want, and the

Commercialization is inevitable, as the BBS nation seems to have reached critical mass.

calls there reenter the phone system.

Tymnet is re-marketed through a service called StarLink by Galaxy Telecomm International in Albuquerque, New Mexico. After a sign-up fee, users are charged $14 an hour during business hours and $1.50 per hour for nights and weekends, plus one cent per kilobyte over 200K bytes per hour. The head of Galaxy Telecomm, who asked that his name not be used, claims to have "thousands" of StarLink users, who are on-line an average of 40 hours a month, some well over 100 hours a month. He has seen multiline BBSes network their chat lines from one BBS to another, so that a couple hundred people are on-line together.

Dominick DeAngelo is marketing vice president at Telenet Communications Corp. in Reston, Virginia. Telenet's service, a data packet service for BBS users, is called PC Pursuit. DeAngelo notes that after Telenet found people using PC Pursuit 300 hours a month—leaving them just enough time for eating and sleeping—it raised the rates from $25 per month for unlimited use. Now, after the sign-up fee, users pay $30 per month for 30 hours of non-prime-time use, and $3 per hour over that. DeAngelo's service also has thousands of users who pretty well fill the network's evening capacity of the 34 cities where it's offered.

Into the Future

When services such as PC Pursuit began, there were those who objected to the implied commercialization of the BBS movement. Most BBS software had simply appeared, written by someone in the ranks in response to a need. A good example is QMail, written by Mark Herring in Memphis in 1987 to help a friend reduce his phone bills when calling Tennessee BBSes from his new home in Texas. QMail allows you to download new conference messages, read them and write replies off-line, and then upload the replies to the appropriate conferences. It circulates as shareware, but Herring sends you a "better version" if you pay the $25 registration fee.

Further commercialization is inevitable, as the BBS nation seems to have reached the critical mass required to become a serious hardware and software market. "Today, more and more firms are writing software for BBSes, and we're seeing more and more features at a tremendous rate all because of the money that's in it now," says the head of StarLink.

As examples, sources point to the multiuser boards from DigiBoard in Minneapolis, which have up to 16 serial ports on a personal computer plug-in board, using software that circumvents DOS by talking directly to universal asynchronous receiver/transmitters on the board. In addition, there is multiuser telecomm BBS software based on "distributed demand scheduling" from eSoft in Aurora, Colorado. It has a module that can compile ordinary dBASE programs into multiuser programs, with automatic file locking, sharing, and updating.

So, aside from a few regulatory harassments, the BBS nation has passed its infancy and is blooming into an unknown factor—certainly at least a grass-roots community based on high technology. Perhaps it will end up as a new information medium as hard for us to imagine now as the current publishing industry would have been for Gutenberg to imagine in 1450. ∎

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