

X

The Ultimate Corp.

717 Ridgedale Avenue
East Hanover, New Jersey 07936
Telephone: (201) 887-9222
Fax: (201) 887-6139
Dun's Number: 09-497-2445

Date Founded: 1978

CORPORATE STRATEGIC DIRECTION

The Ultimate Corp. markets and distributes workstations and midrange computer systems designed for business database management. Ultimate also markets a line of software products for its operating systems. In May 1990, the Company was officially organized into four operating divisions: Systems, Customer Service, Professional Services, and Financial Services. The Systems Division is responsible for worldwide sales of minicomputer systems designed for database management. These systems feature the Ultimate Operating System, the Company's enhanced version of the PICK operating system. This division is also responsible for the worldwide distribution of vertical-niche applications software through independent and Company-owned dealers. The Customer Service Division is responsible for all contract service operations in the United States. The Professional Services Division is responsible for specialized development software, education and training operations, and systems consulting. Finally, the Financial Services Division is responsible for leasing, rental, and other specialized financial programs.

Total revenue in fiscal 1990 increased \$9.8 million* to \$209.7 million as opposed to revenue of \$199.9 million in fiscal 1989. Overall product revenue (including hardware, software, supplies, and other) increased 1.4 percent to \$135.1 million in fiscal 1990 as opposed to \$133.2 million in fiscal 1989. Service revenue increased 11.9 percent to \$74.6 million from \$66.7 million in fiscal 1989. Product revenue constituted 64.4 percent of total revenue; service revenue constituted 35.6 percent. Net income totaled \$125,000 in 1990 as opposed to a loss of \$13.0 million in fiscal 1989. Ultimate employed 730 people during fiscal 1990.

*All dollar amounts are in US dollars.

During fiscal years 1990, 1989, and 1988, R&D expenditure was \$5.8 million, \$6.7 million, and \$5.5 million, respectively. These figures respectively represented 2.8, 3.3, and 2.6 percent of total revenue. R&D activities are directed toward enhancement of the performance and functionality of Ultimate's operating system software and implementation of such software on a broader range of hardware. R&D activities also focus on the refinement of Ultimate's version of the PICK operating system and toward the Company's new strategic platforms.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this backgrounder.

BUSINESS SEGMENT STRATEGIC DIRECTION

Midrange Computers

Ultimate markets PICK-based systems on Bull XPS-100 and DPS/6 systems, and minicomputers based on the Digital Equipment Corporation (DEC) LSI central processing unit. The Ultimate Operating System enables users to run PICK-based applications. Ultimate also sells versions of the ULT/ix (UNIX-based) operating environment as part of fully configured systems on the Bull DPX/2 systems. In March 1989, Ultimate began selling versions of the ULT/ix as part of fully configured systems on the IBM RT series of computers. Users of these systems may run PICK-based applications software in the UNIX operating environment. Ultimate markets versions of the

Ultimate/370 Operating System either separately or as part of fully configured systems for use with IBM 9370 and 4300 computers.

Operating System Software

Ultimate markets three operating systems: the Ultimate Operating System, the Ultimate/370 Operating System, and the Sequoia Open Architecture Operating System. Each operating system implementation is based upon Ultimate's original enhanced version of the PICK operating system and is specific to the hardware system it resides on. Ultimate enhanced the PICK operating system software through the addition of a number of features including an applications generator with an underlying fourth-generation language to update and maintain files. The Ultimate and Ultimate/370 Operating Systems perform as relational databases with English-like (fourth-generation) language capabilities. Two features included in Ultimate's relational database are Ultimate Update, which allows the database to be updated or maintained, and Ultimate Recall, which allows access to data in user-designed report formats. The Company's ULT/ix is a native implementation of the PICK operating system in the UNIX environment. This product serves as a bridge between the PICK and UNIX operating environments and enables users of this system to access information from a variety of programs. Based on UNIX, ULT/ix is a PICK-compatible relational database management system as well as an applications development system.

Hardware

Bull-Based Systems

Ultimate's Bull-based systems include standard hardware marketed by Bull as the Level 6/DPS 6 minicomputer that is adapted to permit use of the Ultimate Operating System by the addition of a coprocessor. This coprocessor improves execution speed over that of prior implementations of the Ultimate Operating System. Developed by Ultimate in conjunction with Bull, it is manufactured for Ultimate by Bull. Ultimate also sells Bull's fully configured DPX/2 systems with a software-only implementation

of the Ultimate Operating System and the ULT/ix operating environment.

DEC LSI-Based Systems

Ultimate's DEC LSI-based systems are assembled and tested by Ultimate. They consist of central processing units manufactured for Ultimate by DEC.

IBM-Based Systems

Ultimate markets a version of the PICK operating system for systems based on the IBM 370 architecture, including IBM 4300 and 9370 computers. In 1988, Ultimate entered into an agreement with IBM for the purchase of IBM products including IBM 4300 and 9370 computers. IBM products may be remarketed by Ultimate's subsidiaries and dealers to end users only as part of a system that includes the Ultimate Operating System and on application software packages that have been approved by IBM. Ultimate entered into a one-year agreement with IBM for the purchase of the IBM RT and RS/6000 series of computers in June 1990. These computers may be remarketed by Ultimate's subsidiaries and dealers to end users only as part of a system that includes the ULT/ix operating environment and on applications software packages that have been approved by IBM.

Coprocessors

Ultimate markets a 16-bit coprocessor, a dual processor configuration, and a 32-bit coprocessor. The coprocessors are developed by Ultimate in conjunction with third-party contractors.

Peripherals

Ultimate purchases certain peripheral equipment, including CRTs and line printers, from standard peripheral suppliers.

Further Information

For more information about The Ultimate Corp.'s business segments, please contact the appropriate Dataquest industry service.

Table 1
Five-Year Corporate Highlights (Thousands of US Dollars)

	1986	1987	1988	1989	1990
Five-Year Revenue	\$139,915.4	\$171,131.4	\$209,168.0	\$199,865.0	\$209,703.0
Percent Change	-	22.31	22.23	(4.45)	4.92
Capital Expenditure	NA	NA	NA	NA	NA
Percent of Revenue	NA	NA	NA	NA	NA
R&D Expenditure	NA	\$4,500.0	\$5,500.0	\$6,700.0	\$5,782.0
Percent of Revenue	NA	2.63	2.63	3.35	2.76
Number of Employees	281	281	738	655	730
Revenue (\$K)/Employee	\$497.92	\$609.01	\$283.43	\$305.14	\$305.14
Net Income	\$14,449.7	\$13,784.7	\$13,016.0	(\$13,021.0)	\$125.0
Percent Change	-	(4.60)	(5.58)	(200.04)	NA
1990 Fiscal Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$49,020.00	\$51,629.00	\$50,680.00	\$58,374.00	
Quarterly Profit	\$1,007.00	(\$648.00)	(\$1,701.00)	\$1,467.00	

NA = Not available

Source: The Ultimate Corp.
Annual Reports and Forms 10-K
Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1986	1987	1988	1989	1990
North America	83.78	80.91	77.61	76.12	77.49
International	16.22	19.09	22.39	23.88	22.51
Europe	3.30	8.25	10.69	12.24	15.06
Asia/Pacific	12.92	10.83	11.65	11.30	7.45
ROW	0	0.01	0.05	0.34	0

Source: The Ultimate Corp.
Annual Reports and Forms 10-K
Dataquest (1990)

Table 3
Revenue by Distribution Channel (Percent)

Channel	1989	1990
Direct Sales	66.60	NA
Indirect Sales	33.40	NA
Distributors/Dealers	33.40	NA

NA = Not available

Source: Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—9
Europe—2
Asia/Pacific—7

MANUFACTURING LOCATIONS

The Ultimate Corp. does not use manufacturing facilities.

SUBSIDIARIES

North America

Hands-On Learning Corp. (United States)
The Ultimate Development Corp. (United States)
The Ultimate Disc Corp. (United States)
The Ultimate International Corp. (United States)
The Ultimate Product Corp. (United States)
Ultimate Canada, Inc. (Canada)
Ultimate Computer Supplies, Inc. (United States)
Ultimate Data Systems, Inc. (United States)
Ultimate Foreign Sales Corp. (US Virgin Islands)
Ultimate Midatlantic, Inc. (United States)
Ultimate Southern California, Inc. (United States)
Ultimate Southern Florida, Inc. (United States)
Ultralex, Inc. (United States)

Europe

Ultimate France S.A.R.L. (France)
Ultimate S.A. (Spain)
Ultimate S.r.l. (Italy)
Ultimate U.K. Limited (United Kingdom)

Asia/Pacific

Ultimate Computer Limited (Australia)
Ultimate Computer Manufacturing Pty. Ltd.
(Australia)
Ultimate Computer NZ Limited (New Zealand)
Ultimate Systems Limited (Hong Kong)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

IBM

Ultimate entered into a one-year agreement with IBM for the purchase of IBM RT and RS/6000 series computers in June 1990.

1989

Sequoia Systems

Ultimate became the exclusive worldwide distributor of Sequoia Systems' PICK-based systems. The agreement is subject to the right of certain existing Sequoia distributors to continue selling Sequoia's PICK-based systems.

Hewlett-Packard (HP)

Ultimate and HP established an agreement for Ultimate to resell HP's full line of HP 9000 Series 800 multiuser minicomputers. Ultimate became HP's exclusive worldwide distributor of solutions based on the PICK operating system.

VMark Software Inc.

Ultimate entered into an exclusive licensing agreement with VMark Software. The agreement grants Ultimate worldwide rights to VMark's software system, UniVerse, for certain hardware families. The exclusivity will extend to UNIX-based hardware products made by DEC, Honeywell Bull, and IBM.

1988

Honeywell Bull

Ultimate and Honeywell Bull signed a \$10 million agreement that allows Ultimate to market Honeywell Bull's DPS EXT Series superminicomputers. Under the terms of the agreement, Ultimate will integrate its version of the PICK operating system with the Honeywell superminicomputers.

IBM

Ultimate entered into an agreement with IBM for the purchase of IBM products including IBM 4300 and 9370 computers.

1987

IBM

Ultimate will remarket IBM's 9370 departmental processors with its Ultimate 370 Operating System.

Ever-On

Ever-On sold exclusive rights to its PICK look-alike operating system to Ultimate.

MERGERS AND ACQUISITIONS

1990

Advanced Marketing Management Inc.

Ultimate acquired Advanced Marketing Management of Alexandria, Virginia. Advanced Marketing Management will act as an education and training subsidiary to Ultimate.

Hands-On Learning Corporation

Ultimate acquired Hands-On Learning, which offers training in UNIX, X Window, and C language. Hands-On Learning provides public and on-site seminars and video and publication-based self-study courses on operating systems, database applications, programming languages, and graphic interfaces in the United States, United Kingdom, France, Germany, Sweden, Norway, Denmark, Japan, and Australia.

1988

Service Automation Systems

Ultimate bought a minority interest in Service Automation Systems, which specializes in turnkey systems for the service industry and markets products to mechanical and appliance contractors. Ultimate's subsidiaries will jointly market Service Automation Systems' hardware and software offerings.

CPA Data Systems

Ultimate acquired CPA Data Systems, which became a subsidiary, Ultimate Canada, Inc. Ultimate Canada will concentrate its efforts on turnkey computer systems for manufacturing, distribution, agribusiness, automobile clubs, general insurance, and trucking.

KEY OFFICERS

Michael J. O'Donnell

President and chairman of the board

R. Richard Dool

Senior vice president, Professional Services Division

Thomas Perry

President, Systems Division

John D. Redding

Senior vice president, Financial Services Division

John D. Smith

Senior vice president, Customer Service Division

James Matthews III

Vice president, Corporate Finance and Administration

Jay Sturm

Vice president and general counsel

John Eyre

Vice president, Employee and Investor Relations

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Information is not available.

Table 4
Comprehensive Financial Statement
Fiscal Year Ending April
(Thousands of US Dollars, except Per Share Data)

Balance Sheet	1986	1987	1988*	1989*	1990
Total Current Assets	\$88,507.4	\$134,453.7	\$156,534.0	\$109,167.0	\$120,025.0
Cash	16,902.3	23,732.6	9,574.0	16,941.0	23,726.0
Receivables	52,107.5	77,278.9	94,534.0	72,401.0	73,765.0
Marketable Securities	NA	NA	15,558.0	3,019.0	0
Inventory	18,686.7	29,564.2	35,064.0	15,980.0	14,843.0
Other Current Assets	810.9	3,878.0	1,804.0	826.0	7,691.0
Net Property, Plants	\$15,221.3	\$20,129.7	\$32,487.0	\$37,815.0	\$39,180.0
Other Assets	\$23,733.8	\$23,635.6	\$26,454.0	\$21,828.0	\$27,710.0
Total Assets	\$127,462.5	\$178,219.0	\$215,475.0	\$168,810.0	\$186,915.0
Total Current Liabilities	\$43,132.5	\$64,943.4	\$90,876.0	\$64,908.0	\$78,004.0
Long-Term Debt	\$36,147.4	\$24,214.1	\$21,191.0	\$14,855.0	\$22,191.0
Other Liabilities	NA	NA	NA	NA	NA
Total Liabilities	\$79,279.9	\$89,157.5	\$112,067.0	\$79,763.0	\$100,195.0
Total Shareholders' Equity	\$48,182.6	\$89,061.5	\$103,408.0	\$89,047.0	\$86,720.0
Common Stock	12,263.3	12,665.0	13,385.0	13,483.0	13,484.0
Other Equity	(15,972.7)	(3,357.5)	(2,747.0)	(4,185.0)	(6,638.0)
Retained Earnings	51,892.0	79,754.0	92,770.0	79,749.0	79,874.0
Total Liabilities and Shareholders' Equity	\$127,462.5	\$178,219.0	\$215,475.0	\$168,810.0	\$186,915.0
Income Statement	1986	1987	1988*	1989*	1990
Revenue	\$139,915.4	\$171,131.4	\$209,168.0	\$199,865.0	\$209,703.0
US Revenue	117,223.9	138,458.4	162,332.4	152,128.9	162,515.0
Non-US Revenue	22,691.5	32,673.0	46,835.6	47,736.1	47,188.0
Cost of Sales	\$74,441.7	\$93,062.3	\$124,781.0	\$116,659.0	\$130,590.0
R&D Expense	NA	\$4,500.0	\$5,500.0	\$6,700.0	\$5,782.0
SG&A Expense	\$35,593.6	\$52,623.1	\$62,681.0	\$84,302.0	\$75,832.0
Capital Expense	NA	NA	NA	NA	NA
Pretax Income	\$27,249.7	\$26,024.7	\$21,256.0	(\$22,186.0)	\$781.0
Pretax Margin (%)	19.48	15.21	10.16	(11.10)	0.37
Effective Tax Rate (%)	47.00	47.00	38.80	(32.30)	83.90
Net Income	\$14,449.7	\$13,784.7	\$13,016.0	(\$13,021.0)	\$125.0
Shares Outstanding, Thousands	8,502.6	9,630.1	9,829.0	9,841.0	9,902.0
Per Share Data					
Earnings	\$1.70	\$1.43	\$1.32	(\$1.32)	\$0.01
Dividend	NA	NA	NA	NA	NA
Book Value	\$5.67	\$9.25	\$10.52	\$9.05	\$8.76

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending April
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1986	1987	1988*	1989*	1990
<i>Liquidity</i>					
Current (Times)	2.05	2.07	1.72	1.68	1.54
Quick (Times)	1.62	1.62	1.34	1.44	1.35
Fixed Assets/Equity (%)	31.59	22.60	31.42	42.47	45.18
Current Liabilities/Equity (%)	89.52	72.92	87.88	72.89	89.95
Total Liabilities/Equity (%)	164.54	100.11	108.37	89.57	115.54
<i>Profitability (%)</i>					
Return on Assets	-	9.02	6.61	(6.78)	0.07
Return on Equity	-	20.09	13.53	(13.53)	0.14
Profit Margin	10.33	8.06	6.22	(6.51)	0.06
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	NA	2.63	2.63	3.35	2.76
Capital Spending % of Revenue	NA	NA	NA	NA	NA
Employees	281	281	738	655	730
Revenue (\$K)/Employee	\$497.92	\$609.01	\$283.43	\$305.14	\$287.26
Capital Spending % of Assets	NA	NA	NA	NA	NA

*Reclassified to conform to 1990 presentation
 NA = Not available

Source: The Ultimate Corp.
 Annual Reports and Forms 10-K
 Dataquest (1990)

Uniplex, Inc.

150 West Carpenter Freeway
Irving, Texas 75039
Telephone: (214) 717-0068
Fax: (214) 717-0812
Dun's Number: 13-037-9324

Date Founded: 1979

CORPORATE STRATEGIC DIRECTION

Founded in 1979 in England (the US unit was founded in 1985) Uniplex, Inc., is privately held under the Redwood Management International holding company. The Company develops and markets a fully integrated multiuser office automation system for Open Systems and DOS base computers. The Company was one of the first developers of UNIX applications. The Company's revenue is estimated by Dataquest to be between \$40 million* and \$50 million. The Company employs approximately 300 people worldwide. According to Dataquest, the Company held 48.1 percent market share of the 1989 worldwide integrated office systems (IOS) software market, based on total shipments. Hence, the Company ranked first among IOS software vendors in 1989, according to Dataquest.

The Company's software currently is available to run on more than 220 different machines, ranging from standalone PCs to high-performance mainframe computers, and has been ported to approximately 80 different derivatives of UNIX. The Company has installed over 60,000 licenses of its software in 11 different languages throughout the world.

The Company primarily uses indirect sales channels such as distributors, value-added resellers (VARs), dealers, and original-equipment manufacturers (OEMs). Domestic sales offices are located in Irving, Texas (US Operations headquarters); Palo Alto, California; Los Angeles, California; and Boston, Massachusetts. The Company's Federal Sales Division is located in Washington, D.C. The Federal Sales Division reports to US headquarter in Irving, Texas, and targets the Federal Government marketplace in which the Company has four General Service Administration (GSA) contract holders. The Federal

Sales Division has won major systems contracts, including the Army Command and Control Systems, the Maneuver Control System, and NAVSEA contracts. Within Europe and the rest of the world, the Company maintains offices in West Germany, France, the United Kingdom, and Australia. International Operations headquarters (the unit responsible for all sales outside the Americas) is located in Hemel Hempstead, England, at Uniplex House. The Company also uses a line of distributors and resellers positioned throughout Europe, the Middle East, Asia, and Australia. The Company licenses its product in the Americas through commercial, OEM, and Federal sales channels. Major OEM agreements calling for the selling and in some cases bundling of Uniplex software have been established with companies such as Altos Computer Systems, AT&T, Data General, Dell Computer Corporation, Digital Equipment Corporation, Hewlett-Packard (HP), IBM, MAI Basic Four, Motorola, Prime, and many others. The Company's low-end distribution strategy is to service a large reseller base principally focused on versions of the product to run on Santa Cruz Operations (SCO), UNIX, Interactive, and PS2 AIX.

On January 23, 1990, the Company announced a strategic alliance with HP. Through the alliance, the Company became an OEM for Hewlett-Packard's HP OpenMail product. HP began marketing Uniplex IOS as HP's preferred host-based UNIX IOS solution, and HP OpenMail became an embedded component of Uniplex products to replace Uniplex mail where appropriate. The agreement is enabling the Company to reposition itself as an environment in addition to a high-quality applications supplier. The Company's aim is not only to provide productivity and office tools but to supply the connectivity to make these applications interplay. During 1990, the Company plans to establish a series of additional agreements with a large number of vendors in which it will

*All dollar amounts are in US dollars.

strengthen its position as a supplier of environments. In the Company's perspective, office is the environment into which all third party and vertical applications can be "plugged," thereby negating the need to provide disparate packages across the network.

Financial tables are unavailable because Uniplex is a private company and does not disclose such information.

BUSINESS SEGMENT STRATEGIC DIRECTION

Software

Uniplex Business Software is an office environment and a family of business software applications consisting of Uniplex II Plus, Uniplex Advanced Office System, and Uniplex Advanced Graphics System. All applications offer source code level integration, allow data to be shared among them, and provide consistent commands, menu structures, and soft keys. Uniplex Database Links are available, enabling the user to access multiple databases simultaneously and cut and paste data between Oracle and Informix databases.

Uniplex II Plus

Uniplex II Plus, the base product of Uniplex Business Software, supplies three main business applications: word processing, spreadsheet, and database. The Uniplex word processor enables the user to create a variety of memos, letters, reports, and professional documentation. It provides a range of editing, formatting, and layout facilities that are initiated easily through menu-driven soft keys. Multiple columns, multiple fonts, special print effects, and proportional spacing may be applied when using a laser printer. The word processor also has a multilingual spell checker (as well as an 87,000-word spelling dictionary and 60,000-word thesaurus). Through the aid of additional dictionaries, it is able to check spelling in multiple languages within the same document. The Uniplex spreadsheet provides a full range of arithmetic, statistical, financial, and logical functions. Additional functions can be formed by using macros attached to function keys. Users can choose between Uniplex or industry standard interfaces, with complete compatibility between spreadsheets created in

either mode. Users may choose between a version of the product providing Uniplex's own fully relational Informix-compatible database or one providing links to Informix and Oracle databases that may then be transparently accessed as if they were part of Uniplex. Through data from the Uniplex II Plus spreadsheet and database, a variety of bar, line, and scatter charts can be created. Additionally, Sketchpad enables the user to form simple diagrams and line drawings. All charts, graphs, and Sketchpad drawings can be inserted into the word processor for use in reports or as presentation visuals. The Uniplex II Plus also comes with a comprehensive set of tools for building customized menus and screen systems.

Uniplex Advanced Office System

The Uniplex Advanced Office System features an electronic mail system, a report writer, a personal organizer, a card index and a time manager, all with multiuser capabilities. Uniplex electronic messaging allows for documents, notes, memos, letters, reports, spreadsheets, graphs, and tables to be transmitted to various locations. The personal organizer helps the user organize through utilizing the To-Do List, Meetings Records, Projects Planner, Name and Address file, and Notepad, and it may be printed in three sizes for handy reference outside of the office. The card index works like a manual card file, enabling the user to manage and sort through information easily without generating a full relational database. Cards may be searched by entries or groups of entries. The time manager allows the user to track and schedule appointments, meetings, and facilities. Individual or group schedules can be reviewed to find an available conference time, schedule a meeting, and alert each attendee. The report writer can produce comprehensive analytical reports on a range of data. Data may be pulled from the database, spreadsheet, or card index.

Uniplex Advanced Graphics System

The Uniplex Advanced Graphics System consists of two parts, Presentation Graphics and Presentation Editor. Presentation Graphics allows the user to create a variety of graphics from vertical or horizontal bar charts to pie charts. The graphics can be built from data directly entered into the system or from other Uniplex applications. Text and size attributes as well as shade, line, and marker styles can be altered. The graphics can be incorporated into a word processing document and scaled to fit the page layout. Information from other areas of Uniplex may be cut, pasted,

and displayed in the form of graphs. Presentation Editor provides a range of tools to edit graphics, enhance the standard graphs formed in the Advance Graphics System, and translate freehand drawings into illustrations and diagrams. The editor allows the user to scale, rotate, copy, or move objects or groups of objects. By using the four-way display, the user can edit up to four graphics simultaneously and transfer objects from one illustration to another. The zoom facility enables the user to work on the fine detail of the illustration to achieve the image quality desired.

Further Information

For more information about Uniplex's business segments, please contact Dataquest's UNIX and/or Office Systems Industry Service.

1990 SALES OFFICE LOCATIONS

North America—5
Europe—3
Asia/Pacific—1

MANUFACTURING LOCATIONS

North America

Irving, Texas
Tape and documentation manufacturing and packaging

Europe

Hemel Hempstead, England
Tape and documentation manufacturing and packaging

SUBSIDIARIES

Information is not available.

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Hewlett-Packard

Uniplex and HP announced a strategic alliance that covers the following three areas: Uniplex will become an OEM for Hewlett-Packard's HP OpenMail; Hewlett-Packard will market Uniplex IOS as its preferred host-based UNIX IOS solution; and HP OpenMail will become an embedded component of Uniplex products.

MAI/Basic Four

MAI/Basic Four has agreed to resell the Uniplex products on its full range of platforms.

Data General

Uniplex and Data General established a multiyear agreement to market Uniplex Business Software for the 88000-based AViON systems and Dasher 386 platforms.

1989

Softsel Computer Products

Uniplex and Softsel Computer Products signed a distribution agreement. Through the agreement, Uniplex has become one of the first major UNIX application vendors to supply and support an IOS through mass distribution.

Intergraph

Intergraph has signed a worldwide OEM agreement with Uniplex under which Intergraph markets the complete Uniplex Business Software suite on its Clipper-based workstations. Intergraph bundles all of the Uniplex modules—Uniplex II Plus, Advanced Office System, Advanced Graphics System, and Windows—on its workstations.

IBM Corporation

Uniplex and IBM Corporation formed an agreement under which IBM will market and support Uniplex Business Software for IBM's RT System, RS/6000, and full AIX family of products, including the PS/2 and 370. IBM also is permitted to sell Uniplex Integrated Systems' UNIX-based software for IBM's version of UNIX.

Ingram/Micro D

Uniplex and Ingram/Micro D entered a distribution agreement. Under the agreement, Uniplex has become one of the major UNIX applications vendors to supply and support an integrated office system through mass distribution.

IBM United Kingdom

Uniplex and IBM United Kingdom announced an agreement in which IBM United Kingdom will market Uniplex Business Software to its Enterprise accounts.

IXI Limited

Uniplex and IXI Limited established a joint technology transfer agreement. The two companies will integrate IXI's X.desktop with Uniplex Business Software.

Amdahl

Uniplex and Amdahl entered a marketing agreement for Uniplex to supply Amdahl with its Uniplus UNIX-based IOS package in the United Kingdom and the rest of Europe.

Digital Equipment Corporation (DEC)

Uniplex and DEC signed a strategic alliance whereby DEC will sell and support Uniplex Business Software on all of its UNIX platforms, including VAX computers and RISC-based DECsystem computers running DEC's ULTRIX.

Motorola

Uniplex and Motorola formed an agreement in which Motorola will bundle and support Uniplex for its existing lines of 68000- and 88000-based computer systems. For Motorola's MPC systems, Uniplex can be accessed through the Looking Glass graphical user interface from Visix.

Dell Computer Corporation

Uniplex and Dell Computer Corporation entered an agreement stating that Dell Computer will install Uniplex software on the hard disk of its new DELL Station 325 and DELL Station 425E workstations.

Altos Computer Company

Altos Computer Company established Uniplex as its standard office software for all of its UNIX systems. Uniplex Business Software and Uniplex Windows are bundled by Altos for sale to its resellers and VARs.

AT&T

Uniplex and AT&T formed an agreement for AT&T to sell and support Uniplex software on AT&T's 3B2 and 6386 systems. As an option,

AT&T offers the Uniplex environment integration with AT&T's electronic mail system, AT&T Mail.

Arrow Electronics

Arrow Electronics established an agreement with Uniplex to distribute Uniplex software through Arrow's six regional offices to its 5,000 VARs.

Dicken Data Systems

Uniplex formed an agreement allowing Dicken Data Systems to distribute Uniplex software.

Tech Data Corporation

An agreement was made in which Tech Data Corporation will distribute Uniplex software through its 11 national distribution centers to its 18,000 customers. Tech Data sells Uniplex under SCO XENIX System V/386 and UNIX System V.3 in 4-, 8- and 16-user licenses.

1988

Tecsys

An agreement was formed between Uniplex and Tecsys authorizing Tecsys to be the primary distributor for Uniplex's integrated UNIX office software in Canada.

Nixdorf Computer Corporation

Uniplex and Nixdorf Computer Corporation established an agreement in which Nixdorf will market Uniplex Business Software with the UNIX-based Targon computer systems.

1987

Ford Aerospace of Colorado Springs, Colorado
Ford Aerospace of Colorado Springs purchased a license to integrate Uniplex-II Plus software into its products. Under the terms of the agreement, Ford Aerospace will use Uniplex-II Plus with a total system solution manufactured by Ford and supplied to its customers.

MERGERS AND ACQUISITIONS

Information is not available.

KEY OFFICERS

Peter Osborn
Chairman (Redwood Management International)

Anthony Heywood
Group managing director (Redwood Management International)

Patrick Register
Managing director, International Operations (International Operations)

Garth Shephard
Managing director, Software Products Division (International Operations)

Jeff Waxman
President and chief executive officer (US Operations)

Tom Borger
Senior vice president, Sales and Marketing (US Operations)

John Holland
Senior vice president, Operations (US Operations)

Lynne Boyd
Vice president, Federal Operations (US Operations)

Larry Warnock
Director, Marketing (US Operations)

Bob Greenfield
Manager, Marketing Communications (US Operations)

PRINCIPAL INVESTORS

Information is not available.

Union Carbide Corporation

39 Old Ridgebury Road
Danbury, Connecticut 06817-0001

Telephone: (203) 794-6440

Fax: (203) 794-2826

Dun's Number: 00-128-9008

Date Founded: 1917

CORPORATE STRATEGIC DIRECTION

Incorporated in 1917, Union Carbide Corporation is a worldwide leader in industrial technology and is one of the 50 largest US industrial corporations. The Company designs, manufactures, and markets chemicals and plastics, industrial gases and related products, metals and carbons, batteries, home and automotive products, and specialty products. Union Carbide is divided into three specific business groups: Union Carbide Chemicals and Plastics Company Inc., representing 66 percent of total sales; Union Carbide Industrial Gases Inc., representing 25 percent of total sales; and UCAR Carbon Company, Inc., representing 9 percent of total sales. Seventy-five percent of UCAR's business and 17 percent of Industrial Gases' business is dependent upon the steel industry.

Total revenue for fiscal year 1989 grew 5.1 percent to \$8.7 billion* from \$8.3 billion in fiscal year 1988. Net income decreased 13.4 percent to \$573.0 million for fiscal year 1989 from \$662.0 million for fiscal year 1988. Union Carbide employs 45,987 people worldwide.

Union Carbide sales are produced principally through its direct sales force. Although domestic sales dominate the percentage of total revenue generated, international sales have slowly been increasing at a constant pace of 2 to 3 percent over the past five years. In fiscal year 1989, domestic sales accounted for 66.2 percent and international sales accounted for 33.8 percent of total revenue. Europe represented 12.0 percent and Latin America 11.0 percent of international sales. Union Carbide is currently focusing and building on trading and sales activities abroad.

In fiscal years 1989, 1988, and 1987, Union Carbide respectively spent \$181.0 million, \$159.0 million, and \$159.0 million on R&D. These figures respectively

*All dollar amounts are US dollars.

total 2.0 percent, 1.9 percent, and 2.3 percent of total revenue. Sponsored primarily by Union Carbide, R&D activities are conducted to develop new products, processes, or services, and improve existing ones. The Chemicals and Plastics group has eight facilities within the United States and four internationally. The Industrial Gases group has five domestic facilities and two internationally. The UCAR Carbon Company's R&D activities are carried on primarily in Parma, Ohio.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this backgrounder.

BUSINESS SEGMENT STRATEGIC DIRECTION

Chemicals and Plastics

Union Carbide was one of the founders of the US petrochemical industry when it started to manufacture ethylene and other coproducts and derivatives. Since then, Union Carbide Chemicals and Plastics Company Inc. has branched out into developing numerous other chemicals and plastics. It is the world's largest producer of ethylene oxide/glycol. Its UNIPOL process is the lowest-cost process for polyethylene production and is widely licensed throughout the world. Union Carbide is also the largest producer of oxygenated solvents in the United States and is the leader in oxo-alcohols process technology. Union Carbide produces the following product groups: ethylene oxide and derivatives, polyethylene, solvents and coatings materials, and other specialty chemicals. The

ethylene oxide and derivatives group consists of ethylene glycol for antifreeze, polyester fiber and PET resins, surfactants for detergents, ethanolamines, and ethyleneamines. This group also produces both high-volume and specialty polyethylene resins for many plastic products: film and wrap, bags, pipes, containers and drums, wire and cable insulation, and a variety of molded products. Solvents and coatings materials consist of alcohols, acetates, acrylates, latex, coatings resins, and glycol ethers. Other specialty chemicals produced by Union Carbide are water-soluble polymers for personal care, silicones, polyvinyl acetate for additives to plastics, UCON fluids for hydraulic and heat transfer fluids and for lubricants, acrolein, and gluteraldehyde for biocide and custom intermediates.

Industrial Gases

Union Carbide Industrial Gases Inc. is the largest producer of oxygen, nitrogen, argon, hydrogen, helium, and specialty gases in the United States, Canada, and Brazil, as well as one of the three largest

producers throughout the world. Numerous areas utilize industrial gases: chemicals, steel and aluminum production, electronics, food freezing, rubber and plastic production, metalworking and welding, medicine, oil and gas extraction, pulp and paper, glass production, aerospace, and environmental cleanup.

Carbon Products

UCAR Carbon Company accounts for the smallest portion of Union Carbide Corporation's business; however, within its field, UCAR is the world's largest producer of graphite electrodes and other carbon and graphite products for the basic metals industries.

Further Information

For more information on Union Carbide's business segments, please contact Dataquest's Semiconductor Equipment and Materials Service.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$6,390.0	\$6,343.0	\$6,914.0	\$8,324.0	\$8,744.0
Percent Change	-	(0.74)	9.00	20.39	5.05
Capital Expenditure	\$501.0	\$524.0	\$502.0	\$671.0	NA
Percent of Revenue	7.84	8.26	7.26	8.06	NA
R&D Expenditure	\$181.0	\$148.0	\$159.0	\$159.0	\$181.0
Percent of Revenue	2.83	2.33	2.30	1.91	2.07
Number of Employees	52,117	50,292	43,119	43,992	45,987
Revenue (\$K)/Employee	\$122.61	\$126.12	\$160.35	\$189.22	\$190.14
Net Income	(\$581.0)	\$496.0	\$232.0	\$662.0	\$573.0
Percent Change	-	185.37	(53.23)	185.34	(13.44)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$2,241.00	\$2,277.00	\$2,141.00	\$2,085.00	
Quarterly Profit	\$201.00	\$186.00	\$139.00	\$47.00	

NA = Not available

Source: Union Carbide Corporation
Annual Reports and Forms 10-K
Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	73.41	71.81	69.11	69.17	66.25
International	26.59	28.19	30.89	30.83	33.75
Canada	4.90	3.80	4.30	5.15	5.30
Europe	10.11	11.78	12.67	11.16	12.04
Latin America	7.45	8.18	9.23	9.33	10.99
Others	4.13	4.43	4.69	5.19	5.42

Source: Union Carbide Corporation
Annual Reports and Forms 10-K
Dataquest (1990)

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988	1989
Direct Sales	100.00	100.00
Indirect Sales	0	0

Source: Dataquest (1990)

1990 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

Chemical and Plastics Manufacturing

North America

Acushnet, Massachusetts
Precision coating equipment

Alsip, Illinois
Latexes

Bensenville, Illinois
Printed circuit chemicals

Bound Brook, New Jersey
Coatings resins, phenolic resins, phenoxy resins, polyethylene compounding, synthetic thickeners

Clear Lake, Wisconsin
Conformal coating services

Cowansville, Quebec, Canada
Polyethylene film

Edison, New Jersey
Lanolin derivatives

Garland, Texas
Latexes

Henderson, Kentucky
Dielectric fluid

Indianapolis, Indiana
Coating and bonding systems

Institute, West Virginia
Carbowax polyethylene glycol, hydroxethyl cellulose, polyethyleneoxide, ketones, tergitol surfactants

Mamaroneck, New York
Lanolin derivatives

Montreal East, Quebec, Canada
Chemicals

Moses Lake, Washington
Polycrystalline silicon

Prentiss, Canada
Ethylene oxide and glycol

Seadrift, Texas
Alkanolamines, ethylene oxide and glycol, glycol ethers, olefins, polyethylene, polypropylene, tergitol surfactants

Sistersville, West Virginia
Antifoams and emulsions, organofunctional silanes and silicone surfactants, silicone fluids

Somerset, New Jersey
Latexes

South Charleston, West Virginia
Alkylalkanolamines, brake fluids, ketones, miscellaneous specialty products, niac polyols and catalysts, propylene glycol, coatings resins, ucon fluids

Sunnyvale, California
Photoresists

Taft (Star Plant), Louisiana
Polyethylene

Taft, Louisiana
Acrolein and derivatives, acrylic monomers, ultraviolet curing equipment, alkylene amines, cycloaliphatic epoxides, ethylene oxide and glycol, glycol ethers, olefins

Texas City, Texas
Olefins, organic acids and esters, alcohols, tergitol surfactants, vinyl acetate, coatings resins

Torrance, California
Latexes

Tucker, Georgia
Latexes

Washougal, Washington
Crystal products

Europe

Northampton, United Kingdom
Conformal coatings

Solingen, Germany
Photoresists

Termoli, Italy
Organofunctional silanes

Vilvoorde, Belgium
Lanolin derivatives

Asia/Pacific

Ekala, Sri Lanka
Latex

Jakarta, Indonesia
Latex

Jurong, Singapore
Latex

Kowloon, Hong Kong
Latex silicones

Nonthaburi, Thailand
Latex

Seoul, South Korea
Photoresists

Seremban, Malaysia
Latex, silicones

ROW

Aratu, Brazil
Hydroxyethyl cellulose
Barranquilla, Colombia
Silicones
Bayamon, Puerto Rico
Latexes
Buenos Aires, Argentina
Silicones
Cubatao, Brazil
Polyethylene
Guayaquil, Ecuador
Latexes
Sao Paulo, Brazil
Silicones

Industrial Gases Manufacturing

Domestic facilities for the manufacturing of industrial gases are spread over 100 plants, some of which are located at customer facilities throughout the United States. The following are principal manufacturing facilities for products other than oxygen, nitrogen, and argon.

North America

Bushton, Kansas
Gaseous and liquid helium
East Chicago, Indiana
Specialty gases
Fort Saskatchewan, Alberta, Canada
Industrial gases
Houston, Texas
Specialized industrial services
Indianapolis, Indiana
Coatings service
Kansas City, Missouri
Coatings service
Kearney, New Jersey
Specialty gases
Montreal, Quebec, Canada
Industrial gases
Niagara Falls, New York
Gaseous and liquid hydrogen
North Haven, Connecticut
Coatings service
Norwood, Massachusetts
Membrane systems
Oakville, Ontario, Canada
Industrial gases
Ontario, California

Gaseous and liquid hydrogen
Prentiss, Canada
Industrial gases
Sarnia, Ontario, Canada
Industrial gases
Sault Ste. Marie, Ontario, Canada
Industrial gases
Selkirk, Manitoba, Canada
Industrial gases
Tonawanda, New York
Air separation equipment
Torrance, California
Specialty gases
Tracy, Canada
Industrial gases
Ulysses, Kansas
Gaseous and liquid helium

Europe

Antwerp, Belgium
Industrial gases
Biebesheim, Germany
Industrial gases
Creil, France
Industrial gases
Geneva, Switzerland
Coatings service
Gijon, Spain
Industrial gases
Navarro, Italy
Coatings service
Oevel, Belgium
Industrial gases
Ratigen, Germany
Coatings service
Southam, United Kingdom
Coatings service
St. Etienne, France
Coatings service
Swindon, United Kingdom
Coatings service

Asia/Pacific

Changwon City, South Korea
Industrial gases and coatings service
Giheugn, South Korea
Industrial gases
Kozuki-Cho, Japan
Coatings service
Okegawa, Japan
Coatings service

ROW

Brazil

Industrial gases, air separation equipment, welding,
and related products

Carbon Manufacturing

North America

Clarksburg, West Virginia
Graphite specialties
Clarksville, Tennessee
Graphite electrodes
Cleveland, Ohio
Specialty inorganic materials
Columbia, Tennessee
Graphite electrodes
Irving, California
Graphite tooling
Lawrenceburg, Tennessee
Carbon and graphite products
Niagara Falls, New York
Calcined coal
Robinson, Illinois
Calcined petroleum coke
Welland, Ontario, Canada
Graphite electrodes
Yabucoa, Puerto Rico
Graphite electrodes

Europe

Aigueblanche, France
Graphite electrodes
Calais, France
Graphite electrodes
Caserta, Italy
Graphite electrodes
Forno Allione, Italy
Graphite electrodes
Pamplona, Spain
Graphite electrodes
Sheffield, United Kingdom
Graphite electrodes and graphite products

Asia/Pacific

Kozuki-Cho, Japan
Specialty inorganic materials

ROW

Candeias, Brazil
Carbon cathodes, graphite electrodes

SUBSIDIARIES

North America

Union Carbide Canada Ltd. (Canada)
Union Carbide Caribe Inc. (United States)
Union Carbide Communications Co. Inc. (United States)
Union Carbide Eastern Inc. (United States)
Union Carbide Engineering and Hydrocarbons Service Co. Inc. (United States)
Union Carbide Engineering and Technology Services (Africa and Middle East) Inc. (United States)
Union Carbide Ethylene Oxide/Glycol Co. (United States)
Union Carbide Europe Inc. (United States)
Union Carbide Finance Corp. (United States)
Union Carbide Foreign Sales Corp., Virgin Islands (United States)
Union Carbide Grafito Inc. (United States)
Union Carbide Imaging Systems Inc. (United States)
Union Carbide Industrial Services Co. (United States)
Union Carbide Inter-America Inc., Delaware (United States)
Union Carbide Inter-America Inc., New Jersey (United States)
Union Carbide International Capital Corp. (United States)
Union Carbide International Sales Corp. (United States)
Union Carbide Middle East Ltd. (United States)
Union Carbide Pan America Inc. (United States)
Union Carbide Petrochemical International (FCS) Corp., Virgin Islands (United States)
Union Carbide Polyolefins Development Co. Inc. (United States)
Union Carbide Puerto Rico Inc. (Puerto Rico)
Union Carbide Southern Africa (USA) Inc. (United States)
Union Carbide Subsidiary C Inc. (United States)
Union Carbide Turkey Inc. (United States)

Europe

Union Carbide Austria GmbH (Austria)
Union Carbide Benelux N.V. (Belgium)
Union Carbide Deutschland GmbH (Germany)
Union Carbide France S.A. (France)
Union Carbide Hellas Ltd. (Greece)
Union Carbide Iberica S.A. (Spain)
Union Carbide Italia S.p.A. (Italy)
Union Carbide M.S. S.p.A. (Italy)

Union Carbide Navarra S.A. (Spain)
 Union Carbide Norden AB (Sweden)
 Union Carbide Services Ltd. (United Kingdom)
 Union Carbide U.K. Ltd. (United Kingdom)

Asia/Pacific

Union Carbide Asia Ltd. (Hong Kong)
 Union Carbide Formosa Co. Ltd. (Taiwan)
 Union Carbide India Ltd. (India)
 Union Carbide Indonesia P.T. (Indonesia)
 Union Carbide Japan K.K. (Japan)
 Union Carbide Korea Ltd. (South Korea)
 Union Carbide Pakistan Ltd. (Pakistan)
 Union Carbide Philippines (Far East) Inc.
 (Philippines)
 Union Carbide Services Eastern Ltd. (Hong Kong)
 Union Carbide Thailand Ltd. (Thailand)

ROW

Union Carbide Agricultural Products Ltd.
 (Zimbabwe)
 Union Carbide Argentina S.A.I.C.S. (Argentina)
 Union Carbide Commercial Chile Ltda. (Chile)
 Union Carbide Commercial Nicaragua S.A.
 (Nicaragua)
 Union Carbide do Brasil Ltda. (Brazil)
 Union Carbide Land & Investment Ltd. (Zimbabwe)
 Union Carbide Management Services Ltd.
 (Zimbabwe)
 Union Carbide Mexicana S.A. (Mexico)
 Union Carbide Overseas Finance Corp. N.V.
 (Netherlands Antilles)
 Union Carbide Ranches Ltd. (Zimbabwe)
 Union Carbide South Africa Ltd. (South Africa)
 Union Carbide Zimbabwe Ltd. (Zimbabwe)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Guardsman Products

Guardsman Products was given the rights to develop, produce, and sell the UNICARB paint system from Union Carbide Chemicals and Plastics.

Elekeiroz do Nordeste Industrias Quimicas

A joint venture calls for production of 80,000 metric tons per year of butanol and 2-ethylhexanol in Brazil.

1989

Mitsubishi Petrochemical Company Limited

Under the agreement, Mitsubishi acquired a license to construct a worldscale polypropylene plant using the UNIPOL PP technology jointly developed by Union Carbide and Shell Chemical. Union Carbide acquired an option to obtain a license and sublicensing rights for the use of Mitsubishi's family of high-activity polypropylene catalysts.

Kanegafuchi Chemical Industry Co.

A joint venture calls for the production of silicon polymer.

Sekisui America

Union Carbide and Sekisui America jointly formed Hexatec Polymers to make toner resins for North and South American markets. Hexatec Polymers will supply custom styrene-acrylic resins for toners used in copying machines and laser printers.

Ivax

Union Carbide and Ivax jointly formed Baker Cummins Dermatologicals to manufacture and market dermatological products.

ENIQ

Union Carbide and ENIQ will construct an oxochemicals plant in Camacari, Brazil, to begin production of butanols and 2-ethylhexanol by 1992.

DNA Plant Technology

Union Carbide and DNA Plant Technology jointly formed Agri-Diagnostics Association to manufacture and market on-site test kits to detect diseases, contaminants, and pollutants in agricultural areas.

Wei T'o Associates

Wei T'o licensed its paper-preservation technology to Union Carbide.

Schenectady Chemicals

Union Carbide licensed its phenolic washed resins technology to Schenectady Chemicals, which will supply the resins to Union Carbide's customers after Union Carbide stops production of the resins in Bound Brook, New Jersey.

1988

UOP Inc.

A joint venture was established with UOP, Inc., a subsidiary of Allied-Signal Inc. The joint venture, called UOP, will help strengthen Union Carbide's position as a supplier of technology, products, and services to the petroleum refining, petrochemical, and gas-processing industries.

1987

Nan Ya Plastics

Nan Ya Plastics was licensed to use the low-pressure oxo technology Union Carbide jointly licensed with Davy-McKee and Johnson-Mathey for a new plant in Taiwan.

MERGERS AND ACQUISITIONS

1989

Argi-Diagnostic Associates

Union Carbide partly acquired Agri-Diagnostic, a developer and marketer of kits for detecting contaminants and agricultural pollutants.

BP Chemicals

BP Chemicals sold its silicone surfactant business to Union Carbide.

KEY OFFICERS

Robert D. Kennedy

Chairman, president and chief executive officer

Joseph E. Geoghan

Vice president and general counsel

John B. Powers

Vice president, Strategic Planning

Cornelius C. Smith, Jr.

Vice president, Community & Employee Health, Safety & Environmental Protection

J. Clayton Stephenson

Vice chairman, chief financial and administrative officer

H. William Lichtenberger

Vice president and president, Chemicals & Plastics Business Group

John R. MacLean

Vice president and president, Industrial Gases Business Group

Robert P. Krass

Vice president and president, Carbon Products Business Group

PRINCIPAL INVESTORS

Delaware Management Company Inc.—5.7 percent

FOUNDERS

Information is not available.

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Balance Sheet	1985*	1986	1987	1988	1989
Total Current Assets	\$4,426.0	\$2,414.0	\$2,555.0	\$2,883.0	\$2,787.0
Cash	24.0	38.0	201.0	146.0	142.0
Receivables	1,114.0	1,085.0	1,294.0	1,413.0	1,474.0
Marketable Securities	406.0	261.0	0	0	0
Inventory	831.0	746.0	827.0	1,032.0	932.0
Other Current Assets	2,051.0	284.0	233.0	292.0	239.0
Net Property, Plants	\$4,527.0	\$4,379.0	\$4,344.0	\$4,416.0	\$4,584.0
Other Assets	\$717.0	\$778.0	\$993.0	\$1,142.0	\$1,175.0
Total Assets	\$9,670.0	\$7,571.0	\$7,892.0	\$8,441.0	\$8,546.0
Total Current Liabilities	\$2,382.0	\$1,881.0	\$1,811.0	\$2,455.0	\$2,328.0
Long-Term Debt	\$1,713.0	\$3,057.0	\$2,863.0	\$2,295.0	\$2,080.0
Other Liabilities	\$1,556.0	\$1,628.0	\$1,971.0	\$1,855.0	\$1,755.0
Total Liabilities	\$5,651.0	\$6,566.0	\$6,645.0	\$6,605.0	\$6,163.0
Total Shareholders' Equity	\$4,019.0	\$1,005.0	\$1,247.0	\$1,836.0	\$2,383.0
Common Stock	212.0	205.0	209.0	214.0	142.0
Other Equity	199.0	961.0	1,140.0	1,216.0	(52.0)
Retained Earnings	3,774.0	2,061.0	2,098.0	2,605.0	2,293.0
Less: Treasury Stock	(166.0)	(2,222.0)	(2,200.0)	(2,199.0)	0
Total Liabilities and Shareholders' Equity	\$9,670.0	\$7,571.0	\$7,892.0	\$8,441.0	\$8,546.0
Income Statement	1985*	1986	1987	1988	1989
Revenue	\$6,390.0	\$6,343.0	\$6,914.0	\$8,324.0	\$8,744.0
US Revenue	4,691.0	4,555.0	4,778.0	5,758.0	5,793.0
Non-US Revenue	1,699.0	1,788.0	2,136.0	2,566.0	2,951.0
Cost of Sales	\$4,597.0	\$4,343.0	\$4,773.0	\$5,465.0	\$5,875.0
R&D Expense	\$181.0	\$148.0	\$159.0	\$159.0	\$181.0
SG&A Expense	\$735.0	\$740.0	\$779.0	\$822.0	\$924.0
Capital Expense	\$501.0	\$524.0	\$502.0	\$671.0	NA
Pretax Income	(\$906.0)	\$212.0	\$391.0	\$1,128.0	\$878.0
Pretax Margin (%)	-	3.34	5.66	13.55	10.04
Effective Tax Rate (%)	43.90	30.20	34.00	38.90	NA
Net Income	(\$581.0)	\$496.0	\$232.0	\$662.0	\$573.0
Shares Outstanding, Millions	202.8	127.7	132.2	137.6	141.6
Per Share Data					
Earnings	(\$2.78)	\$4.78	\$1.76	\$4.88	\$4.07
Dividend	\$1.13	\$1.50	\$1.50	\$1.15	NA
Book Value	\$19.82	\$7.87	\$9.43	\$13.34	\$16.83

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985*	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	1.28	1.41	1.41	1.17	1.20
Quick (Times)	0.89	0.95	0.95	0.75	0.80
Fixed Assets/Equity (%)	435.72	348.36	348.36	240.52	192.36
Current Liabilities/Equity (%)	187.16	145.23	145.23	133.71	97.69
Total Liabilities/Equity (%)	653.33	532.88	532.88	359.75	258.62
<i>Profitability (%)</i>					
Return on Assets	-	5.75	3.00	8.11	6.75
Return on Equity	-	19.75	20.60	42.95	27.16
Profit Margin	(9.09)	7.82	3.36	7.95	6.55
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	2.83	2.33	2.30	1.91	2.07
Capital Spending % of Revenue	7.84	8.26	7.26	8.06	NA
Employees	52,117	50,292	43,119	43,992	45,987
Revenue (\$K)/Employee	\$122.61	\$126.12	\$160.35	\$189.22	\$190.14
Capital Spending % of Assets	6.62	6.64	6.36	7.95	NA

*1985 is restated. In addition, 1985 includes certain reclassifications to conform to the 1986 presentation. Amounts for 1985 were adjusted to reflect the stock dividend in March 1986.

NA = Not available

Source: Union Carbide Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

Unisys Corporation

Post Office Box 500
Blue Bell, Pennsylvania 19424-0001
Telephone: (215) 542-4011
Fax: (215) 542-6850
Dun's Number: 00-535-8932

Date Merged: November 13, 1986

CORPORATE STRATEGIC DIRECTION

Unisys Corporation, formed in 1986 by the merger of Sperry and Burroughs, is a leading information systems company with 1989 revenue of \$10.1 billion.* Unisys manufactures computers ranging from networked workstations through mainframes and is a major supplier of defense electronics. Information systems and related services and supplies constitute the largest segment of Unisys' operations. Although Unisys faces tough global competitors, it has successfully hurdled many of the problems encountered by the merger.

Unisys has grown steadily since its creation; however, during the past two years, this growth has slowed dramatically. Growth in 1988 represented only a 2 percent change in revenue, down from 31 and 48 percent changes during fiscal years 1987 and 1986, respectively. The Company has developed a growth strategy based on increasing software cost-effectiveness and speed, expanding open and interoperable architectures, and improving multiple information flow capabilities. The Company specializes in interconnecting and unifying multivendor or incompatible systems.

Total revenue increased 2.0 percent to \$10.1 billion in fiscal 1989, up from \$9.9 billion in fiscal 1988. Net loss equaled \$639.0 million for fiscal 1989, a 193.9 percent decrease from fiscal 1988. Unisys attributed the loss to a large charge for restructuring, unfavorable market conditions, the effects of actions taken by the Company in response to high cost structure and high inventory levels, losses associated with its defense business, and interest costs associated with higher debt levels. During the third quarter, Unisys decided to significantly cut its cost structure and, hence, recorded a \$231 million restructuring

charge consisting of \$127 million for a work force reduction of approximately 8,000 employees, \$56 million relating to consolidation of manufacturing facilities, and \$48 million for other facility consolidations and discontinuation of certain products and businesses. Through these actions, Unisys hopes to rearrange and simplify organizational structures, eliminate redundancies, and streamline manufacturing material costs, resulting in reducing the Company's annual cost base by approximately \$500 million by the end of 1990.

Unisys sells its products and services worldwide, primarily through its direct sales force. Unisys also uses original equipment manufacturers (OEMs) and value-added resellers (VARs) as well as distributors in some foreign countries. Unisys has operations in approximately 120 countries and employs approximately 80,000 people, about three-fourths of whom are located within the United States. Throughout the past five years, Unisys basically has maintained an even split between revenue generated domestically and internationally. During fiscal years 1989, 1988, and 1987, international sales accounted for 49, 46, and 44 percent of total revenue, respectively. International sales are generated from the Asia/Pacific, European, and Central and South American markets.

Within the European market, Unisys has become well established in Spain, where there is a strong demand for high-end 2200 mainframes, UNIX systems, and PCs. Unisys is the largest UNIX supplier in Spain and holds a strong position in the corporate resource computers (CRC) segment and in smaller systems, particularly in the small department computer (SDC) market. Unisys anticipates continued fast growth throughout the early 1990s. Unisys also conducts a great amount of business in France, Italy, and the United Kingdom.

Unisys has been able to maintain a high level of R&D investment principally because of aggressive cost control and economies of scale achieved during the

*All dollar amounts are in US dollars.

past two years. Research and development increased from \$713 million in fiscal 1988 to \$782 million in fiscal 1989. Capital expenditure decreased in fiscal 1989 to \$615 million or 6.1 percent of total revenue, down from \$673 million in fiscal 1988.

On December 6, 1989, Unisys announced that its Santa Clara (HDA) manufacturing and refurbishment operations had been sold to a group of managers led by Michael Haltom. The new company, Sequel Inc., is headed by Mr. Haltom, who was vice president of Peripherals Group Manufacturing Operations for Unisys, and has hired over 600 former Unisys employees. The sale included a long-term agreement stating that Sequel will supply a variety of new and refurbished HDAs for Unisys' 14-inch disk drive products. Unisys believes that the new relationship is enabling it to concentrate on the value-added features of the disk storage systems that it designs for its mainframe customers. The Company plans to direct its research and development efforts at the disk-controller level and to optimize the performance and reliability of the disk cabinet components obtained from Sequel and other OEMs.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Computer Systems

According to Dataquest, Unisys held a 7.15 percent share of the worldwide computer marketplace, excluding PCs, in 1989 (this figure is based upon total revenue). Unisys divides its product portfolio into two main segments: Commercial Information Systems, representing three-fourths of total revenue, and Defense Systems, representing one-fourth. Within these two segments, Unisys further classifies its products into six specific classes. Mainframes and peripherals comprise a complete line of small-to-large mainframes and related communication processors and peripheral products such as printers, storage devices, and document-handling equipment. This class of products contributed close to \$3 billion, or 30 percent of total revenue, for fiscal 1989.

Distributed systems and workstations accounted for 15 percent of total revenue. This class is made up of departmental systems, intelligent workstations, UNIX OS-based equipment, terminals, and personal computers. Software and related services consists of application and systems software along with related professional services and amounted to \$1.8 billion, or 18 percent of total revenue. Representing 19 percent of total revenue generated, equipment maintenance results from charges for preventive maintenance, spare parts, and other repair activities. Custom products and services, which include specialized information processing systems marketed mainly to governmental defense agencies, contributed 16 percent of total revenue, totaling \$1.6 billion in sales. Other means generate 2 percent of Unisys' revenue.

In 1989, Unisys delivered new models in all of its mainframe families. The new models provide greater functionality in terms of OLTP, database and network management, security, capacity, memory, and storage. Unisys also unveiled the Network Applications Platform (NAP). This is the first time in the industry that a digital telephone switch has been directly integrated with a mainframe system. The NAP runs on a full range of A Series models and enables telephone companies to offer customers advanced "intelligent" services that require mainframe storage capacity.

The 1100/2200 Series family offers a wide performance range of object code-compatible, general-purpose computer systems. The series is broken into three subfamilies: the 2200/200 Series, which consists of entry-level systems; the 2200/400 Series, which consists of medium-scale systems; and the 2200/600 Series, which consists of large-scale systems. The 1100/2200 Series is primarily targeted at the airline, communication, and government markets.

The A Series family of processors are descendants of the B5000 introduced in the early 1960s. The A Series product family is divided into four subfamilies of processors aimed at the needs of desktop, entry-level, midrange, and large-scale commercial data-processing customers. During 1989, Unisys introduced the Micro A, a multiuser desktop system that runs the same operating system as the other members of the A Series. Housed in a Unisys PW personal computer, the Micro A runs the same software as other A series models and can be used to test and develop applications quickly for use on larger systems. The A10x models provide midrange performance with a larger selection of peripheral connectivity. The A12, A15x, and A17 field upgradable models make up the large-scale systems.

InfoImage IIPS/ICPS (Image Item Processing System/Image Check Processing System) is based on Unisys' V Series mainframes and DP 1800 document processors. Through the elimination of many manual steps involved in processing checks, the system allows customers to cut labor expenses while doubling the number of checks they can process each hour. **InfoImage EDMS** (Engineering Document Management System) runs on Unisys' UNIX-based systems and PW workstations. The system captures large documents, such as engineering drawings and facilities diagrams, that can then be displayed, edited, and distributed electronically, reducing paperwork during design review cycles. In April 1990, Unisys unveiled **InfoImage Folder**, an electronic file folder management system that automates and expedites the movement of paper-based information. Electronic files are handled in the same manner as paper files: Files are organized into folders that can hold many documents, each of which can have many pages. **InfoImage Folder** has menu-driven programs that enable the user to define form displays, map data to and from files on mainframes and other computers in the network, develop indexing routines, and automate document distribution.

Unisys **BTOS/CTOS** workstations are multitasking, allowing users to execute many tasks at the same time. They offer a modular architecture and built-in local area network (LAN) capabilities so that users can build LANs of workstations quickly and without incurring costs for additional equipment. These LANs can be connected to users' central mainframes without sacrificing the processing power available to individual users. There are over 700,000 **BTOS/CTOS** systems installed.

The Unisys **U Series** are business-oriented UNIX computers that run under an implementation of AT&T's UNIX system V. These systems act as "servers" in LANs, coordinating the flow of information between large-scale mainframe systems and smaller desktop systems. Unisys provides the **U 5000, 6000, and 7000 Series** and adds value in software, development tools, and database products. The **U 5000 Series**, based on the Motorola 68020 processor, comes from NCR Corporation and Arix Corporation. The **U 7000** is based on Computer Consoles, Inc.'s (CCI's) **Power 6/32** supermini. The **U 6000/30, 50, and 55** are Intel 80386-based systems manufactured by Network Computer Group, a wholly owned subsidiary. The high-end **U 6000/70 and 80** are from Sequent Computer Systems.

Early in 1990, Unisys announced a series of broadband networking systems, which include the **TX3/SuperHub** and **TIME/LAN** family systems based on Fiber Distributed Data Interface. Through fiber-optic technology, the **TIME/LAN** systems offer increases in working capacity that customers need to consolidate their LANs and to support high-speed, high-bandwidth applications such as imaging and videoconferencing. The **TX3/SuperHub** provides 28 times the capacity of T-1 systems and offers customers platforms to build super transport backbone networks.

Unisys also markets **DCP** and **CP** families of front-end network processors, concentrators, and gateways. These systems consolidate, format, and transmit data among workstations, departmental servers, and mainframes.

Mil/Aero

The Defense Systems Group provides defense electronics through five major lines: shipboard and ground systems, systems development, communication systems, system support, and computer systems. Unisys has many key military and aerospace programs. Revenue generated from federal defense and space contracts and subcontracts accounted for 17 percent of 1989 total revenue and sales of commercial products to the federal government accounted for an additional 6 percent of total revenue.

The navy accounts for a major percentage of Unisys' defense revenue. Unisys is an alternate supplier for the **Aegis** combat system that will be used aboard more than 50 guided-missile cruisers and destroyers. Unisys, a leading supplier of shipborne computers, is replacing the navy's old small, general-purpose computers with the embedded computer system family—**UYK43** and **UYK44**. Unisys also has won a \$280 million contract to supply microcomputers throughout the US Department of Defense. Unisys recently began selling and planning to increase its concentration on avionic modules, including 32-bit airborne computers.

Late in 1989, Unisys was awarded the **DeskTop III** contract that was led by the United States Air Force. The contract was for up to 250,000 **Personal Workstation (PW)** desktop computers, based on Intel's microprocessor technology. The order is one of the largest in Unisys' history. The **PW** systems will run both a **POSIX-compliant** version of the UNIX operating systems and the **MS-DOS** operating system. If all

options are exercised, the contract, currently having an initial two-year value of \$233 million, could be worth up to \$700 million over the next five years.

UNIX

UNIX systems offer users a powerful platform to perform standalone tasks as well as connect into broader cooperative networks. More than 1,000 commercial UNIX applications run on Unisys' U Series systems.

Software

Unisys offers a wide range of software packages tailored for specific industries including banking, health care, manufacturing, and airlines. By supporting standard operating systems on its platforms and maintaining relationships with third-party software developers, the Company also gives its customers access to off-the-shelf applications available on the general market. Unisys' computer-aided software engineering (CASE)/fourth-generation language (4GL) tools—the Logic and Information Network

Compiler (LINC), Maintaining, Preparing, Producing Executive Reports (MAPPER), and Ally systems—automate the software development process, decreasing development time and freeing organizations to concentrate on designing new systems that solve business problems. The LINC and MAPPER are available on all major Unisys product platforms. In 1989, Unisys extended the MAPPER system to its A Series and UNIX-based systems customers, with the V Series and System 80 scheduled for portation in 1990. The Company is also making its CASE/4GL tools available on major UNIX-based systems from other vendors. Unisys added "upper-CASE" systems design capabilities to the LINC system as well, and extended the use of its software tools to outside developers whose upper-CASE technologies are widely used throughout the industry.

Further Information

For further information about Unisys' business segments, please contact the appropriate Dataquest industry services.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$5,038	\$7,432	\$9,713	\$9,902	\$10,097
Percent Change	-	-	30.69	1.95	1.97
Capital Expenditure	\$450	\$550	\$719	\$673	\$615
Percent of Revenue	8.93	7.40	7.40	6.80	6.09
R&D Expenditure	\$285	\$441	\$597	\$713	\$782
Percent of Revenue	5.66	5.93	6.15	7.20	7.74
Number of Employees	60,500	98,300	92,500	93,000	82,300
Revenue (\$K)/Employee	\$83.27	\$75.60	\$105.00	\$106.47	\$120.32
Net Income	\$248	(\$43)	\$578	\$681	(\$639)
Percent Change	-	(117.32)	1,444.19	17.82	(193.88)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$2,201.0	\$2,575.0	\$2,351.0	\$2,969.0	
Quarterly Profit	(\$79.0)	\$54.0	(\$648.0)	\$34.0	

Source: Unisys Corporation
 Annual Reports
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	56.00	57.00	56.00	54.00	51.00
International	44.00	43.00	44.00	46.00	49.00

Source: Unisys Corporation
 Annual Reports

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988*	1989*
Direct Sales	79.08	80.30
Indirect Sales	20.92	19.70
VARs	10.75	10.50
OEMs	0.03	0.50
Distributors	10.14	8.70

*Business and technical computers only

Source: Dataquest (1990)

1990 SALES OFFICE LOCATIONS

North America—200
Europe—1 (sales subsidiary only)
Asia/Pacific—7 (sales subsidiary only)
ROW—10 (sales subsidiary only)

MANUFACTURING LOCATIONS

North America

Camarillo, California
Air traffic control systems, custom systems,
development of Thailand's centralized air defense
system
Clear Lake, Iowa
2200 Series systems, high-end A Series
Dorval, Quebec
Terminals, power supplies and terminals
Eagan, Minnesota
Standard militarized computer products and
displays, information-processing systems,
Submarine Standard Operating Systems (SSOS)
Flemington, New Jersey
Personal computers
Great Neck, New York
Electronic warfare, military systems, and support
systems
Mission Viejo, California
Low-end A Series
Plymouth, Michigan
Imaging, check reader/sorters
Rancho Bernardo, California
Low-end A Series
Rochester, New York
Office supplies
Salt Lake City, Utah
UNIX
Twin Cities, Minnesota
2200 Series systems, military computers
Woodcliff Lake, New Jersey
TI switchers

Europe

Barcelona, Spain
AI equipment
Livingston, Scotland
S Series coding machines
Villers-Ecalles, France
Financial terminals

Asia/Pacific

Jurong, Singapore
Terminals
Milson's Point, Australia
Software

ROW

Nogales, Mexico
Cables
Veleiros, Brazil
Low-end A Series systems

SUBSIDIARIES

North America

Burroughs Europe Inc. (United States)
Burroughs Export Corporation (United States)
Burroughs Information Systems Ltd. (United States)
Burroughs International Government Sales Inc.
(United States)
Burroughs International Holding Co. (United States)
Burroughs Systems Inc. (United States)
Burroughs Transport Corporation (United States)
Convergent Inc. (United States)
Foundation Computer Systems Inc. (United States)
Harrison Credit Group Inc. (United States)
Joseph & Cogan Associates Inc. (United States)
New Holland Machine Co. (Canada) Ltd. (Canada)
Ramac Services Corp. (United States)
Sperry C.A. (United States)
Sperry Dalmo Victor Inc. (United States)
Sperry Holding Co. Inc. (United States)
Sperry International Services Co. Inc. (United States)
Sperry Lease Finance Corp. (United States)
Sperry Leasing Corp. (United States)
Sperry Mapper Services Inc. (United States)
Sperry Overseas Services Corp. (United States)
Sperry Rand Corp. (United States)
Unisys CAD/CAM Inc. (United States)
Unisys China Investment Inc. (United States)
Unisys China Services Inc. (United States)
Unisys Japan Ltd. (United States)
Unisys Services Corp. (United States)
Unisys World Trade Inc. (United States)

Europe

Burroughs International Finance N.V. (Netherlands
Antilles)
Burroughs International S.A. (Switzerland)
Burroughs Machines Ltd. (United Kingdom)

Sperry Curacao N.V. (Netherlands)
 Sperry International Finance Corp. B.V. (Netherlands)
 Unisys AB (Sweden)
 Unisys Ab, Oy (Finland)
 Unisys A/S (Denmark)

Asia/Pacific

New Holland Ltd. (New Zealand)
 Nihon Unisys Ltd. (Japan)
 Nippon Univac Kaisha Ltd. (Japan)
 Oki Univac Kaisha Ltd. (Japan)
 Remington Rand Ltd. (New Zealand)
 Sperry Computer Systems Ltd. (New Zealand)
 Sperry Transportation Systems Pty. Ltd. (Australia)
 Synercom Australia Pty. Ltd. (Australia)

ROW

Burroughs Overseas Sales Co. Ltd. (Jamaica)
 Galactic Insurance Group Ltd. (Bermuda)
 Remington Peruana Equipos de Oficina S.A. (Peru)
 Remington Rand de Mexico S.A. (Mexico)
 Remington Venezuela C.A. (Venezuela)
 Sperry C.A. (Venezuela)
 Sperry Cayman Islands Ltd. (Cayman Islands)
 Sperry Colombiana S.A. (Colombia)
 Sperry Foreign Sales Corp. (Barbados)
 Sperry S.A. de C.V. (Mexico)
 Univac de Mexico S.A. (Mexico)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

September 1989

FileNet

FileNet signed an agreement under which FileNet will provide Unisys with its Image Access Facility software and jukeboxes.

Touche Ross

Unisys and Touche Ross have agreed to a strategic alliance to provide large-scale commercial systems integration services.

Mercedes Information Technologies (Pty) Ltd.

Unisys sold its South African marketing and sales subsidiary to Mercedes Information Technologies.

Lodgistix Inc.

The two companies have a marketing alliance that makes Lodgistix a value-added reseller (VAR) of the Unisys PW2 line of products in conjunction with its MS-DOS-based property management system and sales and catering system.

July 1989

Microamerica

Unisys signed a value-added distributor (VAD) agreement with Microamerica. The agreement is expected to increase Unisys sales of UNIX-based multiuser systems and PCs through the third party channel over the next five years significantly.

June 1989

Tech Data Corp.

Unisys signed a VAD arrangement with Tech Data. Under the agreement, Tech Data will resell Unisys' Intel 80386-based U 6000 Series of UNIX processors and the PW2 line to its customers.

March 1989

SPSS Inc.

Unisys and SPSS agreed to a strategic alliance to provide statistical and graphics software solutions on Unisys hardware.

1988

Mitsui & Co.

The two companies entered into a joint venture to form Nihon Unisys Ltd.

MERGERS AND ACQUISITIONS

December 1988

Convergent, Inc.

Convergent, acquired by Unisys, was a leader in distributed and networking solutions.

January 1988

Timeplex, Inc.

Timeplex, acquired by Unisys, was a leading worldwide supplier of wide area voice/data communication networks.

KEY OFFICERS

Michael W. Blumenthal
Chairman of the board

James A. Unruh
President and chief executive officer

Curtis A. Hessler
Vice chairman

John J. Holton
Vice president; president, Corporate Marketing

PRINCIPAL INVESTORS

Information is not available

FOUNDERS

Information is not available

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$2,878	\$4,537	\$5,334	\$5,816	\$5,083
Cash	43	56	55	26	9
Receivables	1,239	1,807	2,915	2,785	2,698
Marketable Securities	0	0	0	0	0
Inventory	1,475	1,952	1,856	2,484	1,761
Other Current Assets	122	722	508	521	615
Net Property, Plants	\$1,007	\$2,192	\$1,858	\$2,003	\$1,855
Other Assets	\$671	\$2,680	\$3,399	\$3,716	\$3,815
Total Assets	\$4,556	\$9,409	\$10,591	\$11,535	\$10,751
Total Current Liabilities	\$1,240	\$3,342	\$3,666	\$3,432	\$3,537
Long-Term Debt	\$802	\$2,226	\$2,377	\$3,078	\$3,248
Other Liabilities	\$23	\$13	\$3	\$70	\$84
Total Liabilities	\$2,064	\$5,581	\$6,046	\$6,580	\$6,869
Total Shareholders' Equity	\$2,492	\$3,828	\$4,545	\$4,955	\$3,882
Converted Preferred Stock	-	1,432	1,426	1,429	1,429
Common Stock	228	231	747	797	797
Other Equity	392	486	355	294	126
Retained Earnings	1,872	1,679	2,017	2,435	1,530
Total Liabilities and Shareholders' Equity	\$4,556	\$9,409	\$10,591	\$11,535	\$10,751
Income Statement	1985	1986	1987	1988	1989
Revenue	\$5,038	\$7,432	\$9,713	\$9,902	\$10,097
US Revenue	2,835	4,244	5,476	5,368	5,136
Non-US Revenue	2,203	3,188	4,237	4,534	4,961
Cost of Sales	\$3,084	\$5,118	\$5,639	\$5,589	\$6,816
R&D Expense	\$285	\$441	\$597	\$713	\$782
SG&A Expense	\$1,242	\$1,905	\$2,378	\$2,527	\$2,710
Capital Expense	\$450	\$550	\$719	\$673	\$615
Pretax Income	\$360	(\$89)	\$951	\$959	(\$554)
Pretax Margin (%)	7.14	(1.20)	9.79	9.68	(5.49)
Effective Tax Rate (%)	NA	NA	NA	NA	NA
Net Income	\$248	(\$43)	\$578	\$681	(\$639)
Shares Outstanding, Millions	137	138	149	158	158
Per Share Data					
Earnings	\$5.46	(\$0.54)	\$2.93	\$3.27	(\$4.71)
Dividend	\$2.60	\$0.87	\$0.91	\$0.98	\$1.00
Book Value	\$18.23	\$27.74	\$30.50	\$31.16	\$24.57

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	2.32	1.36	1.45	1.69	1.44
Quick (Times)	1.13	0.77	0.95	0.97	0.94
Fixed Assets/Equity (%)	40.41	57.26	40.88	40.42	47.78
Current Liabilities/Equity (%)	49.75	87.30	80.66	69.26	91.11
Total Liabilities/Equity (%)	82.83	145.79	133.03	132.80	176.93
<i>Profitability (%)</i>					
Return on Assets	-	(0.62)	5.78	6.16	(5.74)
Return on Equity	-	(1.36)	13.81	14.34	(14.47)
Profit Margin	4.93	(0.58)	5.95	6.88	(6.33)
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	5.66	5.93	6.15	7.20	7.74
Capital Spending % of Revenue	8.93	7.40	7.40	6.80	6.09
Employees	60,500	98,300	92,500	93,000	82,300
Revenue (\$K)/Employee	\$83.27	\$75.60	\$105.00	\$106.47	\$122.69
Capital Spending % of Assets	9.88	5.85	6.79	5.83	5.72

NA = Not available

Source: Unisys Corporation
 Annual Reports and Forms 10-K
 Dataquest 1990

Unisys Corporation

Post Office Box 500
Blue Bell, Pennsylvania 19424-0001
Telephone: (215) 542-4011
Fax: (215) 542-6850
Dun's Number: 00-535-8932

Date Merged: November 13, 1986

CORPORATE STRATEGIC DIRECTION

Unisys Corporation, formed in 1986 by the merger of Sperry and Burroughs, is a leading information systems company with 1988 revenue of \$9.9 billion*. Unisys manufactures computers ranging from networked workstations through mainframes and is a major supplier of defense electronics. Information systems and related services and supplies constitute the largest segment of Unisys' operations. Although Unisys faces tough global competitors, it has successfully hurdled many of the problems encountered by the merger.

Unisys has grown steadily since its creation, but during 1988 this growth slowed dramatically. The Company hopes to double its size to \$20 billion during the 1990s through internal growth, acquisitions (e.g., the December 1988 acquisition of Convergent Technologies), and a growth strategy based on increasing software cost-effectiveness and speed, expanding open and interoperable architectures, and improving multiple information flow capabilities. The Company specializes in interconnecting and unifying multivendor or incompatible systems. In January 1988, Unisys acquired Timeplex, Inc., and created Unisys Networks to extend communications capabilities.

Unisys is leveraging its strength in sales, support, and distribution. The Company has explicitly divorced its thinking from the "not-invented-here" syndrome. It will continue to manufacture and develop proprietary systems where it is best-suited to do so; otherwise, it feels free to buy and resell the best technology it can find.

One important reason behind the Company's success at managing its cost structure is an emphasis on cost-effective sourcing of materials—in particular,

semiconductors. Unisys' total 1988 semiconductor use is estimated at \$360 million, \$40 million of which was commercial grade produced captively.

Unisys plans to double the size of its total business to \$20 billion by the early 1990s. Growth will come through internal expansion and acquisitions in selected high-growth areas.

As mentioned previously, total revenue increased to \$9.9 billion in fiscal 1988, up 2 percent from fiscal 1987's revenue of \$9.7 billion. Net income also increased in fiscal 1988, up 18 percent to \$681 million, up from \$578 million in fiscal 1987. Unisys employs more than 93,000 people worldwide.

The Company is in the process of a corporate-wide restructuring program that will eliminate up to 8,000 jobs and shut down three manufacturing plants.

Unisys has been able to maintain a high level of R&D investment principally because of aggressive cost control and economies of scale achieved during the past two years. Research and development increased from \$597 million in fiscal 1987 to \$713 million in fiscal 1988. Capital expenditure decreased in fiscal 1988 to \$673 million or 6.8 percent of total revenue, down from \$719 million in fiscal 1987.

Unisys provides information systems, products, and services internationally for financial, industrial, commercial, communications, airlines, public sector, federal government, and defense applications.

Unisys' product portfolio is divided into two main segments: Commercial Information Systems (75 percent of total revenue) and Defense Systems

*All dollar amounts are in U.S. dollars.

(25 percent of total revenue). The Company's revenue by product line is as follows:

- Mil/Aero electronics—24 percent
- Software/maintenance—24 percent
- Mainframes—16 percent
- Minicomputers—13 percent
- Peripherals—12 percent
- Microcomputers—11 percent

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Computer Systems

In 1988, Unisys was second only to IBM in the business computer market. Dataquest estimates the Company's 1988 worldwide business computer revenue to be \$3.3 billion.

Burroughs' and Sperry's product strengths were complementary as opposed to competitive in many areas. Merging the two product lines has broadened Unisys' product offerings to target customers. In 1987, the Company upgraded and expanded its mainframe and workstation offerings, including intelligent workstations, UNIX-based technology, fourth-generation languages, networking, and systems integration.

In 1988, Unisys made a significant move toward providing the total business solution. The Company expanded its BTOS II family of networked workstations and introduced Cluster Share, through which IBM-compatible PCs can be integrated readily into a BTOS network. The Company also introduced the Unisys PW2 family, the first personal workstation to run all three of the popular industry-standard operating environments: MS-DOS, OS/2, and UNIX.

Unisys reaffirmed its commitment to the mainframe base with a series of significant introductions and announcements in 1988 including the 2200/400 and

2200/600 systems and the A-17 extensions. The Company introduced the B38 workstation based on the Intel 80386. It extended both the high and low ends of the A Series, providing it with one of the widest performance spectrums in the industry. Unisys also extended the 2200/200 systems and the V Series, and made the first deliveries of the new Systems 80 Models 10 and 20.

The Unisys U Series are business-oriented UNIX computers that run under an implementation of AT&T's UNIX system V. Unisys OEMs the U 5000, 6000, and 7000 Series and adds value in software, development tools, and database products. The U 5000 Series, based on the Motorola 68020 processor, is OEMed from NCR Corporation and Arix Corporation. The U 7000 is based on Computer Consoles, Inc.'s (CCI's) Power 6/32 supermini. The U 6000/30, 50, and 55 are Intel 80386-based systems manufactured by Network Computer Group, a wholly owned subsidiary. The high-end U 6000/70 and 80 are OEMed from Sequent Computer Systems.

Mil/Aero

The Defense Systems Group provides defense electronics through five major lines: shipboard and ground systems, systems development, communication systems, system support, and computer systems. Unisys has many key military and aerospace programs. Dataquest estimates Unisys' Mil/Aero electronic revenue totaled \$2.365 billion in 1988, relatively flat compared with \$2.354 billion in 1987.

The navy accounts for a major percentage of Unisys' defense revenue. Unisys is an alternate supplier for the Aegis combat system that will be used aboard more than 50 guided missile cruisers and destroyers. Unisys, a leading supplier of shipborne computers, is replacing the navy's old small, general-purpose computers with the embedded computer system family—UYK43 and UYK44. Unisys also has won a \$280 million contract to supply microcomputers throughout the Defense Department.

UNIX

Dataquest estimates that Unisys ranked third among the worldwide UNIX vendors in 1988. Unisys holds 10.4 percent of the market, behind Hewlett-Packard and Sun Microsystems. In 1988, Unisys introduced new members to its UNIX product families—the

U 5000, U 6000, and U 7000—which are described above. In mid-1988, the Company introduced the U 6000/50, the first in a series of departmental computing systems that integrate industry-standard UNIX and MS-DOS environments.

Display Terminals

Unisys competes in Segments 1 and 2 of the display terminals. Dataquest estimates that Unisys held less than 2 percent of the market for 1988 in Segment 1.

However, in Segment 2, Unisys ranked first with 64.2 percent of the market; Bull HN followed with 29.1 percent.

Further Information

For further information about the Company's business segments, please contact the appropriate industry service.

Table 1
Corporate Highlights
(Millions of U.S. Dollars)

	1986	1987	1988	
Revenue	\$7,432	\$9,713	\$9,902	
Percent Change	-	30.69	1.95	
Capital Expenditure	\$550	\$719	\$673	
Percent of Revenue	7.40	7.40	6.80	
R&D Expenditure	\$441	\$597	\$713	
Percent of Revenue	5.93	6.15	7.20	
Number of Employees	98,300	92,500	93,000	
Revenue (\$K)/Employee	\$75.60	\$105.00	\$106.47	
Net Income	(\$43)	\$578	\$681	
Percent Change	-	1,444.19	17.82	
1989 Calendar Year	Q1	Q2	Q3	Q4
Quarterly Revenue	\$2,201.8	\$1,777.3	\$2,351.5	N/A
Quarterly Profit	N/A	N/A	N/A	N/A

N/A = Not Available

Source: Unisys Corporation
Annual Reports
Dataquest
January 1990

Table 2
Revenue by Geographic Region (Percent)

Region	1986	1987	1988
North America	57.00	56.00	54.00
International	43.00	44.00	46.00

Source: Unisys Corporation
Annual Reports

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988*
Direct Sales	79.08
Indirect Sales	20.92
VARs	10.75
OEMs	0.03
Distributors	10.14

*Business and technical computers only

Source: Dataquest
January 1990

1988 SALES OFFICE LOCATIONS

North America—200

Japan—0

Europe—1 (sales subsidiary only)

Asia/Pacific—7 (sales subsidiary only)

ROW—10 (sales subsidiary only)

MANUFACTURING LOCATIONS

North America

Blue Bell, Pennsylvania

Automating information management, transaction systems, factory automation, manufacturing management, commercial systems integration, mainframes, software

Camarillo, California

Circuit boards

Clear Lake, Iowa

2200 Series systems

Dorval, Canada

Terminals

Flemington, New Jersey

Personal computers

Mission Viejo, California

Low-end A Series

Plymouth, Michigan

Imaging, check reader/sorters

Rancho Bernardo, California

Low-end A Series

Salt Lake City, Utah

UNIX

Santa Clara, California

Disk drives

Twin Cities, Minnesota

2200 Series systems

Woodcliff Lake, New Jersey

TI switchers

Japan

Tokyo, Japan

Low-end 2200 Series systems

Europe

Barcelona, Spain

AI equipment

Livingston, Scotland

S Series coding machines

Villers-Ecalles, France

Financial terminals

Asia/Pacific

Jurong, Singapore

Terminals

Milson's Point, Australia

Software

ROW

Nogales, Mexico

Cables

Veleiros, Brazil

Low-end A Series systems

SUBSIDIARIES

North America

Convergent, Inc. (United States)

Sperry Financial Corp. (United States)

Timeplex, Inc. (United States)

Unisys Canada Inc. (Canada)

Unisys Finance Corp. (United States)

Unisys International Co. (United States)

Unisys Peripherals Corp. (United States)

Europe

Unisys Belgium (Belgium)

Unisys Deutschland GmbH (West Germany)

Unisys Espana SA (Spain)

Unisys France (France)

Unisys Italia S.p.A. (Italy)

Unisys Ltd. (England)

Unisys Nederland NV (Netherlands)

Unisys (Schweiz) AG (Switzerland)

Asia/Pacific

Unisys Australia Ltd. (Australia)

ROW

Unisys Electronica Ltda. (Brazil)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

September 1989

FileNet

FileNet signed an agreement under which FileNet will provide Unisys with its Image Access Facility software.

Touche Ross

Unisys and Touche Ross have agreed to a strategic alliance to provide large-scale commercial systems integration services.

Mercedes Information Technologies (Pty) Ltd.

Unisys sold its South African marketing and sales subsidiary to Mercedes Information Technologies.

Lodgistix Inc.

The two companies have a marketing alliance that makes Lodgistix a value-added reseller (VAR) of the Unisys PW2 line of products in conjunction with its MS-DOS-based property management system and sales and catering system.

July 1989

Microamerica

Unisys signed a value-added distributor (VAD) agreement with Microamerica. The agreement is expected to increase Unisys sales of UNIX-based multiuser systems and PCs through the third party channel over the next five years significantly.

June 1989

Tech Data Corp.

Unisys signed a VAD arrangement with Tech Data. Under the agreement, Tech Data will resell Unisys' Intel 80386-based U 6000 Series of UNIX processors and the PW2 line to its customers.

March 1989

SPSS Inc.

Unisys and SPSS agreed to a strategic alliance to provide statistical and graphics software solutions on Unisys hardware.

1988

Mitsui & Co.

The two companies entered into a joint venture to form Nihon Unisys Ltd.

MERGERS AND ACQUISITIONS

December 1988

Convergent, Inc.

Convergent, acquired by Unisys, is a leader in distributed and networking solutions.

January 1988

Timeplex, Inc.

Timeplex, acquired by Unisys, is a leading worldwide supplier of wide area voice/data communication networks.

KEY OFFICERS

Michael W. Blumenthal

Chairman of the board, chief executive officer

Curtis A. Hessler

Executive vice president, chief financial officer

James A. Unruh

President

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of U.S. Dollars, except Per Share Data)

Balance Sheet	1986	1987	1988
Total Current Assets	\$4,537	\$5,334	\$5,816
Cash	56	55	26
Receivables	1,807	2,915	2,785
Marketable Securities	0	0	0
Inventory	1,952	1,856	2,484
Other Current Assets	722	508	521
Net Property, Plants	\$2,192	\$1,858	\$2,003
Other Assets	\$2,680	\$3,399	\$3,716
Total Assets	\$9,409	\$10,591	\$11,535
Total Current Liabilities	\$3,342	\$3,666	\$3,432
Long-Term Debt	\$2,226	\$2,377	\$3,078
Other Liabilities	\$13	\$3	\$70
Total Liabilities	\$5,581	\$6,046	\$6,580
Total Shareholders' Equity	\$3,828	\$4,545	\$4,955
Converted Preferred Stock	1432	1426	1429
Common Stock	231	747	797
Other Equity	486	355	294
Retained Earnings	1,679	2,017	2,435
Total Liabilities and Shareholders' Equity	\$9,409	\$10,591	\$11,535
Income Statement	1986	1987	1988
Revenue	\$7,432	\$9,713	\$9,902
U.S. Revenue	4,244	5,476	5,368
Non-U.S. Revenue	3,188	4,237	4,534
Cost of Sales	\$5,118	\$5,639	\$5,589
R&D Expense	\$441	\$597	\$713
SG&A Expense	\$1,905	\$2,378	\$2,527
Capital Expense	\$550	\$719	\$673
Pretax Income	(\$89)	\$951	\$959
Pretax Margin (%)	(1.20)	9.79	9.68
Effective Tax Rate (%)	N/A	39.00	29.00
Net Income	(\$43)	\$578	\$681
Shares Outstanding, Millions	138,400	149,200	158,600
Per Share Data			
Earnings	(\$0.54)	\$2.93	\$3.27
Dividends	\$0.87	\$0.91	\$0.98
Book Value	\$17.29	\$20.87	\$22.11

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of U.S. Dollars, except Per Share Data)

Key Financial Ratios	1986	1987	1988
<i>Liquidity</i>			
Current (Times)	1.36	1.45	1.69
Quick (Times)	0.77	0.95	0.97
Fixed Assets/Equity (%)	57.26	40.88	40.42
Current Liabilities/Equity (%)	87.30	80.66	69.26
Total Liabilities/Equity (%)	145.79	133.03	132.80
<i>Profitability (%)</i>			
Return on Assets	-	5.78	6.16
Return on Equity	-	13.81	14.34
Profit Margin	(0.58)	5.95	6.88
<i>Other Key Ratios</i>			
R&D Spending % of Revenue	5.93	6.15	7.20
Capital Spending % of Revenue	7.40	7.40	6.80
Employees	98,300	92,500	93,000
Revenue (\$K)/Employee	\$75.60	\$105.00	\$106.47
Capital Spending % of Assets	5.85	6.79	5.83

Source: Unisys Corporation
Annual Reports and
Forms 10-K
Dataquest
January 1990

United Microelectronics Corporation

No. 3 Industrial Park
Science-Based Industrial Park
Hsinchu City, Taiwan
Telephone: (886) 035-773131
Fax: (886) 035-770-440
Dun's Number: 65-600-8133

Date Founded: 1980

CORPORATE STRATEGIC DIRECTION

United Microelectronics Corporation (UMC) is Taiwan's largest and first independently owned integrated circuit (IC) manufacturer. In August 1988, United Microelectronics Corporation began construction of a new R&D office building in Taiwan. By December 1988, UMC had developed a 1-micron 256K SRAM and a 1Mb ROM capability. Soon after, company officials decided to join forces with the government-supported Industrial Technology Research Institute's Electronics Research and Service Organization (ERSO) to build a submicron research plant in Hsinchu in September 1991.

UMC places strong emphasis on R&D, reinvesting 11 percent of annual earnings for research and 25 percent in equipment and facilities. A new plant with a maximum production capacity of 30,000 net 6-inch wafers per month was built in 1989. The facility can produce ULSIs at the 0.65-micron level, and it has a state-of-the-art 38,200-square-foot Class 10 (0.1 micron) clean room.

The semiconductor strategic directions of UMC are to support an international network that provides complete customer service from original product conception to delivery, to utilize mass-production capabilities efficiently to fill all customer needs and keep prices competitive, and to give continuous support to keep customers ahead of their competition. UMC expanded its international network in 1989 by opening marketing branches in Holland and Japan. Currently, UMC employs over 1,800 people worldwide.

UMC's product structure places the most emphasis on microcomputer peripherals and memory products. The company currently manufactures products in the following areas: microprocessor ICs, microperipheral

ICs, microcontroller ICs, SRAMs, ROMs, calculator/data bank ICs, commercial ICs, and DSP. UMC is also cooperating with other companies to develop advanced memory devices and peripherals.

According to Dataquest estimates for 1990 semiconductor market share, UMC ranked 21st with 1.3 percent of the Asia/Pacific-ROW market share.

UMC's comprehensive financial statements are not available at this time.

BUSINESS SEGMENT STRATEGIC DIRECTION

Semiconductors

Dataquest's 1990 estimates for Asia/Pacific-ROW rank UMC 11th in MOS digital with a market share of 2.5 percent; 20th in MOS memory with 1.8 percent; 16th in MOS microcomponents with 2.1 percent; and 4th in MOS logic with 4.6 percent. With the exception of MOS microcomponents, revenue for each of these products decreased in 1990 in comparison with 1989.

UMC's first 50-MHz 80486 PC AT chip, the UM82C480, is capable of delivering 22.4-mips performance and is one of today's fastest RISC-based engineering workstations.

Further Information

For further information about the company's business segments, please contact Dataquest's Semiconductors Asia service.

1991 SALES OFFICE LOCATIONS

North America—1
Europe—1
Japan—1
Asia/Pacific-ROW—1

MANUFACTURING LOCATIONS

Asia/Pacific-ROW

Hsinchu City, Taiwan
Semiconductor products

SUBSIDIARIES

United Microelectronics Corporation does not have any subsidiaries.

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Intel Corporation

Under a five-year agreement between UMC and Intel, UMC will manufacture EPROMs and flash products under the Intel label.

Light-On

UMC, Light-On, and 10 other Taiwanese electronics companies are working together to develop a local source of liquid crystal displays for laptop and notebook computers using licensed technology from Japan.

MERGERS AND ACQUISITIONS

United Microelectronics Corporation has not made any mergers or acquisitions recently.

KEY OFFICERS

Chung-Mou Chan
Chairman

Hsing-Cheng Tsao
President

I. D. Liu
Executive vice president, Operations

John Hsuan
Executive vice president, Marketing

PRINCIPAL INVESTORS

Bank of Communication—7.52 percent
Ministry of Economic Affairs—7.34 percent
Yao Hua Glass Management Committee—
6.11 percent
Kuang Hua Securities Investment & Trust—
5.53 percent
Teco Electric & Machinery—5.49 percent

FOUNDERS

Information is not available.

United Microelectronics Corporation

Table 1

**Estimated Worldwide Semiconductor Revenue by Calendar Year
(Millions of Dollars)**

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Total Semiconductor	23	27	33	69	91	106
Total Integrated Circuit	23	27	33	69	91	106
Bipolar Digital (Function)						
Bipolar Digital Memory						
Bipolar Digital Logic						
MOS (Function)						
MOS Memory	5	6	8	5	6	12
MOS Microdevices	1	4	7	18	28	35
MOS Logic	17	17	18	46	57	59
Analog						
Total Discrete						
Total Optoelectronic						

Table 2

**United Microelectronics Corporation
1988 Worldwide Ranking by Semiconductor Markets
(Revenue in Millions of Dollars)**

	<u>1988</u>	<u>1987</u>	<u>1988</u>	<u>Sales</u>	<u>Industry</u>
	<u>Rank</u>	<u>Rank</u>	<u>Revenue</u>	<u>% Change</u>	<u>% Change</u>
				<u>1987-1988</u>	<u>1987-1988</u>
Total Semiconductor	57	52	\$106	16.5%	33.0%
Total Integrated Circuit	48	44	\$106	16.5%	37.4%
MOS (Function)					
MOS Memory	41	41	12	100.0%	93.1%
MOS Microdevices	28	27	35	25.0%	39.9%
MOS Logic	32	30	59	3.5%	29.2%

Source: Dataquest
December 1989

United Microelectronics Corporation

Table 3

**United Microelectronics Corporation
Estimated 1988 Semiconductor Revenue by Geographic Region
(Millions of Dollars)**

	<u>U.S.</u>	<u>Japan</u>	<u>Europe</u>	<u>ROW</u>
Total Semiconductor	\$16	\$2	\$6	\$82
Total Integrated Circuit	\$16	\$2	\$6	\$82
Bipolar Digital (Function)				
Bipolar Digital Memory				
Bipolar Digital Logic				
MOS (Function)	\$16	\$2	\$6	\$82
MOS Memory	7			5
MOS Microdevices	9		4	22
MOS Logic		2	2	55
Analog				
Total Discrete				
Total Optoelectronic				

Source: Dataquest
December 1989

United Microelectronics Corporation

No. 3 Industrial Park
East Third Rd.
Science-Based Industrial Park
Hsinchu City, Taiwan, ROC
Telephone: (886) 035-773131
Fax: (886) 035-774767
Dun's Number: 65-600-8133

Date Founded: 1980

CORPORATE STRATEGIC DIRECTION

In August 1988, United Microelectronics Corporation (UMC) began construction of a new R&D office building in Taiwan. By December 1988, UMC had developed a 1-micron 256K SRAM and a 1Mb ROM capability. Soon afterwards, Company officials decided to join forces with the government-supported Industrial Technology Research Institute's Electronics Research and Service Organization (ERSO) to build a submicron research plant in Hsinchu in September 1989. UMC plans to complete its third wafer fab in 1991. Total investment in the fab is expected to reach NT\$9,078 million (US\$340 million) by the time it is complete.

The semiconductor strategic directions of UMC are to support an international network that provides complete customer service from original product conception to delivery, to utilize mass production capabilities efficiently to fill all customer needs and keep prices competitive, to give continuous support to keep customers ahead of their competition, and, after completing the third wafer fab in 1991, to consider production of 1Mb DRAMs.

Total revenue for fiscal year ended December 1989 reached NT\$5.5 billion (US\$210 million), an increase of 65 percent. UMC employs approximately 966 people worldwide.

R&D expenditure totaled NT\$2,296 million (US\$86 million) for fiscal 1989, showing a 26.5 percent increase over the previous year. In fiscal 1989, the R&D expenditure represented 8.7 percent of total revenue.

UMC's comprehensive financial statements are not available at this time.

BUSINESS SEGMENT STRATEGIC DIRECTION

Semiconductors

According to Dataquest, UMC's major lines of business are MOS memory, microprocessors, and logic. During 1989, memory devices had the largest growth, representing 39 percent share of semiconductor sales, up from 11 percent share in 1988. Logic and microprocessors represent 41 and 20 percent of semiconductor sales, respectively.

Further Information

For further information about the Company's business segments, please contact the appropriate Dataquest industry service.

1989 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

Asia/Pacific

Hsinchu City, Taiwan, ROC
LSI, VLSI devices (memory, microcontrollers, graphics ICs)

SUBSIDIARIES

Information is not available.

**ALLIANCES, JOINT VENTURES, AND
LICENSING AGREEMENTS**

Information is not available.

MERGERS AND ACQUISITIONS

Information is not available.

KEY OFFICERS

Dr. Morris Chang
Chairman of the board

Robert H. C. Tsao
President

I. D. Liu
Executive vice president, Operations

John Hsuan
Executive vice president, Marketing

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Information is not available.

United Telecommunications, Inc.

2330 Shawnee Mission Parkway
Westwood, Kansas 66205
Telephone: (913) 676-3000
Fax: (913) 676-3670
Dun's Number: 00-694-2395

Date Founded: 1938

CORPORATE STRATEGIC DIRECTION

United Telecommunications, Inc., is a diversified corporate holding company with subsidiaries in a number of telecommunications markets. The Company owns all of the common stock of its local communications services subsidiaries and of various other subsidiaries. United is also the majority shareholder of the nation's third largest long distance telephone company, US Sprint Communications Company. In addition to its local and long distance communications services, United, through its other principal subsidiaries, distributes telecommunications products, provides directory publishing services, and designs and manufactures interactive computer graphics hardware and software.

US Sprint, United's main subsidiary, is a long distance voice and data communications service. US Sprint was established in 1986 as a joint venture between United and GTE, each owning 50 percent. In 1989, United purchased 30.1 percent of US Sprint from GTE through its subsidiary, UCOM Inc. Concurrently, the partnership was converted from a general partnership to limited partnership with United as the sole general partner. United began consolidation of US Sprint's financial statements into its own in 1988 as a result of United assuming management control. Furthermore, in early 1990, United proposed to acquire the remaining 19.9 percent of US Sprint for \$500 million* and voted to change its name from United Telecommunications, Inc., to Sprint Corporation.

As a result of the closer alignment between the two entities, certain corporate operations and management positions have become redundant. In response, management has begun to merge divisions and subsidiaries and redefine management roles. One of management's first such actions was to merge Telenet

Communications, a voice-data-video networks company, into its parent company, US Sprint. This eliminated redundant service-sale operations and improved US Sprint's ability to provide custom-designed integrated voice-data-video networks.

Currently, the Company is segmented into three divisions: long distance communications services (57 percent of total Company revenue), local communications services (35 percent of total Company revenue), and complementary services (8 percent of total Company revenue). The long-distance communications service comprises the operations of US Sprint and Sprint Services. In addition, in 1989, US Sprint purchased Private Transatlantic Telecommunications Systems, Inc. (PSI), which owns a 50 percent interest in the PTAT trans-Atlantic fiber-optic cable system. The cable system became operational in November 1989, giving US Sprint opportunities for growth in the international marketplace.

The Company also reinforced its global presence by formalizing the creation of Sprint International. With this establishment and with the 50 percent purchase of the fiber-optic trans-Atlantic undersea cable system, the Company aims to provide all international voice, video, and data services; provide worldwide network and messaging systems and systems integration; and develop and manufacture products that support those systems and services.

Some of the main concerns of the long distance industry involve the federal government, whose stated objective is to replace current regulation with competition in the long distance service markets. The major issues include lessening the regulation of AT&T, equal access and access charges, and possible elimination of some of the restrictions on the Bell operating companies (BOCs) set forth in the Modified Final Judgment (MFJ).

*All dollar amounts are in US dollars.

The following is a synopsis of additional significant events that occurred in 1989:

- United ended its participation in the National Exchange Carrier Association's (NECA's) carrier common line pool. Participation in NECA was mandatory for all local exchange companies until April 1989. By ending its participation, United has gained some pricing flexibility.
- US Sprint, the Company's main subsidiary, began to provide service under its 40 percent share of the US government's multibillion dollar FTS2000 communications contract. As anticipated by the Company, the contract did not provide significant revenue in 1989. However, contract revenue is expected to increase significantly during 1990 as the transition to the US Sprint network is completed during the first half of the year and as opportunities to expand services under the contract become available.
- The Company increased its international partnerships and distributors to more than 40 and its private network customers to more than 150.
- The Company was awarded a number of large contracts to provide global data networks. These included global data networks for two Swiss pharmaceutical companies, East Africa's first public data network in Kenya, a public data network in South Korea, and private data networks in Canada, the United Kingdom, and Germany.

United's consolidated net sales increased 16 percent to \$7.5 billion in fiscal 1989 from \$6.5 billion in fiscal 1988. Much of the growth is attributable to US Sprint's 27 percent increase in revenue over 1988. Income from continuing operations increased 156 percent to \$362.9 million in fiscal 1989 from \$141.8 million in fiscal 1988. However, net income decreased 29 percent to \$362.9 million in fiscal 1989 from \$508.9 million in fiscal 1988. The decrease in 1989 is primarily the result of a \$367.1 million extraordinary gain recorded in 1988 as the result of the sale of United TeleSpectrum, Inc. Without the extraordinary gain, net income would have shown an increase of 156 percent.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this background.

BUSINESS SEGMENT STRATEGIC DIRECTION

Long Distance Telecommunications

During 1989, the Company captured 8.5 percent of the US long distance telecommunications market with net revenue increasing 27 percent to \$4.3 billion in fiscal 1989 from \$3.4 billion in fiscal 1988. The division's net revenue accounted for 57 percent of United's total revenue. The Company's main competitors in the long distance service market are AT&T and MCI.

One of US Sprint's leading products is The Meeting Channel, which is offered by Sprint International. The Meeting Channel is a full-service provider of teleconferencing services that may be accessed by buying, renting, or leasing teleconferencing equipment. There are currently over 500 videoconferencing rooms in Sprint's network. Dataquest expects the videoconferencing market to expand slowly, with the international market experiencing the most significant growth.

In 1989, the Company expanded its long distance product offering capabilities in 1989 by acquiring Long Distance/USA. This Honolulu-based telecommunications company offers United the experience and knowledge necessary to enter the \$3 billion hotel/motel telecommunications market. United is now able to combine the strengths of US Sprint with Long Distance/USA to offer a set of products and services specifically designed for the hotel/motel market, including real-time bill-to-room capability, credit card validation, and foreign language service.

Local Telecommunications

During 1989, United captured a 12.1 percent share of the domestic, non-regional holding company (RHC), local telephone service market and a 2.9 percent share of the total local telephone service market, with net revenue increasing 5.1 percent to \$2.6 billion in fiscal 1989 from \$2.5 billion in fiscal 1988. The division's net revenue accounted for 35 percent of United's total revenue. The Company's main competitors are the seven RHCs, Contel, GTE, and SNET.

United's local communications services comprise 16 rate-regulated telephone operating companies that provide local and intrastate residential and commercial telephone service, private line, and data transmission services to a client base of approximately 3,000 communities in 17 states. In 1989, the local communications services segment exchanged all of its assets in Iowa and Arkansas and certain of its properties in Missouri for similar assets owned by Contel in Kansas. The transaction reduced United's local telecommunications presence from 19 to 17 states.

Complementary Services

United's complementary services and other segments primarily comprise three subsidiaries: North Supply Company, DirectoriesAmerica, Inc., and Megatek Corporation. North Supply is a nationwide distributor of voice and data equipment and security and alarm systems. It distributes products of more than 700 manufacturers to approximately 11,000 customers. The subsidiary serves the United telephone systems, other independent telephone companies, interconnects, national/government accounts, security/alarm dealers, electrical utilities and contractors, and RHCs. North Supply also provides warehousing and physical distribution services to several RHC subsidiaries. North Supply's net revenue increased 6 percent to \$532 million in fiscal 1989 from \$503 million in fiscal 1988. The subsidiary's net revenue accounted for approximately 5 percent of United's total revenue.

DirectoriesAmerica, formed in May 1986, is the tenth largest directory publisher in the United States. The subsidiary publishes and markets white-and-yellow-pages telephone directories in the franchised areas of United's local communications services companies and various other areas. It currently publishes 270 directories in 21 states. DirectoriesAmerica's net revenue increased 17.9 percent to \$215 million in fiscal 1989 from \$183 million in fiscal 1988. The subsidiary's net revenue accounted for approximately 3 percent of United's total revenue.

Megatek, formed in 1972, designs and manufactures customized high-performance graphics workstations, terminals, and software used in government applications including command, control, communication, and intelligence (C3I), visual simulation, training, and real-time data analysis. Megatek also serves commercial markets requiring high-performance graphics for modeling and visualization. Specific revenue figures for Megatek are not available.

Further Information

For additional information about the Company's business segments, please contact the appropriate Dataquest industry service.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$3,083.8	\$3,012.7	\$2,935.1	\$6,493.0	\$7,549.0
Percent Change	-	(2.31)	(2.58)	121.22	16.26
Capital Expenditure	\$1,072.8	\$955.8	\$695.5	\$1,438.8	\$1,389.0
Percent of Revenue	34.79	31.73	23.70	22.16	18.40
Number of Employees	27,400	23,200	23,300	37,700	41,400
Revenue (\$K)/Employee	\$112.55	\$129.86	\$125.97	\$172.23	\$182.34
Net Income	\$20.8	\$180.5	(\$51.5)	\$508.9	\$362.9
Percent Change	-	767.79	(128.53)	1,088.16	(28.69)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$1,766.1	\$1,852.5	\$1,930.1	\$2,000.3	
Quarterly Profit	\$76.4	\$90.5	\$94.6	\$101.4	

Source: United Telecommunications, Inc.
Annual Reports and Forms 10-K
Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	100.00	100.00	100.00	100.00	100.00
International	0	0	0	0	0

Source: United Telecommunications, Inc.
Annual Reports and Forms 10-K
Dataquest (1990)

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988	1989
Direct Sales	100.00	100.00
Indirect Sales	0	0

Source: Dataquest (1990)

1989 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

Information is not available.

SUBSIDIARIES

North America

Alexandria Telephone Cable Co.
 AmeriSource Inc.
 Beslow Associates, Inc.
 Carolina Telephone and Telegraph Co.
 Carolina Telephone Long Distance Inc.
 Consortium Communications International, Inc.
 DirectoriesAmerica Inc.
 Florida Telephone Corporation
 Foresight Systems Inc.
 I.S.A. Inc.
 Information Systems of America Inc.
 Joint Underground Locating Services Inc.
 Megatek Corporation
 Megatek (Delaware) Corporation
 Megatek International Inc.
 Megatek Ltd.
 Megatek (V.I.) Inc.
 NSC Advertising Inc.
 North Supply Company
 North Supply Company of Lexena
 North Supply International Ltd.
 Northstar Transportation Inc.
 Premier Telecom Products Inc.
 Private Transatlantic Telecommunication
 Systems, Inc.
 Sharon Aviation Inc.
 Sprint International Communications Corporation
 Sprint International Inc.
 Sprint International Support Services Inc.
 Sprint/United Management Company
 The Winter Park Telephone Company
 UCOM Inc.
 Unco Inc.
 United Business Communications Inc.
 United Business Information Inc.
 United Data Services Inc.

United Information Services Inc.
 United Inter-Mountain Telephone Co.
 United Telecommunication, Inc (Delaware)
 United Telecommunications Co. Inc. (New York)
 United Telecommunications Inc. (Missouri)
 United TeleDirect Group Inc.
 United Telephone Communication Systems Inc.
 United Telephone Communications Services of
 Ohio Inc.
 United Telephone Co. of Arkansas
 United Telephone Co. of Florida
 United Telephone Co. of Indiana Inc.
 United Telephone Co. of Iowa
 United Telephone Co. of Kansas
 United Telephone Co. of Minnesota
 United Telephone Co. of Missouri
 United Telephone Co. of New Jersey
 United Telephone Co. of Ohio
 United Telephone Co. of Pennsylvania
 United Telephone Co. of Texas Inc.
 United Telephone Co. of the Carolinas
 United Telephone Co. of the Northwest
 United Telephone Co. of the West
 United Telephone Long Distance (South Carolina)
 United Telephone Long Distance Co. of the Midwest
 United Telephone Long Distance Inc. (Florida)
 United Telephone Long Distance Inc. (Ohio)
 United Telephone Long Distance Inc. (Pennsylvania)
 United Telephone Long Distance Inc. (Tennessee)
 United Telephone System Inc.
 United Teleservices Inc.
 US Sprint Communications Company, L.P.
 US Sprint Communications Co. of New Hampshire
 US Sprint Communications Co. of Virginia
 US Sprint Trading Company (US Virgin Islands)
 USST of Texas Inc.
 US Telecom Inc.
 UT Transition Corporation
 UTLD Inc.
 Utelecom Inc.
 Winpar Financial Corp.
 Yakima Paging and Cellular Inc.

Europe

EB Telenet A/S (Norway)
 Plessey Telenet B.V. (Netherlands)
 Plessey-Telenet Ltd. (United Kingdom)
 Sprint International Data Services, Inc.
 (United Kingdom)
 Sprint International Espana S.A. (Spain)
 Sprint International Ltd. (United Kingdom)
 Sprint Telemail Services S.A. (Switzerland)

TCC Communications Ltd. (United Kingdom)
Telemail Datenservice GmbH (Germany)
United Telecommunications (Finance) N.V.
(Netherlands)

Asia/Pacific

Ace Telemail International Inc. (Japan)
Sprint International Communications Hong Kong Ltd.
(Hong Kong)

**ALLIANCES, JOINT VENTURES, AND
LICENSING AGREEMENTS**

1990

Contel Corporation

United and Contel agreed to exchange assets of certain telephone properties in four Midwestern states.

Intellicall, Inc.

US Sprint agreed to provide Intellicall's dealers with access to Sprint's network.

Data Communications Corporation of Korea

Sprint has agreed to build a public data communications network in South Korea.

State Street Bank of Boston

State Street Bank has agreed to issue Sprint's Visa cards nationwide.

US IntelliCo Networks, Inc. (USIN)

Sprint agreed to provide billing and collection services to USIN.

Eicon Technology

Sprint agreed to resell Eicon's gateway and bridge products.

Central Telegraph of the Soviet Ministry of Posts and Telecommunications and the Institute of Electronics and Computer Sciences of the Latvian Academy of Sciences

These two Soviet entities and Sprint formed Telenet USSR, which will undertake a variety of telecommunications activities in the Soviet Union.

Elektrisk Bureau (EB) of Oslo, Norway

EB and Sprint International formed a Norwegian joint venture company, EB Telenet A/S, to sell and distribute data communications products and systems in Scandinavia.

MATRIX Marketing, Inc.

Sprint agreed to provide a Virtual Private Network (VPN) to six locations along the International 800 Service from France to the United Kingdom.

US Department of Defense

Sprint agreed to provide real-time weather information and graphics to US Air Force bases throughout the continental United States.

1989

Japan Credit Bureau (JCB) of Tokyo

JCB and US Sprint reached an agreement whereby JCB cardholders can access a toll-free number from anywhere in the United States to reach a US Sprint bilingual operator for assistance in completing domestic and international calls.

Compression Labs Inc. (CLI)

US Sprint signed an agreement with CLI to provide turnkey videoconferencing services. CLI will provide the equipment for installation on the customers' premises and tap into Sprint's carrier network.

Telefonos de Mexico

Sprint International initiated direct voice and data service to Mexico through an agreement with Telefonos de Mexico.

International Digital Communications

Sprint agreed to provide voice service between the United States and Japan.

Graphics Performance Characterization Committee

Megatek, a United subsidiary, joined the committee, whose goal is to develop a set of benchmark tools that will provide an industry standard for characterizing the speed of different workstations and system run-specific applications.

Hughes Simulation Systems, Inc.

Megatek will provide multiple units of its cockpit display system to Hughes for integration into the US Marine Corp's MV22A Operational Flight Trainers and Aircraft System Trainers.

BIMS A/NV, Engineering Mechanics Corp., Frame Technology Corp., Quadratron Systems Inc., and Quantitative Technology Corp.

These five software companies have formed partnerships with Megatek to port their software packages to Megatek's Sigma family of graphics workstations.

Dynamic Graphics, Merit Technology, Sherrill-Lubinski, and Virtual Prototypes, Inc.

These four software companies have agreed to bring bundled high-performance graphics solutions to the mission planning, mapping, C3I, and prototype markets.

Sun Microsystems

Megatek has agreed to port and remarket the Sun-PIGS graphics software library.

Singapore Computer Systems Pte. Ltd. (SCS)

SCS has agreed to distribute all Megatek products in several Asian markets.

Radan Computational Limited

Radan and Megatek have formed an OEM agreement whereby Radan software will be packaged with Megatek hardware. The resulting product will be marketed throughout Europe.

Century Research Center Corporation (CRC)

CRC agreed to distribute Megatek products in Japan.

MERGERS AND ACQUISITIONS

1990

Consortium Communications Inc.

Sprint International acquired the remaining 34 percent of Consortium's shares. Telenet purchased an initial interest in 1986.

US Sprint

United Telecom purchased the remaining 19.9 percent share in US Sprint from GTE.

1989

US Sprint

United purchased an additional 30.1 percent share in US Sprint from GTE, giving United the controlling interest.

Long Distance/USA

United purchased Long Distance/USA to extend its telephone service capabilities to the hotel/motel market.

Private Transatlantic Telecommunication Systems, Inc. (PSI)

United purchased PSI to gain access to the PTAT trans-Atlantic fiber-optic cable system. PSI owns 50 percent of the system.

KEY OFFICERS

William T. Esrey

Chairman, president and chief executive officer

Curtis G. Fields

President and chief operating officer, Local Telecommunications Division

Ronald LeMay

President and chief operating officer, Long Distance Division

J. Richard Delvin

Executive vice president, general counsel, External Affairs

Arthur B. Krause

Executive vice president, chief financial and information officer

David D. King

Executive vice president, chief human resources, technology, and planning officer

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Information is not available.

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December 31
(Millions of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$887.3	\$830.8	\$808.3	\$2,125.0	\$1,509.2
Cash	110.2	108.2	74.4	617.1	114.8
Receivables	513.5	439.0	450.4	1,180.9	1,083.1
Inventory	113.6	82.2	86.7	95.6	124.7
Other Current Assets	150.0	201.4	196.8	231.4	186.6
Net Property, Plants	\$4,718.4	\$4,280.7	\$4,344.1	\$7,318.4	\$7,884.9
Other Assets	\$161.7	\$1,267.6	\$1,406.0	\$373.5	\$427.2
Total Assets	\$5,767.4	\$6,379.1	\$6,558.4	\$9,816.9	\$9,821.3
Total Current Liabilities	\$1,059.8	\$784.4	\$925.1	\$2,148.9	\$2,278.8
Long-Term Debt	\$1,947.7	\$2,683.3	\$3,047.6	\$3,674.8	\$3,747.0
Other Liabilities	\$1,023.2	\$1,140.9	\$1,018.7	\$1,118.2	\$1,216.9
Minority Interest in Net Assets	-	-	-	\$958.9	\$464.8
Total Liabilities	\$4,030.7	\$4,608.6	\$4,991.4	\$7,900.8	\$7,707.5
Total Shareholders' Equity	\$1,736.7	\$1,770.5	\$1,567.0	\$1,916.1	\$2,113.8
Converted Preferred Stock	44.3	42.7	40.9	38.9	36.9
Common Stock	239.8	246.4	251.4	256.6	517.8
Other Equity	780.8	819.4	857.5	892.2	676.3
Retained Earnings	671.8	662.0	417.2	728.4	882.8
Total Liabilities and Shareholders' Equity	\$5,767.4	\$6,379.1	\$6,558.4	\$9,816.9	\$9,821.3
Income Statement	1985	1986	1987	1988	1989
Revenue*	\$3,083.8	\$3,012.7	\$2,935.1	\$6,493.0	\$7,549.0
Total Operating Expenses	\$2,926.3	\$2,424.3	\$2,255.8	\$6,240.2	\$6,639.0
Capital Expense	\$1,072.8	\$955.8	\$695.5	\$1,438.8	\$1,389.0
Pretax Income	(\$10.5)	\$266.3	(\$135.8)	\$748.7	\$528.3
Pretax Margin (%)	(0.34)	8.84	(4.63)	2.29	7.00
Effective Tax Rate (%)	136.00	13.00	69.00	34.00	31.00
Net Income	\$20.8	\$180.5	(\$51.5)	\$508.9	\$362.9
Shares Outstanding, Millions	191.8	197.1	201.1	205.2	207.1
Per Share Data					
Earnings	\$0.09	\$0.91	(\$0.28)	\$2.48	\$1.72
Dividend	\$0.96	\$0.96	\$0.96	\$0.96	\$0.97
Book Value	\$9.05	\$8.98	\$7.79	\$9.34	\$10.21

Table 4 (Continued)
 Comprehensive Financial Statement
 Fiscal Year Ending December 31
 (Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	0.84	1.06	0.87	0.99	0.66
Quick (Times)	0.73	0.95	0.78	0.94	0.61
Fixed Assets/Equity (%)	271.69	241.78	277.22	381.94	373.02
Current Liabilities/Equity (%)	61.02	44.30	59.04	112.15	107.81
Total Liabilities/Equity (%)	232.09	260.30	318.53	412.34	364.63
<i>Profitability (%)</i>					
Return on Assets	-	2.97	(0.80)	6.22	3.70
Return on Equity	-	10.29	(3.09)	29.22	18.01
Profit Margin	0.67	5.99	(1.75)	7.84	4.81
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	NA	NA	NA	NA	NA
Capital Spending % of Revenue	34.79	31.73	23.70	22.16	18.40
Employees	27,400	23,200	23,300	37,700	41,400
Revenue (\$K)/Employee	\$112.55	\$129.86	\$125.97	\$172.23	\$182.34
Capital Spending % of Assets	18.60	14.98	10.60	14.66	14.14

*During 1988 the method of accounting for US Sprint changed from the equity basis to the consolidated basis; therefore, the operations of US Sprint are included in the financial statements of 1988 and 1989.
 NA = Not available

Source: United Telecommunications, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

United Telecommunications, Inc.

2230 Shawnee Mission Parkway

Westwood, Kansas 66205

Telephone: (913) 676-3000

Fax: (913) 676-3281

Dun's Number: 00-694-2395

Date Founded: 1938

CORPORATE STRATEGIC DIRECTION

United Telecommunications, Inc. (United) operates local and long distance communications services. It also owns a number of subsidiaries that operate in various telecommunications markets. Formerly, US Sprint Communications Company (US Sprint), United's long distance communications service, was jointly owned by US Telecom, Inc. (a wholly owned subsidiary of United) and GTE Communications Services, Inc. (a wholly owned subsidiary of GTE Corporation). In July 1986, the operations of US Telecom, GTE Sprint, and GTE Telenet were combined to form an equally owned partnership, US Sprint. Effective January 3, 1989, United acquired an additional 30.1 percent interest in US Sprint, which increased its ownership to 80.1 percent. At that time, United assumed the management responsibilities for US Sprint.

Consolidated net revenue for United increased from \$2.9 billion* in 1987 to \$6.5 billion in 1988. This substantial revenue increase during 1988 is the result of a change in accounting methods, from an equity basis to a consolidated basis, used to record US Sprint's operations.

Net operating revenue for US Sprint increased from \$2.7 billion in 1987 to \$3.4 billion in 1988, a 27.4 percent increase. The primary reason for the growth of operating revenue was an increase in calling volume. Billable minutes increased from 12.9 billion in 1987 to 15.6 billion in 1988, a 20.9 percent increase.

The inclusion of revenue generated by US Sprint was not the only item to affect the performance of consolidated revenue favorably. Gains in the local communications services and in United's complementary businesses also supported United's current revenue position.

*All dollar amounts are in U.S. dollars.

Revenue contributed by local communications services increased from \$2.4 billion in 1987 to \$2.5 billion in 1988, a growth rate of 4.3 percent. The 1987 growth rate for the local communications services was 1.4 percent. Toll service and access charges continued to represent more than 50 percent of total local communications services revenue.

United finished 1988 profitably with a net income of \$508.9 million. This positive performance compares favorably to a net loss in 1987 of \$51.5 million. United achieved an after-tax profit margin of 7.8 percent at the end 1988. The primary determinant of profitability in 1988 was an after-tax gain of \$367.1 million on the \$775 million sale of United's cellular mobile telephone and paging business.

After a \$195 million pretax (\$64 million after-tax) business restructuring charge in 1988, US Sprint reported an operating loss of \$409 million that year. This operating loss adversely affected the 1988 net income. US Sprint also recorded operating losses for the last six months of 1986 and the entire year of 1987 amounting to \$334 million and \$1.1 billion, respectively.

United is streamlining its consolidated operations in an effort to concentrate on its core business: local and long distance operations. United's local communications services provide local and intrastate residential and commercial telephone services and private line and data transmission services to a client base of approximately 3,000 communities in 19 states. The local communication services are a consolidation of 16 telephone companies, which also provide interstate access services to interexchange carriers.

United's long distance services consist of the operations of US Sprint, the nation's third largest long distance telephone company. During 1988, all of US Sprint's customers were moved to an all digital, all

fiber-optic network system. This fiber-optic network had supported 15 percent of US Sprint's customers at the end of 1986 and 88 percent at the end of 1987. US Sprint is currently in the process of completing this 23,000-mile nationwide communications network. At the end of 1988, 20,000 miles were in place. Also during 1988, United sold two of its subsidiaries, United TeleSpectrum, a cellular and paging business; and United TeleSentinel, an electronic security management company.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Telecommunications

United reports revenue generation from three separate categories: local communications services, long distance communications services, and complementary businesses. Local communications services include Local Service, Network Access, and Toll Service. United Telephone Long Distance (UTLD) was formed in 1987 to resell long distance services and allow customers to purchase services from an affiliate of their local telephone companies. Dataquest estimates that UTLD's local telephone service market share for 1988 was 10.8 percent.

Long Distance Communications

US Sprint is United's long distance communications telephone company. During October 1988, United created a new business unit, Sprint Services, which provided operator services for US Sprint during 1989.

Sprint Gateways, a division of Sprint Services, plans to establish a series of "900" services that will use US Sprint's fiber-optic network.

Data Communications

Telenet Communications Corporation, US Sprint's data communications company, was formed in 1972 for the single purpose of providing packet switching. Currently, Telenet has the largest U.S. installed data network and provides connections to 88 countries.

Service

United subsidiary North Supply is a wholesale distributor of telecommunications products to more than 600 manufacturers. Distributed products include PABX systems, telephones, transmission systems, and security and alarm equipment. Its operating revenue grew from \$451.9 million in 1987 to \$502.5 million in 1988.

DirectoriesAmerica is the tenth largest publishing company in the country. It markets white-and-yellow-pages telephone directories to United's local communications service companies. Its revenue increased from \$158 million in 1987 to \$183 million in 1988. Its 1987 revenue growth rate was 61 percent, the direct result of the acquisition of two directory companies during 1987; National Suburban Directories and Community Telephone Directories (both headquartered in Chicago).

Further Information

For further information about the Company's business segments, please contact the appropriate industry service.

Table 1
Five-Year Corporate Highlights (Millions of U.S. Dollars)

	1984	1985	1986	1987	1988
Five-Year Revenue	\$2,788.8	\$3,083.8	\$3,012.7	\$2,935.1	\$6,493.0
Percent Change	-	10.58	(2.31)	(2.58)	121.22
Capital Expenditure	\$684.3	\$1,073.1	\$956.5	\$695.5	\$1,432.3
Percent of Revenue	24.54	34.80	31.75	23.70	22.06
Number of Employees	27,600	27,400	23,200	23,300	37,700
Revenue (\$K)/Employee	\$101.04	\$112.55	\$129.86	\$125.97	\$172.23
Net Income	\$235.2	\$20.8	\$180.5	(\$51.5)	\$508.9
Percent Change	-	(91.16)	767.79	(128.53)	(1,088.16)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$1,766.1	\$1,852.7	\$1,933.9	N/A	
Quarterly Profit	\$76.4	\$90.5	\$94.6	N/A	

N/A = Not Available

Source: United Telecommunications, Inc.
 1988 Annual Report
 Dataquest
 January 1990

Table 2
Revenue by Geographic Region (Percent)

Region	1984	1985	1986	1987	1988
North America	100.00	100.00	100.00	100.00	100.00
International	0	0	0	0	0

Source: Dataquest
 January 1990

Table 3
Revenue by Distribution Channel (Percent)

Channel	1987	1988
Direct Sales	100.00	100.00
Indirect Sales	0	0

Source: Dataquest
 January 1990

1988 SALES OFFICE LOCATIONS

North America—Not available
Japan—Not available
Europe—Not available
Asia/Pacific—Not available
ROW—Not available

SUBSIDIARIES

All subsidiaries are wholly owned by United unless otherwise indicated.

United States

Beslow Associates, Inc.
Carolina Telephone and Telegraph Co.
Carolina Telephone Long Distance, Inc.
Community Telephone Directories, Inc.
DirectoriesAmerica, Inc.
Florida Telephone Corporation
GLB, Inc.
Information Systems of America, Inc.
Megatek Corporation
National Suburban Directories, Inc.
North Supply Company
North Supply Company of Lenexa
Northstar Transportation, Inc.
Premier Telecom Products, Inc.
Template Graphics Software, Inc.
US Sprint Communications Company (80.1 percent)
US Telecom, Inc.
UTLD, Inc.
United Business Information, Inc.
United Data Services, Inc.
United Inter-Mountain Telephone Company
United Teledirect Group, Inc.
United Telephone Communications Services of Ohio, Inc.
United Telephone Communications Systems, Inc.
United Telephone Company of Arkansas
United Telephone Company of Florida
United Telephone Company of Indiana, Inc.
United Telephone Company of Iowa

United Telephone Company of Kansas
United Telephone Company of Minnesota
United Telephone Company of Missouri
United Telephone Company of New Jersey, Inc.
United Telephone Company of Ohio
United Telephone Company of Pennsylvania
United Telephone Company of Texas, Inc.
United Telephone Company of the Carolinas
United Telephone Company of the Northwest
United Telephone Company of the West
United Telephone Long Distance Company of the Midwest
United Telephone Long Distance, Inc.
United Telephone System, Inc.
Winpar Financial Corporation

MERGERS AND ACQUISITIONS

1989

US Sprint

United purchased a controlling ownership interest in US Sprint from GTE.

KEY OFFICERS

Paul H. Henson
Chairman

William T. Esrey
President and chief executive officer

John F. Dodd
Executive vice president, general counsel

Curtis G. Fields
Executive vice president

Arthur B. Krause
Executive vice president, chief financial officer

Ronald T. LeMay
Executive vice president, Corporate Affairs

Richard H. Brown
Senior vice president

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of U.S. Dollars, except Per Share Data)

Balance Sheet	1984	1985	1986	1987	1988
Total Current Assets	\$854.4	\$887.3	\$830.8	\$808.3	\$2,125.0
Cash	130.6	110.2	108.2	74.4	617.1
Receivables	530.5	513.5	439.0	450.4	1,180.9
Inventory	95.7	113.6	82.2	86.7	95.6
Other Current Assets	97.6	150.0	201.4	196.8	231.4
Net Property, Plants	\$4,416.1	\$4,718.4	\$4,280.7	\$4,344.1	\$7,318.4
Other Assets	\$170.2	\$161.7	\$1,267.6	\$1,406.0	\$373.5
Total Assets	\$5,440.7	\$5,767.4	\$6,379.1	\$6,558.4	\$9,816.9
Total Current Liabilities	\$899.6	\$1,059.8	\$784.4	\$925.1	\$2,148.9
Long-Term Debt	\$1,836.2	\$1,947.7	\$2,683.3	\$3,047.6	\$3,674.8
Other Liabilities	\$943.5	\$1,023.2	\$1,140.9	\$1,018.7	\$1,118.2
Total Liabilities	\$3,679.3	\$4,030.7	\$4,608.6	\$4,991.4	\$6,941.9
Other Partner's Interest in US Sprint	-	-	-	-	\$958.9
Total Shareholders' Equity	\$1,761.4	\$1,736.7	\$1,770.5	\$1,567.0	\$1,916.1
Converted Preferred Stock	46.0	44.3	42.7	40.9	38.9
Common Stock	225.6	239.8	246.4	251.4	256.6
Other Equity	656.3	780.8	819.4	857.5	892.2
Retained Earnings	833.5	671.8	662.0	417.2	728.4
Total Liabilities and Shareholders' Equity	\$5,440.7	\$5,767.4	\$6,379.1	\$6,558.4	\$9,816.9
Income Statement	1984	1985	1986	1987	1988
Revenue*	\$2,788.8	\$3,083.8	\$3,012.7	\$2,935.1	\$6,493.0
Total Operating Expenses	\$2,215.8	\$2,926.3	\$2,424.3	\$2,255.8	\$6,264.6
Capital Expense	\$684.3	\$1,073.1	\$956.5	\$695.5	\$1,432.3
Pretax Income	\$387.4	(\$10.5)	\$266.3	(\$135.8)	\$140.0
Pretax Margin (%)	13.89	(0.34)	8.84	(4.63)	2.16
Effective Tax Rate (%)	38.00	136.00	13.00	71.00	29.00
Net Income	\$235.2	\$20.8	\$180.5	(\$51.5)	\$508.9
Shares Outstanding, Millions	89.8	93.7	97.7	99.8	102.2
Per Share Data					
Earnings	\$2.57	\$0.18	\$1.81	(\$0.55)	\$4.95
Dividends	\$1.88	\$1.92	\$1.92	\$1.92	\$1.92
Book Value	\$19.61	\$18.53	\$18.12	\$15.70	\$18.75

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of U.S. Dollars, except Per Share Data)

Key Financial Ratios	1984	1985	1986	1987	1988
<i>Liquidity</i>					
Current (Times)	0.95	0.84	1.06	0.87	0.99
Quick (Times)	0.84	0.73	0.95	0.78	0.94
Fixed Assets/Equity (%)	250.72	271.69	241.78	277.22	381.94
Current Liabilities/Equity (%)	51.07	61.02	44.30	59.04	112.15
Total Liabilities/Equity (%)	208.88	232.09	260.30	318.53	362.29
<i>Profitability (%)</i>					
Return on Assets	-	0.37	2.97	(0.80)	6.22
Return on Equity	-	1.19	10.29	(3.09)	29.22
Profit Margin	8.43	0.67	5.99	(1.75)	7.84
<i>Other Key Ratios</i>					
Capital Spending % of Revenue	24.54	34.80	31.75	23.70	22.06
Employees	27,600	27,400	23,200	23,300	37,700
Revenue (\$K)/Employee	\$101.04	\$112.55	\$129.86	\$125.97	\$172.23
Capital Spending % of Assets	12.58	18.61	14.99	10.60	14.59

*During 1988, US Sprint's method of accounting changed from an equity basis to a consolidated basis; therefore, its operations are included in the 1988 financial statements.
N/A = Not Available

Source: United Telecommunications, Inc.
1988 Annual Report
Dataquest
January 1990

X

SIS Code: Vol. III, 9.0

WESTERN EUROPEAN SEMICONDUCTOR MARKET UPDATE

SUMMARY

This newsletter gives DATAQUEST's impressions of the state of the Western European economy and semiconductor industry, gathered during a two-week trip to Western Europe. The general consensus in Western Europe is that the semiconductor market is weak and is unlikely to improve before mid-1981. The recession in Western Europe lags that of the United States by three to six months.

DATAQUEST believes that the outlook for growth in semiconductor consumption in Western Europe during 1981 will be approximately six percent. Western European countries are fighting inflation and unemployment at this time, hence capital spending has been cut back. A decrease in discretionary income also means that consumers are spending less on luxury items such as color television and video games.

IMPRESSIONS OF ELECTRONICA 1980

Electronica is a bi-annual, week-long electronics show held in Munich, West Germany. The 1980 show took place between 6 and 12 November. An estimated 200,000 people attended the six day show, which is by far the world's largest and most impressive showing by semiconductor producers. All the major semiconductor companies were represented, and had well-designed booths of varying sizes showing their latest products and technology. This show was also notable for the number of high level management executives in attendance, in marked contrast to similar shows in the United States, where you rarely see top management. Electronica is similar to U.S. trade shows in that orders for new business are not written at the show; however, a significant number of orders were closed later.

Many semiconductor companies used the show to introduce significant new products in Europe. For example, General Instrument showed its new speech synthesis chips, Intel announced its new 16K EEPROMs, Motorola emphasized its microprocessors and development systems, National Semiconductor presented its microcomputers, Siemens and Philips both showed their latest microprocessor offerings, and Texas Instruments demonstrated its new speech synthesis chips.

Copyright © 2 January 1981 by DATAQUEST - Reproduction Prohibited

The content of this report represents our interpretation and analysis of information generally available to the public or released by responsible individuals in the subject companies, but is not guaranteed as to accuracy or completeness. It does not contain material provided to us in confidence by our clients. This information is not furnished in connection with a sale or offer to sell securities or in connection with the solicitation of an offer to buy securities. This firm and its parent and/or their officers, stockholders, or members of their families may, from time to time, have a long or short position in the securities mentioned and may sell or buy such securities.

WESTERN EUROPE

The inventory situation in Western Europe is far worse than that in the United States where the high interest rates in the first quarter of 1980 acted to flush out the excess inventory in the system. In Western Europe, there is presently excess inventory at all levels: user, distributor, and supplier. This surplus is so extensive that at least one major user has reportedly not purchased 16K RAMs for the last six months. It appears that the excess inventory problem will remain in Western Europe for some time to come and continue to slow the order rate.

As a result of excess inventory and slow order rates, it appears that book-to-bill ratios in Western Europe are weaker than that in the United States. Although no official figures are kept for Western Europe, we estimate the fourth quarter 1980 book-to-bill ratio was in the range of .80 to .90.

West Germany

West Germany is suffering from inflation in the range of 6 to 7 percent, a rate it regards as unacceptably high. This, together with a prime interest rate rising toward 10 percent, has slowed the rate of capital spending, and has resulted in a marked slowdown in order rates for semiconductors. The telecommunications market is still strong because capital investment in this area demands long-term commitments. The West German computer market has weakened slightly and the consumer market remains very weak. The main component of the consumer market in Western Europe is still color television, but video games and other hand-held games are becoming popular.

France

Semiconductor consumption growth in France is slightly higher than that in West Germany because the French economy is somewhat stronger. Semiconductor manufacturers in France generally concede that the growth rate there is probably one or two percentage points higher than that of West Germany. The telecommunications market is still quite strong in France and the computer market has weakened only slightly. The French consumer market is generally stronger than the rest of Western Europe because the market for color television is not yet totally saturated. Also, since French television sets in border areas receive both PAL and SECAM transmissions, they are more expensive than in other West European countries, so revenues are higher.

Nationalism in France is still very much on the minds of most Europeans and all semiconductor companies. At present, French semiconductor companies cannot fully meet the demands of the French market, so American and Japanese companies are able to market into France. In the future, however, it appears that only manufacturers having working relationships with French companies will be able to sell into the French market. Only those joint ventures that are 51 percent owned by a French company are acceptable to the French government.

United Kingdom

The economy in the United Kingdom is probably in the worst condition of all the major countries of Western Europe. Unemployment is now in excess of two million people, the worst it has been since the 1930s. Inflation is running in the high teens and the prime rate is approximately 18 percent. Needless to say, this has a negative impact on semiconductor consumption. Book-to-bill ratios in the United Kingdom are below unity and there is excess inventory in the system. The telecommunications market is still moderately strong, but the computer market has turned soft. The consumer electronics market is still surprisingly strong, however. This strength may be because most Britons currently rent televisions so that the market is not yet saturated, or it may be because the hard times Britons are facing mean that home entertainment is becoming more important in their lives. At present, it appears that the presence of North Sea oil is the major factor keeping the British economy afloat.

Benelux

The economies of the Benelux countries are essentially flat or in recession. These countries are significant producers of electronics end products and their markets have been affected by the recession. For this reason, semiconductor consumption in these countries has not grown in the second half of 1980 and an upturn is not expected until late 1981.

Scandinavia

The Scandinavian region of Western Europe is also experiencing a slow economy and increasing inflation rates. This economic climate has slowed semiconductor consumption in all areas except telecommunications.

Central and Southern Europe

Italy is probably second only to the United Kingdom in terms of a weak economy. Unemployment and inflation are both high. As a consequence, order rates for semiconductors have slowed dramatically and orders are not expected to pick up until late 1981. The telecommunications market is the only stable market in Southern Europe at this time. The computer and consumer electronics markets are both weak in most of Central and Southern Europe, although the Swiss computer market is still strong.

CONCLUSION

Manufacturers throughout Western Europe are feeling the effects of the recession and are anticipating slow revenue growth caused both by slow demand and the anticipated increased price pressure for 1981.

Daniel L. Klesken
Jean Page

THE WESTERN EUROPEAN SEMICONDUCTOR MARKET

SUMMARY

The Western European market for semiconductors was an estimated \$2.9 billion in 1979, up about 26 percent from \$2.3 billion in 1978. In 1980 the market is forecast to grow about 15 percent to an estimated \$3.4 billion. European consumption of integrated circuits should grow about 22 percent from \$1.6 billion in 1979 to \$1.9 billion, and total consumption of discrete devices should grow about 6 percent from \$1.3 billion in 1979 to \$1.4 billion in 1980. The European semiconductor market is expected to experience a strong demand from the computer and industrial segments, but a weak demand from the consumer segment. Excess inventory of color television sets as well as a softening of the European economy are leading to reduced consumer electronics consumption.

The 1980 semiconductor consumption in France is expected to grow about 26 percent to \$646 million, up from an estimated \$510 million in 1979. In West Germany 1980 semiconductor consumption is estimated up 20 percent to about \$1,237 million compared with \$1,031 million in 1979. The United Kingdom's 1980 semiconductor consumption is estimated up 18 percent to about \$572 million.

WESTERN EUROPEAN SEMICONDUCTOR CONSUMPTION

Table 1 presents DATAQUEST's estimates of semiconductor consumption in Western Europe. Total European semiconductor consumption in 1980 is estimated at \$3.4 billion, up about 15 percent from 1979 levels. Total IC consumption is estimated at \$1.93 billion, up about 22 percent, whereas discretetes are up about 7 percent to \$1.29 billion, and optoelectronic components are up about 26 percent to \$195 million.

The year-to-year growth of semiconductor consumption in various countries depends greatly upon the currency valuation used to express the growth. Table 2 compares the years 1978 and 1979 for the United States, France, Germany, Japan, and the United Kingdom. First the year-to-year growth is expressed as a percent change in local currency, and then it is expressed as a percent change in U.S. dollars where the local currency was converted to U.S. dollars at the exchange rate of the given year.

Copyright © 22 June 1980 by DATAQUEST - Reproduction Prohibited

Table 1

ESTIMATED WESTERN EUROPEAN SEMICONDUCTOR CONSUMPTION
(Millions of Dollars)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Total Semiconductor	\$1,819	\$2,340	\$2,940	\$3,414
Total IC	\$ 830	\$1,166	\$1,578	\$1,930
Bipolar Digital	\$ 259	\$ 371	\$ 496	\$ 587
MOS	\$ 278	\$ 428	\$ 612	\$ 763
Linear	\$ 293	\$ 367	\$ 470	\$ 580
Total Discrete	\$ 907	\$1,059	\$1,207	\$1,289
Transistor	\$ 453	\$ 485	\$ 532	\$ 570
Diode	\$ 327	\$ 422	\$ 510	\$ 543
Thyristor	\$ 99	\$ 113	\$ 121	\$ 130
Other	\$ 28	\$ 39	\$ 44	\$ 46
Optoelectronic	\$ 82	\$ 115	\$ 155	\$ 195

Source: DATAQUEST, Inc.
June 1980

Table 2

**EFFECT OF CURRENCY VALUATION ON
SEMICONDUCTOR CONSUMPTION GROWTH RATES**

<u>Country</u>	<u>Currency (in Millions)</u>	<u>1978</u>	<u>1979</u>	<u>Percent Increase in Local Currency</u>
United States	U.S. Dollars	3,323	4,625	39.2%
France	French Francs	1,683	2,162	28.4%
Germany	Deutsche Marks	1,663	1,876	12.8%
Japan	Yen	512,048	592,305	15.7%
United Kingdom	Pounds	195	228	16.9%

<u>Country</u>	<u>Currency (in Millions)</u>	<u>1978</u>	<u>1979</u>	<u>Percent Increase in U.S. Dollars</u>
United States	U.S. Dollars	3,323	4,625	39.2%
France	U.S. Dollars	379	510	34.6%
Germany	U.S. Dollars	840	1,031	22.7%
Japan	U.S. Dollars	2,487	2,676	7.6%
United Kingdom	U.S. Dollars	375	485	29.3%

Exchange Rate (Foreign currency units per U.S. Dollar)

	<u>1978</u>	<u>1979</u>
France (Francs)	4.44	4.24
Germany (Deutsche Marks)	1.98	1.82
Japan (Yen)	205.89	221.34
United Kingdom (Pounds)	0.52	0.47

Source: DATAQUEST, Inc.
June 1980

Between 1978 and 1979, the currencies of France, Germany, and the United Kingdom strengthened against the dollar (i.e., it took fewer local currency units to buy \$1.00) and, hence, the percent change in 1979 expressed in the local currency is lower than the percent change expressed in dollars. In West Germany and the United Kingdom, the growth rate of semiconductor consumption expressed in the local currency was a little more than half the growth rate expressed in dollars. Therefore, to a company conducting business in dollars, the market in West Germany or the United Kingdom appeared to be much better than to a company conducting business in the local currency. In Japan, the yen weakened against the dollar, hence the percent change expressed in yen was higher than the percent change expressed in dollars.

In generating Table 1, every attempt was made to look first at the consumption expressed in local currency and then to convert it to U.S. dollars. All percentage changes expressed in this Newsletter were calculated using values in U.S. dollars unless otherwise stated.

ESTIMATED EUROPEAN SEMICONDUCTOR CONSUMPTION BY COUNTRY

Western Europe cannot easily be treated as a single economic entity. The different nations, differing nationalities, customs, and political leanings affect each country differently. In the following paragraphs, we present estimates of European semiconductor consumption by country (Table 3) as well as a discussion of GNP growth for the individual Western European countries (Table 4).

Table 3

ESTIMATED EUROPEAN SEMICONDUCTOR CONSUMPTION BY COUNTRY (Millions of Dollars)

<u>Country</u>	<u>1978</u>		<u>1979</u>	
	<u>Semiconductor Consumption</u>	<u>Percent of Total</u>	<u>Semiconductor Consumption</u>	<u>Percent of Total</u>
West Germany	\$ 840	35.8%	\$1,031	35.0%
France	379	16.2	510	17.4
United Kingdom	375	16.0	485	16.5
Italy	220	9.4	295	10.0
Sweden	98	4.2	115	3.8
Netherlands	84	3.6	98	3.3
Switzerland	77	3.3	85	2.9
Spain	56	2.4	61	2.2
Belgium	54	2.3	62	2.1
Austria	37	1.6	50	1.7
Denmark	35	1.5	42	1.4
Finland	28	1.2	35	1.2
Norway	27	1.2	34	1.2
Portugal	18	0.8	22	0.8
Ireland	12	0.5	15	0.5%
Total	\$2,340	100.0%	\$2,940	100.0%

Source: DATAQUEST, Inc.
June 1980

Table 4 includes a composite number for GNP growth in Western Europe. It shows annualized GNP growth for 1980 estimated to be 2.7 percent, down slightly from estimated growth of 2.9 percent in 1979. This compares favorably with estimated decline in the U.S. GNP of 1 percent in 1980 and increase of 2.3 percent in 1979.

Table 4

ESTIMATED GROSS NATIONAL PRODUCT GROWTH
(Percent Increase Over Preceding Year)

	Estimated Growth <u>1978</u>	Estimated Growth <u>1979</u>	Estimated Growth <u>1980</u>
<u>European Countries</u>			
Austria	1.5%	5.0%	2.2%
Belgium	2.2%	3.2%	2.0%
Denmark	2.0%	2.0%	(1.0%)
France	4.7%	3.2%	1.5%
Italy	2.5%	3.7%	0.5%
Netherlands	2.0%	3.1%	2.5%
Norway	3.0%	3.0%	3.8%
Portugal	3.3%	3.0%	3.7%
Spain	2.0%	1.0%	0.5%
Sweden	2.2%	4.2%	3.0%
Switzerland	1.0%	1.5%	3.0%
United Kingdom	3.2%	1.0%	(1.5%)
West Germany	3.3%	4.7%	2.5%
<u>All of Western Europe</u>	2.8%	2.9%	2.7%
<u>United States</u>	5.0%	2.3%	(1.0%)
<u>Japan</u>	8.6%	6.1%	3.2%

Source: DATAQUEST, Inc.
June 1980

West Germany

After growing almost 23 percent in 1979 to \$1,031 million, West German consumption of semiconductors is expected to grow about 20 percent to an estimated \$1,237 million in 1980. Computers and telecommunications are the major elements of this semiconductor consumption growth as the consumer segment is expected to be weak in 1980.

GNP growth in West Germany in 1980 is estimated to be 2.5 percent, down markedly from 1979 growth of 4.7 percent. The balance of payments surplus decreased sharply in the first quarter of 1980 and the Bundesbank's efforts to control the growth in the money supply could result in increased unemployment. Consumer prices are expected to increase by 6.3 percent in 1980 after very slow growth of 3.7 percent in 1979.

France

Semiconductor consumption in France during 1980 is expected to grow about 26 percent to an estimated \$646 million, up from \$510 million in 1979. Just as in West Germany, the fastest growing markets in France are expected to be the computer and communications segments. The French GNP grew by 3.2 percent in 1979, but in 1980 the increase is expected to be only about 1.5 percent. The inflation rate in 1980 is expected to be about 15 percent, up from an estimated 11.5 percent inflation rate in 1979.

United Kingdom

Total semiconductor consumption in the United Kingdom in 1979 was an estimated \$485 million, up from an estimated \$375 million in 1978. In 1980 this total is expected to increase about 18 percent to an estimated \$572 million. The outlook for semiconductor consumption in the United Kingdom is still reasonably good in spite of the fact that the United Kingdom is facing a period of sharp recession. Mrs. Thatcher's monetary policies do not appear to be working and potentially high wage inflation is still a serious problem. The consumer price index is expected to increase by 16.5 percent in 1980, which is up from an increase of 13.4 percent in 1979. The GNP is expected to decline by at least 1.5 percent in 1980 compared with 1979.

Benelux

Semiconductor consumption in Belgium and the Netherlands, is somewhat moderate compared with France and West Germany. In 1979 Belgium consumed an estimated \$62 million in semiconductors while the Netherlands consumed an estimated \$98 million. Belgium and the Netherlands are expected to achieve moderate economic growth in 1980 of 2.0 percent and 2.5 percent, respectively. Belgium depends to a large degree on its exports of steel for its income, so a downturn in the world economy is likely to affect Belgium adversely.

Scandinavia

Sweden was the largest user of semiconductors in Scandinavia, consuming \$115 million in 1979. Denmark and Norway consumed \$42 million and \$34 million respectively in 1979.

The economies in the Scandinavian countries are generally expected to grow more slowly this year than in 1979. Sweden's GNP is expected to grow only by 3 percent compared with 4.2 percent in 1979. A decline of 1 percent is predicted for the Danish economy since Denmark as well as Sweden is adversely affected by the need to import oil. North Sea oil makes Norway a net exporter of oil and this, combined with the relaxation of the austerity measures in effect in 1979, should produce a growth in GNP of 3.8 percent in 1980.

Central and Southern Europe

The countries of Austria, Italy, Portugal, Spain, and Switzerland are included in this region. Among these, Italy has the largest semiconductor consumption estimated at \$295 million in 1979. Each of the other countries consumed less than \$100 million during 1979.

Austria's GNP grew by 5 percent in 1979 making it one of the fastest growing countries in Europe in that year, but a more modest growth of 2.2 percent is forecast for 1980. Switzerland's GNP grew by only 1.5 percent in 1979, but a higher growth rate of 3.0 percent is expected for 1980. Italy achieved an increase of 3.7 percent growth in 1979. However, the worsening economic situation will probably result in growth of less than 1 percent in 1980. Spain, with its serious problems of unemployment and inflation, is expecting a 1980 GNP growth of less than 1 percent, whereas Portugal's GNP is expected to increase an estimated 3.7 percent, up from 3 percent growth in 1979.

THE SEMICONDUCTOR INDUSTRY IN WESTERN EUROPE

Joint Ventures and Government Participation

In the last three years, the governments of the major Western European countries have come to realize the importance of the semiconductor industry to their economies. Additionally, European industry has recognized the importance of becoming more self-sufficient in integrated circuits. As a result of this awareness, a number of joint ventures and government-funded development programs have been established. Some of these are described briefly in the following paragraphs.

United Kingdom

Britain's major entry into the integrated circuits arena is INMOS. Partly funded by the National Enterprise Board (NEB), it has a design facility in Bristol, England, and a production facility in Colorado Springs, CO. The initial products of INMOS will be a 16K static MOS RAM and a 64K dynamic MOS RAM which are to be followed by microprocessor products.

Since the founding of INMOS in 1978, there has been a change of government in Britain and with it a change in the political climate. The Conservative Government of Margaret Thatcher has been selectively disposing of NEB holdings since it took office. Although the rationale for funding INMOS was the establishment of a British presence in the integrated circuits field, the suitability of government involvement in an entrepreneurial role in such a fast-moving, unpredictable industry has been questioned. The possibility of a link between General Electric Company (GEC) (Britain) and INMOS was discussed but GEC has now decided against this. Other private investors are apparently considering INMOS at present. The Government has still not given INMOS the second \$50 million grant that was expected.

GEC is also involved in a joint venture with Fairchild to build a semiconductor plant in Neston, Cheshire. Since the agreement was made, Fairchild has been acquired by Schlumberger of France, but the plant is going ahead on schedule according to GEC.

The British Government has also made substantial investments in microprocessor applications funding, specifically with the Microprocessor Applications Project (MAP). Under this project, companies can obtain financial support from the Government for the investigation and application of microprocessors to their products.

West Germany

The West German government gives matching funds to a number of semiconductor projects through the Ministry for Research and Technology. It is giving major support to VLSI research; AEG-Telefunken, Siemens, and Valvo are the major companies involved in this area.

Several German companies have established connections with American semiconductor companies. Siemens purchased Litronix as well as Microwave Semiconductor and Sitronix (formerly FMC); it also has a minority holding in Advanced Micro Devices (AMD). Siemens second-sources the Intel 8080 and 8085 microprocessors. Robert Bosch has an interest in American Microsystems.

France

In 1977 the French government acted to establish a French semiconductor industry. The plans included \$200 million of government subsidies and the encouragement of links between French and American semiconductor companies.

In April 1979 National Semiconductor and Saint-Gobain-Pont-a-Mousson agreed to establish a joint MOS manufacturing subsidiary known as Eurotechnique. National Semiconductor has a 49 percent holding in the company and is mainly contributing technological information. Funding for the venture is coming from Saint-Gobain and from the French government's IC program.

The Matra Group is building a \$40 million fabrication facility in Nantes, France, in cooperation with Harris Semiconductor of Melbourne, Florida. The facility will manufacture CMOS circuits and plans to start shipping products in 1981.

EFCIS, a joint venture between Thomson-CSF and the French atomic energy authority, currently produces mainly custom MOS circuits but is planning to expand its line of standard NMOS circuits and hopes to double its sales and place more emphasis on standard products by 1982. Thomson-CSF and EFCIS also made a technology transfer and second-source agreement with Motorola in November 1978.

Italy

Italy has developed an overall electronics plan which includes support for the semiconductor industry. SGS-ATES is the major recipient of this support. They manufacture linear and MOS integrated circuits as well as discrete components. They have agreements with Zilog to second source the Z-80 and Z-8000 microprocessors.

Government Incentives for the Location of Industry

Apart from involvement in joint ventures, many countries in Europe, realizing the need to establish local microelectronics fabrication facilities, are offering substantial incentives to companies that build facilities in their areas. Some examples are given below.

United Kingdom

The United Kingdom offers a variety of incentives for different locations. These include tax breaks, grants for factory building, and financial assistance for retraining employees. In England, the main areas to receive such support are in the industrial North.

Scotland - Depending on the location chosen, the Scottish Development Agency will offer substantial financial assistance and concessions for plants located in Scotland. The Wolfson Microelectronics Institute at Edinburgh University (recently nominated as one of the two U.K. centers for the development of microelectronics technology) offers a source of appropriately trained graduates. Both Motorola and National Semiconductor have established facilities in Scotland.

Wales - Wales offers a wide range of grants and tax incentives to companies locating there. Several Welsh universities, including Bangor and Swansea, have major electronics departments. Bangor includes an Industrial Development Unit to make the facilities and expertise of the University available to industry. Siliconix has an assembly plant near Swansea and is considering a wafer fabrication facility. Several Japanese companies, including Sony and Matsushita, are also established in Wales.

Ulster - In Northern Ireland the Industrial Development Organization is offering cash grants for plant construction, equipment, and training costs to encourage new industry. International Rectifiers has had a subsidiary in Newry since 1969.

Republic of Ireland

The Industrial Development Authority of the Republic of Ireland is endeavoring to attract high-technology industry to the country by offering grants of up to 55 percent of the cost of fixed assets as well as tax exemptions for profits on exports until 1990. A new plan, which will eventually replace the existing one, reduces the current tax rate of 45 percent on corporate profits to 10 percent. Analog Devices built a design and fabrication facility near Limerick in 1978 and Unitrode is building a plant near Shannon which will be completed this year. Mostek has committed to a major expansion in Dublin. It will begin with testing of components but will eventually do wafer fab there as well.

France

There are a number of areas in France that are currently endeavoring to attract high-technology industry. The West Atlantic area, which includes Brittany and the Loire Valley, is offering an incentive package which includes \$5,000 per job created, local tax exemptions, and vocational training aid. They are particularly interested in establishing the area as a center for electronics, and several major electronics facilities including Thomson-CSF and SGS-ATES are already in operation.

Tax incentives and low-cost sites are being offered to attract the electronics industry to the Valbonne area close to the Mediterranean coast between Nice and Cannes. Texas Instruments and IBM both have plants in the area.

Public Perceptions of the Microelectronics Industry

Despite the incentives offered by European governments for the establishment of semiconductor facilities in their countries, public opinion on the subject is more ambivalent. In an environment where unemployment is increasing, the most immediate worry is that with more automation unemployment will increase further. Recent forecasts published for the United Kingdom predict total unemployment by the end of 1980 will be 1.7 million compared with 1.2 million in October of 1979.

The microelectronic revolution is viewed by many as comparable to the Industrial Revolution of the last century. In Europe major technological change is seen as causing short-term upheaval followed by long-term benefits. It is the magnitude of the possible short-term upheaval that worries many people.

European Trade Union concern is that the introduction of microelectronic technology will cause high structural unemployment. The European Trade Union Institute (ETUI) in Brussels published a report in November 1979 expressing these concerns. Specifically they feel that unions should have early access to information on the proposed introduction of new technology in order "to ensure that the technology is introduced at a pace at which its social impact can be spread fairly over societies, and to ensure that the benefits of new technology accrue to working people." The general opinion seems to be that, while the technological advances are welcome, care must be taken so that no one sector of the population bears an unreasonable burden because of the changes.

END-USER MARKETS IN WESTERN EUROPE

Table 5 presents DATAQUEST's estimate of end-user consumption in Western Europe compared with that of the United States. The consumer segment plays an important role in semiconductor consumption in Western Europe using about 33 percent of the total as compared with only 16 percent of the total in the United States. In the industrial segment, Europe consumes about 35 percent of the total whereas the United States consumes an estimated 32 percent. The United States consumes far more semiconductors in the computer segment with an estimated 40 percent compared with only 23 percent computer consumption in Europe. The government and military consumption is nearly equal, with Europe consuming 9 percent and the U.S. consuming 12 percent.

Table 5
ESTIMATED END-USER MARKETS - 1979
(Percent)

	Western Europe			United States
	Discrete	Total IC	Total Semiconductor	Total Semiconductor
Computer	14%	29%	23%	40%
Industrial	44%	28%	35%	32%
Consumer	35%	32%	33%	16%
Automobile	3%	5%	4%	4%
Television	18%	14%	17%	4%
All Other Consumer	14%	13%	12%	8%
Government & Military	7%	11%	9%	12%

Source: DATAQUEST, Inc.
June 1980

EUROPEAN MARKET SHARES

Table 6 presents DATAQUEST estimates of the worldwide revenues of European semiconductor manufacturers for the years 1977, 1978, and 1979. Worldwide semiconductor revenues of the European producers in 1979 were an estimated \$1.8 billion, up about \$300 million from an estimated \$1.5 billion in 1978. This growth rate of 21

percent is less than the 27 percent growth rate of worldwide semiconductor consumption in 1979. The worldwide revenues of Philips and Signetics are presented in Table 6; however, the European revenues of Philips without Signetics and of Signetics alone are presented in Tables 7 and 8 respectively. Table 7 presents DATAQUEST's estimates of the European revenues of European semiconductor companies. In 1979 the European producers shipped an estimated \$1.3 billion of semiconductors into the Western European market, up 18 percent from an estimated \$1.1 billion shipped into Europe in 1978.

Table 8 presents estimated European revenues of American semiconductor manufacturers. For 1979, total shipments into Europe by American producers were an estimated \$1,542 million, up about 31 percent from an estimated \$1,179 million in 1978. IC shipments by American companies in 1979 were an estimated \$1,037 million, up about 36 percent from \$760 million whereas discretetes grew an estimated 21 percent from \$419 million in 1978 to \$505 million in 1979. Table 9 presents the estimated European revenues to the Japanese companies. In 1978 they shipped an estimated \$55 million into Europe whereas in 1979 they shipped an estimated \$95 million, up about 75 percent.

Table 10 summarizes the data in Tables 7, 8, and 9 showing the percentage of European semiconductor consumption supplied by the European, American, and Japanese companies. Although Japanese sales in Europe represent a small percentage of total sales, they are growing rapidly, from 2 percent in 1977 to 4 percent in 1979.

Daniel L. Klesken
Jean C. Page

Table 6

ESTIMATED WORLDWIDE REVENUES OF EUROPEAN SEMICONDUCTOR MANUFACTURERS
(Millions of Dollars)

Company	1977			1978			1979		
	IC	Discrete	Total	IC	Discrete	Total	IC	Discrete	Total
AEG Telefunken	\$ 16	\$ 71	\$ 87	\$ 23	\$ 88	\$ 111	\$ 28	\$ 107	\$ 135
AEI (Subs GEC)	12	0	12	14	0	14	17	0	17
ASEA	1	1	2	1	1	2	2	1	3
Brown-Boveri	0	19	19	0	20	20	0	22	22
Cogie	0	9	9	0	10	10	0	12	12
EFCIS	0	0	0	0	0	0	7	0	7
EMI	0	9	9	0	10	10	0	12	12
Eurosil	9	0	9	10	0	10	11	0	11
Ferranti	13	10	23	16	11	27	19	12	31
GEC	0	4	4	0	4	4	0	5	5
Philips (with Signetics) ¹	286	244	530	379	266	645	480	290	770
Piher	0	7	7	0	8	8	0	9	9
Plessey	17	0	17	25	0	25	27	0	27
RIFA	7	0	7	8	0	8	10	0	10
Semikron	0	15	15	0	20	20	0	25	25
SGS-ATES	49	35	84	59	41	100	74	46	120
Siemens ²	83	167	250	106	186	292	150	206	356
TAG	0	18	18	0	20	20	0	21	21
Thomson-CSF	20	73	93	30	100	130	40	120	160
Others	2	10	12	3	11	14	4	13	17
Total	\$515	\$692	\$1,207	\$674	\$796	\$1,470	\$869	\$ 901	\$1,770
¹ Philips (w/o Signetics)	\$111	\$244	\$ 355	\$165	\$266	\$ 431	\$215	\$ 290	\$ 505
Signetics	\$175	\$ 0	\$ 175	\$214	\$ 0	\$ 214	\$265	\$ 0	\$ 265

²Includes Litronix, excludes MSC and FMC for 1979.

Table 7

ESTIMATED EUROPEAN REVENUES OF EUROPEAN SEMICONDUCTOR MANUFACTURERS
(Millions of Dollars)

Company	1977			1978			1979		
	IC	Discrete	Total	IC	Discrete	Total	IC	Discrete	Total
AEG Telefunken	\$ 13	\$ 66	\$ 79	\$ 20	\$ 82	\$ 102	\$ 21	\$ 97	\$ 118
AEI (Subs. GEC)	12	0	12	14	0	14	17	0	17
ASEA	1	1	2	1	1	2	2	1	3
Brown-Boveri	0	17	17	0	18	18	0	20	20
Cogie	0	9	9	0	10	10	0	12	12
EPCIS	0	0	0	0	0	0	7	0	7
EMI	0	9	9	0	10	10	0	12	12
Eurosil	9	0	9	10	0	10	11	0	11
Ferranti	11	9	20	12	10	22	13	11	24
GEC	0	4	4	0	4	4	0	5	5
Philips (w/o Signetics)	90	220	310	134	244	378	168	262	430
Piher	0	7	7	0	8	8	0	9	9
Plessey	15	0	15	18	0	18	20	0	20
RIFA	7	0	7	8	0	8	10	0	10
Semikron	0	14	14	0	18	18	0	23	23
SGS-ATES	20	31	51	43	37	80	57	42	99
Siemens	65	151	216	85	170	255	117	187	304
TAG	0	18	18	0	20	20	0	20	20
Thomson-CSF	18	68	86	26	91	117	30	111	141
Others	1	9	10	2	10	12	3	15	18
Total	\$262	\$633	\$895	\$373	\$733	\$1,106	\$476	\$827	\$1,303

Source: DATAQUEST, Inc.
June 1980

Table 8

ESTIMATED EUROPEAN REVENUES OF AMERICAN SEMICONDUCTOR MANUFACTURERS
(Millions of Dollars)

Company	1977			1978			1979		
	IC	Discrete	Total	IC	Discrete	Total	IC	Discrete	Total
AMD	\$ 12	\$ 0	\$ 12	\$ 18	\$ 0	\$ 18	\$ 28	\$ 0	\$ 28
AMI	10	0	10	15	0	15	27	0	27
Fairchild	48	15	63	60	18	78	72	23	95
General Electric	0	15	15	0	17	17	0	19	19
General Inst.	16	12	28	24	14	38	35	22	57
Harris	15	0	15	21	0	21	29	0	29
Hewlett-Packard	0	19	19	0	22	22	0	25	25
Intel	52	0	52	82	0	82	116	0	116
International Rectifier	0	20	20	0	25	25	0	30	30
Intersil	10	0	10	13	0	13	18	0	18
ITT	39	65	104	50	78	128	65	92	157
Mostek	20	0	20	33	0	33	58	0	58
Monolithic Memories	7	0	7	9	0	9	11	0	11
Motorola	70	82	152	90	96	186	122	125	247
National	46	10	56	65	13	78	102	18	120
RCA	18	26	44	23	29	52	27	32	59
Signetics	42	0	42	56	0	56	68	0	68
Texas Instruments	120	55	175	165	73	238	215	90	305
TRW	2	0	2	5	0	5	7	0	7
Westinghouse	0	8	8	0	9	9	0	11	11
Zilog	0	0	0	3	0	3	5	0	5
Others	18	13	31	28	25	53	32	18	50
Total	\$545	\$340	\$885	\$760	\$419	\$1,179	\$1,037	\$505	\$1,542

Source: DATAQUEST, Inc.
June 1980

Table 9

ESTIMATED EUROPEAN REVENUES OF JAPANESE SEMICONDUCTOR MANUFACTURERS
(Millions of Dollars)

<u>Company</u>	<u>1977</u>			<u>1978</u>			<u>1979</u>		
	<u>IC</u>	<u>Discrete</u>	<u>Total</u>	<u>IC</u>	<u>Discrete</u>	<u>Total</u>	<u>IC</u>	<u>Discrete</u>	<u>Total</u>
Fujitsu	N/A ¹	N/A	4	N/A	N/A	6	N/A	N/A	12
Hitachi	N/A	N/A	9	N/A	N/A	13	N/A	N/A	22
Matsushita	N/A	N/A	1	N/A	N/A	3	N/A	N/A	6
NEC	N/A	N/A	18	N/A	N/A	24	N/A	N/A	40
Toshiba	N/A	N/A	7	N/A	N/A	9	N/A	N/A	15
Total	\$23	\$16	\$39	\$33	\$22	\$55	\$65	\$30	\$95

¹N/A = Not available

Source: DATAQUEST, Inc.
June 1980

Table 10

SEMICONDUCTOR SUPPLIERS TO WESTERN EUROPE
(Percent of Total)

<u>Company</u>	<u>1977</u>			<u>1978</u>			<u>1979</u>		
	<u>IC</u>	<u>Discrete</u>	<u>Total</u>	<u>IC</u>	<u>Discrete</u>	<u>Total</u>	<u>IC</u>	<u>Discrete</u>	<u>Total</u>
American companies	66%	34%	49%	65%	34%	50%	65%	37%	52%
European companies	31	64	49	32	64	47	30	61	44
Japanese companies	3	2	2	3	2	3	5	2	4
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: DATAQUEST, Inc.
June 1980

United Microelectronics Corporation (UMC)

United Microelectronics Corporation
 No. 3 Industrial East Third Road
 Science Based Industrial Park, Hsin Chu City
 Telephone: 035-773131, Fax: 035-774767
 (Millions of Dollars Except Per Share Data)

Balance Sheet (December 31)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Financial Resources	\$ 1.9	\$(1.2)	\$ 7.5	\$ 9.4	\$ 9.9
Long-Term Liabilities	\$ 7.1	\$ 7.0	\$ 8.2	\$11.0	\$11.6
Shareholders' Equity	\$13.8	\$11.3	\$21.4	\$23.0	\$25.9
After-Tax Return on Average Equity (%)	2.9	(11.4)	38.7	5.5	11.7

Operating Performance (September 31)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Revenue	-	\$ 4.8	\$27.4	\$26.4	\$32.6
Cost of Revenue	-	\$ 4.1	\$14.6	\$19.4	\$21.9
R&D Expense	-	\$ 0.4	-	\$ 0.6	\$ 0.8
SG&A Expense	-	\$ 1.2	\$ 3.4	\$ 3.8	\$ 4.4
Pretax Income	\$ 0.4	\$(2.0)	\$ 8.4	\$ 1.3	\$ 3.0
Net Income	\$ 0.4	\$(2.0)	\$ 8.3	\$ 1.3	\$ 3.0
Average Shares (Million)	36.0	50.0	73.6	78.6	80.0
Per Share (Won)					
Earnings	-	-	4.5	0.6	1.5
Dividends					
Book Value	\$14.5	\$ 9.0	\$11.7	\$11.6	\$12.9
Price Average	N/A	N/A	N/A	N/A	N/A
Total Employees	118	389	580	777	833
Exchange Rate (NT/US\$)	37.8	39.9	40.3	39.5	39.9

N/A = Not Available

Source: United Microelectronics
 Corporation
 Annual Reports

United Microelectronics Corporation (UMC)

BACKGROUND

United Microelectronics Corporation was established in 1980 and started wafer fabrication in March 1982. UMC is the first Taiwanese electronic company invested in by both the government and by private enterprise. UMC received its technology from ERSO. UMC plans to construct a VLSI fab area to produce 1.5-micron devices on 6-inch silicon wafers in 1987.

Manager: H.C. Tsao

Address: Hsin Chu Plant, No. 3, Industrial E. Third Rd., Science-Based Industrial Park, Hsin Chu, Taiwan

Date of first production: April 1982

Employees (March 1986): 833

Facilities: 92,000 square feet (32,000 square feet--wafer fabrication area)

<u>Partial Equipment List</u>	<u>Number of Units</u>
CALMA'S GDS-II CAD system	1 (2 workstations)
VAX 780 simulation computer	1
High current ion implanter	1
Oxide dry etch system	1
Metal dry etch system	1
DDC cantilevered closed-loop furnace systems	8 tubes
Projection wafer steppers	5
Test systems on VLSI	8
Test systems on memory	2
Computer-controlled production management systems	1 system with 26 terminals

MAIN PRODUCTS

- Microcomponents, memory and telecommunication ICs

United Microelectronics Corporation (UMC)

PRODUCTION (Thousands of Units)

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>Total</u>
MOS memory	403	1,685	1,933	2,563	6,584
MOS micro	-	-	-	3,282	3,282
MOS logic	<u>26,981</u>	<u>76,884</u>	<u>130,901</u>	<u>133,449</u>	<u>368,215</u>
Total	27,384	78,569	132,834	139,294	378,081

WORLDWIDE SEMICONDUCTOR SALES BY MAJOR PRODUCT LINE (Millions of U.S. Dollars)

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Total semiconductor	\$4.8	\$25.7	\$20.0	\$27.7	\$65.0
MOS	\$4.8	\$25.7	\$20.0	\$27.7	\$65.0
Memory	0.5	2.3	2.5	2.6	13.0
Micro	-	-	-	5.3	15.0
Logic	4.3	23.4	17.5	19.8	37.0

Source: United Microelectronics Corporation
Annual Reports

AVERAGE MONTHLY WAFER STARTS

<u>Wafer Size</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
4-inch	24,000	23,000	27,000

CAPITAL SPENDING (Millions of U.S. Dollars)

	<u>1983</u>	<u>1984</u>	<u>1985</u>
	\$5.0	\$5.0	\$5.0

DESIGN CENTER

UMC set up a design center in Taipei in July 1986. This design center offers semicustom design service using the gate-array and standard modular library approach.

United Microelectronics Corporation (UMC)

JOINT VENTURES/LICENSESING

<u>Partner</u>	<u>Country</u>	<u>Year</u>	<u>Technology</u>
ERSO	Taiwan	1980	Technology transfer
AMI	United States	1983	Telephone dial IC
Mosel	United States	1984	16K SRAM
Synertek	United States	1985	Computer ICs

CONTRACT MANUFACTURING

UMC produces wafers for 12 major customers, including 8 U.S., 2 European and 2 Taiwanese companies.

U.S. Subsidiary

Unicorn Microelectronics Corporation is a design company.

President: Singi Yang

Address: 99 Tasman Drive, San Jose, CA 95134, U.S.

Telephone: (408) 433-3388/3393

Fax: (408) 433-0705

Telex: 5106004303

Established: 1985

Employees: 20

Investment: US\$2.7 million

Product: ASIC

In 1982, the IC profits for UMC and ERSO were US\$0.1 billion and in 1983, US\$0.225 billion. This amounts to only 3.4 and 7.1 percent, respectively, of the domestic demand.

UMC gained license rights to 21 of Synertek's chip designs as part of an agreement signed in April 1985. UMC has maintained a strong R&D team, placing 10 percent of its annual revenue into R&D.

United Microelectronics Corporation (UMC)

(Page intentionally left blank)

United Microelectronics Corporation (UMC)

United Microelectronics Corporation
 No. 3 Industrial East Third Road
 Science Based Industrial Park, Hsin Chu City
 Telephone: 035-773131, Fax: 035-774767
 (Millions of Dollars Except Per Share Data)

Balance Sheet (December 31)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Financial Resources	\$ 1.9	\$(1.2)	\$ 7.5	\$ 9.4	\$ 9.9
Long-Term Liabilities	\$ 7.1	\$ 7.0	\$ 8.2	\$11.0	\$11.6
Shareholders' Equity	\$13.8	\$11.3	\$21.4	\$23.0	\$25.9
After-Tax Return on Average Equity (%)	2.9	(11.4)	38.7	5.5	11.7

Operating Performance (September 31)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Revenue	-	\$ 4.8	\$27.4	\$26.4	\$32.6
Cost of Revenue	-	\$ 4.1	\$14.6	\$19.4	\$21.9
R&D Expense	-	\$ 0.4	-	\$ 0.6	\$ 0.8
SG&A Expense	-	\$ 1.2	\$ 3.4	\$ 3.8	\$ 4.4
Pretax Income	\$ 0.4	\$(2.0)	\$ 8.4	\$ 1.3	\$ 3.0
Net Income	\$ 0.4	\$(2.0)	\$ 8.3	\$ 1.3	\$ 3.0
Average Shares (Million)	36.0	50.0	73.6	78.6	80.0
Per Share (Won)					
Earnings	-	-	4.5	0.6	1.5
Dividends					
Book Value	\$14.5	\$ 9.0	\$11.7	\$11.6	\$12.9
Price Average	N/A	N/A	N/A	N/A	N/A
Total Employees	118	389	580	777	833
Exchange Rate (NT/US\$)	37.8	39.9	40.3	39.5	39.9

N/A = Not Available

Source: United Microelectronics
 Corporation
 Annual Reports

United Microelectronics Corporation (UMC)

THE COMPANY

OVERVIEW

United Microelectronics Corporation was established in 1980 and started wafer fabrication in March 1982. UMC is the first Taiwanese electronic company invested in by both the government and by private enterprise. UMC received its technology from ERSO. UMC plans to construct a VLSI fab area to produce 1.5-micron devices on 6-inch silicon wafers in 1987.

Manager: H.C. Tsao

Address: Hsin Chu Plant, No. 3, Industrial E. Third Rd., Science-Based Industrial Park, Hsin Chu, Taiwan

Date of first production: April 1982

Employees (March 1986): 833

Facilities: 92,000 square feet (32,000 square feet--wafer fabrication area)

MAIN PRODUCTS

- Microcomponents, memory and telecommunication ICs

PRODUCTION (Thousands of Units)

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>Total</u>
MOS memory	403	1,685	1,933	2,563	6,584
MOS micro	-	-	-	3,282	3,282
MOS logic	<u>26,981</u>	<u>76,884</u>	<u>130,901</u>	<u>133,449</u>	<u>368,215</u>
Total	27,384	78,569	132,834	139,294	378,081

United Microelectronics Corporation (UMC)

WORLDWIDE SEMICONDUCTOR SALES BY MAJOR PRODUCT LINE (Millions of U.S. Dollars)

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Total semiconductor	\$4.8	\$25.7	\$20.0	\$27.7	\$65.0
MOS	\$4.8	\$25.7	\$20.0	\$27.7	\$65.0
Memory	0.5	2.3	2.5	2.6	13.0
Micro	-	-	-	5.3	15.0
Logic	4.3	23.4	17.5	19.8	37.0

Source: United Microelectronics Corporation
Annual Reports

CAPITAL SPENDING (Millions of U.S. Dollars)

<u>1983</u>	<u>1984</u>	<u>1985</u>
\$5.0	\$5.0	\$5.0

DESIGN CENTER

UMC set up a design center in Taipei in July 1986. This design center offers semicustom design service using the gate-array and standard modular library approach.

JOINT VENTURES/LICENSING

<u>Partner</u>	<u>Country</u>	<u>Year</u>	<u>Technology</u>
ERSO	Taiwan	1980	Technology transfer
AMI	United States	1983	Telephone dial IC
Mosel	United States	1984	16K SRAM
Synertek	United States	1985	Computer ICs

United Microelectronics Corporation (UMC)

U.S. Subsidiary

Unicorn Microelectronics Corporation is a design company.

President: Singi Yang

Address: 99 Tasman Drive, San Jose, CA 95134, U.S.

Telephone: (408) 433-3388/3393

Fax: (408) 433-0705

Telex: 5106004303

Established: 1985

Employees: 20

Investment: US\$2.7 million

Product: ASIC

In 1982, the IC profits for UMC and ERSO were US\$0.1 billion and in 1983, US\$0.225 billion. This amounts to only 3.4 and 7.1 percent, respectively, of the domestic demand.

UMC gained license rights to 21 of Synertek's chip designs as part of an agreement signed in April 1985. UMC has maintained a strong R&D team, placing 10 percent of its annual revenue into R&D.

Unitrode Corporation

Table 1

**Estimated Worldwide Semiconductor Revenue by Calendar Year
(Millions of Dollars)**

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Total Semiconductor	81	106	89	82	69	113
Total Integrated Circuit	4	9	8	16	23	51
Bipolar Digital (Function)						
Bipolar Digital Memory						
Bipolar Digital Logic						
MOS (Function)						
MOS Memory						
MOS Microdevices						
MOS Logic						
Analog	4	9	8	16	23	51
Total Discrete	77	97	81	66	46	62
Total Optoelectronic						

Table 2

**Unitrode Corporation
1988 Worldwide Ranking by Semiconductor Markets
(Revenue in Millions of Dollars)**

	<u>1988</u>	<u>1987</u>	<u>1988</u>	<u>Sales</u>	<u>Industry</u>
	<u>Rank</u>	<u>Rank</u>	<u>Revenue</u>	<u>% Change</u>	<u>% Change</u>
				<u>1987-1988</u>	<u>1987-1988</u>
Total Semiconductor	53	64	\$113	63.8%	33.0%
Total Integrated Circuit	63	85	\$ 51	121.7%	37.4%
Analog	34	45	\$ 51	121.7%	16.0%
Total Discrete	28	30	\$ 62	34.8%	14.4%

Source: Dataquest
December 1989

Unitrode Corporation

Table 3

Unitrode Corporation
Estimated 1988 Semiconductor Revenue by Geographic Region
(Millions of Dollars)

	<u>U.S.</u>	<u>Japan</u>	<u>Europe</u>	<u>ROW</u>
Total Semiconductor	\$88	\$3	\$16	\$6
Total Integrated Circuit	\$39	\$2	\$ 6	\$4
Bipolar Digital (Function)				
Bipolar Digital Memory				
Bipolar Digital Logic				
MOS (Function)				
MOS Memory				
MOS Microdevices				
MOS Logic				
Analog	\$39	\$2	\$ 6	\$4
Total Discrete	\$49	\$1	\$10	\$2
Total Optoelectronic				

Source: Dataquest
December 1989

Unitrode Corporation

Unitrode Corporation
 Five Forbes Road
 Lexington, Massachusetts 02173
 Telephone: (617) 861-6540 Telex: 95-1064
 (Millions of Dollars Except Per Share Data)

Balance Sheet (January 31)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Working Capital	\$ 20.3	\$ 26.7	\$ 42.7	\$ 55.9	\$ 75.4
Long-Term Debt*	\$ 5.0	\$ 14.3	\$ 15.1	\$ 13.5	\$ 11.3
Shareholders' Equity	\$ 45.8	\$ 59.1	\$ 75.0	\$ 95.6	\$119.9
After-Tax Return on Average Equity (%)	21.7	21.3	20.3	19.6	20.6

Operating Performance (Fiscal Year Ending January 31)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Revenue	\$103.6	\$118.0	\$131.1	\$159.6	\$200.1
U.S. Revenue	\$ 87.5	\$100.0	\$118.6	\$144.0	\$179.9
Non-U.S. Revenue	\$ 16.1	\$ 18.0	\$ 12.5	\$ 15.6	\$ 20.2
Cost of Revenue	\$ 56.4	\$ 63.6	\$ 71.0	\$ 87.0	\$111.4
R&D Expense	\$ 3.1	\$ 5.6	\$ 6.5	\$ 8.8	\$ 12.1
SG&A Expense	\$ 25.5	\$ 29.2	\$ 31.7	\$ 36.5	\$ 42.5
Pretax Income	\$ 18.1	\$ 19.0	\$ 21.1	\$ 26.5	\$ 33.2
Pretax Margin (%)	17.5	16.1	16.1	16.6	16.6
Effective Tax Rate (%)	43.2	41.1	35.6	36.9	33.1
Net Income	\$ 10.3	\$ 11.2	\$ 13.6	\$ 16.7	\$ 22.2
Average Shares Outstanding (Millions)	12.36	12.73	12.95	13.39	13.46
Per Share					
Earnings**	\$ 0.84	\$ 0.88	\$ 1.05	\$ 1.25	\$ 1.65
Dividends	\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.16	\$ 0.20
Book Value	\$ 4.07	\$ 4.70	\$ 5.88	\$ 7.34	\$ 9.07
Price Range	\$ 5.94- 11.50	\$ 8.13- 15.25	\$10.69- 23.88	\$21.31- 36.75	\$22.00- 33.75
Total Employees	1,985	2,274	2,425	3,094	3,120
Capital Expenditures	\$ 9.1	\$ 17.1	\$ 14.6	\$ 15.6	\$ 12.7

*Includes Industrial Revenue Bonds

**Includes \$0.10 per share resulting from deferral of the DISC tax benefit, in 1985.

Source: Unitrode Corporation
 Annual Reports
 DATAQUEST

Unitrode Corporation

Table 1

Unitrode Corporation
ESTIMATED CORPORATE REVENUES
(Millions of Dollars)

	<u>Calendar Years</u>				
	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Total Semiconductors	\$ 87	\$ 89	\$ 96	\$106	\$130
Total IC (Analog)	-	-	\$ 2	\$ 4	\$ 9
Total Discrete	\$ 70	\$ 70	\$ 71	\$ 78	\$ 97
Transistors	\$ 8	\$ 9	\$ 10	\$ 15	\$ 15
Small-Signal	0	0	0	0	0
Power	8	9	10	15	15
Diodes	\$ 54	\$ 52	\$ 51	\$ 56	\$ 74
Small-Signal	15	15	14	13	15
Power	31	29	29	34	48
Zener	8	8	8	9	11
Thyristors	\$ 7	\$ 7	\$ 8	\$ 4	\$ 4
Other Discretes	\$ 1	\$ 2	\$ 2	\$ 2	\$ 4
Hybrid ICs	\$ 17	\$ 19	\$ 23	\$ 25	\$ 24
Other Revenues	<u>\$ 15</u>	<u>\$ 28</u>	<u>\$ 34</u>	<u>\$ 51</u>	<u>\$ 67</u>
Total Revenues	\$102	\$117	\$130	\$157	\$197

Source: Unitrode Corporation
 Annual Reports
 DATAQUEST

Unitrode Corporation

Table 2

Unitrode Corporation FINANCIAL STATEMENT HISTORY 1978-1985**,** (Millions of Dollars)

	Fiscal Year Ending January 31								CAGR	LSOR
	1978	1979	1980	1981	1982	1983	1984	1985		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	3.89	7.76	7.28	2.97	5.39	11.77	8.57	13.12	18.99	14.67
3 RECEIVABLES	7.00	9.35	13.68	17.29	18.74	21.88	30.79	38.72	27.68	26.01
4 INVENTORY	9.22	10.59	19.62	20.48	21.68	36.96	40.31	50.31	27.43	26.86
5 PREPAID EXPENSES	0.23	0.24	0.54	0.41	0.54	0.66	1.66	1.13	25.40	29.57
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	20.34	27.94	41.12	41.13	46.35	65.27	81.33	103.28	26.13	24.23
9 GROSS P P E	17.36	21.73	34.71	43.53	55.86	71.18	86.11	98.30	28.17	29.09
10 ACCUMULATED DEPRECIATION	8.85	10.70	13.89	17.18	18.37	24.89	32.55	41.79	24.82	24.48
11 NET P P E	8.45	11.02	21.62	26.35	37.50	46.50	53.57	56.51	31.18	32.84
12 MISC ASSETS	1.85	1.88	0.27	2.72	8.13	1.94	1.68	1.27	(5.27)	3.78
13 GOODWILL	0.39	0.83	3.46	3.29	3.21	3.12	3.03	2.94	33.69	27.44
15 +TOTAL ASSETS*	31.63	41.66	66.47	73.49	95.19	116.42	139.61	164.00	26.85	26.34
16 NOTES PAYABLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17 ACCOUNTS PAYABLE	1.52	2.26	5.89	4.79	9.25	8.87	7.20	7.68	26.86	24.29
18 ACCRUED TAXES	1.32	2.49	3.82	1.86	3.20	4.44	5.21	4.11	17.56	16.21
19 ACCRUED LIABILITIES	1.22	2.22	1.29	2.32	2.94	3.68	5.17	8.10	31.83	28.18
20 CURR MAT LONG TERM DEBT	0.14	0.31	0.10	8.20	0.20	2.27	2.94	3.41	58.12	59.81
21 OTHER CURRENT LIABILITIES	0.00	0.00	2.39	3.69	4.78	5.31	4.88	4.58	0.00	0.00
22 TOTAL CURRENT LIABILITIES	4.20	7.27	13.49	20.85	20.37	22.57	25.40	27.89	31.84	28.43
23 LONG TERM DEBT	1.35	0.51	0.00	0.00	0.10	0.74	1.74	2.06	6.22	0.00
24 DEFERRED TAXES	0.00	0.56	0.99	1.86	2.71	3.67	5.06	4.84	0.00	0.00
25Industr REVENUE BONDS	0.00	1.25	2.15	4.95	14.25	14.40	11.79	9.27	0.00	0.00
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	5.55	9.60	16.63	27.66	37.42	41.38	43.98	44.86	34.43	34.90
29 DEFERRED COMPENSATION	0.00	0.00	(4.14)	(3.91)	(2.95)	(2.18)	(1.21)	(0.24)	0.00	0.00
30 COMMON STOCK	0.50	0.52	0.62	0.63	1.26	1.36	2.74	2.74	27.52	31.96
31 CAPITAL SURPLUS	4.05	4.23	18.82	18.20	16.77	18.96	28.36	22.25	27.57	28.47
32 RETAINED EARNINGS	20.93	27.77	34.63	43.52	53.33	65.41	80.17	99.77	24.99	24.40
33 TREASURY STOCK	0.00	(0.48)	(0.10)	(12.62)	(10.64)	(8.52)	(6.44)	(4.57)	0.00	0.00
34 TOTAL EQUITY	25.47	32.06	49.84	45.83	57.78	75.03	95.63	119.94	24.77	23.56
35 +TOTAL LIAB & EQUITY*	31.63	41.66	66.47	73.49	95.19	116.42	139.61	164.00	26.85	26.34
36 NET WORKING CAPITAL	16.13	20.66	27.63	28.28	25.98	42.70	55.94	75.40	24.64	22.91
INCOME & EXPENSES										
38 SALES	38.79	50.99	81.61	103.60	118.04	131.13	159.57	200.11	26.41	25.06
40 COST OF GOODS	22.61	27.75	42.75	51.00	56.51	62.56	76.95	99.93	23.65	22.63
41 GROSS PROFITS	16.18	22.84	38.86	52.60	61.53	68.57	83.62	100.19	29.76	28.52
42 S G & A EXPENSE	7.91	10.83	18.73	25.54	29.19	31.67	36.54	42.49	27.15	26.22
43 R&D EXPENSE	1.32	1.26	1.79	3.10	5.58	6.50	8.81	12.12	37.26	42.42
45 OPERATING PROFIT	6.95	10.75	18.33	23.96	26.76	30.39	37.67	45.98	30.82	28.49
46 DEPRECIATION	1.38	1.85	3.24	4.39	5.53	6.68	8.45	9.90	32.64	32.82
47 LEASE PAYMENTS	0.00	0.35	0.50	1.02	1.54	1.74	2.00	1.47	0.00	0.00
48 INTEREST EXPENSE	(0.04)	(0.24)	(0.32)	0.41	0.66	0.78	0.69	0.90	0.00	0.00
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.32	0.36	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53 PRETAX PROFIT	5.92	9.15	14.90	18.15	19.00	21.19	26.53	33.22	27.94	24.63
54 INCOME TAXES	2.53	3.94	6.63	7.83	7.81	7.95	9.79	11.01	23.37	19.80
55 EXTRAORD LOSS (GAIN)	0.00	(1.71)	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00
56 NET PROFIT	3.39	6.92	8.27	10.40	11.19	13.64	16.74	22.21	30.81	25.60
57 EPS AFTER PFD DIVIDENDS	0.32	0.66	0.68	0.84	0.88	1.05	1.25	1.65	26.14	20.05
58 COMMON DIV PER SHARE	0.03	0.04	0.13	0.13	0.13	0.13	0.16	0.20	34.59	29.66

* IN FISCAL 1980, UNITRODE ACQUIRED HIGH VOLTAGE DEVICES, INC. AND MICRO NETWORKS, INC. ONLY 1979-1984 DATA HAS BEEN RESTATED TO REFLECT THIS ACQUISITION. IF EARLIER YEARS WERE RESTATED, UNITRODE REVENUES, NET INCOME, AND EARNINGS PER SHARE WOULD INCREASE A SMALL AMOUNT.

** IN FISCAL 1984, UNITRODE ACQUIRED U.S. MICROTEK COMPONENTS CORPORATION AND POWER GENERAL CORPORATION. THE CHANGE IN REVENUES IS REFLECTED IN THE YEARS 1982 THROUGH 1984.

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Table 3

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1978-1985,****
(Percent)

	Fiscal Year Ending January 31								CAGR	LSOR
	1978	1979	1980	1981	1982	1983	1984	1985		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	12.52	18.61	18.96	4.04	5.66	10.11	6.14	8.00	(6.20)	(9.72)
3 RECEIVABLES	22.56	22.44	20.50	23.52	19.69	18.79	22.06	23.61	0.65	(0.26)
4 INVENTORY	29.71	25.43	29.52	27.84	22.77	26.60	28.87	30.68	0.46	0.41
5 PREPAID EXPENSES	0.75	0.57	0.81	0.56	0.57	0.57	1.19	0.69	(1.15)	2.56
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	65.54	67.05	61.86	55.97	48.70	56.06	58.26	62.96	(0.57)	(1.67)
9 GROSS P P E	55.77	52.15	52.22	59.23	58.69	61.14	61.68	59.94	1.03	2.17
10 ACCUMULATED DEPRECIATION	28.52	25.69	19.70	23.37	19.29	21.20	23.31	25.48	(1.60)	(1.47)
11 NET P P E	27.25	26.45	32.53	35.86	39.39	39.94	38.37	34.46	3.41	5.14
12 MISC ASSETS	5.97	4.51	0.41	3.69	0.54	1.32	1.21	0.77	(25.32)	(17.86)
13 GOODWILL	1.24	1.99	5.20	4.48	3.37	2.68	2.17	1.79	5.39	0.87
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	(0.00)
16 NOTES PYBLE & CURR LTD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17 ACCOUNTS PAYABLE	4.89	5.42	8.87	6.51	9.72	5.90	5.15	4.68	(0.62)	(1.62)
18 ACCRUED TAXES	4.27	5.97	5.74	2.52	3.36	3.81	3.73	2.51	(7.32)	(6.02)
19 ACCRUED LIABILITIES	3.94	5.33	1.94	3.16	3.09	3.16	3.70	4.94	3.29	1.46
20 CURR MAT LONG TERM DEBT	0.44	0.74	0.15	11.16	0.21	1.95	2.11	2.00	24.65	26.49
21 OTHER ACCRUED LIABILITIES	0.00	0.00	3.60	5.02	5.02	4.56	3.49	2.79	0.00	0.00
22 TOTAL CURRENT LIABILITIES	13.54	17.46	20.29	28.37	21.40	19.39	18.19	17.00	3.30	1.66
23 LTD	4.35	1.23	0.00	0.00	0.10	0.63	1.24	1.26	(16.27)	0.00
24 DEFERRED TAXES	0.00	1.34	1.49	2.53	2.84	3.16	3.63	2.95	0.00	0.00
25Industr REVENUE BONDS	0.00	3.00	3.23	6.74	14.97	12.37	8.44	5.65	0.00	0.00
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	17.89	23.04	25.02	37.63	39.32	35.55	31.50	26.07	5.98	6.78
29 DEFERRED COMPENSATION	0.00	0.00	(6.22)	(5.31)	(3.10)	(1.87)	(0.06)	(0.14)	0.00	0.00
30 COMMON STOCK	1.61	1.24	0.94	0.85	1.32	1.17	1.96	1.67	0.52	4.45
31 CAPITAL SURPLUS	13.04	10.16	20.32	24.77	17.61	16.29	14.58	13.57	0.57	0.10
32 RETAINED EARNINGS	67.46	66.67	52.10	59.22	56.93	58.18	57.43	60.83	(1.47)	(1.53)
33 TREASURY STOCK	0.00	(1.10)	(0.15)	(17.17)	(11.18)	(7.32)	(4.61)	(2.79)	0.00	0.00
34 TOTAL EQUITY	82.11	76.96	74.90	62.37	60.68	64.45	66.50	73.14	(1.64)	(2.21)
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	(0.00)
36 NET WORKING CAPITAL	52.00	49.60	41.57	27.60	27.30	36.60	40.07	45.97	(1.74)	(2.72)
INCOME & EXPENSES										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	(0.00)
40 COST OF GOODS	58.29	54.85	52.39	49.23	47.88	47.71	47.97	49.93	(2.19)	(2.42)
41 GROSS PROFITS	41.71	45.15	47.61	50.77	52.12	52.29	52.03	50.07	2.64	2.77
42 S G & A EXPENSE	20.38	21.41	22.98	24.65	24.73	24.15	22.90	21.23	0.58	0.93
43 R&D EXPENSE	3.41	2.49	2.19	3.00	4.73	4.96	5.52	6.86	6.58	13.88
45 OPERATING PROFIT	17.92	21.25	22.46	23.13	22.67	23.18	23.60	22.78	3.48	2.75
46 DEPRECIATION	3.56	3.66	3.97	4.24	4.68	5.10	5.30	4.99	4.93	6.20
47 LEASE PAYMENTS	0.00	0.69	0.71	0.98	1.32	1.33	1.25	0.73	0.00	0.00
48 INTEREST EXPENSE	(0.09)	(0.48)	(0.39)	0.39	0.56	0.59	0.43	0.45	0.00	0.00
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.81	0.71	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
53 PRETAX PROFIT	15.27	18.09	18.26	17.51	16.10	16.16	16.63	16.60	1.21	(0.34)
54 INCOME TAXES	6.53	7.78	8.12	7.56	6.62	5.76	6.13	5.50	(2.41)	(4.14)
50 EXTRAORD LOSS	0.00	(3.38)	0.00	(0.06)	0.00	0.00	0.00	0.00	0.00	0.00
56 NET PROFIT	8.74	13.69	10.13	10.04	9.48	10.40	10.49	11.10	3.48	6.44
57 EPS AFTER PFD DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	(0.00)
58 COMMON DIV PER SHARE	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	(0.00)

* IN FISCAL 1980, UNITRODE ACQUIRED HIGH VOLTAGE DEVICES, INC. AND MICRO NETWORKS, INC. ONLY 1979-1984 DATA HAS BEEN RESTATED TO REFLECT THIS ACQUISITION. IF EARLIER YEARS WERE RESTATED, UNITRODE REVENUES, NET INCOME, AND EARNINGS PER SHARE WOULD INCREASE A SMALL AMOUNT.

** IN FISCAL 1984, UNITRODE ACQUIRED U.S. MICROTOK COMPONENTS CORPORATION AND POWER GENERAL CORPORATION. THE CHANGE IN REVENUES IS REFLECTED IN THE YEARS 1982 THROUGH 1984

Source: Unitrode Corporation
 Annual Reports
 DATAQUEST

Unitrode Corporation

Table 4

Unitrode Corporation
FUNDS FLOW HISTORY 1978-1985
(Millions of Dollars)

	Fiscal Year Ending January 31								CAGR	LSOR
	1978	1979	1980	1981	1982	1983	1984	1985		
SOURCES										
56 NET PROFIT	3.39	6.92	8.27	10.40	11.19	13.64	16.74	22.21	30.81	25.60
46 DEPRECIATION	1.38	1.85	3.24	4.30	5.53	6.68	8.45	9.98	32.64	32.82
61 NEW LONG TERM DEBT	1.45	0.00	0.00	0.20	0.30	2.91	3.94	3.73	14.46	0.00
62 NEW EQUITY	0.10	0.06	11.03	(12.87)	2.33	5.25	6.03	4.79	73.00	0.00
63 INCR OTHER LIABILITIES	0.00	1.81	1.33	3.67	10.15	1.12	(1.22)	(2.74)	0.00	0.00
66 TOTAL SOURCES	6.32	10.65	23.87	13.79	29.50	29.60	33.94	37.98	29.20	26.51
USES										
67 P P E EXPENDITURES	3.90	4.42	13.84	9.12	16.60	15.60	15.52	12.93	18.69	20.49
68 REPAYMENT LONG TERM DEBT	0.63	0.67	0.72	0.10	0.20	0.20	2.27	2.94	95.44	60.00
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 COMMON DIVIDENDS	0.26	0.40	1.52	1.55	1.59	1.62	2.18	2.69	39.57	34.76
71 INCR OTHER ASSETS	0.35	0.47	1.02	2.28	5.33	(6.69)	0.06	(0.51)	0.00	0.00
72 INCR WORKING CAPITAL	1.79	4.70	6.76	0.75	(2.30)	18.78	13.92	19.93	41.12	0.00
74 TOTAL USES	6.32	10.65	23.87	13.79	29.50	29.60	33.94	37.98	29.20	26.51
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76 CUMULATIVE SUR/DEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Table 5

Unitrode Corporation FINANCIAL RATIO HISTORY 1978-1985

	Fiscal Year Ending January 31									
	1978	1979	1980	1981	1982	1983	1984	1985	ST AVG	WT AVG
LIQUIDITY										
1 CURRENT RATIO	4.839	3.841	3.048	1.973	2.276	2.892	3.203	3.704	3.222	3.065
2 QUICK RATIO	2.590	2.352	1.554	0.972	1.185	1.490	1.550	1.859	1.694	1.568
3 CASH RATIO	0.925	1.066	0.540	0.143	0.264	0.521	0.338	0.471	0.533	0.440
4 WORKING CAPITAL/SALES	0.416	0.408	0.339	0.196	0.220	0.326	0.351	0.377	0.329	0.321
6 DAYS RECEIVABLES	65.861	67.462	61.184	60.901	57.959	60.888	70.440	70.617	64.414	65.030
7 DAYS INVENTORY	148.825	139.370	167.500	146.425	140.000	180.639	192.189	183.778	162.341	169.865
LEVERAGE										
8 LONG TERM DEBT/CAPITALIZ	0.050	0.016	0.000	0.000	0.002	0.010	0.018	0.017	0.014	0.011
11 LONG TERM DEBT/EQUITY	0.053	0.016	0.000	0.000	0.002	0.010	0.018	0.017	0.014	0.012
12 TOTAL DEBT/EQUITY	0.058	0.026	0.002	0.179	0.005	0.040	0.049	0.046	0.051	0.050
COVERAGE										
13 EBIT/INTEREST	(163.472)	(36.967)	(48.856)	45.502	29.701	28.164	39.672	37.917	(8.158)	19.600
14 FIXED CHARGE COVERAGE	(163.472)	80.722	50.533	13.733	9.535	9.401	10.884	15.037	4.922	14.974
16 REPAY LTD+FIX CHARGE COV	(653.889)	11.961	15.454	12.833	2.836	8.711	5.902	6.705	(73.786)	(10.413)
OPER PERFORMANCE										
17 GROSS PROFIT/SALES	0.417	0.452	0.476	0.500	0.521	0.523	0.520	0.501	0.490	0.505
18 OPER PROFIT/SALES	0.179	0.213	0.225	0.231	0.227	0.232	0.236	0.228	0.221	0.228
21 PRETAX PROFIT/SALES	0.153	0.181	0.183	0.175	0.161	0.162	0.166	0.166	0.160	0.167
22 NET PROFIT/SALES	0.087	0.137	0.101	0.100	0.095	0.104	0.105	0.111	0.105	0.105
23 NET PROFIT/AVG EQUITY	0.142	0.241	0.202	0.217	0.216	0.205	0.196	0.206	0.203	0.207
24 NET PROFIT/AVG CAPITALIZ	0.130	0.233	0.201	0.217	0.216	0.204	0.193	0.203	0.201	0.204
26 NET PROFIT/AVG TOT ASSETS	0.119	0.190	0.153	0.149	0.133	0.129	0.131	0.146	0.144	0.141
27 E P S GROWTH RATE	0.538	1.039	0.027	0.237	0.045	0.190	0.188	0.319	0.324	0.240
28 SALES GROWTH RATE	0.260	0.304	0.613	0.260	0.139	0.111	0.217	0.254	0.272	0.242
TURNOVER										
31 SALES/AVG EQUITY	1.626	1.758	1.993	2.166	2.279	1.975	1.870	1.857	1.940	1.971
32 SALES/AVG CAPITALIZ	1.500	1.703	1.980	2.166	2.277	1.963	1.843	1.824	1.917	1.951
33 SALES/AVG TOT DEBT + EQTY	1.574	1.691	1.971	1.993	2.106	1.927	1.789	1.773	1.853	1.879
34 SALES/AVG TOTAL ASSETS	1.361	1.392	1.509	1.400	1.400	1.239	1.246	1.318	1.368	1.342
35 SALES/AVG OPER ASSETS	1.467	1.493	1.605	1.591	1.560	1.341	1.294	1.350	1.404	1.428
36 SALES/AVG GROSS P P E	2.519	2.592	2.092	2.640	2.375	2.004	2.029	2.170	2.411	2.300
BALANCE SHEET										
37 CASH/SALES	0.100	0.153	0.089	0.029	0.046	0.050	0.054	0.066	0.078	0.068
38 RECEIVABLES/SALES	0.180	0.185	0.160	0.167	0.159	0.167	0.193	0.193	0.176	0.178
41 INVENTORY/SALES	0.238	0.209	0.240	0.197	0.184	0.236	0.253	0.251	0.226	0.230
42 OTH CURR ASSETS/SALES	0.006	0.005	0.007	0.004	0.005	0.005	0.010	0.006	0.006	0.006
44 GROSS P P E/SALES	0.446	0.429	0.425	0.420	0.473	0.543	0.540	0.491	0.471	0.489
45 LINE 13/SALES	0.010	0.016	0.042	0.032	0.027	0.024	0.019	0.015	0.023	0.023
46 MISC ASSETS/SALES	0.048	0.037	0.003	0.026	0.009	0.012	0.011	0.006	0.026	0.022
47 ACCOUNTS PAYABLE/SALES	0.030	0.045	0.072	0.046	0.078	0.052	0.045	0.038	0.052	0.052
48 ACCRUED TAXES/SALES	0.034	0.049	0.047	0.018	0.027	0.034	0.033	0.021	0.033	0.030
51 ACCRUED LIABILITY/SALES	0.032	0.044	0.016	0.022	0.025	0.028	0.032	0.040	0.030	0.031
53 DEFERRED TAXES/SALES	0.000	0.011	0.012	0.018	0.023	0.020	0.032	0.024	0.019	0.023
54 MISC LIABILITIES/SALES	0.000	0.025	0.026	0.048	0.121	0.110	0.074	0.046	0.056	0.069
56 LINE 26/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MISCELLANEOUS										
57 EQUITY PER COMMON SHARE	2.440	3.068	4.441	4.023	4.769	5.900	7.235	8.926	5.100	6.101
58 RETIRE/PREV GROSS P P E	(0.007)	0.000	(0.030)	(0.009)	(0.100)	(0.007)	(0.006)	(0.009)	(0.022)	(0.023)
61 DEPREC/PREV GROSS P P E	0.102	0.107	0.149	0.126	0.127	0.120	0.119	0.116	0.121	0.122
62 COM DIVS/ERN-PFD DIVS	0.077	0.057	0.184	0.149	0.142	0.119	0.130	0.121	0.122	0.129
63 TAX RATE	0.427	0.430	0.445	0.432	0.411	0.356	0.360	0.331	0.400	0.383
64 COST OF GOODS/SALES	0.583	0.548	0.524	0.492	0.479	0.477	0.480	0.499	0.510	0.495

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Unitrode Corporation
 Five Forbes Road
 Lexington, Massachusetts 02173
 Telephone: (617) 861-6540 Telex: 95-1064
 (Millions of Dollars Except Per Share Data)

Balance Sheet (January 31)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Working Capital	\$ 20.7	\$27.6	\$ 20.3	\$ 26.0	\$ 41.3
Long-Term Debt*	\$ 1.8	\$ 2.2	\$ 5.0	\$ 14.3	\$ 14.3
Shareholders' Equity	\$ 32.1	\$49.8	\$ 45.8	\$ 57.8	\$ 73.0
After-Tax Return on Average Equity (%)	24.1	20.2	21.7	21.6	19.8

Operating Performance (Fiscal Year Ending January 31)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Revenue	\$ 50.6	\$81.6	\$103.6	\$112.4	\$120.1
U.S. Revenue	\$ 44.8	\$70.6	\$ 87.5	\$ 94.4	\$ 97.3
Non-U.S. Revenue	\$ 5.8	\$11.0	\$ 16.1	\$ 18.0	\$ 22.8
Cost of Revenue	\$ 29.9	\$46.6	\$ 56.4	\$ 60.3	\$ 64.7
R&D Expense	\$ 1.3	\$ 1.8	\$ 3.1	\$ 5.4	\$ 6.2
SG&A Expense	\$ 10.8	\$18.7	\$ 25.5	\$ 27.1	\$ 28.5
Pretax Income	\$ 9.1	\$14.9	\$ 18.1	\$ 19.1	\$ 20.2
Pretax Margin (%)	18.1	18.3	17.5	17.0	16.8
Effective Tax Rate (%)	43.0	44.5	43.2	41.4	36.0
Net Income**	\$ 5.2	\$ 8.3	\$ 10.3	\$ 11.2	\$ 12.9
Average Shares Outstanding (Millions)	5.23	6.08	6.18	5.82	5.93
Per Share					
Earnings	\$ 1.00	\$ 1.36	\$ 1.67	\$ 1.93	\$ 2.18
Dividends	\$ 0.08	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25
Book Value	\$ 6.32	\$ 8.02	\$ 8.14	\$ 10.07	\$ 12.50
Price Range	\$ 5.13-	\$ 8.31-	\$ 11.88-	\$ 16.25-	\$ 21.38-
	10.31	18.75	23.00	30.50	47.75
Total Employees	1,363	2,009	1,985	2,068	2,113
Capital Expenditures	\$ 4.3	\$ 8.6	\$ 8.8	\$ 16.4	\$ 14.0

*Includes Industrial Revenue Bonds

**In fiscal 1979, Unitrode had, in addition, an extraordinary gain of \$1.7 million or \$0.65 per share.

Source: Unitrode Corporation Annual Reports
 DATAQUEST

Unitrode Corporation

Table 1

Unitrode Corporation
ESTIMATED CORPORATE REVENUES
(Millions of Dollars)

	Calendar Years							
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Total Semiconductors	\$27	\$30	\$34	\$42	\$69	\$ 87	\$ 89	\$ 92
Total Discrete	\$26	\$29	\$33	\$40	\$60	\$ 70	\$ 70	\$ 68
Transistors	\$ 2	\$ 2	\$ 2	\$ 3	\$ 6	\$ 10	\$ 12	\$ 12
Small-Signal	0	0	0	0	0	0	0	0
Power	2	2	2	3	6	10	12	12
Diodes	\$19	\$23	\$26	\$32	\$46	\$ 52	\$ 50	\$ 49
Small-Signal	4	5	6	9	13	13	12	12
Power	11	13	16	18	26	31	29	28
Zener	4	5	4	5	7	8	9	9
Thyristors	\$ 4	\$ 3	\$ 4	\$ 4	\$ 6	\$ 7	\$ 7	\$ 6
Other Discretes	\$ 1	\$ 1	\$ 1	\$ 1	\$ 2	\$ 1	\$ 1	\$ 1
Hybrid ICs	\$ 1	\$ 1	\$ 1	\$ 2	\$ 9	\$ 17	\$ 19	\$ 23
Other Revenues	<u>\$ 2</u>	<u>\$ 1</u>	<u>\$ 5</u>	<u>\$ 6</u>	<u>\$11</u>	<u>\$ 15</u>	<u>\$ 22</u>	<u>\$ 32</u>
Total Revenues	\$28	\$31	\$39	\$48	\$80	\$102	\$111	\$119

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Table 2

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1976-1983
(Millions of Dollars)

	Fiscal Year Ending January 31							TREND	CMPD	GR
	1976	1977	1978	1979	1980	1981	1982			
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	0.82	0.87	3.89	7.75	7.28	2.97	5.39	11.62	1.15	40.76
3 RECEIVABLES	5.38	5.79	7.00	9.35	13.68	17.29	18.74	19.39	2.36	23.81
4 INVENTORY	11.70	11.31	9.22	10.59	19.62	20.48	21.88	28.29	2.51	15.96
5 PREPAID EXPENSES	0.19	0.19	0.23	0.24	0.54	0.41	0.54	0.61	0.07	21.21
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	17.89	18.16	20.33	27.93	41.12	41.13	46.35	59.90	6.08	20.47
9 GROSS P P E	12.20	13.50	17.30	21.73	34.71	43.53	55.86	69.19	8.38	30.69
10 ACCUMULATED DEPRECIATION	6.67	7.56	8.85	10.70	13.09	17.18	18.37	24.07	2.42	20.43
11 NET P P E	5.53	5.94	8.45	11.02	21.62	26.35	37.50	45.12	5.99	39.54
12 MISC ASSETS	0.19	1.49	1.85	1.88	0.27	2.72	8.13	1.47	0.51	29.93
14 GOODWILL	0.41	0.40	0.39	0.83	3.46	3.29	3.21	3.12	0.53	47.32
15 *TOTAL ASSETS*	24.02	25.99	31.03	41.66	66.47	73.49	95.19	109.61	13.06	27.14
16 NOTES PAYABLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17 ACCOUNTS PAYABLE	1.53	1.46	1.52	2.26	5.89	4.78	9.25	5.84	0.98	31.39
18 ACCRUED TAXES	0.86	1.00	1.32	2.49	3.82	1.85	3.20	4.17	0.44	24.33
19 ACCRUED LIABILITIES	0.86	0.77	0.58	2.22	2.38	2.32	2.94	2.36	0.32	23.97
20 CURR MAT LONG TERM DEBT	0.02	0.03	0.14	0.31	0.10	8.20	0.20	0.94	0.37	74.02
21 OTHER ACCRUED LIABILITIES	0.46	0.45	0.65	0.00	1.30	3.89	4.78	5.31	0.79	92.92
22 TOTAL CURR LIABILITIES	3.75	3.71	4.20	7.27	13.49	20.85	20.37	18.62	2.90	34.93
23 LONG TERM DEBT	0.06	0.04	1.35	0.51	0.00	0.00	0.10	0.74	0.01	(51.69)
24 DEFERRED TAXES	0.00	0.00	0.00	0.56	0.99	1.88	2.71	3.64	0.54	4822.43
25 INDUSTR REVENUE BONDS	0.00	0.00	0.00	1.25	2.15	4.95	14.25	13.63	2.17	6130.03
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	3.81	3.75	5.55	9.60	16.63	27.65	37.42	36.62	5.61	47.62
29 DEFERRED COMPENSATION	0.00	0.00	0.00	0.00	(4.14)	(3.91)	(2.95)	(2.18)	(0.55)	*****
30 COMMON STOCK	0.50	0.50	0.50	0.52	0.62	0.63	1.25	1.25	0.11	15.36
31 CAPITAL SURPLUS	3.86	3.96	4.04	4.23	18.82	18.20	16.77	17.63	2.59	32.84
32 RETAINED EARNINGS	15.86	17.79	20.93	27.77	34.63	43.52	53.33	64.80	7.08	23.55
33 TREASURY STOCK	0.00	0.00	0.00	(0.46)	(0.10)	(12.62)	(10.64)	(8.52)	(1.79)	*****
34 TOTAL EQUITY	20.21	22.25	25.47	32.06	49.84	45.83	57.76	72.99	7.45	20.93
35 *TOTAL LIAB & EQUITY*	24.02	25.99	31.03	41.66	66.47	73.49	95.19	109.61	13.06	27.14
36 NET WORKING CAPITAL	14.14	14.45	16.13	20.66	27.63	20.28	25.98	41.28	3.18	14.54
INCOME & EXPENSE										
38 SALES	27.75	30.59	38.79	50.59	81.61	103.60	112.41	120.08	15.25	27.16
40 COST OF GOODS	16.50	18.09	22.81	27.75	42.75	51.00	53.87	57.06	6.70	22.45
41 GROSS PROFIT	11.25	12.50	16.18	22.84	38.86	52.60	58.53	63.02	8.55	32.83
42 S G & A EXPENSE	5.27	6.23	7.91	10.83	18.73	25.54	27.15	28.55	3.91	31.90
43 R & D EXPENDITURES	1.23	1.21	1.32	1.26	1.79	3.10	5.39	6.22	0.73	29.50
45 OPERATING PROFIT	4.75	5.07	6.95	10.75	18.33	23.96	26.00	28.26	3.90	34.51
46 DEPRECIATION	1.09	0.90	1.39	1.85	3.24	4.39	5.32	6.39	0.83	35.08
47 LEASE PAYMENTS	0.00	0.00	0.00	0.35	0.58	1.02	1.13	1.26	0.21	4083.09
48 INTEREST EXPENSE (INCOME)	0.10	(0.04)	(0.04)	(0.24)	(0.32)	0.41	0.47	0.43	0.07	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.05	0.32	0.36	0.07	0.00	0.00	0.00	(0.02)	(83.03)
53 PRETAX PROFIT	3.56	4.26	5.92	9.15	14.90	18.15	19.08	20.17	2.77	32.28
54 INCOME TAXES	1.83	2.07	2.53	3.94	6.63	7.83	7.85	7.26	1.02	27.21
55 EXTRAORD LOSS (GAIN)	0.00	0.00	0.00	(1.71)	0.00	(0.09)	0.00	0.00	0.02	*****
56 NET PROFIT	1.73	2.18	3.39	6.92	8.27	10.40	11.23	12.91	1.74	35.97
57 EPS AFTER PPD DIVIDENDS	0.34	0.42	0.65	1.32	1.36	1.68	1.93	2.18	0.28	32.24
58 COMMON DIV PER SHARE	0.00	0.05	0.05	0.07	0.25	0.25	0.25	0.00	0.02	18.25

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc. and Micro Networks, Inc. Only 1979-1983 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Table 3

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1976-1983
(Percent)

	Fiscal Year Ending January 31								TREND	CMPD GR
	1976	1977	1978	1979	1980	1981	1982	1983		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	2.59	3.36	12.52	18.61	10.96	4.04	5.66	10.60	0.41	10.71
3 RECEIVABLES	22.39	22.28	22.56	22.44	20.58	23.52	19.59	17.69	(0.53)	(2.62)
4 INVENTORY	48.72	43.52	29.71	25.43	29.52	27.84	22.77	25.81	(3.16)	(8.79)
5 PREPAID EXPENSES	0.77	0.73	0.75	0.57	0.81	0.56	0.57	0.56	(0.03)	(4.67)
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	74.47	69.88	65.54	67.05	61.86	55.97	48.70	54.65	(3.32)	(5.25)
9 GROSS P F E	50.79	51.93	55.77	52.15	52.22	59.23	58.69	63.12	1.55	2.79
10 ACCUMULATED DEPRECIATION	27.76	29.08	28.52	25.69	19.70	23.37	19.29	21.96	(1.32)	(5.28)
11 NET P F E	23.03	22.85	27.25	26.45	32.53	35.86	39.39	41.16	2.87	9.75
12 MISC ASSETS	0.80	5.74	5.97	4.51	0.41	3.69	8.54	1.34	0.08	2.20
14 GOODWILL	1.70	1.53	1.24	1.99	5.20	4.48	3.37	2.84	0.38	15.87
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
16 NOTES PAYABLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17 ACCOUNTS PAYABLE	6.44	5.62	4.89	5.42	8.87	6.51	9.72	5.33	0.25	3.34
18 ACCRUED TAXES	3.58	3.86	4.27	5.97	5.74	2.52	3.36	3.81	(0.08)	(2.21)
19 ACCRUED LIABILITIES	3.56	2.95	1.86	5.33	3.58	3.16	3.09	2.15	(0.08)	(2.49)
20 CURR MAT LONG TERM DEBT	0.10	0.10	0.44	0.74	0.15	11.16	0.21	0.86	0.44	36.88
21 OTHER ACCRUED LIABILITIES	1.91	1.73	2.08	0.00	1.96	5.02	5.02	4.85	0.57	53.33
22 TOTAL CURR LIABILITIES	15.59	14.27	13.54	17.46	20.29	28.37	21.40	16.99	1.10	6.13
23 LONG TERM DEBT	0.26	0.15	4.95	1.23	0.00	0.00	0.10	0.67	(0.14)	(62.60)
24 DEFERRED TAXES	0.00	0.00	0.00	1.34	1.49	2.53	2.84	3.32	0.54	4826.03
25Industr Revenue Bonds	0.00	0.00	0.00	3.00	3.23	6.74	14.97	12.43	2.17	6184.62
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	15.86	14.41	17.89	23.04	25.02	37.63	39.32	33.41	3.67	16.11
29 DEFERRED COMPENSATION	0.00	0.00	0.00	0.00	(6.22)	(5.31)	(3.10)	(1.99)	(0.61)	*****
30 COMMON STOCK	2.06	1.91	1.61	1.24	0.94	0.85	1.32	1.14	(0.14)	(9.26)
31 CAPITAL SURPLUS	16.08	15.23	13.04	10.16	28.32	28.77	17.61	16.09	0.78	4.48
32 RETAINED EARNINGS	66.00	68.44	67.46	66.67	52.10	59.22	56.03	59.12	(1.78)	(2.83)
33 TREASURY STOCK	0.00	0.00	0.00	(1.10)	(0.15)	(17.17)	(11.18)	(7.78)	(11.18)	*****
34 TOTAL EQUITY	84.14	85.59	82.11	76.98	74.98	62.37	60.68	66.59	(3.67)	(4.89)
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
36 NET WORKING CAPITAL	58.88	55.62	52.00	49.60	41.57	27.60	27.30	37.66	(4.42)	(9.91)
INCOME & EXPENSE										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
40 COST OF GOODS	59.46	59.13	58.29	54.85	52.39	49.23	47.93	47.52	(2.02)	(3.71)
41 GROSS PROFIT	40.54	40.87	41.71	45.15	47.61	50.77	52.07	52.48	2.02	4.46
42 S G & A EXPENSE	18.97	20.36	20.38	21.41	22.96	24.65	24.15	23.77	0.80	3.72
43 R & D EXPENDITURES	4.45	3.95	3.41	2.49	2.19	3.00	4.80	5.18	0.09	1.84
45 OPERATING PROFIT	17.12	16.56	17.92	21.25	22.46	23.13	23.13	23.63	1.13	5.78
46 DEPRECIATION	3.94	2.95	3.56	3.65	3.97	4.24	4.73	5.32	0.25	6.23
47 LEASE PAYMENTS	0.00	0.00	0.00	0.69	0.71	0.98	1.00	1.05	0.18	3962.83
48 INTEREST EXPENSE (INCOME)	0.36	(0.13)	(0.09)	(0.48)	(0.39)	0.39	0.42	0.36	0.05	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.16	0.81	0.71	0.09	0.00	0.00	0.00	(0.05)	(84.79)
53 PRETAX PROFIT	12.82	13.91	15.27	18.09	18.26	17.51	16.97	16.80	0.60	4.02
54 INCOME TAXES	6.59	6.78	6.53	7.78	8.12	7.56	6.98	6.05	0.01	0.04
55 EXTRAORD LOSS (GAIN)	0.00	0.00	0.00	(3.38)	0.00	(0.08)	0.00	0.00	0.04	*****
56 NET PROFIT	6.23	7.13	8.74	13.69	10.13	10.04	9.99	10.75	0.55	6.93
57 EPS AFTER PFD DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
58 COMMON DIV PER SHARE	0.00	11.84	7.70	5.66	18.37	14.85	12.95	0.00	0.47	4.38

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc. and Micro Networks, Inc. Only 1979-1983 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Table 4

Unitrode Corporation
FUNDS FLOW HISTORY 1977-1983
(Millions of Dollars)

	Fiscal Year Ending January 31							TREND	CMPD	GR
	1977	1978	1979	1980	1981	1982	1983			
<i>SOURCES</i>										
56 NET PROFIT	2.18	3.39	6.92	8.27	10.40	11.23	12.91	1.83	33.72	
46 DEPRECIATION	0.90	1.38	1.85	3.24	4.39	5.32	6.39	0.96	40.08	
51 NEW LONG TERM DEBT	0.00	1.45	0.00	0.00	8.20	0.30	1.58	0.38	312.64	
62 NEW EQUITY	0.11	0.10	0.52	10.67	(0.35)	0.18	0.20	(0.02)	*****	
63 INCR OTHER LIABILITIES	0.00	0.00	1.81	1.33	3.67	10.15	0.31	0.82	4214.04	
66 TOTAL SOURCES	3.19	6.32	11.10	23.51	26.31	27.18	21.38	3.96	40.32	
<i>USES</i>										
67 P P E EXPENDITURES	1.31	3.90	4.42	13.84	9.12	16.47	14.01	2.43	46.65	
68 REPAYMENT LONG TERM DEBT	0.02	0.03	0.67	0.72	0.10	8.20	0.20	0.58	75.66	
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
70 COMMON DIVIDENDS	0.26	0.26	0.39	1.52	1.55	1.46	0.00	0.10	(85.10)	
72 INCR WORKING CAPITAL	0.31	1.79	4.70	6.76	0.75	(2.30)	16.04	1.25	*****	
71 INCR OTHER ASSETS	1.29	0.35	0.47	1.02	2.28	5.33	(6.75)	(0.44)	*****	
74 TOTAL USES	3.19	6.32	10.64	23.87	13.79	29.15	23.50	3.92	39.42	
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
76 CUMULATIVE SUR/DEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc. and Micro Networks, Inc. Only 1979-1983 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Table 5

Unitrode Corporation FINANCIAL RATIO HISTORY 1976-1983

	Fiscal Year Ending January 31								ST AV	WTD AVG
	1976	1977	1978	1979	1980	1981	1982	1983		
LIQUIDITY										
1 CURRENT RATIO	4.776	4.898	4.839	3.841	3.048	1.973	2.276	3.217	3.609	3.144
2 QUICK RATIO	1.602	1.797	2.590	2.352	1.554	0.972	1.185	1.665	1.715	1.600
3 CASH RATIO	0.166	0.235	0.925	1.066	0.540	0.143	0.264	0.624	0.495	0.502
4 WORKING CAPITAL/SALES	0.510	0.472	0.416	0.408	0.339	0.196	0.231	0.344	0.364	0.321
6 DAYS RECEIVABLES	70.743	69.077	65.861	67.462	61.184	60.901	60.864	58.926	64.377	62.364
7 DAYS INVENTORY	258.837	228.241	148.825	139.370	167.500	146.425	146.863	180.933	177.124	164.190
LEVERAGE										
8 LONG TERM DEBT/CAPITALIZ	0.003	0.002	0.050	0.016	0.000	0.000	0.002	0.010	0.010	0.009
11 LONG TERM DEBT/EQUITY	0.003	0.002	0.053	0.016	0.000	0.000	0.002	0.010	0.011	0.009
12 TOTAL DEBT/EQUITY	0.004	0.003	0.058	0.026	0.002	0.179	0.005	0.023	0.038	0.044
COVERAGE										
13 EBIT/INTEREST	36.929	(105.400)	(163.472)	(36.967)	(45.858)	45.582	41.857	47.486	(22.480)	(2.641)
14 FIXED CHARGE COVERAGE	36.929	(105.400)	(163.472)	85.722	58.533	13.733	12.962	12.910	(6.010)	6.880
16 REPAY LTD-FIX CHARGE COV	*****	(281.067)	(653.889)	37.634	26.737	12.833	2.111	11.546	(120.585)	(43.262)
OPER PERFORMANCE										
17 GROSS PROFIT/SALES	0.405	0.409	0.417	0.452	0.476	0.508	0.521	0.525	0.464	0.488
18 OPER PROFIT/SALES	0.171	0.186	0.179	0.213	0.225	0.231	0.231	0.235	0.206	0.220
21 PRETAX PROFIT/SALES	0.128	0.139	0.153	0.181	0.183	0.175	0.170	0.168	0.162	0.169
22 NET PROFIT/SALES	0.062	0.071	0.087	0.137	0.101	0.100	0.100	0.108	0.096	0.102
23 NET PROFIT/AVG EQUITY	*****	0.103	0.142	0.241	0.202	0.217	0.217	0.198	0.188	0.203
24 NET PROFIT/AVG CAPITALIZ	*****	0.103	0.138	0.233	0.201	0.217	0.217	0.196	0.186	0.201
26 NET PROFIT/AVG TOT ASSETS	*****	0.087	0.119	0.190	0.153	0.149	0.133	0.126	0.137	0.140
27 E P S GROWTH RATE	*****	0.241	0.538	1.039	0.027	0.237	0.147	0.128	0.337	0.268
28 SALES GROWTH RATE	*****	0.102	0.268	0.304	0.613	0.269	0.085	0.068	0.244	0.226
TURNOVER										
31 SALES/AVG EQUITY	*****	1.441	1.626	1.758	1.993	2.166	2.170	1.837	1.856	1.952
32 SALES/AVG CAPITALIZ	*****	1.438	1.580	1.703	1.980	2.166	2.168	1.825	1.837	1.937
33 SALES/AVG TOT DEBT + EQTY	*****	1.436	1.574	1.691	1.971	1.993	2.006	1.809	1.783	1.864
34 SALES/AVG TOTAL ASSETS	*****	1.223	1.361	1.392	1.509	1.480	1.339	1.173	1.353	1.349
35 SALES/AVG OPER ASSETS	*****	1.287	1.467	1.493	1.605	1.591	1.486	1.272	1.457	1.460
36 SALES/AVG GROSS P P E	*****	2.381	2.519	2.592	2.892	2.648	2.262	1.920	2.459	2.394
BALANCE SHEET										
37 CASH/SALES	0.022	0.029	0.100	0.153	0.088	0.029	0.048	0.097	0.071	0.076
38 RECEIVABLES/SALES	0.194	0.189	0.180	0.185	0.168	0.167	0.167	0.161	0.176	0.171
41 INVENTORY/SALES	0.422	0.370	0.238	0.209	0.240	0.197	0.193	0.236	0.263	0.231
42 OTH CURR ASSETS/SALES	0.007	0.006	0.006	0.005	0.007	0.004	0.005	0.005	0.005	0.005
44 GROSS P P E/SALES	0.440	0.441	0.446	0.429	0.425	0.420	0.497	0.576	0.459	0.475
46 MISC ASSETS/SALES	0.007	0.049	0.048	0.037	0.003	0.026	0.072	0.012	0.032	0.033
47 ACCOUNTS PAYABLE/SALES	0.056	0.048	0.038	0.045	0.072	0.046	0.082	0.049	0.055	0.057
48 ACCRUED TAXES/SALES	0.031	0.033	0.034	0.048	0.047	0.018	0.028	0.035	0.034	0.034
51 ACCRUED LIABILITY/SALES	0.031	0.025	0.015	0.044	0.029	0.022	0.026	0.020	0.027	0.026
52 LIAB 21/SALES	0.017	0.015	0.017	0.000	0.016	0.036	0.043	0.044	0.023	0.029
53 DEFERRED TAXES/SALES	0.000	0.000	0.000	0.011	0.012	0.018	0.024	0.030	0.012	0.017
54 MISC LIABILITIES/SALES	0.000	0.000	0.000	0.025	0.026	0.048	0.127	0.113	0.042	0.064
MISCELLANEOUS										
57 EQUITY PER COMMON SHARE	3.980	4.305	4.881	6.135	8.882	8.047	10.431	12.674	7.417	8.857
58 RETIRE/PREV GROSS P P E	*****	(0.001)	(0.007)	0.000	(0.039)	(0.009)	(0.095)	(0.012)	(0.023)	(0.031)
61 DEPREC/PREV GROSS P P E	*****	0.074	0.102	0.107	0.149	0.126	0.122	0.114	0.114	0.120
62 COM DIVS/ERN-PFD DIVS	0.000	0.118	0.077	0.037	0.184	0.149	0.130	0.000	0.069	0.095
63 TAX RATE	0.514	0.487	0.427	0.430	0.445	0.432	0.411	0.360	0.438	0.418
64 COST OF GOODS/SALES	0.595	0.591	0.583	0.548	0.524	0.492	0.479	0.475	0.536	0.512
65 S G & A/SALES	0.190	0.204	0.204	0.214	0.230	0.246	0.241	0.238	0.221	0.230

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc. and Micro Networks, Inc. Only 1979-1983 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation
Annual Reports
DATAQUEST

Unitrode Corporation

Unitrode Corporation
 Five Forbes Road
 Lexington, Massachusetts 02173
 Telephone: (617) 861-6540 Telex: 95-1064
 (Millions of Dollars Except Per Share Data)

Balance Sheet (January 31)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Working Capital	\$16.1	\$20.7	\$27.6	\$ 20.3	\$ 26.0
Long-Term Debt*	\$ 1.4	\$ 1.8	\$ 2.2	\$ 5.0	\$ 14.3
Shareholders' Equity	\$25.5	\$32.1	\$49.8	\$ 45.8	\$ 57.8
After-Tax Return on Average Equity (%)	14.2	24.1	20.2	21.7	21.6

Operating Performance (Fiscal Year Ending January 31)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Revenue	\$40.1	\$ 50.6	\$81.6	\$103.6	\$112.4
U.S. Revenue	\$36.0	\$ 44.8	\$70.6	\$ 87.5	\$ 94.4
Non-U.S. Revenue	\$ 4.1	\$ 5.8	\$11.0	\$ 16.1	\$ 18.0
Cost of Revenues	\$24.9	\$ 29.9	\$46.6	\$ 56.4	\$ 60.3
R&D Expenditures	\$ 1.3	\$ 1.3	\$ 1.8	\$ 3.1	\$ 5.4
SG&A Expense	\$ 8.2	\$ 10.8	\$18.7	\$ 25.5	\$ 27.1
Pretax Income	\$ 6.1	\$ 9.1	\$14.9	\$ 18.1	\$ 19.1
Pretax Margin (%)	15.1	18.1	18.3	17.5	17.0
Effective Tax Rate (%)	42.2	43.0	44.5	43.2	41.4
Net Income*	\$ 3.5	\$ 5.2	\$ 8.3	\$ 10.3	\$ 11.2
Average Shares Outstanding (Millions)	5.22	5.23	6.08	6.18	5.82
Per Share					
Earnings	\$ 0.67	\$ 1.00	\$ 1.36	\$ 1.67	\$ 1.93
Dividends	\$ 0.05	\$ 0.08	\$ 0.25	\$ 0.25	\$ 0.25
Book Value	\$ 4.99	\$ 6.32	\$ 8.02	\$ 8.14	\$ 10.07
Price Range	\$ 3.31- 5.63	\$ 5.13- 10.31	\$ 8.31- 18.75	\$ 11.88- 23.00	\$ 16.25- 30.50
Total Employees	1,335	1,363	2,009	1,985	2,068
Capital Expenditures	\$ 4.0	\$ 4.3	\$ 8.6	\$ 8.8	\$ 16.4

*Includes Industrial Revenue Bonds

**In fiscal 1979, Unitrode had, in addition, an
 extraordinary gain of \$1.7 million or \$0.65 per share.

Source: Unitrode Corporation Annual Reports
 DATAQUEST, Inc.

Unitrode Corporation

Table 1

Unitrode Corporation
ESTIMATED CORPORATE REVENUES
(Millions of Dollars)

	Calendar Years							
	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Total Semiconductors	\$29	\$26	\$30	\$34	\$42	\$69	\$ 87	\$ 89
Total Discrete	\$29	\$25	\$29	\$33	\$40	\$60	\$ 70	\$ 70
Transistors	\$ 2	\$ 2	\$ 2	\$ 2	\$ 3	\$ 6	\$ 10	\$ 12
Small Signal	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Power	\$ 2	\$ 2	\$ 2	\$ 2	\$ 3	\$ 6	\$ 10	\$ 12
Diodes	\$22	\$19	\$23	\$26	\$32	\$46	\$ 52	\$ 50
Small Signal	\$ 5	\$ 4	\$ 5	\$ 6	\$ 9	\$13	\$ 13	\$ 12
Power	\$12	\$11	\$13	\$16	\$18	\$26	\$ 31	\$ 29
Zener	\$ 5	\$ 4	\$ 5	\$ 4	\$ 5	\$ 7	\$ 8	\$ 9
Thyristors	\$ 4	\$ 4	\$ 3	\$ 4	\$ 4	\$ 6	\$ 7	\$ 7
Other Discretes	\$ 1	\$ 1	\$ 1	\$ 1	\$ 1	\$ 2	\$ 1	\$ 1
Hybrid ICs	\$ 0	\$ 1	\$ 1	\$ 1	\$ 2	\$ 9	\$ 17	\$ 19
Other Revenues	<u>\$ 3</u>	<u>\$ 2</u>	<u>\$ 1</u>	<u>\$ 5</u>	<u>\$ 6</u>	<u>\$11</u>	<u>\$ 15</u>	<u>\$ 22</u>
Total Revenues	\$32	\$28	\$31	\$39	\$48	\$80	\$102	\$111

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

Unitrode Corporation

Table 2

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1975-1982
(Millions of Dollars)

	Fiscal Year Ending January 31								TREND	CMPD	GR
	1975	1976	1977	1978	1979	1980	1981	1982			
BALANCE SHEET											
1 CASH & LIQUID SECURITIES	0.41	0.62	0.87	3.89	7.75	7.28	2.97	5.39	0.83		47.88
3 RECEIVABLES	6.09	5.38	5.79	7.00	9.35	13.68	17.29	18.74	2.07		21.82
4 INVENTORY	11.32	11.70	11.31	9.22	10.59	19.62	20.46	21.60	1.70		11.48
5 PREPAID EXPENSES	0.15	0.19	0.19	0.23	0.24	0.54	0.41	0.54	0.06		20.98
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
8 TOTAL CURRENT ASSETS	17.97	17.89	18.16	20.33	27.93	41.12	41.13	46.35	4.66		17.52
9 GROSS P P E	11.54	12.20	13.50	17.30	21.73	34.71	43.53	55.86	6.37		27.58
10 ACCUMULATED DEPRECIATION	5.58	6.67	7.66	8.85	10.70	13.09	17.18	18.37	1.91		19.41
11 NET P P E	5.96	5.53	5.94	8.45	11.02	21.62	26.35	37.50	4.46		34.38
12 MISC ASSETS	0.19	0.19	1.49	1.85	1.88	0.27	2.72	8.13	0.77		50.64
14 GOODWILL	0.42	0.41	0.40	0.38	0.83	3.46	3.29	3.21	0.52		46.24
15 *TOTAL ASSETS*	24.54	24.02	25.99	31.03	41.66	86.47	73.48	95.19	10.40		24.18
16 NOTES PAYABLE	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.10)		(82.54)
17 ACCOUNTS PAYABLE	3.10	1.55	1.46	1.52	2.26	5.89	4.78	9.25	0.87		23.72
18 ACCRUED TAXES	0.63	0.86	1.00	1.32	2.49	3.82	1.85	3.20	0.39		26.86
19 ACCRUED LIABILITIES	0.61	0.86	0.77	0.58	2.22	2.38	2.32	2.94	0.36		28.01
20 CURR MAT LONG TERM DEBT	0.02	0.02	0.03	0.14	0.31	0.10	8.20	0.20	0.51		78.85
21 OTHER ACCRUED LIABILITIES	0.58	0.46	0.45	0.85	0.00	1.30	3.69	4.78	0.56		10.12
22 TOTAL CURR LIABILITIES	6.19	3.75	3.71	4.20	7.27	13.49	20.85	20.37	2.59		28.93
23 LONG TERM DEBT	0.09	0.06	0.04	1.35	0.51	0.00	0.00	0.10	(0.01)		(81.66)
24 DEFERRED TAXES	0.00	0.00	0.00	0.00	0.56	0.99	1.86	2.71	0.38		5696.79
25 INDUSTRIAL REVENUE BONDS	0.00	0.00	0.00	0.00	1.25	2.15	4.95	14.25	1.57		7225.02
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
28 TOTAL LIABILITIES	6.28	3.81	3.75	5.55	9.60	16.63	27.65	37.42	4.52		38.61
29 DEFERRED COMPENSATION	0.00	0.00	0.00	0.00	0.00	(4.14)	(3.91)	(2.95)	(0.63)		*****
30 COMMON STOCK	0.49	0.50	0.50	0.50	0.52	0.62	0.63	1.25	0.00		10.62
31 CAPITAL SURPLUS	4.02	3.88	3.96	4.04	4.23	18.82	18.20	16.77	2.45		30.68
32 RETAINED EARNINGS	14.25	15.86	17.79	20.93	27.77	34.63	43.52	53.33	5.59		21.80
33 TREASURY STOCK	(0.50)	0.00	0.00	0.00	(0.46)	(0.10)	(12.62)	(10.64)	(1.61)		*****
34 TOTAL EQUITY	18.26	20.21	22.25	25.47	32.08	49.84	45.83	57.76	5.88		19.27
35 *TOTAL LIAB & EQUITY*	24.54	24.02	25.99	31.03	41.66	86.47	73.48	95.19	10.40		24.18
36 NET WORKING CAPITAL	11.78	14.14	14.45	16.13	20.68	27.63	20.28	25.98	2.07		12.01
INCOME & EXPENSE											
38 SALES	31.93	27.75	30.59	38.79	50.59	81.61	103.60	112.41	13.18		24.79
40 COST OF GOODS	20.23	16.50	18.09	22.61	27.75	42.75	51.00	53.87	5.80		19.95
41 GROSS PROFIT	11.71	11.25	12.50	16.18	22.84	38.86	52.60	58.53	7.38		31.07
42 S G & A EXPENSE	5.52	5.27	6.23	7.91	10.83	18.73	25.54	27.15	3.49		30.98
43 R & D EXPENDITURES	1.13	1.23	1.21	1.32	1.26	1.79	3.10	5.39	0.49		22.02
45 OPERATING PROFIT	5.06	4.75	5.07	6.95	10.75	18.33	23.96	26.00	3.41		32.81
46 DEPRECIATION	1.01	1.09	0.90	1.38	1.85	3.24	4.39	5.32	0.64		31.04
47 LEASE PAYMENTS	0.00	0.00	0.00	0.00	0.35	0.58	1.02	1.13	0.18		4971.47
48 INTEREST EXPENSE (INCOME)	0.02	0.10	(0.04)	(0.04)	(0.24)	(0.32)	0.41	0.47	0.04		*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
51 EQUITY IN AFFIL INCOME	0.00	0.00	0.05	0.32	0.36	0.07	0.00	0.00	0.00		1.41
53 PRETAX PROFIT	4.03	3.56	4.26	5.92	9.15	14.90	18.15	19.08	2.54		31.86
54 INCOME TAXES	2.02	1.83	2.07	2.53	3.94	6.63	7.83	7.85	1.02		27.92
55 EXTRAORD LOSS (GAIN)	0.00	0.00	0.00	0.00	(1.71)	0.00	(0.09)	0.00	(0.03)		*****
56 NET PROFIT	2.00	1.73	2.18	3.39	6.92	8.27	10.40	11.23	1.54		35.88
57 EPS AFTER PFD DIVIDENDS	0.40	0.34	0.42	0.65	1.32	1.36	1.68	1.93	0.25		31.83
58 COMMON DIV PER SHARE	0.00	0.00	0.05	0.05	0.07	0.25	0.25	0.25	0.04		1585.64

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979, 1980, 1981, and 1982 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

Unitrode Corporation

Table 3

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1975-1982
 (Percent)

	Fiscal Year ending January 31								TREND	CNPD GR
	1975	1976	1977	1978	1979	1980	1981	1982		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	1.68	2.59	3.36	12.52	18.61	10.96	4.04	5.66	0.76	19.08
3 RECEIVABLES	24.81	22.39	22.28	22.56	22.44	20.58	23.52	19.69	(0.42)	(1.90)
4 INVENTORY	46.12	48.72	43.52	29.71	25.43	29.52	27.84	22.77	(3.74)	(10.22)
5 PREPAID EXPENSES	0.62	0.77	0.73	0.75	0.57	0.81	0.56	0.57	(0.02)	(2.57)
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	73.23	74.47	69.88	65.54	67.05	61.86	55.97	48.70	(3.41)	(5.36)
9 GROSS P P E	47.04	50.79	51.93	55.77	52.15	52.22	59.23	58.69	1.44	2.74
10 ACCUMULATED DEPRECIATION	22.76	27.76	29.08	28.52	25.69	19.70	23.37	19.29	(0.92)	(3.84)
11 NET P P E	24.28	23.03	22.85	27.25	26.45	32.53	35.86	39.39	2.36	8.21
12 MISC ASSETS	0.78	0.80	5.74	5.97	4.51	0.41	3.69	8.54	0.61	21.31
14 GOODWILL	1.71	1.70	1.53	1.24	1.99	5.20	4.44	3.37	0.44	17.77
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
16 NOTES PAYABLE	5.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.42)	(84.47)
17 ACCOUNTS PAYABLE	12.62	8.44	5.62	4.89	5.42	8.87	6.51	9.72	(0.12)	(0.37)
18 ACCRUED TAXES	2.57	3.58	3.86	4.27	5.97	5.74	2.52	3.36	0.09	2.00
19 ACCRUED LIABILITIES	2.49	3.56	2.95	1.86	5.33	3.58	3.16	3.09	0.09	3.08
20 CURR MAT LONG TERM DEBT	0.09	0.10	0.10	0.44	0.74	0.15	11.16	0.21	0.67	44.03
21 OTHER ACCRUED LIABILITIES	2.36	1.91	1.73	2.08	0.00	1.96	5.02	5.02	0.39	(12.24)
22 TOTAL CURR LIABILITIES	25.23	15.59	14.27	13.54	17.46	20.29	28.37	21.40	0.70	3.62
23 LONG TERM DEBT	0.37	0.26	0.15	4.35	1.23	0.00	0.00	0.10	(0.00)	(86.71)
24 DEFERRED TAXES	0.00	0.00	0.00	0.00	1.34	1.49	2.59	2.84	0.46	5978.53
25 INDUSTRY REVENUE BONDS	0.00	0.00	0.00	0.00	3.00	3.23	6.74	14.97	1.80	7581.04
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	25.59	15.86	14.41	17.89	23.04	25.02	37.63	39.32	2.88	11.62
29 DEFERRED COMPENSATION	0.00	0.00	0.00	0.00	0.00	(6.22)	(5.31)	(3.10)	(0.80)	*****
30 COMMON STOCK	1.99	2.06	1.91	1.61	1.24	0.94	0.85	1.32	(0.17)	(10.92)
31 CAPITAL SURPLUS	16.37	16.08	15.23	13.04	10.16	28.32	24.77	17.61	1.05	5.24
32 RETAINED EARNINGS	58.07	66.00	68.44	67.46	66.67	52.10	59.22	56.03	(1.17)	(1.91)
33 TREASURY STOCK	(2.03)	0.00	0.00	0.00	(1.10)	(0.15)	(17.17)	(11.18)	(1.80)	*****
34 TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
36 NET WORKING CAPITAL	48.01	58.88	55.62	52.00	49.60	41.57	27.60	27.30	(4.12)	(9.80)
INCOME & EXPENSE										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
40 COST OF GOODS	63.35	59.46	59.13	58.29	54.85	52.39	49.23	47.93	(2.18)	(3.88)
41 GROSS PROFIT	36.65	40.54	40.87	41.71	45.15	47.61	50.77	52.07	2.18	5.03
42 S G & A EXPENSE	17.28	18.97	20.36	20.38	21.41	22.96	24.65	24.15	1.02	4.95
43 R & D EXPENDITURES	3.52	4.45	3.96	3.41	2.49	2.19	3.00	4.80	(0.05)	(2.22)
45 OPERATING PROFIT	15.85	17.12	16.56	17.92	21.25	22.46	23.13	23.13	1.21	6.43
46 DEPRECIATION	3.17	3.94	2.95	3.56	3.66	3.97	4.24	4.73	0.19	5.00
47 LEASE PAYMENTS	0.00	0.00	0.00	0.00	0.69	0.71	0.99	1.00	0.18	4989.35
48 INTEREST EXPENSE (INCOME)	0.08	0.36	(0.13)	(0.09)	(0.48)	(0.39)	0.39	0.42	0.02	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.00	0.16	0.81	0.71	0.09	0.00	0.00	0.00	(2.39)
53 PRETAX PROFIT	12.61	12.82	13.91	15.27	18.09	18.26	17.51	16.97	0.83	5.66
54 INCOME TAXES	6.34	6.59	6.78	6.53	7.78	8.12	7.56	6.98	0.17	2.51
55 EXTRAORD LOSS (GAIN)	0.00	0.00	0.00	0.00	(3.38)	0.00	(0.08)	0.00	(0.05)	*****
56 NET PROFIT	6.28	6.23	7.13	8.74	13.69	10.13	10.04	9.99	0.70	8.88
57 EPS AFTER PFD DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
58 COMMON DIV PER SHARE	0.00	0.00	11.84	7.70	5.66	18.37	14.85	12.95	2.17	2740.49

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979, 1980, 1981, and 1982 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation Annual Reports
 DATAQUEST, Inc.

Unitrode Corporation

Table 4

Unitrode Corporation
FUNDS FLOW HISTORY 1976-1982
(Millions of Dollars)

	Fiscal Year Ending January 31						TREND	CMPD	GR
	1976	1977	1978	1979	1980	1981			
SOURCES									
56 NET PROFIT	1.73	2.18	3.39	6.92	8.27	10.40	11.23	1.78	41.05
46 DEPRECIATION	1.09	0.90	1.38	1.05	3.24	4.39	5.32	0.77	36.76
61 NEW LONG TERM DEBT	0.00	0.00	1.45	0.00	0.00	8.20	0.30	0.57	590.20
62 NEW EQUITY	(0.27)	0.11	0.10	0.52	10.67	(0.35)	0.18	0.39	*****
63 INCR OTHER LIABILITIES	0.00	0.00	0.00	1.41	1.33	3.67	10.15	1.40	*****
66 TOTAL SOURCES	2.55	3.19	6.32	11.10	23.51	26.31	27.18	4.90	57.01
USES									
67 P P E EXPENDITURES	0.67	1.31	3.90	4.42	13.04	9.12	16.47	2.61	69.44
68 REPAYMENT LONG TERM DEBT	0.02	0.02	0.03	0.67	0.72	0.10	8.20	0.91	130.96
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 COMMON DIVIDENDS	0.00	0.26	0.26	0.39	1.52	1.55	1.46	0.29	1060.24
72 INCR WORKING CAPITAL	2.36	0.31	1.79	4.70	6.76	9.75	(2.30)	(0.29)	*****
71 INCR OTHER ASSETS	(0.01)	1.29	0.35	0.47	1.02	2.20	5.33	0.67	*****
74 TOTAL USES	3.05	3.19	6.32	10.64	23.87	13.79	29.15	4.18	48.29
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76 CUMULATIVE SUR/DEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979, 1980, 1981, and 1982 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

Unitrode Corporation

Table 5

Unitrode Corporation FINANCIAL RATIO HISTORY 1975-1982

	Fiscal Year ending January 31								ST AV	WTD	AVG
	1975	1976	1977	1978	1979	1980	1981	1982			
LIQUIDITY											
1 CURRENT RATIO	2.903	4.776	4.898	4.839	3.841	3.048	1.973	2.276	3.569	3.223	
2 QUICK RATIO	1.050	1.602	1.797	2.590	2.352	1.554	0.972	1.185	1.638	1.594	
3 CASH RATIO	0.067	0.166	0.235	0.925	1.066	0.540	0.143	0.264	0.426	0.458	
4 WORKING CAPITAL/SALES	0.369	0.510	0.472	0.416	0.408	0.339	0.196	0.231	0.368	0.327	
6 DAYS RECEIVABLES	69.585	70.743	69.077	65.851	67.462	61.184	60.901	60.864	65.710	63.872	
7 DAYS INVENTORY	204.251	254.837	228.241	148.825	139.370	167.500	148.425	146.863	190.039	163.991	
LEVERAGE											
8 LONG TERM DEBT/CAPITALIZ	0.005	0.003	0.002	0.050	0.016	0.000	0.000	0.002	0.010	0.009	
11 LONG TERM DEBT/EQUITY	0.005	0.003	0.002	0.053	0.016	0.000	0.000	0.002	0.010	0.009	
12 TOTAL DEBT/EQUITY	0.075	0.004	0.003	0.058	0.026	0.002	0.000	0.005	0.044	0.049	
COVERAGE											
13 EBIT/INTEREST	168.833	36.929	(105.400)	(163.472)	(36.967)	(45.858)	45.582	41.857	(7.312)	(14.818)	
14 FIXED CHARGE COVERAGE	168.833	36.929	(105.400)	(163.472)	85.722	58.533	13.733	12.962	13.480	7.007	
16 REPAY LTD+FIX CHARGE COV	*****	29.967	(281.067)	(653.869)	37.634	26.737	12.833	2.111	(117.953)	(75.637)	
OPER PERFORMANCE											
17 GROSS PROFIT/SALES	0.367	0.405	0.409	0.417	0.452	0.476	0.508	0.521	0.444	0.470	
18 OPER PROFIT/SALES	0.159	0.171	0.166	0.179	0.213	0.225	0.231	0.231	0.197	0.211	
21 PRETAX PROFIT/SALES	0.126	0.128	0.139	0.153	0.181	0.183	0.175	0.170	0.157	0.167	
22 NET PROFIT/SALES	0.063	0.062	0.071	0.087	0.137	0.101	0.100	0.100	0.090	0.098	
23 NET PROFIT/AVG EQUITY	*****	0.090	0.103	0.142	0.241	0.202	0.217	0.217	0.173	0.197	
24 NET PROFIT/AVG CAPITALIZ	*****	0.089	0.103	0.138	0.233	0.201	0.217	0.217	0.171	0.196	
26 NET PROFIT/AVG TOT ASSETS	*****	0.071	0.087	0.119	0.190	0.153	0.149	0.133	0.129	0.141	
27 E P S GROWTH RATE	*****	(0.152)	0.241	0.538	1.039	0.027	0.237	0.147	0.287	0.310	
28 SALES GROWTH RATE	*****	(0.131)	0.102	0.268	0.304	0.613	0.269	0.085	0.216	0.263	
TURNOVER											
31 SALES/AVG EQUITY	*****	1.443	1.441	1.626	1.758	1.993	2.166	2.170	1.799	1.942	
32 SALES/AVG CAPITALIZ	*****	1.437	1.438	1.580	1.703	1.980	2.166	2.168	1.782	1.926	
33 SALES/AVG TOT DEBT + EQUITY	*****	1.390	1.436	1.574	1.691	1.971	1.993	2.006	1.723	1.843	
34 SALES/AVG TOTAL ASSETS	*****	1.143	1.223	1.361	1.392	1.509	1.480	1.333	1.349	1.393	
35 SALES/AVG OPER ASSETS	*****	1.172	1.287	1.467	1.493	1.605	1.591	1.466	1.443	1.503	
36 SALES/AVG GROSS P P E	*****	2.338	2.381	2.519	2.592	2.892	2.848	2.262	2.519	2.543	
BALANCE SHEET											
37 CASH/SALES	0.013	0.022	0.029	0.100	0.153	0.089	0.029	0.048	0.060	0.067	
38 RECEIVABLES/SALES	0.191	0.194	0.189	0.180	0.185	0.168	0.167	0.167	0.180	0.175	
41 INVENTORY/SALES	0.354	0.422	0.370	0.238	0.209	0.240	0.197	0.193	0.278	0.241	
42 OTH CURR ASSETS/SALES	0.005	0.007	0.006	0.006	0.005	0.007	0.004	0.005	0.005	0.005	
44 GROSS P P E/SALES	0.361	0.440	0.441	0.446	0.429	0.425	0.420	0.497	0.433	0.443	
46 MISC ASSETS/SALES	0.006	0.007	0.049	0.048	0.037	0.003	0.026	0.072	0.031	0.037	
47 ACCOUNTS PAYABLE/SALES	0.097	0.056	0.048	0.039	0.045	0.072	0.046	0.082	0.061	0.060	
48 ACCRUED TAXES/SALES	0.020	0.031	0.033	0.034	0.049	0.047	0.018	0.028	0.032	0.033	
51 ACCRUED LIABILITY/SALES	0.019	0.031	0.025	0.015	0.044	0.029	0.022	0.026	0.026	0.027	
52 LINE 21/SALES	0.018	0.017	0.015	0.017	0.000	0.016	0.036	0.043	0.020	0.024	
53 DEFERRED TAXES/SALES	0.000	0.000	0.000	0.000	0.011	0.012	0.018	0.024	0.008	0.012	
54 MISC LIABILITIES/SALES	0.000	0.000	0.000	0.000	0.025	0.026	0.048	0.127	0.028	0.045	
MISCELLANEOUS											
57 EQUITY PER COMMON SHARE	3.657	3.980	4.305	4.881	6.135	9.882	8.047	10.431	6.280	7.439	
58 RETIRE/PREV GROSS P P E	*****	(0.001)	(0.001)	(0.007)	0.000	(0.039)	(0.009)	(0.095)	(0.022)	(0.033)	
51 DEPRC/PREV GROSS P P E	*****	0.095	0.074	0.102	0.107	0.149	0.126	0.122	0.111	0.119	
52 COM DIVS/ERN-PED DIVS	0.000	0.000	0.118	0.077	0.057	0.184	0.149	0.130	0.089	0.115	
63 TAX RATE	0.502	0.514	0.487	0.427	0.430	0.445	0.432	0.411	0.456	0.440	
64 COST OF GOODS/SALES	0.633	0.596	0.591	0.583	0.548	0.524	0.492	0.479	0.558	0.530	
65 S G c A/SALES	0.173	0.190	0.204	0.204	0.214	0.230	0.246	0.241	0.213	0.225	

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979, 1980, 1981, and 1982 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues, net income, and earnings per share would increase a small amount.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Unitrode Corporation
580 Pleasant Street
Watertown, Massachusetts 02172
(617)926-0404

(Millions of Dollars Except per Share Data)

Balance Sheet (January 31)

	<u>1979</u>	<u>1980</u>	<u>Percent Change 1979-1980</u>
Working Capital	\$ 20.7	\$ 27.6	33.7%
Long-Term Debt	\$ 1.8	\$ 2.2	21.9%
Shareholders' Equity	\$ 32.1	\$ 49.8	55.5%
After-Tax Return on Average Equity (%)	18.0%	20.2%	

Operating Performance (Fiscal Year Ending January 31)

	<u>1979</u>	<u>1980</u>	<u>Percent Change 1979-1980</u>
Revenue	\$ 50.6	\$ 81.6	61.3%
Cost of Goods	\$ 28.1	\$ 43.3	54.3%
R&D Expenditures	\$ 1.3	\$ 1.8	42.1%
Marketing, SG&A Expense	\$ 10.8	\$ 18.7	72.9%
Pretax Income	\$ 9.1	\$ 14.9	62.9%
Pretax Margin (%)	18.1%	18.3%	
Net Income*	\$ 5.2	\$ 8.3	58.7%
Per Share Data			
Earnings**	\$ 2.00	\$ 2.72	36.0%
Dividends	\$.15	\$.50	233.3%
Book Value	\$ 12.26	\$ 16.40	33.8%
Average Shares Outstanding (Millions)	2.61	3.04	16.3%
Capital Expenditures	\$ 4.3	\$ 8.6	100.0%
Total Employees	1,363	2,009	47.4%

*In fiscal 1979, Unitrode had, in addition, an extraordinary gain of \$1.7 million or \$0.65 per share.

**Fully diluted

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-1

Unitrode Corporation
ESTIMATED CORPORATE REVENUES
(Millions of Dollars)

	Calendar Years							
	1972	1973	1974	1975	1976	1977	1978	1979
Total Semiconductors	\$19	\$24	\$29	\$26	\$30	\$34	\$42	\$69
Total Discrete	19	24	29	25	29	33	40	55
Transistors	2	2	2	2	2	2	3	5
Small Signal	0	0	0	0	0	0	0	0
Power	2	2	2	2	2	2	3	5
Diodes	14	18	22	19	23	26	32	45
Small Signal	3	4	5	4	5	6	9	13
Power	8	9	12	11	13	16	18	25
Zener	3	5	5	4	5	4	5	7
Thyristors	2	3	4	4	3	4	4	5
Other Discrete Devices	1	1	1	1	1	1	1	0
Hybrid ICs	0	0	0	1	1	1	2	14
Other Revenues	<u>1</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>5</u>	<u>6</u>	<u>11</u>
Total Revenues	\$20	\$26	\$32	\$28	\$31	\$39	\$48	\$80

Source: Unitrode Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-2

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1973-80
(Millions of Dollars)

	Fiscal Year Ending January 31								TREND	CMPD GR
	1973	1974	1975	1976	1977	1978	1979	1980		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	1.18	0.43	0.41	0.62	0.87	3.89	7.75	7.28	1.07	50.30
3 RECEIVABLES	4.15	5.44	6.09	5.38	5.79	7.00	9.35	13.68	1.06	14.74
4 INVENTORY	6.50	8.17	11.32	11.70	11.31	9.22	10.59	19.62	1.16	10.49
5 PREPAID EXPENSES	0.14	0.13	0.15	0.19	0.19	0.23	0.24	0.54	0.04	17.74
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	11.97	14.18	17.97	17.89	18.16	20.33	27.93	41.12	3.34	15.83
9 GROSS P P E	7.88	9.52	11.54	12.20	13.50	17.30	21.73	34.71	3.18	20.73
10 ACCUMULATED DEPRECIATION	3.72	4.58	5.58	6.67	7.56	8.85	10.70	13.09	1.27	18.91
11 NET P P E	4.15	4.93	5.96	5.53	5.94	8.45	11.02	21.62	1.91	21.98
12 MISC ASSETS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.02	397.16
13 INVESTMENT IN SUBSIDIARY	0.17	0.17	0.19	0.19	1.49	1.85	1.88	0.04	0.17	13.74
14 GOODWILL	0.44	0.43	0.42	0.41	0.40	0.38	0.83	3.46	0.27	22.96
15 *TOTAL ASSETS*	16.74	19.72	24.54	24.02	25.99	31.03	41.66	66.47	5.71	18.38
16 NOTES PAYABLE	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	(0.04)	(52.67)
17 ACCOUNTS PAYABLE	1.15	1.51	3.10	1.55	1.46	1.52	2.26	5.89	0.38	14.33
18 ACCRUED TAXES	0.41	0.68	0.63	0.86	1.00	1.32	2.49	3.82	0.42	33.87
19 ACCRUED LIABILITIES	0.49	0.60	0.61	0.86	0.77	0.58	2.22	2.38	0.25	22.88
20 CURR MAT LONG TERM DEBT	0.14	0.05	0.02	0.02	0.03	0.14	0.31	0.10	0.02	16.34
21 OTHER ACCRUED LIABILITIES	0.43	0.51	0.58	0.46	0.45	0.65	0.00	1.30	0.05	(66.58)
22 TOTAL CURR LIABILITIES	2.61	3.35	6.19	3.75	3.71	4.20	7.27	13.49	1.07	14.42
23 LONG TERM DEBT	0.16	0.13	0.09	0.06	0.04	1.35	0.51	0.00	0.05	(75.44)
24 DEFERRED TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.99	0.12	1763.64
25 INDUSR REVENUE BONDS	0.00	0.00	0.00	0.00	0.00	0.00	1.25	2.15	0.25	1985.38
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	2.77	3.48	6.28	3.81	3.75	5.55	9.60	16.63	1.49	22.76
29 DEFERRED COMPENSATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(4.14)	(0.34)	*****
30 COMMON STOCK	0.49	0.49	0.49	0.50	0.50	0.50	0.52	0.62	0.01	2.44
31 CAPITAL SURPLUS	4.00	4.04	4.02	3.86	3.96	4.04	4.23	18.82	1.25	14.16
32 RETAINED EARNINGS	10.03	12.25	14.25	15.86	17.79	20.93	27.77	34.63	3.24	18.18
33 TREASURY STOCK	(0.55)	(0.54)	(0.50)	0.00	0.00	0.00	(0.46)	(0.10)	0.06	*****
34 TOTAL EQUITY	13.97	16.23	18.28	20.21	22.25	25.47	32.06	49.84	4.21	17.30
35 *TOTAL LIAB & EQUITY*	16.74	19.72	24.54	24.02	25.99	31.03	41.66	66.47	5.71	18.38
36 NET WORKING CAPITAL	9.36	10.83	11.78	14.14	14.45	16.13	20.66	27.63	2.27	15.04
INCOME & EXPENSE										
38 SALES	19.65	26.26	31.93	27.75	30.59	38.79	50.59	81.61	6.89	18.03
40 COST OF GOODS	10.13	14.48	20.23	16.50	18.09	22.61	28.09	43.33	3.68	18.01
41 GROSS PROFIT	9.52	11.79	11.71	11.25	12.50	16.18	22.49	38.28	3.21	18.21
42 S G & A EXPENSE	4.57	5.55	5.52	5.27	6.23	7.91	10.83	18.73	1.59	18.78
43 R & D EXPENDITURES	0.74	0.93	1.13	1.23	1.21	1.32	1.26	1.79	0.11	10.18
45 OPERATING PROFIT	4.20	5.30	5.06	4.75	5.07	6.95	10.40	17.75	1.50	18.80
46 DEPRECIATION	0.69	0.87	1.01	1.09	0.90	1.38	1.85	3.24	0.28	20.08
47 LEASE PAYMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48 INTEREST EXPENSE (INCOME)	(0.03)	(0.03)	0.02	0.10	(0.04)	(0.04)	(0.24)	(0.32)	(0.04)	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.00	0.00	0.00	0.05	0.32	0.36	0.07	0.04	3519.48
53 PRETAX PROFIT	3.55	4.46	4.03	3.56	4.26	5.92	9.15	14.90	1.30	19.52
54 INCOME TAXES	1.80	2.24	2.02	1.83	2.07	2.53	3.94	6.63	0.52	16.39
55 EXTRAORD LOSS (GAIN)	0.00	0.00	0.00	0.00	0.00	0.00	(1.71)	0.00	(0.10)	*****
56 NET PROFIT	1.75	2.22	2.00	1.73	2.18	3.39	6.92	8.27	0.88	24.45
57 EPS AFTER PFD DIVIDENDS	0.71	0.91	0.83	0.70	0.87	1.34	2.65	2.72	0.29	21.61
58 COMMON DIV PER SHARE	0.00	0.00	0.00	0.05	0.10	0.10	0.15	0.50	0.05	3068.72

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979 and 1980 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues for 1978, for example, would be raised to \$40.16 million.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-3

Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1973-80
(Percent)

	Fiscal Year Ending January 31								TREND	CMPD GR
	1973	1974	1975	1976	1977	1978	1979	1980		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	7.07	2.19	1.68	2.59	3.36	12.52	18.61	10.96	1.70	26.97
3 RECEIVABLES	24.78	27.61	24.81	22.39	22.28	22.56	22.44	20.58	(0.74)	(3.08)
4 INVENTORY	38.82	41.46	46.12	48.72	43.52	29.71	25.43	29.52	(2.38)	(6.66)
5 PREPAID EXPENSES	0.84	0.85	0.62	0.77	0.73	0.75	0.57	0.81	0.00	(0.54)
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	71.51	71.91	73.23	78.47	69.88	65.54	67.05	61.86	(1.42)	(2.07)
9 GROSS P P & E	47.05	48.28	47.04	50.79	51.93	55.77	52.15	52.22	0.99	1.98
10 ACCUMULATED DEPRECIATION	22.24	23.25	22.78	27.76	29.08	28.52	25.69	19.70	0.15	0.44
11 NET P P & E	24.81	25.02	24.28	23.03	22.85	27.25	26.45	32.53	0.83	3.04
12 MISC ASSETS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.03	414.37
13 INVESTMENT IN SUBSIDIARIES	1.04	0.88	0.78	0.80	5.74	5.97	4.51	0.06	0.38	(3.92)
14 GOODWILL	2.65	2.19	1.71	1.70	1.53	1.24	1.99	5.20	0.18	3.87
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
16 NOTES PAYABLE	0.00	0.00	5.09	0.00	0.00	0.00	0.00	0.00	(0.18)	(54.99)
17 ACCOUNTS PAYABLE	6.86	7.67	12.62	6.44	5.62	4.89	5.42	8.87	(0.25)	(3.42)
18 ACCRUED TAXES	2.44	3.48	2.57	3.58	3.86	4.27	5.97	5.74	0.49	13.08
19 ACCRUED LIABILITIES	2.93	3.08	2.49	3.56	2.95	1.86	5.33	3.58	0.16	3.80
20 CURR MAT LONG TERM DEBT	0.84	0.23	0.09	0.10	0.10	0.44	0.74	0.15	(0.01)	(1.72)
21 OTHER ACCRUED LIABILITIES	2.54	2.56	2.36	1.91	1.73	2.08	0.00	1.96	(0.21)	(73.21)
22 TOTAL CURR LIABILITIES	15.60	16.98	25.23	15.59	14.27	13.54	17.46	20.29	(0.01)	0.03
23 LONG TERM DEBT	0.96	0.68	0.37	0.26	0.15	4.35	1.23	0.00	0.09	(79.95)
24 DEFERRED TAXES	0.00	0.00	0.00	0.00	0.00	0.00	1.34	1.49	0.20	1931.31
25 INDUSTRY REVENUE BONDS	0.00	0.00	0.00	0.00	0.00	0.00	3.00	3.23	0.45	2173.01
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	16.56	17.66	25.59	15.86	14.41	17.89	23.04	25.02	0.73	3.70
29 DEFERRED COMPENSATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(6.22)	(0.52)	*****
30 COMMON STOCK	2.92	2.48	1.99	2.06	1.91	1.61	1.24	0.94	(0.25)	(13.46)
31 CAPITAL SURPLUS	23.88	20.48	16.37	16.08	15.23	13.04	10.16	28.32	(0.37)	(3.56)
32 RETAINED EARNINGS	59.93	62.12	58.07	66.00	68.44	67.46	66.67	52.10	(0.02)	(0.17)
33 TREASURY STOCK	(3.29)	(2.75)	(2.03)	0.00	0.00	0.00	(1.10)	(0.15)	0.43	*****
34 TOTAL EQUITY	83.44	82.34	74.41	84.14	85.59	82.11	76.96	74.98	(0.73)	(0.92)
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
36 NET WORKING CAPITAL	55.91	54.93	48.01	58.88	55.62	52.00	49.60	41.57	(1.41)	(2.82)
INCOME & EXPENSE										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
40 COST OF GOODS	51.57	55.12	63.35	59.46	59.13	58.29	55.53	53.10	(0.03)	(0.02)
41 GROSS PROFIT	48.43	44.88	36.65	40.54	40.87	41.71	44.47	46.90	0.03	0.15
42 S G & A EXPENSE	23.27	21.15	17.28	18.97	20.36	20.38	21.41	22.96	0.12	0.64
43 R & D EXPENDITURES	3.78	3.54	3.52	4.45	3.95	3.41	2.49	2.19	(0.20)	(6.65)
45 OPERATING PROFIT	21.38	20.20	15.85	17.12	16.56	17.92	20.56	21.75	0.12	0.65
46 DEPRECIATION	3.50	3.32	3.17	3.94	2.95	3.56	3.66	3.97	0.06	1.73
47 LEASE PAYMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48 INTEREST EXPENSE(INCOME)	(0.16)	(0.11)	0.08	0.36	(0.13)	(0.09)	(0.48)	(0.39)	(0.05)	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.00	0.00	0.00	0.16	0.81	0.71	0.09	0.08	3921.89
53 PRETAX PROFIT	18.05	16.98	12.61	12.82	13.91	15.27	18.09	18.26	0.19	1.26
54 INCOME TAXES	9.14	8.54	6.34	6.59	6.78	6.53	7.78	8.12	(0.12)	(1.39)
55 EXTRAORD LOSS (GAIN)	0.00	0.00	0.00	0.00	0.00	0.00	(3.38)	0.00	(0.20)	*****
56 NET PROFIT	8.91	8.44	6.28	6.23	7.13	8.74	13.69	10.13	0.51	5.44
57 EPS AFTER PFD DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
58 COMMON DIV PER SHARE	0.00	0.00	0.00	7.12	11.48	7.46	5.66	18.37	2.19	6079.40

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979 and 1980 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues for 1978, for example, would be raised to \$40.16 million.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-4

Unitrode Corporation
FUNDS FLOW HISTORY 1974-80
(Millions of Dollars)

	<u>Fiscal Year Ending January 31</u>							<u>TREND</u>	<u>CPD GR</u>
	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>		
SOURCES									
56 NET PROFIT	2.22	2.00	1.73	2.18	3.39	6.92	8.27	1.06	28.88
46 DEPRECIATION	0.87	1.01	1.09	0.90	1.38	1.85	3.24	0.32	21.20
51 NEW LONG TERM DEBT	0.02	0.00	0.00	0.00	1.45	0.00	0.00	0.05	(64.53)
62 NEW EQUITY	0.04	(0.02)	(0.15)	0.10	0.09	0.52	10.67	1.19	*****
63 INCR OTHER LIABILITIES	0.00	0.00	0.00	0.00	0.00	1.81	1.33	0.27	4253.30
66 TOTAL SOURCES	3.15	2.99	2.67	3.18	6.31	11.10	23.51	2.89	40.46
USES									
67 P P E EXPENDITURES	1.65	2.04	0.67	1.31	3.90	4.42	13.84	1.59	41.34
68 REPAYMENT LONG TERM DEBT	0.14	0.07	0.02	0.02	0.03	0.67	0.72	0.11	41.00
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 COMMON DIVIDENDS	0.00	0.00	0.12	0.25	0.25	0.39	1.52	0.20	3961.89
72 INCR WORKING CAPITAL	1.37	0.93	2.36	0.31	1.79	4.70	6.76	0.83	31.83
71 INCR OTHER ASSETS	(0.01)	0.01	(0.01)	1.28	0.35	0.47	1.02	0.16	*****
74 TOTAL USES	3.16	3.04	3.17	3.18	6.31	10.64	23.87	2.87	39.23
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76 CUMULATIVE SUR/DBP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979 and 1980 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues for 1978, for example, would be raised to \$40.16 million.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-5

Unitrode Corporation FINANCIAL RATIO HISTORY 1973-80

	Fiscal Year Ending January 31								ST AV	WTD AVG	
	1973	1974	1975	1976	1977	1978	1979	1980			
LIQUIDITY											
1	CURRENT RATIO	4.585	4.235	2.903	4.776	4.898	4.839	3.841	3.048	4.141	4.046
2	QUICK RATIO	2.042	1.755	1.050	1.602	1.797	2.590	2.352	1.554	1.843	1.904
3	CASH RATIO	0.453	0.129	0.067	0.166	0.235	0.925	1.066	0.540	0.448	0.558
4	WORKING CAPITAL/SALES	0.476	0.412	0.389	0.510	0.472	0.416	0.408	0.339	0.425	0.413
6	DAYS RECEIVABLES	77.068	75.663	69.585	70.743	69.077	65.861	67.462	61.184	69.580	67.288
7	DAYS INVENTORY	234.100	206.115	204.251	258.837	228.241	148.825	137.638	165.266	197.909	183.727
LEVERAGE											
8	LONG TERM DEBT/CAPITALIZ	0.011	0.008	0.005	0.003	0.002	0.050	0.016	0.000	0.012	0.013
11	LONG TERM DEBT/EQUITY	0.012	0.008	0.005	0.003	0.002	0.053	0.016	0.000	0.012	0.014
12	TOTAL DEBT/EQUITY	0.022	0.011	0.075	0.004	0.003	0.058	0.026	0.002	0.025	0.023
COVERAGE											
13	EBIT/INTEREST	(109.844)	(158.286)	168.833	36.929	(105.400)	(163.472)	(36.967)	(45.855)	(51.758)	(52.934)
14	FIXED CHARGE COVERAGE	(109.844)	(158.286)	168.833	36.929	(105.400)	(163.472)	(36.967)	(45.855)	(51.758)	(52.934)
16	REPAY LTD+FIX CHARGE COV	*****	39.571	58.725	29.967	(281.067)	(653.889)	(86.495)	*****	(335.912)	(531.184)
OPER PERFORMANCE											
17	GROSS PROFIT/SALES	0.484	0.449	0.367	0.405	0.409	-0.417	0.445	0.469	0.431	0.431
18	OPER PROFIT/SALES	0.214	0.202	0.159	0.171	0.166	0.179	0.206	0.218	0.189	0.191
21	PRETAX PROFIT/SALES	0.181	0.170	0.128	0.128	0.139	0.153	0.181	0.183	0.157	0.160
22	NET PROFIT/SALES	0.089	0.084	0.063	0.062	0.071	0.087	0.137	0.101	0.087	0.093
23	NET PROFIT/AVG EQUITY	*****	0.147	0.115	0.090	0.103	0.142	0.241	0.202	0.149	0.165
24	NET PROFIT/AVG CAPITALIZ	*****	0.145	0.115	0.089	0.103	0.138	0.233	0.201	0.146	0.162
26	NET PROFIT/AVG TOT ASSETS	*****	0.122	0.091	0.071	0.087	0.119	0.190	0.153	0.119	0.131
27	E P S GROWTH RATE	*****	0.285	(0.090)	(0.152)	0.241	0.538	0.976	0.027	0.261	0.334
28	SALES GROWTH RATE	*****	0.336	0.216	(0.131)	0.102	0.268	0.304	0.613	0.244	0.294
TURNOVER											
31	SALES/AVG EQUITY	*****	1.739	1.851	1.443	1.441	1.626	1.758	1.993	1.693	1.720
32	SALES/AVG CAPITALIZ	*****	1.722	1.839	1.437	1.438	1.580	1.703	1.980	1.671	1.694
33	SALES/AVG TOT DEBT + EQTY	*****	1.712	1.772	1.390	1.436	1.574	1.691	1.971	1.649	1.678
34	SALES/AVG TOTAL ASSETS	*****	1.441	1.443	1.143	1.223	1.361	1.392	1.509	1.359	1.370
35	SALES/AVG OPER ASSETS	*****	1.491	1.484	1.172	1.287	1.467	1.493	1.605	1.428	1.452
36	SALES/AVG GROSS P P E	*****	3.019	3.032	2.338	2.381	2.519	2.592	2.892	2.682	2.643
BALANCE SHEET											
37	CASH/SALES	0.060	0.016	0.013	0.022	0.029	0.100	0.153	0.089	0.060	0.076
38	RECEIVABLES/SALES	0.211	0.207	0.191	0.194	0.189	0.180	0.185	0.168	0.191	0.184
41	INVENTORY/SALES	0.331	0.311	0.354	0.422	0.370	0.238	0.209	0.240	0.309	0.288
42	OTH CURR ASSETS/SALES	0.007	0.005	0.005	0.007	0.006	0.006	0.005	0.007	0.006	0.006
44	GROSS P P E/SALES	0.401	0.362	0.361	0.440	0.441	0.446	0.429	0.425	0.413	0.424
45	LINE 13/SALES	0.009	0.007	0.006	0.007	0.049	0.048	0.037	0.001	0.020	0.024
46	MISC ASSETS/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.001
47	ACCOUNTS PAYABLE/SALES	0.058	0.058	0.097	0.056	0.048	0.039	0.045	0.072	0.059	0.057
48	ACCRUED TAXES/SALES	0.021	0.026	0.020	0.031	0.033	0.034	0.049	0.047	0.033	0.037
51	ACCRUED LIABILITY/SALES	0.025	0.023	0.019	0.031	0.025	0.015	0.044	0.029	0.026	0.028
52	LINE 21/SALES	0.022	0.019	0.018	0.017	0.015	0.017	0.000	0.016	0.015	0.013
53	DEFERRED TAXES/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.012	0.003	0.005
54	MISC LIABILITIES/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.026	0.006	0.011
MISCELLANEOUS											
57	EQUITY PER COMMON SHARE	5.845	6.663	7.542	8.214	8.883	10.073	12.270	17.763	9.632	11.314
58	RETIRE/PREV GROSS P P E	*****	(0.001)	(0.001)	(0.001)	(0.001)	(0.007)	0.000	(0.039)	(0.007)	(0.011)
61	DEPREC/PREV GROSS P P E	*****	0.111	0.106	0.095	0.074	0.102	0.107	0.149	0.106	0.111
62	COM DIVS/ERN-PPD DIVS	0.000	0.000	0.000	0.071	0.115	0.075	0.057	0.184	0.063	0.088
63	TAX RATE	0.506	0.503	0.502	0.514	0.487	0.427	0.430	0.445	0.477	0.462
64	COST OF GOODS/SALES	0.516	0.551	0.633	0.595	0.591	0.583	0.555	0.531	0.569	0.569
65	S G e A/SALES	0.233	0.211	0.173	0.190	0.204	0.204	0.214	0.230	0.207	0.209

In fiscal 1980, Unitrode acquired High Voltage Devices, Inc., and Micro Networks, Inc. Only 1979 and 1980 data has been restated to reflect this acquisition. If earlier years were restated, Unitrode revenues for 1978, for example, would be raised to \$40.16 million.

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Unitrode Corporation
580 Pleasant Street
Watertown, Massachusetts 02172
(617) 926-0404

Balance Sheet (January 31)

	<u>1978</u>	<u>1979</u>	<u>Percent Change 1978-1979</u>
Working Capital (\$ Millions)	\$16.1	\$19.5	20.8%
Long-Term Debt (\$ Millions)	\$ 1.4	\$ 1.3	(7.4%)
Shareholders' Equity (\$ Millions)	\$25.5	\$31.7	24.5%
After-Tax Return on Average Equity (%)	14.2%	23.8%	

Operating Performance (Fiscal Year Ending January 31)

	<u>1978</u>	<u>1979</u>	<u>Percent Change 1978-1979</u>
Revenue (\$ Millions)	\$38.8	\$48.4	24.8%
Cost of Goods (\$ Millions)	\$22.6	\$26.7	17.9%
R&D Expenditures (\$ Millions)	\$ 1.3	1.3	(4.6%)
Marketing, SG&A Expense (\$ Millions)	\$ 7.9	\$10.4	31.2%
Pretax Income (\$ Millions)	\$ 5.9	\$ 8.9	51.1%
Pretax Margin (%)	15.3%	18.5%	
Net Income (\$ Millions)	\$ 3.4	\$ 6.8	101.1%
Per Share Data ¹			
Earnings (\$)	\$ 1.34	\$ 2.71	102.2%
Dividends (\$)	\$ 0.10	\$ 0.15	50.0%
Book Value (\$)	\$10.21	\$12.92	26.5%
Average Shares Outstanding (Millions)	2.53	2.52	
Capital Expenditures (\$ Millions)	\$ 3.9	\$ 4.1	6.3%
Total Employees	1,208	1,232	2.0%

¹Fully diluted

Source: Unitrode Corporation Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-1
Unitrode Corporation
ESTIMATED CORPORATE REVENUES
(Dollars in Millions)

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Total Semiconductors	\$14	\$19	\$24	\$29	\$25	\$29	\$33	\$40
Total Discrete	14	19	24	29	25	29	33	40
Transistors	2	2	2	2	2	2	2	3
Small Signal	0	0	0	0	0	0	0	0
Power	2	2	2	2	2	2	2	3
Diodes	9	14	18	22	19	23	26	32
Small Signal	2	3	4	5	4	5	6	9
Power	4	8	9	12	11	13	16	18
Zener	3	3	5	5	4	5	4	5
Thyristors	2	2	3	4	3	3	4	4
Other	1	1	1	1	1	1	1	1
Other Revenues	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>6</u>	<u>8</u>
Total Revenues	\$14	\$20	\$26	\$32	\$28	\$31	\$39	\$48

Source: DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-2
Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1972-79
(Dollars in Millions)

	Fiscal Year Ending January 31							TREND	CHGD GR	
	1972	1973	1974	1975	1976	1977	1978			1979
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	2.09	1.18	0.43	0.41	0.62	0.87	3.89	7.74	0.65	23.32
3 RECEIVABLES	3.98	4.15	5.44	6.09	5.38	5.79	7.00	9.02	0.64	12.04
4 INVENTORY	5.05	6.50	8.17	11.32	11.70	11.31	9.22	9.73	0.67	9.13
5 PREPAID EXPENSES	0.10	0.14	0.13	0.15	0.19	0.19	0.23	0.22	0.02	11.80
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	10.63	11.97	14.18	17.97	17.89	18.16	20.33	26.70	1.98	12.42
9 GROSS P P E	6.78	7.88	9.52	11.54	12.20	13.50	17.30	21.35	1.93	16.83
10 ACCUMULATED DEPRECIATION	3.06	3.72	4.58	5.58	6.67	7.56	8.65	10.58	1.05	19.11
11 NET P P E	3.72	4.15	4.93	5.96	5.53	5.94	8.45	10.77	0.87	14.64
12 MISC ASSETS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13 INVESTMENTS	0.13	0.17	0.17	0.19	0.19	1.49	1.85	1.88	0.29	54.88
14 GOODWILL	0.45	0.44	0.43	0.42	0.41	0.40	0.38	0.83	0.03	3.92
15 *TOTAL ASSETS*	14.94	16.74	19.72	24.54	24.02	25.99	31.03	40.18	3.17	13.75
16 NOTES PAYABLE	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	(0.01)	(22.07)
17 ACCOUNTS PAYABLE	0.49	1.15	1.51	3.10	1.55	1.46	1.52	2.00	0.13	13.16
18 ACCRUED TAXES	0.52	0.41	0.68	0.63	0.86	1.00	1.32	3.04	0.28	26.42
19 ACCRUED LIABILITIES	0.42	0.49	0.60	0.61	0.86	0.77	0.58	2.07	0.15	16.87
20 CURR MAT LONG TERM DEBT	0.13	0.14	0.05	0.02	0.02	0.03	0.14	0.11	0.00	(3.25)
21 OTHER ACCRUED LIABILITIES	0.35	0.43	0.51	0.58	0.46	0.45	0.65	0.00	(0.02)	(80.24)
22 TOTAL CURR LIABILITIES	1.91	2.61	3.35	6.19	3.75	3.71	4.20	7.21	0.52	14.66
23 LONG TERM DEBT	0.30	0.16	0.13	0.09	0.06	0.04	1.35	1.25	0.15	21.65
24 DEFERRED TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25 MISC LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	2.21	2.77	3.48	6.28	3.81	3.75	5.55	8.46	0.67	16.17
29 PREFERRED STOCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 COMMON STOCK	0.49	0.49	0.49	0.49	0.50	0.50	0.50	0.50	0.00	0.42
31 CAPITAL SURPLUS	3.96	4.00	4.04	4.02	3.86	3.96	4.04	4.13	0.01	0.31
32 RETAINED EARNINGS	8.28	10.03	12.25	14.25	15.86	17.79	20.93	27.55	2.47	17.18
33 TREASURY STOCK	0.00	(0.55)	(0.54)	(0.50)	0.00	0.00	0.00	(0.46)	0.02	*****
34 TOTAL EQUITY	12.73	13.97	16.23	18.26	20.21	22.25	25.47	31.72	2.51	13.24
35 *TOTAL LIAB & EQUITY*	14.94	16.74	19.72	24.54	24.02	25.99	31.03	40.18	3.17	13.75
36 NET WORKING CAPITAL	8.72	9.36	10.83	11.78	14.14	14.45	15.13	19.49	1.46	11.84
INCOME & EXPENSE										
38 SALES	13.69	19.65	26.26	31.93	27.75	30.59	38.79	48.42	4.14	16.13
40 COST OF GOODS	7.05	10.13	14.48	20.23	16.50	18.09	22.61	26.66	2.46	17.85
41 GROSS PROFIT	6.65	9.52	11.79	11.71	11.25	12.50	16.18	21.76	1.68	14.11
42 S G & A EXPENSE	3.60	4.57	5.55	5.52	5.27	6.23	7.91	10.37	0.78	13.23
43 R & D EXPENSE	0.00	0.74	0.93	1.13	1.23	1.21	1.32	1.26	0.15	499.55
45 OPERATING PROFIT	3.04	4.20	5.30	5.06	4.75	5.07	6.95	10.13	0.74	13.62
46 DEPRECIATION	0.54	0.69	0.87	1.01	1.09	0.90	1.38	1.82	0.15	15.61
47 LEASE PAYMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48 INTEREST EXPENSE(INCOME)	(0.07)	(0.03)	(0.03)	0.02	0.10	(0.04)	(0.04)	(0.28)	(0.02)	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.00	0.00	0.00	0.00	0.05	0.32	0.36	0.05	3016.88
53 PRETAX PROFIT	2.58	3.55	4.46	4.03	3.56	4.26	5.92	8.95	0.66	14.00
54 INCOME TAXES	1.34	1.80	2.24	2.02	1.83	2.07	2.53	3.84	0.24	11.00
55 EXTRAORD ITEM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(1.71)	(0.14)	*****
56 NET PROFIT	1.24	1.75	2.22	2.00	1.73	2.18	3.39	6.82	0.56	19.58
57 EPS AFTER PFD DIVIDENDS	0.53	0.71	0.91	0.83	0.70	0.87	1.34	2.71	0.22	18.64
58 COMMON DIV PER SHARE	0.00	0.00	0.00	0.00	0.05	0.10	0.10	0.15	0.02	3326.89

Source: Unitrode Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-3
Unitrode Corporation
FINANCIAL STATEMENT HISTORY 1972-79
(Percent)

	Fiscal Year Ending January 31							TREND	CMED	GR
	1972	1973	1974	1975	1976	1977	1978			
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	14.03	7.07	2.19	1.68	2.59	3.36	12.52	19.25	0.81	9.42
3 RECEIVABLES	22.60	24.78	27.61	24.81	22.39	22.28	22.56	22.44	(0.37)	(1.50)
4 INVENTORY	33.84	38.82	41.46	46.12	48.72	43.52	29.71	24.22	(1.24)	(4.06)
5 PREPAID EXPENSES	0.68	0.84	0.65	0.62	0.77	0.73	0.75	0.55	(0.01)	(1.71)
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	71.15	71.51	71.91	73.23	74.47	69.88	65.54	66.45	(0.80)	(1.16)
9 GROSS P P E	45.39	47.05	48.28	47.04	50.79	51.93	55.77	53.14	1.34	2.71
10 ACCUMULATED DEPRECIATION	20.47	22.24	23.25	22.76	27.76	29.08	28.52	26.33	1.13	4.72
11 NET P P E	24.92	24.81	25.02	24.28	23.03	22.85	27.25	26.81	0.21	0.79
12 MISC ASSETS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13 INVESTMENTS	0.80	1.04	0.88	0.78	0.80	5.74	5.97	4.67	0.78	36.16
14 GOODWILL	3.04	2.65	2.19	1.71	1.70	1.53	1.24	2.06	(0.19)	(8.64)
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
16 NOTES PAYABLE	0.00	0.00	0.00	5.09	0.00	0.00	0.00	0.00	(0.06)	(23.36)
17 ACCOUNTS PAYABLE	3.31	6.86	7.67	12.62	6.44	5.62	4.89	4.98	(0.12)	(0.52)
18 ACCRUED TAXES	3.49	2.44	3.46	2.57	3.58	3.86	4.27	7.56	0.47	11.14
19 ACCRUED LIABILITIES	2.79	2.93	3.06	2.49	3.56	2.95	1.86	5.15	0.14	2.75
20 CURR MAT LONG TERM DEBT	0.86	0.84	0.23	0.09	0.10	0.10	0.44	0.27	(0.08)	(14.94)
21 OTHER ACCRUED LIABILITIES	2.34	2.54	2.56	2.36	1.91	1.73	2.08	0.00	(0.26)	(83.90)
22 TOTAL CURR LIABILITIES	12.78	15.60	16.98	25.23	15.59	14.27	13.54	17.95	0.10	0.80
23 LONG TERM DEBT	2.02	0.96	0.68	0.37	0.26	0.15	4.35	3.11	0.27	6.95
24 DEFERRED TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25 MISC LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	14.80	16.56	17.66	25.59	15.86	14.41	17.89	21.06	0.37	2.13
29 PREFERRED STOCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30 COMMON STOCK	3.26	2.92	2.48	1.99	2.06	1.91	1.61	1.24	(0.27)	(11.72)
31 CAPITAL SURPLUS	26.49	23.88	20.48	16.37	16.08	15.23	13.04	10.27	(2.19)	(11.82)
32 RETAINED EARNINGS	55.45	59.93	62.12	58.07	66.00	68.44	67.46	68.57	1.86	3.02
33 TREASURY STOCK	0.00	(3.29)	(2.75)	(2.03)	0.00	0.00	0.00	(1.14)	0.22	*****
34 TOTAL EQUITY	85.20	83.44	82.34	74.41	84.14	85.59	82.11	78.94	(0.37)	(0.45)
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
36 NET WORKING CAPITAL	58.37	55.91	54.93	48.01	58.88	55.62	52.00	48.50	(0.90)	(1.67)
INCOME & EXPENSE										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
40 COST OF GOODS	51.45	51.57	55.12	63.35	59.46	59.13	58.29	55.06	0.80	1.48
41 GROSS PROFIT	48.55	48.43	44.88	36.65	40.54	40.87	41.71	44.94	(0.80)	(1.73)
42 S G & A EXPENSE	26.31	23.27	21.15	17.28	18.97	20.36	20.38	21.42	(0.59)	(2.50)
43 R & D EXPENSE	0.00	3.78	3.54	3.52	4.45	3.95	3.41	2.60	0.22	509.33
45 OPERATING PROFIT	22.24	21.38	20.20	15.85	17.12	16.56	17.92	20.91	(0.43)	(2.16)
46 DEPRECIATION	3.94	3.50	3.32	3.17	3.94	2.95	3.56	3.76	(0.02)	(0.44)
47 LEASE PAYMENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48 INTEREST EXPENSE(INCOME)	(0.54)	(0.16)	(0.11)	0.08	0.36	(0.13)	(0.09)	(0.59)	0.00	*****
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
51 EQUITY IN AFFIL INCOME	0.00	0.00	0.00	0.00	0.00	0.16	0.81	0.74	0.12	3554.43
53 PRETAX PROFIT	18.83	18.05	16.98	12.61	12.82	13.91	15.27	18.48	(0.30)	(1.83)
54 INCOME TAXES	9.76	9.14	8.54	6.34	6.59	6.78	6.53	7.93	(0.37)	(4.41)
55 EXTRAORD ITEM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(3.53)	(0.29)	*****
56 NET PROFIT	9.08	8.91	8.44	6.28	6.23	7.13	8.74	14.08	0.36	2.98
57 EPS AFTER FED DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
58 COMMON DIV PER SHARE	0.00	0.00	0.00	0.00	7.12	11.48	7.46	5.54	1.40	7419.72

Source: Unitrode Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-4
Unitrode Corporation
FUNDS FLOW HISTORY 1973-79
(Dollars in Millions)

	Fiscal Year Ending January 31						TREND	CMPD GR	
	1973	1974	1975	1976	1977	1978			1979
<i>SOURCES</i>									
56 NET PROFIT	1.75	2.22	2.00	1.73	2.18	3.39	6.82	0.63	19.61
46 DEPRECIATION	0.69	0.87	1.01	1.09	0.90	1.38	1.82	0.15	14.26
61 NEW LONG TERM DEBT	0.00	0.02	0.00	0.00	0.00	1.45	0.01	0.10	1143.34
62 NEW EQUITY	0.04	0.04	(0.02)	(0.15)	0.10	0.09	0.27	0.03	*****
63 INCR OTHER LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
66 TOTAL SOURCES	2.48	3.15	2.99	2.67	3.18	6.31	8.91	0.92	20.81
<i>USES</i>									
67 P P E EXPENDITURES	1.12	1.65	2.04	0.67	1.31	3.90	4.14	0.46	20.42
68 REPAYMENT LONG TERM DEBT	0.13	0.14	0.07	0.02	0.02	0.03	0.14	(0.01)	(13.43)
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 COMMON DIVIDENDS	0.00	0.00	0.00	0.12	0.25	0.25	0.38	0.07	6493.99
72 INCR WORKING CAPITAL	0.65	1.37	0.93	2.36	0.31	1.79	3.33	0.29	16.66
71 INCR OTHER ASSETS	0.03	(0.01)	0.01	(0.01)	1.29	0.35	0.47	0.12	*****
74 TOTAL USES	1.93	3.16	3.04	3.17	3.18	6.31	8.45	0.93	23.31
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76 CUMULATIVE SUR/DEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Unitrode Annual Reports
DATAQUEST, Inc.

8.56 Unitrode Corporation

Table 8.56-5
Unitrode Corporation
FINANCIAL RATIO HISTORY 1972-79

	Fiscal Year Ending January 31								ST AV	WTD AVG
	1972	1973	1974	1975	1976	1977	1978	1979		
LIQUIDITY										
1 CURRENT RATIO	5.567	4.585	4.235	2.903	4.776	4.898	4.839	3.702	4.438	4.928
2 QUICK RATIO	2.866	2.042	1.755	1.050	1.602	1.797	2.590	2.322	2.003	1.998
3 CASH RATIO	1.097	0.453	0.129	0.067	0.166	0.235	0.925	1.072	0.518	0.554
4 WORKING CAPITAL/SALES	0.637	0.476	0.412	0.369	0.510	0.472	0.416	0.403	0.462	0.439
6 DAYS RECEIVABLES	89.984	77.068	75.663	69.585	70.743	69.077	65.861	67.963	73.243	70.066
7 DAYS INVENTORY	261.861	234.100	206.115	204.251	258.837	228.241	148.825	133.216	209.431	192.682
LEVERAGE										
8 LONG TERM DEBT/CAPITALIZ	0.023	0.011	0.008	0.005	0.003	0.002	0.050	0.038	0.018	0.021
11 LONG TERM DEBT/EQUITY	0.024	0.012	0.008	0.005	0.003	0.002	0.053	0.039	0.018	0.022
12 TOTAL DEBT/EQUITY	0.034	0.022	0.011	0.007	0.004	0.003	0.058	0.043	0.031	0.033
COVERAGE										
13 EBIT/INTEREST	(33.851)	(109.844)	(158.286)	168.833	36.929	(105.400)	(163.472)	(30.504)	(49.449)	(52.476)
14 FIXED CHARGE COVERAGE	(33.851)	(109.844)	(158.286)	168.833	36.929	(105.400)	(163.472)	(30.504)	(49.449)	(52.476)
16 REPAY LTD+FIX CHARGE COV	*****	36.615	39.571	58.725	29.967	(281.067)	(653.889)	(59.336)	(118.488)	(190.436)
OPER PERFORMANCE										
17 GROSS PROFIT/SALES	0.485	0.484	0.449	0.367	0.405	0.409	0.417	0.449	0.433	0.424
18 OPER PROFIT/SALES	0.222	0.214	0.202	0.159	0.171	0.166	0.179	0.209	0.190	0.185
21 PRETAX PROFIT/SALES	0.188	0.181	0.170	0.126	0.128	0.139	0.153	0.185	0.159	0.155
22 NET PROFIT/SALES	0.091	0.089	0.084	0.063	0.062	0.071	0.087	0.141	0.086	0.090
23 NET PROFIT/AVG EQUITY	*****	0.131	0.147	0.116	0.090	0.103	0.142	0.238	0.138	0.149
24 NET PROFIT/AVG CAPITALIZ	*****	0.129	0.145	0.115	0.089	0.103	0.138	0.228	0.135	0.145
26 NET PROFIT/AVG TOT ASSETS	*****	0.111	0.122	0.091	0.071	0.087	0.119	0.191	0.113	0.121
27 E P S GROWTH RATE	*****	0.344	0.285	(0.090)	(0.152)	0.241	0.538	1.019	0.312	0.415
28 SALES GROWTH RATE	*****	0.435	0.336	0.216	(0.131)	0.102	0.268	0.248	0.211	0.182
TURNOVER										
31 SALES/AVG EQUITY	*****	1.472	1.739	1.851	1.443	1.441	1.626	1.693	1.609	1.610
32 SALES/AVG CAPITALIZ	*****	1.447	1.722	1.839	1.437	1.438	1.580	1.620	1.583	1.577
33 SALES/AVG TOT DEBT + EQTY	*****	1.433	1.712	1.772	1.390	1.436	1.574	1.613	1.561	1.559
34 SALES/AVG TOTAL ASSETS	*****	1.241	1.441	1.443	1.143	1.223	1.361	1.360	1.316	1.315
35 SALES/AVG OPER ASSETS	*****	1.290	1.491	1.484	1.172	1.287	1.467	1.461	1.379	1.388
36 SALES/AVG GROSS P P E	*****	2.681	3.019	3.032	2.338	2.381	2.519	2.505	2.638	2.561
BALANCE SHEET										
37 CASH/SALES	0.153	0.060	0.016	0.013	0.022	0.029	0.100	0.160	0.069	0.073
38 RECEIVABLES/SALES	0.247	0.211	0.207	0.191	0.194	0.189	0.180	0.186	0.201	0.192
41 INVENTORY/SALES	0.369	0.331	0.311	0.354	0.422	0.370	0.238	0.201	0.324	0.305
42 OTH CURR ASSETS/SALES	0.007	0.007	0.005	0.005	0.007	0.006	0.006	0.005	0.006	0.006
44 GROSS P P E/SALES	0.495	0.401	0.362	0.361	0.440	0.441	0.446	0.441	0.423	0.426
45 LINE 13/SALES	0.010	0.009	0.007	0.006	0.007	0.049	0.048	0.039	0.022	0.029
46 MISC ASSETS/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47 ACCOUNTS PAYABLE/SALES	0.036	0.058	0.058	0.097	0.056	0.048	0.039	0.041	0.054	0.052
48 ACCRUED TAXES/SALES	0.038	0.021	0.026	0.020	0.031	0.033	0.034	0.063	0.033	0.037
51 ACCRUED LIABILITY/SALES	0.030	0.025	0.023	0.019	0.031	0.025	0.015	0.043	0.026	0.027
52 LINE 21/SALES	0.025	0.022	0.019	0.018	0.017	0.015	0.017	0.000	0.017	0.014
53 DEFERRED TAXES/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
54 MISC LIABILITIES/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MISCELLANEOUS										
57 EQUITY PER COMMON SHARE	5.392	5.645	6.663	7.542	8.214	8.883	10.073	12.596	8.126	9.236
58 RETIRE/PREV GROSS P P E	*****	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.007)	(0.005)	(0.003)	(0.003)
61 DEPREC/PREV GROSS P P E	*****	0.101	0.111	0.106	0.095	0.074	0.102	0.105	0.099	0.098
62 COM DIVS/ERN-PPD DIVS	0.000	0.000	0.000	0.000	0.071	0.115	0.075	0.055	0.039	0.056
63 TAX RATE	0.518	0.506	0.503	0.502	0.514	0.487	0.427	0.429	0.486	0.471
64 COST OF GOODS/SALES	0.515	0.516	0.551	0.633	0.595	0.591	0.583	0.551	0.567	0.576
65 S G e A/SALES	0.263	0.233	0.211	0.173	0.190	0.204	0.204	0.214	0.211	0.205

Source: Unitrode Annual Reports
DATAQUEST, Inc.

U S WEST, Inc.

7800 East Orchard Road
Englewood, Colorado 80111
Telephone: (303) 793-6356
Fax: (303) 793-6659
Dun's Number: 10-256-2451

Date Founded: 1984

CORPORATE STRATEGIC DIRECTION

U S WEST, Inc., is one of seven regional holding companies (RHCs) created as a result of the US District Court's decision to restructure the Bell System and American Telephone & Telegraph (AT&T). The historic AT&T antitrust settlement ordered AT&T to divest its 22 Bell operating companies (BOCs) and its control of the local exchange services. The 22 BOCs were reorganized into 7 RHCs, one of which is U S WEST, Inc. On January 1, 1984, U S WEST and the 6 other RHCs began life as independent corporations, separated from their former parent—AT&T.

U S WEST, Inc., is the "parent" of the U S WEST family. Its responsibilities lie in establishing overall corporate strategy and direction, as well as creating and maintaining relationships with the investment community. Its subsidiaries are segmented into four strategic areas: Communication, Data Solutions, Marketing Services, and Financial Services.

Total revenue increased 5 percent to \$9.7 billion* in fiscal year 1989 from \$9.2 billion in fiscal 1988. Net income reached \$1.11 billion in fiscal year 1989, down 1.9 percent from fiscal year 1988. U S WEST, Inc., employs 70,587 people worldwide.

In 1988, U S WEST, Inc., combined the operations of Mountain Bell, Northwestern Bell, and Pacific Northwest Bell to form U S WEST Communications in order to eliminate redundancy of work and streamline operations. This subsidiary provides local and in-state long-distance telephone service to residential and business customers in 14 western state regions. In fiscal year 1989, U S WEST Communications generated revenue amounting to \$8.1 million, a less than 1 percent increase from revenue in fiscal year 1988. U S WEST Communications also organized its customer service units around markets rather

than organizing them based on geography. A number of "market units" were formed, including Home & Personal Services (a residential market) and several business units.

During 1988, U S WEST, Inc., began construction on an R&D facility near the University of Colorado at Boulder. Additionally, R&D for U S WEST, Inc., is conducted by Bell Communications Research, of which U S WEST, Inc., is one-seventh owner, with the remaining RHCs each having equal share.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Communication

U S WEST, Inc., offers a broad range of communications services from its US Communications Group, U S WEST NewVector Group, and U S WEST Cable Communications Division.

The U S WEST Communications Group provides integrated voice and data network solutions to federal government agencies and facilities, network offerings, voice and data communications to public tax-supported organizations, telecommunications services to local exchange telephone companies, connections for long-distance companies to the local telephone network, communications services to third-party marketers, and local telephone service and in-state long-distance service within a 14-state region. Dataquest

*All dollar amounts are in US dollars.

believes that during 1988, U S WEST, Inc., captured a market share of 9.5 percent of local telephone services and 9.1 percent of Centrex services.

The U S WEST NewVector Group is one of the largest cellular communications companies in the nation. It provides cellular mobile phone services in 28 cities and handles paging systems in 55 cities. During fiscal year 1989, the NewVector Group's revenue increased 42 percent to \$189.5 million. The growth primarily came from customer growth of 62 percent and from new products such as Message Center, a voice mail service that increases air time an average of 33 minutes a month among customers who use it. A subset of this group, U S WEST International, recognizes and develops international opportunities for U S WEST in the areas of network infrastructure, cellular, private network, and marketing services.

The U S WEST Cable Communications Division is starting to play a leading role in the international cable communications industry. Currently, U S WEST, Inc., partially owns a number of cable television franchises in the United Kingdom and France. It is also a member of the international consortium that is going to build the cable television system in Hong Kong.

Communications Services

The U S WEST Communications Group and the U S WEST Data Systems Group each handles specific data services. The U S WEST Communications Group sells information solutions to fulfill the communications needs of large and small businesses. Through services such as CommunityLink and 976

Information Delivery Service, U S WEST meets the needs of information providers. The U S WEST Data Systems Group offers transaction-processing application software for automated teller machines, electronic funds transfer, and point-of-sale equipment. It provides telecommunications applications software for voice intercept, calling card billing validation and fraud control, and enhanced directory assistance and electronic white pages.

Directory Services

The U S WEST Marketing Resources Group, Inc., publishes over 1,000 telephone and city directories in 500 cities. It is best known for its yellow-and-white pages directories. It sells direct-mail lists and marketing software as well.

Financial Services

BetaWEST Properties is a commercial real estate company that focuses on the development of office buildings in North America. U S WEST Financial Services is a diversified, international financial services company with a portfolio of about \$3 billion.

Further Information

For more information about U S WEST's business segments, please contact Dataquest's Telecommunications Industry Service.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$7,819.2	\$8,380.9	\$8,696.5	\$9,220.6	\$9,690.6
Percent Change	-	7.18	3.77	6.03	5.10
Capital Expenditure	\$2,089.0	\$2,282.0	\$1,908.0	\$2,278.7	\$2,185.5
Percent of Revenue	26.72	27.23	21.94	24.71	22.55
R&D Expenditure	NA	NA	NA	NA	NA
Percent of Revenue	0	0	0	0	0
Number of Employees	70,202	69,375	68,523	69,765	70,587
Revenue (\$K)/Employee	\$111.38	\$120.81	\$126.91	\$132.17	\$137.29
Net Income	\$926.0	\$924.0	\$1,006.0	\$1,132.0	\$1,110.7
Percent Change	-	(0.22)	8.87	12.52	(1.88)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$2,393.60	\$2,434.60	\$2,323.00	\$2,539.40	
Quarterly Profit	\$249.60	\$258.60	\$258.10	\$344.40	

NA = Not available

Source: U S WEST, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	100.00	100.00	100.00	100.00	100.00
International	0	0	0	0	0

Source: Dataquest (1990)

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988	1989
Direct Sales	100.00	100.00
Indirect Sales	0	0

Source: Dataquest (1990)

1990 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

According to the Modified Final Judgment (MFJ), which is the final set of instructions for the restructuring of the Bell System, the RHCs are not allowed to manufacture telecommunications products after the divestiture.

SUBSIDIARIES

North America

ACI Canada Efts Ltd. (Canada)
Applied Communications Inc. (United States)
Applied Computer Equipment Sales Inc. (United States)
BetaWEST Properties Inc. (United States)
Command Data Systems (United States)
MN Plus Inc. (United States)
Mountain States Telephone & Telegraph Co. (United States)
Northwestern Bell Telephone Co. (United States)
Pacific Northwest Bell Telephone Co. (United States)
Telematics Inc. (United States)
Trans Western Publishing (United States)
Transaction Systems Architects Inc. (United States)
U S WEST Business Resources Inc. (United States)
U S WEST Capital Funding Inc. (United States)
U S WEST Cellular of California Inc. (United States)
U S WEST Cellular Technical Services (United States)
U S WEST Communications Group Inc. (United States)
U S WEST Communications Systems Inc. (United States)
U S WEST Corporate Communications Inc. (United States)
U S WEST Corporate Transportation Inc. (United States)
U S WEST Direct Co. (United States)
U S WEST Enterprises Inc. (United States)
U S WEST Financial Foreign Sales Inc. (United States)

U S WEST Financial Services Inc. (United States)
U S WEST Financial Services International Inc. (United States)
U S WEST Foreign Investments Inc. (United States)
U S WEST International Holdings Inc. (United States)
U S WEST International Inc. (United States)
U S WEST Investments Inc. (United States)
U S WEST Marketing Resources Group Inc. (United States)
U S WEST Marketing Resources Co. (United States)
U S WEST Mobile Services Inc. (United States)
U S WEST NewVector Group Inc. (United States)
U S WEST Overseas Operations Inc. (United States)
U S WEST Paging Inc. (United States)
U S WEST SPF Co. (United States)
U S WEST Service Link Inc. (United States)
U S WEST Systems Inc. (United States)
U S WEST Venture Capital Inc. (United States)
Western Range Insurance Co. (United States)

Europe

Acibase Twenty Four Licensing B.V. (Netherlands)
Applied Communications U.K. Ltd. (United Kingdom)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

TIE/Communications Inc.

TIE/Communications provides service, warranty, and maintenance for the entire base of U S WEST small business systems customers.

1989

Trans-Soviet Line Development Corp.

An agreement was entered into to lead Trans-Soviet Line Development in carrying international calls and computer data between Europe and Japan and long-distance calls within the United States.

Department of Trade and Industry

A license was offered to the consortium Unitel Ltd. that consists of U S WEST, Deutsche Bundespost Telekom, STC, and Thorn EMI.

Random Access

Random Access is the primary provider of microcomputers to U S WEST's entire network of locations.

MERGERS AND ACQUISITIONS

1989

Command Data Systems (CDS)

U S WEST purchased the assets of CDS, a software development and marketing company headquartered in Dublin, California.

1988

Donnelly Information Publishing, Inc.

U S WEST acquired this publisher of 18 nonutility directories in the Houston, Texas, and Oklahoma City and Tulsa, Oklahoma, areas.

Contact Communications

U S WEST acquired the paging assets of this Denver, Colorado, company.

Seattle-Tacoma Partnership

U S WEST purchased an additional 11.5 percent interest in this cellular property for which New-Vector is the general manager.

Enhance Financial Services

U S WEST invested \$50 million in this reinsurance company involved with financial guarantees.

Saratoga County Yellow Pages, Inc.

U S WEST acquired this nonutility yellow-page directory serving Saratoga County, New York.

UTS

U S WEST acquired UTS' assets in Portland, Eugene, and Salem, Oregon, and Reno, Nevada.

VTS

U S WEST purchased the assets of this Toronto, Canada-based retail point-of-sales systems company.

Fixed Asset Lending Division of Westinghouse Credit Corporation

U S WEST purchased approximately \$608 million of financing receivables and other assets of this company.

Telephone & Radio Paging of Tacoma

U S WEST purchased the paging assets of Telephone & Radio Paging in Seattle and Tacoma, Washington.

Zentech

U S WEST purchased software product and related marketing rights for a product that complements ACI's Base 24.

MM Plus, Inc.

U S WEST acquired this company that develops and markets software products used by advertising agencies and radio and television stations.

Microbase

U S WEST acquired Microbase's software product, which complements advertising and broadcast media capabilities.

1987

Yellow Pages Media, Inc.

U S WEST acquired this directory publisher in Oklahoma.

A Beeper Company

U S WEST purchased certain paging assets of A Beeper Company, located in Arizona and New Mexico, for \$8.1 million.

Donnelley Information Publishing, Inc.

U S WEST purchased five of Donnelley's directories in Oklahoma.

ART

U S WEST acquired ART, a software company.

High Tech Paging of Oregon, Inc.

U S WEST acquired this company's paging assets for approximately \$1.2 million in cash.

KEY OFFICERS

Jack A. MacAllister

Chairman of the board and chief executive officer

Richard D. McCormick

President and chief operating officer

Charles M. Lillis

Executive vice president and chief planning officer

Thomas E. Madison

Executive vice president, U S WEST, and president, U S WEST Communications-Markets

Charles M. Lamar

Vice president, Strategic Marketing

Winston J. Wade

Vice president, U S WEST, and president, U S WEST Advanced Technologies, Inc.

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Information is not available.

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Balance Sheet¹	1985	1986	1987	1988	1989
Total Current Assets	\$2,470.5	\$2,352.4	\$2,422.3	\$2,514.0	\$2,775.8
Cash	350.7	133.3	323.4	152.2	208.2
Receivables	1,406.5	1,486.1	1,519.9	1,771.4	1,867.1
Marketable Securities	139.8	149.7	169.5	152.0	82.3
Inventory	250.2	259.0	205.6	214.3	262.6
Other Current Assets	323.3	324.3	203.9	224.1	355.6
Net Property, Plants	\$15,494.1	\$16,280.3	\$16,532.4	\$17,006.6	\$17,412.8
Other Assets	\$477.6	\$1,415.6	\$2,026.5	\$2,895.3	\$5,237.3
Total Assets	\$18,442.2	\$20,048.3	\$20,981.2	\$22,415.9	\$25,425.9
Total Current Liabilities	\$2,721.4	\$2,742.6	\$2,884.7	\$3,330.7	\$4,069.2
Long-Term Debt	\$4,988.5	\$5,761.5	\$6,119.0	\$6,465.9	\$7,247.9
Other Liabilities	\$3,788.8	\$4,265.7	\$4,521.2	\$4,833.7	\$6,037.5
Total Liabilities	\$11,498.7	\$12,769.8	\$13,524.9	\$14,630.3	\$17,354.6
Total Shareholders' Equity	\$6,943.5	\$7,278.5	\$7,456.3	\$7,785.6	\$8,071.3
Common Stock	4,412.2	4,394.5	4,171.2	4,015.0	4,317.4
Other Equity	NA	NA	NA	NA	(425.5)
Retained Earnings	2,531.3	2,884.0	3,285.1	3,770.6	4,179.4
Total Liabilities and Shareholders' Equity	\$18,442.2	\$20,048.3	\$20,981.2	\$22,415.9	\$25,425.9
Income Statement²	1985	1986	1987	1988	1989
Revenue	\$7,819.2	\$8,380.9	\$8,696.5	\$9,220.6	\$9,690.6
Cost of Sales	\$1,930.7	\$2,377.3	\$2,518.9	\$2,685.8	\$2,829.8
R&D Expense	NA	NA	NA	NA	NA
SG&A Expense	\$2,617.8	\$2,471.9	\$2,393.9	\$2,746.3	\$2,955.0
Capital Expense	\$2,089.0	\$2,282.0	\$1,908.0	\$2,278.7	\$2,185.5
Pretax Income	\$1,593.8	\$1,570.4	\$1,578.3	\$1,628.5	\$1,544.9
Pretax Margin (%)	20.38	18.74	18.15	17.66	15.94
Effective Tax Rate (%)	38.70	41.14	36.29	30.51	28.10
Net Income	\$926.0	\$924.0	\$1,006.0	\$1,132.0	\$1,110.7
Shares Outstanding, Millions	190.3	190.0	185.6	183.4	184.5
Per Share Data					
Earnings	\$4.84	\$4.86	\$5.13	\$6.17	\$6.02
Dividend	\$2.86	\$3.04	\$3.28	\$3.52	\$3.76
Book Value	\$36.49	\$38.31	\$40.17	\$42.45	\$43.75

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	0.91	0.86	0.84	0.75	0.68
Quick (Times)	0.82	0.76	0.77	0.69	0.62
Fixed Assets/Equity (%)	223.15	223.68	221.72	218.44	215.74
Current Liabilities/Equity (%)	39.19	37.68	38.69	42.78	50.42
Total Liabilities/Equity (%)	165.60	175.45	181.39	187.91	215.02
<i>Profitability (%)</i>					
Return on Assets	10.04	4.80	4.90	5.22	4.64
Return on Equity	26.67	12.99	13.65	14.85	14.01
Profit Margin	11.84	11.03	11.57	12.28	11.46
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	0	0	0	0	0
Capital Spending % of Revenue	26.72	27.23	21.94	24.71	22.55
Employees	70,202	69,375	68,523	69,765	70,587
Revenue (\$K)/Employee	\$111.38	\$120.81	\$126.91	\$132.17	\$137.29
Capital Spending % of Assets	11.33	11.38	9.09	10.17	8.60

¹The 1987 and 1986 Statements of Income and the 1987 Balance Sheet have been reclassified to reflect the impacts of the Uniform System of Accounts Rewrite (USOAR) adopted in 1988. Non-reclassified data is not comparable.

Source: U S WEST, Inc.
Annual Reports and Forms 10-K
Dataquest (1990)

²The 1984 through 1987 Statements of Income and the 1987 Balance Sheets have been restated to reflect full consolidation in 1988 of U S WEST Financial Services and BetaWEST Properties under Financial Accounting Standards Board Statement No. 94, "Consolidation of All Majority-owned Subsidiaries."

NA = Not available

Valid Logic Systems, Inc.

2820 Orchard Parkway
San Jose, California 95134
Telephone: (408) 432-9400
Fax: (408) 432-9430
Dun's Number: 05-251-8412

Date Founded: 1981

CORPORATE STRATEGIC DIRECTION

Valid Logic Systems, Inc., designs, manufactures, markets, and supports hardware and software solutions for electronic design automation (EDA). These systems are used in the development of electronic systems, printed circuit boards (PCBs) and integrated circuits (ICs). Valid provides a broad line of EDA tools addressing both the computer-aided engineering (CAE) tasks of product definition, including design capture and validation, and the computer-aided design (CAD) tasks of physical layout.

Valid's products consist of software, application-specific hardware for IC prototype verification, and hardware and software acquired from third parties. These products are designed to operate on commercially available platforms, such as those of Digital Equipment Corporation, IBM, and Sun Microsystems, Inc. The Company's software is written to run under both UNIX and VMS operating systems.

Valid's products are sold separately as software packages for existing hardware or as turnkey systems combining hardware and software. Valid sells its systems to a variety of customers in the electronic systems manufacturing market, including the computer, semiconductor, telecommunications, instrumentation, automotive, aerospace, and military industries.

Valid markets its products worldwide, primarily through its direct sales force. The Company has direct sales and customer support offices in 28 US cities, 8 European cities, and in Australia, Canada, Japan, South Korea, and Taiwan. Valid is also represented by distributors in various countries. International sales accounted for 48 percent of 1989 revenue, up from 44 percent and 38 percent in 1988 and 1987, respectively. Valid seeks to enhance this global base in order to capitalize on growth surges in specific regions, while reducing the impact from any softening markets.

Revenue for 1989 was \$173.9 million,* an increase of 23 percent over 1988 revenue of \$141.1 million. Net income for 1989 was \$10.0 million, an increase of 29 percent over 1988 income of \$7.7 million. The rapid revenue growth over the last two years has elevated Valid to the number two position among worldwide EDA suppliers. Dataquest estimates that Valid Logic Systems captured 6.2 percent of the worldwide EDA market in 1989, up from its 1988 position as the third largest supplier with 6.0 percent of the market. These market share figures are based on Company revenue as a percentage of the total market revenue, which Dataquest estimates at \$2.84 billion for 1989.

R&D expenditure totaled \$25.4 million in 1989, up from \$19.7 million in 1988. These figures represent 14.6 percent and 14.0 percent of total sales, respectively. In 1989, much of this expense was incurred in connection with Valid's efforts to integrate its own product line offerings with those of the companies it acquired. Capital expenditure amounted to \$9.3 million in 1989, representing 5.4 percent of total sales.

In June 1990, Valid completed the sale of \$11.2 million worth of newly issued voting convertible preferred stock to IBM Corporation. IBM's investment represents an interest of approximately 8 percent in Valid. IBM's stake in Valid may increase over the next four years, up to a maximum of 49.9 percent.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region. Information on revenue by distribution channel is not available. Table 3, a comprehensive financial statement, is at the end of this backgrounder.

*All dollar amounts are in US dollars.

BUSINESS SEGMENT STRATEGIC DIRECTION

Valid offers a full line of integrated EDA solutions for both digital and analog CAE, as well as both IC CAD and PCB CAD processes. Valid's new products originate through internal development and occasionally through acquisitions of other companies or product lines. Valid's stated goal is to provide complete design solutions that integrate with the customer's existing engineering, design, and manufacturing environments. To help achieve this goal, Valid provides EDA framework technology supporting its own products and integration of third-party commercial or customer tools.

EDA Framework

Valid's Design Process Framework (also called Valid-Frame) uses a switchboard methodology to provide the tool integration and design management capabilities demanded by users without the limitations in performance and extendability inherent in single database approaches. Four framework "managers"—the Communications Manager, Design Manager, User Interface Manager, and Process Manager—can be "plugged into" by applications using documented programming interfaces. This allows Valid applications or other tools to incorporate framework functionality without database modifications.

CAE Digital Software

ValidGED Graphics Editor is a menu-driven tool used to accelerate design capture. With ValidGED, engineers can create and modify schematic drawings using parts from existing component libraries or from libraries created with ValidGED. ValidGED supports both analog and digital design and allows engineers to create designs at any level, including block diagrams, hierarchical schematics, and flat schematics. Valid's digital and analog libraries each include more than 4,000 commonly used parts. In addition, Valid is supported by over 100 application-specific IC (ASIC) design kits supplied by ASIC vendors and used in the design and simulation of ASICs.

The Logic Workbench is a simulation framework that enables users to analyze and debug their digital designs. It includes a multiwindow display environment, advanced stimulus creation capabilities, and integration features such as cross-probing between schematics and simulation input patterns or output

waveforms. RapidSIM, part of the Logic Workbench, is a mixed-level simulation and timing analysis tool that has replaced the Company's original ValidSIM simulator. RapidSIM features a new vendor-definable algorithms capability that enables it to simulate sub-micron ASICs and high-speed board designs. It also utilizes optimized data structures to provide improvements over ValidSIM in the areas of speed and circuit capacity.

CAE Analog Software

Valid's analog products were obtained through the acquisition of ADT in February 1989. Valid has integrated those products within its EDA product line, linking them with both design capture tools and physical design tools.

The Analog Workbench II was introduced in March 1990 as a continuation of the Analog Workbench developed by ADT. It provides an environment for the simulation and analysis of analog circuits. The Analog Workbench II can be used for both IC and board-level analog designs.

Optional Analysis Modules enable analog designers to evaluate and optimize their circuits with respect to quality, manufacturability, and reliability. Included is the Smoke Alarm stress analysis package; Statistical Analysis, containing statistical, sensitivity, and worst case analysis programs; and the Parametric Plotting analysis package.

Application-Specific Hardware

Valid has discontinued manufacturing of application-specific hardware products for simulation acceleration and hardware modeling.

Valid's two patents for hardware modeling systems have been licensed to Logic Modeling Systems, Inc., of San Jose. Valid resells the Logic Modeling products under the name of Realchip-LM.

PCB CAD Software

Valid offers a broad set of tools for the physical design and analysis of PCB designs. Allegro is a rules-driven system for PCB layout that addresses the needs of high-speed and double-sided board surface-mount design technologies. Thermostats analyzes board designs for component temperature and calculates a board's reliability and susceptibility to noise interference.

Valid's Signal Noise Analysis is an integrated analysis package that examines the electrical characteristics of high-frequency board designs to help engineering teams achieve proper circuit performance.

IC CAD Software

For full-custom ICs, Valid has a broad line of tools spanning the physical design process. Included are tools for traditional polygon-level editing, as well as higher-level design tools for automated chip assembly and post-layout analysis.

The Construct IC Layout Editor features full GDS II compatibility at both the database and command levels, plus a variety of advanced automation features such as multiple view ports, cut-and-paste editing, and programmable cells. Valid's Compose Hierarchical Chip Assembly Environment is a rules- and netlist-driven design tool for complex chip layout. Compose is integrated with Construct so that ICs can be hand-tailored without database conversion.

Valid also offers the Confirm Physical Verification Tools that provide design and electrical rule checking for both hierarchical and flat layouts. Confirm can be used to extract capacitance and parameters from the physical design for use in post-layout simulations.

Other products include the TIMEMILL+ Digital Timing Simulator, which provides timing simulation of full-custom ICs at the functional, logic, or transistor levels from the design's layout, and the PATHMILL Critical Path Analyzer, which lets users perform critical path analysis on their IC designs either before or after physical layout. The Fast Mask CAM Output Tools deliver CAM output for both optical and electron-beam pattern generation.

TestBRIDGE Software

As electronic designs become more complex, need to link the design environment with the production test environment increases. CAE and CAD tools provide

significant amounts of information that may be used in the test process. Valid has developed certain products designed to facilitate the design-to-test transition.

The RapidTEST Concurrent Fault Simulator is a high-speed fault simulator for measuring the effectiveness of test programs in detecting potential manufacturing defects. The Test Prep Automatic Test Point Generator is an automated tool that helps designers avoid the "physical" testability problems associated with tester access requirements.

ASIC Verification

With the acquisition of Integrated Measurement Systems (IMS) in February 1989, Valid is able to offer the series of design verification systems offered by IMS. Each system integrates the functions of individual test instruments into a single unit that offers increased verification performance at a significant cost savings over traditional automated test equipment and instrument clusters.

The IMS product line consists of the Logic Master XL series, which includes the Logic Master XL, Logic Master XL2, the Logic Master Mixed-Signal System, and the XL SCAN module. Logic Master is designed to work with computer systems or terminals to receive and execute test commands and report the results of test procedures. Logic Master may be used with mainframes, minicomputers, or microcomputers, and also may be linked to most CAE workstations.

Further Information

For more information about the Company's business segments, please contact the appropriate Dataquest industry service.

Table 1
Corporate Highlights (Thousands of US Dollars)

	1988*	1989*		
Two-Year Revenue	\$141,117.0	\$173,856.0		
Percent Change	60.06	23.20		
Capital Expenditure	\$9,798.0	\$9,308.0		
Percent of Revenue	6.94	5.35		
R&D Expenditure	\$19,733.0	\$25,446.0		
Percent of Revenue	13.98	14.64		
Number of Employees	498	973		
Revenue (\$K)/Employee	\$283,367	\$178,680		
Net Income	\$7,744.0	\$10,002.0		
Percent Change	(128.79)	29.16		
1989 Calendar Year	Q1	Q2	Q3	Q4
Quarterly Revenue	NA	NA	NA	NA
Quarterly Profit	NA	NA	NA	NA

*Financial data for 1988 and 1989 include revenue and assets acquired through the purchase of ADT, IMS, Telesis, and the IC CAD product line from Calma.
 NA = Not available

Source: Valid Logic Systems, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1988	1989
North America	56.44	52.00
International	43.56	48.00
Europe	25.00	NA
Asia/Pacific	23.00	NA

Source: Valid Logic Systems, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

1989 SALES OFFICE LOCATIONS

The Company has a total of 46 offices.

MANUFACTURING LOCATIONS

North America

San Jose, California; Beaverton, Oregon
Design verification products

SUBSIDIARIES

Information is not available.

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

ExperTest, Inc.

Valid and ExperTest signed a joint marketing agreement that calls for ExperTest to develop and market a software interface between ExperTest's Test Design Expert (TDX) software and Valid's Design Process Framework.

Minc, Inc.

Valid and Minc signed an agreement that provides for the integration of Minc's advanced programmable logic device (PLD) and field-programmable gate array (FPGA) design and synthesis technology into Valid's design framework.

Logic Automation, Inc.

Valid and Logic Automation introduced an expansion of the two companies' software marketing relationship whereby Valid will supply a six-month subscription to the SmartModel library with all new-customer shipments of RapidSIM on the Sun-3 and Sun-4 platforms.

Intermetrics, Inc.

Valid made an unspecified initial payment to Intermetrics for its VHDL source code after having sold Intermetrics' VHDL tools on an OEM basis for a year. The deal gives Valid an important asset for the military market.

Seattle Silicon, Inc.

Valid entered into an OEM/Distribution agreement with Seattle Silicon to market the SS ChipCrafter ASIC CAE software package alongside its own products in Taiwan, South Korea, and Japan.

1989

Sun Microsystems

Valid bundles Sun's workstations with its EDA products. The agreement with Sun, worth \$120 million, includes the RISC-based SPARCstation 1 and the SPARCstation 330 and 370 desk-side systems. The agreement is valid through November 1990.

IBM

IBM and Valid agreed to market Valid's CAE software ported to the IBM PC RT. The joint marketing agreement involves Valid's entire range of CAE software, which IBM's Professional Services Group (Dallas, Texas) will integrate, install, and support as turnkey CAE systems.

Apex Microtechnology

Valid and Apex Microtechnology signed a technology exchange agreement that gives Valid customers analog simulation models for Apex's leading line of analog ICs and gives Apex access to Valid's large analog customer base.

1988

Logic Automation, Inc.

Logic Automation and Valid agreed to offer Logic Automation's SmartModels on Valid's EDA systems. The agreement resulted from a cooperative marketing arrangement calling for joint development to make all SmartModels compatible with Valid's ValidSIM logic simulator.

MERGERS AND ACQUISITIONS

1989

Analog Design Tools (ADT)

ADT was acquired by Valid for \$35 million in stock. The acquisition helps position Valid in the CAD market, since ADT is a leading supplier of CAE systems for analog circuit design.

Integrated Measurement Systems (IMS)

IMS was acquired by Valid for approximately \$18 million in stock. IMS will enable Valid to provide a full line of design-to-test solutions and

ASIC verification products. The unit will operate as the IMS division of Valid and will remain in Beaverton, Oregon.

1988

Calma

Calma sold its computer-aided chip design business to Valid. Calma is a unit of General Electric USA.

1987

Telesis Systems Corporation

Valid acquired all the outstanding common stock of Telesis and subsidiaries in exchange for 4 million shares of Valid's common stock. Telesis sold EDA workstations and software, and its main product was its PCB layout system. The merger was accounted for as a pooling of interests.

KEY OFFICERS

W. Douglas Hajjar

Chairman of the board, chief executive officer, and director

L. George Klaus

President and chief operating officer

Thomas F. Kelly

Vice president, Finance and Administration, and chief financial officer

Alain Labat

Vice president, International Operations

Robert J. Moore

Vice president, US Sales

Joseph Prang

Vice president, Marketing

Franklin D. White, Sr.

Vice president, Operations

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Information is not available.

Table 3
Comprehensive Financial Statement
Fiscal Year Ending January 1
(Thousands of US Dollars, except Per Share Data)

Balance Sheet	1988*	1989*
Total Current Assets	\$81,749.0	\$87,792.0
Cash	13,455.0	9,206.0
Receivables	45,016.0	56,034.0
Marketable Securities	0	0
Inventory	19,718.0	17,669.0
Other Current Assets	3,560.0	4,883.0
Net Property, Plants	\$19,319.0	\$25,032.0
Other Assets	\$11,130.0	\$26,822.0
Total Assets	\$112,198.0	\$139,646.0
Total Current Liabilities	\$33,775.0	\$38,226.0
Long-Term Debt	\$7,279.0	\$17,858.0
Other Liabilities	\$41.0	\$746.0
Total Liabilities	\$41,095.0	\$56,830.0
Total Shareholders' Equity	\$71,103.0	\$82,816.0
Common Stock	31.0	32.0
Other Equity	116,676.0	118,820.0
Retained Earnings	(50,100.0)	(40,098.0)
Total Liabilities and Shareholders' Equity	\$112,198.0	\$139,646.0
Income Statement	1988*	1989*
Revenue	\$141,117.0	\$173,856.0
US Revenue	79,646.0	91,249.0
Non-US Revenue	61,471.0	82,607.0
Cost of Sales	\$85,308.0	\$96,803.0
R&D Expense	\$19,733.0	\$25,446.0
SG&A Expense	\$60,828.0	\$70,902.0
Capital Expense	\$9,798.0	\$9,308.0
Pretax Income	\$8,475.0	\$11,078.0
Pretax Margin (%)	6.01	6.37
Effective Tax Rate (%)	NA	NA
Net Income	\$7,744.0	\$10,002.0
Shares Outstanding, Millions	30.3	32.6
Per Share Data		
Earnings	\$0.26	\$0.31
Dividend	0	0
Book Value	\$2.35	\$2.54

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending January 1
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1988*	1989*
<i>Liquidity</i>		
Current (Times)	2.42	2.30
Quick (Times)	1.84	1.83
Fixed Assets/Equity (%)	27.17	30.23
Current Liabilities/Equity (%)	47.50	46.16
Total Liabilities/Equity (%)	57.80	68.62
<i>Profitability (%)</i>		
Return on Assets	8.12	7.94
Return on Equity	14.70	13.00
Profit Margin	5.49	5.75
<i>Other Key Ratios</i>		
R&D Spending % of Revenue	13.98	14.64
Capital Spending % of Revenue	6.94	5.35
Employees	498	973
Revenue (\$K)/Employee	\$283,367	\$178,680
Capital Spending % of Assets	8.73	6.67

*Financial data for 1988 and 1989 include revenue and assets acquired through the purchase of ADT, IMS, Telesis, and the IC CAD product line from Calma.
 NA = Not available

Source: Valid Logic Systems, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

Varian Associates, Inc.

611 Hansen Way
Palo Alto, California 94303
Telephone: (415) 493-4000
Fax: (415) 493-0307
Dun's Number: 00-912-0817

Date Founded: 1948

CORPORATE STRATEGIC DIRECTION

Varian Associates, Inc., together with its subsidiaries, is engaged in the research, development, manufacture, and marketing of various products and services for the fields of communications, defense, industrial production, scientific and industrial research, health care, and environmental monitoring. The Company's principal lines of business are electron devices and systems and equipment including analytical instruments, semiconductor equipment, and medical and industrial products.

Varian's operations are grouped into two segments: Electron Devices and Systems and Equipment. The Electron Devices and Systems segment includes a broad line of electron devices and systems used in broadcasting, communications, and other commercial and military applications. The Equipment segment includes analytical instruments widely used in the fields of chemistry, physics, biology, life sciences, and metallurgy; semiconductor equipment used for semiconductor wafer fabrication; and medical and industrial products including linear accelerators used for cancer therapy and industrial testing and inspection, as well as vacuum pumps and systems, gauges, and leak detectors used in a variety of industrial applications.

Total revenue increased by 15 percent to \$1.34 billion* in fiscal 1989 from \$1.17 billion in fiscal 1988. Net earnings increased 14 percent to \$31.5 million in fiscal 1989 from \$27.8 million in fiscal 1988. Varian employs 12,100 people worldwide.

Research and development expenditure totaled \$83 million in fiscal 1989, representing 6 percent of revenue.

*All dollar amounts are in US dollars.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region. Information on distribution channels is not available. Table 3, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Electron Devices and Systems Segment

Varian's Electron Devices and Systems segment is organized around two major areas of activity, Electron Devices and Systems. Electron Devices, the larger of the two, holds world leadership positions in microwave, power grid, and special-purpose electron tubes, and has an expanding position in gallium arsenide (GaAs)-based solid-state components and night vision devices. The Systems area includes power amplifiers and other systems used in satellite communications, high-power transmitters for radar, radio and television broadcasting, and other communications applications, as well as electronic countermeasures and instrumentation. Approximately one-half of the segment's sales are for defense applications, including electronic countermeasures, radar, and missile guidance. About one-third of its sales are for communication applications, including radio and television broadcasting and satellite communications. Industrial and medical markets, such as X-ray generation and imaging, also are served.

Equipment Segment

The Company's largest business segment, Equipment, is organized around three major groups, Semiconductor Equipment, Analytical Instruments, and Medical and Industrial Products.

The Semiconductor Equipment Group manufactures process equipment used to make semiconductor devices such as integrated circuits. The major product lines are ion implantation and sputter deposition. Varian is a leader in the development, manufacture, and application of equipment utilizing ion implantation and sputter-coating in semiconductor wafer processing. Backlog for this business amounted to \$125 million and \$113 million in fiscal 1989 and 1988, respectively.

The Analytical Instruments Group manufactures, sells, and services a variety of scientific instruments for analyzing chemical substances. The substances analyzed include metals, inorganic materials, organic compounds, polymers, natural substances, and biochemicals. The products include liquid and gas chromatographs, nuclear magnetic resonance (NMR) spectrometers, ultraviolet visible and atomic absorption spectrophotometers, and associated data products. Typical applications are biochemical research, measurement of the chemical composition of mixtures, studies of the chemical structures of pure compounds, quality control of manufactured materials, chemical analysis of natural products, and the satisfaction of environmental and regulatory chemical measurement needs. The major markets served are the pharmaceutical and chemical industries, chemical

and life science academic research, government laboratories, and specific areas of the health care industry. Backlog for this business amounted to \$56 million and \$49 million in fiscal 1989 and 1988, respectively.

The Medical and Industrial Products Group manufactures linear accelerators, simulators, supplies, and systems. Linear accelerators are used in cancer therapy and for industrial radiographic applications. Varian's leading CLINAC series of accelerators, marketed to hospitals and clinics worldwide, generate therapeutic X-rays and electron beams for cancer treatment. LINATRON linear accelerators are used in industrial applications for x ray examination of heavy metallic structures for quality control and materials irradiation for sterilization. Backlog for this business amounted to \$236 million and \$222 million in fiscal 1989 and 1988, respectively.

Further Information

For more information about the Company's business segments, please contact the appropriate industry service.

Table 1
Five-Year Corporate Highlights (Thousands of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$935,888.0	\$891,139.0	\$982,776.0	\$1,170,558.0	\$1,343,632.0
Percent Change	-	(4.78)	10.28	19.11	14.79
Capital Expenditure	-	-	-	-	-
Percent of Revenue	-	-	-	-	-
R&D Expenditure	\$72,211.0	\$82,290.0	\$80,726.0	\$80,222.0	\$83,071.0
Percent of Revenue	7.72	9.23	8.21	6.85	6.18
Number of Employees	11,900	11,600	11,900	11,800	12,100
Revenue (\$K)/Employee	\$78.65	\$76.82	\$82.59	\$99.20	\$111.04
Net Income	\$26,122.0	(\$14,870.0)	\$21,365.0	\$27,758.0	\$31,519.0
Percent Change	-	(156.93)	(243.68)	29.92	13.55
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$358.62	\$333.50	\$364.10	\$317.70	
Quarterly Profit	\$12.03	\$9.10	\$10.00	\$7.60	

Source: Varian
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	80.14	77.20	76.42	75.35	77.40
International	19.86	22.80	23.58	24.65	22.60
Japan	6.00	4.00	4.00	6.00	6.00
Europe	9.00	12.00	14.00	12.00	10.00
Asia/Pacific	3.00	4.00	2.00	3.00	4.00
ROW	2.00	3.00	3.00	3.00	2.00

Source: Varian
 Annual Reports and Forms 10-K
 Dataquest (1990)

1989 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

North America

Tempe, Arizona

Activities of the Tempe Electronics Division include printed circuit board assembly.

Fremont, Palo Alto, and Santa Clara, California

Thin Film Technology Division is located in each of these cities. Activities include the production of integrated processing systems, chemical vapor deposition (CVD) systems, sputtering systems, molecular beam epitaxy systems, and memory disk sputtering systems.

Palo Alto, California

The Microwave Power Division, Traveling-Wave Tube Division, Coupled Cavity Tube Division, Electro Optical Sensors Division, NMR Instrument Division, and Radiation Division are located in Palo Alto, California. Activities include the production of klystrons, gytrons, traveling-wave tubes, coupled cavity tubes, klystode tubes, night-vision devices, NMR spectrometers, and medical and industrial linear accelerators.

San Carlos, California

Activities of the Eimac, San Carlos Division include the production of power-grid tubes and ancillary hardware, and X-ray subsystems.

Santa Clara, California

The Solid State Microwave Division, III-V Device Center, Microwave Equipment Division, and Varian-TEL Ltd. are located in Santa Clara. Activities include the production of solid-state oscillators, amplifiers and subsystems, GaAs and indium-phosphide devices and integrated devices, GaAs foundry, power amplifiers and transmitters, power supplies, and semiconductor manufacturing equipment.

Sunnyvale and Walnut Creek, California

Activities of the Walnut Creek Instrument Division include the production of gas and liquid chromatographs, data systems, and laboratory information management systems.

Beverly, Massachusetts

Activities of the RF Subsystems Division include production of RF and IF/log amplifiers, microwave signal processing equipment and subsystems.

Beverly and Gloucester, Massachusetts

An Extron Division is located in both cities. Activities include the production of ion implantation equipment and rapid thermal processing equipment.

Georgetown, Ontario

The Canada Microwave Division's activities include the production of power supplies, klystrons, traveling-wave tubes, and millimeter-wave tubes.

Dallas, Texas

Activities of the Continental Electronics Division include the production of high-power transmitters and power amplifiers.

Salt Lake City, Utah

Activities of the Eimac, Salt Lake Division involve the production of power-grid tubes, cavity amplifiers, oscillators, and X-ray tubes.

Europe

Cambridge, England

Activities of Varian TVT Ltd. include the production of UHF, VHF, and FM transmitters and systems.

Crawley, England

Activities of Varian-TEM Ltd. include the production of cancer therapy planning simulators.

Asia/Pacific

Melbourne, Australia

Activities of the Varian Techtron Pty. Ltd. include the production of atomic absorption and UV-Vis spectrometers.

SUBSIDIARIES

North America

Analytichem International Inc. (United States)

Mansfield Insurance Co. (United States)

Varian Associates Ltd. (United States)

Varian Canada Inc. (Canada)

Varian China Ltd. (United States)

Varian Export Corp. (United States)

Varian Instruments Ltd. (United States)
 Varian Instruments of Puerto Rico Inc. (United States)
 Varian Investment Corp. (United States)
 Varian Microwave Equipment Ltd. (United States)
 Varian Pacific Inc. (United States)
 Varian Realty Inc. (United States)
 Varian Semiconductor Equipment Co. Inc. (United States)
 Varian U.K. Ltd. (United States)

Europe

N.V. Varian Benelux S.A. (Belgium)
 Varian AB (Sweden)
 Varian AG (Switzerland)
 Varian Benelux B.V. (The Netherlands)
 Varian Electronics ApS (Denmark)
 Varian FSC B.V. (The Netherlands)
 Varian GmbH (Austria)
 Varian GmbH (Germany)
 Varian International AG (Switzerland)
 Varian SA (France)
 Varian S.p.A (Italy)
 Varian-TEM Ltd. (United Kingdom)
 Varian TVT Ltd. (United Kingdom)

Asia/Pacific

Varian Australia Pty. Ltd. (Australia)
 Varian Pty. Ltd. (Australia)
 Varian Taiwan Ltd. (Taiwan)
 Varian Techtron Pty. Ltd. (Australia)

ROW

Varian Industria e Comercia Ltd. (Brazil)
 Varian S.A. (Mexico)

dynamic random-access memory (DRAM) chips and 32-bit microprocessors.

ASEA Brown Boveri

Varian signed a letter of understanding with ASEA Brown Boveri AG (ABB) of Baden, Switzerland, under which Varian will assume installation and service responsibilities for ABB radiotherapy equipment. Under the arrangement, Varian would also purchase certain related ABB technology, including rights to its newly developed Dynaray-ID imaging system.

Finnigan Corporation

Varian and Finnigan Corporation entered into an agreement under which Varian will purchase from Finnigan the basic technology and knowledge to manufacture ion trap mass detectors used with Varian's gas chromatographs in varied analytical applications. Additionally, Varian will pay unspecified royalties on units manufactured under Finnigan patents. Varian will distribute worldwide a version of Finnigan's ITS 40 gas chromatograph/ion trap mass detection system, which is manufactured exclusively by Finnigan.

1988

Tokyo Electron (TEL)

Varian and TEL entered into an agreement under which Varian will exclusively distribute, sell, and service TEL's semiconductor products in the United Kingdom, the United States, and several European markets. In addition, Varian will distribute the TEL photoresist coater/developer, Clean Track Mark II, which is used for Mb DRAM production, and the TEL Diffusion Furnace/LPCVD System.

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1989

Tokyo Electron

Varian and Tokyo Electron (TEL) entered into a joint venture, a semiconductor equipment company called Varian-TEL, to produce a vertical diffusion furnace system. The system is focused on fabricating lines that produce products such as 4Mb

MERGERS AND ACQUISITIONS

1989

Watkins-Johnson

Varian acquired Watkins-Johnson's line of space communications equipment. Varian will merge the Watkins-Johnson traveling-wave tube, power supply, amplifier, and exploratory products into its Microwave Equipment Division product lines.

Machlett Laboratories

Varian acquired Machlett Laboratories, which makes X-ray and power grid tubes. Most of Machlett's equipment will be relocated to Varian's Eimac Division facilities in San Carlos, California, and Salt Lake City, Utah. Machlett was previously a subsidiary of Raytheon.

KEY OFFICERS

J. Tracy O'Rourke

Chairman of the board and chief executive officer

Allen J. Lauer

Senior vice president and president, Analytical Instruments

Al D. Wilunowski

Vice president and president, Electron Devices

Alan J. Bennet

Vice president, Research

Stanley Z. Cole

Vice president and director, Patents and Licensing

Richard M. Levy

Senior vice president and president, Semiconductor Equipment

John J. Cooper

Vice president and general counsel

Gary E. Simpson

Vice president, Corporate Communications

Ernest M. Felago

Vice president, Human Resources

PRINCIPAL INVESTORS

Battermarch Financial Management—9.4 percent

Neuberger and Berman—8.9 percent

Pioneering Management Corp.—7.0 percent

Prudential Insurance Co. of America—6.1 percent

Table 3
 Comprehensive Financial Statement
 Fiscal Year Ending September
 (Thousands of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$473,830.0	\$505,420.0	\$537,448.0	\$589,922.0	\$643,237.0
Cash	13,491.0	7,978.0	27,937.0	11,539.0	-
Receivables	188,474.0	190,403.0	205,242.0	252,469.0	263,738.0
Marketable Securities	-	-	-	-	-
Inventory	213,899.0	211,819.0	230,754.0	245,455.0	285,725.0
Other Current Assets	57,966.0	95,220.0	73,515.0	80,459.0	93,774.0
Net Property, Plants	\$246,849.0	\$254,272.0	\$255,719.0	\$241,660.0	\$252,771.0
Other Assets	\$24,127.0	\$30,463.0	\$36,437.0	\$24,247.0	\$35,273.0
Total Assets	\$744,806.0	\$790,155.0	\$829,604.0	\$855,829.0	\$931,281.0
Total Current Liabilities	\$247,133.0	\$304,480.0	\$327,568.0	\$336,477.0	\$414,201.0
Long-Term Debt	\$46,188.0	\$50,824.0	\$3,814.0	\$35,179.0	\$54,914.0
Other Liabilities	\$22,256.0	\$23,921.0	\$25,806.0	\$33,171.0	\$34,885.0
Total Liabilities	\$315,577.0	\$379,225.0	\$357,188.0	\$404,827.0	\$1,129,799.0
Total Shareholders' Equity	\$429,229.0	\$410,930.0	\$438,116.0	\$451,002.0	\$427,281.0
Converted Preferred Stock	-	-	-	-	-
Common Stock	21,313.0	21,448.0	21,966.0	21,674.0	19,896.0
Other Equity	155,488.0	157,476.0	168,437.0	159,537.0	111,356.0
Retained Earnings	252,428.0	232,006.0	247,713.0	269,791.0	296,029.0
Total Liabilities and Shareholders' Equity	\$744,806.0	\$790,155.0	\$795,304.0	\$855,829.0	\$931,281.0
Income Statement	1985	1986	1987	1988	1989
Revenue	\$935,888.0	\$891,139.0	\$982,776.0	\$1,170,558.0	\$1,343,632.0
U.S. Revenue	750,000.0	688,000.0	751,000.0	882,000.0	1,040,000.0
Non-U.S. Revenue	185,888.0	203,139.0	231,776.0	288,558.0	303,632.0
Cost of Sales	\$643,209.0	\$646,212.0	\$676,382.0	\$809,635.0	\$961,728.0
R&D Expense	\$72,211.0	\$82,290.0	\$80,726.0	\$80,222.0	\$83,071.0
SG&A Expense	\$167,198.0	\$181,463.0	\$197,263.0	\$211,032.0	\$232,305.0
Capital Expense	-	-	-	-	-
Pretax Earnings	\$54,137.0	(\$40,173.0)	\$31,895.0	\$43,378.0	\$50,829.0
Pretax Margin (%)	5.78	(4.51)	3.25	3.71	3.78
Effective Tax Rate (%)	30.00	(63.00)	33.00	36.00	38.00
Net Earnings	\$26,122.0	(\$14,870.0)	\$21,365.0	\$27,758.0	\$31,519.0
Shares Outstanding, Millions	21.3	21.5	22.0	21.7	19.9
Per Share Data					
Earnings	\$1.19	(\$0.70)	\$0.98	\$1.27	\$1.53
Dividend	-	-	-	-	-
Book Value	\$20.14	\$19.12	\$19.94	\$20.81	\$21.48

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending September
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	1.92	1.66	1.64	1.75	0.62
Quick (Times)	1.05	0.96	0.94	1.02	0.34
Fixed Assets/Equity (%)	57.51	61.88	58.37	53.58	59.16
Current Liabilities/Equity (%)	57.58	74.10	74.77	74.61	243.40
Total Liabilities/Equity (%)	73.52	92.28	81.53	89.76	264.42
<i>Profitability (%)</i>					
Return on Assets	-	(1.94)	2.64	3.29	3.53
Return on Equity	-	(3.54)	5.03	6.24	7.18
Profit Margin	2.79	(1.67)	2.17	2.37	2.35
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	7.72	9.23	8.21	6.85	6.18
Capital Spending % of Revenue	0	0	0	0	0
Employees	11,900	11,600	11,900	11,800	12,100
Revenue (\$K)/Employee	\$78.65	\$76.82	\$82.59	\$99.20	\$111.04
Capital Spending % of Assets	0	0	0	0	0

Source: Varian
 Annual Reports and Forms 10-K
 Dataquest (1990)

Varian Solid-State Microwave Division

Varian Solid-State Microwave Division
3251 Olcott Street
Santa Clara, CA 95054
(408) 988-1331
(408) 562-2834 (Marketing)
(408) 562-2904 (MMIC Foundry)

Established 1965
Number of Employees: 240

BACKGROUND

Varian Solid-State Microwave is a division of Varian Associates, Inc. Varian produces GaAs devices for both the merchant market and internal consumption. The Company is a leader in InP technology, presently supplying mm-wave oscillators, reflection amplifiers, Gunn diodes, and other InP devices to the marketplace. Varian discontinued its merchant line of GaAs varactors, LNAs, and power FETs in early 1985, reportedly due to heavy Japanese competition.

Varian is one of very few companies that produces chips capable of 100-GHz operation. Its foundry services include a design training course.

COMPANY EXECUTIVES

- Division General Manager—Dr. Frank Olson
- Director of Marketing—Dean Merkley
- Director of Foundry Sales—Mike Kopec

PROCESS TECHNOLOGY

The Company's GaAs and InP wafer processing is based on MBE active layers, proton isolation, 0.50-micron contact lithography and 0.25-micron e-beam lithography, PECVD passivation, and reactive ion etching.

PRODUCTS

- GaAs—IMPATT diodes, Gunn diodes, MESFETs, MODFETs, and MMICs
- InP—MMIC oscillators, amps, Gunn diodes, VCOs

Varian Solid-State Microwave Division

- Full foundry services for custom MMICs
- 2-inch and 3-inch MBE GaAs and InP wafers

FACILITIES

The Company's Santa Clara, California, facility has 20,000 square feet, including a 6,000-square-foot clean room. The facilities provide for three levels of screening: standard level (C), high reliability (R), and space qualified (S).

Varian Solid-State Microwave Division

Varian Solid-State Microwave Division
1215 West Crosby Road
Santa Clara, CA 95050
(408) 988-1331

Established 1965
Number of Employees: N/A

BACKGROUND

Varian Solid-State Microwave is a division of Varian Associates, Inc. Varian produces GaAs devices for limited merchant market participation and for internal consumption. The Company is a leader in InP technology, presently supplying mm-wave oscillators, reflection amplifiers, Gunn diodes, and other InP devices to the marketplace. Varian discontinued its merchant line of GaAs varactors, LNAs, and power FETs in early 1985, reportedly due to heavy Japanese competition.

COMPANY EXECUTIVES

- Division General Manager—Dr. Frank Olson
- Director of Marketing—Jim Orr

PROCESS TECHNOLOGY

The Company uses GaAs and InP wafer processing.

PRODUCTS

- GaAs— IMPATT diodes, Gunn diodes, FETs, MMICs
- InP— MMIC oscillators, amps, Gunn diodes, VCOs

FACILITIES

The Company's Santa Clara, California, facility has 20,000 square feet, including a 6,000-square-foot clean room.

Varian Solid-State Microwave Division

(Page intentionally left blank)

8.86 Varo, Inc.

Varo, Inc.
2203 West Walnut Street
Garland, Texas 75040
(214) 272-1571

(Millions of Dollars Except per Share Data)

Balance Sheet (April 30)

	<u>1979</u>	<u>1980</u>	<u>Percent Change</u> <u>1979-1980</u>
Working Capital	\$35.8	\$38.2	6.8%
Long Term Debt	\$ 0.4	\$ 0.3	(21.6%)
Shareholders' Equity	\$41.1	\$46.1	12.3%
After-Tax Return on Average Equity (%)	18.4%	15.5%	

Operating Performance (Fiscal Year Ending April 30)

	<u>1979</u>	<u>1980</u>	<u>Percent Change</u> <u>1979-1980</u>
Revenue	\$77.4	\$94.2	21.7%
Cost of Goods	\$53.4	\$65.4	22.5%
R&D Expenditures ¹	\$ 3.0	\$ 1.8	(39.7%)
Marketing, SG&A Expense	\$ 9.7	\$13.4	36.3%
Pretax Income	\$12.4	\$11.5	(7.2%)
Pretax Margin (%)	16.0%	12.2%	
Net Income	\$ 6.7	\$ 6.6	(2.6%)
Per Share Data			
Earnings ²	\$ 1.51	\$ 1.47	(2.6%)
Dividends	\$ 0.32	\$ 0.40	25.0%
Book Value	\$ 8.98	\$10.00	11.4%
Average Shares Outstanding (Millions)	4.47	4.45	(0.5%)
Capital Expenditures	\$ 3.1	\$ 5.1	63.3%
Total Employees	1,892	2,003	5.9%

¹Internally funded R&D only. Varo also had \$3.8 and \$4.0 million U.S. government-funded R&D plus \$1.7 and \$2.4 million product and process development costs in fiscal 1979 and 1980, respectively.

²Fully diluted

Source: Varo, Inc. Annual Reports and
Form 10-K
DATAQUEST, Inc.

8.86 Varo, Inc.

Table 8.86-1

Varo, Inc.
OPERATING REVENUES BY PRODUCT GROUP
(Millions of Dollars)

	Fiscal Year Ending April 30				
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Night Vision Products	\$35.1	\$32.2	\$36.4	\$33.7	\$43.1
Semiconductor Products	30.1	35.8	38.7	38.5	39.8
Power Conversion Products	7.5	5.1	6.7	9.4	11.1
Weapons Delivery Systems	3.9	5.0	1.5	1.4	5.9
Elimination of Intersegment Sales	<u>(2.3)</u>	<u>(2.7)</u>	<u>(4.2)</u>	<u>(5.6)</u>	<u>(5.7)</u>
Total	\$74.3	\$75.4	\$79.1	\$77.4	\$94.2

Source: Varo, Inc. Annual Reports

Table 8.86-2

Varo, Inc.
SEMICONDUCTOR REVENUES
(Millions of Dollars)

	Fiscal Year Ending April 30				
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
High-Voltage Rectifiers	\$ 7.0	\$ 8.0	\$ 7.8	\$ 7.8	\$ 8.5
High-Voltage Multipliers	19.0	21.2	22.0	19.2	18.9
Medium- & Low-Voltage Rectifiers	<u>4.1</u>	<u>6.6</u>	<u>8.9</u>	<u>11.5</u>	<u>12.4</u>
Total	\$30.1	\$35.8	\$38.7	\$38.5	\$39.8

Source: Varo, Inc. Annual Reports

8.86 Varo, Inc.

Table 8.86-3

Varo, Inc.
FINANCIAL STATEMENT HISTORY 1973-80¹
(Millions of Dollars)

	Fiscal Year Ending April 30								TRENDS	CHG'D GR
	1973	1974	1975	1976	1977	1978	1979	1980		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	1.55	1.18	6.16	5.24	8.52	14.36	12.90	6.84	1.45	34.97
3 RECEIVABLES	4.83	6.38	3.82	8.36	8.70	8.42	13.88	13.58	1.34	17.49
4 INVENTORY	3.76	6.77	5.23	5.09	8.79	12.64	22.29	27.01	3.17	31.40
5 OTHER CURRENT ASSETS	0.06	0.16	0.17	0.43	0.30	0.57	1.09	2.24	0.25	57.10
6 PROFITS-UNCOMP CONTRACTS	2.39	4.45	5.59	9.38	3.87	2.51	0.00	0.00	(0.64)	(95.76)
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	12.58	18.94	20.97	28.50	30.19	38.50	50.11	49.46	5.57	21.46
9 GROSS P P E	9.83	11.67	12.55	12.33	13.63	15.04	17.32	22.03	1.46	10.35
10 ACCUMULATED DEPRECIATION	4.18	4.69	5.39	5.22	5.65	6.65	6.52	7.79	0.46	8.33
11 NET P P E	5.66	6.98	7.16	7.12	8.18	8.40	10.80	14.24	1.00	11.65
12 MISC ASSETS	1.81	0.75	0.64	0.17	0.00	0.00	0.00	0.00	(0.22)	(98.06)
15 *TOTAL ASSETS*	20.05	26.67	28.77	35.78	38.37	46.89	60.90	63.70	6.35	17.79
16 NOTES PAYABLE	0.60	1.13	0.19	0.00	0.00	0.00	0.00	0.00	(0.12)	(97.28)
17 ACCOUNTS PAYABLE	2.94	4.47	2.85	4.64	3.96	3.11	5.21	4.87	0.21	5.38
18 ACCRUED TAXES	0.00	0.00	1.97	4.11	2.14	2.05	0.51	0.00	0.01	227.96
19 ACCRUED LIABILITIES	1.71	1.97	1.64	2.52	3.25	2.88	2.83	3.92	0.29	12.03
20 CURR MAT LONG TERM DEBT	1.71	2.02	1.58	0.12	0.11	0.11	0.12	0.13	(0.30)	(38.14)
21 ADVANCES-UNCOMP CONTRACTS	1.00	0.34	2.50	4.02	0.82	1.25	5.68	2.35	0.35	21.61
22 TOTAL CURR LIABILITIES	7.96	9.94	10.74	15.40	10.29	9.40	14.35	11.27	0.43	4.21
23 LONG TERM DEBT	8.94	7.10	5.20	1.14	1.03	0.91	0.36	0.28	(1.28)	(41.14)
24 DEFERRED TAXES	0.18	0.24	0.34	2.19	3.07	2.63	2.50	3.82	0.53	60.37
25 MISC LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.45	2.14	1.95	0.31	4250.60
26 OBLIG-CAPTL LEASE	0.00	0.00	0.00	0.00	0.00	0.00	1.90	1.84	0.27	2010.60
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	17.08	17.27	18.28	18.72	14.39	13.40	21.24	19.16	0.25	1.19
29 PREFERRED STOCK	5.00	5.00	3.50	0.00	0.00	0.00	0.00	0.00	(0.84)	(98.12)
30 COMMON STOCK	7.37	0.41	0.41	0.41	0.42	0.43	0.44	0.45	(0.57)	(20.27)
31 CAPITAL SURPLUS	1.27	8.23	8.23	8.27	8.53	8.78	8.93	9.19	0.72	18.80
32 RETAINED EARNINGS	(10.67)	(4.24)	0.35	8.38	17.74	26.31	31.64	36.41	7.10	*****
33 ENPL STOCK OWNER PLAN	0.00	0.00	0.00	0.00	(2.70)	(2.02)	(1.35)	(1.51)	(0.31)	*****
34 TOTAL EQUITY	2.97	9.40	12.49	17.06	23.99	33.50	39.66	44.54	6.10	42.01
35 *TOTAL LIAB & EQUITY*	20.05	26.67	28.77	35.78	38.37	46.89	60.90	63.70	6.35	17.79
36 NET WORKING CAPITAL	4.62	9.00	10.23	13.10	19.90	29.09	35.75	38.19	5.15	35.05
INCOME & EXPENSE										
38 SALES	33.83	56.04	49.22	74.34	75.39	79.11	77.39	94.20	7.38	12.94
40 COST OF GOODS	24.15	39.74	32.65	46.99	45.91	47.78	53.36	65.36	4.77	12.06
41 GROSS PROFIT	9.69	16.30	16.57	27.34	29.48	31.33	24.04	28.85	2.61	14.76
42 S G & A EXPENSE	5.05	5.73	5.95	7.82	8.42	8.71	9.84	13.42	1.05	13.67
43 MISC OPERATING EXPENSE	0.00	0.00	1.01	1.19	1.25	2.90	3.05	1.84	0.40	2154.90
45 OPERATING PROFIT	4.64	10.57	9.61	18.33	19.82	19.72	11.15	13.59	1.16	12.88
46 DEPRECIATION	0.74	0.74	0.87	1.01	0.90	1.07	1.17	1.42	0.09	9.24
47 LEASE PAYMENTS	0.48	0.41	0.45	0.41	0.39	0.43	0.45	0.90	0.03	4.68
48 INTEREST EXPENSE	0.80	1.14	0.91	0.52	0.10	0.07	0.09	0.23	(0.14)	(30.65)
49 MISC EXPENSE	0.39	1.73	0.19	0.74	(0.08)	0.27	0.93	1.06	0.00	*****
51 MISC INCOME	0.00	0.00	0.00	0.00	0.38	0.77	4.05	1.40	0.39	5570.13
53 PRETAX PROFIT	2.23	8.55	7.19	15.64	18.68	18.66	12.55	11.47	1.58	23.56
54 INCOME TAXES (CREDITS)	1.15	3.20	3.28	7.62	8.69	8.89	5.63	4.91	0.67	21.15
55 EXTRAORD LOSS (GAIN)	(1.10)	(3.08)	(0.68)	0.00	0.00	0.00	0.00	0.00	0.30	*****
56 NET PROFIT	2.18	6.43	4.59	8.03	9.99	9.76	6.92	6.56	0.80	13.41
57 EPS AFTER PFD DIVIDENDS	0.53	1.57	1.12	1.82	2.26	2.19	1.55	1.47	0.12	11.68
58 COMMON DIV PER SHARE	0.00	0.00	0.00	0.00	0.10	0.33	0.32	0.40	0.07	4093.42

¹In 1971, \$5.00 million of preferred stock was issued as a part of a recapitalization plan for Varo Semiconductor. This stock was redeemed from working capital in payments of \$1.5 million (1975) and \$3.5 million (1976). Present restatements of financial data by Varo, Inc., consider this as long term debt rather than shareholders' equity.

Source: Varo, Inc. Annual Reports
DATAQUEST, Inc.

8.86 Varo, Inc.

Table 8.86-4

Varo, Inc.
FINANCIAL STATEMENT HISTORY 1973-80¹
(Percent)

	Fiscal Year Ending April 30									
	1973	1974	1975	1976	1977	1978	1979	1980	TREND	CHGD GR
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	7.71	4.42	21.40	14.63	22.21	30.62	21.18	10.42	1.64	14.58
3 RECEIVABLES	24.07	23.92	13.27	23.36	22.68	17.96	22.79	21.32	(0.14)	(0.25)
4 INVENTORY	19.74	25.40	18.19	14.22	22.92	28.95	36.50	42.40	3.05	11.55
5 OTHER CURRENT ASSETS	0.31	0.60	0.59	1.21	0.79	1.21	1.79	3.51	0.35	39.37
6 PROFITS-UNCOMP CONTRACTS	11.80	16.67	19.42	26.23	10.08	5.35	0.00	0.00	(2.68)	(98.63)
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	62.73	71.01	72.87	79.64	78.68	82.10	82.27	77.65	2.23	3.11
9 GROSS P P E	49.05	43.76	43.63	34.46	36.04	32.08	28.44	34.58	(2.51)	(6.31)
10 ACCUMULATED DEPRECIATION	20.82	17.59	18.74	14.57	14.72	14.18	10.71	12.22	(1.29)	(8.03)
11 NET P P E	28.23	26.17	24.89	19.89	21.32	17.90	17.73	22.35	(1.22)	(5.22)
12 MISC ASSETS	9.04	2.82	2.24	0.47	0.00	0.00	0.00	0.00	(1.01)	(98.52)
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
16 NOTES PAYABLE	2.99	4.25	0.65	0.00	0.00	0.00	0.00	0.00	(0.53)	(97.90)
17 ACCOUNTS PAYABLE	14.65	16.77	9.92	12.95	10.31	6.84	8.55	7.65	(1.22)	(10.54)
18 ACCRUED TAXES	0.00	0.00	6.84	11.49	5.58	4.37	0.85	0.00	(0.11)	231.67
19 ACCRUED LIABILITIES	8.54	7.40	5.71	7.03	8.48	6.14	4.65	6.15	(0.33)	(4.89)
20 CURR MAT LONG TERM DEBT	0.53	7.59	5.49	0.32	0.30	0.24	0.20	0.20	(1.32)	(47.48)
21 ADVANCES-UNCOMP CONTRACTS	4.99	1.26	8.71	11.23	2.15	2.66	9.33	3.69	0.05	3.24
22 TOTAL CURR LIABILITIES	39.70	37.28	37.32	43.03	26.82	20.05	23.57	17.69	(3.46)	(11.53)
23 LONG TERM DEBT	44.60	26.80	18.08	3.18	2.66	1.94	0.59	0.44	(5.81)	(50.03)
24 DEFERRED TAXES	0.90	0.88	1.19	6.12	8.00	5.62	4.11	5.99	0.80	36.15
25 MISC LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.96	3.51	3.06	0.50	4880.10
26 OBLIG-CAPTL LEASE	0.00	0.00	0.00	0.00	0.00	0.00	3.11	2.90	0.43	2157.08
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	85.20	84.76	56.59	52.33	37.50	28.57	34.88	30.08	(7.55)	(14.10)
29 PREFERRED STOCK	24.94	18.75	12.16	0.00	0.00	0.00	0.00	0.00	(3.63)	(98.55)
30 COMMON STOCK	36.74	1.54	1.42	1.15	1.10	0.93	0.79	0.70	(3.07)	(32.31)
31 CAPITAL SURPLUS	6.35	30.86	28.60	23.10	22.22	18.72	14.66	14.43	(0.65)	0.85
32 RETAINED EARNINGS	(53.23)	(15.90)	1.22	23.41	46.22	56.10	51.95	57.17	15.47	*****
33 ENPL STOCK OWNER PLAN	0.00	0.00	0.00	0.00	(7.04)	(4.32)	(2.22)	(2.38)	(0.57)	*****
34 TOTAL EQUITY	14.80	35.24	43.41	47.67	62.50	71.43	65.12	69.92	7.55	20.56
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
36 NET WORKING CAPITAL	23.03	33.74	35.55	36.61	51.86	62.05	59.70	59.96	5.69	14.65
INCOME & EXPENSE										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
40 COST OF GOODS	71.37	70.91	66.34	63.22	60.90	60.39	68.94	69.38	(0.52)	(0.78)
41 GROSS PROFIT	28.63	29.09	33.66	36.78	39.10	39.61	31.06	30.62	0.52	1.62
42 S G & A EXPENSE	14.92	10.23	12.08	10.52	11.17	11.01	12.72	14.24	0.06	0.65
43 MISC OPERATING EXPENSE	0.00	0.00	2.06	1.60	1.65	3.67	3.94	1.95	0.46	2161.94
45 OPERATING PROFIT	13.70	18.86	19.53	24.66	26.29	24.93	14.40	14.43	0.01	(0.23)
46 DEPRECIATION	2.18	1.32	1.75	1.36	1.19	1.35	1.51	1.51	(0.06)	(3.27)
47 LEASE PAYMENTS	1.42	0.73	0.82	0.56	0.52	0.54	0.59	0.85	(0.07)	(7.32)
48 INTEREST EXPENSE	2.37	2.03	1.85	0.70	0.13	0.09	0.11	0.25	(0.36)	(98.59)
49 MISC EXPENSE	1.16	3.09	0.38	1.00	(0.10)	0.34	1.21	1.13	(0.13)	*****
51 MISC INCOME	0.00	0.00	0.00	0.00	0.50	0.98	5.23	1.49	0.48	5754.27
53 PRETAX PROFIT	6.58	11.69	14.61	21.05	25.04	23.58	16.22	12.18	1.10	9.41
54 INCOME TAXES (CREDITS)	3.41	5.71	6.66	10.25	11.79	11.24	7.28	5.22	0.43	7.27
55 EXTRAORD LOSS (GAIN)	(3.26)	(5.50)	(1.38)	0.00	0.00	0.00	0.00	0.00	0.65	*****
56 NET PROFIT	8.43	11.48	9.33	10.80	13.25	12.34	8.94	6.96	0.03	0.42
57 EPS AFTER PFD DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
58 COMMON DIV PER SHARE	0.00	0.00	0.00	0.00	4.43	15.07	20.67	27.23	4.09	9060.95

¹In 1971, \$5.00 million of preferred stock was issued as a part of a recapitalization plan for Varo Semiconductor. This stock was redeemed from working capital in payments of \$1.5 million (1975) and \$3.5 million (1976). Present restatements of financial data by Varo, Inc., consider this as long term debt rather than shareholders' equity.

Source: Varo, Inc. Annual Reports
DATAQUEST, Inc.

8.86 Varo, Inc.

Table 8.86-5

Varo, Inc.
FUNDS FLOW HISTORY 1974-80¹
(Millions of Dollars)

	Fiscal Year Ending April 30						TREND	CHGD GR	
	1974	1975	1976	1977	1978	1979			1980
SOURCES									
56 NET PROFIT	6.43	4.59	6.03	9.99	9.76	6.92	6.56	0.24	3.91
46 DEPRECIATION	0.74	0.87	1.01	0.90	1.07	1.17	1.42	0.10	9.83
61 NEW LONG TERM DEBT	0.18	0.00	0.00	0.00	0.00	0.00	0.05	(0.01)	(12.77)
62 NEW EQUITY	0.00	(1.50)	(3.46)	0.08	0.54	0.00	0.27	0.28	*****
63 INCR OTHER LIABILITIES	0.06	0.11	1.85	0.88	0.01	3.45	1.08	0.28	47.38
66 TOTAL SOURCES	7.40	4.07	7.43	11.85	11.39	11.54	9.38	0.89	12.20
USES									
67 P P E EXPENDITURES	2.06	1.05	0.97	1.96	1.28	3.57	4.86	0.48	20.88
68 REPAYMENT LONG TERM DEBT	1.71	2.34	5.53	0.12	0.12	0.55	0.12	(0.49)	(40.95)
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 COMMON DIVIDENDS	0.00	0.00	0.00	0.44	1.47	1.43	1.79	0.35	9289.89
72 INCR WORKING CAPITAL	4.70	0.79	1.41	6.80	9.19	6.66	2.45	0.46	16.19
71 INCR OTHER ASSETS	(1.06)	(0.11)	(0.48)	(0.17)	0.00	0.00	0.00	0.14	*****
74 TOTAL USES	7.40	4.07	7.43	9.15	12.06	12.21	9.22	0.94	12.68
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76 CUMULATIVE SUR/DEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹In 1971, \$5.00 million of preferred stock was issued as a part of a recapitalization plan for Varo Semiconductor. This stock was redeemed from working capital in payments of \$1.5 million (1975) and \$3.5 million (1976). Present restatements of financial data by Varo, Inc., consider this as long term debt rather than shareholders' equity.

Source: Varo, Inc. Annual Reports
DATAQUEST, Inc.

8.86 Varo, Inc.

Table 8.86-6

Varo, Inc. FINANCIAL RATIO HISTORY 1973-80¹

	Fiscal Year Ending April 30								ST AV	MTD AVG
	1973	1974	1975	1976	1977	1978	1979	1980		
LIQUIDITY										
1 CURRENT RATIO	1.580	1.905	1.952	1.851	2.934	4.095	3.490	4.390	2.775	3.262
2 QUICK RATIO	0.901	0.760	0.929	0.883	1.674	2.423	1.866	1.794	1.391	1.638
3 CASH RATIO	0.194	0.119	0.573	0.340	0.828	1.527	0.899	0.589	0.634	0.773
4 WORKING CAPITAL/SALES	0.136	0.161	0.200	0.178	0.264	0.368	0.462	0.405	0.273	0.327
6 DAYS RECEIVABLES	52.066	41.554	28.310	41.044	42.133	38.846	65.459	52.625	45.256	47.424
7 DAYS INVENTORY	58.805	62.223	58.495	39.513	69.920	96.552	152.083	150.823	85.802	103.191
LEVERAGE										
8 LONG TERM DEBT/CAPITALIZ	0.751	0.430	0.294	0.063	0.041	0.027	0.009	0.006	0.203	0.089
11 LONG TERM DEBT/EQUITY	3.014	0.755	0.416	0.067	0.043	0.027	0.009	0.006	0.542	0.181
12 TOTAL DEBT/EQUITY	3.792	1.091	0.558	0.073	0.048	0.031	0.012	0.009	0.702	0.237
COVERAGE										
13 EBIT/INTEREST	3.777	6.757	8.880	31.027	187.931	253.135	146.830	50.249	86.086	112.695
14 FIXED CHARGE COVERAGE	2.738	5.233	6.263	17.749	39.141	38.167	24.284	12.141	18.215	22.078
16 REPAY LTD+FIX CHARGE COV	*****	2.486	2.524	6.592	31.782	31.104	20.137	10.883	15.070	18.103
OPER PERFORMANCE										
17 GROSS PROFIT/SALES	0.286	0.291	0.337	0.368	0.391	0.396	0.311	0.306	0.336	0.342
18 OPER PROFIT/SALES	0.137	0.189	0.195	0.247	0.263	0.249	0.144	0.144	0.196	0.198
21 PRETAX PROFIT/SALES	0.066	0.117	0.146	0.210	0.250	0.236	0.162	0.122	0.164	0.177
22 NET PROFIT/SALES	0.064	0.115	0.093	0.108	0.133	0.123	0.089	0.070	0.099	0.100
23 NET PROFIT/AVG EQUITY	*****	1.040	0.420	0.543	0.447	0.340	0.189	0.156	0.454	0.335
24 NET PROFIT/AVG CAPITALIZ	*****	0.453	0.269	0.447	0.462	0.329	0.186	0.155	0.329	0.287
26 NET PROFIT/AVG TOT ASSETS	*****	0.275	0.166	0.249	0.269	0.229	0.128	0.105	0.203	0.182
27 E P S GROWTH RATE	*****	1.955	(0.286)	0.625	0.240	(0.030)	(0.293)	(0.051)	0.308	0.070
28 SALES GROWTH RATE	*****	0.656	(0.122)	0.510	0.014	0.049	(0.022)	0.217	0.186	0.130
TURNOVER										
31 SALES/AVG EQUITY	*****	9.064	4.497	5.031	3.674	2.753	2.116	2.238	4.196	3.213
32 SALES/AVG CAPITALIZ	*****	3.946	2.880	4.142	3.489	2.663	2.080	2.221	3.060	2.765
33 SALES/AVG TOT DEBT + EQTY	*****	3.309	2.517	3.936	3.471	2.653	2.073	2.214	2.882	2.687
34 SALES/AVG TOTAL ASSETS	*****	2.999	1.776	2.303	2.033	1.856	1.438	1.512	1.902	1.767
35 SALES/AVG OPER ASSETS	*****	2.538	1.821	2.332	2.038	1.856	1.436	1.512	1.933	1.779
36 SALES/AVG GROSS P P E	*****	5.212	4.064	5.974	5.763	5.480	4.783	4.788	5.152	5.140
BALANCE SHEET										
37 CASH/SALES	0.046	0.021	0.125	0.070	0.113	0.181	0.167	0.070	0.099	0.115
38 RECEIVABLES/SALES	0.143	0.114	0.078	0.112	0.115	0.106	0.179	0.144	0.124	0.130
41 INVENTORY/SALES	0.111	0.121	0.106	0.068	0.117	0.160	0.287	0.287	0.157	0.189
42 OTH CURR ASSETS/SALES	0.002	0.003	0.003	0.006	0.004	0.007	0.014	0.024	0.008	0.011
43 LINE 6/SALES	0.070	0.079	0.114	0.126	0.051	0.032	0.000	0.000	0.059	0.042
44 GROSS P P E/SALES	0.291	0.208	0.255	0.166	0.183	0.190	0.224	0.234	0.219	0.212
46 MISC ASSETS/SALES	0.054	0.013	0.013	0.002	0.000	0.000	0.000	0.000	0.010	0.004
47 ACCOUNTS PAYABLE/SALES	0.087	0.080	0.058	0.062	0.052	0.039	0.067	0.052	0.062	0.057
48 ACCRUED TAXES/SALES	0.000	0.000	0.040	0.055	0.028	0.026	0.007	0.000	0.020	0.019
51 ACCRUED LIABILITY/SALES	0.051	0.035	0.033	0.034	0.043	0.036	0.037	0.042	0.039	0.038
52 LINE 21/SALES	0.030	0.008	0.051	0.054	0.011	0.016	0.073	0.025	0.033	0.035
53 DEFERRED TAXES/SALES	0.005	0.004	0.007	0.029	0.041	0.033	0.032	0.041	0.024	0.031
54 MISC LIABILITIES/SALES	0.000	0.000	0.000	0.000	0.000	0.006	0.028	0.021	0.007	0.011
56 LINE 26/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.020	0.006	0.009
MISCELLANEOUS										
57 EQUITY PER COMMON SHARE	(0.496)	1.073	2.193	3.868	5.418	7.510	8.875	9.973	4.802	6.604
58 RETIRE/PREV GROSS P P E	*****	(0.022)	(0.014)	(0.095)	(0.037)	(0.005)	(0.086)	(0.009)	(0.038)	(0.039)
61 DEPREC/PREV GROSS P P E	*****	0.075	0.074	0.081	0.073	0.077	0.076	0.082	0.077	0.078
62 COM DIVS/BRN-PFD DIVS	0.000	0.000	0.000	0.000	0.044	0.151	0.207	0.272	0.084	0.132
63 TAX RATE	0.518	0.489	0.456	0.487	0.471	0.477	0.449	0.428	0.472	0.461
64 COST OF GOODS/SALES	0.714	0.709	0.853	0.632	0.609	0.604	0.689	0.694	0.664	0.658
65 S G & A/SALES	0.149	0.102	0.121	0.105	0.112	0.110	0.127	0.142	0.121	0.122

¹In 1971, \$5.00 million of preferred stock was issued as a part of a recapitalization plan for Varo Semiconductor. This stock was redeemed from working capital in payments of \$1.5 million (1975) and \$3.5 million (1976). Present restatements of financial data by Varo, Inc., consider this as long term debt rather than shareholders' equity.

Source: Varo, Inc. Annual Reports
DATAQUEST, Inc.

V G Instruments plc

V G Instruments plc
29 Brighton Road
Crawley
West Sussex
England

TEN-YEAR FINANCIAL SUMMARY (Millions of Pounds)

	12 Months to 31 December						12 Months to 30 June			
	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
Sales	£50,893	£38,560	£30,249	£28,112	£22,204	£15,817	£12,160	£7,109	£5,319	£3,529
Trading profit	£ 9,532	£ 6,401	£ 4,907	£ 6,467	£ 5,366	£ 3,429	£ 3,884	£1,619	£1,117	£ 447
Profit before taxation	£10,613	£ 7,347	£ 6,533	£ 7,563	£ 6,315	£ 3,952	£ 4,052	£1,732	£1,179	£ 470
Taxation	£ 4,569	£ 3,272	£ 2,748	£ 3,758	£ 3,027	£ 1,293	£ 1,824	£ 577	£ 379	(£ 22)
Profit after taxation	£ 6,044	£ 4,075	£ 3,785	£ 3,805	£ 3,288	£ 2,659	£ 2,228	£1,155	£ 800	£ 492
Extraordinary item	155	-	-	-	-	-	-	-	-	-
Minority interest	171	123	354	460	401	320	376	169	98	71
Dividends	900	-	-	-	-	-	-	19	17	15
Retained profit	£ 4,818	£ 3,952	£ 3,431	£ 3,345	£ 2,887	£ 2,339	£ 1,852	£ 967	£ 685	£ 406
Funds Employed										
Share Capital	£ 5,000	£ 5,000	£ 120	£ 10	£ 119	£ 119	£ 118	£ 116	£ 116	£ 116
Reserves	22,195	17,531	16,577	13,095	9,744	7,761	4,672	2,821	1,733	1,048
Shareholders' funds	£27,195	£22,531	£16,697	£13,215	£ 9,863	£ 7,880	£ 4,790	£2,937	£1,849	£1,164
Minority interest	896	743	2,414	2,059	1,629	1,237	791	420	244	140
Total	£28,091	£23,274	£19,111	£15,274	£11,492	£ 9,117	£ 5,581	£3,357	£2,093	£1,304
Employment of Funds										
Fixed assets	£ 7,535	£ 3,898	£ 3,023	£ 2,545	£ 2,563	£ 2,179	£ 1,405	£ 906	£ 804	£ 566
Net liquid funds	10,462	10,342	10,696	8,728	6,545	4,586	1,917	854	774	224
Other net assets	10,094	9,034	5,392	4,001	2,384	2,352	2,259	1,597	515	514
Total	£28,091	£23,274	£19,111	£15,274	£11,492	£ 9,117	£ 5,581	£3,357	£2,093	£1,304

The accounting period end was changed in 1976 from 30 June to 31 December, and figures for the six months ended on 31 December 1978 have not been included in the above table.

Source: V G Instruments plc
1984 Annual Report

V G Instruments plc

V G Instruments plc
29 Brighton Road
Crawley
West Sussex
England

TEN-YEAR FINANCIAL SUMMARY (Millions of Dollars)

	12 Months to 31 December						12 Months to 30 June			
	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
Sales	\$67,857	\$54,310	\$53,068	\$57,371	\$51,673	\$33,653	\$23,385	\$12,472	\$ 9,671	\$ 7,842
Trading profit	\$12,709	\$ 9,015	\$ 8,609	\$13,198	\$12,479	\$ 7,296	\$ 7,469	\$ 2,840	\$ 2,031	\$ 993
Profit before taxation	\$14,151	\$10,348	\$11,461	\$15,435	\$14,686	\$ 8,409	\$ 7,792	\$ 3,039	\$ 2,144	\$ 1,044
Taxation	\$ 6,092	\$ 4,606	\$ 4,821	\$ 7,669	\$ 7,040	\$ 2,751	\$ 3,508	\$ 1,012	\$ 689	(\$ 49)
Profit after taxation	\$ 8,059	\$ 5,740	\$ 6,640	\$ 7,765	\$ 7,647	\$ 5,657	\$ 4,285	\$ 2,026	\$ 1,455	\$ 1,093
Extraordinary item	207	-	-	-	-	-	-	-	-	-
Minority interest	228	173	621	939	933	681	723	297	178	158
Dividends	1,200	-	-	-	-	-	-	33	31	33
Retained profit	\$ 6,424	\$ 5,566	\$ 6,019	\$ 6,827	\$ 6,714	\$ 4,977	\$ 3,562	\$ 1,697	\$ 1,245	\$ 902
Funds Employed										
Share Capital	\$ 6,667	\$ 7,042	\$ 210	\$ 245	\$ 277	\$ 253	\$ 227	\$ 204	\$ 211	\$ 258
Reserves	29,393	24,692	29,082	26,725	22,660	16,513	8,985	4,949	3,151	2,329
Shareholders' funds	\$36,260	\$31,742	\$29,293	\$26,970	\$22,937	\$16,766	\$ 9,212	\$ 5,153	\$ 3,362	\$ 2,587
Minority interest	1,195	1,047	4,235	4,202	3,788	2,632	1,521	737	444	311
Total	\$37,455	\$32,780	\$33,528	\$31,171	\$26,725	\$19,398	\$10,733	\$5,889	\$3,806	\$ 2,898
Employment of Funds										
Fixed assets	\$10,047	\$ 5,490	\$ 5,304	\$ 5,194	\$ 5,960	\$ 4,636	\$ 2,702	\$ 1,589	\$ 1,462	\$ 1,258
Net liquid funds	13,949	14,566	18,765	17,812	15,220	9,757	3,687	1,498	1,407	498
Other net assets	13,459	12,724	9,460	8,165	5,544	5,004	4,344	2,802	936	1,142
Total	\$37,455	\$32,780	\$33,528	\$31,171	\$26,726	\$19,398	\$10,733	\$ 5,890	\$ 3,805	\$ 2,898
Exchange Rate (Pounds per US\$)	0.75	0.71	0.57	0.49	0.43	0.47	0.52	0.57	0.55	0.45

The accounting period-end was changed in 1978 from 30 June to 31 December, and figures for the six months ended on 31 December 1978 have not been included in the above table.

Source: V G Instruments plc
1984 Annual Report

V G Instruments plc

BACKGROUND AND OVERVIEW

V G Instruments plc had its beginnings in a partnership formed by a Mr. Fastwell and a Mr. Treasure to make flanges and vacuum pumps 25 years ago in Crawley, England. Then, in 1962, they formed V G Instruments plc to produce ultrahigh-vacuum (UHV) components and systems. At that time, UHV was a new technology. It provided a working space that was many orders of magnitude cleaner and less reactive than any other environment available.

The UHV systems at that time were used in the processing of microwave tubes. Today UHV techniques have spawned a new branch of instrumentation that analyzes and operates on the surfaces of semiconductor compounds.

In the formative years of the Company, the state-of-the-art technology was such that the UHV space still contained some residual gas. It was necessary to know the composition of this residual gas before processing could take place. To cope with this, V G Instruments developed a simple mass spectrometer. Today V G Instruments produces a range of mass spectrometers.

The V G Instruments Group has expanded by creating new companies or by dividing growing companies. Each company is autonomous and deploys its resources to develop and exploit new instrumentation in order to expand its activities. Today the V G Instruments plc family includes nine production and marketing companies, one manufacturing support company, and five overseas trading companies.

V G Instruments plc is owned by Grovewood Securities, which in turn is part of the British Allied Tobacco (BAT) conglomerate.

PRODUCTS AND MARKETS SERVED

The following paragraphs describe the products of some of the companies in the V G Instruments plc family.

V G Semicon Ltd.

V G Semicon Ltd. is located in East Grinstead, West Sussex, England. Over the last few years, this company has developed a range of systems for molecular beam epitaxy, chemical vapor deposition, ion beam etching, and ion implantation.

V G Instruments plc

DATAQUEST believes that one of the key strengths of V G Semicon is its modular system approach, which makes it possible for "customized" UHV processing. In other words, MBE, surface science, ion beam lithography, CVD machines, ion sputtering, and metallization systems can be readily linked together in any combination to provide a multiprocess facility. Other products include a focused ion beam system, used for lithography and maskless processing, and an acoustic scanning microscope, used in nondestructive testing to assess the quality of semiconductor packaging.

In 1985, V G Semicon announced the development of an oxygen implanter code-named Oxis. This machine is being developed in close collaboration with the U.K. atomic energy authorities in Harwell and Culham, England. Production will begin early in 1986.

V G Scientific Ltd.

V G Scientific Ltd., also located in East Grinstead, West Sussex, England, produces sophisticated tools for solid state physics research. These tools are used in evaluation of such parameters as the band gaps of semiconductor compounds and in mapping of surface states, which allows accurate location of impurities.

V G Gas Analysis Ltd.

In semiconductor production/research, it is necessary to utilize gas measurements for a wide variety of applications from the simple leak checking of gas feed lines to the precise monitoring of doping gas purity. V G Gas Analysis, located in Middlewich, Cheshire, England, produces quadruple and magnetic-sector mass spectrometers for these types of applications.

Other V G Instruments companies are:

- Vacuum Generators Ltd. Hastings, East Sussex, England
- V G Analytical Ltd. Wythenshaw, Manchester, England
- V G Electronics Ltd. Hastings, East Sussex, England
- V G Instruments Telford Ltd. Telford, Salop, England
- V G Isogas Ltd. Middlewich, Cheshire, England
- V G Laboratory Systems Ltd. Altringham, Cheshire, England

V G Instruments plc

OUTLOOK

The managing director of V G Semicon summarized the V G Instruments Group's success to date in one word--flexibility. It is a theme that runs throughout the group from design to customer service. DATAQUEST believes that this attitude, coupled with V G Instruments plc's high-technology portfolio in a buoyant materials R&D market, means that the group is well positioned for sustained future growth.

V G Instruments plc

(Page intentionally left blank)

Vitesse Semiconductor Corporation

Vitesse Semiconductor Corporation
741 Calle Plano
Camarillo, CA 93010
(805) 388-3700

Established 1984
Number of Employees: 115

BACKGROUND

Vitesse Semiconductor Corporation is the new name for Vitesse Electronics Corporation, following a major reorganization in 1987. Total funding of Vitesse Semiconductor through August 1987 was \$28 million, including an unspecified portion of the original \$30 million initial funding of Vitesse Electronics by Norton Company in 1984.

The Semiconductor Division of Vitesse Electronics Corporation was founded in 1984 to develop and market cost-effective digital GaAs LSI circuits for the high-performance marketplace. The Company has focused its efforts to date on the development of high-performance LSI GaAs ICs, incorporating proven silicon manufacturing techniques in the production process.

Vitesse has a digital GaAs technology insertion agreement with E-Systems (Dallas, Texas). In May 1988, Vitesse announced that it was selected by General Electric to supply GaAs gate arrays for the U.S. Navy Consolidated Automated System Support (CASS) program; total contract with options was valued at \$14.1 million. In 1989, Vitesse completed prototypes of five chip types for the CASS equipment.

COMPANY EXECUTIVES

- President and CEO—Lou Tomasetta (formerly director, R&D Center, Rockwell)
- Executive Vice President—Patrick Hoffpaur (formerly general manager, ASIC operations, VLSI Technology)
- Vice President, Marketing and Sales—David Mooring (formerly marketing manager, Intel)
- Vice President, Sales—Neil Rappaport (formerly U.S. sales manager, AMCC)
- Vice President, Engineering—Ira Deyhimy (formerly manager, IC engineering, Rockwell)
- Vice President, IC Operations—James Mikkelson (formerly manager, process development, HP)

Vitesse Semiconductor Corporation

- Vice President, Finance/CFO—Michael A. Russell (formerly CFO, Avicon International)
- Director, Standard Products—Tom Dugan
- Director, Foundry Products—Ray Milano
- Director, Gate Array Products—Robert R. Nunn

FINANCIAL BACKING

- August 1984—Initial financing of \$30 million from Norton Company
- February 1987—Round 2 of \$10 million from Sequoia Capital, J.C. Whitney, New Enterprise Assoc./Spectra, Robertson, Coleman & Stephens, Walden Investors, Oxford Venture Corporation, Bryan and Edwards, and The Norton Company.
- January 1988—Round 3 of \$8.1 million from previous investors; Hodi Partners; Mohr Davidow Ventures; Morgenthaler Ventures; Oak Investment Partners; Singapore Development Board

STRATEGIC ALLIANCES

- Convex (gate arrays)
- AMD (2900 bit-slice family)
- E-Systems (VSC10K and VS12G476)
- TRW Components International (class S products)

SERVICES

- GaAs foundry
- Design
- Manufacturing
- Packaging
- Test

Vitesse Semiconductor Corporation

PROCESS TECHNOLOGY

The Company uses VML, a proprietary circuit design approach based on 1.25 micron and smaller E/D GaAs MESFET processing on 3-inch and 4-inch GaAs wafers.

PRODUCTS

- VSC29Gxx family of bit-slice products
- VSC3K/5K/10K/15K Fury series gate arrays
- VSC1500 and VSC4500 HS and LP series gate arrays (1,500, to 4,500 internal gates)
- VS12G422T and VS12G422E 4ns 256x4 TTL- and ECL-compatible SRAMs
- VS12G476 4K SRAMs
- VS3210 ECL five-port register file
- Multiplexers and demultiplexers
- SONET mux/demux
- VCB 50K standard cell library

Applications

- Computers
- Workstations
- Communications
- Instrumentation
- Military/aerospace systems

FACILITIES

Vitesse's Camarillo, California, facility has 45,000 square feet of office and manufacturing space, including computerized labs and 6,000 square feet of Class 10 clean room.

Vitesse Semiconductor Corporation

Vitesse Semiconductor Corporation
741 Calle Plano
Camarillo, CA 93010
(805) 388-3700

Established 1984
Number of Employees: 75

BACKGROUND

Vitesse Semiconductor Corporation is the new name for Vitesse Electronics Corporation, following a major reorganization in 1987. Total funding of Vitesse Semiconductor through August 1987 was \$28 million, including an unspecified portion of the original \$30 million initial funding of Vitesse Electronics by Norton Company in 1984.

The Semiconductor Division of Vitesse Electronics Corporation was founded in 1984 to develop and market cost-effective digital GaAs LSI circuits for the high-performance marketplace. The Company has focused its efforts to date on the development of high-performance LSI GaAs ICs, incorporating proven silicon manufacturing techniques in the production process.

Vitesse and Ford Microelectronics are reported to be near culmination of an alternate-source agreement on E/D processing, and Vitesse has a digital GaAs technology insertion agreement with E-Systems (Dallas, Texas).

COMPANY EXECUTIVES

- President and CEO—Lou Tomasetta (formerly director, R&D Center, Rockwell)
- Vice President, Sales—Neil Rappaport (formerly U.S. sales manager, AMCC)
- Marketing Director—Tom Dugan

FINANCIAL BACKING

- August 1984—Initial financing of \$30 million from Norton Company
- 1987—Follow-on financial backing from Sequoia Capital, J.C. Whitney, New Enterprise Assoc./Spectra, Robertson, Coleman & Stephens, Walden Investors, Oxford Venture Corporation, and Bryan and Edwards

*first round \$10 million 2/87 Sequoia Capital
J.C. Whitney & Co
2/88 - \$9.1 raised in 2nd rd. financing New Enterprise Assoc.
Spectra Enterprise
Norton Co.
\$4 million from Oak Investment Partners
Morgenthaler Ventures
Mohr Dandon Ventures.*

Vitesse Semiconductor Corporation

STRATEGIC ALLIANCES

- AMD
- E-Systems
- Ford Microelectronics

SERVICES

The Company has a foundry.

PROCESS TECHNOLOGY

The Company uses VML, a proprietary circuit design approach, based on E/D MESFET processing.

PRODUCTS

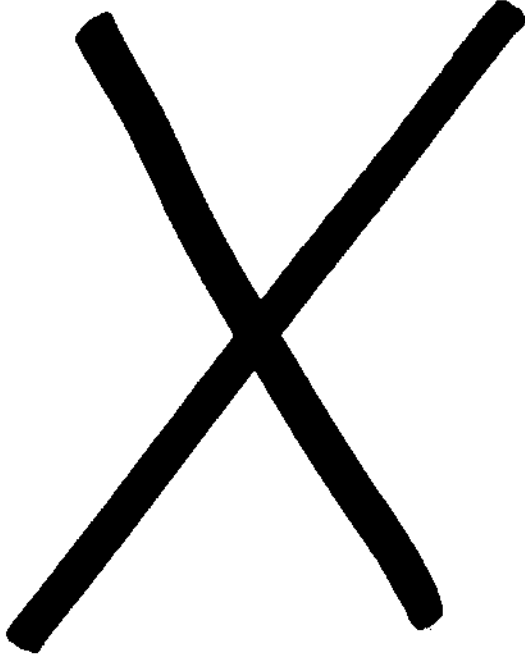
- VSC29Gxx family of bit-slice products
- VSC1500 and VSC4500 gate arrays (1500 and 4500 internal gates)
- VS12G422T 4ns 256x4 TTL-compatible SRAM

Applications

- Computers
- Communications
- Instrumentation
- Military/aerospace systems

FACILITIES

Vitesse's Camarillo, California, facility has 45,000 square feet of office and manufacturing space, including computerized labs and 6,000 square feet of class 10 clean room.



VLSI Technology, Inc.

1109 McKay Drive
San Jose, California 95131
Telephone: (408) 434-3100
Fax: (408) 263-2511
Dun's Number: 02-118-8396

Date Founded: 1979

CORPORATE STRATEGIC DIRECTION

Incorporated in August 1979, VLSI Technology, Inc., designs, manufactures, and markets application-specific integrated circuits (ASICs), application-specific standard products (ASSPs), and high-speed memories. These products are used principally in personal computers, workstations, and graphics processors, as well as in military applications. In addition to integrated circuits, VLSI develops and sells software tools used to design ASICs—both array and cell-based devices. By using its proprietary tools internally, VLSI can create new ASIC designs and develop ASSPs in a timely manner. VLSI's strategy is to automate as many steps of the IC design process as possible, enabling system engineers that have little or no experience in building complex specialized ICs to efficiently create and test application-specific circuits.

Total revenue increased 30.4 percent to \$288.5 million* in fiscal year 1989 from \$221.2 million in fiscal year 1988. Net income totaled \$506,000 for fiscal year 1989, representing a 92.5 percent decrease from fiscal year 1988. VLSI employed 1,988 people during fiscal year 1989.

In fiscal years 1989, 1988, and 1987, R&D expenditure respectively totaled \$46.7, \$37.7, and \$30.5 million. These figures respectively represented 16.2, 17.1, and 17.8 percent of total revenue. Over the past five years, VLSI has been increasing its investment in its R&D activities. The 1989 allocation was focused primarily toward the acceleration of process technology development and integration of Hitachi manufacturing processes and methodologies in the San Antonio fabrication facility, the development of advanced software, and the development of several 1-micron designs.

*All dollar amounts are in US dollars.

VLSI utilizes a direct sales force, commissioned representatives, and distributors for sales to original equipment manufacturers (OEMs). With 20 sales offices throughout the United States, VLSI's direct sales force accounted for 48.2 percent and 46.4 percent of total revenue in fiscal years 1989 and 1988, respectively. VLSI's indirect sales channel consists of distributors and manufacturing representatives. Manufacturing representatives accounted for approximately 49 percent of total revenue, while distributors represented approximately 4 percent. VLSI's international sales offices are located in Milan, Italy; Palaiseau Cedex, France; Munich, Germany; Hong Kong; Tokyo, Japan; and Milton Keynes, United Kingdom. During fiscal years 1989, 1988, and 1987, international sales respectively represented 21.1, 18.5, and 15.3 percent of total revenue. VLSI attributes the growth to the development of major accounts for ASIC products and to increased sales of logic chip sets.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Application-Specific Integrated Circuits (ASICs)

According to Dataquest's preliminary estimates, VLSI ranked ninth in the 1989 worldwide ASIC market, based upon revenue. VLSI strives to reach three primary ASIC goals: to supply systems manufacturers with VLSI proprietary software-based

tools for use in the design of their own circuits; to supply custom design services, usually working in conjunction with the customers' designers at one of the VLSI's technology centers; and to supply production capabilities to manufacture the resulting circuits on a quick turnaround basis in whatever volume is required. VLSI's ASIC products are made up of a broad range of cell-based and gate array integrated circuits, each of which is supported by VLSI's proprietary integrated circuit design software, and assistance at VLSI's network of technology centers and wafer fabrication facilities. Based upon Dataquest's preliminary figures, cell-based circuits represented 72.2 percent of VLSI's ASIC shipments during 1989, while gate arrays represented 27.8 percent. Dataquest also estimates that VLSI ranked third in worldwide cell-based integrated circuit shipments for 1989.

Software-Based Design Tools

VLSI's software-based design tools allow the system or circuit designer to create complex circuits by drawing on an extensive "library" of predefined functional circuit blocks and then simulating and testing the resulting design. Using these tools, design solutions can be readily chosen and, if necessary, modified. The VLSI software also supports the industry-standard interfaces (i.e., VHDL, EDIF, and CIF), allowing the VLSI design tools to be used in conjunction with other system design tools or generic third-party CAE tools developed by system customers. VLSI's design tools run on a broad range of engineering workstations and support virtually all of the commercially available ASIC design methodologies, including cell compiler, gate array, standard cell, megacell, and full-custom designs. The design tools cover virtually all phases of the design process in each methodology, including behavioral modeling, schematic entry, simulation, symbolic layout, custom layout, analysis, and test description. Access to each of these modules is provided through a single graphic interface. In 1989, VLSI introduced the V8 ASIC Design Platform. The V8 is proprietary software tools for design of 1-micron and submicron high-integration ASICs.

Services

VLSI offers a range of ASIC design services to its customers through its network of technology centers. These services include assistance in systems definition, complete logic and circuit design, and test generation. VLSI currently has 18 facilities throughout the world and plans to add more during 1990.

Military Products

VLSI's military products group focus is primarily on its ASIC product offering. During 1989, VLSI introduced the VAAST-INTELLIGENCE product line (VLSI's Advanced ASIC System Technology for the Military/Intelligence marketplace). The VAAST-INTELLIGENCE product line includes militarized versions of the VLSI gate array and cell-based families and a militarized version of design tools called the Viewpoint Express System that has incorporated military standards and requirements. The product line addresses the concerns of the military by supplying design retargetability, VHSIC-type technologies, VHDL documentation, and testability support (i.e., JTAG).

Chip Sets, Microprocessor Devices, and Microperipherals

VLSI's logic group has introduced several versions of its high-integration IBM PC AT-compatible chip set, as well as an IBM PS/2-compatible chip set and other industry-standard devices such as communications controllers and reduced-instruction-set computing (RISC) microprocessors. During 1989, the logic group focused its main design, marketing, and production efforts on system definition and design of more fully integrated chip set solutions directed at the Intel Corporation's 80386SX and 80386DX personal computer market while continuing to support production ramp-ups of its 12-MHz and 16-MHz PC AT chip sets. The group continued to expand its product line of peripheral controllers such as VLSI's COMBO I/O chip. In 1989, VLSI introduced the TOPCAT (two- and three-chip optimized PC AT) family of very high-integration chip sets and the COMBO I/O chip. The TOPCAT is intended for use in the design of AT-compatible systems. The two-chip set is designed for use in 80286 and 80386SX microprocessor-based system designs. The three-chip set is made for the new 80386DX microprocessor system implementations. The COMBO I/O chip complements the TOPCAT family of chip sets through offering a single-chip solution for the keyboard, a real-time clock, UARTs, an IDE interface, and parallel port functions for a PC AT system.

Memory Devices

Throughout 1989, VLSI's memory products group continued to move out of the ROM-based product areas and increasingly emphasized static random-access memory (SRAM) and application-specific memory (ASM) products. VLSI currently sells a total

of 19 SRAM devices and plans to add to this number during 1990. VLSI's SRAMs offer both high speed and high density. Speeds range from 12 nanoseconds to 35 nanoseconds. Densities vary from 1KB to 1MB. VLSI offers over 100 options of speed, density, organization, and package. ASM products include cache-tag, FIFO, and dual-port memories.

Further Information

For more information on VLSI's business segments, please contact Dataquest's Semiconductor Industry Service.

Table 1
Five-Year Corporate Highlights (Thousands of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$78,671.0	\$111,698.0	\$171,984.0	\$221,157.0	\$288,483.0
Percent Change	-	41.98	53.97	28.59	30.44
Capital Expenditure	\$26,196.0	\$27,936.0	\$50,088.0	\$75,607.0	\$54,973.0
Percent of Revenue	33.30	25.01	29.12	34.19	19.06
R&D Expenditure	\$21,169.0	\$23,306.0	\$30,529.0	\$37,745.0	\$46,679.0
Percent of Revenue	26.91	20.87	17.75	17.07	16.18
Number of Employees	822	1,050	1,345	1,630	1,988
Revenue (\$K)/Employee	\$95.71	\$106.83	\$127.87	\$135.68	\$145.11
Net Income	\$16.0	\$56.0	\$7,094.0	\$6,703.0	\$506.0
Percent Change	-	250.00	12567.86	(5.51)	(92.45)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$60,037.00	\$70,692.00	\$77,069.00	\$80,685.00	
Quarterly Profit	(\$6,247.00)	\$705.00	\$3,257.00	\$2,791.00	

Source: VLSI Technology, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	NA	81.71	77.89	70.25	60.11
International*	NA	18.29	22.11	29.75	39.89
Europe	NA	11.04	12.86	15.65	18.85
Asia/Pacific	NA	7.25	9.25	14.10	21.04

*Includes export revenue
 NA = Not available

Source: VLSI Technology, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988	1989
Direct Sales	46.40	48.20
Indirect Sales	53.60	51.80
Distributors	3.80	3.70
Manufacturers' Representatives	49.80	48.10

Source: Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—20
 Europe—4
 Asia/Pacific—1
 Japan—1

MANUFACTURING LOCATIONS

North America

San Jose, California
 Wafer fabrication
 San Antonio, Texas
 Class-one fabrication plant featuring
 computer-integrated manufacturing capability;
 6-inch wafer fabrication facility
 Tempe, Arizona
 Assembly and testing of advanced military devices

SUBSIDIARIES

North America

Arcus Technology Inc. (United States)
 VISIC Inc. (United States)
 VISIC Research and Development Corporation
 (United States)
 VLSI Foreign Sales Corporation (United States)

Europe

VLSI Design Ltd. (United Kingdom)
 VLSI Technology Eurl Centre De Recherche
 European
 VLSI Technology France Sarl (France)
 VLSI Technology GmbH (Germany)
 VLSI Technology Plc (United Kingdom)

Asia/Pacific

VLSI Technology K.K. (Japan)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Intel Corporation

Under a nonexclusive agreement, Intel will market the TOPCAT ISA and COMBO I/O peripheral chip sets designed and manufactured by VLSI Technology to its OEM customers in order to supplement its 80386 and 80386SX microprocessor sales.

1989

Pacific Microelectronics Center (PMC)

VLSI Technology and PMC will jointly develop system-level solutions for telecommunication using ASICs. The system-level megacells, called Telecom System Blocks, will be supplied in two forms: as a netlist for implementation as a gate array or cell-based ASIC and as individually packaged ICs.

Valid Logic Systems, Inc.

VLSI Technology and Valid Logic Systems introduced the Portable Library Design Kit available for designing VLSI's standard cell and gate array product families using Valid's electronic design automation software.

1988

Oak Technology

A joint venture calls for development of IBM PS/2 logic chips using VLSI's software tools.

Vitesse

VLSI signed an agreement with Vitesse to develop a GaAs cell library for VLSI design tools.

Viewlogic Systems, Inc.

VLSI Technology and Viewlogic Systems developed an agreement to support VLSI's Portable Library elements in Viewlogic's Workview environment.

Philips International B.V.

VLSI Technology will license its ASIC design tools to Philips for the design of ASIC and standard products. Philips will also produce VLSI's

gate array families under license. In return, Philips will provide foundry services to VLSI. Philips and VLSI will work together on joint library and software development projects and act as alternate sources for certain ASIC products.

Hitachi, Ltd.

A technology agreement calls for VLSI Technology to provide leadership ASIC technology to Hitachi. The technology will be used at the Hitachi Semiconductor and Integrated Circuits Division. Hitachi will supply VLSI with advanced CMOS processing technology and manufacturing know-how.

Mentor Graphics Corporation

VLSI Technology's advanced compilers and library design tools may be used in the Mentor Graphics design environment.

Sanyo Electric

VLSI Technology will sublicense its VL86C010 family of 32-bit RISC multichip microcomputers to Sanyo to be manufactured and marketed. In addition, the two companies will jointly develop a single-chip version of the Microcomputer.

1987

GE Solid State

GE Solid State will produce and market VLSI's VGT10 and VGT100 families of CMOS gate arrays. During 1989, this agreement was extended to VLSI's VGT200 family of CMOS gate arrays.

Advanced Design Cottage Corporation (ADC)

An agreement calls for ADC to use VLSI Technology's CAD systems to design ASICs in Japan. The ASICs will then be manufactured in the United States by VLSI Technology and exported back to ADC for distribution in Japan.

Kanamoto Co., Ltd.

Kanamoto will rent VLSI Technology's Logic Plus Design System, an LSI design tool. Under the agreement, Kanamoto will rent the tool to those who design their own LSIs.

Zilog Inc.

VLSI Technology will manufacture and sell ASCI products that incorporate Zilog's Z80 MPU family as megacells. VLSI will manufacture and sell Zilog's Z8 MCU family, Super 8 MCU family, and Z8000 peripherals, including the industry-standard Z85C30 SCC.

Thomson Components-Mostek

VLSI Technology and Thomson Components-Mostek will second-source five of each other's RAM products, including FIFO memories, dual-port RAMs, cache-tag RAMs, and SRAMs.

Acorn Computers Ltd.

VLSI Technology will license the manufacture and sales of Acorn Computers' 32-bit RISC MPU family as standard products and as ASIC cores.

Daisy Systems Corporation

VLSI will sublicense its logic synthesizer software tool to Daisy Systems for incorporation in Daisy's IC design software tools suite.

MERGERS AND ACQUISITIONS

Information is not available.

KEY OFFICERS

Alfred J. Stein

Chairman and chief executive officer

James R. Fiebiger

President and chief operating officer

Douglas J. Bartek

Vice president, Logic and Government Products

Douglas G. Fairbairn

Vice president, ASIC

PRINCIPAL INVESTORS

State Farm Mutual Automobile Insurance

Company—12.60 percent

Wang Laboratories Ireland, B.V.—11.70 percent

John W. Bristol & Co.—5.50 percent

David C. Evans—5.30 percent

Evans & Sutherland Computer Corporation—

5.07 percent

FOUNDERS

Information is not available.

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December
(Thousands of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$75,446.0	\$107,005.0	\$164,078.0	\$152,493.0	\$149,951.0
Cash	50,085.0	71,391.0	103,021.0	10,943.0	12,852.0
Receivables	18,475.0	23,028.0	38,027.0	47,089.0	52,242.0
Inventory	5,709.0	11,054.0	21,357.0	27,813.0	38,641.0
Other Current Assets	1,177.0	1,532.0	1,673.0	66,648.0	46,216.0
Net Property, Plants	\$63,769.0	\$73,974.0	\$99,965.0	\$145,961.0	\$163,093.0
Other Assets	\$540.0	\$9,684.0	\$7,201.0	\$4,802.0	\$4,486.0
Total Assets	\$139,755.0	\$190,663.0	\$271,244.0	\$303,256.0	\$317,530.0
Total Current Liabilities	\$19,791.0	\$27,879.0	\$50,531.0	\$69,214.0	\$77,485.0
Long-Term Debt	\$530.0	\$8,500.0	\$65,000.0	\$67,562.0	\$65,000.0
Other Liabilities	\$20,957.0	\$20,205.0	\$16,450.0	\$16,180.0	\$19,946.0
Total Liabilities	\$41,278.0	\$56,584.0	\$131,981.0	\$152,956.0	\$162,431.0
Total Shareholders' Equity	\$98,477.0	\$134,079.0	\$139,263.0	\$150,300.0	\$155,099.0
Common Stock	102,795.0	138,454.0	229.0	235.0	242.0
Other Equity	(1,090.0)	(1,203.0)	135,578.0	139,906.0	144,192.0
Retained Earnings	(3,228.0)	(3,172.0)	3,456.0	10,159.0	10,665.0
Total Liabilities and Shareholders' Equity	\$139,755.0	\$190,663.0	\$271,244.0	\$303,256.0	\$317,530.0
Income Statement	1985	1986	1987	1988	1989
Revenue	\$78,671.0	\$111,698.0	\$171,984.0	\$221,157.0	\$288,483.0
US Revenue	NA	99,163.0	145,662.0	180,162.0	227,412.0
Non-US Revenue*	NA	12,535.0	26,322.0	40,995.0	61,071.0
Cost of Sales	\$45,444.0	\$63,944.0	\$97,974.0	\$129,102.0	\$180,331.0
R&D Expense	\$21,169.0	\$23,306.0	\$30,529.0	\$37,745.0	\$46,679.0
SG&A Expense	\$14,323.0	\$23,092.0	\$35,414.0	\$44,667.0	\$56,088.0
Capital Expense	\$26,196.0	\$27,936.0	\$50,088.0	\$75,607.0	\$54,973.0
Pretax Income	\$16.0	\$324.0	\$9,373.0	\$9,258.0	\$1,219.0
Pretax Margin (%)	0.02	0.29	5.45	4.19	0.42
Effective Tax Rate (%)	NA	NA	NA	NA	NA
Net Income	\$16.0	\$56.0	\$7,094.0	\$6,703.0	\$506.0
Shares Outstanding, Thousands	19,892.0	22,151.0	23,352.0	23,283.0	23,781.0
Per Share Data					
Earnings	NA	NA	\$0.30	\$0.29	\$0.02
Dividend	NA	NA	NA	NA	NA
Book Value	\$4.95	\$6.05	\$5.96	\$6.46	\$6.52

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	3.81	3.84	3.25	2.20	1.94
Quick (Times)	3.52	3.44	2.82	1.80	1.44
Fixed Assets/Equity (%)	64.76	55.17	71.78	97.11	105.15
Current Liabilities/Equity (%)	20.10	20.79	36.28	46.05	49.96
Total Liabilities/Equity (%)	41.92	42.20	94.77	101.77	104.73
<i>Profitability (%)</i>					
Return on Assets	-	0.03	3.07	2.33	0.16
Return on Equity	-	0.05	5.19	4.63	0.33
Profit Margin	0.02	0.05	4.12	3.03	0.18
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	26.91	20.87	17.75	17.07	16.18
Capital Spending % of Revenue	33.30	25.01	29.12	34.19	19.06
Employees	822	1,050	1,345	1,630	1,988
Revenue (\$K)/Employee	\$95.71	\$106.83	\$127.87	\$135.68	\$145.11
Capital Spending % of Assets	18.74	14.65	18.47	24.93	17.31

*Includes export revenue
 NA = Not available

Source: VLSI Technology, Inc.
 Annual Reports and Forms 10-K
 Dataquest (1990)

VLSI Technology, Inc.

Table 1

**Estimated Worldwide Semiconductor Revenue by Calendar Year
(Millions of Dollars)**

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Total Semiconductor	36	69	78	112	172	221
Total Integrated Circuit	36	69	78	112	172	221
Bipolar Digital (Function)						
Bipolar Digital Memory						
Bipolar Digital Logic						
MOS (Function)	36	69	78	112	172	221
MOS Memory	20	24	17	24	23	16
MOS Microdevices					18	54
MOS Logic	16	45	61	88	131	151
Analog						
Total Discrete						
Total Optoelectronic						

Table 2

**VLSI Technology, Inc.
1988 Worldwide Ranking by Semiconductor Markets
(Revenue in Millions of Dollars)**

	<u>1988</u>	<u>1987</u>	<u>1988</u>	<u>Sales</u>	<u>Industry</u>
	<u>Rank</u>	<u>Rank</u>	<u>Revenue</u>	<u>% Change</u>	<u>% Change</u>
				<u>1987-1988</u>	<u>1987-1988</u>
Total Semiconductor	34	35	\$221	28.5%	33.0%
Total Integrated Circuit	29	30	\$221	28.5%	37.4%
MOS (Function)	25	22	\$221	28.5%	54.5%
MOS Memory	38	32	16	(30.4%)	93.1%
MOS Microdevices	23	33	54	200.0%	39.9%
MOS Logic	17	17	151	15.3%	29.2%

Source: Dataquest
December 1989

VLSI Technology, Inc.

Table 3

VLSI Technology, Inc.
Estimated 1988 Semiconductor Revenue by Geographic Region
(Millions of Dollars)

	<u>U.S.</u>	<u>Japan</u>	<u>Europe</u>	<u>ROW</u>
Total Semiconductor	\$169	\$6	\$36	\$10
Total Integrated Circuit	\$169	\$6	\$36	\$10
Bipolar Digital (Function)				
Bipolar Digital Memory				
Bipolar Digital Logic				
MOS (Function)	\$169	\$6	\$36	\$10
MOS Memory	12		4	
MOS Microdevices	45	1	5	3
MOS Logic	112	5	27	7
Analog				
Total Discrete				
Total Optoelectronic				

Source: Dataquest
December 1989

X

Watkins-Johnson Solid-State Devices Division

Watkins-Johnson Solid-State
Devices Division
3333 Hillview Avenue
Palo Alto, CA 94304-1204
(415) 493-4141

Established 1957
No. of Employees: Approximately 400

BACKGROUND

Watkins-Johnson Company is engaged in the design, development, manufacturing, and marketing of solid-state amplifiers, receivers, microwave receiving systems, and equipment for surveillance, direction finding, and countermeasures. The Company comprises four divisions and five subsidiaries worldwide.

COMPANY EXECUTIVES

- Vice President, Devices Group—Keith D. Gilbert
- Vice President, and Manager, Subsystems Division—Paul Y. Lin
- Manager, Components Division—James L. Schram
- Marketing Director—Barry Høglund

PROCESS TECHNOLOGY

The Company uses submicron GaAs MESFET technology.

PRODUCTS

- VHF and microwave amps
- Oscillators
- Mixers
- Synthesizers
- Subsystems

Watkins-Johnson Solid-State Devices Division

Applications

- Communications equipment
- Surveillance
- Countermeasures
- Radar

FACILITIES

The Company's Palo Alto, California, facility has 180,000 square feet, including an 8,000-square-foot clean room. The Scotts Valley, California, facility has approximately 120,000 square feet.

Watkins-Johnson Solid-State Devices Division

Watkins-Johnson Solid-State Devices Division
3333 Hillview Avenue
Palo Alto, CA 94304
(415) 493-4141

Established 1957
No. of Employees: N/A

BACKGROUND

Watkins-Johnson Company is engaged in the design, development, manufacturing, and marketing of solid state amplifiers, receivers, microwave receiving systems, and equipment for surveillance, direction finding, and countermeasures. The Company is comprised of four divisions and five subsidiaries worldwide.

COMPANY EXECUTIVES

- Vice President, Devices Group—Keith D. Gilbert
- Vice President, and Manager, Computer Division—Paul Y. Lin
- Marketing Director—Barry Hoglund

PROCESS TECHNOLOGY

The Company uses GaAs MESFET technology.

PRODUCTS

- VHF and microwave amps
- Oscillators
- Mixers
- Synthesizers
- Subsystems

Applications

- Surveillance
- Countermeasures

FACILITIES

The Company's Palo Alto, California, facility has 18,000 square feet, including an 8,000-square-foot clean room.

Wang Laboratories, Inc.

One Industrial Avenue
Lowell, Massachusetts 01851
Telephone: (617) 459-5000
Fax: (508) 452-0986
Dun's Number: 00-101-8167

Date Founded: 1951

CORPORATE STRATEGIC DIRECTION

Founded in 1951 by Dr. An Wang in Boston, Massachusetts, Wang Laboratories, Inc., began by doing research and development in electronic systems, calculators, and instruments. In 1972, Wang introduced its first word processing system and has since become known as the leading worldwide supplier of word processing systems. As Wang enters the 1990s, the Company seeks to change its corporate image from the leader in word processing systems to a leading vendor of integrated systems. Wang's overall mission for the 1990s focuses on providing products, services, and industry-specific solutions to help customers manage 100 percent of their business information.

The Company markets and services its products in the United States through hundreds of sales and customer service offices nationwide. To complement its worldwide direct sales and distributor organization, the Company has additional channels of distribution, including independent dealers and value-added resellers (VARs) who incorporate their proprietary application software into Company products. Wang has identified the government, financial services, manufacturing, and professional and legal services markets as its principal marketing efforts. The United States represents 51 percent of the Company's sales; Europe, 31 percent; Asia/Pacific, 14 percent; and Rest of World, 4 percent.

Fiscal 1989 was a difficult year for Wang. The Company experienced declines in sales and profits and increases in expenses. Additionally, Wang suffered from weak domestic demand, the strengthening of the US dollar in international operations, and declining price trends. As a result, the Company reported a loss of \$424.3 million.* Furthermore, Frederick A. Wang

resigned in August 1989 after 17 years as president, and in April 1990, founder and CEO An Wang died, leaving the future of Wang Labs uncertain.

In order to improve its financial position, Wang underwent a major restructuring. Staff was reduced 30 percent—approximately 7,000 employees from a work force of over 26,000 in July of 1989. In April 1990, Wang completed the sale of its Wang International Financial Ltd. to GE Capital, reducing bank debt by approximately \$90 million. The Company also plans to sell the Wang Financial Information Services Corp. and is in negotiations with Matra of France to sell its InteCom subsidiary.

Wang has realigned marketing and development into three platform engineering teams and seven applications engineering teams under a program entitled "Operation Customer." The platform engineering units are hardware systems, system and communications software, and core applications. The applications engineering teams are set up along vertical industry lines to drive product development based on customer needs and market demand. The guiding principles of Operation Customer are to delegate responsibility and authority to individuals, to allow the needs of Wang's customers to shape and drive Wang's priorities, to shorten product design cycle and speed delivery, and to instill quality in all of Wang's work.

Building on the Operation Customer program, Wang has unveiled its "Innovation on Standards," a new product and marketing strategy. The focus of this program is to position Wang as a provider of total systems solutions using industry standards and open systems architecture. As a solutions provider, Wang will become a value-added reseller (VAR) and software house and systems integrator, delivering

*All dollar amounts are in US dollars.

solutions on standard platforms in addition to proprietary products. Wang has also increased its efforts to develop technology alliances with other manufacturers in addition to improving relations with Independent Software Vendors (ISVs), in order to meet the goal of being a solutions provider to its clients.

Wang has also restructured its sales and marketing organization into a number of smaller, more focused marketing groups. The new organization will work to focus product and ISV decisions on appropriate applications and businesses within selected vertical markets. Wang has identified the government, financial services, manufacturing, and professional and legal services markets for its principal marketing efforts.

Although Wang is losing market share, its installed base continues to grow. Most of this growth is through the sales of its low-end systems, resulting in a reduction in revenue and profit margin per sale. Revenue for fiscal 1989 decreased 7 percent from \$3.1 billion in fiscal 1988 to \$2.9 billion in fiscal 1989. The Company reported a net loss of \$424.3 million, as mentioned above, which included a \$140 million pretax restructuring charge to continuing operations and a \$94 million charge for the estimated loss on disposal of discontinued operations. Dataquest estimates that approximately 50 percent of Wang's revenue comes from computer systems sales. Including sales by its InteCom subsidiary, Dataquest estimates that sales of telecommunications equipment account for another 25 percent of revenue. The remaining 25 percent is split between software and imaging systems sales, with the latter accounting for only 5 percent of total revenue.

Research and development expenditure amounted to \$243.4 million in fiscal 1989, or 8 percent of Wang's revenue. Capital expenditure is approximately \$230.0 million for the same period, or 8 percent of revenue. Wang has manufacturing facilities in the United States (5), Puerto Rico, Ireland, Taiwan, Mexico, and Australia.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region. Information on revenue by distribution channel is not available. Table 3, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Computer Systems

The Company's principal computer hardware product line is the VS computer family, which offers multiple software languages and advanced capabilities. The VS 10000 series, introduced in January 1989, offers intensive CPU processing power and large storage capacities for heavily interactive applications, distributed data processing, and advanced communications functions. Three models of the VS 10000 are available. Although the VS 10000 is positioned by Wang marketing as a product to create new markets, evidence exists that Wang's sales force is selling the VS 10000 system only as an upgrade path for the installed base.

In September 1989, Wang introduced the new VS 8000 family, which replaces the VS 7000 family. The VS 8000 provides a choice of five processors that overlap the VS 5000 model 60 at the low end and are overlapped by the VS 10000 family at the high end. Current VS 7000 and VS 300 systems can be upgraded with the new VS 8000 series processors.

With Wang's connectivity strategy, customers can now build much larger single-system VS configurations. The new Extended Capacity Facility (ECF) extends I/O capacity and connectivity for VS systems. The number of workstations and other devices that can be connected to a single system are not dependent on the CPU but on other hardware constraints and OS support.

In January 1990, Wang unveiled the first of its new family of computers, the Dynamix DX2000. The Dynamix systems incorporate the features of Wang's Open/Architecture, providing network integration with other Wang and non-Wang systems.

The Dynamix DX2000 system uses the Intel 80486 microprocessor and Multibus II architecture. The systems are designed to support 16 to 128 users, providing up to 6 Gbytes of total disk capacity. Users have a choice of SCO UNIX System V/386 release 3.2 for traditional multiuser host environments, or SCO Open Desktop operating systems. SCO Open Desktop provides a graphical operating system environment with

multitasking, database management services, networking connectivity, and X Window support. It also provides for the connection of workstations via TCP/IP and 802.3 protocols.

Micro Computer Systems

Wang has made several important changes in its PC strategy in 1989. In September, Wang sold its PC manufacturing plant in Stirling, Scotland, and consolidated PC manufacturing at its Limerick, Ireland, plant. In February, 1990, Wang formed WLT Systems to distribute its new PC models through the mail-order channel, under the brand name WLT PC Express. The WLT PC Express product line consists of ten IBM-compatible PCs based on the Intel 80286 and 80386 chips manufactured at its Wang Laboratories Taiwan, Ltd., subsidiary.

In September 1989, Wang introduced four new industry standard PCs. Three of the models, the PC 250/16, 280/20, and 350/16 use IBM's AT architecture. The fourth model, MC350/16s, uses the 80386SX and offers Micro Channel Architecture (MCA) compatibility. In November 1989, Wang announced the PC 380/25C, a high-performance AT-compatible PC based on Intel's 80386 microprocessor.

Telecommunications

The Company's communications and networking products include a local area network (LAN) for PCs and WangNet, which connect both the Company's and other manufacturers' equipment. For wide area networking, Wang Systems Networking also includes a variety of industry-standard protocols and supports industry-standard and proprietary network architectures.

Telecom

In November 1989, Wang announced an agreement with Novell Inc. to license Novell's Portable NetWare to develop a product that allows NetWare clients access to applications on Wang VS servers and systems. In addition, under the agreement Wang and Novell worked together to develop an Open/Image server that provides NetWare users access to WIIS capabilities.

The agreement with Novell is one component in the overall shift in Wang's strategy to provide a more open platform to its clients. In addition, Wang plans

to adapt its VS line of computers to the Open/Server model, porting Banyan, Portable NetWare, and LAN Manager to its VS models. Eventually Wang plans to use OSI as its primary network implementation and to provide support for TCP/IP and IBM's SNA. Options for links to FDDI and ISDN connections will also be added.

In April 1990, Wang announced an extension of its OEM agreement with 3Com, under which Wang will sell 3Com's family of 10BASE-T network adapters. The agreement covers the EtherLink II TP for AT-compatible PCs and EtherLink MC/TP for MCA-compatible PCs. Wang also resells several 3Com Ethernet and Token-Ring adapters.

As noted earlier, Wang is planning to sell its InteCom subsidiary. The most recent information is that Matra Communications of France is negotiating with Wang to purchase InteCom.

Document Image Management Systems

With the introduction of WIIS (Wang Integrated Image System) in April 1987, Wang Labs became the first traditional office system vendor to introduce an electronic image storage-and-retrieval system. Wang continues to enhance the WIIS product and strengthen its relationship with third-party software developers writing vertical software for WIIS. For the year ended December 31, 1989, Dataquest ranks Wang as one of the top three vendors of medium- and high-volume document image management systems.

The WIIS system is based on Wang VS systems and the PACE relational data base management system, which manages the indexing and retrieval of image files. Workstation options include a variety of devices, from IBM-compatible PCs to intelligent workstations and alphanumeric display terminals. WIIS components are linked using Wang Systems Networking architectures. File transfer between WIIS systems use Wang's File Transfer Manager or Wang Office.

WIIS software handles image capture, indexing, storage, retrieval, and administrative functions. The WIIS user interface supports up to four data processing windows and one image window simultaneously. The WIIS image workstation software runs on MS-DOS V3.2; however, third-party MS-DOS applications

cannot run in the WIS window environment. Support for 3270 sessions in the WIS windowing environment is provided via a Wang SNA gateway.

The WIS system is also compatible with Freestyle, introduced by Wang in November 1988. Freestyle allows users to combine data, text, images, voice, and handwritten annotations into single documents. Freestyle users connected to WIS can both send images captured at a Freestyle workstation to WIS systems and receive and use images sent to Freestyle from WIS.

Wang is emphasizing a consultative sell to boost sales of its WIS product, receiving some fee revenue while playing a systems-integrator role during the implementation phase of the sell. Also, with its Open Image Architecture, Wang is working to make the interface to its imaging applications common on all platforms, using common application interfaces (APIs) for scan, display, copy, print, and image management. ISVs, using the Open Image Architecture, can offer applications that start with a PC using local optical disk storage and grow through LAN-based storage to the high end on a VS system, with minimal programming impact.

Software

In February 1990, Wang introduced its first UNIX-based systems and software applications—WP/X and UNIX ClearView. WP/X brings Wang's word processing system to the UNIX environment. UNIX ClearView is an object-oriented desktop manager program that runs on Wang hardware using The Santa Cruz Operation Inc.'s Open Desktop operating environment.

In June 1989, Wang introduced a new OPEN/image-windows product that enables customers and third parties to develop integrated image applications on industry-standard PCs. At the time of announcement, this product had end-user endorsement and significant ISV participation and looked to be Wang's strongest product announcement during the past 18 months.

Further Information

For further information on the Company's business segments, please contact the appropriate industry service.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$2,351.7	\$2,642.5	\$2,836.7	\$3,068.4	\$2,868.8
Percent Change	-	12.37	7.35	8.17	(6.51)
Capital Expenditure	\$402.0	\$234.0	\$235.2	\$273.6	\$230.0
Percent of Revenue	17.09	8.86	8.29	8.92	8.02
R&D Expenditure	\$181.1	\$181.7	\$212.4	\$246.0	\$243.4
Percent of Revenue	7.70	6.88	7.49	8.02	8.48
Number of Employees	31,061	31,628	30,306	31,516	26,796
Revenue (\$K)/Employee	\$75.71	\$83.55	\$93.60	\$97.36	\$107.06
Net Income	\$15.5	\$55.9	(\$70.7)	\$92.7	(\$424.3)
Percent Change	-	260.65	(226.48)	(231.12)	(557.71)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$721.4	\$783.7	\$596.8	\$637.7	
Quarterly Profit (Loss)	\$63.7	(\$374.7)	(\$62.1)	(\$10.5)	

Source: Wang Laboratories, Inc.
 Annual Reports
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	69.00	64.00	60.00	55.00	51.00
International	31.00	36.00	41.00	45.00	49.00
Europe	18.00	23.00	27.00	30.00	31.00
Asia/Pacific	9.00	9.00	9.00	11.00	14.00
ROW	4.00	4.00	5.00	4.00	4.00

Source: Wang Laboratories, Inc.
 Annual Reports
 Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—more than 200
Europe—11
Asia/Pacific—8
 Japan—1
ROW—5

MANUFACTURING LOCATIONS

North America

Lowell, Massachusetts (2)
Methuen, Massachusetts
Tewksbury, Massachusetts

Europe

Limerick, Ireland

Asia/Pacific

Canberra, Australia
Yangmei, Taiwan

ROW

Guadalajara, Mexico
Juncos, Puerto Rico

SUBSIDIARIES

North America

InteCom Inc. (United States) (Pending sale to Matra)
Wang Credit Corporation (United States)
Wang Financial Information Services Corp. (United States)
Wang Informatics Legal and Professional Systems, Inc. (United States)
Wang Information Services Corp. (United States)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Novell

License for Novell NetWare and joint development agreement for Open/Set

1989

IBM

Wang gained access to MCA technology through a cross-licensing agreement with IBM.

1988

Xerox

The two companies announced a cooperative marketing agreement under which Wang will recommend Xerox high-speed, high-volume printing systems to selected Wang customers.

Cygnets Systems

Cygnets Systems entered a two-year OEM agreement with Wang. Wang will use Cygnets's Series 1800 Expandable Jukeboxes with LMS drives as part of its WIIS.

KEY OFFICERS

Richard Miller

President, director, and CEO

Michael F. Mu

Vice president and CFO

Harry H.S. Chou

Vice chairman

Ken Olisa

Vice president and general manager for Europe, Africa, and Middle East

Horace Tsiang

Executive vice president, chief development officer

Michael P. Downes

Senior vice president, Manufacturing

FOUNDERS

Dr. An Wang

Table 3
Comprehensive Financial Statement
Fiscal Year Ending June 30
(Millions of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$1,049.3	\$1,204.2	\$1,250.3	\$1,177.6	\$1,321.7
Cash	31.1	38.0	22.3	27.3	257.9
Receivables	479.4	530.1	576.1	532.6	529.6
Temporary Cash Investments	17.2	119.7	157.3	127.6	0
Inventory	469.4	448.4	412.1	387.6	359.6
Other Current Assets	52.2	68.0	82.5	102.5	174.6
Net Property, Plants	\$715.1	\$737.7	\$778.1	\$782.7	\$665.2
Other Assets	\$611.5	\$707.4	\$784.0	\$877.7	\$738.8
Total Assets	\$2,375.9	\$2,649.3	\$2,812.4	\$2,838.0	\$2,725.7
Total Current Liabilities	\$455.0	\$537.9	\$653.4	\$709.2	\$967.5
Long-Term Debt	\$666.6	\$656.5	\$667.5	\$537.1	\$622.5
Other Liabilities	\$6.0	\$7.3	\$5.3	\$5.6	\$4.9
Total Liabilities	\$1,127.6	\$1,201.7	\$1,326.2	\$1,251.9	\$1,594.9
Total Shareholders' Equity	\$1,248.3	\$1,447.6	\$1,486.2	\$1,586.1	\$1,130.8
Common Stock	69.9	75.5	81.2	82.0	82.1
Other Equity	547.5	713.2	842.3	875.0	869.9
Retained Earnings	630.9	658.9	562.7	629.1	178.8
Total Liabilities and Shareholders' Equity	\$2,375.9	\$2,649.3	\$2,812.4	\$2,838.0	\$2,725.7
Income Statement	1985	1986	1987	1988	1989
Revenue	\$2,351.7	\$2,642.5	\$2,836.7	\$3,068.4	\$2,868.8
US Revenue	1,616.0	1,689.3	1,698.1	1,698.1	1,462.3
Non-US Revenue	735.7	953.2	1,138.6	1,370.3	1,406.5
Cost of Sales	\$1,398.4	\$1,461.5	\$1,607.4	\$1,511.7	\$1,562.2
R&D Expense	\$181.1	\$181.7	\$212.4	\$246.0	\$243.4
SG&A Expense	\$767.8	\$883.1	\$1,012.6	\$1,137.1	\$1,128.8
Capital Expense	\$402.0	\$234.0	\$235.2	\$273.6	\$230.0
Pretax Income	(\$54.5)	\$55.9	(\$51.7)	\$118.7	(\$262.7)
Pretax Margin (%)	(2.32)	2.12	(1.82)	3.87	(9.16)
Effective Tax Rate (%)	46.00	46.00	46.00	34.00	34.00
Net Income	\$15.5	\$55.9	(\$70.7)	\$92.7	(\$424.3)
Shares Outstanding, Millions	141.1	146.6	159.8	165.7	163.6
Per Share Data					
Earnings	\$0.11	\$0.35	(\$0.44)	\$0.56	(\$2.59)
Dividend	-	-	-	-	-
Book Value	\$8.85	\$9.87	\$9.30	\$9.57	\$6.91

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending June 30
(Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	2.31	2.24	1.91	1.66	1.37
Quick (Times)	1.27	1.41	1.28	1.11	0.99
Fixed Assets/Equity (%)	57.29	50.96	52.35	49.35	58.83
Current Liabilities/Equity (%)	36.45	37.16	43.96	44.71	85.56
Total Liabilities/Equity (%)	90.33	83.01	89.23	78.93	141.04
<i>Profitability (%)</i>					
Return on Assets	-	2.22	(2.59)	3.28	(15.25)
Return on Equity	-	4.15	(4.82)	6.03	(31.23)
Profit Margin	0.66	2.12	(2.49)	3.02	(14.79)
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	7.70	6.88	7.49	8.02	8.48
Capital Spending % of Revenue	17.09	8.86	8.29	8.92	8.02
Employees	31,061	31,628	30,306	31,516	26,796
Revenue (\$K)/Employee	\$75.71	\$83.55	\$93.60	\$97.36	\$107.06
Capital Spending % of Assets	16.92	8.83	8.36	9.64	8.44

Source: Wang Laboratories, Inc.
 Annual Reports
 Dataquest (1990)

Wang Laboratories, Inc.

One Industrial Avenue
Lowell, Massachusetts 01851
Telephone: (617) 459-5000
Fax: (508) 452-0986
Dun's Number: 00-101-8167

Date Founded: 1951

CORPORATE STRATEGIC DIRECTION

Founded in 1951 by Dr. An Wang in Boston, Massachusetts, Wang Laboratories began by doing research and development in electronic systems, calculators, and instruments. In 1972, Wang introduced its first word processing system and has since become known as the leading worldwide supplier of word processing systems. As Wang enters the 1990s, the Company seeks to change its corporate image from the leader in word processing systems to a leading vendor of integrated systems. Wang's overall mission for the 1990s focuses on providing products, services, and industry-specific solutions to help customers manage 100 percent of their business information.

Fiscal 1989 was a difficult year for Wang. The Company experienced declines in sales and profits, and increases in expenses. Additionally, Wang suffered from weak domestic demand, the strengthening of the U.S. dollar in international operations, and declining price trends. As a result, the Company reported a loss of \$424.3 million.* Furthermore, President and Chief Operating Officer Frederick A. Wang resigned in early August after 17 years of service.

To combat these obstacles, the Company is undergoing major restructuring. Staff is being reduced, nonstrategic assets are being written down, and certain operations are being closed or reduced. In particular, the Scottish manufacturing facility was closed and consolidated with the facility in Ireland, and the Puerto Rican facility staff was scaled down from 500 to approximately 125.

*All dollar amounts are in U.S. dollars.

Richard W. Miller, the new president and chief operating officer, has a tough task ahead of him. Wang must beat its \$900 million debt to banks. It also must reverse its image as a risky company in the eyes of both clients and prospects. Wang needs to develop a focused, comprehensible, and solutions-oriented strategy that is clearly understood within its markets.

The Wang family controls the company; it owns 80 percent of the class C stock and 30 percent of the class B stock. It places three-quarters of the board and can resist almost any stockholder battle. Any new turnaround management would need to be given the most basic tool of business—control of the Company.

Wang continues to focus its product strategies based on what it calls the six technologies: data processing, word processing, image processing, voice processing, networking, and human factors.

Although Wang is losing market share, its installed base continues to grow. Most of this growth is through the sales of its low-end systems, resulting in a reduction in revenue and profit margin per sale. Revenue for fiscal 1989 decreased 7 percent from \$3.1 billion in fiscal 1988 to \$2.9 billion in fiscal 1989. The Company reported a net loss of \$424.3 million, as mentioned above, which included a \$140 million pretax restructuring charge to continuing operations and a \$94 million charge for the estimated loss on disposal of discontinued operations.

Research and development expenditures amounted to \$243.4 million in fiscal 1989, or 8 percent of Wang's revenue. Capital expenditures are approximately \$230.0 million for the same period, or 8 percent of revenue.

As of July 1, 1989, the Company employed 26,796 people in its continuing operations and 1,538 people in discontinued operations. Total employment in fiscal 1990 has been reduced by approximately 2,300 as a result of the restructuring program and attrition.

The Company markets and services its products in the United States through hundreds of sales and customer service offices nationwide. To complement its worldwide direct sales and distributor organization, the Company has additional channels of distribution, including independent dealers and value-added resellers (VARs) who incorporate their proprietary application software into Company products. Wang has identified the government, financial services, manufacturing, and professional and legal services markets as its principal marketing efforts.

However, marketing has been Wang's chief weakness. Premature announcements, lack of independent software vendor (ISV) endorsements, and a mis-directed sales force have stifled Wang's marketing efforts. Wang has taken action by restructuring into a small number of focused marketing organizations, each concentrating on the above-mentioned vertical markets. These new organizations are focusing product and ISV decisions on appropriate applications and organizations within the vertical markets.

The United States represents 51 percent of the Company's sales; Europe, 31 percent; Asia/Pacific, 14 percent; and Rest of World, 4 percent. Wang has manufacturing facilities in the United States (5), Puerto Rico, Ireland, Taiwan, Mexico, and Australia.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Computer Systems

The Company's principal computer hardware product line is the VS computer family, which offers multiple

software languages and advanced capabilities. The VS 10000 series, introduced in January 1989, offers intensive CPU processing power and large storage capacities for heavily interactive applications, distributed data processing, and advanced communications functions. Three models of the VS 10000 are available. Although the VS 10000 is positioned by Wang marketing as a product to create new markets, evidence exists that Wang's sales force is selling the VS 10000 system only as an upgrade path for the installed base.

In September 1989, Wang introduced the new VS 8000 family, which replaces the VS 7000 family. The VS 8000 provides a choice of five processors that overlap the VS 5000 model 60 at the low end and are overlapped by the VS 10000 family at the high end. Current VS 7000 and VS 300 systems can be upgraded with the new VS 8000 series processors.

The \$250,000 to \$1,500,000 business unit market segment fared best in 1988, and Dataquest believes that it continued to be the strongest segment in 1989. With its VS 8000 and VS 10000, as well as probable new high-end systems, Wang has product offerings in this segment.

The VS 5000 series, introduced in July 1988, is based on a single high-performance microprocessor and is designed for small businesses, corporate departments, and distributed offices of large enterprises.

The second-healthiest market segment of 1989 was the work group systems segment, priced at less than \$25,000 (expected by Dataquest to grow 10 percent in worldwide and user revenue.) The entry level of Wang's aggressively priced VS 5000 falls in this market segment. The trick for Wang is to deliver applications that provide a vehicle for moving these systems products.

With Wang's connectivity strategy, customers can now build much larger single-system VS configurations. The new Extended Capacity Facility (ECF) extends I/O capacity and connectivity for VS systems. The number of workstations and other devices that can be connected to a single system are now based on hardware, constraints, and OS support, and are not dependent on the CPU.

Dataquest estimates Wang's 1988 market status based on end-user revenue as follows: In the business unit

market, Wang ranked twelfth with 0.9 percent of the market; in the large department market, Wang ranked eighth with 2.3 percent; in the small department market, Wang ranked fifth with 6.5 percent; and in the work group market, Wang ranked fifth with 3.6 percent.

Dataquest estimates that Wang held less than 1 percent of the PC market, based on 1988 factory revenue of \$166 million.

Telecommunications

The Company's communications and networking products include a local area network (LAN) for PCs and WangNet, which connect both the Company's and other manufacturers' equipment. For wide area networking, Wang Systems Networking also includes a variety of industry-standard protocols and supports industry-standard and proprietary network architectures.

Image Processing

The Company's imaging system, Wang Integrated Image Systems (WIIS), is a strongly competitive offering, especially because it is available on a general-purpose computer, allowing easier integration of the imaging function with other product functions. Imaging has several strengths and weaknesses for Wang. First, imaging is 5 percent of Wang's revenue today; the Company does not expect imaging to account for more than 10 percent of its total revenue within the next few years. Second, the imaging sales cycle is long, frequently as much as a year. To combat this, Wang is emphasizing a consultative sell, receiving some fee revenue while playing a systems-integration role during the implementation phase of the sell. Third, with its Open Image Architecture, Wang is working to make the interface to its imaging applications common on all platforms, using common application program interfaces (APIs) for scan, display, copy, print, and image management. Last, ISVs can offer applications that start with a PC, using local optical disk storage, and grow through LAN-based storage to the high end on a VS system, with minimal programming impact.

In 1988, Wang ranked second in the worldwide installed based of image systems with its WIIS product (180 systems installed), behind FileNet

(with approximately 200 systems installed). Introduced in fiscal 1988, WIIS allows the integration of paper-based image documents with data and text and permits users to incorporate image information into office and data processing systems.

Within its OPEN/image architecture, in June 1989, Wang introduced a new OPEN/image-windows product that enables customers and third parties to develop integrated image applications on industry-standard PCs. At the time of announcement, this product had end-user endorsement and significant ISV participation and looked to be Wang's strongest product announcement during the past 18 months.

PC-Based User-Interface Products

Introduced in December 1988, Freestyle is Wang's PC-based user-interface product supporting the integration of text, image, graphics, voice, and handwritten script into a single document. This document then can be moved through Wang's VS and LAN mail systems. As offered initially, Freestyle was integrated only into VS Office and usable with WIIS as a storage mechanism. Freestyle now also is available with Wang's LAN Office. This lack of broad-based integration into products has severely limited Freestyle's impact on related VS systems sales. Properly integrated into applications and priced aggressively, Freestyle has the potential of pulling VS systems sales. However, the poor introduction of Freestyle may have blunted this potential.

Software

Wang licenses proprietary software applications and certain third-party-developed software. Proprietary software offerings include WP Plus, Wang OFFICE, PACE, and VS/VM.

Further Information

For further information on the Company's business segments, please contact the appropriate industry service.

Table 1
Five-Year Corporate Highlights (Millions of U.S. Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$2,351.7	\$2,642.5	\$2,836.7	\$3,068.4	\$2,868.8
Percent Change	-	12.37	7.35	8.17	(6.51)
Capital Expenditure	\$402.0	\$234.0	\$235.2	\$273.6	\$230.0
Percent of Revenue	17.09	8.86	8.29	8.92	8.02
R&D Expenditure	\$181.1	\$181.7	\$212.4	\$246.0	\$243.4
Percent of Revenue	7.70	6.88	7.49	8.02	8.48
Number of Employees	31,061	31,628	30,306	31,516	26,796
Revenue (\$K)/Employee	\$75.71	\$83.55	\$93.60	\$97.36	\$107.06
Net Income	\$15.5	\$55.9	(\$70.7)	\$92.7	(\$424.3)
Percent Change	-	260.65	(226.48)	(231.12)	(557.71)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$759.4	\$783.7	\$596.8	N/A	
Quarterly Profit	N/A	N/A	N/A	N/A	

N/A = Not Available

Source: Wang Laboratories, Inc.
 Annual Reports
 Dataquest
 January 1990

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	69.00	64.00	60.00	55.00	51.00
International	31.00	36.00	41.00	45.00	49.00
Europe	18.00	23.00	27.00	30.00	31.00
Asia/Pacific	9.00	9.00	9.00	11.00	14.00
ROW	4.00	4.00	5.00	4.00	4.00

Source: Wang Laboratories, Inc.
 Annual Reports
 Dataquest
 January 1990

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988	1989
Direct Sales	N/A	N/A
Indirect Sales	N/A	N/A

N/A = Not Available

Source: Dataquest
 January 1990

SALES OFFICE LOCATIONS

North America—more than 200
Europe—11
Japan—1
Asia/Pacific—8
ROW—5

MANUFACTURING LOCATIONS

North America

Juncos, Puerto Rico
Lowell, Massachusetts (2)
Methuen, Massachusetts
Tewksbury, Massachusetts

Europe

Limerick, Ireland

Asia/Pacific

Canberra, Australia
Yangmei, Taiwan

SUBSIDIARIES

North America

InteCom Inc. (United States)
Wang Credit Corporation (United States)
Wang Financial Information Services Corp. (United States)
Wang Informatics Legal and Professional Systems, Inc. (United States)
Wang Information Services Corp. (United States)

Europe

Wang International Financial Limited (Ireland)

SCA
0005703

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1989

IBM

Wang gained access to MCA technology through a cross-licensing agreement with IBM.

1988

Xerox

The two companies announced a cooperative marketing agreement under which Wang will recommend Xerox high-speed, high-volume printing systems to selected Wang customers.

Cygnets Systems

Cygnets Systems entered a two-year OEM agreement with Wang. Wang will use Cygnets's Series 1800 Expandable Jukeboxes with LMS drives as part of its WIIS.

KEY OFFICERS

An Wang

Chairman of the board, chief executive officer

Harry H.S. Chou

Vice chairman

Richard W. Miller

President, chief operating officer

Horace Tsiang

Executive vice president, chief development officer

Eugene M. Bullis

Senior vice president, chief financial officer, treasurer, corporate controller

Michael P. Downes

Senior vice president, Manufacturing

FOUNDERS

Dr. An Wang

Table 4
Comprehensive Financial Statement
Fiscal Year Ending June 30
(Millions of U.S. Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$1,049.3	\$1,204.2	\$1,250.3	\$1,177.6	\$1,321.7
Cash	31.1	38.0	22.3	27.3	257.9
Receivables	479.4	530.1	576.1	532.6	529.6
Temporary Cash Investments	17.2	119.7	157.3	127.6	0
Inventory	469.4	448.4	412.1	387.6	359.6
Other Current Assets	52.2	68.0	82.5	102.5	174.6
Net Property, Plants	\$715.1	\$737.7	\$778.1	\$782.7	\$665.2
Other Assets	\$611.5	\$707.4	\$784.0	\$877.7	\$738.8
Total Assets	\$2,375.9	\$2,649.3	\$2,812.4	\$2,838.0	\$2,725.7
Total Current Liabilities	\$455.0	\$537.9	\$653.4	\$709.2	\$967.5
Long-Term Debt	\$666.6	\$656.5	\$667.5	\$537.1	\$622.5
Other Liabilities	\$6.0	\$7.3	\$5.3	\$5.6	\$4.9
Total Liabilities	\$1,127.6	\$1,201.7	\$1,326.2	\$1,251.9	\$1,594.9
Total Shareholders' Equity	\$1,248.3	\$1,447.6	\$1,486.2	\$1,586.1	\$1,130.8
Common Stock	69.9	75.5	81.2	82.0	82.1
Other Equity	547.5	713.2	842.3	875.0	869.9
Retained Earnings	630.9	658.9	562.7	629.1	178.8
Total Liabilities and Shareholders' Equity	\$2,375.9	\$2,649.3	\$2,812.4	\$2,838.0	\$2,725.7
Income Statement	1985	1986	1987	1988	1989
Revenue	\$2,351.7	\$2,642.5	\$2,836.7	\$3,068.4	\$2,868.8
U.S. Revenue	1,616.0	1,689.3	1,698.1	1,698.1	1,462.3
Non-U.S. Revenue	735.7	953.2	1,138.6	1,370.3	1,406.5
Cost of Sales	\$1,398.4	\$1,461.5	\$1,607.4	\$1,511.7	\$1,562.2
R&D Expense	\$181.1	\$181.7	\$212.4	\$246.0	\$243.4
SG&A Expense	\$767.8	\$883.1	\$1,012.6	\$1,137.1	\$1,128.8
Capital Expense	\$402.0	\$234.0	\$235.2	\$273.6	\$230.0
Pretax Income	(\$54.5)	\$55.9	(\$51.7)	\$118.7	(\$262.7)
Pretax Margin (%)	(2.32)	2.12	(1.82)	3.87	(9.16)
Effective Tax Rate (%)	46.00	46.00	46.00	34.00	34.00
Net Income	\$15.5	\$55.9	(\$70.7)	\$92.7	(\$424.3)
Shares Outstanding, Millions	141.1	146.6	159.8	165.7	163.6
Per Share Data					
Earnings	\$0.11	\$0.35	(\$0.44)	\$0.56	(\$2.59)
Dividends	-	-	-	-	-
Book Value	\$8.85	\$9.87	\$9.30	\$9.57	\$6.91

Table 4 (Continued)
 Comprehensive Financial Statement
 Fiscal Year Ending June 30
 (Millions of U.S. Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	2.31	2.24	1.91	1.66	1.37
Quick (Times)	1.27	1.41	1.28	1.11	0.99
Fixed Assets/Equity (%)	57.29	50.96	52.35	49.35	58.83
Current Liabilities/Equity (%)	36.45	37.16	43.96	44.71	85.56
Total Liabilities/Equity (%)	90.33	83.01	89.23	78.93	141.04
<i>Profitability (%)</i>					
Return on Assets	-	2.22	(2.59)	3.28	(15.25)
Return on Equity	-	4.15	(4.82)	6.03	(31.23)
Profit Margin	0.66	2.12	(2.49)	3.02	(14.79)
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	7.70	6.88	7.49	8.02	8.48
Capital Spending % of Revenue	17.09	8.86	8.29	8.92	8.02
Employees	31,061	31,628	30,306	31,516	26,796
Revenue (\$K)/Employee	\$75.71	\$83.55	\$93.60	\$97.36	\$107.06
Capital Spending % of Assets	16.92	8.83	8.36	9.64	8.44

Source: Wang Laboratories, Inc.
 Annual Reports
 Dataquest
 January 1990

Western Digital Corporation

2445 McCabe Way
Irvine, California 92714
Telephone: (714) 863-0102
Fax: (714) 863-1656
Dun's Number: 05-198-3567

Date Founded: 1970

CORPORATE STRATEGIC DIRECTION

Western Digital Corporation was founded in 1970 as a manufacturer of specialized semiconductors. Today, Western Digital is a multinational company that designs, develops, manufactures, and markets semiconductors, subsystems, and intelligent disk drives to original equipment manufacturers (OEMs) and resellers that serve the microcomputer industry. Western Digital's Storage Products Group produces intelligent drives and controllers; its Microcomputer Products Group provides communications, imaging, systems logic, and integrated systems products.

Total revenue increased 29 percent to \$992.1 million* in fiscal year 1989, up from \$768.3 million in fiscal 1988. Revenue for each of Western Digital's four product areas contributed to this growth. Storage product sales increased 16 percent over the prior year, primarily from sales of its disk drive products. Sales of communications products increased 86 percent over the prior year, principally because of the demand for ethernet and board products. Systems logic revenue increased 14 percent, whereas the sales of imaging products increased 73 percent because of the demand for the Company's VGA video controller products. Net income for fiscal year 1989 dropped to \$34.3 million, representing a 21 percent decrease from fiscal 1988. Western Digital employed 6,394 people worldwide during fiscal year 1989.

Western Digital markets its products through its own sales force to a wide range of domestic and international OEMs, and through reseller channels. The Company's strategy is to form close technical relationships with its OEM customers. By doing so, Western Digital serves as a technology partner with its customers' engineering organizations or as an extension of their internal design teams. Western Digital sells a range of standardized personal

computer upgrade and enhancement products to resellers for sale to the personal computer end-user market. These products are sold directly to large dealers and franchised/chain computer stores, and indirectly to smaller dealers through major domestic, international, and regional resellers.

The Company maintains a continuous R&D program to develop new products and processes, enhance existing products, and implement and improve engineering and manufacturing standards and practices. R&D expenditure totaled \$86.4 million, \$67.7 million, and \$39.6 million, respectively, during fiscal years 1989, 1988, and 1987. This represented 8.7, 8.8, and 8.2 percent of total revenue, respectively. In fiscal 1989, Western Digital made R&D investments in intelligent drives and video controller products and for the conversion from 3.0 to 1.25 micron semiconductor technology.

The VLSI technology employed by Western Digital covers a broad range of processes: 3.0-micron, double level metal CMOS; 1.25-micron, double level metal CMOS; 1.25-micron, double level metal BiCMOS; and 0.9-micron CMOS for 33-MHz, higher-frequency devices. The Company packages its chips using 84- to 164-pin PLCC, PQFP, TAB, and EIAJ technology. When it comes to design methodology, Western Digital draws from its extensive history of proprietary full-custom designs; its library of analog designs used in storage, imaging, and communications devices; and standard cells to produce superchips that combine these three elements into one LSI package. Through a strategic relationship with AT&T, Western Digital is one of a handful of mass producers of 1.25-micron circuits and is moving toward submicron circuit production. Western Digital plans to open a new \$100 million wafer fabrication plant located in Irvine, California. The facility will design and manufacture both 1.25-micron and submicron chips.

*All dollar amounts are in US dollars.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region. Information on revenue by distribution channel is not available. Table 3, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Storage Products

The Company's Storage Products Group is a \$700 million supplier of the broadest range of storage management hardware—everything from VLSI chips and board-level subsystems that control hard, floppy, and optical disks and tape to hard disk drives to complete storage subsystems. In its storage products offering, Western Digital supports all interface standards for the microcomputer market (AT, XT, Micro Channel Architecture (MCA), SCSI, and Enhanced Small Device Interface (EDSI)).

As a result of its vertical integration, the Storage Products Group controls VLSI board and head-disk assembly design and manufacture as well as media manufacturing. Compatibility is ensured because of the Company's knowledge of storage control, firmware development, and system and bus architecture.

With its acquisition of the disk drive assets of Tandon Corporation in March 1988, Western Digital joined its controller expertise with Tandon's disk drive manufacturing foundation to provide intelligent 3.5-inch disk drives. An intelligent disk drive comprises a disk drive with a controller mounted and interfaced directly to the mechanical head-disk assembly of the drive. From September 1988 to September 1989, Western Digital shipped 1 million disk drives. The Company provides intelligent disk drives in 20MB to 320MB capacities in a variety of interfaces, XT, AT, and small computer systems interface (SCSI), which operates up to sub-18-millisecond access times.

Western Digital introduced the industry's first ST506 storage controller. According to Dataquest, Western Digital currently maintains a 60 to 70 percent market share of the AT- and XT-compatible disk controller markets. In the high-performance controller market segment, Western Digital maintains a 55 percent market share in (SCSI), host bus adapters, ESDI

controllers for AT, Extended Industry Standard Architecture (EISA), and MCA-compatible systems. Western Digital sells high-performance controllers to nearly every computer OEM in the PC industry. It also sells SCSI host adapter solutions (boards and LSI) to over 20 computer OEMs.

Microcomputer Products

The Company's Microcomputer Products Group is made up of its systems logic, imaging, and communications product areas, providing LSI device to board-level products. The emphasis within this group is to provide its customers with a centralized capability of platform design at the system level.

The systems logic product area is based on core logic devices that enable microprocessors used in IBM-, XT-, AT-, and MCA-compatible PCs to interface with the memory and peripherals of their respective systems. The foundation for this product area is based on Western Digital's acquisition of Faraday Electronics in 1987. At that time, Faraday was an industry leader in XT-compatible PC core logic. In March 1990, Western Digital introduced a breakthrough in core logic designs with its new 7500, 7600, and 7600 LP AT-compatible product families. These products are based on Western Digital's interarchitecture of chip design and that design's ability to provide optimized performance and reduce overall system cost.

The second product area of the Microcomputer Products Group is imaging. Western Digital is one of the world's leading suppliers of add-on graphics boards to the PC reseller market, as well as of graphics boards and video controller chips to personal computer OEMs. Its retail product line includes Paradise-brand EGA boards for IBM XT and AT PCs, and VGA boards for IBM-compatible AT and PS/2 machines. In fiscal 1989, the Company acquired Verticom, a leading manufacturer of high-performance graphics display controllers and subsystems that provide personal computers with workstation-quality graphics capabilities. As a result, Western Digital has achieved leadership in 8514/A chip sets and graphics adapters, being the first to demonstrate 8514/A standard by shipping chip sets to OEMs and by shipping 8514/A graphics adapters.

In 1971, the Microcomputer Products Group's communications product area introduced the world's first single-chip universal asynchronous receiver/transmitter. Its products range from various controller devices to board-level subsystems that support

communications standards and protocols used in local area networks (LANs). Western Digital is the only manufacturer currently supporting all of the standard LAN technologies: STARLAN, Token-Ring, Ethernet/Coaxial, Ethernet/Twisted Pair, and Ethernet 10BaseT.

Further Information

For more information about Western Digital's business segments, please contact Dataquest's Computer Storage Industry Service.

Table 1
Five-Year Corporate Highlights (Thousands of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$176,495.0	\$300,300.0	\$481,368.0	\$768,320.0	\$992,065.0
Percent Change	-	70.15	60.30	59.61	29.12
Capital Expenditure	\$21,024.0	\$17,101.0	\$40,774.0	\$74,364.0	NA
Percent of Revenue	11.91	5.69	8.47	9.68	0
R&D Expenditure	\$12,416.0	\$25,625.0	\$39,592.0	\$67,716.0	\$86,371.0
Percent of Revenue	7.03	8.53	8.22	8.81	8.71
Number of Employees	2,614	2,541	3,422	6,582	6,394
Revenue (\$K)/Employee	\$67.50	\$118.20	\$140.70	\$116.70	\$155.20
Net Income	(\$4,644.0)	\$23,157.0	\$45,822.0	\$43,429.0	\$34,324.0
Percent Change	-	598.64	97.88	(5.22)	(20.97)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$243.22	\$243.48	\$244.90	\$264.94	
Quarterly Profit	\$4.44	\$4.34	(\$2.69)	\$8.58	

NA = Not available

Source: Western Digital Corporation
Annual Reports and Forms 10-K
Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	81.29	68.38	63.73	48.26	52.03
International	18.71	31.62	36.27	51.74	47.97
Europe	11.71	22.78	24.94	31.53	29.30
Far East	7.00	8.84	11.33	20.21	18.67

Source: Western Digital Corporation
Annual Reports and Forms 10-K
Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—16
 Europe—3
 Asia/Pacific—3
 Japan—1

MANUFACTURING LOCATIONS

North America

Costa Mesa, California
 Integrated circuit manufacturing
 Irvine, California
 Board manufacturing
 Ponce, Puerto Rico
 Board manufacturing
 Santa Clara, California
 Magnetic disk processing

Europe

Cork, Ireland
 Board manufacturing

Asia/Pacific

Kuala Lumpur, Malaysia
 Integrated circuit assembly
 Seoul, South Korea
 Board manufacturing
 Singapore
 Intelligent drive manufacturing

SUBSIDIARIES

North America

Western Digital Canada Corporation (Canada)

Europe

Western Digital Deutschland GmbH (Germany)
 Western Digital (France) SARL (France)
 Western Digital (UK) Ltd. (United Kingdom)

Asia/Pacific

Western Digital Australia (Australia)
 Western Digital Hong Kong Ltd. (Hong Kong)

Western Digital Japan Ltd. (Japan)
 Western Digital Korea Ltd. (South Korea)
 Western Digital Taiwan Company Ltd. (Taiwan)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1989

Texas Instruments (TI)

Under a joint venture, the companies will develop a systems board to be featured in TI's new portable computer, the TravelMate LT286 Model 12.

ComputerLand

Western Digital has licensed ComputerLand to sell computer storage, graphics, and networking hardware in stores worldwide in an effort to increase retail recognition and sales.

1988

Economic Organization Disk Drive Memories

The organizations made an agreement calling for Economic Organization Disk Drive Memories to distribute Western Digital's computer parts in Bulgaria. In return, Western Digital will assemble hard disk drives at its Singapore plant for Economic Organization.

1987

AT&T

AT&T will provide all of Western Digital's external volume requirements for digital CMOS wafers. AT&T will license and transfer process technology to a new semiconductor plant that Western Digital will build for limited runs of prototype devices.

Tandon Corporation

The companies formed a joint venture company, Western Pte. Ltd., which will manufacture and market 3.5-inch intelligent Winchester disk drives for personal computers. An agreement was made in 1988 to purchase the assets of Tandon Corporation's Winchester disk drive operations.

Phoenix Technologies

The companies made two agreements—one that calls for the joint development of several read-only memory basic input/output systems (ROM BIOSs) compatible with IBM's PS/2 system Models 25, 30, 50, 60, and 80; another allows Western Digital to license BIOSs compatible with IBM's XT, AT, and PC AT-386 machines.

MERGERS AND ACQUISITIONS

1988

Verticom Incorporated

Western Digital acquired all the common stock of Verticom, a leading manufacturer of high-performance graphics display controllers and subsystems.

Tandon Corporation

Western Digital acquired the net assets of the Winchester disk drive operations of Tandon Corporation.

1987

Faraday Electronics

Western Digital acquired Faraday Electronics as a strategic step in its attempt to be the leading supplier of hardware to the PC-compatible market.

KEY OFFICERS

Roger W. Johnson

Chairman of the board, president and chief executive officer

Kathryn A. Braun

Senior vice president and general manager, Storage Products Group

Dave Schafer

Vice president, Worldwide Sales

John R. MacKay

Senior vice president, Semiconductor Operations and Manufacturing Technologies

Robert N. Stephens

Senior vice president and general manager, Microcomputer Products Group

PRINCIPAL INVESTORS

First Interstate Bank Ltd.—8.3 percent

FOUNDERS

Information is not available.

Table 3
Comprehensive Financial Statement
Fiscal Year Ending June
(Thousands of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$114,004.0	\$157,441.0	\$222,482.0	\$382,048.0	\$383,915.0
Cash	2,399.0	44,336.0	64,326.0	28,531.0	40,474.0
Receivables	52,780.0	61,797.0	80,137.0	195,866.0	137,095.0
Marketable Securities	NA	NA	NA	NA	NA
Inventory	55,996.0	48,787.0	76,370.0	152,292.0	197,050.0
Other Current Assets	2,829.0	2,521.0	1,649.0	5,359.0	9,296.0
Net Property, Plants	\$48,298.0	\$51,343.0	\$75,559.0	\$121,329.0	\$155,577.0
Other Assets	\$6,683.0	\$6,911.0	\$16,135.0	\$47,329.0	\$49,431.0
Total Assets	\$168,985.0	\$215,695.0	\$314,176.0	\$550,706.0	\$588,923.0
Total Current Liabilities	\$80,695.0	\$47,961.0	\$78,261.0	\$178,245.0	\$122,122.0
Long-Term Debt	\$6,133.0	\$52,857.0	\$7,705.0	NA	\$56,466.0
Other Liabilities	\$13,178.0	\$15,061.0	\$21,446.0	\$117,487.0	\$108,267.0
Total Liabilities	\$100,006.0	\$115,879.0	\$107,412.0	\$295,732.0	\$286,855.0
Total Shareholders' Equity	\$68,979.0	\$99,816.0	\$206,764.0	\$254,974.0	\$302,068.0
Common Stock	1,908.0	2,194.0	2,717.0	2,753.0	2,910.0
Other Equity	69,600.0	79,306.0	140,754.0	145,499.0	164,046.0
Retained Earnings	(2,529.0)	18,316.0	63,293.0	106,722.0	135,112.0
Total Liabilities and Shareholders' Equity	\$168,985.0	\$215,695.0	\$314,176.0	\$550,706.0	\$588,923.0
Income Statement	1985	1986	1987	1988	1989
Revenue	\$176,495.0	\$300,300.0	\$481,368.0	\$768,320.0	\$992,065.0
US Revenue	143,469.0	205,338.0	306,779.0	370,807.0	516,138.0
Non-US Revenue	33,026.0	94,962.0	174,589.0	397,513.0	475,927.0
Cost of Sales	\$176,495.0	\$189,588.0	\$177,288.0	\$541,055.0	\$711,727.0
R&D Expense	\$12,416.0	\$25,625.0	\$39,592.0	\$67,716.0	\$86,371.0
SG&A Expense	\$33,157.0	\$50,696.0	\$81,651.0	\$102,553.0	\$135,273.0
Capital Expense	\$21,024.0	\$17,101.0	\$40,774.0	\$74,364.0	NA
Pretax Income	(\$4,144.0)	\$29,640.0	\$55,168.0	\$55,076.0	\$45,451.0
Pretax Margin (%)	(2.35)	9.87	11.46	7.17	4.58
Effective Tax Rate (%)	46.00	46.00	46.00	34.00	34.00
Net Income	(\$4,644.0)	\$23,157.0	\$45,822.0	\$43,429.0	\$34,324.0
Shares Outstanding, Thousands	19,076.6	21,937.7	27,173.6	27,531.6	29,103.1
Per Share Data					
Earnings	(\$0.26)	\$1.03	\$1.79	\$1.53	\$1.18
Dividend	NA	NA	NA	NA	NA
Book Value	\$3.62	\$4.55	\$7.61	\$9.26	\$10.38

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending June
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	1.41	3.28	2.84	2.14	3.14
Quick (Times)	0.72	2.27	1.87	1.29	1.53
Fixed Assets/Equity (%)	70.02	51.44	36.54	47.58	51.50
Current Liabilities/Equity (%)	116.98	48.05	37.85	69.91	40.43
Total Liabilities/Equity (%)	144.98	116.09	51.95	115.99	94.96
<i>Profitability (%)</i>					
Return on Assets	-	12.04	17.30	10.04	6.02
Return on Equity	-	27.44	29.89	18.81	12.32
Profit Margin	(2.63)	7.71	9.52	5.65	3.46
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	7.03	8.53	8.22	8.81	8.71
Capital Spending % of Revenue	11.91	5.69	8.47	9.68	0
Employees	2,614	2,541	3,422	6,582	6,394
Revenue (\$K)/Employee	\$67.50	\$118.20	\$140.70	\$116.70	\$155.20
Capital Spending % of Assets	12.44	7.93	12.98	13.50	0

NA = Not available

Source: Western Digital Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

Western Digital Corporation

Table 1

**Estimated Worldwide Semiconductor Revenue by Calendar Year
(Millions of Dollars)**

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Total Semiconductor	47	68	56	53	70	100
Total Integrated Circuit	47	68	56	53	70	100
Bipolar Digital (Function)						
Bipolar Digital Memory						
Bipolar Digital Logic						
MOS (Function)	47	68	56	53	70	100
MOS Memory						
MOS Microdevices	8	12	11	50	70	100
MOS Logic	39	56	45	3		
Analog						
Total Discrete						
Total Optoelectronic						

Table 2

**Western Digital Corporation
1988 Worldwide Ranking by Semiconductor Markets
(Revenue in Millions of Dollars)**

	<u>1988</u>	<u>1987</u>	<u>1988</u>	<u>Sales</u>	<u>Industry</u>
	<u>Rank</u>	<u>Rank</u>	<u>Revenue</u>	<u>% Change</u>	<u>% Change</u>
				<u>1987-1988</u>	<u>1987-1988</u>
Total Semiconductor	59	62	\$100	42.9%	33.0%
Total Integrated Circuit	51	53	\$100	42.9%	37.4%
MOS (Function)	40	41	\$100	42.9%	54.5%
MOS Microdevices	16	17	100	42.9%	39.9%

Source: Dataquest
December 1989

Western Digital Corporation

Table 3

Western Digital Corporation
Estimated 1988 Semiconductor Revenue by Geographic Region
(Millions of Dollars)

	<u>U.S.</u>	<u>Japan</u>	<u>Europe</u>	<u>ROW</u>
Total Semiconductor	\$50	\$8	\$17	\$25
Total Integrated Circuit	\$50	\$8	\$17	\$25
Bipolar Digital (Function)				
Bipolar Digital Memory				
Bipolar Digital Logic				
MOS (Function)	\$50	\$8	\$17	\$25
MOS Memory				
MOS Microdevices	50	8	17	25
MOS Logic				
Analog				
Total Discrete				
Total Optoelectronic				

Source: Dataquest
December 1989

Western Digital Corporation

THE COMPANY

Background

Western Digital Corporation designs, manufactures, and markets proprietary MOS/LSI semiconductor components and digital systems for telecommunications, computer, and computer peripheral applications. Founded as a specialized semiconductor manufacturer, it was incorporated in California on April 23, 1970, under the name General Digital Corporation, and changed its name to Western Digital Corporation in July 1971. The Company incurred significant financial losses during 1975, leading to a complete reorganization in 1977. Following that reorganization, the Company's revenues have increased at an average annual rate of 55 percent.

Operations

Western Digital's corporate office, research and development facilities, and principal production plant are located in Irvine, California. An assembly facility is located in Kuala Lumpur, Malaysia. The Company has three major divisions:

- Telecommunications Division
- Computer Products Division
- Advanced Systems Division

Marketing

Western Digital sells its products through independent representatives in the United States, Australia, Canada, Europe, Hong Kong, Israel, and Japan; and through distributors in the United States, Australia, Europe, Hong Kong, and Japan.

Sales and marketing headquarters are as follows:

Western Digital Corporation
24455 McCabe Way
Irvine, California 92714

Telephone: (714) 557-3550
TWX: 910 5951139

Western Digital Corporation

Research and Development

Western Digital maintains an active research and development (R&D) program to assist in the improvement of existing products, to develop new products and processes, and to improve engineering standards and practices. The Company is involved in a number of investor-sponsored R&D programs, including the development of computer and telecommunications devices. In fiscal 1981, the Company invested \$2.165 million on R&D. This represents 8 percent of the Company's total revenues.

Employees

In September 1981, Western Digital had 942 full-time employees, of whom 130 were engaged in engineering, 172 in marketing and administration, and 640 in manufacturing.

SEMICONDUCTOR PRODUCTS

Western Digital's semiconductor products are based upon large-scale MOS integrated circuit technology. The Company emphasizes design intensive proprietary products rather than commodity devices. The Telecommunications Division's semiconductor products include data communications devices, data encryption products, and network devices, including a packet switching controller. The Computer Product Division offers Winchester and floppy disk controllers, and a number of computer peripheral devices, including custom and semi-custom products.

OTHER ACTIVITIES

Western Digital's Advanced Systems Division offers a line of microcomputer system products, including its Pascal MicroEngine; which is designed to maximize performance of Pascal high level language software programs. The MicroEngine microprocessor is also sold as a chip set.

Western Digital Corporation

Western Digital Corporation
 2445 McCabe Way
 Irvine, California 92714
 Telephone: (714) 557-3550
 (Million of Dollars Except Per Share Data)

Balance Sheet (June 30, 1981)

	<u>1979</u>	<u>1980</u>	<u>1981</u>
Working Capital	\$4.8	\$6.2	\$26.1
Long-Term Debt	\$5.2	\$4.7	\$ 1.4
Shareholders' Equity	\$1.6	\$3.5	\$35.1
After-Tax Return on Average Equity (%)	0.1	26.2	(2.4)

Operating Performance (Fiscal Year Ending June 30, 1981)

	<u>1979</u>	<u>1980</u>	<u>1981</u>
Revenue	\$10.3	\$20.6	\$27.0
Cost of Revenue	\$ 6.1	\$11.5	\$17.5
R&D Expense*	\$ 1.0	\$ 1.4	\$ 2.2
SG&A Expense	\$ 3.0	\$ 5.7	\$ 9.1
Pretax Income (Loss)	\$ 0.003	\$ 1.6	\$(0.5)
Pretax Margin (%)	0.03	8.0	(1.7)
Effective Tax Rate (%)	66.7	58.9	N/A
Net Income (Loss)	\$ 0.001	\$ 0.7	\$(0.5)
Average Shares Outstanding (Millions)	13.0	12.9	12.7
Per Share			
Earnings	\$ 0	\$ 0.05	\$(0.04)
Dividends	\$ 0	\$ 0	\$ 0
Book Value	\$ 0.15	\$ 0.28	\$ 2.77
Price Range	\$ 1 3/8- 3 3/4	\$ 2 1/8- 5 3/4	\$ 4- 14 5/8
Total Employees	645	760	942

*Including third party expenditures.
 N/A = Not applicable

Source: DATAQUEST, Inc.
 June 1982

Western Digital Corporation

(Page intentionally left blank)

Western Digital Corporation

Table 1

**Estimated Worldwide Semiconductor Revenue by Calendar Year
(Millions of Dollars)**

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Total Semiconductor	47	68	56	53	70	100
Total Integrated Circuit	47	68	56	53	70	100
Bipolar Digital (Function)						
Bipolar Digital Memory						
Bipolar Digital Logic						
MOS (Function)	47	68	56	53	70	100
MOS Memory						
MOS Microdevices	8	12	11	50	70	100
MOS Logic	39	56	45	3		
Analog						
Total Discrete						
Total Optoelectronic						

Table 2

**Western Digital Corporation
1988 Worldwide Ranking by Semiconductor Markets
(Revenue in Millions of Dollars)**

	<u>1988</u>	<u>1987</u>	<u>1988</u>	<u>Sales</u>	<u>Industry</u>
	<u>Rank</u>	<u>Rank</u>	<u>Revenue</u>	<u>% Change</u>	<u>% Change</u>
				<u>1987-1988</u>	<u>1987-1988</u>
Total Semiconductor	59	62	\$100	42.9%	33.0%
Total Integrated Circuit	51	53	\$100	42.9%	37.4%
MOS (Function)	40	41	\$100	42.9%	54.5%
MOS Microdevices	16	17	100	42.9%	39.9%

Source: Dataquest
December 1989

Western Digital Corporation

Table 3

Western Digital Corporation
Estimated 1988 Semiconductor Revenue by Geographic Region
(Millions of Dollars)

	<u>U.S.</u>	<u>Japan</u>	<u>Europe</u>	<u>ROW</u>
Total Semiconductor	\$50	\$8	\$17	\$25
Total Integrated Circuit	\$50	\$8	\$17	\$25
Bipolar Digital (Function)				
Bipolar Digital Memory				
Bipolar Digital Logic				
MOS (Function)	\$50	\$8	\$17	\$25
MOS Memory				
MOS Microdevices	50	8	17	25
MOS Logic				
Analog				
Total Discrete				
Total Optoelectronic				

Source: Dataquest
December 1989

Westinghouse Electric Corporation

Westinghouse Building, Gateway Center
Pittsburgh, Pennsylvania 15222

Telephone: (412) 244-2000

Fax: (412) 642-3404

Dun's Number: 00-134-3955

Date Founded: 1886

CORPORATE STRATEGIC DIRECTION

Western Electric Corporation is a diversified, global, technology-based corporation providing electrical and electronic products and services for industrial, construction, and electric utility applications, including nuclear and fossil-fueled equipment for power generation. Westinghouse is a leading supplier of electronic systems to the US government. The Company has major operations in radio and television broadcasting, financial services, transport refrigeration, franchised beverage bottling and distribution, materials for electronic and electrical applications, land and community development, and waste-to-energy and environmental services. The Company also operates several government-owned facilities under contracts with the Department of Energy and other federal government departments.

In 1988, Westinghouse realigned its operating units into groups concentrated in six major market areas: defense and commercial electronics, financial services, energy and utility systems, industrial, commercial, and broadcasting. As a result, the Company operates its business through the following groups: Electronic Systems, Financial Services, Energy and Utility Systems, Industries, International, Commercial, and Westinghouse Broadcasting. For planning purposes, Westinghouse applies a business unit concept, with each business unit consisting of one or more divisions or subsidiaries that meet certain internal criteria for profit center decentralization. Currently, the organization consists of 26 business units: 21 within the major operating groups, Westinghouse Canada Inc., and 4 Westinghouse international regions that were designated business units for management reporting purposes. The Company's largest single customer is the US government and its agencies.

Total revenue increased 3 percent to \$12.8 billion* in fiscal 1989 from \$12.5 billion in fiscal 1988. Net income increased 12 percent to \$922 million in fiscal 1989 from \$823 million in fiscal 1988. Westinghouse employs 122,000 people worldwide.

R&D expenditure totaled \$769 million in fiscal 1989, representing 6 percent of revenue. Capital spending totaled \$424 million in fiscal 1989, representing 3 percent of revenue.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region. Information on revenue by distribution channel is not available. Table 3, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Electronic Systems

The Electronic Systems Group, which operates one business unit, provides research, development, production, and support for advanced electronic systems for the Department of Defense, the Federal Aviation Administration, the National Aeronautics and Space Administration, and certain other government agencies. In addition to commercial customers and domestic government agencies, customers of the Electronic Systems Group include prime contractors that service government agencies and federally approved foreign governments. Products include surveillance and fire control radars, command and

*All dollar amounts are in US dollars.

control systems, electronic countermeasures equipment, electro-optical and spaceborne sensors, missile launching and handling equipment, torpedoes, sonar, and communications. Dataquest estimates Westinghouse to be in the top ten of the military/aerospace electronic systems market.

In 1988, the Corporation acquired the naval torpedo business of Gould Inc., which includes the design, development, and production of MK-48 torpedoes for the US Navy.

Energy and Utility Systems

The Energy and Utility Systems Group combines all business activities involving electrical power generation and transmission and distribution products and services.

Industries

The Industries Group includes five operating business units: Materials, Thermo King Corporation, Distribution and Control, Industries and Environmental Services, and Automation and Analyzer Systems.

International

The International organization coordinates the activities of the Company's domestic business units in key world markets. In a recent organization alignment, International presently consists of four principal regions: Canada, Latin America, Europe/Africa/Middle East, and Asia/Pacific.

Commercial

The Commercial Group includes Westinghouse Beverage Group Inc., Westinghouse Communities Inc., Westinghouse Furniture Systems, and Longines-Wittnauer Watch Company.

Westinghouse Broadcasting

Westinghouse Broadcasting Company (Group W), operating as a wholly owned subsidiary of Westinghouse, provides a variety of communications services primarily for commercial broadcasting and program production and distribution.

Financial Services

The Financial Services Group consists of the financing operations of Westinghouse Financial Services Inc. (WFSI), a wholly owned subsidiary of the Company, which offers a wide array of financial services, primarily through its principal operating subsidiary, Westinghouse Credit Corporation. Services provided by WFSI include the leasing and financing of capital equipment and of commercial and residential real estate projects.

Further Information

For more information about the Company's business segments, please contact the appropriate industry service. Dataquest tracks Westinghouse through the MilAero Technology Service.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$10,700.2	\$11,370.1	\$11,332.0	\$12,499.5	\$12,844.0
Percent Change	-	6.26	(0.34)	10.30	2.76
Capital Expenditure	\$568.0	\$441.8	\$419.9	\$421.8	\$424.0
Percent of Revenue	5.31	3.89	3.71	3.37	3.30
R&D Expenditure	\$982.0	\$917.8	\$808.3	\$706.0	\$769.0
Percent of Revenue	9.18	8.07	7.13	5.65	5.99
Number of Employees	124,935	117,267	112,478	119,640	122,000
Revenue (\$K)/Employee	\$85.65	\$96.96	\$100.75	\$104.48	\$105.28
Net Income	\$598.0	\$172.9	\$900.5	\$822.8	\$922.0
Percent Change	-	(71.09)	420.82	(8.63)	12.06
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$2,887.20	\$3,177.70	\$3,127.80	\$3,651.00	
Quarterly Profit	\$189.00	\$228.30	\$241.40	\$270.00	

Source: Westinghouse Electric Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	91.55	91.80	90.23	89.43	88.02
International	8.45	8.20	9.77	10.57	11.98

Source: Westinghouse Electric Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

1989 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

North America

Aerospace Division, Defense and Electronics Center, Baltimore, Maryland

Avionics Division production and development activities include the APQ-66, -68, and -78 fire control radars for the F-16 and upgraded F-4; the APQ-164 offensive radar system for the B-1 bomber; the Ultra Reliable Radar (URR) program; the Small Aerostat Surveillance System (SASS); and avionics upgrade programs.

Electronic Warfare Division production and development activities include the ALQ-131 electronic countermeasure pod for the F-16, F-14, F-111, and other aircraft; development and production of the ALQ-165 Airborne Self-Protection Jammer (ASPJ) with ITT; ALQ-153 Tail Warning System for the B-52; risk reduction studies and hardware for the Integrated Electronic Warfare System (INEWS) with TRW.

Command and Control Divisions, Defense and Electronic Center, Baltimore, Maryland

Surveillance Radar Division production and development activities include FPS-700 configuration of the TPS-70, the TPS-70 and TPS-75 tactical 3-D radars, the TPS-63/65 tactical 2-D radar, the vigilant family of tactical medium-range radars, the W-160 and SPS-65(V) shipboard surveillance and fire control radars, the SPS-40 radar solid-state transmitter, Advanced Missile Surveillance Radar (AMSR) and Multi-role Survivable Radar (MRSR) for the army, W-160 multifunctional naval fire control radar, and SPS-58/65 for naval point defense.

Systems and Airborne Surveillance Division production and development activities include airborne surveillance radars for US and foreign E-3 Sentry (AWACS) aircraft, air traffic control systems for international customers, AP4-2 (AWACS) radar, and tactical and fixed air defense systems.

Communication Division production and development activities include TACAMO strategic

communication programs; the Tethered Aerostat Antenna program; HF transmitters and multicouplers for shipboard communications; development of VHF and UHF systems by Xetron Company, a subsidiary; the mobile (Aerostat-Augmented) VLF/LF communications system; satellite services; and Voice Communication Systems (VOCOM).

Electrical Systems Division, Lima, Ohio

This division designs and produces electrical generating equipment for commercial and military aircraft, including the variable speed constant frequency (VSCF) main electrical system for the AV-8B aircraft, the F-5G, and the auxiliary (VSCF) power system for the F-16. It also provides the primary electrical system for the F-16, B-1B, and M-1 battle tanks; specialty AC and DC motor systems for military applications; microprocessor-based surveillance systems for nuclear power plants; solid-state power controllers; and power conditioning equipment for the Space Shuttle and Space Station.

Marine Division, Sunnyvale, California

This division produces the capsule launcher subsystem for vertical launch of the Tomahawk Cruise Missile, the canister launching system for the Peacekeeper missile, and Trident missile launchers. It designs, manufactures, and supports US Navy ship propulsion turbines and reduction gears and ships service turbine generator sets. Electromagnetic launcher (EML) technology development is being performed to support the Strategic Defense Initiative (SDI) and tactical weapons development.

The Oceanic Division, Annapolis, Maryland

Production and development activities of this division include undersea technology for the navy. Advanced acoustic, underwater vehicle, and information processing capability is being applied to meet defense needs for torpedoes, ASW systems, mine hunting, deep ocean search, and magnetic silencing. These projects include the AQS-14 mine-hunting sonar system; an acoustic transducer array for the MK48 advanced capability (ADCAP) torpedo; the SQQ-89 Ship ASW Combat System; development of the MK50 lightweight torpedo program with Honeywell; and submarine wide-aperture, hull-mounted sonar arrays.

Development and Operation Division, Defense and Electronics Center, Baltimore, Maryland

Space Division production and development activities include key synthetic aperture radar

elements for SEASAT and SIR-A shuttle imaging radar; and Earth observation centers, which include infrared and visible primary data acquisition systems and data processors for the Defense Meteorological Satellite Program. The Space Division is the central headquarters for the Westinghouse SDI team.

Development and Engineering Division production and development activities include multisensor systems, advanced radar, electronic warfare, computer and signal processing, electro-optical systems and communications development; the Aquila remotely piloted vehicle payload; the Harpoon computer; Multi-role Survivable Radar; the Integrated Electronic Warfare System; and next-generation radar for the Advanced Tactical Radar.

Advanced Technology Division production and development activities include semiconductor and microwave devices and subsystems, very high-speed integrated circuits (VHSICs), gallium arsenide activities, acoustic optics charge-coupled devices, and visual and infrared sensors.

Design and Producibility Engineering Division activities encompass the design aspects of Digital Equipment Corporation (DEC) production hardware, including performance, quality, reliability, maintainability, standardization, design-to-cost, and value engineering for both hardware and software.

Manufacturing Operations Division responsibilities are the production of Digital Equipment Corporation systems including radar, electro-optical, communications, electronic warfare, battlefield electronics, signal processing systems and computers, and missile guidance and warning systems.

Missile Systems Department responsibilities are advanced technological insertion and development of new missile systems with primary technological emphasis on multispectral seeker development and integration with fire control systems.

Integrated Logistics Support Divisions, Hunt Valley, Maryland

The Aerospace Logistics Support Division provides logistic support and services for aerospace avionics products such as the F-16 and B-1B radars, the ALQ-131 and ASPJ electronic countermeasures systems, and electro-optical systems.

The Command and Control Logistics Support Division provides worldwide logistics support and services for Westinghouse surveillance radars (TPS-43, TPS-63, TPS-70, Vigilant), air traffic control radars (ARSR-3, ASR-9), communications systems (TACAMO, LF/VLF Strategic and Civil Defense System, Wideband HF, VOCOM), airborne surveillance and control systems (E3-A AWACS), ship systems, air defense systems, and communications systems.

The Defense and Electronics Systems Company, Defense and Electronics Center, Baltimore, Maryland

This center provides the total management for the integration and delivery of complex technology systems. It supports a number of aerostat programs including the US Customs CARIBALL and SOWRBALL programs and the Saudi Arabian Low Altitude Surveillance System (LASS). It also provides ongoing support for both the US Naval Airship and NATO Frigate Programs.

Westinghouse Airship Industries, Baltimore, Maryland

This company, a joint venture with Airship Industries Ltd., is building a prototype of a new military blimp for the navy.

Plant Apparatus Division, Wilkins Township, Pennsylvania

Production of naval nuclear reactor plant components is the responsibility of this division.

SUBSIDIARIES

North America

Challenger Electrical Equipment Corp. (United States)

Fortin Industries Inc. (United States)

Gladwin Corp. (United States)

Hittman Nuclear and Development Corp. (United States)

Longines-Wittnauer (United States)

S & ME Inc. (United States)

TSC Inc. (United States)

Thermo King Corp. (United States)

Tinicum Inc. (United States)

Westinghouse Beverage Group Inc. (United States)

Westinghouse Broadcasting Co. Inc. (United States)

Westinghouse Canada Inc. (Canada)

Westinghouse Communities Inc. (United States)

Westinghouse Credit Corp. (United States)
Westinghouse de Puerto Rico Inc. (Puerto Rico)
Westinghouse Financial Services Inc. (United States)
Westinghouse Furniture Systems (United States)
Westinghouse International Technology Corp. (United States)
Westinghouse Overseas Service Corp. (United States)
Westinghouse Savannah River Co. Inc. (United States)
Xetron Corp. (United States)

Europe

Westinghouse Electric S.A. (Switzerland)
Westinghouse Fanal Schaltgerate GmbH (Germany)

Asia/Pacific

Tyree Industries Ltd. (Australia)

ROW

Westinghouse Foreign Sales Corp. (Barbados)
Westinghouse Foreign Sales Corp. (Virgin Islands)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Mitsubishi Heavy Industries

Westinghouse and Mitsubishi Heavy Industries entered into a joint development agreement under which the two companies will jointly develop large-capacity nuclear power reactors.

1989

ASEA Brown Boveri (ABB)

Westinghouse and ASEA Brown Boveri (ABB) formed a joint venture to supply nuclear services to Europe's electrical power industry. The joint venture will bring together Westinghouse's knowledge of pressurized water reactors and ABB's expertise in boiling water reactors.

Mitsubishi Heavy Industries

Westinghouse and Mitsubishi Heavy Industries entered into a cooperative technology development, sourcing, and business agreement to enhance the steam turbine technology bases of each corporation. The agreement provides for exchanging existing steam turbine technology and cooperatively developing new steam turbine technology for the worldwide power generation market.

Tandem Computer

Westinghouse and Tandem Computer entered into a joint venture to design and market systems integration products and services. The two companies will also offer applications re-engineering and software development support services to the aerospace, electronics, and manufacturing industries. In addition, they will design and market computer systems.

Dravo Automation Sciences Inc. (DAS)

Westinghouse and DAS entered into a licensing agreement under which DAS will have exclusive worldwide license to manufacture and sell all products, technology, and services previously provided by Westinghouse's Voice System Division. DAS is a major systems integrator in the discrete manufacturing and process industries.

MERGERS AND ACQUISITIONS

1989

Blindex Brown Boveri Electronica S.A.

Westinghouse acquired Blindex Brown Boveri Electronica, a Brazilian manufacturer of pilot and logic devices used in motor control centers.

Legacy and Metropolitan Broadcasting Companies

Westinghouse acquired the Legacy and Metropolitan Broadcasting Companies for \$369 million.

1987

Challenger Electronic Equipment

Westinghouse acquired Challenger Electronic Equipment Corporation for \$250 million.

1987

WEGS

Westinghouse acquired WEGS for \$60 million.

KEY OFFICERS

John C. Marous

Chairman and chief executive officer

Paul E. Lego

President and chief operating officer

Thomas P. Costello

President, Thermo King Corporation

H. Joe Frazier
President, Westinghouse Communities, Inc.

James S. Moore
President, Westinghouse Savannah River Company

Edward B. Priestner
President, Westinghouse Canada Inc.

William T. Taylor
President, Westinghouse Electric Supply Company

PRINCIPAL INVESTORS

Citibank

FOUNDERS

Information is not available.

Table 3
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987¹	1988²	1989
Total Current Assets	\$4,620.9	\$4,635.3	\$11,529.7	\$13,158.0	\$15,575.0
Cash	150.2	163.1	615.4	295.0	466.0
Receivables	2,032.3	1,905.2	7,175.0	8,582.0	9,825.0
Marketable Securities	551.9	434.4	1,586.7	1,409.0	1,815.0
Inventory	1,109.5	1,161.6	1,237.5	1,300.0	1,354.0
Other Current Assets	777.0	971.0	915.1	1,572.0	2,115.0
Net Property, Plants	\$3,300.2	\$2,188.7	\$2,337.0	\$2,495.0	\$2,381.0
Other Assets	\$1,790.2	\$1,657.8	\$1,328.9	\$1,284.0	\$2,358.0
Total Assets	\$9,711.3	\$8,481.8	\$15,195.6	\$16,937.0	\$20,314.0
Total Current Liabilities	\$5,253.2	\$4,196.4	\$4,898.4	\$8,541.0	\$9,791.0
Long-Term Debt	\$525.3	\$518.2	\$823.3	\$4,042.0	\$4,365.0
Other Liabilities	\$664.9	\$734.0	\$6,231.0	\$538.0	\$1,603.0
Total Liabilities	\$6,443.4	\$5,448.6	\$11,952.7	\$13,121.0	\$15,759.0
Total Shareholders' Equity	\$3,267.8	\$3,033.2	\$3,242.9	\$3,816.0 ²	\$4,555.0 ²
Common Stock	180.6	183.1	183.4	183.0	184.0
Other Equity	705.9	769.2	762.2	(1,025.0)	795.0
Retained Earnings	2,381.3	2,080.9	2,297.3	4,637.0	3,405.0
Total Liabilities and Shareholders' Equity	\$9,711.2	\$8,481.8	\$15,195.6	\$16,937.0	\$20,314.0
Income Statement	1985	1986	1987	1988	1989
Revenue	\$10,700.2	\$11,370.1	\$11,332.0	\$12,499.5	\$12,844.0
US Revenue	9,795.9	10,438.3	10,224.7	11,178.8	11,305.0
Non-US Revenue	904.3	931.8	1,107.3	1,320.7	1,539.0
Cost of Sales	\$7,737.9	\$8,261.3	\$8,249.0	\$9,101.8	\$9,289.0
R&D Expense	\$982.0	\$917.8	\$808.3	\$706.0	\$769.0
SG&A Expense	\$1,771.2	\$1,795.1	\$1,683.8	\$1,829.5	\$1,810.0
Capital Expense	\$568.0	\$441.8	\$419.9	\$421.8	\$424.0
Pretax Income	\$795.9	\$792.3	\$1,047.5	\$1,065.5	\$1,275.0
Pretax Margin (%)	7.44	6.97	9.24	8.52	9.93
Effective Tax Rate (%)	23.70	78.00	14.10	22.80	26.70
Net Income	\$598.0	\$172.9	\$900.5	\$822.8	\$922.0
Shares Outstanding, Millions	153.8	142.5	143.5	144.0	145.0
Per Share Data					
Earnings	\$3.48	\$1.15	\$6.23	\$5.66	\$6.31
Dividend	\$1.15	\$1.35	\$1.64	\$1.93	\$2.30
Book Value	\$21.25	\$21.29	\$22.60	\$26.50	\$31.41

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December
(Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	0.88	1.10	2.35	1.54	1.59
Quick (Times)	0.67	0.83	2.10	1.39	1.45
Fixed Assets/Equity (%)	100.99	72.16	72.07	65.38	52.27
Current Liabilities/Equity (%)	160.76	138.35	151.05	223.82	214.95
Total Liabilities/Equity (%)	197.18	179.63	368.58	343.84	345.97
<i>Profitability (%)</i>					
Return on Assets	-	1.90	7.61	5.12	4.95
Return on Equity	-	5.49	28.70	23.31	22.03
Profit Margin	5.59	1.52	7.95	6.58	7.18
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	9.18	8.07	7.13	5.65	5.99
Capital Spending % of Revenue	5.31	3.89	3.71	3.37	3.30
Employees	124,935	117,267	112,478	119,640	122,000
Revenue (\$K)/Employee	\$85.65	\$96.96	\$100.75	\$104.48	\$105.28
Capital Spending % of Assets	5.85	5.21	2.76	2.49	2.09

¹ Numbers have been restated.

² Numbers include minority interest.

Source: Westinghouse Electric Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

Winbond Electronics Corporation

No. 2, R&D Road, VI
Science-Based Industrial Park
Hsinchu, 30077
Taiwan, ROC

Telephone: (886) 35-770066

Fax: (886) 35-774527

Dun's Number: Not Available

Date Founded: 1987

CORPORATE STRATEGIC DIRECTION

Winbond Electronics Corporation, established in September 1987 by Dr. Ding-Yuan Yang and Dr. Dean Chen, began operation of its NT\$1.4 billion (US\$50-million) wafer fab in September 1988 to produce 256K and 1Mb SRAMs and ASICs. In March 1988, ERSO transferred its CMOS VLSI technology to Winbond, giving it the capability of handling 1.2- to 5.0-micron CMOS and NMOS processes.

Winbond began operating its first wafer fabrication plant in October 1988, 11 months after breaking ground. The fab currently can produce up to 20,000 5-inch wafers a month. In addition, Winbond performs all assembly and testing for packaged devices. All of Winbond's packaging work is subcontracted to local or international assembly companies. The Company plans to begin operating its second wafer fab in either the first or second quarter of 1992. One of the plant's first products will be CMOS high-speed SRAMs.

Winbond's capitalization was approximately NT\$1.3 billion (US\$40 million) when it was founded and had increased to NT\$1.6 billion (US\$60 million) by the end of 1989. The Company has successfully raised cash capital of another NT\$3.7 billion (US\$140 million) to pay for its new wafer fab facility in Taiwan.

Winbond's strategy for the 1990s will be to invest heavily in R&D in order to differentiate its product offerings. Winbond also will seek key international alliances and expand its global presence. It will also

focus on submicron development to ensure future global competitiveness.

Winbond's strategic direction is to become a major supplier of personal computer VLSIs. The Company's rapid success has been attributed largely to its ability to serve the PC and computer markets in Taiwan. Its major business objective is to penetrate the needs of downstream electronic equipment manufacturers in Taiwan.

Total revenue for fiscal year ended December 1989 reached NT\$871 million (US\$33 million). Expenditure on R&D totaled 13 percent of total revenue of fiscal 1989. Total revenue for fiscal 1990 is estimated to reach NT\$1.3 billion (US\$49 million).

Comprehensive financial information is not available because the Company is privately held.

BUSINESS SEGMENT STRATEGIC DIRECTION

Winbond is in the semiconductor and wafer foundry business. The semiconductor business segment includes memory devices, PC chip sets, peripheral interface products, telephone dialer products, and consumer-related ICs.

Further Information

For further information about the Company's business

1989 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

Asia/Pacific

Hsinchu, Taiwan

CMOS, NMOS process and SRAM and EPROM devices, ASICs, consumer and telecom ICs

SUBSIDIARIES

Information is not available.

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

Information is not available.

MERGERS AND ACQUISITIONS

Information is not available.

KEY OFFICERS

Arthur Y. C. Chiao
Chairman

Dr. Ding-Yuan Yang
President

Dr. Dean Chen
Vice president

Dr. Ho Chun
Vice president

Wang-Tsai Lin
Vice president

PRINCIPAL INVESTORS

Walsin Lihwa—50 percent
H&Q Taiwan Ltd.—Percentage not available

FOUNDERS

Dr. Ding-Yuan Yang
Dr. Dean Chen

12.05 Wyle Laboratories

Wyle Laboratories
128 Maryland Street
El Segundo, California 90245
(213)678-4251

(Millions of Dollars Except per Share Data)

Balance Sheet (January 31)

	<u>1979</u>	<u>1980</u>	<u>Percent Change 1979-1980</u>
Working Capital	\$ 39.8	\$ 46.1	15.6%
Long-Term Debt	\$ 36.2	\$ 35.9	(0.7%)
Shareholders' Equity	\$ 33.8	\$ 40.6	20.3%
Equity as a Percent of Assets (%)	35.9%	35.7%	
After-Tax Return on Average Equity (%)	19.4%	22.1%	

Operating Performance (Fiscal Year Ending January 31)

	<u>1979</u>	<u>1980</u>	<u>Percent Change 1979-1980</u>
Revenue	\$205.3	\$239.5	16.7%
Cost of Goods	\$150.0	\$171.3	14.1%
Marketing, SG&A Expense	\$ 33.6	\$ 41.6	23.7%
Pretax Income	\$ 12.1	\$ 15.4	26.6%
Pretax Margin (%)	5.9%	6.4%	
Net Income	\$ 6.3	\$ 8.2	31.6%
Per Share Data			
Earnings*	\$ 1.06	\$ 1.34	26.4%
Dividends	\$ 0.23	\$ 0.32	39.1%
Book Value	\$ 6.34	\$ 7.48	18.0%
Average Shares Outstanding (Millions)	5.40	5.50	1.8%
Capital Expenditures	\$ 7.7	\$ 7.3	(5.0%)
Sales/Average Assets	2.21	2.31	4.5%
Sales/Average Inventory	7.38	7.62	3.2%
Total Employees	2,363	2,374	0.5%

*Fully diluted; per share data is for continuing operations only.
Earnings per share including Curtis-Toledo division, sold in fiscal 1979, were \$0.87 rather than \$1.06 listed above.

Source: Wyle Laboratories Annual Reports
DATAQUEST, Inc.

12.05 Wyle Laboratories

Table 12.05-1

Wyle Laboratories
REVENUES BY MAJOR LINE OF BUSINESS
(Millions of Dollars)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Wyle Distribution	\$ 63.1	\$ 55.7	\$ 79.9	\$102.6	\$130.0	\$157.4
Scientific Services and Systems	12.8	12.9	15.9	22.3	27.1	29.2
Transportation	19.2	18.7	19.3	19.0	24.4	25.7
Industrial Manufacturing	<u>20.9</u>	<u>19.2</u>	<u>18.1</u>	<u>20.5</u>	<u>23.8</u>	<u>27.2</u>
Total Revenues	\$116.0	\$106.5	\$133.2	\$164.4	\$205.3	\$239.5

Note: Revenues reflect divestiture of Curtis-Toledo Division.

Source: Wyle Laboratories Annual Reports
DATAQUEST, Inc.

12.05 Wyle Laboratories

Table 12.05-2

Wyle Laboratories
FINANCIAL STATEMENT HISTORY 1973-80
(Millions of Dollars)

	Fiscal Year Ending January 31							TREND	CMPD GR	
	1973	1974	1975	1976	1977	1978	1979			1980
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	1.27	2.37	1.80	2.72	2.22	2.51	2.64	3.70	0.24	11.03
2 RECEIVABLES	15.15	18.66	17.67	16.79	20.07	25.61	29.77	38.42	2.92	12.83
4 INVENTORY	15.58	21.93	21.39	19.86	22.28	28.93	26.69	36.17	2.30	9.86
5 OTHER CURRENT ASSETS	2.73	0.82	0.87	1.07	1.28	1.75	1.78	1.38	(0.02)	1.56
6 REPURDABLE INCOME TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	34.74	43.78	41.73	40.44	45.85	58.80	60.89	79.65	5.43	10.80
9 GROSS P P E	35.37	37.32	40.71	41.31	39.36	44.49	43.96	44.35	1.25	3.17
10 ACCUMULATED DEPRECIATION	16.69	18.62	20.32	22.16	21.55	20.64	20.81	19.98	0.41	2.21
11 NET P P E	18.68	18.70	20.39	19.16	17.80	23.85	23.15	24.37	0.85	4.04
12 MISC ASSETS	1.38	1.33	1.42	1.28	1.52	2.14	3.97	3.76	0.38	18.02
13 INVESTMENTS	0.43	0.41	0.41	0.42	0.00	0.00	0.00	0.00	(0.08)	(97.72)
14 GOODWILL	6.47	6.47	6.47	6.47	6.47	6.47	6.07	5.84	(0.06)	(1.23)
15 *TOTAL ASSETS*	61.69	70.68	70.41	67.76	71.64	91.26	94.07	113.62	6.51	8.09
16 NOTES PAYABLE	0.00	4.57	0.00	0.00	2.15	9.25	0.00	0.00	0.09	(22.02)
17 ACCOUNTS PAYABLE	5.73	6.75	4.03	5.81	5.58	6.55	9.18	18.19	1.34	15.13
18 ACCRUED TAXES	0.00	0.25	1.63	0.83	2.10	0.43	0.58	2.82	0.23	524.12
19 ACCRUED LIABILITIES	3.39	4.73	5.10	4.73	5.41	6.27	7.83	9.56	0.75	13.37
20 CURR MAT LONG TERM DEBT	3.18	2.06	2.96	3.05	2.86	5.43	3.45	3.01	0.15	4.71
22 TOTAL CURR LIABILITIES	12.30	18.36	13.71	14.23	17.91	29.93	21.04	33.57	2.56	13.02
23 LONG TERM DEBT	29.88	28.28	30.21	26.43	23.32	27.28	36.15	35.89	0.83	2.51
24 DEFERRED TAXES	1.14	1.48	2.34	2.60	2.73	3.23	3.11	3.51	0.33	16.20
25 MISC LIABILITIES	0.07	0.08	0.04	0.03	0.00	0.00	0.00	0.00	(0.01)	(96.74)
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	43.38	48.20	46.31	43.29	43.97	60.44	60.30	72.98	3.70	6.86
29 PREFERRED STOCK	0.26	0.23	0.21	0.18	0.15	0.13	0.00	0.00	(0.04)	(93.80)
30 COMMON STOCK	1.52	1.52	1.52	1.52	1.60	1.65	1.78	1.81	0.05	2.82
31 CAPITAL SURPLUS	10.09	10.03	9.97	9.91	10.44	10.73	10.91	11.23	0.19	1.74
32 RETAINED EARNINGS	6.44	10.70	12.40	12.85	15.48	18.31	21.08	27.60	2.62	19.46
34 TOTAL EQUITY	18.31	22.48	24.10	24.46	27.67	30.82	33.77	40.64	2.81	10.62
35 *TOTAL LIAB & EQUITY*	61.69	70.68	70.41	67.76	71.64	91.26	94.07	113.62	6.51	8.09
36 NET WORKING CAPITAL	22.44	25.42	28.02	26.21	27.94	28.87	39.85	46.08	2.88	9.26
INCOME & EXPENSE										
38 SALES	92.55	118.60	131.09	120.11	146.31	164.45	205.25	239.50	18.91	13.01
40 COST OF GOODS	68.27	89.58	97.54	89.83	108.74	123.59	150.05	171.27	13.34	12.54
41 GROSS PROFIT	24.28	29.01	33.55	30.48	37.57	40.86	55.21	68.23	5.57	14.33
42 S G & A EXPENSE	15.55	18.50	21.20	20.81	24.38	26.42	33.60	41.56	3.30	13.56
43 MISC OPERATING EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 OPERATING PROFIT	8.73	10.51	12.35	9.67	13.19	14.44	21.60	26.67	2.27	15.63
46 DEPRECIATION	2.78	2.71	3.08	3.52	3.44	3.37	3.95	3.94	0.18	5.58
47 LEASE PAYMENTS	1.03	0.68	0.94	1.11	1.71	1.51	3.04	5.22	0.52	27.94
48 INTEREST EXPENSE	2.07	2.33	2.97	2.20	1.88	2.11	3.13	3.80	0.16	5.57
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50 LOSS/DISC OPERATIONS	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.06)	(81.73)
51 MISC INCOME	0.41	0.48	0.21	0.74	1.06	1.05	0.66	1.65	0.15	21.58
53 PRETAX PROFIT	2.54	5.27	5.57	3.57	7.22	8.49	12.14	15.36	1.62	24.99
54 INCOME TAXES (RECOVERY)	1.60	2.64	2.62	1.57	3.51	4.02	5.88	7.13	0.73	21.79
55 EXTRAORDINARY ITEM	2.48	(2.06)	0.00	0.00	0.00	0.42	2.23	0.00	0.06	*****
56 NET PROFIT	(1.54)	4.70	2.96	2.00	3.71	4.06	4.03	8.24	0.83	*****
57 EPS AFTER PFD DIVIDENDS	(0.30)	0.85	0.57	0.42	0.71	0.76	0.75	1.50	0.15	*****
58 COMMON DIV PER SHARE	0.00	0.00	0.13	0.15	0.18	0.20	0.23	0.32	0.04	1537.23

Note: Figures for 1978, 1979, and 1980 have been restated to reflect 1979 divestiture Curtis-Toledo Division. Earlier years have not been adjusted.

Source: Wyle Laboratories Annual Reports
DATAQUEST, Inc.

12.05 Wyle Laboratories

Table 12.05-3

Wyle Laboratories FINANCIAL STATEMENT HISTORY 1973-80 (Percent)

	Fiscal Year Ending January 31								TREND	CMPD GR
	1973	1974	1975	1976	1977	1978	1979	1980		
BALANCE SHEET										
1 CASH & LIQUID SECURITIES	2.07	3.35	2.56	4.01	3.10	2.75	2.81	3.26	0.06	2.72
3 RECEIVABLES	24.55	26.40	25.10	24.78	28.01	29.06	31.64	33.81	1.23	4.38
4 INVENTORY	25.26	31.03	30.38	29.31	31.11	31.70	28.38	31.84	0.46	1.63
5 OTHER CURRENT ASSETS	4.43	1.16	1.23	1.58	1.78	1.92	1.90	1.20	(0.20)	(6.05)
6 REFUNDABLE INCOME TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7 EXCESS FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8 TOTAL CURRENT ASSETS	56.31	61.94	59.27	59.68	64.00	64.43	64.72	70.10	1.55	2.50
9 GROSS P P E	57.34	52.80	57.82	60.97	54.94	48.75	46.74	39.03	(2.28)	(4.56)
10 ACCUMULATED DEPRECIATION	27.06	26.34	26.86	32.70	30.09	22.61	22.13	17.58	(1.28)	(5.45)
11 NET P P E	30.28	26.46	28.96	28.27	24.85	26.13	24.61	21.45	(0.99)	(3.75)
12 MISC ASSETS	2.23	1.88	2.01	1.89	2.12	2.35	4.22	3.31	0.24	3.18
13 INVESTMENTS	0.69	0.57	0.58	0.62	0.00	0.00	0.00	0.00	(0.12)	(97.89)
14 GOODWILL	10.48	9.15	9.19	9.54	9.03	7.09	6.45	5.14	(0.69)	(8.62)
15 *TOTAL ASSETS*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
16 NOTES PAYABLE	0.00	6.47	0.00	0.00	3.00	10.14	0.00	0.00	0.01	(23.05)
17 ACCOUNTS PAYABLE	9.29	9.55	5.72	8.58	7.79	9.37	9.76	18.01	0.69	6.51
18 ACCRUED TAXES	0.00	0.35	2.31	0.93	2.94	0.47	0.62	2.48	0.18	501.10
19 ACCRUED LIABILITIES	5.49	6.69	7.25	6.99	7.56	6.87	8.32	8.41	0.33	4.88
20 CURR MAT LONG TERM DEBT	5.15	2.92	4.20	4.51	3.72	5.95	3.66	2.65	(0.11)	(3.13)
22 TOTAL CURR LIABILITIES	19.94	25.97	19.48	21.00	25.00	32.80	22.37	29.55	1.11	4.56
23 LONG TERM DEBT	48.43	40.01	42.91	39.01	32.56	29.89	38.43	31.59	(2.04)	(5.17)
24 DEFERRED TAXES	1.84	2.09	3.32	3.84	3.82	3.54	3.30	3.09	0.18	7.50
25 MISC LIABILITIES	0.11	0.12	0.06	0.05	0.00	0.00	0.00	0.00	(0.02)	(96.98)
27 DEFICIT FUNDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 TOTAL LIABILITIES	70.33	68.20	65.77	63.89	61.37	66.23	64.10	64.23	(0.77)	(1.14)
29 PREFERRED STOCK	0.42	0.33	0.29	0.27	0.22	0.14	0.00	0.00	(0.06)	(94.22)
30 COMMON STOCK	2.46	2.15	2.16	2.24	2.23	1.81	1.89	1.60	(0.10)	(4.88)
31 CAPITAL SURPLUS	16.35	14.19	14.16	14.63	14.57	11.75	11.60	9.89	(0.78)	(5.88)
32 RETAINED EARNINGS	10.44	15.14	17.61	18.97	21.60	20.07	22.41	24.29	1.71	10.51
34 TOTAL EQUITY	29.67	31.80	34.23	36.11	38.63	33.77	35.90	35.77	0.77	2.34
35 *TOTAL LIAB & EQUITY*	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
36 NET WORKING CAPITAL	36.37	35.96	39.79	38.68	39.00	31.63	42.36	40.55	0.44	1.08
INCOME & EXPENSE										
38 SALES	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
40 COST OF GOODS	73.76	75.54	74.41	74.62	74.32	75.15	73.10	71.51	(0.31)	(0.42)
41 GROSS PROFIT	26.24	24.46	25.59	25.38	25.68	24.85	26.90	28.49	0.31	1.17
42 S G & A EXPENSE	16.80	15.60	16.17	17.33	16.68	16.07	16.37	17.35	0.08	0.49
43 MISC OPERATING EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 OPERATING PROFIT	9.43	8.86	9.42	8.05	9.02	8.78	10.53	11.14	0.23	2.31
46 DEPRECIATION	3.01	2.29	2.35	2.93	2.35	2.05	1.93	1.64	(0.15)	(6.57)
47 LEASE PAYMENTS	1.11	0.57	0.72	0.93	1.17	0.92	1.48	2.18	0.15	13.20
48 INTEREST EXPENSE	2.23	1.96	2.27	1.83	1.28	1.28	1.53	1.59	(0.12)	(6.58)
49 MISC EXPENSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50 LOSS/DISC OPERATIONS	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.07)	(81.85)
51 MISC INCOME	0.44	0.41	0.16	0.61	0.72	0.64	0.32	0.69	0.03	7.58
53 PRETAX PROFIT	2.74	4.45	4.25	2.97	4.94	5.17	5.91	6.41	0.45	10.60
54 INCOME TAXES (RECOVERY)	1.73	2.22	2.00	1.31	2.40	2.44	2.86	2.97	0.17	7.76
55 EXTRAORDINARY ITEM	2.68	(1.74)	0.00	0.00	0.00	0.25	1.09	0.00	(0.05)	*****
56 NET PROFIT	(1.66)	3.96	2.25	1.67	2.54	2.47	1.96	3.44	0.32	*****
57 EPS AFTER PPD DIVIDENDS	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00
58 COMMON DIV PER SHARE	0.00	0.00	22.95	35.41	25.33	26.30	30.86	21.37	3.62	2958.85

Note: Figures for 1978, 1979, and 1980 have been restated to reflect 1979 divestiture Curtis-Toledo Division. Earlier years have not been adjusted.

Source: Wyle Laboratories Annual Reports
DATAQUEST, Inc.

12.05 Wyle Laboratories

Table 12.05-4

**Wyle Laboratories
FUNDS FLOW HISTORY 1974-80
(Millions of Dollars)**

	Fiscal Year Ending January 31						TREND	CMPD GR
	1974	1975	1976	1977	1978	1979		
<i>SOURCES</i>								
58 NET PROFIT	4.70	2.96	2.00	3.71	4.06	4.03	8.24	0.53 11.35
46 DEPRECIATION	2.71	3.08	3.52	3.44	3.37	3.95	3.94	0.19 5.78
61 NEW LONG TERM DEBT	0.47	4.89	0.00	0.00	9.39	12.32	2.75	1.11 193.39
62 NEW EQUITY	(0.52)	(0.66)	(0.93)	0.43	0.16	0.17	0.39	0.20 *****
63 INCR OTHER LIABILITIES	0.35	0.82	0.25	0.10	0.50	(0.12)	0.40	(0.05)*****
66 TOTAL SOURCES	7.71	11.08	4.85	7.69	17.48	20.35	15.72	1.97 18.00
<i>USES</i>								
67 P P E EXPENDITURES	2.73	4.76	2.29	2.09	9.42	3.25	5.18	0.41 9.58
68 REPAYMENT LONG TERM DEBT	3.18	2.06	3.68	3.50	2.66	5.43	3.45	0.23 6.86
69 PREFERRED DIVIDENDS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 0.00
70 COMMON DIVIDENDS	0.00	0.68	0.71	0.94	1.07	1.24	1.76	0.24 936.86
72 INCR WORKING CAPITAL	1.86	3.49	(1.71)	1.34	3.70	8.99	5.79	1.01 *****
71 INCR OTHER ASSETS	(0.07)	0.09	(0.12)	(0.18)	0.63	1.42	(0.43)	0.08 *****
74 TOTAL USES	7.71	11.08	4.85	7.69	17.48	20.35	15.72	1.97 18.00
75 EXCESS/DEFICIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 0.00
76 CUMULATIVE SUR/DEF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 0.00

Note: Figures for 1978, 1979, and 1980 have been restated to reflect 1979 divestiture Curtis-Toledo Division. Earlier years have not been adjusted.

Source: Wyle Laboratories Annual Reports
DATAQUEST, Inc.

12.05 Wyle Laboratories

Table 12.05-5

Wyle Laboratories FINANCIAL RATIO HISTORY 1973-80

	Fiscal Year Ending January 31								ST AV	WTD AVG
	1973	1974	1975	1976	1977	1978	1979	1980		
LIQUIDITY										
1 CURRENT RATIO	2.025	2.385	3.043	2.842	2.560	1.964	2.894	2.372	2.611	2.553
2 QUICK RATIO	1.335	1.145	1.420	1.371	1.245	0.939	1.540	1.254	1.281	1.279
3 CASH RATIO	0.104	0.129	0.132	0.191	0.124	0.084	0.126	0.110	0.125	0.122
4 WORKING CAPITAL/SALES	0.242	0.214	0.214	0.218	0.191	0.176	0.194	0.192	0.205	0.197
6 DAYS RECEIVABLES	59.740	57.426	49.198	51.020	50.056	56.838	52.933	58.546	54.470	54.347
7 DAYS INVENTORY	83.319	89.356	80.038	80.889	74.796	85.446	64.933	77.089	79.484	77.323
LEVERAGE										
8 LONG TERM DEBT/CAPITALIZ	0.620	0.557	0.556	0.519	0.457	0.470	0.517	0.469	0.521	0.499
11 LONG TERM DEBT/EQUITY	1.632	1.258	1.254	1.080	0.843	0.885	1.070	0.883	1.113	1.009
12 TOTAL DEBT/EQUITY	1.806	1.553	1.376	1.205	1.017	1.361	1.172	0.957	1.306	1.194
COVERAGE										
13 EBIT/INTEREST	2.228	3.264	2.876	2.626	4.853	5.032	4.875	5.039	3.849	4.355
14 FIXED CHARGE COVERAGE	1.820	2.752	2.424	2.079	3.015	3.351	2.966	2.702	2.639	2.791
16 REPAY LTD+FIX CHARGE COV	*****	1.338	1.588	1.099	1.628	1.930	1.577	1.955	1.588	1.683
OPER PERFORMANCE										
17 GROSS PROFIT/SALES	0.262	0.245	0.256	0.254	0.257	0.248	0.269	0.285	0.259	0.263
18 OPER PROFIT/SALES	0.094	0.089	0.094	0.081	0.090	0.088	0.105	0.111	0.094	0.097
21 PRETAX PROFIT/SALES	0.027	0.044	0.043	0.030	0.049	0.052	0.059	0.064	0.046	0.051
22 NET PROFIT/SALES	(0.017)	0.040	0.023	0.017	0.025	0.025	0.020	0.034	0.021	0.025
23 NET PROFIT/AVG EQUITY	*****	0.230	0.127	0.082	0.142	0.139	0.125	0.221	0.152	0.153
24 NET PROFIT/AVG CAPITALIZ	*****	0.095	0.056	0.038	0.073	0.074	0.063	0.112	0.073	0.077
26 NET PROFIT/AVG TOT ASSETS	*****	0.071	0.042	0.029	0.053	0.050	0.043	0.079	0.053	0.054
27 E P S GROWTH RATE	*****	*****	(0.337)	(0.252)	0.677	0.070	(0.020)	1.009	*****	*****
28 SALES GROWTH RATE	*****	0.281	0.105	(0.084)	0.218	0.124	0.248	0.167	0.151	0.157
TURNOVER										
31 SALES/AVG EQUITY	*****	5.816	5.629	4.947	5.613	5.623	6.355	6.437	5.774	5.917
32 SALES/AVG CAPITALIZ	*****	2.397	2.495	2.283	2.872	3.015	3.206	3.270	2.791	2.962
33 SALES/AVG TOT DEBT + EQTY	*****	2.181	2.286	2.160	2.666	2.558	2.809	3.132	2.542	2.695
34 SALES/AVG TOTAL ASSETS	*****	1.792	1.858	1.739	2.099	2.019	2.215	2.306	2.004	2.095
35 SALES/AVG OPER ASSETS	*****	2.046	2.104	1.974	2.374	2.248	2.463	2.547	2.251	2.340
36 SALES/AVG GROSS P P E	*****	3.263	3.360	2.929	3.627	3.923	4.641	5.424	3.881	4.239
BALANCE SHEET										
37 CASH/SALES	0.014	0.020	0.014	0.023	0.015	0.015	0.013	0.015	0.016	0.016
38 RECEIVABLES/SALES	0.164	0.157	0.135	0.140	0.137	0.156	0.145	0.160	0.149	0.149
41 INVENTORY/SALES	0.168	0.185	0.163	0.165	0.152	0.176	0.130	0.151	0.161	0.156
42 OTH CURR ASSETS/SALES	0.030	0.007	0.007	0.009	0.009	0.011	0.009	0.006	0.011	0.009
43 LINE 6/SALES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
44 GROSS P P E/SALES	0.382	0.315	0.311	0.344	0.269	0.271	0.214	0.185	0.286	0.257
45 LINE 13/SALES	0.005	0.003	0.003	0.003	0.000	0.000	0.000	0.000	0.002	0.001
46 MISC ASSETS/SALES	0.015	0.011	0.011	0.011	0.010	0.013	0.019	0.016	0.013	0.014
47 ACCOUNTS PAYABLE/SALES	0.062	0.057	0.031	0.048	0.038	0.052	0.045	0.076	0.051	0.052
48 ACCRUED TAXES/SALES	0.000	0.002	0.012	0.005	0.014	0.003	0.003	0.012	0.006	0.007
51 ACCRUED LIABILITY/SALES	0.037	0.040	0.039	0.039	0.037	0.038	0.038	0.040	0.039	0.039
53 DEFERRED TAXES/SALES	0.012	0.012	0.018	0.022	0.019	0.020	0.015	0.015	0.017	0.017
54 MISC LIABILITIES/SALES	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MISCELLANEOUS										
57 EQUITY PER COMMON SHARE	3.523	4.044	4.580	5.135	5.269	5.751	6.250	7.390	5.243	5.822
58 RETIRE/PREV GROSS P P E	*****	(0.022)	(0.037)	(0.041)	(0.098)	(0.109)	(0.085)	(0.109)	(0.072)	(0.087)
61 DEPREC/PREV GROSS P P E	*****	0.077	0.083	0.087	0.083	0.086	0.089	0.090	0.085	0.087
62 COM DIVS/ERN-PPD DIVS	0.000	0.000	0.230	0.354	0.253	0.263	0.309	0.214	0.203	0.245
63 TAX RATE	0.630	0.500	0.470	0.439	0.486	0.473	0.484	0.464	0.493	0.477
64 COST OF GOODS/SALES	0.738	0.755	0.744	0.746	0.743	0.752	0.731	0.715	0.741	0.737
65 S G e A/SALES	0.168	0.156	0.162	0.173	0.167	0.161	0.164	0.174	0.165	0.166

Note: Figures for 1978, 1979, and 1980 have been restated to reflect 1979 divestiture Curtis-Toledo Division. Earlier years have not been adjusted.

Source: Wyle Laboratories Annual Reports
DATAQUEST, Inc.

Wyse Technology
3471 North First Street
San Jose, California 95134
Telephone: (408) 473-1200
Fax: (408) 946-3496
Dun's Number: 03-595-3827

Date Founded: 1981

CORPORATE STRATEGIC DIRECTION

Wyse Technology, the leading independent manufacturer of display terminals, is now a manufacturer and supplier of monitors and IBM-compatible personal computers. The Company's long-term strategic direction has been planned around what it recognized as a market need for well-designed, low-priced display products. Wyse ranked second in the display terminal market in 1988 with 16.9 percent market share. In the personal computer industry, Wyse had 1.5 percent market share. In April 1989, the Company announced the shipment of its 2 millionth terminal.

Wyse's total revenue decreased less than 1 percent to \$452.3 million* in fiscal 1989 from \$456.6 million in fiscal 1988. Net income decreased 175.75 percent to \$21.2 million in fiscal 1989 from \$28.0 million in 1988. Wyse Technology employs approximately 3,000 people worldwide.

The U.S. sales contribution to Wyse's total revenue decreased to \$318.0 million in fiscal 1989. U.S. sales accounted for 71 percent of total sales, down from 76 percent in fiscal 1988. Sixty-seven percent of Wyse's sales offices are in U.S. locations; the Company has manufacturing locations in Taiwan and Hong Kong, where it manufactures products for business, industrial, and engineering computer users.

Research and development expenditures totaled \$32.5 million in 1989, representing 7.19 percent of revenue. Capital spending expenditures totaled \$18.3 million in fiscal 1989, representing 4.05 percent of revenue.

Wyse Technology announced in December 1989 that it will be sold to Channel International Group, a Taiwanese Company.

*All dollar amounts are in U.S. dollars.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Terminals

In 1988, Wyse announced its "Terminals of the '90s" strategy to lead the terminal industry by announcing a new family of products. To date, four of these products have been introduced: the WY-150 general-purpose terminal, the next generation of the WY-50; the WY-212 network terminal, to compete in an emerging class of devices called processing terminals or diskless workstations; the WY-185 DEC VT320-compatible terminal, the next generation of Wyse's WY-85; and the high-performance WY-370, color terminal, the next generation of the WY-350.

Personal Computers

In February 1989, Wyse enhanced the high end of its personal computer line with a 25-MHz Intel 80386-based IBM PC AT-compatible personal computer and a 16-MHz Intel 80286-based machine.

Multiuser Operating Systems

In July 1988, Wyse rolled out two new high-capacity, high-performance multiuser computer systems based on the Intel 80386 microprocessor: the WY-3216-150T, supporting up to 12 active users, with a 150MB ESDI disk drive; and the WY-3216-85T, supporting up to 8 active users, with an 85MB disk drive.

Computer-Aided Design (CAD)

In May 1989, Wyse entered the CAD graphics market with a high-performance CAD personal workstation and graphics subsystem that increases performance up to 10 times over standard PC-based CAD workstations.

Further Information

For further information about the Company's business segments, please contact the appropriate industry service.

TABLE 1
Five-Year Corporate Highlights (Thousands of U.S. Dollars)

	1985*	1986**	1987**	1988**	1989
Five-Year Revenue	\$119,832	\$171,253	\$272,348	\$456,571	\$452,313
Percent Change	-	42.91	59.03	67.64	(0.93)
Capital Expenditure	\$5,603	\$8,905	\$6,764	\$20,430	\$18,322
Percent of Revenue	4.68	5.20	2.48	4.47	4.05
R&D Expenditure	\$4,516	\$9,121	\$14,165	\$24,163	\$32,537
Percent of Revenue	3.77	5.33	5.20	5.29	7.19
Number of Employees	847	1,403	3,730	4,187	3,000
Revenue (\$K)/Employee	\$141.48	\$122.06	\$73.02	\$109.04	\$150.77
Net Income	\$5,701	\$11,973	\$18,575	\$27,978	(\$21,192)
Percent Change	-	110.02	55.14	50.62	(175.75)
1989 Calendar Year		Q1	Q2	Q3	Q4
Quarterly Revenue		\$112.00	119.05	N/A	N/A
Quarterly Profit		(4.10)	(3.58)	N/A	N/A

*Results for FY 1985 have been restated to reflect the acquisition of Amdek Corp. in February 1986.
 **Results for FYs 1986, 1987, and 1988 have been restated to reflect the acquisition of Link Technologies in July 1987.
 N/A = Not Available

Source: Wyse Technology
 Dataquest
 January 1990

TABLE 2
Revenue by Geographic Region (Percent)

Region	1985*	1986**	1987**	1988**	1989
North America	89.42	86.49	80.21	76.05	71.00
International	10.58	13.51	19.79	23.95	29.00

*Results for FY 1985 have been restated to reflect the acquisition of Amdek Corp. in February 1986.
 **Results for FYs 1986, 1987, and 1988 have been restated to reflect the acquisition of Link Technologies in July 1987.

Source: Wyse Technology

TABLE 3
Revenue by Distribution Channel (Percent)

Channel	1988*	1989
Direct Sales	0	0
Indirect Sales	100.00	100.00
VARs/Distributors	48.00	45.00
International VARs/Distributors/OEMs	23.00	29.00
Dealers	14.00	11.00
OEMs	15.00	15.00

*Results for FY 1988 have been restated to reflect the acquisition of Link Technologies in July 1987.

Source: Wyse Technology

1989 SALES OFFICE LOCATIONS

North America—20
Europe—5
Asia/Pacific—1
ROW—1

MANUFACTURING LOCATIONS

Location/Function

Asia/Pacific

Hsinchu Science Park, Taiwan
Manufactures terminals and monitors
Tuen Mun, Hong Kong
Manufactures personal computers

SUBSIDIARIES

North America

Amdek Corporation (United States)
Link Technologies (United States)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1989

IBM

Covers Wyse's use of all IBM patents for a five-year period

1988

Transdata of Mexico City

Marketing and manufacturing agreement for Wyse's 8088- and 80286-based PCs

Microsoft Corp.

Software licensing agreement for MS-DOS, MS OS/2

Santa Cruz Operation

Xenix operating systems licensing agreement

Phoenix Technology

ROM BIOS products licensing agreement

Businessland

In an expanded contract, Businessland to carry full line of Wyse personal computers and terminals with selected monitors

MERGERS AND ACQUISITIONS

1988

Amdek Corporation

Distributor of IBM PC-compatible monitors

1987

Link Technologies, Inc.

Terminals company

KEY OFFICERS

Dr. Bernard K. Tse

Chief executive officer and chairman of the board

Lawrence D. Lummis

Vice president, Personal Computer and Display Products

Howard H. Graham

Senior vice president and chief financial officer

David A. Everett

Senior vice president, Sales and Corporate Marketing

Ron Brown

Vice president, Corporate Marketing and Service

Charles M. Lejsek

President of Link Technologies, Inc.

PRINCIPAL INVESTORS

Fidelity Management and Research Corp.

Bernard and Grace Tse (founders)

TABLE 4

Comprehensive Financial Statement
Fiscal Year Ending in March
(Thousands of U.S. Dollars, except Per Share Data)

Balance Sheet	1985*	1986**	1987**	1988**	1989
Total Current Assets	\$53,275	\$95,635	\$211,714	\$344,420	\$301,195
Cash	5,443	10,647	41,953	32,955	31,767
Receivables	20,667	37,847	64,787	130,832	90,489
Marketable Securities	0	7,964	43,675	13,751	0
Inventory	24,247	34,763	55,592	156,260	154,095
Other Current Assets	2,918	4,414	5,707	10,622	24,844
Net Property, Plants	\$6,728	\$13,735	\$17,586	\$31,776	\$39,155
Other Assets	\$795	\$1,400	\$6,032	\$7,057	\$5,760
Total Assets	\$60,798	\$110,770	\$235,332	\$383,253	\$346,110
Total Current Liabilities	\$27,725	\$27,277	\$48,800	\$95,157	\$85,278
Long-Term Debt	\$2,777	\$4,645	\$5,653	\$1,773	\$521
Other Liabilities	\$1,857	\$5,510	\$85,979	\$121,676	\$114,200
Total Liabilities	\$32,359	\$37,432	\$140,432	\$218,606	\$199,999
Total Shareholders' Equity	\$28,439	\$73,338	\$94,900	\$164,647	\$146,111
Converted Preferred Stock	2,500	3,116	0	0	0
Common Stock	22,487	55,700	61,565	103,171	148
Other Equity	(1,361)	(825)	(587)	(424)	105,255
Retained Earnings	4,813	15,347	33,922	61,900	40,708
Total Liabilities and Shareholders' Equity	\$60,798	\$110,770	\$235,332	\$383,253	\$346,110
Income Statement	1985*	1986**	1987**	1988**	1989
Revenue	\$119,832	\$171,253	\$272,348	\$456,571	\$452,313
U.S. Revenue	107,152	148,112	218,446	347,235	317,953
Non-U.S. Revenue	12,680	23,141	53,902	109,336	134,360
Cost of Sales	\$82,552	\$113,269	\$185,052	\$318,667	\$353,438
R&D Expense	\$4,516	\$9,121	\$14,165	\$24,163	\$32,537
SG&A Expense	\$18,939	\$27,941	\$42,188	\$71,054	\$85,980
Capital Expense	\$5,603	\$8,905	\$6,764	\$20,430	\$18,322
Pretax Income	\$11,867	\$19,894	\$29,666	\$40,068	(\$35,028)
Pretax Margin (%)	9.90	11.62	10.89	8.78	(7.74)
Effective Tax Rate (%)	52.00	40.00	38.00	30.00	(39.50)
Net Income	\$5,701	\$11,973	\$18,575	\$27,978	(\$21,192)
Shares Outstanding, Thousands	N/A	N/A	12,731	14,585	14,790
Per Share Data					
Earnings	\$0.76	\$1.10	\$1.44	\$1.80	(\$1.44)
Dividends	0	0	0	0	0
Book Value	N/A	N/A	\$7.45	\$11.29	\$9.88

Continued on Next Page

TABLE 4 (Continued)

Comprehensive Financial Statement
 Fiscal Year Ending in March
 (Thousands of U.S. Dollars, except Per Share Data)

Key Financial Ratios	1985*	1986**	1987**	1988**	1989
<i>Liquidity</i>					
Current (Times)	1.92	3.51	4.34	3.62	3.53
Quick (Times)	1.05	2.23	3.20	1.98	1.72
Fixed Assets/Equity (%)	23.66	18.73	18.53	19.30	26.80
Current Liabilities/Equity (%)	97.49	37.19	51.42	57.79	58.37
Total Liabilities/Equity (%)	113.78	51.04	147.98	132.77	136.88
<i>Profitability (%)</i>					
Return on Assets	-	13.96	10.73	9.05	(5.81)
Return on Equity	-	23.53	22.08	21.56	(13.64)
Profit Margin	4.76	6.99	6.82	6.13	(4.69)
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	3.77	5.33	5.20	5.29	7.19
Capital Spending % of Revenue	4.68	5.20	2.48	4.47	4.05
Employees	847	1,403	3,730	4,187	3,000
Revenue (\$K)/Employee	\$141.48	\$122.06	\$73.02	\$109.04	\$150.77
Capital Spending % of Assets	9.22	8.04	2.87	5.33	5.29

*Results for FY 1985 have been restated to reflect the acquisition of Amdek Corp. in February 1986.

**Results for FYs 1986, 1987, and 1988 have been restated to reflect the acquisition of Link Technologies in July 1987.

Source: Wyse Technology
 Annual Reports and
 Forms 10-K
 Dataquest
 January 1990

Wacker-Chemitronic GmbH

BACKGROUND AND OVERVIEW

Wacker-Chemie GmbH (Wacker) is one of West Germany's leading chemical companies. It is privately owned, with the share capital being equally divided between Hoechst AG and the Dr. Alexander Wacker Familiengesellschaft.

The Company, which reported worldwide sales of \$885 million in 1984, manufactures and markets a wide variety of plastics, silicones, organic chemicals, and semiconductor materials through Wacker-Chemitronic GmbH.

Wacker-Chemitronic, a wholly owned subsidiary, has been active in semiconductor materials since 1953 when the Company commenced research into the manufacture of hyperpure silicon. Since then, Wacker has developed into one of the world's leading suppliers of semiconductor wafer substrate material.

Important milestones in the Company's development are as follows:

- 1953--Research commenced into hyperpure silicon.
- 1958--Production of monocrystalline silicon reached 100kg.
- 1960--Wacker conducted its first investigations into GaAs and other III/V compound semiconductors.
- 1960--First sales of hyperpure silicon were made in the U.S.A.
- 1965--Wacker Chemical Corporation, New York, New York, U.S.A., was established.
- 1968--Wacker-Chemitronic GmbH, Burghausen, West Germany, was established.
- 1971--Capacity of hyperpure silicon reached 250 tons per annum.
- 1977--Heliotronic GmbH was established, along with Wacker's research center for advanced solar-grade silicon.
- 1978--Wacker Siltronic Corporation, Portland, Oregon, U.S.A., was established.
- 1981--Capacity of polycrystalline hyperpure silicon reached 1,800 tons.
- 1982--Wacker Chemicals East Asia Ltd., Tokyo, Japan, was established.

Wacker-Chemitronic GmbH

- 1984--Capacity of polycrystalline hyperpure silicon reached 2,500 tons.
- 1984--Worldwide sales of polished silicon slices exceeded 100 million cm².

In December 1984, Wacker-Chemitronic GmbH announced the setting up near Munich of an optical fiber manufacturing facility that would use technology obtained from Sumitomo Electric of Japan. This venture represents part of Wacker's ongoing diversification into optoelectronic materials, in which the Company is Europe's largest supplier of gallium arsenide (GaAs) and indium phosphate wafers.

OPERATIONS

The corporate headquarters of Wacker-Chemie GmbH are in Munich, West Germany. In 1984, the Wacker-Chemie Group employed an estimated 10,600 persons worldwide, of which 28 percent were in subsidiary companies. Worldwide, the Company operates a number of manufacturing plants that are owned either directly or through wholly owned or partly owned subsidiaries.

The principal manufacturing plants, by location and ownership, are:

- West Germany
 - Wacker-Chemitronic GmbH, Burghausen (100 percent owned by Wacker-Chemie GmbH)
 - Heliotronic GmbH, Burghausen (100 percent owned by Wacker-Chemitronic GmbH)
 - Elektroschmelzwerk Kempten GmbH, Kempten and Grefrath (99.67 percent owned by Wacker-Chemie)
- United States
 - Wacker Siltronic Corporation, Portland, Oregon (100 percent owned by Wacker-Chemie through its wholly owned holding company in the United States--Wacker Chemical Corp., New York, New York)
 - Exolon-Esk Company, Tonawanda, New York (50 percent owned via Wacker Chemical Corp., New York, New York)
 - SWS Silicones Corporation, Adrian, Michigan (49 percent owned via Wacker Chemical Corp., New York, New York)

Wacker-Chemitronic GmbH

- Brazil
 - Wacker Quimica do Brasil Ltda, Mexico City (operational headquarters), (100 percent owned by Wacker-Chemie)
- Mexico
 - Wacker Mexicana S.A., Mexico City (50 percent owned by Wacker-Chemie)
- Japan
 - Wacker Chemical East Asia Ltd., Tokyo (75 percent owned by Wacker-Chemie)

In addition, there are numerous subsidiaries and affiliates located throughout the world to handle sales of the Company's products.

The activities of Wacker in semiconductor and related technologies are administered by four operating companies:

- Wacker-Chemitronic GmbH, West Germany
- Wacker Siltronic Corporation, U.S.A.
- Wacker Chemical East Asia Ltd., Japan
- Heliotronic GmbH, West Germany

Of these, Heliotronic GmbH is primarily involved in research and development of base materials for solar cells, but it is also involved in the manufacture and sale of semiconductor materials, as are both Wacker-Chemitronic GmbH and Wacker Siltronic Corporation. Wacker Chemical East Asia Ltd. is concerned with sales in that region.

FINANCIAL

A summary of Wacker's most recent financial information covering the fiscal years ended 31 December 1983 and 1984 is presented in Table 1.

The data in Table 1 show that net sales in U.S. dollars increased by 8.7 percent in 1984, compared with 1983. However, in terms of the local currency (deutsche marks), sales showed a much more significant increase of 21.4 percent. Total operating performance increased by 9.3 percent between 1983 and 1984; but due to the strength of the U.S. currency, this translated into a 22.1 percent increase in terms of the deutsche mark.

Wacker-Chemitronic GmbH

Table 1

Wacker-Chemie GmbH
WORLDWIDE CONSOLIDATED STATEMENT OF INCOME
(Millions of U.S. Dollars)

	<u>1983</u>	<u>1984</u>
Sales (Net)	\$814	\$885
Change in Inventories	3	11
Company-Produced Additions to Plant	<u>8</u>	<u>6</u>
Total Operating Performance	\$825	\$902
Less Cost of Raw Materials	<u>397</u>	<u>409</u>
Gross Result from Operations	\$428	\$493
Other Income	<u>32</u>	<u>43</u>
Total Gross Income	\$460	\$536
Less Wages and Other Deductions	<u>444</u>	<u>500</u>
Total Net Income	\$ 16	\$ 36
Exchange Rate, US\$ to DM	0.392	0.351

Source: Wacker-Chemie GmbH
Annual Accounts 1984
DATAQUEST
March 1986

In the 1984 annual accounts, the Company notes that the growth in sales (up 28 percent) was largely led by exports, rising to 57 percent of group turnover in 1984 compared with 54 percent in 1983. The strength of the U.S. dollar also reduced the presence of U.S. chemicals in world markets, which had a beneficial effect on Wacker yields. The Company states that, in order of importance, Italy took first place in exports.

Wacker-Chemitronic GmbH

Italy was followed by the United Kingdom, France, and Austria, with the United States in fifth position. Domestic business increased by 13 percent in 1984. This was partly attributable to the favorable export climate for Wacker customers in West Germany.

Wacker-Chemitronic GmbH, the semiconductor materials arm of the Company, reports having had a particularly successful year in 1984. Reflecting the lively demand for semiconductors, which began to stabilize in the last quarter of 1984, turnover in 1984 rose to above DM 540 million (US\$190 million), an increase of 47 percent compared with 1983. Exports accounted for 78 percent of total turnover. DATAQUEST estimates that 21 percent of total group turnover in 1984 was attributable to Wacker-Chemitronic GmbH. This compares with nearly 18 percent in 1983.

Net sales in 1983 from production for both Wacker-Chemitronic GmbH and Wacker Siltronic Corporation in the United States reached approximately DM 520 million (US\$204 million) and together represented 25 percent of total group net sales. DATAQUEST estimates that, in 1984, the total net sales for these two companies approached 30 percent of the total group sales--i.e., US\$265 million. Based on DATAQUEST's estimate that the worldwide value of substrate material was about US\$1,100 million in 1984, Wacker's share of the world market was in the region of 25 percent.

RESEARCH AND DEVELOPMENT

In 1984, Wacker increased expenditure on research and development (R&D) by 5 percent compared with 1983. In 1983, Wacker-Chemitronic GmbH alone spent an estimated DM 70 million (US\$27 million) on R&D. Specific areas of R&D for the Company are as follows:

- Polymers--Tailor-making copolymers and terpolymers for specific applications
- Organic intermediates--Emphasis on drugs, plant protective products, and cosmetics and dyestuffs
- Silicon chemistry--Development of new ceramic materials, with emphasis on nonoxide special ceramics
- Bioengineering--Studies in collaboration with universities and technical colleges

Wacker-Chemitronic GmbH

PRODUCTS

Wacker-Chemie's products are grouped as follows:

- **Plastics**
 - PVC and copolymers
 - High-density polyethylene
 - Vinyl acetate monomer
 - PVA and hot melts
 - Pressure-sensitive adhesives
 - Dispersions
 - Vinyl chloride and vinyl acetate resins
 - Polyvinyl butyral
- **Plasticizers**
 - Phthalates and sebacates
- **Silanes**
 - Chlorosilanes
 - Alkoxysilanes
 - Functional silanes
 - Siloxanes
 - Silazanes
- **Silicones**
 - Silicone rubbers
 - Fluids
 - Pastes
 - Greases

Wacker-Chemitronic GmbH

- Antifoam agents
- Release agents
- Highly dispersed silica
 - Fumed silica
 - Precipitated silica
 - Dispersions of silica
- Thermal insulating materials
 - Products for high-temperature applications
- Solvents
 - Methyl acetate and ethyl acetate
 - Di-n-butyl oxalate
 - Butyl glycolate
- Chlorinated solvents
 - Trichloroethylene
 - 1, 1, 1-trichloroethylene
 - Perchloroethylene
- Organic intermediates (covers a wide variety of chemicals)
- Pesticides (includes products based on butocarboxime and copper oxylchloride)
- Other products
 - Rock salt
 - Caustic soda
 - Electro-slag
 - Premolten welding powder

Wacker-Chemitronic GmbH

Semiconductor Products

The products of Wacker-Chemitronic GmbH, serving the semiconductor industry, are:

- Hyperpure silicon
 - Polycrystalline silicon
 - Silicon single crystals by float zoning
 - Silicon single crystals by Czochralski crucible pulling
 - Silicon single crystal slices--as cut, lapped
 - Silicon single crystal slices--polished
 - Silicon epitaxial slices
- Solar-grade silicon
 - SILSO
- Gallium arsenide
 - GaAs single crystals--crucible pulled (LEC)
 - GaAs single crystals--boat grown
 - GaAs slices--as cut
 - GaAs slices--polished
- Gadolinium gallium garnet (GGG)
- Other products
 - Silicon tubes for diffusion and oxidation
 - Chlorosilanes
 - Hyperpure hydrogen chloride (HCl)

Wacker-Chemitronic GmbH

Wacker-Chemitronic GmbH offers a range of silicon wafer substrates manufactured to meet very precise specifications for both geometrical and electrical parameters. Table 2 lists typical silicon wafer substrate dimensions together with the very close tolerances within which they are manufactured.

Table 2

Wacker-Chemitronic GmbH
TYPICAL SILICON WAFER DIMENSIONS AND TOLERANCES

<u>Diameter</u>	<u>Standard Values of Wafer/Slice Thickness</u>
50.8mm \pm 0.4mm	$\left\{ \begin{array}{l} 240 \pm 15\mu\text{m} \\ 280 \pm 15\mu\text{m} \\ 330 \pm 15\mu\text{m} \\ 381 \pm 15\mu\text{m} \end{array} \right.$
76.2mm \pm 0.5mm	$\left\{ \begin{array}{l} 381 \pm 15\mu\text{m} \\ 457 \pm 15\mu\text{m} \\ 508 \pm 15\mu\text{m} \end{array} \right.$
100.0mm \pm 0.3mm	$\left\{ \begin{array}{l} 525 \pm 15\mu\text{m} \\ 625 \pm 15\mu\text{m} \end{array} \right.$
125.0mm \pm 0.1mm	625 \pm 20 μm
150.0mm \pm 0.1mm	675 \pm 25 μm

Source: Wacker-Chemitronic GmbH
DATAQUEST
March 1986

Wacker-Chemitronic GmbH

Table 3 shows typical electrical resistivities for silicon substrates using different doping agents to give n-type or p-type carriers.

Table 3

Wacker-Chemitronic GmbH
TYPICAL ELECTRICAL RESISTIVITIES FOR SILICON SUBSTRATES

<u>Type</u>	<u>Dopant</u>	<u>Standard Values of Resistivity</u>
n-type	Antimony (Sb)	$\left\{ \begin{array}{l} \leq 15 \text{ mohmcm} \\ \leq 20 \text{ mohmcm} \\ \leq 25 \text{ mohmcm} \\ \leq 30 \text{ mohmcm} \end{array} \right.$
p-type	Boron (B)	$\left\{ \begin{array}{l} \leq 10 \text{ mohmcm} \\ 10-20 \text{ mohmcm} \\ 50-100 \text{ mohmcm} \end{array} \right.$

Source: Wacker-Chemitronic GmbH
DATAQUEST
March 1986

Another important aspect of quality is the resistivity of the silicon layer that is grown on the base substrate. This layer, known as an epitaxial layer, is grown at a predetermined crystal orientation to the base silicon crystal plane. Although this layer is typically 2-100um \pm 10 percent thick, Wacker offers wafers with thicker epitaxial layers according to customer requirements. Typical values of resistivity for single epitaxial layers, n-types or p-types, are given in Table 4.

Wacker-Chemitronic GmbH

Table 4

Wacker-Chemitronic GmbH
DOPANT AND RESISTIVITY OF EPITAXIAL LAYERS

<u>Dopant</u>	<u>Sensitivity Range*</u>
Phosphorus	{ 0.02 - 3 ohmcm \pm 15% V 3 - 10 ohmcm \pm 20% V 10 - 20 ohmcm \pm 25% V 20 - 50 ohmcm \pm 30% V 50 - 100 ohmcm \pm 40%
Boron	{ 0.02 - 3 ohmcm \pm 15% V 3 - 10 ohmcm \pm 20% V 10 - 20 ohmcm \pm 25% V 20 - 50 ohmcm \pm 30% V 50 - 100 ohmcm \pm 40%

*These values apply to n-type layers on antimony-doped substrates and p-type layers on boron-doped substrates.

Source: Wacker-Chemitronic GmbH
DATAQUEST
March 1986

The Company can tighten the tolerances given in the table to meet individual customer requirements. In addition, it can produce silicon wafers with more than one epitaxial layer deposited on boron- or antimony-doped substrate.

OUTLOOK

Wacker views the sectors of silicone chemistry and semiconductors as primary growth areas and expects to increase investment accordingly over the next few years. The Company is confident that it will continue to hold a leading position in the development of silicon and related products, and it is building on the expansion that took place in silicon rubber and silicone fluids in 1984.

Wacker-Chemitronic GmbH

In the area of semiconductor materials, Wacker-Chemitronic GmbH has an optimistic view of the future demand for its products serving the electronics industry. Capacity for silicon trichlorosilane has been increased to meet the demand for polycrystalline hyperpure silicon. The Company has met the increase in demand for monocrystalline end products by additional drawing plants, modern saw systems, and new epitaxy installations. Wacker expects to raise capabilities at all stages of production over the next few years, as determined by market requirement.

The Company expects to set aside considerable R&D funds to meet the continuing demands of the semiconductor industry for higher-quality products, enlarging silicon wafer diameters, and the area of III/V semiconductors.

WordStar International Incorporated

201 Alameda Del Prado
Novato, California 94949
Telephone: (415) 382-8000
Fax: (415) 883-1617
Dun's Number: 09-309-5867

Date Founded: 1978

CORPORATE STRATEGIC DIRECTION

WordStar International Incorporated develops, markets, and supports word processing software for microcomputers. WordStar's product line includes WordStar Release 6.0 and WordStar 2000 Release 3, both targeted at individuals and businesses with extensive word processing requirements. The company changed its corporate name in early 1989 to WordStar International Incorporated from MicroPro International Corporation.

For fiscal 1989, WordStar reported revenue of \$43 million,* a 2 percent increase over the prior year. The net loss for the year totaled \$3 million. During the first quarter of fiscal 1989 and the second quarter of fiscal 1988, WordStar reorganized to reduce costs and streamline operations. In fiscal 1989, the Company reduced its domestic work force by approximately 20 percent, incurring expenses of \$470,000 primarily for severance and outplacement costs. In fiscal 1988, expenses of \$237,000 were incurred for similar reorganizational costs. Dataquest estimates that WordStar ranked 17th in worldwide PC software revenue in 1989.

The Company markets its products worldwide through a direct sales force to dealers and distributors and also through contracts with original equipment manufacturers (OEMs). WordStar also markets updated products directly to its installed user base and through selected exclusive distributors. The Company provides customer service and support from its Customer Service Call Center located in Bloomington, Indiana.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel.

*All dollar amounts are in US dollars.

Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Various versions of WordStar are available for use on a broad range of microcomputers offered by major manufacturers. WordStar Release 6.0 was released in the United States and the United Kingdom in early 1990. The new release offers comprehensive support for advanced scalable-font printers, such as the Hewlett-Packard LaserJet III and PostScript printers. WordStar 6.0 continues to offer the features of earlier WordStar versions, such as superior text and graphics integration, pull-down menus for easy learning, style sheets for automated formatting, and Advanced Page Preview.

WordStar 2000 Release 3 is available for use on a broad range of microcomputers. The product was originally introduced in the United States in 1984 and has been translated into German, French, Japanese, and Italian. The most recent update began shipping in the United States in 1987 and was released in the United Kingdom, Germany, and Japan during fiscal 1988. WordStar 2000 Release 3 combines a word processing core program with companion products tailored to the needs of users in specific markets. The WordStar 2000 Release 3 core program has over 400 editing, formatting, and productivity features, including significant speed and performance enhancements, a spelling corrector, a thesaurus, line and paragraph numbering, automatic reformatting, font downloading, Lotus 1-2-3 support, telecommunications functions, StarIndex (a mail list database) for inserting/editing graphics, and Star Exchange for exchanging documents with other word processors. WordStar

2000 Release 3 includes the core program and Show-Text for creating presentations, Fill-a-Form for filling in preprinted forms, and PC Outline for outlining documents.

WordStar licenses third-party software products that complement the Company's word processing line and sells these products directly to its installed user base. These products include a grammar checker, laser printer fonts; medical, financial, and foreign language dictionaries; and other products.

Further Information

For further information on the Company's business segments, please contact the appropriate Dataquest industry services.

Table 1
Five-Year Corporate Highlights (Thousands of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$42,649.0	\$38,230.0	\$41,331.0	\$42,459.0	\$43,157.0
Percent Change	-	(10.36)	8.11	2.73	1.64
Capital Expenditure	\$751.0	\$1,249.0	\$1,555.0	\$2,034.0	\$1,249.0
Percent of Revenue	1.76	3.27	3.76	4.79	2.89
R&D Expenditure	\$8,341.0	\$5,922.0	\$5,846.0	\$5,081.0	\$5,334.0
Percent of Revenue	19.56	15.49	14.14	11.97	12.36
Number of Employees	291	238	275	314	290
Revenue (\$K)/Employee	\$146,560	\$160,630	\$150,295	\$135,220	\$148,817
Net Income	\$207.0	(\$1,231.0)	\$2,906.0	(\$5,101.0)	(\$3,034.0)
Percent Change	-	(694.69)	(336.07)	(275.53)	(40.52)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$9,656.00	\$10,326.00	\$11,858.00	\$11,317.00	
Quarterly Profit	(\$2,607.00)	\$166.00	\$199.00	(\$793.00)	

Source: WordStar International Incorporated
Annual Reports and Forms 10-K
Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	73.00	60.00	67.00	59.00	53.00
International	27.00	40.00	33.00	41.00	47.00
Europe	22.00	25.00	22.00	26.00	32.00
Others	5.00	15.00	11.00	15.00	15.00

Source: WordStar International Incorporated
Annual Reports and Forms 10-K
Dataquest (1990)

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988	1989
Direct Sales	21.00	14.00
Indirect Sales	79.00	86.00

Source: WordStar International Incorporated
Annual Reports and Forms 10-K
Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—13

MANUFACTURING LOCATIONS

North America

Novato, California
Reproduction and assembly

Europe

Dublin, Ireland
Reproduction and assembly

Asia/Pacific

Tokyo, Japan
Reproduction and assembly

SUBSIDIARIES

Europe

WordStar International GmbH (Germany)
WordStar Ireland Limited (Ireland)
WordStar International Ltd. (England)

Asia/Pacific

WordStar Japan K.K. (Japan)
WordStar Singapore (Singapore)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

Information is not available.

MERGERS AND ACQUISITIONS

Information is not available.

KEY OFFICERS

Gari Grimm
President and chief executive officer

Jim Dalrymple
General manager and chief financial officer

Dean Scott
Vice president, Worldwide Sales and Marketing

Jim Cook
Vice president, Product Development

John Speller
Senior vice president, United Kingdom

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Information is not available.

Table 4
Comprehensive Financial Statement*
Fiscal Year Ending August
(Thousands of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988	1989
Total Current Assets	\$30,890.0	\$31,885.0	\$33,779.0	\$29,661.0	\$28,292.0
Cash	17,189.0	19,752.0	24,192.0	17,760.0	18,176.0
Receivables	8,301.0	6,211.0	5,669.0	7,668.0	7,273.0
Inventory	2,088.0	1,432.0	1,656.0	2,327.0	1,310.0
Other Current Assets	3,312.0	4,490.0	2,262.0	1,906.0	1,533.0
Net Property, Plants	\$3,257.0	\$2,288.0	\$2,242.0	\$2,705.0	\$2,279.0
Other Assets	\$1,343.0	\$945.0	\$4,356.0	\$6,494.0	\$3,243.0
Total Assets	\$35,490.0	\$35,118.0	\$40,377.0	\$38,860.0	\$33,814.0
Total Current Liabilities	\$6,357.0	\$5,349.0	\$6,373.0	\$9,609.0	\$6,859.0
Long-Term Debt	\$34.0	0	\$32.0	\$68.0	\$200.0
Other Liabilities	-	\$87.0	\$228.0	\$214.0	\$177.0
Total Liabilities	\$6,391.0	\$5,436.0	\$6,633.0	\$9,891.0	\$7,236.0
Total Shareholders' Equity	\$29,099.0	\$29,682.0	\$33,744.0	\$28,969.0	\$26,578.0
Founders Common Stock	23.0	20.0	16.0	16.0	16.0
Common Stock	21,863.0	21,944.0	117.0	118.0	121.0
Other Equity	(1,766.0)	(30.0)	22,957.0	23,282.0	23,922.0
Retained Earnings	8,979.0	7,748.0	10,654.0	5,553.0	2,519.0
Total Liabilities and Shareholders' Equity	\$35,490.0	\$35,118.0	\$40,377.0	\$38,860.0	\$33,814.0
Income Statement	1985	1986	1987	1988	1989
Revenue	\$42,649.0	\$38,230.0	\$41,331.0	\$42,459.0	\$43,157.0
US Revenue	31,194.0	23,007.0	27,525.0	24,951.0	22,949.0
Non-US Revenue	11,455.0	15,223.0	13,806.0	17,508.0	20,208.0
Cost of Sales	\$10,208.0	\$7,650.0	\$8,238.0	\$10,312.0	\$11,860.0
R&D Expense	\$8,341.0	\$5,922.0	\$5,846.0	\$5,081.0	\$5,334.0
SG&A Expense	\$27,012.0	\$26,986.0	\$24,881.0	\$29,793.0	\$27,114.0
Capital Expense	\$751.0	\$1,249.0	\$1,555.0	\$2,034.0	\$1,249.0
Pretax Income	\$23.0	(\$2,532.0)	\$3,950.0	(\$3,472.0)	(\$1,618.0)
Pretax Margin (%)	0.05	(6.62)	9.56	(8.18)	(3.75)
Effective Tax Rate (%)	NA	NA	NA	NA	NA
Net Income	\$207.0	(\$1,231.0)	\$2,906.0	(\$5,101.0)	(\$3,034.0)
Shares Outstanding, Thousands	12,528.0	12,612.0	13,316.0	13,328.0	13,534.0
Per Share Data					
Earnings	\$0.02	(\$0.10)	\$0.22	(\$0.38)	(\$0.22)
Dividend	0	0	0	0	0
Book Value	\$2.32	\$2.35	\$2.53	\$2.17	\$1.96

Table 4 (Continued)
Comprehensive Financial Statement*
Fiscal Year Ending August
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988	1989
<i>Liquidity</i>					
Current (Times)	4.86	5.96	5.30	3.09	4.12
Quick (Times)	4.53	5.69	5.04	2.84	3.93
Fixed Assets/Equity (%)	11.19	7.71	6.64	9.34	8.57
Current Liabilities/Equity (%)	21.85	18.02	18.89	33.17	25.81
Total Liabilities/Equity (%)	21.96	18.31	19.66	34.14	27.23
<i>Profitability (%)</i>					
Return on Assets	-	(3.49)	7.70	(12.88)	(8.35)
Return on Equity	-	(4.19)	9.16	(16.27)	(10.92)
Profit Margin	0.49	(3.22)	7.03	(12.01)	(7.03)
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	19.56	15.49	14.14	11.97	12.36
Capital Spending % of Revenue	1.76	3.27	3.76	4.79	2.89
Employees	291	238	275	314	290
Revenue (\$K)/Employee	\$146,560	\$160,630	\$150,295	\$135,220	\$148,817
Capital Spending % of Assets	2.12	3.56	3.85	5.23	3.69

*Certain amounts in the 1988 and 1987 Financial Statements have been reclassified to conform with the fiscal 1989 presentation.
 NA = Not available

Source: WordStar International Incorporated
 Annual Reports and Forms 10-K
 Dataquest (1990)

WordPerfect Corporation

1555 N. Technology Way

Orem, Utah 84057

Telephone: (801) 225-5000

Fax: (801) 227-5687

Dun's Number: Not Available

Date Founded: 1979

CORPORATE STRATEGIC DIRECTION

WordPerfect Corporation was formed in 1979 with only two employees and no venture capital. By March 1980, it had a workable product and, thus, opened its doors for business. Today, the Company has grown to 1,900 employees, with annual sales surpassing \$280.0 million.* According to Dataquest, WordPerfect possessed a 41.4 percent share of the 1989 worldwide word processor market. This ranked WordPerfect as the leader, with its nearest competitor holding less than half of that percentage.

The Company is a publisher of productivity software for IBM PC, Macintosh, Apple, UNIX, VAX, Data General, Amiga, OS/2, Atari, and other systems. With over 4 million end users worldwide, the Company maintains its philosophy of full concentration on servicing its customers' needs. More than one-third of the Company's work force works in customer support, and the Company maintains a toll-free customer support number for all of its US and Canadian microcomputer products. The Company has 33 offices and distributors servicing 58 countries throughout the world.

Total revenue increased 57.9 percent to \$281.0 million in fiscal year 1989, up from \$178.0 million in fiscal year 1988. During fiscal years 1988 and 1989, domestic sales accounted for 86.0 and 81.0 percent, respectively, of total revenue. Research and development expenditure totaled \$28.1 million during fiscal year 1989, representing 10.0 percent of total revenue.

WordPerfect's sales and distribution are conducted solely through indirect channels. The Company has approximately 15,000 dealers covering the majority of markets (Fortune 500, small business, government, and retail); however, the Company is most dominant

in the legal market. The Company has four distributors in the United States (Ingram Micro D, Kenfil, Softsel/Microamerica, and Software Resource) and three distributors in Canada. The Company also utilizes a half-dozen retail chains, including Businessland, ComputerLand, and Egghead Software. International sales are handled through WordPerfect International. More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction." Information on distribution channels and a comprehensive financial statement are unavailable for publication because WordPerfect is a privately held corporation.

BUSINESS SEGMENT STRATEGIC DIRECTION

Software

WordPerfect 5.1

WordPerfect 5.1 is a word processor accounting for nearly 70 percent of WordPerfect's total sales. With WordPerfect 5.1, the user can integrate text and graphics to create professional-looking correspondence, reports and newsletters.

WordPerfect 5.1 features can be accessed through function keys or pull-down menus, with or without a mouse. It possesses features such as Columns, Tables, Speller, Thesaurus, View Document, Footnotes/Endnotes, Merge, Font, Macros, Bold, and Underline. Through the Columns feature, the user can create up to 24 newspaper-style or parallel columns at any point in the document. The Tables feature allows the user to create up to 32,765 rows and 32 columns of tabular data automatically enclosed in rules. The

*All dollar amounts are in US dollars.

WordPerfect Speller has 115,000 words in its dictionary, and the Thesaurus has 10,000 headwords.

The View Document feature lets the user display an entire page of text and graphics at once. The user can view facing pages together or "zoom in" on a page for a closer look. Graphic images and fonts are shown as they will look when they are printed. WordPerfect 5.1 streamlines the task of creating, editing, or deleting footnotes and endnotes. To create a note, the user just furnishes the information, and WordPerfect takes care of numbering, formatting, and placement. The Merge feature enables the user to combine data from two or more different sources in a single document.

WordPerfect 5.1 is designed to work with leading graphics formats and programs. Its Font feature allows more than one daisywheel, cartridge, or soft font to mix up to 250 fonts in a document without ever having to change margin, tab, or column settings.

The DOS version of WordPerfect 5.1 runs on the IBM PC, XT, AT, PS/2, and true compatibles. The program requires 384K of "free memory." Versions of WordPerfect 5.1 also are available for Data General and VAX minicomputers, Macintosh, Apple IIe and IIc, Apple IIGS, Amiga, and Atari computers, and for computers running under UNIX/XENIX and OS/2. WordPerfect 5.1 runs on a standalone PC or on a network. It supports over 700 dot-matrix, daisy-wheel, and laser printers. WordPerfect 5.1 is distributed in many foreign languages—Danish, Dutch, UK and US English, Finnish, French, German, Icelandic, Italian, Norwegian, Portuguese, Spanish, and Swedish. Development of Japanese and Cyrillic versions is under way.

WordPerfect 5.0

WordPerfect 5.0 will display graphics in a bit-mapped composition on most popular graphics terminals. It comes with several clip-art images that can be scaled, moved, or rotated easily to fit anywhere in the document. Images can surround a paragraph; they also can be inserted into a line or included in a header or footer. The first port of WordPerfect 5.0 for UNIX Systems will support The Santa Cruz Operation's (SCO's) XENIX 386. It also will be ported for UNIX System V 386, NCR Tower 32, and the Sun SPARCstation.

DrawPerfect 1.1

DrawPerfect 1.1 is an easy-to-use presentation graphics package that allows the user to design a wide

spectrum of presentation aids, including slides, transparencies, on-screen slide shows, and visuals for WordPerfect documents. It lets the user create a variety of charts and graphs, bulleted lists, signs, and flyers. It comes with over 500 clip-art figures and several charts and certified templates that the user can customize simply by inserting his/her information. DrawPerfect 1.1 allows the user to work with pull-down menus, icons, or function keys. It is compatible with other WordPerfect products and has a run-time module. DrawPerfect 1.1 enables the user to design one page at a time. The presentation feature enables the user to view a series of pages in sequence by linking the files and arranging them into an on-screen show. Special effects such as fading, sweeps, overlays, and shaded backgrounds can be used. DrawPerfect 1.1 offers a set of extensive graph and chart capabilities including pie, bar, line, scatter, hi-lo stacked bar, area, and mixed charts. It also allows the user to add legends and grid lines, create a 3-D effect, overlap bars, include titles, and label axes. It offers 256 colors, 64 fill patterns, and 16 linewidths and styles.

PlanPerfect 5.0

PlanPerfect 5.0 is compatible with its word processing forerunner, WordPerfect. It provides an environment that caters to most spreadsheet users. It utilizes slash (/) commands, keystrokes, and pull-down menus.

The PlanPerfect 5.0 worksheet allows the user to import from and export to the following formats: WordPerfect (including mail-merge) files, Lotus 1-2-3 worksheets, dBASE, ASCII, and DIF files. PlanPerfect 5.0 provides easy access to over 2 million cells in a worksheet (8,192 rows and 256 columns). When memory is full, PlanPerfect 5.0 routes data from the worksheet onto the disk. If the user has expanded memory, PlanPerfect 5.0 automatically takes advantage of up to 8 megabytes of expandable memory before the virtual memory capability is used.

With PlanPerfect 5.0, the user can create the standard types of graphs and charts (pie, bar, stacked bar, line, and so forth) and also mix graph types in the same chart. PlanPerfect 5.0 has over 100 built-in functions, including statistical, logical, query, financial, text, date, and arithmetic. These functions make it easy to create, edit, and manipulate formulas.

PlanPerfect 5.0 has the same printing power and versatility as WordPerfect, including support for over

450 printers. It can link worksheets, letting information flow between them. It allows for editing two worksheets in memory at the same time and for copying or moving information from one worksheet to the other. It works with most network systems that support the DOS file-locking feature, including Novell NetWare, 3Com 3+ Network, IBM PC LAN, Banyan, and AT&T StarLAN, among others. PlanPerfect 5.0 requires DOS version 3.0 or later to support full DOS file sharing and locking. It offers an "undelete" feature, automatic backup, and a special "shortcut" formula for summing ranges of numbers. Extensive file-management capabilities include the option to preview or print worksheets before returning them to memory.

WordPerfect Office 3.0

WordPerfect Office 3.0 is a package that provides electronic mail, calendar, and scheduling services for a network environment. WordPerfect Office 3.0 comprises three components: Office PC, Office LAN, and Office Connection Server. Office PC replaces WordPerfect Library by offering the desktop programs, Calculator, Notebook, File Manager, Macro/Program Editor, Calendar, and DOS Shell. Office PC also can be used as a Network Station. Office LAN includes the same desktop programs as Office PC, as well as workgroup software, E-Mail and Scheduler. The Office Connection Server becomes the hub in managing the distribution of messages among multiple file servers, remote LANs, gateways to third-party E-mail services, and future Office implementations on other host platforms. WordPerfect Office 3.0 can exchange files and WordPerfect documents across multiple file servers and host platforms that support WordPerfect.

WordPerfect Office 2.0 for UNIX Systems

WordPerfect also markets WordPerfect Office 2.0 for UNIX Systems, which provides electronic mail for

multiuser environments, as well as Calculator, Notebook, File Manager, and Macro/Program Editor to enhance the desktop environment. It is available for SCO XENIX 386, AT&T 3B2, and NCR Tower 32. Single-user or multiuser system licenses are available.

DataPerfect 2.1

DataPerfect 2.1 is a database management system. DataPerfect 2.1 uses 192K of free memory and requires DOS version 2.1 or higher for a standalone version, and DOS 3.0 or higher for a network system. The program is available for IBM PCs and close compatibles.

WordPerfect Language Modules

WordPerfect Language Modules enable its users to create and edit documents (including multilingual documents) in various languages within their existing English copy of WordPerfect 5.1. The January 19 release of WordPerfect 5.1 is required to run the Russian and Greek modules that contain screen fonts, keyboard drivers, printer drivers, and a hyphenation program to allow WordPerfect users to write and edit in Russian and Greek. These modules require no additional memory. Each module comes on one low-density floppy disk (about 150K) with a set of instructions and an installation program. The installation does not affect word processing in English. In order to display screen characters, a user will need an EGA, a VGA, or a Hercules RamFont card.

Further Information

For more information about WordPerfect's business segments, please contact Dataquest's Office Systems Industry Service (OSIS) or Microcomputer Systems Service (MCSS).

Table 1
Five-Year Corporate Highlights
 (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$23	\$52	\$100	\$178	\$281
Percent Change	-	126.09	92.31	78.00	57.87
Capital Expenditure	NA	NA	NA	NA	NA
Percent of Revenue	NA	NA	NA	NA	NA
R&D Expenditure	NA	NA	NA	NA	NA
Percent of Revenue	NA	NA	NA	NA	NA
Number of Employees	199	306	554	1,130	1,612
Revenue (\$K)/Employee	\$116	\$170	\$181	\$158	\$174
Net Income	NA	NA	NA	NA	NA
Percent Change	NA	NA	NA	NA	NA
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	NA	NA	NA	NA	
Quarterly Profit	NA	NA	NA	NA	

NA = Not available
 Note: Fiscal year ends in December.

Source: WordPerfect Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	NA	NA	NA	86.00	81.00
International	NA	NA	NA	14.00	19.00

NA = Not available

Source: WordPerfect Corporation
 Annual Reports and Forms 10-K
 Dataquest (1990)

1989 SALES OFFICE LOCATIONS

Information is not available.

MANUFACTURING LOCATIONS

Information is not available.

SUBSIDIARIES

Information is not available.

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Groupe Bull S.A.

WordPerfect and Groupe Bull signed a worldwide agreement that will enable Groupe Bull to offer the WordPerfect word processor on Groupe Bull's XPX-100 and DPX/2 UNIX supermicros.

Pertech Computers Ltd.

WordPerfect and Pertech signed a distribution agreement that allows Pertech to market WordPerfect products in India.

1989

Lotus Development Corporation

WordPerfect and Lotus Development established a technology-sharing agreement. The two companies have developed an interface between Lotus' 1-2-3/G spreadsheet for OS/2, the Presentation Manager (PM) graphical user interface (GUI), and WordPerfect for PM. Under the terms of the agreement, Lotus will share the software code created for Lotus 1-2-3/G, the graphical version of the 1-2-3 spreadsheet, with WordPerfect for use in its WordPerfect for PM.

Bitstream Inc.

WordPerfect and Bitstream announced the new version of Bitstream Fontware 3.0 for WordPerfect 5.0 and 5.1.

INTERACTIVE Systems Corporation

WordPerfect and INTERACTIVE Systems jointly announced that WordPerfect 4.2 has been ported to 386/ix, the multiuser, multitasking operating system developed and marketed by INTERACTIVE.

Quadram

WordPerfect and Quadram jointly announced the incorporation of a Quadram JT fax driver into WordPerfect 5.0. The new driver enables the user to preview a document before it is transmitted, without first converting the document to facsimile format. This feature will save both time and space. After confirming the proper format, the user can transmit the document to a remote facsimile as simply as printing from WordPerfect.

1988

Business Software Association

Business Software Association has been formed jointly by six major software companies: Aldus, Ashton-Tate, Autodesk, Lotus Development, Microsoft, and WordPerfect. The association was formed to battle international software piracy and to reduce international trade barriers.

Electronic Text Corporation (ETC)

WordPerfect granted ETC the right to publish computerized versions of WordPerfect documentation for use with ETC's text-indexing and text retrieval program, WordCruncher.

Marketing Graphics Inc. (MGI)

WordPerfect, in conjunction with MGI, will ship a graphics sampler diskette with each WordPerfect 5.0 package. MGI's WordPerfect graphics sampler includes 30 PicturePak images that are fully functional with WordPerfect 5.0.

1987

Data General

WordPerfect and Data General will bundle WordPerfect's 4.05 word processing software with Data General's Eclipse/MV minicomputer.

MERGERS AND ACQUISITIONS

Information is not available.

KEY OFFICERS

Bruce W. Bastian
Chairman of the board and president of the International Division

Dr. Alan C. Ashton
President

Dan Lunt
Senior vice president

W.E. Pete Peterson
Executive vice president

Andre Peterson
Vice president

Jeff Acerson
Director of Corporate Communications

PRINCIPAL INVESTORS

Information is not available.

FOUNDERS

Alan C. Ashton
Bruce W. Bastian

Wyse Technology

3471 North First Street
San Jose, California 95134
Telephone: (408) 473-1200
Fax: (408) 946-3496
Dun's Number: 03-595-3827

Date Founded: 1981

CORPORATE STRATEGIC DIRECTION

Wyse Technology was purchased by WT Acquisition Corporation of Delaware, incorporated by Channel International Corporation for the purchase of Wyse Technology. Channel International is a company formed and licensed under the Company Law of the Republic of China. The offer was made on December 14, 1989, to buy outstanding shares of stock for \$10.00 per share and was finalized by January 25, 1990.

The company's long-term strategic direction continues to focus on a market need for well-designed, low-priced display products, personal computers, and UNIX multiuser systems. This strategy is based on building a better product using technologies that are cost-efficient, enabling Wyse to price under the competition. The criteria for a product introduction are as follows:

- Defined industry standards
- Established channels of distribution, VAR, or OEM channels
- Compatibility with existing products
- Volume potential to sufficiently meet Company's financial needs

Wyse ranked second in the total North American display terminal market for 1989, with 19.4 percent share of units shipped. Nearly 100 percent of Wyse terminal shipments are Segment 4 terminals. This segment comprises ASCII and ANSI display terminals that are not specific terminals for any one host. In Segment 4, Wyse (including its subsidiary Link) has a 47.7 percent market share for 1989 calendar year. In April 1989, the Company announced the shipment of its two-millionth terminal.

According to Dataquest, Wyse sold approximately 130,000 units in the PC market worldwide in 1989.

Wyse Technology became a private company during its third quarter of fiscal 1989.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present revenue by region and distribution channel. Table 3, a financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Terminals

In 1988, Wyse announced its "Terminals of the '90s" strategy in an effort to lead the terminal industry by announcing a new family of products. Five of these products have been introduced: the WY-150 general-purpose terminal, the next generation of the WY-50; the WY-212 network terminal, to compete in a growing class of devices called processing terminals or diskless workstations; the WY-185 DEC VT320-compatible terminal, the next generation of Wyse's WY-85; the high-performance WY-370 color terminal, the next generation of the WY-350; and the WY-160, which is a high-end ASCII terminal. The color VGA display monitors WY-650 and WY-450 were introduced in 1989, along with the 19-inch color display WY-890N. This display subsystem is compatible with VGA, MDA, Hercules, and WY-700.

Wyse is currently competing in five terminal markets: ASCII, ANSI, PC terminals, color, and network terminals. The ASCII and ANSI sectors have been the most profitable.

Personal Computers/Graphics

Wyse offers a range of IBM-compatible personal computers and monitors. Forty-four percent of Wyse's revenue is generated from the personal computer market. The products include the PC 286 model WY-2116i, model WY-2214, model WY-2012i, the PC 386 model WY-3216, the WY-3016SX, WY-3116SX, and the WY-3225. In 1989, Wyse had less than 1 percent of the worldwide personal computer market, according to Dataquest estimates. In the United States, Wyse had a 1 percent market share in 1989.

The WY-3216 and the WY-3225 can be used as advanced multiuser systems. According to Dataquest estimates, Wyse sold approximately 33,000 units and about 27,000 units, respectively, in 1989 worldwide. The WY-3216 is based on the 16-MHz Intel 386 processor, with 387 and 287 coprocessor support. Both models incorporate the Wyse-enhanced version of the proven PC-compatible Phoenix BIOS and are designed to be fully compatible with the IBM PC AT, MS-DOS and MS OS/2.

Advanced Systems

In January 1990, Wyse introduced a midrange, multiuser computer that is based on the company's enhanced version of UNIX V/386 Release 3.2. The

series includes the entry-level 5000i and the 9000i series. The 9000i system incorporates a fully symmetrical multiprocessing architecture that is offered at uniprocessor prices. This pricing strategy is part of the overall corporate strategy, using technology to aid in production of an advanced product while pricing it lower than the competition. Both the series 5000i and the 9000i are designed with the Intel 80X86 microprocessor family and use the industry-standard UNIX operating system that allows compatibility with thousands of applications.

Computer-Aided Design (CAD)

In May 1989, Wyse entered the CAD graphics market with a high-performance CAD personal workstation and graphics subsystem that increases performance up to 10 times over standard PC-based CAD workstations. One such workstation is the WY-8400 released in 1989.

Further Information

For further information about the Company's business segments, please contact the appropriate industry service.

Table 1
Revenue by Geographic Region (Percent)

Region	1986*	1987*	1988*	1989*	1990**
North America	86.49	80.21	76.05	71.00	71.00
International	13.51	19.79	23.95	29.00	29.00

*Results for fiscal years 1986, 1987, 1988, and 1989 have been restated to reflect the acquisition of Link Technologies in July 1987.
 **Represents the first three fiscal quarters of fiscal 1990 due to the buyout by Channel International.

Source: Wyse Technology
 Annual Reports and Forms 10-K
 Dataquest (1990)

Table 2
Revenue by Distribution Channel (Percent)

Channel	1988*	1989*	1990**
Direct Sales	0	0	0
Indirect Sales	100.00	100.00	100.00
VARs/Distributors	48.00	45.00	45.00
International VARs/Distributors/OEMs	23.00	29.00	29.00
Dealers	14.00	11.00	11.00
OEMs	15.00	15.00	15.00

*Results for fiscal years 1988 and 1989 have been restated to reflect the acquisition of Link Technologies in July 1987.
 **Represents the first three fiscal quarters of fiscal 1990 due to the buyout by Channel International.

Source: Wyse Technology
 Annual Reports and Forms 10-K
 Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—20
Europe—4
Asia/Pacific—1
ROW—1

MANUFACTURING LOCATIONS

North America

San Jose, California
Manufactures advanced systems and personal computers

Asia/Pacific

Hsinchu Science Park, Taiwan
Manufactures terminals and monitors

SUBSIDIARIES

North America

Amdek Corporation (United States)
Link Technologies (United States)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1989

IBM

Covers Wyse's use of all IBM patents for a five-year period

1988

Transdata of Mexico City

Marketing and manufacturing agreement for Wyse's 8088- and 80286-based PCs

Microsoft Corp.

Software licensing agreement for MS-DOS, MS OS/2

Santa Cruz Operation

Xenix operating systems licensing agreement

Phoenix Technology

ROM BIOS products licensing agreement

Businessland

In an expanded contract, Businessland to carry full line of Wyse personal computers and terminals with selected monitors

MERGERS AND ACQUISITIONS

1990

Channel International Corporation

Wyse Technologies bought by Channel International Corporation

1987

Link Technologies, Inc.

Wyse acquired this terminals company.

KEY OFFICERS

Dr. Morris Chang

Chairman and chief executive officer

Dr. Bernard K. Tse

Vice chairman

Dr. Daniel Wu

President

PRINCIPAL INVESTORS

Fidelity Management and Research Corp.
Bernard and Grace Tse (founders)

Table 3
Comprehensive Financial Statement
Fiscal Year Ending March
(Thousands of US Dollars, except Per Share Data)

Balance Sheet	1986*	1987*	1988*	1989*	1990**
Total Current Assets	\$95,635	\$211,714	\$344,420	\$301,195	\$297,686
Cash	10,647	41,953	32,955	31,767	19,605
Receivables	37,847	64,787	130,832	90,489	112,474
Marketable Securities	7,964	43,675	13,751	0	0
Inventory	34,763	55,592	156,260	154,095	150,760
Other Current Assets	4,414	5,707	10,622	24,844	14,847
Net Property, Plants	\$13,735	\$17,586	\$31,776	\$39,155	\$35,420
Other Assets	\$1,400	\$6,032	\$7,057	\$5,760	\$11,512
Total Assets	\$110,770	\$235,332	\$383,253	\$346,110	\$344,618
Total Current Liabilities	\$27,277	\$48,800	\$95,157	\$85,278	\$89,327
Long-Term Debt	\$4,645	\$5,653	\$1,773	\$521	\$497
Other Liabilities	\$5,510	\$85,979	\$121,676	\$114,200	\$122,563
Total Liabilities	\$37,432	\$140,432	\$218,606	\$199,999	\$212,387
Total Shareholders' Equity	\$73,338	\$94,900	\$164,647	\$146,111	\$132,231
Converted Preferred Stock	3,116	0	0	0	0
Common Stock	55,700	61,565	103,171	148	106,239
Other Equity	(825)	(587)	(424)	105,255	0
Retained Earnings	15,347	33,922	61,900	40,708	25,992
Total Liabilities and Shareholders' Equity	\$110,770	\$235,332	\$383,253	\$346,110	\$344,618
Income Statement	1986*	1987*	1988*	1989*	1990**
Revenue	\$171,253	\$272,348	\$456,571	\$452,313	\$343,860
US Revenue	148,112	218,446	347,235	317,953	NA
Non-US Revenue	23,141	53,902	109,336	134,360	NA
Cost of Sales	\$113,269	\$185,052	\$318,667	\$353,438	\$276,887
R&D Expense	\$9,121	\$14,165	\$24,163	\$32,537	\$21,358
SG&A Expense	\$27,941	\$42,188	\$71,054	\$85,980	\$63,890
Capital Expense	\$8,905	\$6,764	\$20,430	\$18,322	NA
Pretax Income	\$19,894	\$29,666	\$40,068	(\$35,028)	(\$22,642)
Pretax Margin (%)	11.62	10.89	8.78	(7.74)	NA
Effective Tax Rate (%)	40.00	38.00	30.00	(39.50)	NA
Net Income	\$11,973	\$18,575	\$27,978	(\$21,192)	(\$14,716)
Shares Outstanding, Thousands	N/A	12,731	14,585	14,790	14,964
Per Share Data					
Earnings	\$1.10	\$1.44	\$1.80	(\$1.44)	(\$0.99)
Dividend	0	0	0	0	0
Book Value	NA	\$7.45	\$11.29	\$9.88	\$8.84

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending March
(Thousands of US Dollars, except Per Share Data)

Key Financial Ratios	1986*	1987*	1988*	1989*	1990**
<i>Liquidity</i>					
Current (Times)	3.51	4.34	3.62	3.53	NA
Quick (Times)	2.23	3.20	1.98	1.72	NA
Fixed Assets/Equity (%)	18.73	18.53	19.30	26.80	NA
Current Liabilities/Equity (%)	37.19	51.42	57.79	58.37	NA
Total Liabilities/Equity (%)	51.04	147.98	132.77	136.88	NA
<i>Profitability (%)</i>					
Return on Assets	13.96	10.73	9.05	(5.81)	NA
Return on Equity	23.53	22.08	21.56	(13.64)	NA
Profit Margin	6.99	6.82	6.13	(4.69)	NA
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	5.33	5.20	5.29	7.19	NA
Capital Spending % of Revenue	5.20	2.48	4.47	4.05	NA
Employees	1,403	3,730	4,187	3,000	NA
Revenue (\$K)/Employee	\$122.06	\$73.02	\$109.04	\$150.77	NA
Capital Spending % of Assets	8.04	2.87	5.33	5.29	NA

NA = Not available

*Results for fiscal years 1986, 1987, 1988, and 1989 have been restated to reflect the acquisition of Link Technologies in July 1987.

**Based on three quarters only, due to December 1989 buyout.

Source: Wyse Technology
 Annual Reports and Forms 10-K
 Dataquest (1990)

Xerox Corporation

P.O. Box 1600
800 Long Ridge Road
Stamford, Connecticut 06904
Telephone: (203) 968-3000
Fax: (203) 968-4312
Dun's Number: 04-959-1852

Date Founded: 1906

CORPORATE STRATEGIC DIRECTION

Xerox Corporation, founded in 1906 as The Haloid Company, started out as a manufacturer and seller of photographic paper and photocopying equipment. In 1961, the Company changed its name to Xerox Corporation. Xerox is now a multinational company constituting two separate enterprises, business products and systems (BP&S) and financial services.

BP&S activities include developing, manufacturing, marketing, and servicing a broad range of document processing products, including Xerox copiers, duplicators, electronic printers and typewriters, workstations, networks and other related products, scanners, facsimile machines, software, and supplies. These products are marketed in more than 130 countries by a direct sales force and a network of dealers and distributors. The focus of this analysis is on the BP&S sector.

The Company's financial services business provides financial products and services primarily on a wholesale basis, through Xerox Financial Services. Xerox's financial services include such names as Crum and Forster, Xerox Credit Corporation, Van Kampen Merritt, Furman Selz Holding Corporation, and Xerox Financial Services Life Insurance Company.

In the BP&S segment, Xerox has refocused its efforts. Because certain resources were not producing adequate returns, businesses were either scaled down (e.g., the electronic typing business) or eliminated (e.g., Xerox Medical Systems). The Company organized document systems into one worldwide organization, Integrated Systems Operations. With the development of this new unit, Xerox hopes to achieve

substantial increases in profits by having a narrower focus on specific customer and market segments and specific applications. Overhead was reduced by eliminating 2,000 jobs during fiscal 1988.

During 1989, the Company underwent a major reorganization, affecting marketing, product development, and manufacturing. Wanting to become a more market-driven company and recognizing that its marketing efforts must be coordinated on a worldwide basis, Xerox formed a worldwide marketing and sales organization, Marketing and Customer Operations.

For product development, the new Development and Manufacturing Organization was formed, responsible for design and manufacturing of virtually all Xerox products, including systems software. Additionally, this unit will focus its efforts on developing a corporate-wide architecture based on industry-standard platforms for Xerox products and systems and maximization of Xerox's software assets.

During 1989, Xerox expanded and renamed its Xerox Business Services (formerly Xerox Reproduction Centers), which provides facility management services and operates a nationwide network of Xerox facilities, all of which provide high-volume reprographics, electronic publishing, and special-event support services both off and on-site.

The Company's goals include achieving a 15 percent return on assets in the 1990s and providing solid shareholder value. As a step to achieve these goals, the BP&S restructuring, eliminating underused assets, resulted in a \$275 million* write-off against 1988 earnings.

*All dollar amounts are in US dollars.

Total revenue increased by 7.3 percent to \$17.6 billion in fiscal 1989 from \$16.4 billion in fiscal 1988. Net income increased 81.4 percent to \$704 million in fiscal 1989 from \$388 million in fiscal 1988. Xerox employs 111,400 worldwide.

Research and development (R&D) expenditure totaled \$809 million in fiscal 1989, representing 5.0 percent of revenue. Capital spending expenditure totaled \$1.3 billion in fiscal 1989, representing 7.4 percent of revenue.

More detailed information is available in Tables 1 and 2, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region. Information on distribution channels is not available. Table 3 a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Xerox anticipates that documents will be increasingly handled in digital electronic form but that customers will demand the capability to move easily between the digital electronic and the paper forms of a document in the process of meeting their business documentation needs. Xerox believes that the use of paper in the office will continue to increase. Accordingly, Xerox's document processing strategy is focused on providing products, service, and supplies that integrate into its customers' office environments and that both simplify and enhance the customers' document-related business processes and communications.

In support of this strategy, Xerox offers a wide range of copiers and duplicators, which principally serve the office equipment market. Products range from small personal and desktop models to large, high-speed duplicator models and are designed to provide customers with monthly copy volumes ranging from under 1,000 copies per month to more than 250,000 copies per month. Xerox markets these products on an outright sale and rental basis as well as offering various equipment purchase financing options, although not all of these options are offered for every product.

In 1988, Xerox began the introduction of its latest "50 Series" of copiers and duplicators based on advanced technology in order to further enhance the features and performance and reduce the costs of its product line. Six new copier/duplicator products were introduced in 1988. During 1989, the 50 Series of copiers and duplicators was expanded to a total of nine models, extending from an 8 copies-per-minute personal copier to a 15-copies-per-minute fully featured duplicator.

In further support of this strategy, Xerox offers a wide range of other document processing products. These products include electronic nonimpact printers based on laser and ion deposition technology, ink jet and electrostatic printers, electronic typewriters, workstations, local area networks (LANs) such as Ethernet and network products, facsimile products, scanners, programming products, CAD/CAM systems, and integrated systems solutions.

Xerox also has implemented certain arrangements in support of its strategy. These arrangements include an agreement with Sun Microsystems to use their SPARC microprocessor in certain Xerox products and the development of workstation and server products for Xerox, and arrangements to market Ventura and other desktop publishing software products, which led to the acquisition of Ventura in early 1990.

Xerox also manufactures and markets products for use by engineering reproduction departments, including reproduction devices, some of which reproduce on ordinary paper from microfilm or engineering drawings.

Xerox is one of the world's largest suppliers of cut-sheet paper in the world, distributing approximately 600,000 tons of paper yearly. Xerox also sells and manufactures a broad line of consumables, primarily developer and toner, and a broad range of general office supplies.

Further Information

For further information about the Company's business segments, please contact the appropriate industry service.

Table 1
Five-Year Corporate Highlights (Millions of US Dollars)

	1985	1986	1987	1988	1989
Five-Year Revenue	\$11,761.0	\$13,046.0	\$15,125.0	\$16,441.0	\$17,635.0
Percent Change	4.62	10.93	15.94	8.70	7.26
Capital Expenditure	\$1,017.0	\$1,075.0	\$1,100.0	\$1,399.0	\$1,298.0
Percent of Revenue	8.65	8.24	7.27	8.51	7.36
R&D Expenditure	\$597.0	\$650.0	\$722.0	\$794.0	\$809.0
Percent of Revenue	5.08	4.98	4.77	4.83	4.59
Number of Employees	112,591	112,337	112,287	113,245	111,400
Revenue (\$K)/Employee	\$104.46	\$116.13	\$134.70	\$145.18	\$158.30
Net Income	\$475.0	\$465.0	\$578.0	\$388.0	\$704.0
Percent Change	63.23	(2.11)	24.30	(32.87)	81.44
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$4,139.00	\$4,380.00	\$4,447.00	\$4,669.00	
Quarterly Profit	\$158.00	\$179.00	\$155.00	\$212.00	

Source: Xerox Corporation
Annual Reports
Dataquest (1990)

Table 2
Revenue by Geographic Region (Percent)

Region	1985	1986	1987	1988	1989
North America	75.00	72.00	70.00	65.00	36.38
International	25.00	28.00	30.00	35.00	63.62

Source: Xerox Corporation
Annual Reports
Dataquest (1990)

1989 SALES OFFICE LOCATIONS

North America—182
Japan—Not available
Europe—Not available
Asia/Pacific—Not available
ROW—Not available

South Korea
Function not available
Taiwan
Function not available

ROW

Brazil
Function not available
Mexico
Function not available

MANUFACTURING LOCATIONS

North America

California (6)
Function not available
Canada
Function not available
New York (3)
Function not available
Oklahoma
Function not available
Texas
Function not available

Japan

Japan
Function not available

Europe

Bulgaria
Function not available
England
Function not available
France
Function not available
Gloucester, United Kingdom
Plain paper printers
Madrid, Spain
Plain paper printers
Netherlands
Function not available

Asia/Pacific

China
Function not available
India
Function not available

SUBSIDIARIES

North America

Lyell Holdings Limited (United States)
Versatec Inc. (United States)
Xerox Business Equipment Inc. (United States)
Xerox Canada Inc. (Canada)
Xerox Financial Services Inc. (United States)
Xerox Imaging Systems Inc. (United States)
Xerox Realty Corporation (United States)

Europe

Bessemer Trust Ltd. (United Kingdom)
Rank Xerox A.B. (Sweden)
Rank Xerox Espanola S.A. (Spain)
Rank Xerox Exports Ltd. (United Kingdom)
Rank Xerox Finance (Nederland) B.V. (Netherlands)
Rank Xerox Greece S.A. (Greece)
Rank Xerox Holding B.V. (Netherlands)
Rank Xerox Leasing International Ltd. (United Kingdom)
Rank Xerox Ltd. (Europe)
Rank Xerox Ltd. (United Kingdom)
Rank Xerox (Management) Ltd. (United Kingdom)
Rank Xerox (Nederland) B.V. (Netherlands)
Rank Xerox S.A. (France)
Rank Xerox (U.K.) Ltd. (United Kingdom)
Triton Business Finance Ltd. (United Kingdom)
Xerox Research (U.K.) Ltd. (United Kingdom)

Japan

Fuji Xerox Co., Ltd.

ROW

Astoria Participacoes Ltda. (Brazil)
Xerox Argentina I.C.S.A.

Xerox de Chile
 Xerox de Colombia S.A. (Colombia)
 Xerox de Ecuador S.A. (Ecuador)
 Xerox de Venezuela (Venezuela)
 Xerox del Peru (Peru)
 Xerox Mexicana S.A. (Mexico)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1990

Digital Research

Xerox Desktop Software Inc. and Digital Research entered into a licensing agreement. Under the agreement, Digital will license its Graphical Environment Manager (GEM) systems software to Xerox. GEM was the first systems software that supported mice; windows; and bit-mapped graphical images such as icons, drop-down menus, and raster fonts for IBM PCs and compatibles.

Advanced Technology

Xerox and Robert E. LaRose, founder of Advanced Technology, entered into a joint venture. The new venture, known as Universal Systems Inc. (USI), will pursue systems integration solutions on a worldwide basis. The two parties, independently and together, will market systems that integrate equipment, software, and services to automate large-scale production and processing of documents for business and governments.

Agile Inc.

Xerox and Agile Inc. entered into an agreement to market a new printer-plotter interface controller, expanding the capability of Xerox low-volume electronic printers by working with IBM main-frame systems in a distributed processing environment.

Adobe Systems Incorporated

Xerox and Adobe Systems Incorporated entered into a licensing agreement, providing Xerox the licensing rights to Adobe's PostScript language interpreter. PostScript is an industry-standard language that supports computer systems and electronic printing and publishing products.

1989

Novell Inc.

Xerox entered into an alliance with Novell Inc. to pursue the development of work group publishing by integrating Xerox Ventura Publisher with Novell's NetWare product.

Metaphor

Xerox and Metaphor entered into a licensing agreement, resulting from a settlement of a suit between the two companies relating to intellectual property rights. Under the agreement, Metaphor, a supplier of data interpretations systems, will be allowed to use all features of Xerox's graphical user interface computer software.

AT&T Microelectronics

The two companies signed an agreement to cooperate in the design and production of application-specific ICs (ASICs) for use in Xerox business systems.

Open Software Foundation (OSF)

Xerox joined OSF to promote open systems and industry standards.

Sun Microsystems

Sun and Fuji Xerox are teaming up to form Unisol, a Tokyo-based software developing and marketing firm. Unisol will develop and sell Unix Stem V and Open Look-based software for Japan's workstation market.

UNIX International

Xerox joined UNIX International to promote open systems and industry standards.

1988

Cricket Software, Inc.

Xerox and Cricket entered into a marketing relationship where Xerox is to have exclusive worldwide marketing rights to certain software products that Cricket develops for the MS-DOS and OS/2 operating systems.

Storage Technology

Storage Tek announced the signing of a multiyear, multimillion dollar OEM agreement with Xerox. Storage Tek is to supply Xerox with Storage Tek's 4980 18-track cartridge tape drive and continued requirements for the 2925 9-track open reel tape transport for use with Xerox electronic printing systems.

Wang Laboratories

Xerox and Wang announced a cooperative marketing agreement under which Wang is to recommend Xerox high-speed, high-volume printing systems to selected and prospective Wang customers.

MERGERS AND ACQUISITIONS

1989

Ventura Software Inc.

Xerox's independent Xerox Desktop Software (XDS) subsidiary acquired Ventura Software Inc., which manufactures the Ventura Publisher desktop package. Prior to the purchase, XDS held exclusive marketing rights to Ventura Publisher, which had estimated annual sales of \$40 million. Ventura's original development team will continue to work on upcoming products through July 1, 1990, and then will participate in a six-month technology transfer program.

1988

Datacopy Corporation

Xerox acquired Datacopy, a leading supplier of desktop scanners and image processing systems.

KEY OFFICERS

David T. Kearns

Chairman and chief executive officer

Paul A. Allaire

President

Wayland R. Hicks

Executive vice president, Marketing and Customer Operations

William C. Lowe

Executive vice president, Development and Manufacturing

A. Barry Rand

Group vice president; president, US Marketing Group

Julius L. Marcus

Senior vice president and assistant group executive, Development and Manufacturing

Leonard Vickers

Senior vice president, Marketing

David R. Myerscough

Vice president; president, Xerox Americas Operations

Charles E. Otto

Vice president; senior vice president, Operations, US Marketing Group

Richard C. Palermo

Vice president; senior vice president, Marketing Support, US Marketing Group

Table 3
Comprehensive Financial Statement
Fiscal Year Ending December 31
(Millions of US Dollars, except Per Share Data)

Balance Sheet	1985	1986	1987	1988¹	1989
Total Current Assets	\$3,901.0	\$3,973.0	\$4,459.0	\$5,253.0	\$23,937.0
Cash	267.0	402.0	309.0	296.0	142.0
Receivables	1,874.0	1,867.0	2,104.0	3,374.0	11,811.0
Marketable Securities	0	0	0	0	9,394.0
Inventory	1,470.0	1,389.0	1,408.0	1,583.0	1,567.0
Other Current Assets	290.0	315.0	638.0	0	1,023.0
Net Property, Plants	\$1,423.0	\$1,491.0	\$1,639.0	\$2,008.0	\$1,997.0
Other Assets	\$4,493.0	\$5,144.0	\$5,500.0	\$19,180.0	\$4,154.0
Total Assets	\$9,817.0	\$10,608.0	\$11,598.0	\$26,441.0	\$30,088.0
Total Current Liabilities	\$2,215.0	\$2,206.0	\$2,850.0	\$14,589.0	\$16,531.0
Long-Term Debt	\$1,583.0	\$1,730.0	\$1,539.0	\$5,379.0	\$7,441.0
Other Liabilities	\$1,191.0	\$1,543.0	\$1,662.0	\$806.0	0
Total Liabilities	\$4,989.0	\$5,479.0	\$6,051.0	\$20,774.0	\$23,972.0
Total Shareholders' Equity	\$4,828.0	\$5,129.0	\$5,547.0	\$5,667.0	\$6,116.0
Converted Preferred Stock	442.0	442.0	442.0	296.0	1,081.0
Retained Earnings	4,386.0	4,687.0	5,105.0	5,371.0	5,035.0
Total Liabilities and Shareholders' Equity	\$9,817.0	\$10,608.0	\$11,598.0	\$26,441.0	\$30,088.0
Income Statement	1985	1986	1987	1988¹	1989
Revenue	\$11,761.0	\$13,046.0	\$15,125.0	\$16,441.0	\$17,635.0
US Revenue	8,794.0	9,380.0	10,631.0	10,686.7	6,416.0
Non-US Revenue	2,967.0	3,666.0	4,494.0	5,754.3	11,219.0
Cost of Sales	\$4,411.0	\$4,814.0	\$5,382.0	\$5,778.0	\$4,968.0
R&D Expense	\$597.0	\$650.0	\$722.0	\$794.0	\$809.0
SG&A Expense	\$3,019.5	\$3,370.0	\$3,571.0	\$4,150.0	\$345.0
Capital Expense	\$1,017.0	\$1,075.0	\$1,100.0	\$1,399.0	\$1,298.0
Pretax Income ²	-	-	-	\$1,005.0	\$922.0
Pretax Margin (%)	0	0	0	6.11	5.23
Effective Tax Rate (%)	NA	NA	NA	NA	31.00
Net Income	\$475.0	\$465.0	\$578.0	\$388.0	\$704.0
Shares Outstanding, Millions	96.2	97.3	99.0	101.7	78.9
Per Share Data					
Earnings	\$4.44	\$4.28	\$5.35	\$3.50	\$6.56
Dividend	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00
Book Value	\$45.54	\$48.04	\$51.03	\$52.23	\$77.54

Table 3 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December 31
(Millions of US Dollars, except Per Share Data)

Key Financial Ratios	1985	1986	1987	1988 ¹	1989
<i>Liquidity</i>					
Current (Times)	1.76	1.80	1.56	0.36	1.45
Quick (Times)	1.10	1.17	1.07	0.25	1.35
Fixed Assets/Equity (%)	29.47	29.07	29.55	35.43	32.65
Current Liabilities/Equity (%)	45.88	43.01	51.38	257.44	270.29
Total Liabilities/Equity (%)	103.33	106.82	109.09	366.58	391.96
<i>Profitability (%)</i>					
Return on Assets	-	4.55	5.21	2.04	2.49
Return on Equity	-	9.34	10.83	6.92	11.95
Profit Margin	4.04	3.56	3.82	2.36	3.99
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	5.08	4.98	4.77	4.83	4.59
Capital Spending % of Revenue	8.65	8.24	7.27	8.51	7.36
Employees	112,591	112,337	112,287	113,245	111,400
Revenue (\$K)/Employee	\$104.46	\$116.13	\$134.70	\$145.18	\$158.30
Capital Spending % of Assets	10.36	10.13	9.48	5.29	4.31

¹As with the Consolidated Statements of Income, the new consolidation rules have resulted in significant modifications to the presentation of the Company's consolidated balance sheets.

Source: Xerox Corporation
Annual Reports
Dataquest (1990)

²Xerox did not report pretax income for 1985 through 1987.
NA = Not available

Xerox Corporation

P.O. Box 1600
800 Long Ridge Road
Stamford, Connecticut 06904
Telephone: (203) 968-3000
Fax: (203) 968-4312
Dun's Number: 04-959-1852

Date Founded: 1906

CORPORATE STRATEGIC DIRECTION

Xerox Corporation, founded in 1906 as The Holooid Company, started out as a manufacturer and seller of photographic paper and photocopying equipment. In 1961, the Company changed its name to Xerox Corporation. Xerox is now a multinational company constituting two separate enterprises, business products and systems (BP&S) and financial services.

BP&S activities include developing, manufacturing, marketing, and servicing a broad range of document processing products, including Xerox copiers, duplicators, electronic printers and typewriters, workstations, networks and other related products, software, and supplies. These products are marketed in more than 130 countries by a direct sales force and a network of dealers and distributors. The focus of this analysis is on the BP&S sector.

The Company's financial services business provides financial products and services primarily on a wholesale basis, through Xerox Financial Services. Xerox's financial services include such names as Crum and Forster, Xerox Credit Corporation, Van Kampen Merritt, Furman Selz Holding Corporation, and Xerox Financial Services Life Insurance Company.

In the BP&S segment, Xerox has refocused its efforts. Because certain resources were not producing adequate returns, businesses were either scaled down (e.g., the electronic typing business) or eliminated (e.g., Xerox Medical Systems). The Company organized document systems into one worldwide organization, Integrated Systems Operations. With the development of this new unit, Xerox hopes to achieve substantial increases in profits by having a narrower

focus on specific customer and market segments and specific applications. Overhead was reduced by eliminating 2,000 jobs during fiscal 1988.

During 1989, the Company underwent a major reorganization, affecting marketing, product development, and manufacturing. Wanting to become a more market-driven company and recognizing that its marketing efforts must be coordinated on a worldwide basis, Xerox formed a worldwide marketing and sales organization, Marketing and Customer Operations.

For product development, the new Development and Manufacturing Organization was formed, responsible for design and manufacturing of virtually all Xerox products, including systems software. Additionally, this unit will focus its efforts on developing a corporate-wide architecture based on industry-standard platforms for Xerox products and systems and maximization of Xerox's software assets.

The third new organization is Integrated Systems Operations, which addresses the systems business. Xerox has been very successful in designing complex systems for the U.S. government and has decided to enter the commercial sector with this new unit, which combines custom systems with the rest of the Company's document systems business.

The Company's goals include achieving a 15 percent return on assets in 1990 and providing solid shareholder value. As a step to achieve these goals, the BP&S restructuring, eliminating underused assets, resulted in a \$275 million* write-off against 1988 earnings.

*All dollar amounts are in U.S. dollars.

This \$275 million restructuring provision of the BP&S sector resulted in a decline in net income to \$388 million for fiscal 1988 compared with \$578 million in fiscal 1987. Earnings were lowered by \$1.85 per share. Without restructuring, earnings per share would have been \$5.90, up 10 percent from the previous year. Net income for the BP&S sector was \$73 million in fiscal 1988 compared with \$298 million in fiscal 1987. Before the restructuring, net income increased to \$317 million.

Xerox's total consolidated revenue for fiscal 1988 was \$16.4 billion, as opposed to \$15.1 billion in fiscal 1987.

Research and development expenditures increased to \$794 million in fiscal 1988, or 7 percent of revenue, compared with \$722 million the previous year. Capital expenditures amounted to \$1.4 billion in fiscal 1988 compared with \$1.1 billion the previous year.

U.S. revenue accounted for 65 percent of total revenue, or \$10.7 billion, in fiscal 1988.

Xerox operates 182 sales offices throughout the United States and has sales offices in 58 countries outside the United States.

Xerox's largest interest outside the United States are the Rank Xerox companies, comprising Rank Xerox Ltd. of London, England, and Rank Xerox Holding B.V. of the Netherlands, plus their respective subsidiaries, as well as other subsidiaries jointly owned by Xerox and the Rank Organization.

Rank Xerox manufactures and markets almost all Xerox business products and systems in more than 80 countries in the Eastern Hemisphere. Although its manufacturing operations are located principally in the United Kingdom, its marketing operations are located in Africa, Australia, Europe, the Middle East, and the Far East.

In the Far East, Fuji Xerox Co., Ltd., of Tokyo, Japan (equally owned by Fuji Photo Film Co., Ltd., of Japan and Rank Xerox) manufactures various copiers, duplicators, and supplies that it markets principally in Japan and in other areas of the Far East. They are also marketed by Xerox in the United States and by Rank Xerox.

More detailed information is available in Tables 1 through 3, which appear after "Business Segment Strategic Direction" and present corporate highlights and revenue by region and distribution channel. Table 4, a comprehensive financial statement, is at the end of this profile.

BUSINESS SEGMENT STRATEGIC DIRECTION

Copiers

The backbone of Xerox's product line is the copier. The technology was developed in 1938, but the first commercial copier did not appear on the market until 1959. Since then, technologies have advanced, with the newest line of copiers introduced in May 1988, the Xerox 50 Series of standalone copiers.

Six of the 50 Series copiers are available in the United States. Ranging in performance from 8 cpm to 135 cpm, Xerox copiers have entered a new segment, the personal copier segment, and the Company has rejuvenated its product line with new entries in Segments 1, 2, 3, 4, and 6. Xerox's segment 6 unit is the fastest copier in the world. It also offers binding, hitherto offered only by Eastman Kodak Company.

As Xerox enters the 1990s, its copier strategy is focused toward becoming the leader in integrating office copier products into one package.

Facsimiles

Dataquest estimates that Xerox had 4.3 percent of the 1988 facsimile market based on 44,900 units shipped. This makes the Company eighth in market share position.

Xerox's strength lies in its mid- to high-range product line. It has focused its R&D on printing technology and the integration of fax with its other office products. Xerox introduced its thermal transfer fax machine that used cut-sheet, plain bond paper in 1986. Dataquest believes that thermal transfer is an interim step to plain paper technology. However, Xerox was able to bridge the gap successfully by promoting this unique technology to its customers.

In 1988, Xerox also introduced a complete line of thermal products that will enable the Company to be more effective in penetrating small to medium-size corporations that are unwilling to buy higher-priced fax machines. Xerox's low-end product, the Telecopier 7007, is targeted toward these businesses.

In the future, we anticipate that Xerox will take further advantage of its printing technology strength and possibly enter into the development of a multifunctional terminal. Xerox's presence in the personal copier, word processor, and professional workstation markets makes its FaxMaster software product a viable enhancement to this customer base. FaxMaster software enables personal computer users to send a document from a personal computer to remote fax machines.

Printers

Dataquest estimates that Xerox ranked among the top five page printer companies in 1988 that, combined, captured 74 percent of the market. The other four are Apple, Canon, Hewlett-Packard, and IBM.

Workstations

Dataquest estimates that Xerox's technical workstation 1988 factory revenue was \$30 million, or less than 1 percent of the total technical workstation market.

Xerox manufactures the 1185 and 1186 artificial intelligence (AI) workstations, which bridge the gap between personal computers and midrange workstations. The AI workstations use custom processors designed to support the special requirements of symbolic languages. The systems are configured with from 1.1 to 3.6MB of main memory and support 10 to 80MB of hard disk space. In addition, the workstations can be configured to support IBM PC software. All of Xerox's AI workstations support the Company's LISP compiler, InterLISP D.

Further Information

For further information about the Company's business segments, please contact the appropriate industry service.

Table 1
Five-Year Corporate Highlights (Millions of U.S. Dollars)

	1984	1985	1986	1987	1988
Five-Year Revenue	\$11,242.0	\$11,761.0	\$13,046.0	\$15,125.0	\$16,441.0
Percent Change	-	4.62	10.93	15.94	8.70
Capital Expenditure	\$1,402.3	\$1,017.0	\$1,075.0	\$1,100.0	\$1,399.0
Percent of Revenue	12.47	8.65	8.24	7.27	8.51
R&D Expenditure	\$555.0	\$597.0	\$650.0	\$722.0	\$794.0
Percent of Revenue	4.94	5.08	4.98	4.77	4.83
Number of Employees	110,694	112,591	112,337	112,287	113,245
Revenue (\$K)/Employee	\$101.56	\$104.46	\$116.13	\$134.70	\$145.18
Net Income	\$291.0	\$475.0	\$465.0	\$578.0	\$388.0
Percent Change	-	63.23	(2.11)	24.30	(32.87)
1989 Calendar Year	Q1	Q2	Q3	Q4	
Quarterly Revenue	\$4,139.00	\$4,380.00	\$4,447.00	N/A	
Quarterly Profit	\$158.00	\$179.00	\$155.00	N/A	

N/A = Not Available

Source: Xerox Corporation
 Annual Reports
 Dataquest
 1990

Table 2
Revenue by Geographic Region (Percent)

Region	1984	1985	1986	1987	1988
North America	75.00	75.00	72.00	70.00	65.00
International	25.00	25.00	28.00	30.00	35.00

Source: Xerox Corporation
 Annual Reports
 Dataquest
 1990

Table 3
Revenue by Distribution Channel (Percent)

Channel	1988
Direct Sales	N/A
Indirect Sales	N/A

N/A = Not Available

Source: Xerox Corporation

1988 SALES OFFICE LOCATIONS

North America—182
 Japan—Not available
 Europe—Not available
 Asia/Pacific—Not available
 ROW—Not available

South Korea
 Function not available
 Taiwan
 Function not available

ROW

Brazil
 Function not available
 Mexico
 Function not available

MANUFACTURING LOCATIONS

North America

California (6)
 Function not available
 Canada
 Function not available
 New York (3)
 Function not available
 Oklahoma
 Function not available
 Texas
 Function not available

Japan

Japan
 Function not available

Europe

Bulgaria
 Function not available
 England
 Function not available
 France
 Function not available
 Gloucester, United Kingdom
 Plain paper printers
 Madrid, Spain
 Plain paper printers
 Netherlands
 Function not available

Asia/Pacific

China
 Function not available
 India
 Function not available

SUBSIDIARIES

North America

Crum and Forster Inc. (United States)
 Furman Selz Holding Corporation (United States)
 Rank Xerox Holdings Ltd. (United States)
 Rank Xerox Investments Ltd. (United States)
 Triton Business Finance Ltd. (United States)
 Van Kampen Merritt Inc. (United States)
 Versatec Inc. (United States)
 Xerox Business Equipment Inc. (United States)
 Xerox Canada Inc. (Canada)
 Xerox Credit Corporation (United States)
 Xerox Financial Services Inc. (United States)
 Xerox Imaging Systems Inc. (United States)
 Xerox Realty Corporation (United States)

Europe

Lyell Holdings Ltd. (United Kingdom)
 Rank Xerox Holding B.V. (Netherlands)
 Rank Xerox Ltd. (Europe)

Japan

Fuji Xerox Co., Ltd.

ROW

Astoria Participacoes Ltda. (Brazil)
 Xerox Argentina I.C.S.A.
 Xerox de Chile
 Xerox de Colombia S.A. (Colombia)
 Xerox de Ecuador S.A. (Ecuador)
 Xerox de Venezuela (Venezuela)
 Xerox del Peru (Peru)
 Xerox Mexicana S.A. (Mexico)

ALLIANCES, JOINT VENTURES, AND LICENSING AGREEMENTS

1989

AT&T Microelectronics

The two companies signed an agreement to cooperate in the design and production of application-specific ICs (ASICs) for use in Xerox business systems.

Open Software Foundation (OSF)

Xerox joined OSF to promote open systems and industry standards.

Sun Microsystems

Sun and Fuji Xerox are teaming up to form Unisol, a Tokyo-based software developing and marketing firm. Unisol will develop and sell Unix Stem V and Open Look-based software for Japan's workstation market.

UNIX International

Xerox joined UNIX International to promote open systems and industry standards.

1988

Cricket Software, Inc.

Xerox and Cricket entered into a marketing relationship where Xerox is to have exclusive worldwide marketing rights to certain software products that Cricket develops for the MS-DOS and OS/2 operating systems.

Storage Technology

StorageTek announced the signing of a multiyear, multimillion dollar OEM agreement with Xerox. StorageTek is to supply Xerox with StorageTek's 4980 18-track cartridge tape drive and continued requirements for the 2925 9-track open reel tape transport for use with Xerox electronic printing systems.

Wang Laboratories

Xerox and Wang announced a cooperative marketing agreement under which Wang is to recommend Xerox high-speed, high-volume printing systems to selected and prospective Wang customers.

MERGERS AND ACQUISITIONS

1988

Datacopy Corporation

Xerox acquired Datacopy, a leading supplier of desktop scanners and image processing systems.

Du Pont

Xerox and Du Pont signed a letter of intent for Du Pont to acquire the Xerox Medical Systems business with headquarters in Monrovia, California.

KEY OFFICERS

David T. Kearns

Chairman, chief executive officer

Paul A. Allaire

President

William F. Glavin

Vice chairman

Melvin Howard

Vice chairman; chairman and chief executive officer, Xerox Financial Services, Inc.

Wayland R. Hicks

Executive vice president, Marketing and Customer Operations

William C. Lowe

Executive vice president, Development and Manufacturing

Table 4
Comprehensive Financial Statement
Fiscal Year Ending December 31
(Millions of U.S. Dollars, except Per Share Data)

Balance Sheet	1984	1985	1986	1987	1988*
Total Current Assets	\$3,739.2	\$3,901.0	\$3,973.0	\$4,459.0	\$5,253.0
Cash	168.0	267.0	402.0	309.0	296.0
Receivables	1,337.7	1,874.0	1,867.0	2,104.0	3,374.0
Marketable Securities*	58.9	0	0	0	0
Inventory	1,300.0	1,470.0	1,389.0	1,408.0	1,583.0
Other Current Assets	874.6	290.0	315.0	638.0	0
Net Property, Plants	\$1,391.8	\$1,423.0	\$1,491.0	\$1,639.0	\$2,008.0
Other Assets	\$4,406.1	\$4,493.0	\$5,144.0	\$5,500.0	\$19,180.0
Total Assets	\$9,537.1	\$9,817.0	\$10,608.0	\$11,598.0	\$26,441.0
Total Current Liabilities	\$2,451.1	\$2,215.0	\$2,206.0	\$2,850.0	\$14,589.0
Long-Term Debt	\$1,614.3	\$1,583.0	\$1,730.0	\$1,539.0	\$5,379.0
Other Liabilities	\$928.7	\$1,191.0	\$1,543.0	\$1,662.0	\$806.0
Total Liabilities	\$4,994.1	\$4,989.0	\$5,479.0	\$6,051.0	\$20,774.0
Total Shareholders' Equity	\$4,543.0	\$4,828.0	\$5,129.0	\$5,547.0	\$5,667.0
Converted Preferred Stock	442.0	442.0	442.0	442.0	296.0
Retained Earnings	4,101.0	4,386.0	4,687.0	5,105.0	5,371.0
Total Liabilities and Shareholders' Equity	\$9,537.1	\$9,817.0	\$10,608.0	\$11,598.0	\$26,441.0
Income Statement	1984	1985	1986	1987	1988*
Revenue	\$11,242.0	\$11,761.0	\$13,046.0	\$15,125.0	\$16,441.0
U.S. Revenue	8,404.0	8,794.0	9,380.0	10,631.0	10,686.7
Non-U.S. Revenue	2,838.0	2,967.0	3,666.0	4,494.0	5,754.3
Cost of Sales	\$4,204.0	\$4,411.0	\$4,814.0	\$5,382.0	\$5,778.0
R&D Expense	\$555.0	\$597.0	\$650.0	\$722.0	\$794.0
SG&A Expense	\$2,986.5	\$3,019.5	\$3,370.0	\$3,571.0	\$4,150.0
Capital Expense	\$1,402.3	\$1,017.0	\$1,075.0	\$1,100.0	\$1,399.0
Pretax Income**	-	-	-	-	\$1,005.0
Pretax Margin (%)	0	0	0	0	6.11
Effective Tax Rate (%)	N/A	N/A	N/A	N/A	N/A
Net Income	\$291.0	\$475.0	\$465.0	\$578.0	\$388.0
Shares Outstanding, Millions	95.7	96.2	97.3	99.0	101.7
Per Share Data					
Earnings	\$2.53	\$4.44	\$4.28	\$5.35	\$3.50
Dividends	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00
Book Value	\$42.87	\$45.54	\$48.04	\$51.03	\$52.23

Table 4 (Continued)
Comprehensive Financial Statement
Fiscal Year Ending December 31
(Millions of U.S. Dollars, except Per Share Data)

Key Financial Ratios	1984	1985	1986	1987	1988*
<i>Liquidity</i>					
Current (Times)	1.53	1.76	1.80	1.56	0.36
Quick (Times)	1.00	1.10	1.17	1.07	0.25
Fixed Assets/Equity (%)	30.64	29.47	29.07	29.55	35.43
Current Liabilities/Equity (%)	53.95	45.88	43.01	51.38	257.44
Total Liabilities/Equity (%)	109.93	103.33	106.82	109.09	366.58
<i>Profitability (%)</i>					
Return on Assets	-	4.91	4.55	5.21	2.04
Return on Equity	-	10.14	9.34	10.83	6.92
Profit Margin	2.59	4.04	3.56	3.82	2.36
<i>Other Key Ratios</i>					
R&D Spending % of Revenue	4.94	5.08	4.98	4.77	4.83
Capital Spending % of Revenue	12.47	8.65	8.24	7.27	8.51
Employees	110,694	112,591	112,337	112,287	113,245
Revenue (\$K)/Employee	\$101.56	\$104.46	\$116.13	\$134.70	\$145.18
Capital Spending % of Assets	14.70	10.36	10.13	9.48	5.29

*As with the Consolidated Statements of Income, the new consolidation rules have resulted in significant modifications to the presentation of the Company's consolidated balance sheets.

**Xerox did not report pretax income for 1984 through 1987.

N/A = Not Available

Source: Xerox Corporation
 Annual Reports
 Dataquest
 1990

Xicor, Inc.

THE COMPANY

Background

Xicor, Inc., was founded by Raphael Klein, Richard T. Simko, Wallace Tchou, and William H. Owen III, formerly of Intel Corporation; Julius Blank, formerly of Nortec; and S. Allan Kline and Paul L. Myers Jr., formerly of Intersil. The Company was incorporated on August 18, 1978, in the State of California. Xicor is a public corporation and its stock is traded over the counter. Xicor is primarily engaged in the design, development, production, and marketing of non-volatile, random-access memory (NVRAM) devices.

Operations

Xicor's corporate headquarters and fabrication facilities are located in Milpitas, California. In addition, very early in the Company's development, Xicor initiated a joint venture with Ebauches Electroniques, S.A., of Marin, Switzerland, allowing fabrication of Xicor products in Europe. Fabrication commenced in the Milpitas plant in March 1982. Ebauches continues to manufacture Xicor products for the European market and also serves as a second source.

Marketing

Xicor markets its products in the United States through direct sales, a network of independent sales representatives, and non-exclusive distributors. The European market is served by Ebauches Electroniques, S.A. Sales representatives are also located in Japan and Israel.

Marketing and sales headquarters are:

Xicor, Inc.
851 Buckeye Court
Milpitas, California 95035
Telephone: (408) 946-6920
TWX 910-3790033

Research and Development

Since it was founded, the Company's activities have centered on the research, development, and preliminary marketing of its NOVRAM, a patented nonvolatile RAM (NOVRAM is a trademark of Xicor, Inc.). Since its inception in 1978, the Company has spent more than \$3 million on research and development. In 1981, 12 percent of the Company's employees were engaged in R&D activities.

Xicor, Inc.

Employees

As of March 19, 1982, Xicor had 100 full-time employees, 8 of whom are engaged in administration, 9 in marketing and sales, 12 in research and product development, and 71 in manufacturing and quality assurance.

PRODUCTS

Xicor produces nonvolatile random-access memories under the trademark NOVRAM. These devices combine the data-retention characteristics of ROM devices with the ease of reprogramming typical of traditional RAMs. The devices are TTL-compatible and operate on a 5-volt power supply.

In order to penetrate markets where cost per memory bit is more critical than functionality, Xicor recently introduced 16K EEPROMs based on the structure of the EEPROM component of the NOVRAM cell. The Company also plans to produce 4K versions of its EEPROM devices.

Xicor, Inc.

Xicor, Inc.
851 Buckeye Court
Milpitas, California 95035
Telephone: (408) 946-6920
(Millions of Dollars Except Per Share Data)

Balance Sheet (January 3, 1982)

	<u>1979</u>	<u>1980</u>	<u>1981</u>
Working Capital	\$ 0.509	\$14.161	\$ 3.773
Long-Term Debt	\$ 0.024	\$ 0.032	\$ 5.405
Shareholders' Equity	\$ 0.532	\$15.237	\$ 9.711
After-Tax Return on Average Equity (%)	N/M	N/M	N/M

Operating Performance (Fiscal Year Ending January 3, 1982)

	<u>1979</u>	<u>1980</u>	<u>1981</u>
Revenue	\$ 0.021	\$ 0.540	\$ 1.897
Cost of Revenue	\$ 0.365	\$ 1.413	\$ 7.423
R&D Expense	\$ 0.120	\$ 0.478	\$ 2.541
SG&A Expense	\$ 0.245	\$ 0.932	\$ 4.584
Pretax Income	\$(0.344)	\$(0.873)	\$(5.526)
Pretax Margin (%)	N/M	N/M	N/M
Effective Tax Rate (%)	0	0	0
Net Income	\$(0.344)	\$(0.873)	\$(5.526)
Average Shares Outstanding (Millions)	2.4	3.0	5.8
Per Share			
Earnings	\$(0.14)	\$(0.30)	\$(0.95)
Dividend	0	0	0
Book Value	\$ 0.222	\$ 5.079	\$ 1.674
Price Range		\$ 6 1/2- 11 1.2	\$ 5 1/2- 14 1/2
Total Employees	N/A	N/A	100

N/A = Not Available
N/M = Not Meaningful

Source: Xicor, Inc., Annual Reports
DATAQUEST, Inc.
June 1982

Xicor, Inc.

(Page intentionally left blank)

X

Yamaha Corporation

Table 1

Estimated Worldwide Semiconductor Revenue by Calendar Year
(Billions of Yen)

	<u>1987</u>	<u>1988</u>
Total Semiconductor	16.6	19.7
Total Integrated Circuit	16.6	19.7
Bipolar Digital (Function)		
Bipolar Digital Memory		
Bipolar Digital Logic		
MOS (Function)	16.7	19.7
MOS Memory		
MOS Microdevices		
MOS Logic	16.7	19.7
Analog		
Total Discrete		
Total Optoelectronic		

Table 2

Estimated Worldwide Semiconductor Revenue by Calendar Year
(Millions of Dollars)

	<u>1987</u>	<u>1988</u>
Total Semiconductor	116	151
Total Integrated Circuit	116	151
Bipolar Digital (Function)		
Bipolar Digital Memory		
Bipolar Digital Logic		
MOS (Function)	116	151
MOS Memory		
MOS Microdevices		
MOS Logic	116	151
Analog		
Total Discrete		
Total Optoelectronic		

Source: Dataquest
December 1989

Yamaha Corporation

Table 3

**Yamaha Corporation
1988 Worldwide Ranking by Semiconductor Markets
(Revenue in Millions of Dollars)**

	<u>1988 Rank</u>	<u>1987 Rank</u>	<u>1988 Revenue</u>	<u>Sales % Change 1987-1988</u>	<u>Industry % Change 1987-1988</u>
Total Semiconductor	43	42	\$151	30.2%	33.0%
Total Integrated Circuit	36	35	\$151	30.2%	37.4%
MOS (Function)	29	28	\$151	30.2%	54.5%
MOS Logic	18	20	151	30.2%	29.2%

Table 4

**Yamaha Corporation
Estimated 1988 Semiconductor Revenue by Geographic Region
(Millions of Dollars)**

	<u>U.S.</u>	<u>Japan</u>	<u>Europe</u>	<u>ROW</u>
Total Semiconductor	\$3	\$135	\$2	\$11
Total Integrated Circuit	\$3	\$135	\$2	\$11
Bipolar Digital (Function)				
Bipolar Digital Memory				
Bipolar Digital Logic				
MOS (Function)	\$3	\$135	\$2	\$11
MOS Memory				
MOS Microdevices				
MOS Logic	\$3	135	2	11
Analog				
Total Discrete				
Total Optoelectronic				

Source: Dataquest
December 1989

Zilog, Inc.

BACKGROUND AND OVERVIEW

Zilog, Inc., was founded in November 1974 by F. Faggin and R. Ungermann, both previously from Intel Corporation. The Company was founded to manufacture and sell microprocessor products. In June 1975, Exxon Enterprises, Inc., the oil company, showed an interest in the newly formed company and offered capital assistance. Zilog is now an affiliate of Exxon Enterprises, Inc.

In October 1976, Zilog's headquarters were established in Cupertino, California. Over the next few years, widespread recognition for the Z80, Zilog's improved second-generation version of Intel's highly successful 8080 8-bit microprocessor, brought rapid growth and expansion for the Company. Zilog opened its first in-house component manufacturing facility designed to employ the latest state-of-the-art technology, in Campbell, California. In addition, a systems manufacturing facility was also opened in Cupertino, California, and a component assembly plant in Manila, the Philippines. Zilog also opened its first domestic facility outside California, a manufacturing plant in Nampa, Idaho. The addition of this facility considerably increased Zilog's wafer fabrication potential.

Zilog has a second-source agreement with AMD under which AMD manufactures Zilog's Z8000/3 and Z8000/4 16-bit microprocessors. In return, AMD supplies Zilog with MOS and bipolar technology components and an Ethernet chip. Zilog has a similar agreement, covering the complete range of Zilog's microprocessor products, with SGS-Ates in Italy.

As shown in Table 1, DATAQUEST estimates that Zilog's 1982 European revenues were \$22 million.

Zilog, Inc.

Table 1

Zilog, Inc.
ESTIMATED EUROPEAN SEMICONDUCTOR REVENUES BY PRODUCT LINE
(Millions of U.S. Dollars)

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Total Semiconductor	\$ 1	\$ 5	\$ 23	\$ 19	\$ 22
Total Integrated Circuit	\$ 1	\$ 5	\$ 23	\$ 19	\$ 22
Bipolar Digital	0	0	0	0	0
MOS	1	5	23	19	22
Linear	0	0	0	0	0
Total Discrete	0	0	0	0	0
Transistor	0	0	0	0	0
Diode	0	0	0	0	0
Thyristor	0	0	0	0	0
Other	0	0	0	0	0
Total Optoelectronic	0	0	0	0	0

Source: DATAQUEST
December 1983

PRODUCTS AND MARKETS SERVED

Zilog developed the Z80 microprocessor in 1976 and has since added a broad line of peripheral devices. The Company introduced the first members of two new families, the Z8, a single-chip, 8-bit microcomputer aimed at high-performance, cost-sensitive applications, and the Z8000, a 16-bit microcomputer that took Zilog into the high-end microcomputer market.

Zilog has a wide product range in the systems area, including development systems, a complete line of Z80-based microcomputer boards and general-purpose microcomputer systems, and a vast array of software support. The Z80 processor has become the industry standard for use in many of the home computers produced in Europe, and currently enjoys the highest volume sales in this area.

Zilog, Inc.

OUTLOOK

In spite of a long record of innovation and the success of the industry-standard Z80 microprocessor, Zilog has never been a profitable concern.

Zilog entered 1983 with new emphasis on profitability, while retaining and enhancing market acceptance of its product range. Zilog is introducing a range of new products during 1983. The Company will produce CMOS parts for the first time and will bring out a Z80 extended to 8/16-bit performance, called the Z800, which will compete directly with Intel's 8088. In 1983, Zilog expects to announce its CMOS version of the Z80 and to produce test batches of the CMOS process it is acquiring from Toshiba.

Also in 1983, the Z80000 16/32-bit processor family will extend the Z8000 16-bit processor while maintaining bit-level software compatibility.

Another planned introduction by Zilog in 1983 will be its floating point math processor. This is the first device implementing Zilog's new "Extended Processor" concept.

Zilog, in an attempt to gain greater growth, intends to concentrate on developing new peripherals as well as on updating and extending its processor lines.

Zilog also hopes to put stronger emphasis on military sales, having an existing base to build on, with the Z800 well accepted in military applications because of its high number-crunching capability.

Other Semiconductor Manufacturers

ADVANCED DATUM INFORMATION CORPORATION (ADI)

Disco Electronic Enterprise Corporation was founded in 1979. DEE's major products were televisions and monitors. When Disco expanded its business field to terminals, keyboards, and personal computers in 1982, it changed its name from DEE to ADI.

President: David T. P. Wang

Head office: 15F, 126, Sec. 4, Nan King E. Road, Taipei, Taiwan

Factory: 258-1, Pu-tzi Keng, Kuang Hua Tsuen, Taiping Shiang, Taichung, Taiwan

Telephone: Head office--(02) 751-0017
Factory--(04) 279-8161

Telex: 21790 MAGNACOD

Fax: (02) 731-1121

Capital: US\$5,250,000

Employees: 874

Facility: 270,000 square feet

Main products: Monitors, terminals, keyboards, personal computers

Worldwide sales (millions of U.S. dollars):

<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
\$12.0	\$20.0	\$30.0	\$50.0

Source: Dataquest
March 1987

Other Semiconductor Manufacturers

Semiconductor products purchased (millions of U.S. dollars):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Total semiconductor	\$5.4	\$8.1	\$10.8	\$16.2
IC	3.2	6.1	8.6	11.3
Discrete	2.2	2.0	2.2	4.9

Source: Dataquest
March 1987

Major semiconductor component suppliers: Hitachi, TI, Motorola, National Semiconductor, SGS, Sanyo, GIT

DIONIX CORPORATION

President: George Tai

Head office: 3F, No. 45, Sec. 2, Fu Shin S. Road, Taipei, Taiwan

Factory: No. 176, Ta Kuan Road, Ta Yuan Hsiang, Tacyuan Hsien, Taiwan

Telephone: Head office--(02) 705-4539
Factory--(033) 866305

Telex: 11774 DIOATS ATTN: GEORGE TAI

Capital: US\$1,050,000

Employees: 10

Established: 1983

Production: 1985--130 million units

Main products: High-power, fast-recovery, low-power, bridge, and custom rectifiers; zener and reference diodes

Other Semiconductor Manufacturers

OPTOTECH CORPORATION

President: James Chiu

Head office and factory: No. 32, Ind. East 4 Road, Science-Based Ind. Park, Hsinchu, Taiwan

Telephone: (035) 777-481/3

Telex: 31592 OPTOTECH

Cable: OPTOTECH HSINCHU

Capital: US\$1,000,000

Employees: 100

Established: 1984

Production: 1985--US\$3 million (500 million units)

Main products: Visible LEDs, inherent light, photo transistors, photo diodes

Production capacity: 840 million units per year

PHOTRONICS CORPORATION

President: Andrew Chew

Head office: 11F, 160, Sec. 2, Nanking E. Road, Taipei, Taiwan

Factory: 28, Wu Shun Street, An Lok District, Keelung, Ta Wu Lurn Industrial Park, Taiwan

Telephone: Head office--(02) 5518250
Factory--(032) 312151/6

Fax: (02) 561-7925

Capital: US\$1,250,000

Employees: 700

Other Semiconductor Manufacturers

Established: 1980

Production: 1985--US\$0.5 million

Main products: LED and rectifier wafers; solar cells; silicon, fast-recovery, and bridge rectifiers

PRESIDENT ENTERPRISE CORPORATION

President: Shou-chee Wu

Head office: 301, Chung Cheng Road, Yeong Kang Shiang, Tainan Hsien, Taiwan

Factory: 76, Chung San Road., Hsin Shih Hsiang, Tainan Hsien, Taiwan

Telephone: Head office--(06) 253-2121
Factory--(096) 599-1621

Telex: 12200PECORTPE

Fax: (06) 253-2661

Cable: "PRESIDENT" TAINAN

Overseas offices: Room 1202 Sino Centre, No. 582, Nathan Road, Kowloon, Hong Kong
3028 A Scott Blvd., Santa Clara, CA 95054, U.S.

Semiconductor Division:

Director: Chin-tsai Chen

Capital: US\$47 million

Employees: 260

Established: 1982

Production: 1985--US\$3.8 million

Production capacity: 2,500 million units per year

Brand name: PECOR

Main products: High-power transistors

Other Semiconductor Manufacturers

PROMAX-JOINTON ELECTRONICS CORPORATION

President: In-chung Chu

Head office and factory: No. 17-1, Yung Kung 1st Road, Yung An,
Kaohsiung Hsien, Taiwan

Telephone: (07) 622-9850/3

Telex: 81834 PROMAX

Fax: (07) 622-5024

Capital: US\$3,750,000

Employees: 500

Established: 1983

Production: 1985--US\$6 million (40 kk JUNCTIONS per month)

Main products: Silicon and bridge rectifiers, custom diffusion wafers

TAIWAN SEMICONDUCTOR COMPANY, LTD.

President: Arthur Wang

Head office and factory: No. 2-6, Lane 4, Chen-ten Road, Tu-chen Hsiang,
Taipei Hsien, Taiwan

Telephone: (02) 260-1230

Telex: 32254 TSCDMC

Capital: US\$75,000

Employees: 200

Established: 1979

Production: 1985--US\$3 million

Main products: Axial lead silicon and fast-recovery rectifiers, bridge
rectifier assemblies

Production: 30 million units per year

Other Semiconductor Manufacturers

TAIWAN TOPTek ELECTRONIC COMPANY, LTD.

President: Shen Yen Chen

Head office and factory: No. 37, Chung Shan Road., Sec. 2, Chung Ho
City, Taipei Hsien, Taiwan

Telephone: (02) 248-6666

Telex: 32280 TOPTek ATTN: MR. JAMES LIN

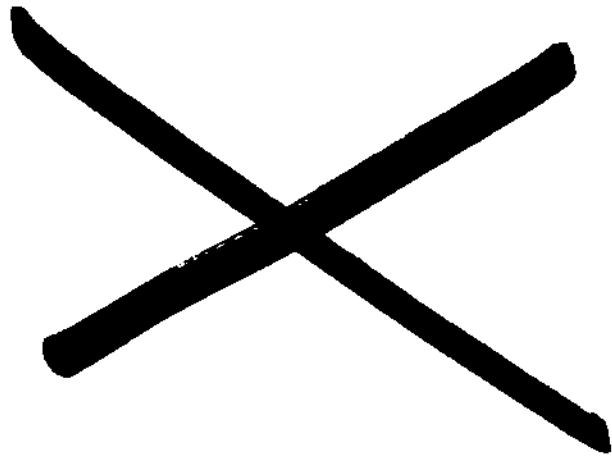
Capital: US\$1 million

Employees: 300

Established: 1982

Production: 13.8 million units per year

Main products: Single-digit, dual-digit, and dot matrix, clock displays;
lamps





Market Share Ranking

Table 1

**Final Estimated 1988 Worldwide Semiconductor Market Share Rankings
(Millions of Dollars)**

1988 Rank	1987 Rank	Company	1987 Revenue	1988 Revenue	Percent Change
1	1	NEC	3,368	4,543	34.9%
2	2	Toshiba	3,029	4,395	45.1%
3	3	Hitachi	2,618	3,506	33.9%
4	4	Motorola	2,434	3,035	24.7%
5	5	Texas Instruments	2,127	2,741	28.9%
6	6	Fujitsu	1,801	2,607	44.8%
7	10	Intel	1,491	2,350	57.6%
8	9	Mitsubishi	1,492	2,312	55.0%
9	11	Matsushita	1,457	1,883	29.2%
10	7	Philips-Signetics	1,602	1,738	8.5%
11	8	National Semiconductor	1,506	1,650	9.6%
12	13	SGS-Thomson	859	1,087	26.5%
13	12	Advanced Micro Devices	986	1,084	9.9%
14	14	Sanyo	851	1,083	27.3%
15	18	Sharp	590	1,036	75.6%
16	19	Sony	571	950	66.4%
17	17	Okidata	651	947	45.5%
18	23	Samsung	328	905	175.9%
19	15	AT&T	802	859	7.1%
20	16	Siemens	657	784	19.3%
21	21	Rohm	518	721	39.2%
22	20	General Electric	520	555	6.7%
23	24	Sanken	294	383	30.3%
24	28	LSI Logic	262	375	43.1%
25	25	Analog Devices	292	360	23.3%
26	22	ITT	357	360	0.8%
27	29	Fuji Electric	252	346	37.3%
28	43	Micron Technology	115	331	187.8%
29	26	Harris	275	329	19.6%
30	30	Seiko-Epson	245	311	26.9%
31	27	Telefunken Electronic	273	289	5.9%

(Continued)

Table 1 (Continued)

Final Estimated 1988 Worldwide Semiconductor Market Share Rankings
(Millions of Dollars)

1988 Rank	1987 Rank	Company	1987 Revenue	1988 Revenue	Percent Change
32	32	Plessey	222	284	27.9%
33	31	Hewlett-Packard	243	270	11.1%
34	35	VLSI Technology	172	221	28.5%
35	48	NMB Semiconductor	104	199	91.3%
36	37	International Rectifier	151	192	27.2%
37	33	Honeywell	187	182	(2.7%)
38	34	Rockwell	172	174	1.2%
39	50	Integrated Device Tech.	98	171	74.5%
40	38	New JRC	130	169	30.0%
41	36	General Instrument	160	164	2.5%
42	45	Chips & Technologies	112	160	42.9%
43	42	Yamaha	116	151	30.2%
44	39	Burr-Brown	120	144	20.0%
45	63	GoldStar	69	137	98.6%
46	60	Cypress Semiconductor	76	135	77.6%
47	41	NCR	116	132	13.8%
48	44	Siliconix	115	131	13.9%
49	55	Silicon Systems	88	125	42.0%
50	46	Sprague	109	120	10.1%
51	47	Powerex	106	115	8.5%
52	49	ASEA Brown Boveri	103	113	9.7%
53	64	Unitrode	69	113	63.8%
54	53	Microchip Technology	89	111	24.7%
55	51	Inmos	91	110	20.9%
56	83	Hyundai	30	106	253.3%
57	52	United Microelectronics	91	106	16.5%
58	56	Gould AMI	85	101	18.8%
59	62	Western Digital	70	100	42.9%
60	54	Raytheon	89	99	11.2%
61	58	KEC	78	95	21.8%
62	57	Semikron	79	91	15.2%
63	66	Xicor	63	90	42.9%
64	61	Zilog	75	90	20.0%
65	59	Precision Monolithics	78	85	9.0%
66	65	Ricoh	65	85	30.8%

(Continued)

Table 1 (Continued)

Final Estimated 1988 Worldwide Semiconductor Market Share Rankings
(Millions of Dollars)

1988 Rank	1987 Rank	Company	1987 Revenue	1988 Revenue	Percent Change
67	68	Matra-Harris	48	71	47.9%
68	40	TRW	117	61	(47.9%)
69	67	SEEQ	50	60	20.0%
70	74	Linear Technology	43	59	37.2%
71	76	Ericsson	41	52	26.8%
72	69	MEDL	47	51	8.5%
73	71	Exar	44	47	6.8%
74	73	Hughes	43	47	9.3%
75	75	IMP	42	47	11.9%
76	91	Sierra Semiconductor	24	47	95.8%
77	70	Solitron	47	46	(2.1%)
78	72	VTC	44	46	4.5%
79	80	Austria Mikro Systeme	32	44	37.5%
80	78	Mitel	39	43	10.3%
81	81	Mietec	32	42	31.3%
82	77	Standard Microsystems	41	41	0
83	116	Quality Technologies	0	40	N/A
84	106	Vitellic	10	40	300.0%
85	94	Altera	21	37	76.2%
86	93	Maxim	22	35	59.1%
87	88	Silicon General	25	35	40.0%
88	79	Teledyne	33	35	6.1%
89	98	WaferScale	20	35	75.0%
90	97	Weitek	21	35	66.7%
91	84	Cherry Semiconductor	29	33	13.8%
92	87	Eurosil	25	29	16.0%
93	85	Applied Micro Circuits Corp.	27	28	3.7%
94	89	California Micro Devices	24	28	16.7%
95	115	Fagor	0	27	N/A
96	105	Xilinx	11	27	145.5%
97	86	ZyMOS	26	27	3.8%
98	92	Micro Power Systems	23	26	13.0%
99	103	Micro Linear	12	24	100.0%
100	95	TAG	21	23	9.5%
101	102	Lattice	13	22	69.2%

(Continued)

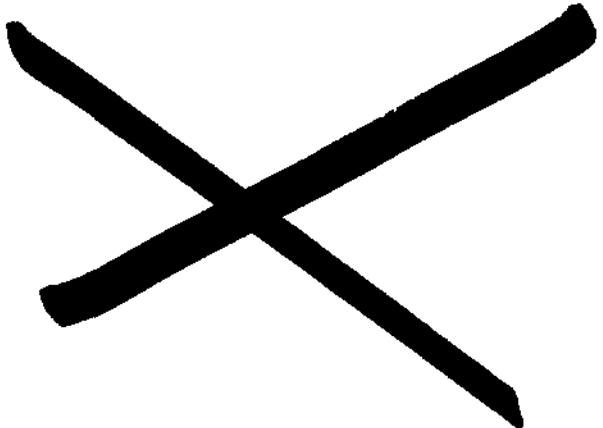
Table 1 (Continued)

Final Estimated 1988 Worldwide Semiconductor Market Share Rankings
(Millions of Dollars)

1988 Rank	1987 Rank	Company	1987 Revenue	1988 Revenue	Percent Change
102	104	STC	12	22	83.3%
103	100	Acrian	15	21	40.0%
104	99	Supertex	19	21	10.5%
105	96	VQSI	21	21	0
106	101	IMI	13	15	15.4%
107	109	ES2	7	13	85.7%
108	114	MOSEL	1	12	1,100.0%
109	110	Saratoga Semiconductor	4	10	150.0%
110	108	Universal	8	10	25.0%
111	107	Holt	9	9	0
112	113	Daewoo	1	7	600.0%
113	111	BIT	2	6	200.0%
114	112	Catalyst	2	5	150.0%
115	82	ERSO	30	0	(100.0%)
116	90	GTE Microcircuits	24	0	(100.0%)
		Total Market	38,251	50,859	33.0%
		Japanese Companies	18,450	25,942	40.6%
		U.S. Companies	14,930	18,586	24.5%
		European Companies	4,200	4,917	17.1%
		Rest of World Companies	671	1,414	110.7%

N/A = Not Applicable

Source: Dataquest
October 1989



Company Revenue by Product

Worldwide Semiconductor Market 1988 Semiconductor Revenue by Product (Millions of Dollars)

Company	Bipolar Memory	Bipolar Logic	MOS Memory	MOS Micro	MOS Logic	Analog	Discrete	Opto	Total Semi
Total Market	689	4,511	11,692	7,144	8,152	8,880	7,612	2,179	50,859
Acriam	0	0	0	0	0	0	21	0	21
Advanced Micro Devices	104	432	207	183	92	66	0	0	1,084
Altera	0	0	0	0	37	0	0	0	37
Analogy Devices	0	0	0	20	0	340	0	0	360
Applied Micro Circuits Corp.	0	27	0	0	1	0	0	0	28
ASEMI-Brown Boveri	0	0	0	0	28	0	76	9	113
ATI	0	61	24	39	317	247	161	10	859
Austria Mikro Systeme	0	0	4	0	36	4	0	0	44
Bipolar Integrated Technology	0	6	0	0	0	0	0	0	6
Burr-Brown	0	0	0	0	0	144	0	0	144
California Micro Devices	0	0	0	1	4	23	0	0	28
Catalyst	0	0	5	0	0	0	0	0	5
Cherry Semiconductor	0	0	0	0	0	33	0	0	33
Chips & Technologies	0	0	0	130	0	0	0	0	160
Cypress Semiconductor	0	30	94	7	34	0	0	0	135
Daewoo	0	0	0	0	2	5	0	0	7
Ericsson	0	0	0	0	6	46	0	0	52
European Silicon Structures	0	0	0	0	13	0	0	0	13
Eurosil	0	0	0	2	27	0	0	0	29
Exar	0	0	3	0	4	40	0	0	47
Fagor	0	0	0	0	0	0	27	0	27
Fuji Electric	0	0	0	0	31	33	279	3	346
Fujitsu	254	399	1,067	202	347	151	82	105	2,607
General Electric	0	0	29	48	192	120	145	21	555
General Instrument	0	0	0	0	0	0	164	0	164
Goldstar	0	32	27	4	32	41	1	0	137
Gould AMI	0	0	15	0	86	0	0	0	101
Harris	3	59	26	62	33	146	0	0	329
Hewlett-Packard	0	0	0	0	0	0	57	213	270
Hiltachi	119	382	1,114	525	246	343	707	70	3,506
Holt	0	0	0	0	0	9	0	0	9
Honeywell	0	27	14	0	74	27	10	30	182
Hughes	0	0	0	2	45	0	0	0	47
Huundai	0	0	106	0	0	0	0	0	106
IMI	0	0	0	1	14	0	0	0	15
Imos	0	0	53	57	0	0	0	0	110
Integrated Device Technology	0	0	135	15	21	0	0	0	171
Intel	0	22	392	1,835	101	0	0	0	2,350
International Rectifier	0	0	0	0	47	0	192	0	192
Int'l Microelectronic Prod.	0	0	0	15	0	0	0	0	47
ITT	0	0	0	0	135	64	146	0	360
Korean Electronic Co.	0	0	0	0	0	25	65	5	95
Lattice	0	0	2	0	20	0	0	0	22
Linear Technology	0	0	0	0	0	59	0	0	59
LSI Logic	0	0	0	18	357	0	0	0	375
Matra-Harris	0	0	28	21	22	0	0	0	71
Matsumita	0	0	230	230	415	423	377	178	1,883
Maxim	0	0	0	0	0	35	0	0	35
MBDL	0	0	5	1	23	0	22	0	51
Micro Linear	0	0	0	0	0	0	0	0	24
Micro Power Systems	0	0	0	0	0	26	0	0	26
Microchip Technology	0	0	82	18	11	0	0	0	111
Micron Technology	0	0	331	0	0	0	0	0	331
Mitel	0	0	0	0	42	0	0	0	42
Mitel	0	0	0	0	0	43	0	0	43
Mitsubishi	0	127	966	381	106	395	310	27	2,212

(Continued)

Company Revenue by Product

Worldwide Semiconductor Market (Continued) 1988 Semiconductor Revenue by Product (Millions of Dollars)

Company	Bipolar Memory	Bipolar Logic	MOS Memory	MOS Micro	MOS Logic	Analog	Discrete	Opto	Total Semi
MOSEL	0	0	12	0	0	0	0	0	12
Motorola	7	428	236	699	464	425	752	24	3,035
National Semiconductor	35	515	135	150	200	540	75	0	1,650
NCR	0	0	6	6	120	0	0	0	132
N&C	44	246	1,490	790	843	469	571	88	4,543
New JRC	0	1	0	0	27	118	8	15	169
NMB Semiconductor	0	0	199	0	0	0	0	0	199
OKI Semiconductor	0	38	353	134	354	23	9	36	947
Philips-Signetics	58	355	35	114	253	466	432	25	1,738
Plessey	0	94	0	0	76	67	25	22	284
Powerex	0	0	0	0	0	0	115	0	115
Precision Monolithics	0	0	0	0	0	85	0	0	85
Quality Technologies	0	0	0	0	0	0	0	40	40
Raytheon	14	41	0	0	2	27	15	0	99
Ricoh	0	0	26	19	40	0	0	0	85
Rockwell	0	0	0	51	123	0	0	0	174
Rohm	0	0	8	16	30	271	287	109	721
Samsung	0	0	650	15	100	85	55	0	905
Sanken	0	0	0	0	0	157	207	19	383
Sanyo	0	41	87	70	142	471	210	62	1,083
Saratoga Semiconductor	0	0	10	0	0	0	0	0	10
SEQ Technology	0	0	46	0	14	0	0	0	60
Seiko-Epson	0	0	94	12	190	15	0	0	311
Semikron	0	0	0	0	0	0	91	0	91
SGS-Thomson	0	20	185	118	158	352	254	0	1,087
Sharp	0	0	344	54	284	69	0	285	1,036
Siemens	0	36	150	88	89	120	201	100	784
Sierra Semiconductor	0	0	0	1	23	23	0	0	47
Silicon General	0	0	0	0	0	35	0	0	35
Silicon Systems	0	0	0	0	0	125	0	0	125
Siliconix	0	0	0	0	3	67	61	0	131
Solitron	0	0	0	0	0	13	33	0	46
Sony	0	0	103	37	95	386	112	217	950
Sprague	0	0	0	0	16	86	18	0	120
Standard Microsystems	0	0	0	34	7	0	0	0	41
STC	0	7	2	0	8	4	1	0	22
Supertex	0	0	0	0	0	11	10	0	21
TAG	0	0	0	0	0	0	23	0	23
Teledyne	0	2	0	0	0	33	0	0	35
Telefunken Electronic	0	19	0	0	20	85	91	74	289
Texas Instruments	50	890	834	234	203	426	63	41	2,741
Toshiba	0	108	1,516	346	777	569	864	215	4,395
TRW	0	0	0	0	5	20	0	36	61
United Microelectronics	0	0	12	35	59	0	0	0	106
Unitrode	0	0	0	0	0	51	62	0	113
Universal	0	0	0	0	6	4	0	0	10
Vitellic	0	0	40	0	0	0	0	0	40
VLSI Technology	0	0	16	54	151	0	0	0	221
VQSI	0	0	0	0	0	0	21	0	21
VTC Inc.	0	0	0	0	19	27	0	0	46
WaterScale Integration	0	0	25	0	10	0	0	0	35
Weitek	0	0	0	35	0	0	0	0	35
Western Digital	0	0	0	100	0	0	0	0	100
Xicor	0	0	87	0	0	3	0	0	90
Xilinx	0	0	0	0	27	0	0	0	27
Yamaha	0	0	0	0	151	0	0	0	151
Zilog	0	0	0	90	0	0	0	0	90
ZyMOS	0	0	0	17	10	0	0	0	27

(Continued)

Company Revenue by Product

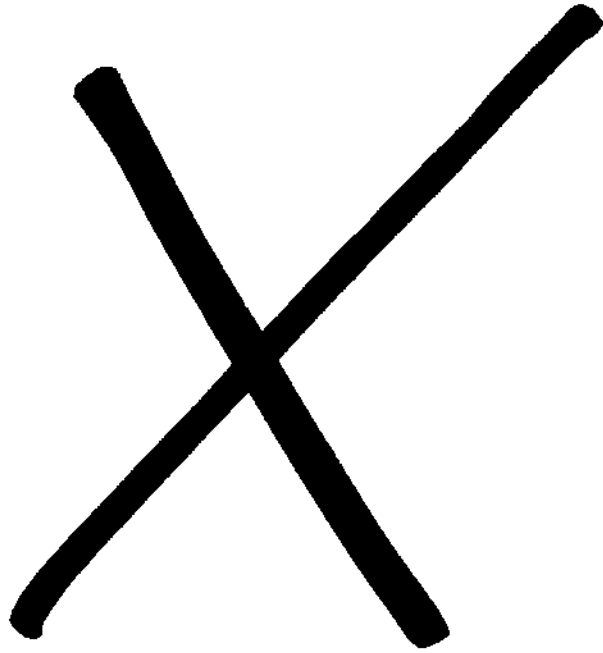
Worldwide Semiconductor Market (Continued) 1988 Semiconductor Revenue by Product (Millions of Dollars)

Company	Bipolar Memory	Bipolar Logic	MOS Memory	MOS Micro	MOS Logic	Analog	Discrete	Opto	Total Semi
Other European Companies	1	8	2	0	18	3	7	8	47
European Companies	59	539	464	401	819	1,147	1,250	238	4,917
Other Japanese Companies	0	0	0	1	2	197	33	82	315
Japanese Companies	417	1,374	7,597	2,817	4,080	4,090	4,056	1,511	25,942
Other North American Companies	0	8	30	7	18	28	50	10	151
North American Companies	213	2,548	2,836	3,872	3,046	3,475	2,171	425	18,586
Other Rest of World Companies	0	18	0	0	14	12	14	0	58
Rest of World Companies	0	50	795	54	207	168	135	5	1,414

Source: Dataquest
October 1989

Company Revenue by Product

(Page intentionally left blank)



Company Directory

This is a directory of the addresses and telephone numbers of all the companies worldwide that Dataquest's Components Division research includes in its semiconductor market share surveys. We have tried to provide, whenever possible and wherever applicable, the corporate address, followed by the semiconductor address, listed in alphabetical order. Should your company's address or phone number be incorrectly listed here, we would appreciate hearing from you.

✓ Acrian Inc.
490 Race Street
San Jose, CA 95126
408/294-4200

✓ Advanced Micro Devices, Inc.
901 Thompson Place
P.O. Box 3453
Sunnyvale, CA 94088
408/732-2400

✓ Altera Corporation
3525 Monroe Street
Santa Clara, CA 95051
408/984-2800

✓ Applied Micro Circuits Corporation
6195 Lusk Boulevard
San Diego, CA 92121
619/450-9333

Analog Devices, Incorporated
One Technology Way
P.O. Box 9106
Norwood, MA 02062-9106
617/461-3612

Asea AB Head Office
S-721 83 Vasteras
Sweden
46 21 10 00 00

Asea Brown Boveri
Box 520, S-175 26
Jarfalla
Sweden
010 46 758 24500

AT&T Microelectronics
555 Union Blvd.
Allentown, PA 18103-9989
1-800-372-2447

Austria MikroSysteme International
Schloss Permstatten
8141 Unterpemastatten
Austria
010 43 31363666271

Bipolar Integrated Technology
1050 Northwest Compton Drive
Beaverton, OR 97006
503/629-5490

Burr-Brown Corporation
6730 South Tucson Boulevard
Tucson, AZ 85706
602/746-1111

✓ California Micro Devices Corporation
215 Topaz Street
Milpitas, CA 95035-5430
408/263-3214

✓ Catalyst Semiconductor, Inc.
2231 Calle De Luna
Santa Clara, CA 95054
408/748-7700

Cherry Semiconductor Corporation
2000 South County Trail
East Greenwich, RI 02818
401/885-3600

✓ Chips and Technologies, Inc.
3050 Zanker Road
San Jose, CA 95134
408/434-0600

✓ Cypress Semiconductor Corporation
3901 North First Street
San Jose, Ca 95134-1599
408/943-2600

Daewoo Telecommunications Co., Ltd.
541 Namdaemun-ro 5-ga
Chung-gu, Seoul, Korea
02-771-35

Ericsson
Telefonaktiebolaget LM Ericsson
S-126 25 Stockholm, Sweden
46 8 719 0000

Ericsson Components AB
IC Division
Isafjordsgatan 10-16, Kista
S-164 81 Stockholm
Sweden
010 46 8 757 4354

Electronics Research and Service Organization
(ERSO)
195-4-S40, SEC. 4, Chung Hsing Road
Chu Tung, Hsin Chu
Taiwan
035-966100

European Silicon Structures
Industriestrasse 17
8034 Germering
West Germany
089/8 49 39 0

EXAR Corporation
Corporate Headquarters
2222 Qume Drive
P.O. Box 49007
San Jose, CA 95161-9007
408/434-6400

Fagor Electrotecnica, S. Coop.
P.O. Box 33
20500 Mondragon
Guipuzcoa
Spain
010 34 43 79 1011

Fuji Electric Co., Ltd.
Head Office
12-1 Yurakucho 1-chome, Chiyoda-ku
Tokyo 100 Japan
03-211-7111

Fuji Electric Co., Ltd
Matsumoto Factory
2666 Tsukama
Matsumoto City, Prefecture 390
Japan
0263 25-7111

Fujitsu Limited
6-1, Marunouchi 2-chome
Chiyoda-ku, Tokyo 100, Japan
03-216-3211

General Electric Company
3135 Easton Turnpike
Fairfield, CT 06531
518/438-6500

GE Solid State
Route 202
Somerville, NJ 08876
201/685-6426

General Instrument Corporation
767 Fifth Avenue
New York, NY 10153
212/207-6200

General Instrument
Power Semiconductor Division
600 West John Street
Hicksville, NY 11802
516/933-3000

GoldStar Semiconductor, Ltd.
20, Yoido-dong,
Youngdungpo-gu
Seoul 150-603, Korea
02 787-1114

Gould Inc.
10 Gould Center
Rolling Meadows, IL 60008
312/640-4000

Gould Semiconductor Division
3800 Homestead Road
Santa Clara, CA 95051
408/246-0330

GTE Corporation
One Stamford Forum
Stamford, CT 06904
203/965-2000

GTE Microcircuits
2000 W. 14th Street
Tempe, AZ 85281
602/921-6526

Harris Corporation
1025 W. NASA Boulevard
Melbourne, FL 32919
407/727-9100

Harris Semiconductor Sector
1301 Woody Burke Road
Melbourne, FL 32919
407/724-7000

Hewlett-Packard Company
3000 Hanover Street
Palo Alto, CA 94304
415/857-1501

Hitachi, Ltd.
6, Kanda-Surugadai 4-chome,
Chiyoda-ku
Tokyo, 101-10
Japan

Holt Integrated Circuits, Inc.
9351 Jeronimo Road
Irvine, CA 92718
714/859-8800

Honeywell, Inc.
General Offices
Honeywell Plaza
P.O. Box 524
Minneapolis, MN 55408
612/870-5200

Honeywell Solid State Electronics Division
1150 East Cheyenne Mountain Blvd.
Colorado Springs, CO 80906
303/576-3300

Hughes Aircraft Company
Corporate Offices
P.O. Box 1042
El Segundo, CA 90245

Hughes Microelectronics Products Division
300 Superior Avenue
Newport Beach, CA 92663
714/548-0671

Hyundai Electronics Industries Co., Ltd.
Semiconductor Operations
66, Tucksun-dong, Chongro-gu
Seoul, Korea
02 733-5555

International Microelectronic Products
2830 North First Street
San Jose, CA 95134
408/432-9100

International Microcircuits Incorporated
3350 Scott Blvd.
Building 37
Santa Clara, CA 95054
408/727-2280

Inmos International, plc
Worldwide Headquarters
1000 Aztec West, Almondsbury
Bristol BS12 4SQ
United Kingdom
011 44 454 616616

Integrated Device Technology, Inc.
3236 Scott Boulevard
P.O. Box 58015
Santa Clara, CA 95052-8015
408/727-6116

Intel Corporation
3065 Bowers Avenue
Santa Clara, CA 95052-8131
408/987-8080

International Rectifier Corporation
233 Kansas Street
El Segundo, CA 90245
213/772-2000

ITT Corporation
320 Park Avenue
New York, NY 10022
212/752-6000

*- new owned
by SGS*

ITT Semiconductors
500 Broadway
Lawrence, MA 01841
617/688-1881

Korea Electronics Co., Ltd.
45 Namdaemun-ro 4-ga
Jung-gu, Seoul 100-094
Korea
02-757-5700

Lattice Semiconductor Corporation
P.O. Box 2500
Portland, OR 97208-2500
503/681-0118

Linear Technology Corporation
1630 McCarthy Blvd.
Milpitas, CA 95035-7487
408/432-1900

LSI Logic Corporation
1551 McCarthy Boulevard
Milpitas, CA 95035
408/433-8000

Marconi Electronic Devices Ltd.
Lincoln Industrial Park
Doddington Road
Lincoln
LN6 3LF
United Kingdom
0522 500500

Matra-Harris Systems Semiconducteurs
38 Boulevard Paul Cezanne, BP 309
78054 Saint Quentin Yvelines
CEDEX
France
010 33130607000

Matsushita Electric Industrial Co., Ltd.
1006 Kadoma, Kadoma City
Osaka 571
Japan
06-908-1121

Matsushita Electronics Corporation
1-1, Saiwai-cho, Takatsuki City
Osaka 569
Japan
0726-82-5521

Maxim Integrated Products, Inc.
120 San Gabriel Drive
Sunnyvale, CA 94086
408/737-7600

Micro Linear Corporation
2092 Concourse Drive
San Jose, CA 95131
408/433-5200

Micro Power Systems, Incorporated
3100 Alfred Street
Santa Clara, CA 95054
408/727-5350

Microchip Technology Inc.
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
602/963-7373

Micron Technology, Inc.
2805 East Columbia Road
Boise, ID 83706
208/283-4000

Mietec N.V.
Westerring 15
B-9700 Oudenaarde
Belgium
055-33-2211

Mitel Corporation
350 Legget Drive
P.O. Box 13089
Kanata, Ontario
Canada K2K 1X3
613/592-2122

Mitel Semiconductor
360 Legget Drive
P.O. Box 13320
Kanata, Ontario
Canada K2K 1X5
613/592-5630

Mitsubishi Electric Corporation
Mitsubishi Denki Bldg., 2-3, Marunouchi 2-chome
Chiyoda-ku, Tokyo, 100
Japan
(03) 218-2111

Mitsubishi Electric Corporation Semiconductor
 Kita-Itami Works
 4-1, Mizuhara Itami-City
 Hoyga Prefecture
 Japan 664
 0727-82-5131

MOSEL
 914 W. Maude Avenue
 Sunnyvale, CA 94080
 408/733-4556

Motorola, Inc.
 Corporate Offices
 Motorola Center
 1303 E. Algonquin Road
 Schaumburg, IL 60196
 312/397-5000

Motorola, Inc.
 Semiconductor Products
 3501 Ed Bluestein Boulevard
 Austin, TX 78721
 512/928-6000

National Semiconductor Corporation
 2900 Semiconductor Drive
 P.O. Box 58090
 Santa Clara, CA 95052-8090
 408/721-5000

NCR Corporation
 Corporate Headquarters
 1700 South Patterson Blvd.
 Dayton, OH 45479
 513/445-5000

NEC Corporation
 33-1, Shiba 5-chome
 Minato-ku
 Tokyo 108
 Japan
 (03) 454-1111

NEC
 Tamagawa Works
 1753 Shimonumabe
 Kawasaki-city
 Kanagawa 211
 Japan
 044-433-1111

New Japan Radio Co., Ltd
 Mitsuya Toranomom Bldg.
 1-22-14, Toranomom Minato-ku, Tokyo 105
 Japan
 (03) 502-2331

NMB Semiconductor Co., Ltd.
 1580 Yamamoto
 Tateyama-shi
 Chiba 294
 Japan
 0470-23-3121

NMB Semiconductor Corporation
 9730 Independence Avenue
 Chatsworth, CA 91311
 818/341-3355

Oki Electric Industry Company, Ltd.
 7-12, Toranomom 1-chome, Minato-ku
 Tokyo 105
 Japan
 (03) 501-3111

Oki
 Hachioji Works
 550-1, Higashiasaka-cho
 Hachioji-city, Tokyo 664
 Japan
 (0426) 62-1111

N.V. Philips Gloeilampenfabrieken
 Groenewoudseweg 1
 5621 Ba Eindhoven
 The Netherlands

N.V. Philips BV
 Components Divison, Building BA
 MD Eindhoven
 The Netherlands
 010 31 40 723074

Plessey Semiconductors Ltd.
 Cheney Manor, Swindon,
 Wiltshire SN2 2QW
 United Kingdom
 (0793) 518000

Powerex, Inc.
 Hillis Street
 Youngwood, PA 15697
 412/925-4393

Company Directory

Precision Monolithics Inc.
1500 Space Park Dr.
P.O. Box 58020
Santa Clara, CA 95052-8020
408/727-9222

Quality Technologies
3400 Hillview Avenue
Palo Alto, CA 94304
415/493-0400

Raytheon Company
141 Spring Street
Lexington, MA 02173
617/862-6600

Raytheon Company
Semiconductor Division
350 Ellis Street
Mountain View, CA 94039
415/968-9211

Ricoh Company, Ltd.
15-5, Minami-Aoyama 1-chome
Minato-ku, Tokyo 107
Japan
(03) 479-3111

Ricoh Company, Ltd.
Electronic Devices Group
Ikeda Works
12-1 Himemuro-cho
Ikeda Osaka, 563
Japan
(0727) 53-1111

Rockwell International Corporation
600 Grant Street
Pittsburgh, PA 15219
412/565-2900

Rockwell Semiconductor Products Division
4311 Jamboree Road
P.O. Box C
MS 501-300
Newport Beach, CA 92658-8902
714/833-4600

Rohm Co., Ltd.
21, Saiin Mizosaki-cho
Ukyo-ku, Koyoto 615
Japan
(075) 311-2121

Samsung Semiconductor and Telecommunications
Co., Inc. (SST)
250 Taepyung-ro 2-ga
Jung-gu, Seoul 100
Korea
02-751-2114

Sanken Electric Company, Ltd.
3-6-3, Kitano
Niiza-city, Saitama-352
Japan

Sanyo Electric Co., Ltd.
18, Keihan-Hondori 2-chome
Moriguichi, Osaka 570
Japan
(06) 991-1181

Sanyo Electric Co., Ltd.
Semiconductor Business Headquarters
180, Sakata Oiaumi-Madri
Ora-Gun, Gunma
Japan
(0276) 63-8058

Saratoga Semiconductor Corporation
10500 Ridgeview Court
Cupertino, CA 95014
408/864-4416

SEEQ Technology, Incorporated
1849 Fortune Drive
San Jose, CA 95131
408/432-7400

Seiko Epson Corporation
Corporate Headquarters
3-5, 3-chome, Owa,
Suwa-shi, Nagano-ken 392
Japan
0266-52-3131

Seiko Epson Corporation
Semiconductor Operation Division
281 Fujimi, Fujimi-machi
Suwa-gun, Nagano-ken 399-02
Japan
0266-62-5380

Semikron International GmbH D& Co KG
Sigmund-Strasse 200
8500 Nurnberg 82
West Germany
010 49 911 65591

SGS-Thomson Microelectronics
7 Avenue Gallieni
94253 Gentilly CEDEX
France
010 331 47 40 7575

Sharp Corporation
22-22 Nagaïke-cho
Abeno-ku, Osaka 545
Japan
(06) 621-1221

Siemens AG
Semiconductor Division
Balanstrasse 73
D-8000 Munich 80
West Germany
010 49 89 4144 3786

Sierra Semiconductor Corporation
2075 North Capitol Avenue
San Jose, CA 95132
408/263-9300

Silicon General, Inc.
85 West Tasman Drive
San Jose, CA 95134-1703
408/943-9403

Silicon General Semiconductors
11861 Western Avenue
Garden Grove, CA
714/989-8121

Silicon Systems, Inc.
14351 Myford Road
Tustin, CA 92680
714/731-7110

Siliconix Incorporated
P.O. Box 54951
2201 Laurelwood Road
Santa Clara, CA 95054
408/988-8000

Solitron Devices, Inc.
Semiconductor Group
1177 Blue Heron Blvd.
Riviera Beach, FL 33404
305/848-4311

Sony Corporation
7-35 Kitashinagawa 6-chome
Shinagawa-ku, Tokyo 141
Japan
(03) 448-2111

Sony Semiconductor Group
1-14-1 Asahi-cho
Atsugi-shi
Kanagawa 243
Japan

Sprague Technologies, Inc.
4 Stamford Forum
Stamford, CT 06901
203/964-8600

Sprague Electric Company
Semiconductor Group
3900 Welsh Road
Willow Grove, PA 19090
215/657-8400

Standard Microsystems Corporation
35 Marcus Boulevard
Hauppauge, NY 11788
516/273-3100

STC Components Limited
Semiconductor Division
Maidstone Road
Sidcup, Kent
DA14 5HT United Kingdom
01 300 3333

Storage Technology Corporation
2270 South 88th Street
Louisville, CO 80028-0001
303/673-5151

Supertex, Inc.
1225 Bordeaux Drive
P.O. Box 3607
Sunnyvale, CA 94088-3607
408/744-0100

TAG Semiconductors
Hohlstrasse 608/610
8048 Zurich
Switzerland
010 411 625611

Teledyne, Inc.
1901 Avenue of the Stars
Los Angeles, CA 90067
213/277-3311

Teledyne Semiconductor
1300 Terra Bella Avenue
Mountain View, CA 94039
415/968-9241

Telefunken Electronic GmbH
Theresienstrasse 2
D-1700 Heilbronn
West Germany
010 49 7131 672382

Texas Instruments, Incorporated
Corporate Offices
P.O. Box 655474
13500 N. Central Expressway
Dallas, TX 75265
214/995-2551

Toshiba Corporation
1-1 Shibaura 1-Chome
Minato-Ku, Tokyo 105
Japan
03-457-4511

Toshiba Corporation Semiconductor
Toshiba Semiconductor Operations
Tamagawa Plant
Komukai-Toshiba-cho 1
Saiwai-ku, Kawasaki City
Kanagawa 210
Japan
44-511-3111

TRW Inc.
1900 Richmond Road
Cleveland, OH 44124
216/291-7000

TRW LSI Products, Inc.
P.O. Box 2472
La Jolla, CA 92038
619/457-1000

United Microelectronics Corporation
No. 3 Industrial East Third Road
Science-Based Industrial Park, Hsin chu City
Taipei
Taiwan
(035) 773131

Unitrode Corporation
Five Forbes Road
Lexington, MA 02173
617/861-6540

Unitrode Integrated Circuits
7 Continental Blvd.
Merrimack, NH 03054
603/424-2410

Universal Semiconductor Inc.
1925 Zanker Road
San Jose, CA 95112
408/436-1906

Varo Quality Semiconductor, Inc.
1000 North Shiloh Road
P.O. Box 469013
Garland, TX 75046-9013
214/487-4300

Vitellic Corporation
3910 North First Street
San Jose, CA 95134
408/433-6000

VLSI Technology, Inc.
1109 McKay Drive
San Jose, CA 95131
408/434-3000

VTC Incorporated
2401 East 86th Street
Bloomington, MN 55425-2702
612/851-5200

WaferScale Integration, Inc.
47280 Kato Road
Fremont, CA 94538
415/656-5400

Weitek Corporation
1060 East Arques Avenue
Sunnyvale, CA 94086
408/738-8400

Western Digital Corporation
2445 McCabe Way
Irvine, CA 92714
714/863-0102

Xicor, Inc.
851 Buckeye Court
Milpitas, CA 95035
408/432-8888

Xilinx Incorporated
2069 Hamilton Avenue
San Jose, CA 95125
408/559-7778

Yamaha Corporation
203 Matsunokijima
Toyooka-mura 1 wata-gun
Sizuoka-ken 438-01
Japan
053962-3125

Zilog Inc.
210 Hacienda Avenue
Campbell, CA 95008
408/370-8000

ZyMOS Corporation
477 North Mathilda Avenue
Sunnyvale, CA 94086
408/730-8800