ABSTRACT
                This paper describes the advantages of using computer
bulletin boards systems (BBS) for distance learning, including the
use of the New York City Education Network (NYCENET) to access
various databases and to communicate with individuals or the public.
Questions to be answered in order to determine the most appropriate
software for running a BBS are listed; and the following public
domain and shareware BBS software packages suitable for setting up a
BBS for long distance learning are reviewed: Magpie, QBBS, PC Board,
RBBS, and Opus. One commercial program--The Bread Board System
(TBBS)--is also considered. A 1992 update of the information
presented in this paper is appended. (ALF)

A Review of MS-DOS Bulletin Board Software
Suitable for Long Distance Learning
Reviewed By Anneliese Sessa (1989)

The idea of using a computer for long distance learning is
not very new. After exploring some text files on the Educational
Forum of Compuserve, I learned that computers have been used for
many years by many different institutions such as the New York
Institute of Technology located in Central Islip, New York;
Connected Education with the New School in the Bronx, New York;
Nova University in Fort Lauderdale, Florida; and Empire State
College in Saratoga Springs just to name a few. Most of the
experiments and on going projects have been done on the
institutions' mainframe. Empire State College in Saratoga Springs
for example, did a pilot project with long distance learning on the
Vax using a commercial Bulletin Board software, called CAUCUS, to
teach an on-line course in American Diplomacy in 1987.

In my research on Compuserve, I found a text file by Professor
Lowell Roberts of Empire State College's Center for Long Distance
Learning about this project. He states how the students found the
on-line project to be a very positive and fun experience. He also
said that the students that logged on from their home computer
produced better papers than the students that took the same course
in a normal classroom situation. The difference was that the
students interacted privately and publicly, with each other and the
teacher. This helped to stimulate and motivate the students into
doing better work.   I came to the same conclusions in my
experiences using local bulletin boards. It is much easier to
interact with different people using this medium of communication.
Sex, race, age and creed biases are left out of it, unless you have
this as the specific topic of discussion. Everyone is more or less
equal and you are accepted for what you have to say or what you
have to contribute to a topic of discussion. I have seen 13 year
olds hold their own with professionals on technical topics
concerning computer hardware and software. If they know their
subjects, they have the confidence to compete in this medium.   I
have been a Bulletin Board user since 1984 and I have learned its
vocabulary and expressions through daily use. My most active BBS
is NYCENET.

NYCENET is a multi-user, 16 line BBS that has a Unix based
operating system running on a 386 micro computer with 200 meg of
storage using a shareware program called Magpie. Magpie is also
available in Ms-Dos format that can run on an XT or AT.

What do I use Nycenet for? I use it for doing research,
gathering news, learning about new technology, sharing
information/curriculum with other computer teachers and just
keeping in touch with friends and people in the computer industry.
Using it for long distance learning is the best part of using
Nycenet. The software used by Nycenet is capable of exiting the
BBS and accessing a CD-ROM which contains Grolier's Encyclopedia
on-line, a database of educational software, a database of

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curriculum and lesson plans, and several other files that would be of interest to teachers. It also has daily news reports from the Associated Press and daily stock market reports on-line for reference. Classrooms access these databases for projects in their curriculum. Another feature that the Magpie software has is that it has a chat line for multi-users that teachers use for homebound instruction. These chats are prearranged so that homebound students can interact with other students in real time conferences. Not only do they get a social outlet this way, but they get to practice using new found communication skills. Nycenet also has an on going Mentor program with celebrities logging on and doing a one on one chat with students that are "at risk" of dropping out of school. They are trying to motivate these kids by introducing them to this new way of learning and exciting them to come to school for more. So far it seems to be working.

Another reason for using a BBS is to get your messages across to very busy people. Have you ever played telephone tag with a teacher or student? Someone always seems to take a message that one of you called, however, the actual message never gets across until after several calls. The use of the Bulletin Board allows you to leave the actual message at any hour and also to get a reply, plus a text file if it is needed. A Bulletin Board could also be used for public messages that are the same from year to year, such as recruitment information, enrollment requirements, dates and times of workshops and classes.

There are many ways to use a Bulletin Board System, which I will refer to as a BBS from now on, in an educational environment. Today, long distance learning can be done on a micro computer with a minimum storage of 20 megs and 512 K of memory. There are programs available in the public domain, as shareware and commercially for most every brand of microcomputer. There are also many different types of software available to meet different kinds of needs. I canvased some of our local boards and found the following BBS software:QBBS V 2.04, RBBS, PC Board V10, Opus, ProComm Host and Magpie BBS (Ms-Dos). Most of these were downloaded from NYCENET BBS. Magpie is my favorite BBS software, as you may have guessed, however, it is a very powerful program and I only recommend it for use when teachers and students become proficient in using BBS software. The Magpie message base uses a tree structure where the replies to a message follow abranching or threading so that you can follow a thought wayback to its origin. Messages can stay on-line for several years depending on the amount of storage available. Magpie Ms-Dos software needs at least 3 megs of storage to install itself onto a hard drive. I agree with Professor Lowell Roberts in his paper on Distance Education, that a simple software should be used as a first experience. Using complicated programs, the sysop will be spending too much time training the students and teachers on how to use the software rather than using the Bulletin Board for what it was intended for. This now brings me to the next thought. What is the purpose of the BBS?

Several questions have to be asked and answered before setting up a BBS in order to determine the software that will be used to run the system:

1. Will you allow public access to the system?
2. Will it be used for public announcements?
3. Will it be used for recruitment?
4. Will it need a private Board for Mentor to student access?
5. Will you need a file transfer area?
6. Will you need a public board for student interaction such as a study group on-line?
7. Do you need international capabilities using different languages?
8. Do you need access to a gateway or access to an on-line database?
9. Do you need a multiuser system?

If you wish to set up a simple BBS with private and public messages and occasional file transfers, then a terminal program called ProComm Plus is recommended. This is presently a commercial program, however, I found a shareware version with limited use on our local boards to experiment with. What I like about this program is that it may also be used to call out to other systems with just a few keystrokes, if the need arises, compared to taking down a BBS and rebooting the system with a terminal program. ProComm Plus is all menu controlled and a novice could use it with out going too deeply into the manual which is included on the disk. A Hayes modem is needed to run this program and it works on any Ms-Dos machine. If you use a Hayes compatible modem, you may have to reprogram your modem from the defaults that were set at the factory, which I had to do on my MiniEpic 2400 baud modem, in order to use the Host mode (BBS). The documentation to change any parameters is included in the manual.

If a more powerful program is needed, then I suggest you take a look at QBBS and PC Board next, since they answer questions one to six. Both are public domain programs and have simple message bases which are easy to use and both have file transfer capabilities. I haven't come across it, but I was told that QBBS is capable of being used in 5 different languages and documentation is included to add netmail or echomail using other commercial programs such as Seadog or Binkleyterm. Both QBBS and PC Board also have options for color and ANSI graphics should you wish to add it. Both are public domain programs and no fees are requested if the BBS is used for non-profit purposes. Governmental institutions are requested to register the software, but there are exceptions (see the documentation). Extensive documentation is included to help set up the BBS and support numbers are listed in case you need assistance. School District 10 inthe Bronx uses QBBS (5pm to 6am and weekends) at 212-220-8305, for simple message interaction, school to school one line interaction and it has a file transfer area. The Dolphin BBS at the College of Staten Island uses Version 10 of PC Board at 718-448-2613 (5pm to 8am and weekends) for simple public messages, private mail for teachers and

students at CSI, and a file transfer area for the exchange of utilities and computer language tutorials. The New York Amateur Computer Club uses the latest version of PC Board at 718-539-3338, to keep in touch with its members and to keep up to date with new technology. They have an extensive library of public domain and shareware programs on-line for downloading to club members.

The last two Shareware/PD programs are RBBS and Opus and these are more complex and are an answer to questions one through nine. The message bases are easy to use and they both have file transfer abilities. RBBS is written in BASIC and compiled for speed; source code is available to modify this program. A special feature of RBBS and Opus is that they can run outside programs. RBBS can exit to Doors and run on-line games or other database programs. Brooklyn Tech./ High School of Telecommunications, Arts and Science runs two separate BBSes Technet and LaserNet which use RBBS. The students have a great deal of input on these Bulletin Boards and Technet has the on-line games. Besides the message bases, Technet at 718-852-0347 and Laser Net at 718-680-2928 both have program files for downloading. The National Education Association BBS also uses RBBS software (NEA BBS 800-541-0816, Washington, DC). It has two public boards for messages, 3 private boards (for the NEA Board of Directors, for members of the National Foundation for Improved Education and for Private projects). The Nea BBS has many surveys and text files on education which may be downloaded for reference. It also lists educational bulletins, employment vacancies around the country and Legislation updates.

RBBS and Opus both have a feature where it can exchange mail with other BBS systems remotely. This is overnight mail or echomail that is sent between "Fido" networks around the country. There is an estimate of about 6000 BBSes using fidonet mail nationally and they already started to connect internationally in 1989. Opus and RBBS use commercial programs called Seadog or Binkleyterm for sending and receiving echomail. The Opus program I downloaded has a limited time free use of D'Bridge for echomail and if you decide to use it, then it has to be registered. Cyber Church BBS uses Opus at 212-304-0072 for keeping in touch with the religious community. It also has national echomail and a public domain and shareware library of programs for downloading. It was on this board that I read a very interesting account of what it felt like to be in the middle of the California earthquake. It was written by a priest from ST. Mary's Church in California. He gave detailed reports of the damages and loss of life he encountered and his descriptive technique of writing drew pictures in my mind that made me feel like I was there with him.

A commercial BBS software that I like very much is called The Bread Board System (TBBS). This software allows the user to chose ANSI color or straight ASCII transmissions. It supports echomail and internet mail. It has real time conferencing or chat if more phone lines are added. It can display graphic RLE files on-line if your terminal software supports RLE. It has upload/download areas for public and cosysop access. Text files

may be attached to messages and users may read backwards to the
original message on the same subject. My favorite TBBS systems
are: Fordham Jesuit in the Bronx (212-579-2869), Grand Central BBS
in Staten Island (718-317-7650), and Night Shift BBS also in Staten
Island (718-816-7825).

There are many more products on the market to choose from.
This is just a sampling of the possibilities and what is most
commonly used in my area. I would like to add that what I have
experienced as a user of Bulletin Boards is a new way of thinking
and a new way of using my mind. This is just the beginning and I'm
sure there will be much more available in the near future.

December 1992 Update Of The Bulletin Boards Mentioned
In The Review of Bulletin Board Software
for Long Distance Learning
By Anneliese Sessa

Several things have changed since my original independent study was written in 1989. Dolphin BBS (College of Staten Island) changed software to Wildcat, shortly after my review was written. The BBS listed current student activities, an academic phone directory, and public service messages. I tried to contact the BBS during the month of December 1992, and the system was off line. Other users on the networks told me that a hacker forced the closing. I have been playing telephone tag with the sysop for a few days and haven't been able to find out when or if it will be up again.

Nycenet BBS moved to I.S. 25 in Queens and the new local access number is 718-461-8650. A new 800 number was added for out of state schools and is available only by direct application. Nycenet has also increased the hard drive storage to 600 megs, 20 local phone line access and 3 Watts lines. Minutes of meetings from the UN, Teachers' Choice catalog, curriculum guides, Impact II grant information and a schedule of TAC Workshops have been added to the reference database. ERIC database has been added, but it is not open to all users until the beta testing is complete. Internet access has been added for special projects. Nycenet has plans to expand in the Spring of 1993 to a RISC system and give access to schools through the ATS system.

Cyber Church went down and moved to another state.

Lasernet doesn't answer.

The NEA BBS was closed to regular users and open to members of the National Education Association only.

New versions of RBBS now have multiplexing capabilities provided you have extended memory to do so.