MULTIPLATER INSTALLATION AT THE UNIVERSITY OF HAWAII
presented by Martha Chantiny
at the ASIS Mid-Year Meeting, 1990

The University of Hawaii Libraries at the main campus in Honolulu consist of
the Undergraduate Library (Sinclair) and the Graduate Library (Hamilton).

OVERHEAD - MAP OF UH CAMPUS

I work in the Library Systems Office which is located in Hamilton Library.
The Systems Office is responsible for all automation-related support for
both libraries.

During the Summer of 1989, material containing asbestos was removed from
water-damaged ceiling areas in Hamilton Library. The building was closed
to the public and most staff during this process.

Nearly a year in advance, in late Summer 1988, the Libraries began planning
to move nearly 100 staff members and most services and operations from
Hamilton Library to Sinclair Library.

Sinclair Library is an un-airconditioned building constructed in 1956 with
slightly less than half the square footage of Hamilton Library.

It was immediately apparent that the 15 miles of printed reference and
index materials located in Hamilton could not possibly be accommodated in
Sinclair along with the additional staff who would also be housed there.

A subcommittee of the Library's Microcomputer Council began to investigate
CD ROM indexes as an alternative means of providing access to reference
materials which would be unavailable in their printed format during the
summer in Sinclair.

Hamilton library was scheduled to close down operations on May 13th and
staff was expected to resume operations in their new quarters 4 days later
on May 17th. The first of two summer sessions was to begin May 22nd.

This extremely short time frame meant that any CD ROM products to be used
would have to be operational from nearly the moment of installation. There
would be no time for extensive development or experimentation.

In October 1988 I attended the LITA conference in Boston at which time I
saw a demonstration of the Multiplatter system sold by SilverPlatter. I was
very much impressed by a site visit to their Boston College installation.
University of Hawaii at Manoa
At that time, the market for networked CD ROM systems was small and it was clear to me from discussions with the very few CD Network vendors in the LITA exhibit hall, that the only vendor which could offer a truly "turn-key" (but expensive) solution was SilverPlatter.

The University of Hawaii Libraries entered into written and phone negotiations with SilverPlatter to investigate the possibility of becoming the 6th Multiplatter installation in time to provide reference service no later than June 1, 1989 in Sinclair Library.

After preparing voluminous quantities of justification and purchase documents (a necessary evil when working in a state agency) and obtaining exemptions in order to meet a 50% pre-payment clause - our order for a Multiplatter system was processed and mailed the last week of April 1989.

After a number of scheduling delays, the system was finally installed on June 27, 1989.

During the month long interval between the start of the summer session and the Multiplatter installation, the Library was fortunately able to borrow three standalone (XT-type clone) CD workstations (each with a single internal CD drive) from the University's School of Library and Information Science.

The Reference librarians were then faced with the logistics of handling 5 databases on 8 CD disks and three unfamiliar workstations while they learned the search software and attempted to adjust to the new technology.

Naturally, everything that could go wrong with a standalone situation, did. A CD disk was inserted into the floppy drive, a CD disk was inserted into the CD drive but without it's protective disk caddy, a CD disk was stolen.

And innumerable disk for ID swaps were made, as patrons used one disk after another. After nearly 4 weeks of this, the Multiplatter network system was greeted with enthusiasm!

The actual installation was quick and relatively simple to understand. We had the same experience as described by the Boston College Librarians at LITA -- the system was up and running within a day!

OVERHEAD - DIAGRAM

Our original Multiplatter system consisted of a Meridian CD-Net tower with a 386 processor and 5 stacked CD drives, Novell Ethernet interface cards and thin Ethernet coaxial cable, the Novell IPX interface "driver" software,
Meridian CD-Net Server Tower
386 Processor
5 CD drives
Novell Ethernet interface card
and thin coaxial cable

Meridian CD-Net
Novell IPX
DOS

Multiplatter Menu shell
and statistics software
A single CD server tower with only 5 CD drives
No file server
5 workstations & 3 printers
Meridian CD-Net network operating system software, Multiplatter menu shell and statistics software.

The Multiplatter system differs from a "standard" network configuration in that it need not have a file server. Each workstation hard disk contains a copy of the network and search software required. The CD server boots only with the software needed to run the server itself.

The five initial databases mounted on our Multiplatter system were:

OVERHEAD - LIST OF DBs


Five IBM PS/2 model 50z microcomputers with 12 inch color monitors were chosen for workstations because they had adequately fast processors and color screens to display the software to best advantage. They were also easy to purchase because they were listed on an official State Price List. Our original 5 workstations were on loan to the library from the campus Computing Center.

The original Multiplatter system cost a bit over $23,000. Our price was slightly higher than the base configuration because we opted for a 386-based processor rather than a 286. We believed that the faster CPU configuration of the server would help to minimize the effects of slow CD drive access speeds.

It was an admittedly expensive proposition but we feel it was well worth the investment.

The University Libraries needed a CD network that would be up and running without any false starts or a lot of time spent installing and/or developing programs for configuring menus, software, access levels, etc. The one year of toll-free support which was included in the purchase price, as well as the one-year warranty on the hardware were also a much appreciated part of the package.

In addition, the Multiplatter system came with a "beta test" version of a statistics gathering program.

This program was linked to the Multiplatter menu shell and collected usage statistics for each database on each workstation. Whenever a patron chose a database from the menu it would be counted and logged to a file; statistics
INITIAL DATABASES OFFERED - JUNE 1989

Silverplatter - ERIC

PsycLIT

SPIRS search software ver. 1.5

Wilson - Readers' Guide Abstracts

- Applied Science & Technology Index

Wilson search software ver. 1.9

Ziff-Davis - Computer Library

Bluefish search software
were combined and displays for weekly, monthly and year-to-date were available on each workstation. There were some bugs, but the basic data was stable enough to begin to analyze patterns of use.

In Fall 1989, the LAN configuration was reduced to 3 workstations (the Computing Center 'reposessed' 2 of their loaners, but generously transferred ownership of the remaining 3 to the library).

The Multiplatter statistics showed that the ERIC and PsychLIT databases were by far the most heavily used. The figures were so impressive, that shortly after the start of the Fall semester, they were employed to lobby the Education and Psychology Departments to contribute one workstation and printer each, in order to expand our configuration to 5 workstations once more. This application of the usage statistics was extremely fruitful and in a sense helped defray the initial purchase cost.

In December 1989 the University Libraries ordered an expansion upgrade to the original server unit. An additional 6-CD drive tower with associated software, a memory upgrade for the original server CPU (from 1 mb to 2mb), support and maintenance were purchased for slightly more than $10,000.

The upgrade arrived in the first week of 1990; installation was to be performed by myself with phone support only from SilverPlatter. I thought it might take 2-3 days. It took nearly 2 weeks, for a variety of reasons.

1) The hardware arrived in good shape, but the memory upgrade turned out to be a complex matter. 2) the new CBIS network operating system did not include an ethernet driver that was compatible with Novell interface cards (so a special IPX version of the network operating system setup was created and mailed from Boston).

3) The various autoexec and config files needed the usual amount of 'tweaking' that seems to accompany all software upgrades.

Due to the difference in time zones, the method of communication was mostly by fax after the initial phone call or two. After 9 fax messages varying from one to nine pages each had flown back and forth across the country - nearly complete success was finally achieved.
However, two major problems became apparent almost immediately.

The CBIS CD-Connection network operating system uses less RAM than did the Meridian CD-NET and provides some network monitoring features BUT does not use the standard Microsoft extensions in order to save RAM.

UMI search software (v.2.1 and 2.11) does NOT recognize the CBIS Microsoft CD ROM Extension emulator. All the other products on the network functioned with the "nearly identical" emulator provided by the CD-Connection software, but UMI software would not run.

Also, strange new error messages began to appear on the workstation screens. Messages that said "NET BUSY" or "Serious error 901" (a Wilson software error message) or "Exec failure" (in association with Computer Library).

Again a number of phone calls and faxes revealed (in fairly short order) the cause -- a problem with the CD-Connection network monitoring program.

A counter in the monitoring program which tracks the number of open files per workstation was apparently not clearing. When any particular database on a specific workstation exceeded the allowed number of open files - these messages would begin to appear.

The short term fix to what I call "server brain scrambling" is to turn all workstations off, then both server towers, then all back on again. This clears out the counter, if somewhat inelegantly.

Hamilton Library is open roughly 14-16 hours per day, 7 days a week. Therefore, we leave the workstations up and running 24 hours per day. Because of this continuous operation - the server must be reset 2 to 4 times per week to cure the Net Busy counter problem. Libraries that turn their machines off each night, should never even face this problem. A fix to both of these problems is "coming soon" according to SilverPlatter.

Despite these two drawbacks, the upgrade has been well worth it.

OVERHEAD - LIST OF DBs

The number of databases has been expanded to add 2 more Wilson products (Social Science Index and Humanities Index) and we have been able to make the backfiles of ERIC available on the network.

When we are able to offer the UMI products ABI/Inform and Newspaper Abstracts On Disc via the Multiplatter system the network should be an even...


**DATABASES AVAILABLE - MAY 1990**

**Silverplatter**  
- **ERIC** (1976-82 and 1983-present)  
- **PsycLIT** (1976-82 and 1983-present)  
  SPIRS search software ver. 1.6

**Wilson**  
- Readers' Guide Abstracts  
- Applied Science & Technology Index  
- Humanities Index  
- Social Science Index  
  Wilson search software ver. 2.1

**Ziff-Davis**  
- Computer Library  
  Bluefish search software

*And coming very soon ...*

**UMI**  
- **ABI/Inform**  
- Newspaper Abstracts OnDisc
more popular and powerful reference tool. In anticipation of the increased demand, we are adding a 6th workstation at the end of this month.

The only other problems we have experienced are those that are common to nearly all public-use microcomputer and CD ROM situations.

When the workstations were first made available, patrons tended to reboot or turn the micros off whenever they had problems or were finished with the machine. To circumvent this (because it causes the hard disk to clutter up with potentially damaging lost clusters and because it fouls up the statistics program) we installed power locks over the on/off switches. A key is now necessary to turn the machine off.

Every one of our workstations has its own parallel HP Thinkjet printer. The patrons love the print capability but many seem to use it to excess. The problem of coping with the increasing cost of providing print capability is ongoing.

All of the databases offer a download-to-diskette option, but many patrons seem confused about what is happening and therefore a dozen or so files per week end up on the hard disk. I perform regular 'maintenance' and delete these files, search for lost clusters and optimize the hard disk - generally about once a week.

We have experienced few difficulties and the benefits of the Multiplatter system far outweigh the disadvantage of the problems we do experience.

SilverPlatter has provided excellent support and we hope to maintain continued good relations.

Our plans for the future include:

Expansion to other floors of Hamilton and perhaps across campus back to Sinclair Library via our campus fiber optic cable system.

Remote access is also of great interest, but the licensing issues may be more formidable than the technical issues.

There are now 20 installed Multiplatter sites, as well as a number of other CD network vendors. The technology is a viable way to make a fairly large number of databases available to a large number of information seekers and we have been very happy with our Multiplatter system.
POSSIBLE NETWORK CONFIGURATION FOR SINCLAIR

Summer 1989
Diagram A
IDEAL and THEORETICAL

POSSIBLE NETWORK CONFIGURATION FOR HAMILTON
The Future - with theoretical Gandalf connection
With "Local Resource Nodes"

Periodical Room

Modem Server
and modem(s)

SCI/TECH

Aquatic Sciences

NurseSearch

Gandalf
Modem Pool

GOV DOCS

Supernap

SCI/TECH

SINCLAIR Reader's Guide
The "Big Picture" of the somewhat distant Future Possibilities
For linking the 2 libraries
SilverPlatter

MultiPlatter

PRICE SHEET

January 1990

MultiPlatter configurations start with a four workstation/seven CD-ROM drive network. Although the components for this basic system are priced individually, you purchase the system as a unit. You can build on this basic MultiPlatter system unit by purchasing additional components individually. These additional components can be purchased with the basic system or at a later time.

The basic MultiPlatter system server unit

$19,980

- CBIS Network Server with seven CD-ROM drives and 2 MB RAM (80286 processor)*
  $11,280
- Four Ethernet Network Interface Cards
  $1,600
- Network Communications Software
  $2,600
- MS-DOS CD ROM Extensions emulation software
  $200
- MultiPlatter Application Manager Software
  $2,000
- System testing and shipping
  $300
- Onsite installation by SilverPlatter
  *Includes all travel expenses for one day onsite installation by SilverPlatter staff

* For 80386 processor add $2,000.

Additional components for the basic unit

- Expansion Unit with seven CD-ROM drives (Drives 8 - 14)
  MultiPlatter Application Manager Software (Drives 8 - 14)
  $9,980
  $2,000
- Additional Network Server with seven CD-ROM drives (Drives 15 - 21)
  MultiPlatter Application Manager Software (Drives 15 - 21)
  $11,280
  $2,000
- MultiPlatter Usage Statistics Software Module
  $2,000
- Adding a non-SilverPlatter title to the MultiPlatter System (per title)
  $300
- Support package for each additional workstation
  *Includes Ethernet Network Interface Card, MS-DOS CD ROM Extensions emulation software, and MultiPlatter Network Manager Software License for one additional workstation
  For PS2 Personal Computers with Micro Channel Architecture, add $150
  \$600

1 For PS2 Personal Computers with Micro Channel Architecture, add $600. For Token Ring network hardware, add $2,500. Please contact SilverPlatter for pricing information for Token Ring configurations.

Please note:

Workstations to access CD-ROM drives are not included in MultiPlatter pricing. All workstations must be IBM® Personal Computers or 100% compatible, with 640KB of memory, a minimum of 10MB fixed storage, standard monitor and keyboard.

Prices do not include Ethernet cables which must conform to SilverPlatter specifications and be installed by the purchaser.

Prices include a six month warranty on software and hardware supplied by SilverPlatter. An extended warranty is available for 15% of the configuration cost per year. The warranty covers all MultiPlatter software updates, telephone support, and hardware maintenance.

While all items listed as additional components are available separately, they are available to MultiPlatter customers only.

All orders must be accompanied by a 50% down payment, with balance due on delivery of system. Allow 90 - 120 days for installation after receipt of order.

All prices subject to change without notice

For special configurations, contact SilverPlatter.

Customer is responsible for obtaining necessary licensing agreements required for all CD-ROM products used in MultiPlatter.

Prices valid for U.S. installations.
MultiPlatter offers an optional capability for remote users to access the services of the LAN over dial-up lines. The dial-in capability is added to your existing LAN file server by adding dial-in port interface cards to the available expansion slots within the server. Each dial-in interface card supports 2 remote users by providing each with a fully functioning PC-AT compatible computer. A LAN application that is requested by a remote user runs on the dial-in port computer, which has access to the full bandwidth of the LAN. Screen images and keystrokes are sent over the modems giving the remote user almost all of the functionality, look and feel that is available to workstations on the LAN. The dial-in capability can be added to your MultiPlatter LAN for 2, 4, 6 or 8 remote users.

### Dial-In Feature

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Each Dial-In port is equipped with:
- 1 PC-AT CPU chip running at 10 Mhz with 1 MB RAM and EGA/CGA graphics capabilities.
- 1 9600 baud V.32 compatible host modem.
- 1 copy of PC ANYWHERE III dial-in host and remote software.
- 1 Copy of DOS

### Installation:

- (with the purchase of a MultiPlatter) No Charge
- (added after the original installation of MultiPlatter) $2,000

### Additional Software for CBIS Network-OS users:

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### Please Note:

1. The dial-in components are added to your LAN file server which must be a PC-AT or compatible computer with one free 16-bit Industry Standard Architecture interface slot for each 2 port interface purchased.

2. The maximum dial-in ports per file server is eight. Additional file servers can be configured if more than eight users are required.

3. One 8-bit Network Interface Card is included with the purchase of the first two dial-in ports. Add $100 for a 16-bit Network Interface Card.

4. 2400 baud modems and AT and 386-compatible servers are available upon request. Call SilverPlatter for pricing.

5. Customer is responsible for obtaining necessary licensing agreements for all CD-ROM products to be used via remote dial-in.

6. Site licenses may be needed for more than 8 remote users. Call SilverPlatter for more information.
Microcomputing in the 1990s: Unlocking the Power

1990 ASIS Mid-Year Meeting
May 13-17, 1990
Fort Lauderdale, Florida

Edited by Paul Nicholls

American Society for Information Science
Washington DC 20036
Despite various and often contradictory predictions, CD-ROMs have neither taken the world by storm nor yet been superseded by a newer technology. They have, however, established themselves as a viable means for the distribution of certain types of information. Their capacity for storing very large amounts of data is what makes them so attractive. The fact that they have been limited to a single user has been perhaps their greatest drawback. Since their introduction, consumers have been trying to devise ways of networking these powerful tools. Although there are still significant licensing issues involved, the technical problems are beginning to be resolved. Three speakers from sites which have CD-ROM networks up and running will describe how they implemented and are running the networks.

Meridian Tower and PC-LAN
Ka-Neng Au, John Cotton Dana Library, Rutgers, The State University of New Jersey, New Brunswick NJ

SilverPlatter and MultiPlatter
Martha Chantiny, Hamilton Library Systems Office, University of Hawaii at Manoa

OPTI-NET
Loren Aman, South Dakota State University