After showing some signs of slowing down, the library automation marketplace posted another record-high 395 systems installed worldwide

Automated System Marketplace

Focusing on Software Sales and Joint Ventures 1990

By Robert A. Walton & Frank R. Bridge

FOLLOWING A PATTERN of unprecedented growth during the prior three years, the 1989 library automation marketplace showed some signs of slowing down, but still posted another record-high 395 systems installed worldwide. As in prior years, this article reviews and concentrates on the systems that libraries are purchasing, examines automation marketplace themes, and looks for behavioral patterns in special market segments, e.g., software-only sales and the purchase of "joint venture" systems, sold by a union of software and hardware vendors.

The authors have presented (or some would say, continue to fail to present) estimates of the financial stake of library automation vendors. As if tó maintain a tradition of years gone by

formation on revenue sources for publication, this marketplace analysis is based upon a count of the installed systems (whether or not they serve single or multiple libraries).

Some critics have said, "Exclude those vendors who don't release financial data from the next analysis." But then we could only report on four vendors. Not much of an analysis there, so let's take another walk through the annual market share patterns as defined by installations.

Flattening growth? Yes!

In the 1988 marketplace analysis ("Automated System Marketplace 1988: Focused on Fulfilling Commitments," *LJ*, April 1, 1989, p. 41-52), the annual growth of the number of systems slowed from a growth rate of 55 percent during 1987 to 16 percent during 1988. Even though 1989 set another record for total systems installed (with 35 installations more than the 360 systems installed during 1988), the overall annual growth was only nine percent. As the overall marketplace grows larger, the annual percentage of increased installations continues to flatten.

The question must be asked, "Are libraries losing some interest in library automation?" While there is a flattening in the percentage of annual installations growth, there is no evidence to support a slowing trend among institutional library consumers. Regardless of library interest in investing in the use of technology, the current vendor community can only manage to grow and install a defined number of sales each year. Several of the more popular vendors have now hit the practical realities of double-digit growth and expansion: qualified technical staff are more difficult to find, there are too many Request for Proposals to answer, and the coordination problems of too many simultaneous installations expose the company's reputation to increasing risk.

Under these circumstances, most vendors focus on market segments in which they have an advantage and a better track record than their competitors. A few firms have continued to add large numbers of new staff and continue to attack with vigor every sales opportunity. But historic positive user impressions of some of these firms have declined as library staff encounter new vendor faces in every meeting with the vendor staff. Many of the "tried and true" quality controls that were part of the company's early "corporate culture" are more difficult to maintain among newer and less-experienced staff. One firm continues to emphasize sales, but simply places the reality of installation delays on the consumer's shoulders. Should a *decision* be made today to purchase this popular system, the actual *installation* date for the project will be set for the second quarter of 1991, at the earliest. Complications of data con-

Chart 1A: Worldwide Market Shares Total Installed Systems
(ALL YEARS)

UNIVERSAL 22/1%
VTLS 118/6%
UNISYS 41/2%
CLSI 345/16%
SOBECO 87/4%
COMSTOW 42/2%
OTHER 108/5%
DRA 130/6%
OCLC 134/6%
CARL 6/0%
SIRSI 49/2%
NOTIS 132/6%
DYNIX 307/14%
INNOVATIVE 155/7%
UTLAS 14/1%
INLEX 59/3%
GEAC 189/9%
CARLYLE 45/2%
IBM/DOBIS 167/8%
Variance: +/- 0.5%
TOTAL SYSTEMS=2,150
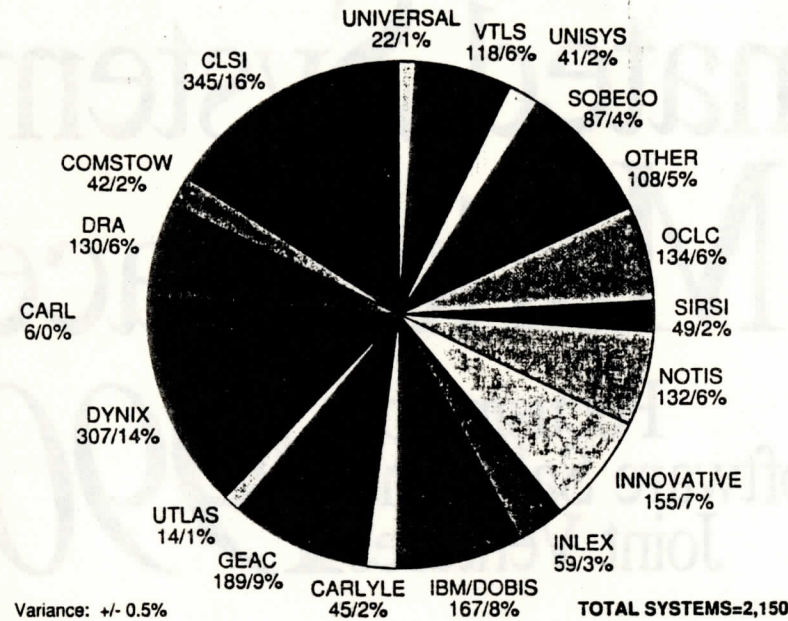
Chart 1B: United States Market Shares Total Installed Systems
(ALL YEARS)

UNIVERSAL 6/1%
VTLS 81/6%
UNISYS 20/1%
CLSI 278/19%
OTHER 97/6%
SOBECO 7/1%
COMSTOW 41/3%
OCLC 129/9%
DRA 115/8%
SIRSI 49/3%
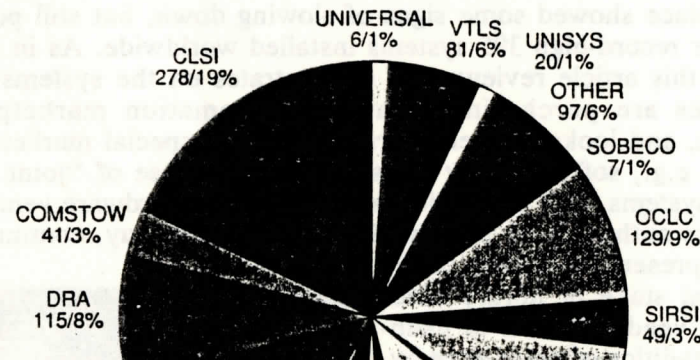
ing expansion in these foreign arenas [see "Australia: Going Online Down Under," p. 62]. Dynix, Inlex, CLSI, VTLS, and others increasingly pushed the sale of automated systems overseas, and foreign-based companies such as Geac and Sobeco (Multi-LIS) continued to try to move into the U.S. marketplace. In looking at the marketplace patterns for 1989, the tremendous growth of the overseas marketplace tends to skew the view of what is happening here at home.

Perhaps the time has come to adjust the view of vendor market shares based upon the location of those installations. Why? Is this another example of American xenophobia or an attempt to perform "foreigner bashing"? No, one of the primary purposes of this annual analysis is to answer the question, "What are my neighbor institutions buying?" For most libraries the use of the term "neighbor" is an expression of interest in what other U.S. institutions are doing, libraries that have similar funding patterns, system maintenance problems, legal precedents, and clientele. But rather than argue the point, this year's analysis presents both market share findings: what happened worldwide and what happened in the United States.

Chart 1A presents the worldwide market shares for total systems installed for all years. Chart 1B presents the U.S. market shares for total installed systems for all years. Considering the large base of installations examined, where a change of even one percent means a difference of a large number of installations, many of the market shares show some shifting patterns. Those vendors whose overall installations are heavily foreign, such as Geac, IBM, and Sobeco, showed smaller total historical market share when looking only at the United States. Geac's 14 percent worldwide market share drops to six percent for U.S. only and Sobeco, a Canadian-based firm, shows a large drop from four percent worldwide to barely one percent in the United States. Perhaps most surprising,

when looking at 1989-only installations. Many impressions of the "bigger" library automation players must now be reexamined. Chart 2A presents the worldwide market shares for systems installed during 1989. Chart 2B presents the United States market shares for systems installed during 1989 only.

In looking at worldwide 1989 installations, Dynix once again shows a

clear lead by capturing a 26 percent market share, up over the 21 percent record set by the company in 1988. The world view continues to be strongly focused on Dynix. But, when focusing on the U.S. 1989 marketplace activity, the market share for Dynix drops, to a still very respectable 17 percent U.S.-only market share. What makes this significant is that another vendor, Innova-

Chart 2A: Vendor Worldwide Market Shares for Total Installed Systems
(1988 ONLY)

- DYNIX 101/26%
- GEAC ADVANCED 10/3%
- GEAC 9000 9/2%
- IBM/DOBIS 16/4%
- DRA 28/7%
- INLEX 20/5%
- COMSTOW 5/1%
- INNOVATIVE 40/10%
- CLSI 38/9%
- NOTIS 13/3%
- VTLS 16/4%
- OCLC 3/1%
- UTLAS 3/1%
- OTHER 18/5%
- UNISYS 15/4%
- SIRSI 28/7%
- SOBECO 32/8%

Variance: +/- 1.5%   TOTAL=395
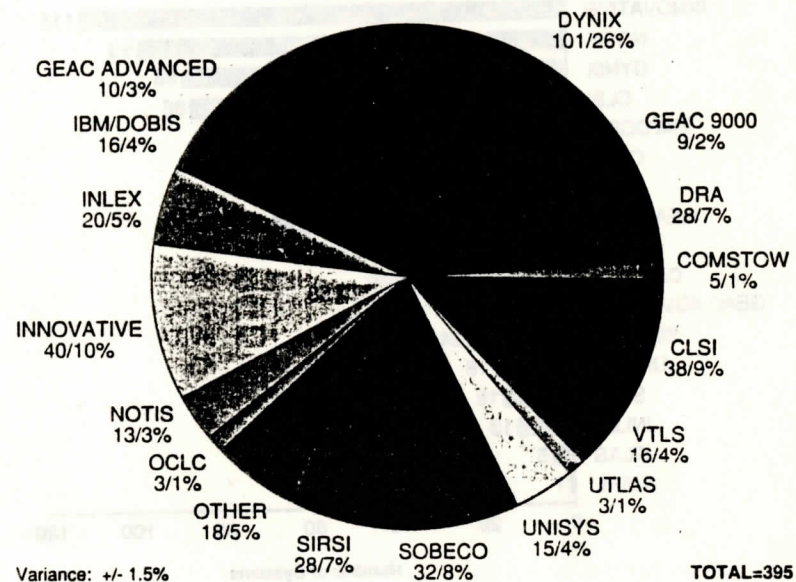
Chart 2B: Vendor United States Market Shares for Total Installed Systems
(1989 ONLY)

- GEAC ADVANCED 5/2%
- DYNIX 39/17%
- INLEX 17/7%
- COMSTOW 5/2%
- IBM/DOBIS 2/1%
- DRA 24/10%
- UTLAS 3/1%
- INNOVATIVE 39/17%
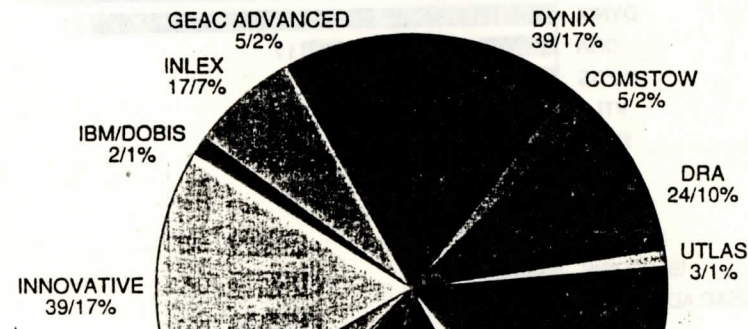
tive Interfaces Inc., also posts a U.S.-only market share of 17 percent. For U.S. installations during 1989, there is no longer a clear leader, but instead a dead heat between Dynix and Innovative for first place.

Several other surprises surfaced in breaking out U.S. installations. CLSI, now under new management, stopped licking its wounds resulting from what had been an annual tradition of losses and declining market share and instead posted installations of 12 percent for 1989, up significant-ly from an all-time low of six percent (worldwide) during 1988. Data Research Associates (DRA) showed much improvement during 1989 in the U.S. marketplace by posting annual installations of ten percent, slightly higher than its worldwide share (which is appropriate given that foreign sales are not really the focus of DRA's marketing efforts).

In looking at the changes that surfaced from the U.S. analysis, Sirsi really jumps out for the first time. Not even appearing as a separate market segment during prior years, Sirsi accelerates into a very respectable market share position in both the worldwide and U.S. market shares. During 1989, "new kid on the block" Sirsi posted annual installations that were almost equal with "elder" CLSI, each company showing a 12 percent U.S. market share. Finally, by analyzing worldwide and U.S. patterns separately, it is clear that Inlex and VTLS compete equally in the worldwide arena, with annual installations of five percent and four percent, respectively. But in the United States, Inlex (seven percent) more than doubled its installations, enabling the company to move ahead of VTLS (three percent) as the dominant, domestic, Hewlett-Packard solution.

Software-only sales

Libraries are showing increased interest in "software-only" system acquistions. But what is a "software-only"-type sale? Traditionally, libraries have invested in the turnkey automation solution. The turnkey solution draws the analogy from the operation of a car where the consumer simply gets in and "turns the key," not knowing or caring how the car operates or is designed. Similarly, libraries have traditionally attempted to install automated systems that lowed them to "turn on the system, without the necessity of having experienced technical or programming personnel on staff. In the turnkey environment, the vendor selects a hardware platform, develops the software, and sells this system's package to the library with the related installation, training, and maintenance services that are necessary to make the automation project a success. Until recently, almost all of the systems installed in libraries were turnkey solutions.

Marketplace activity in 1989 demonstrated that software-only sales are increasing in popularity. Academic libraries are interested in having their automated library system as an interactive partner on the campus-wide computing network. Public li-

Chart 3: Total Worldwide Installations in Academic Libraries
(ALL YEARS)

Vendor	Number of Systems
INNOVATIVE	111
NOTIS	98
DYNIX	88
CLSI	86
IBM/DOBIS	69
OCLC	67
VTLS	63
GEAC 9000	62
DRA	58
CARLYLE	40
GEAC ADVANCED	25
SOBECO	24
UNISYS	18
SIRSI	16
INLEX	13
UTLAS	5
CARL	1

Number of Systems
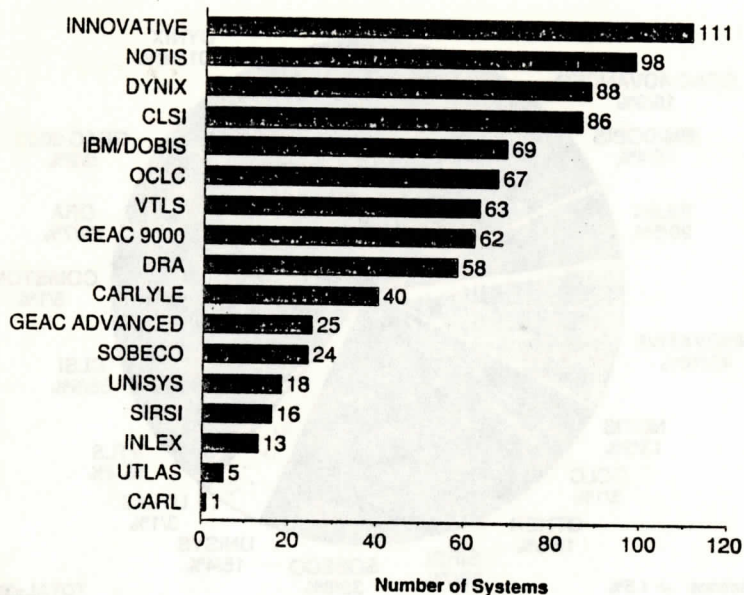
Chart 4: 1989 Worldwide Installations in Academic Libraries

Vendor	Number
INNOVATIVE	34
DYNIX	31
DRA	17
NOTIS	13
VTLS	10
SIRSI	10
CLSI	9
UNISYS	8
SOBECO	7
IBM/DOBIS	6
GEAC ADVANCED	5
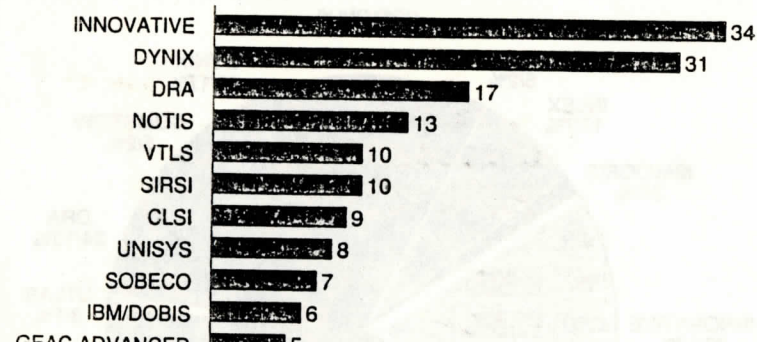
and main memory. Libraries want to see links among their local area networks, allowing users of MS-DOS and Macintosh workstations to communicate interactively with the automated library system.

All of these demands for increased access and control over the automated library system frustrate many industry vendors. Some firms long for the "good ole days" when librarians behaved properly, gently handling the automated system as if it were a precious and fragile technology. This antiquated view of library automation encouraged librarians to fear an "open" system as if they should be in fear that dangerous emissions would spew out if an activist librarian wanted a look inside, or that expecting a system to do more than substitute for the card catalog or check-out books would create "system stress" resulting in years of degraded performance and corrective therapy. As we enter the 1990s, with inexpensive and powerful technologies such as image technology, 4GLs (fourth-generation programming languages), and artificial intelligence, many marketplace offerings and consumer behavior patterns continue to mirror the 1970s when investing in automation was risky and complicated.

Some librarians, however, want more control and influence over their investments in technology. This vision includes the linking of all microcomputers to the integrated library system, the sharing of proprietary CD-ROM database subscriptions by multiple public access workstations, and the creation and offering of home-grown databases for patron consumption. For many libraries, the traditional automated library system will serve as a foundation (rather than the primary focus) for a larger network of information technologies and services.

"But, if you want control of your system, we won't be totally responsible for systems performance and reliability." This is the legitimate rallying cry of much of the vendor market-

has been to accept this challenge. By "chipping away the wall" of the closed-system architecture, increasingly the library community seems more accepting of the responsibilities that go with operating in an "open" system environment. Librarians are accepting the challenge.

More vendors are selling software-only licenses to libraries. CARL, Inlex, NOTIS, and VTLS routinely sell their systems as a "joint venture" with the hardware manufacturer upon whose hardware

platform their system operates. Both Inlex and VTLS team up with local HP staff to provide a joint hardware and software solution for the library. NOTIS provides its software to operate on an existing IBM mainframe, or will assist the library in working with the local IBM office to configure and install the correct hardware resources to properly operate the NOTIS system. CARL provides its software to operate on Tandem-based hardware platforms. While these vendors may get a "cut" of the profit

Chart 5: Total Worldwide Installations in Public Libraries
(ALL YEARS)

Vendor	Number of Systems
CLSI	222
DYNIX	129
GEAC 9000	60
SOBECO	46
VTLS	37
DRA	36
INLEX	29
OCLC	27
IBM/DOBIS	27
SIRSI	13
INNOVATIVE	13
OTHER	12
NOTIS	7
UTLAS	3
CARLYLE	3
UNISYS	2
CARL	2
GEAC ADVANCED	0
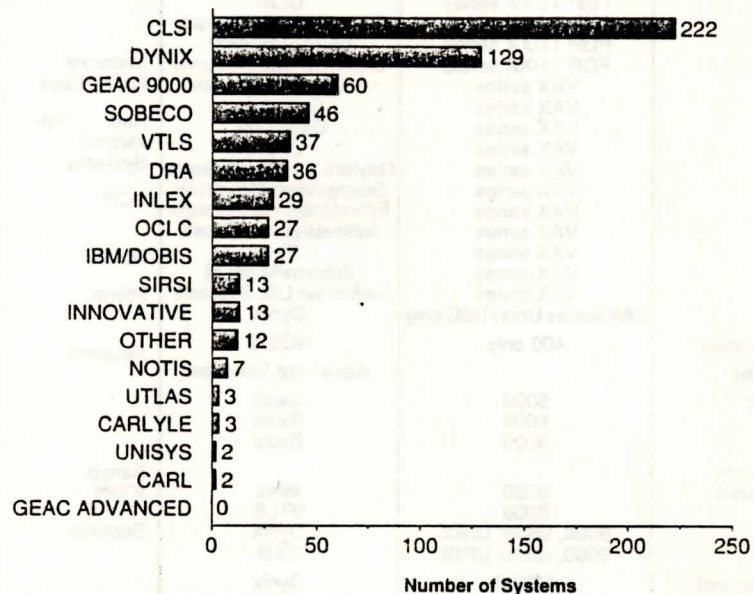
Chart 6: 1989 Worldwide Installations in Public Libraries

Vendor	Number of Systems
DYNIX	32
CLSI	23
SOBECO	18
INLEX	10
OTHER	5
IBM/DOBIS	5
GEAC ADVANCED	5
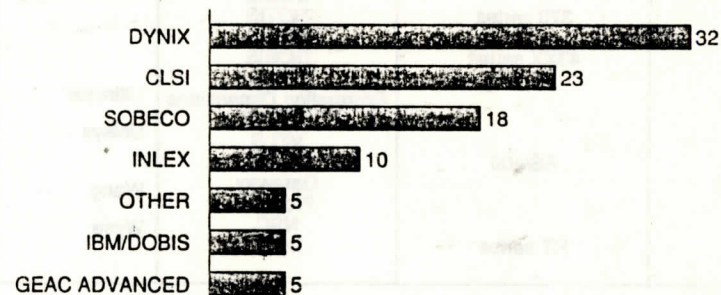
Table 1: Hardware Availability

Manufacturer	Model	Vendor
Altos	2000	CLSI
Amdahl	all	NOTIS
ARIX	all	Innovative Interfaces
	all	Sirsi
C.Itoh	50 through 550	Advanced Libraries
Control Data	Omega series only	NOTIS
	180 series	Information Dimensions
Convergent Technologies all UNIX		Innovative Interfaces
Data General	MV/XXXX series	OCLC-LS/2000
	S/XXX series	OCLC-LS/2000
Digital Equipment Corp.	microVAX Series	Comstow
		Sobeco/MultiLIS
	PDP 11/XX series	CLSI
	PDP 11/XX series	Georgetown University
	PDP 11/XX series	OCLC-LS/2000
	PDP 11/XX series	Universal Lib. Systems
	VAX series	Advanced Libraries
	VAX series	Comstow
	VAX series	Data Trek
	VAX series	DRA
	VAX series	Gaylord Library Systems
	VAX series	Georgetown University
	VAX series	Information Dimensions
	VAX series	Innovative Interfaces
	VAX series	Sirsi
	VAX series	Sobeco/MultiLIS
	VAX series	Universal Lib. Systems
	VAX series Unix RISC only	Dynix
Formation	400 only	NOTIS
Fujitsu		Advanced Libraries
Geac	6000	Geac
	8000	Geac
	9000	Geac
Hewlett-Packard	3000	Inlex
	3000	VTLS
	9000, under UNIX	Dynix
	9000, under UNIX	Sirsi
Honeywell	DPS/6	Dynix
	DPS/6	Advanced Libraries
IBM	370	Dynix
	937X	Dynix
	30XX series	NOTIS
		Information Dimensions
	309X series	Dynix
		DOBIS
	370 series	NOTIS
		Dynix
	43XX series	DOBIS
		Dynix
		Information Dimensions
		NOTIS
		VTLS
	AS/400	CDMS
		Gateway
		ProData
		NSC
	RT series	Dynix
IBM (continued)	System 3X	CDMS
	Gateway	ProData
		NSC
Innovative	INNOVACQ	Innovative
Intel	DPX	Carlyle
Magnuson	all	NOTIS
McDonnel Douglas	any w/PICK oper. system	Advanced Libs.
	Sequel, Spirit	Dynix
MIPS	M/120–M/2000	Sobeco/MultiLIS
	all	Dynix
		Innovative
Motorola Four-Phase	311 & 312 only	NOTIS
Natl. Advanced Systems	all	NOTIS
NCR	Tower 32/200-850	Sirsi
		Sobeco/MultiLIS
Nixdorf	all	NOTIS
Prime	any w/PICK oper. system	Advanced Libs.
	50 series, EXL	Dynix
Sequent	B 21	CLSI
	B 8	CLSI
	S 27	CLSI
	S 81	CLSI
	all	Dynix
Sanyo ICON	3000, 4000	Geac Advanced
Sequoia	any w/PICK oper. system	Advanced Libs.
		Dynix
		Utlas
	Cyclone	CARL
Tandem	CLX	Tacoma PL
		Utlas
	EXT	Utlas
	TNSII	CARL
	TXP	CARL
		Tacoma PL
	VLX	CARL
		Tacoma PL
		Utlas
Ultimate	1400,3000,6000,7000	Dynix
Unisys	1100,2200,PW2,U-Series	Unisys
	5000 series	Dynix
Wang	VS series, exc. 80	Info Dimensions
Wyse	2108	CLSI
	XT,286,386	OCLC-LS/2000

lations were software-only. Given this trend, the cases of Innovative and CLSI require some additional examination. These are the two systems that are designed for and operate on the Unix operating system, undoubtedly the most universally accepted "open systems" architecture. Although Innovative had a few installations that were software-only, both firms show a strong preference for the turnkey alternative and contractually prohibit or discourage much of the user interaction with the Unix operating system.

Academic libraries

During 1989, the marketplace saw a large jump in the total number of systems installed in academic libraries in comparison with the number of installations in public libraries that has slowed considerably. The close of the Eighties also saw some obvious and important shifts in the position of academic marketplace leadership. Chart 3 illustrates the worldwide market shares for academic libraries for all years and Chart 4 focuses on the worldwide academic installations for 1989.
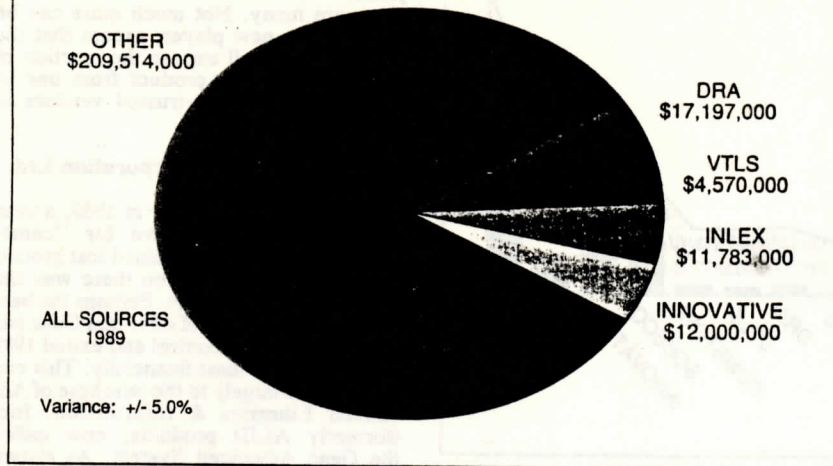
Innovative was the big surprise of 1989, capturing the lead position in academic libraries both in worldwide and U.S. installations. Once thought of as a specialist, technical services vendor, Innovative has now pushed NOTIS to second place in total systems installed and passed NOTIS, Dynix, IBM, and DRA for academic installations during 1989. Although Dynix didn't capture first place, the company still posted a large increase in academic installations, primarily in community colleges and junior colleges. DRA strengthened its installations in the academic marketplace during 1989, and due to the company's willingness to provide software-only sales, its competitiveness in the academic market will probably increase.

If a "loser" category had to be identified, it would include NOTIS and IBM/DOBIS. NOTIS suffers from the realities of academic demographics where many of the large As-

Table 2: Operating Systems

System	Release	Vendor
CDC NOS/VE	1.2.1	Information Dimensions
CICS		DOBIS
CICS/VS	1.6	NOTIS
CLSI Proprietary	27.45	CLSI
CMS-1100	SRIA	Unisys
DMS	8R3G	Unisys
EXEC	41R3	
Geos	2.7	Geac
GUARDIAN	90 XF	CARL
	C series	Utlas
	B40, C20	Tacoma Public Library
Hewlett-Packard MPE	5.0+	VTLS
Hewlett-Packard MPE-XL	all	Inlex
	1.2	VTLS
Intel RMXII	3	Carlyle
M/11+-Intersystems	3.X	Georgetown University
MIIS	5.3	LS/2000 (OCLC)
MVS-IBM/370		NOTIS
MVS-IMB/SP		DOBIS
MVS-IBM/TSO	3.7	Information Dimensions
MVS-IBM/XA		DOBIS,NOTIS
MVS/ESA		DOBIS,NOTIS
MVX-Intersystems	3.X	Georgetown University
OS-IBM/VS1		NOTIS
OS/400 [IBM]	.	Gateway
		ProData
		NSC
		CMDS
OS1100	3R2	Unisys
P/OS	2	CLSI
PICK	1.6	Advanced Libraries
PL/1		DOBIS
PRIMOS [oper. PICK]		Dynix
ULTRIX	3	Innovative Interfaces (3.1)
		Information Dimensions
UNISYS OS/3		Pueblo
UNIX	27.DBMS	CLSI
	27.5	CLSI,Dynix
	System V.3	Innovative Interfaces
	5.2	Sobeco/MultiLIS
		Unisys
	System V.3	Carlyle
	System V.3	MultiLIS
	System V.3	Sirsi
	System V.3	Ringgold
UNIX [oper. PICK]		Dynix
VM-IBM [oper. PICK]		Dynix
VM-IBM/CMS		Information Dimensions
VM-IBM/SQL	5.0+VTLS	
VMS [DEC oper. PICK]		Dynix
VMS [DEC]	latest	DRA
	5	Sobeco/MultiLIS
	all	ULISYS
	4.4-5.2	Comstow

Estimated Gross Revenues of Library Automation Vendors

OTHER
$209,514,000

DRA
$17,197,000

VTLS
$4,570,000

INLEX
$11,783,000

INNOVATIVE
$12,000,000

ALL SOURCES
1989

Variance: +/- 5.0%

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over 200 connected terminals, and databases in excess of one million (e.g., Denver Public Library, University of Colorado at Boulder, the MARMOT Consortium [17 libraries], and the Montgomery County Library System, Md.). CARL Systems, Inc. has added staff, expanded marketing, and is now a frequent bidder (and winner) of larger automation system projects. Scheduled for installation during 1990 are the Sno-Isle Library System

(Wash.) and Northeastern University (Mass.). CARL just doesn't "fit" the way we count vendor performance, but don't think CARL is "small-time." It is the "smaller" vendor serving the "really big" libraries.

Carlyle Systems, Inc.

Carlyle has gone through some tough times during recent years. After surviving

the reaction to what was a very disappointing circulation control module and well-publicized financial difficulties, the company has regrouped and started fresh in trying to once again "prove itself." The company has redone the circulation system, which will be based on the Ingres database management system and operate on the Unix software platform. The Carlyle focus for 1990 will be to begin rebuilding customer and library marketplace confidence.

CLSI

CLSI had a good year in 1989. For the first time in several years, the company increased installations of new systems and minimized what has been a sizable, annual erosion of its worldwide market share. While the company continues to be weak in its attractiveness to academic libraries, public libraries continue to invest in the CLSI solution, particularly its circulation system and OPAC. CLSI has designated that 1990 is the "Year of the Customer." Although the authors would hope that every year is the "Year of the Customer," CLSI has recognized and focused in on one of its most vulnerable issues, the need to provide better service and responsiveness to its existing customer base. This emphasis will manifest itself in an increased effort to complete Release 29 and in continuing to improve the Sequent Unix-based software platform.

Data Research Associates (DRA)

As discussed earlier, DRA showed strong market share growth in 1989. This was particularly true in academic libraries where DRA installed 17 systems. During 1989, the company added new marketing and sales staff, providing for expanded contacts with the library community. To date, this increased level of communication has been well received. As shown in the chart above, DRA leads the way in calling for more open disclosure of audited information about the financial stability of major automation vendors. DRA continues to be financially healthy and will remain a prominent marketplace player.

Dynix, Inc.

Once again Dynix proved that its growth could continue. As Dynix leads the pack each year, the company also becomes a popular target for negative comments by its competitors, particularly about the variety of hardware platforms supported by Dynix and its overseas marketing efforts. Rather than respond to these negative comments, Dynix continues to keep eyes focused forward and concentrates on expanding its installations in ever-growing number,

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DATAPOINT: Datapoint's fully functional product, Data*Library, has this year extended from its base of public libraries to special libraries, including Shell in the UK. There are now seven Data*Library sites, including the Sydney Opera House's Library and Archives of the Performing Arts. Datapoint has also completed its downline loading module for copying from ABN or CD-ROM. Nonetheless, a quiet year of reassessment and gradual progress; plans for 1990 include conversion of the software to MS-DOS.

ICL AUSTRALIA: Nineteen eighty-nine was the birth-year of ICL's new library product ICL Library, with one public library site installed. The system that operates under Unix has added MARC cataloging and MARC load from tape. Further

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PICK and Xenix and multiuser networks, the distinction between micro- and minicomputer systems is effectively lost. Thus the small system suppliers are of interest to all those responsible for small libraries. Australia has its share of these suppliers, the most successful of which is **SOFTLINK AUSTRALIA.** In 1989 its MS-DOS-based Alarm/Oasis package was installed in over 150 new sites, taking its overall total to 470 systems. The system can be successfully networked, the largest site comprising nine dedicated terminals. Thirty sites are special libraries, the rest are schools.

CONCORD DATA SYSTEMS added 31 sites in 1989, taking its total to 45; its package is called Aims/Opal and runs under MS-DOS or Xenix/Unix.

Lothlorien Software with ' LOTH-LORIEN has 38 sites running on MS-

attributed to the fact that Inlex continued the difficult process of expanding its software offerings, by releasing the acquisitions module, full LC MARC authority load software, and Boolean searching. Plans for 1990 include the release of a reserve book room module and an Information & Referral subsystem.

Innovative

Innovative Interfaces, Inc. (they prefer to be called "Innovative") had its best year ever. Particularly when you examine 1989 installations in the United States (Chart 2B), Innovative tied Dynix with 39 systems installed. What makes this particularly impressive is that Innovative is a much smaller company than Dynix (with 40 FTEs compared to Dynix's 230 FTEs), and yet its success in the United States is quite impressive. It is also important to note that this large jump in installations doesn't even include the addition of 16 online catalog systems installed (a separate product called INNOPAC) at sites that were already operating the technical services product (called INNOVACQ). Because of its popularity, the Innovative installation schedule has been extended well into 1991 and it will be interesting to see how the company handles this extreme growth and whether libraries are willing to wait in line. So far, getting in line is exactly what libraries are doing, no matter how long the wait.

NOTIS

NOTIS continues to be the system of choice for the majority of ARL libraries, which turns out to be both a blessing and a curse. The obvious blessing is that NO-TIS remains prominent as a system for the academic community, fitting well into the campus network and centralized computer center environment. The curse is that some day, NOTIS may run out of ARL libraries. For this reason, NOTIS is poised and ready to introduce a new mid-range NOTIS system, called KeyNOTIS, for small to medium-sized academic libraries. At press time, NOTIS has scheduled a briefing for automation consultants and other gurus, so most likely the new NOTIS system will receive much attention in the 1990 library automation marketplace analysis. During 1989, NOTIS introduced a new software option, the Multiple Database Access System (MDAS), which permits installations to mount databases from MEDLINE, H.W. Wilson, and Compendex Plus. As one of the open software architectures mentioned earlier, NOTIS will be one of the companies to lead the march to more open and flexible library automation solutions.

OCLC Local Systems

During 1989, OCLC retreated from the marketing of the OCLC LS/2000 product line. In reviewing the results of the marketplace survey provided by OCLC, most of the activity of the Local Systems Division was focused on the sale and support of the SC350 serials control system, which is not the primary focus of this article. Now that OCLC has focused on providing lower-end, microcomputer-based library automation services and products, 1990 will be a better measure of whether this historic library automation leader will continue to be a player in this analysis.

Sirsi

Another major surprise in 1989 was the Sirsi system, a relative newcomer to the major league marketplace. Sirsi is a Unix-based system that has been traditionally perceived as an automation alternative for smaller special libraries. No more! During 1989, Sirsi had 28 installations, with ten installed in academic libraries and 13 in public school systems. In looking at Sirsi's historic installed base, however, the product is used almost equally by public, academic, and school libraries. The company's installation success caught many competitors off guard and is another example of success based upon the introduction of an open, software-only library automation solution. During 1990, the company will turn back to the basics by upgrading the acquisitions, online catalog, and circulation modules to enable it to be even more competitive in the mainstream library automation marketplace.

Sobeco/MultiLIS

Although some marketing has taken place in the United States, Sobeco remains primarily a Canadian vendor focused on providing software solutions to Canadian libraries. During 1989, out of 32 installations for the year, only three systems were installed in the United States (and all of those were on the East Coast). Sobeco will probably continue to modestly offer its system in the United States, but its primary focus will be to continue its expansion in Canada and to move into the European marketplace.

Table 3: System Interfaces

Vendor	OCLC	RLIN	WLN	Utlas	Biblio-File	Auto-graphics	Marcive	Baker & Taylor	Laser-Quest	Brodart	Other Interface
CARL	✔	✔		✔	✔	✔		✔	✔	✔	Mini-Marc
Carlyle	✔	✔	✔		✔				✔		
CLSI	✔	✔	✔	✔	✔	✔	✔(tape)	✔(tape)		✔	LSSI; PICA (tape)
Comstow	✔	✔	✔	✔	✔						
Data Research	✔	✔	✔	✔	✔	✔		✔		✔	
Data Trek	✔	✔			✔		✔	✔	✔	✔	MITINET
DOBIS	✔	✔	✔		✔						
Dynix	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	N LaserCat; LSSI;Gaylord Super
Gaylord								✔			
Geac	✔	✔	✔	✔	✔	✔		✔	✔	✔	
Geac Adv.	✔	✔	✔		✔	✔		✔	✔	✔	
Georgetown	✔										
Info Dimensions		✔		✔	✔		•✔	✔		✔	
Inlex	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	

Table 4: Size of Installations

Vendor	Smallest Library Installed		Largest Library Installed	
	Terminals	Titles	Terminals	Titles
CARL	88	200,000	920+	4,200,000
Carlyle	1	36,000	132	1,400,000
CLSI	5	18,190	300	875,000
Comstow	2	5,000	Undefined	400,000
Data Research Assocs.	5	20,000	500+	1,400,000
DOBIS	3	50,000	1,000+	2,000,000+
Dynix	1	4,700	334	800,000
Geac	3	30,000	254	2,100,000
Geac Advanced	2	55,000	165	1,200,000
Inlex	4	6,000	180	300,000
Innovative Interfaces	2	5,000	230	1,500,000
NOTIS	10	16,000	1,300	5,400,000
Sirsi	2	3,000	70	355,000
Sobeco/MultiLIS	2	3,000	250	2,000,000
Unisys	1	3,000	900+	1,650,000
Universal Lib. Systems	8	52,379	238	587,576
Utlas	18	80,000	225	3,000,000
VTLS	4	6,500	200	5,000,000

Unisys

Unisys continues to market its library automation system, called PALS, almost equally in the United States and abroad. While installations in academic libraries were impressive for 1989 (15 systems installed), over half of these were installed in Europe and the Far East. But the PALS system is gaining in both general name recognition and acceptance as a mainstream alternative for academic libraries. Nineteen ninety will be a telling year for the Unisys commitment to this product in the United States.

VTLS

While Inlex was demonstrating its ability to establish strong growth in the United States, VTLS found greatest acceptance as the HP-based system of choice for foreign locations. Of the 16 VTLS systems installed during 1989, nine were installed in Europe and abroad. But VTLS remains determined to provide an expanded menu of products to enable growth both domestically and abroad. During 1989, the company announced a new library automation product called "Marcus," designed for operation on mid-range IBM computers, and released VTLS-89 that allows OPAC users to navigate to a CD-ROM system for searching. As with several other vendors, 1989 was another steady year for VTLS.

Source List