

Dataquest

DB a company of
The Dun & Bradstreet Corporation

May 1991

CAD/CAM/CAE SERVICE

FILING INSTRUCTIONS

TITLE: AEC and Mapping Forecast Tables

VOLUME: AEC and Mapping Applications

TAB: Forecast Data Base

FILING INSTRUCTIONS: These forecast tables replace the existing tables, which should now be discarded.

DATAQUEST, INC.

Dataquest

DB a company of
The Dun & Bradstreet Corporation

February 1991

CAD/CAM/CAE INDUSTRY SERVICE FILING INSTRUCTIONS

TITLE: AEC and Mapping Market Share Tables
VOLUME: AEC and Mapping Applications
TAB: Market Share Data Base
FILING INSTRUCTIONS: These market share tables replace the existing tables, which should now be discarded.

CCIS

FEB 12 1991

DATAQUEST, INC.

Dataquest

DB a company of
The Dun & Bradstreet Corporation

November 1990

CAD/CAM/CAE INDUSTRY SERVICE FILING INSTRUCTIONS

TITLE: AEC and Mapping Forecast Tables

VOLUME: AEC and Mapping Applications

TAB: Forecast Data Base

FILING INSTRUCTIONS: These updated forecast tables replace the existing tables which should now be discarded.

CCIS
NOV 14 1990
DATAQUEST, INC.

Dataquest

DB a company of
The Dun & Bradstreet Corporation

July 1990

**CAD/CAM/CAE INDUSTRY SERVICE
FILING INSTRUCTIONS**

TITLE: AEC and Mapping Forecast Tables

VOLUME: AEC and Mapping Applications

TAB: Forecast Data Base

FILING INSTRUCTIONS: These forecast tables replace the existing tables, which should now be discarded.

Dataquest

DB a company of
The Dun & Bradstreet Corporation

July 1990

7/23

CAD/CAM/CAE INDUSTRY SERVICE FILING INSTRUCTIONS

TITLE:	AEC and Mapping Market Share Tables
VOLUME:	AEC and Mapping Applications
TAB:	Market Share Data Base
FILING INSTRUCTIONS:	These market share tables replace the existing tables, which should now be discarded.

CAD/CAM Industry Service

AEC and Mapping Applications

Dataquest

DB a company of
The Dun & Bradstreet Corporation

1290 Ridder Park Drive
San Jose, California 95131-2398
(408) 437-8000
Telex: 171973
Fax: (408) 437-0292

Sales/Service Offices:

UNITED KINGDOM
Dataquest UK Limited
13th Floor, Centrepoint
103 New Oxford Street
London WC1A 1DD
England
01-379-6257
Telex: 266195
Fax: 01-240-3653

FRANCE
Dataquest SARL
Tour Gallieni 2
36, avenue Gallieni
93175 Bagnolet Cedex
France
(1)48 97 31 00
Telex: 233 263
Fax: (1)48 97 34 00

EASTERN U.S.
Dataquest Boston
1740 Massachusetts Ave.
Boxborough, MA 01719-2209
(508) 264-4373
Telex: 171973
Fax: (508) 635-0183

GERMANY
Dataquest GmbH
Rosenkavalierplatz 17
D-8000 Munich 81
West Germany
(089)91 10 64
Telex: 5218070
Fax: (089)91 21 89

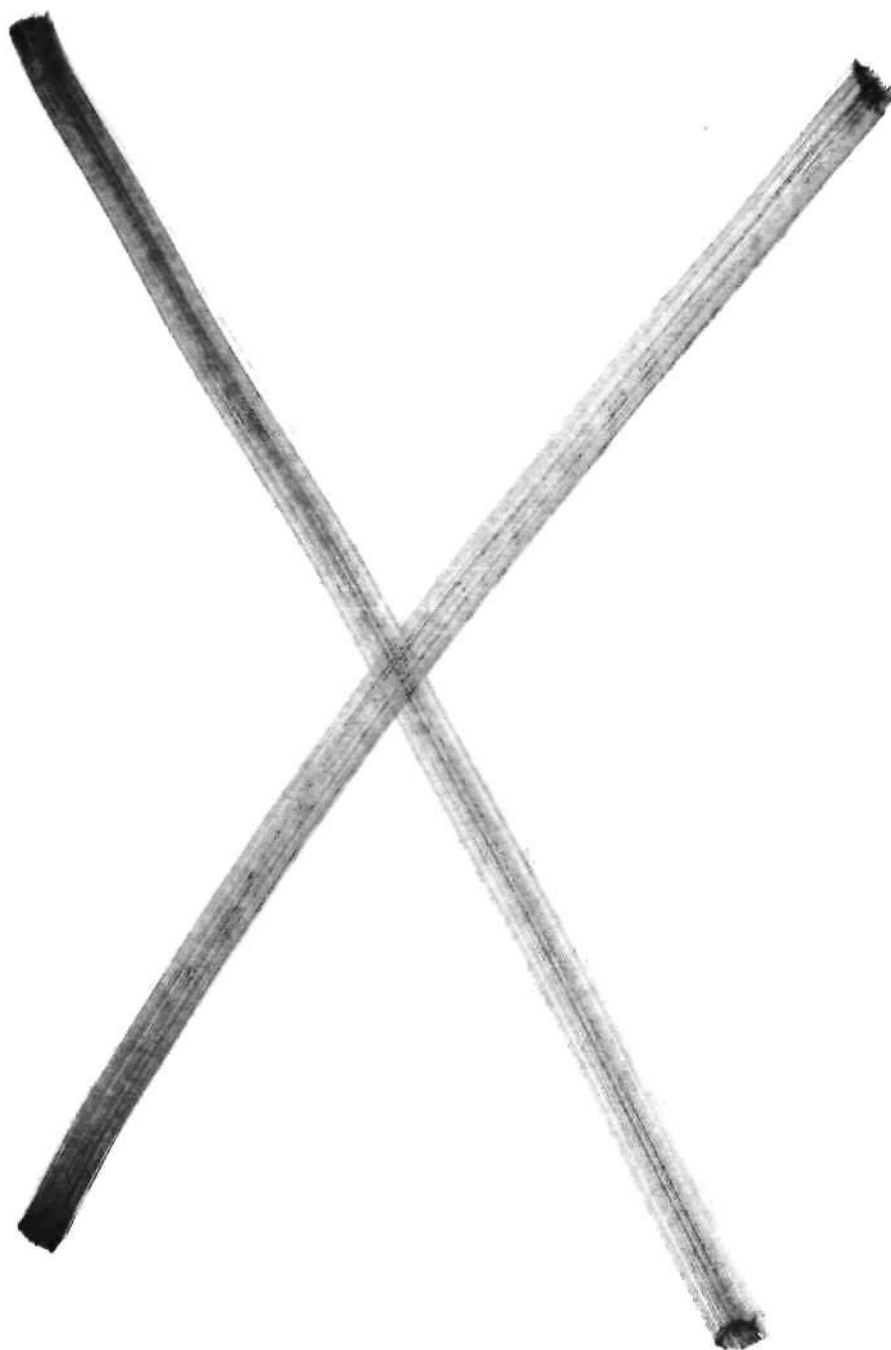
JAPAN
Dataquest Japan, Ltd.
Taiyo Ginza Building/2nd Floor
7-14-16 Ginza, Chuo-ku
Tokyo 104 Japan
(03)546-3191
Telex: 32768
Fax: (03)546-3198

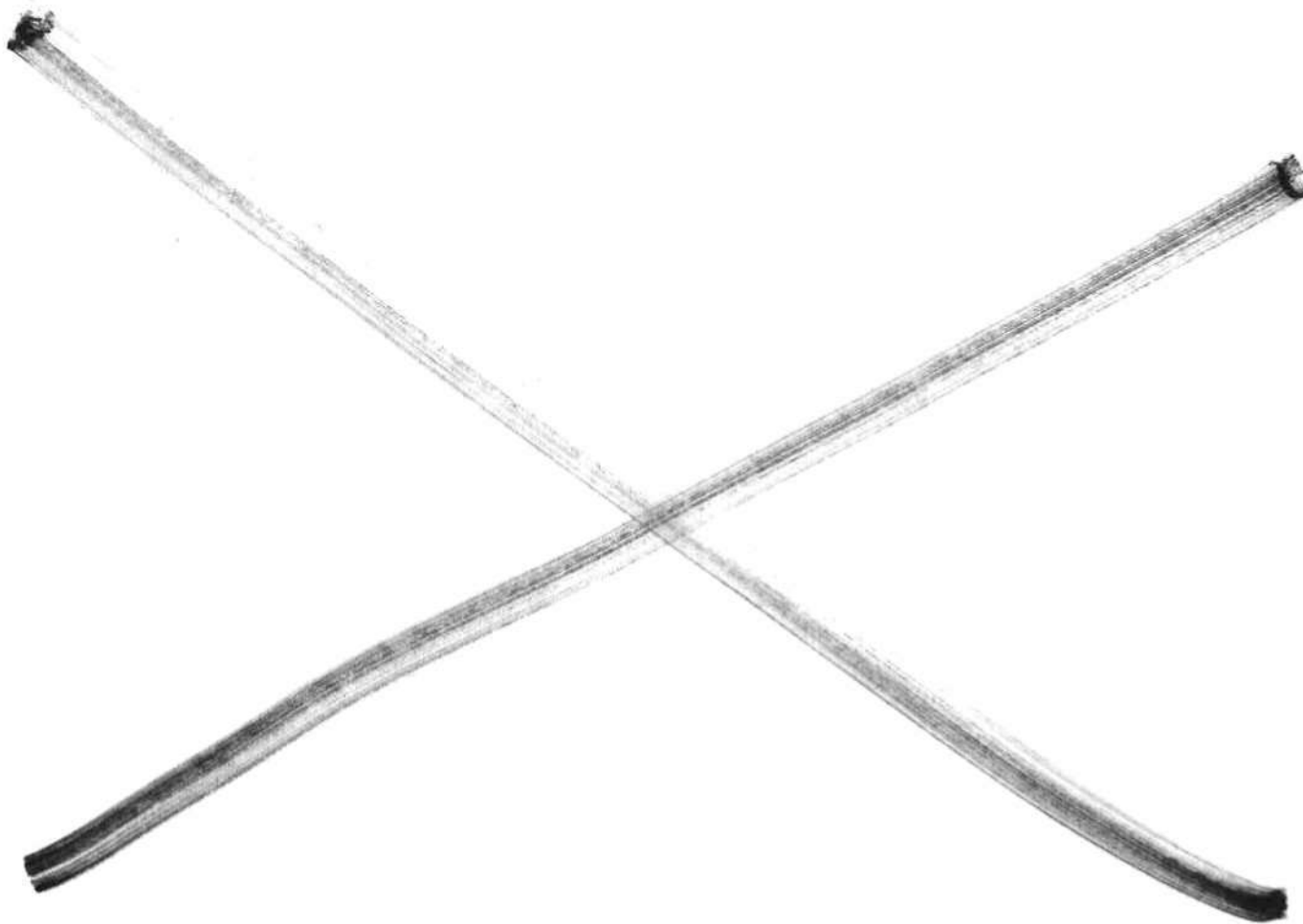
KOREA
Dataquest Korea
63-1 Chungjung-ro, 3Ka
Seodaemun-ku
Seoul, Korea
(02)392-7273-5
Telex: 27926
Fax: (02)745-3199

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.

Printed in the United States of America. All rights reserved. No part of this publication may be reproduced, stored in retrieval systems, or transmitted, in any form or by any means—mechanical, electronic, photocopying, duplicating, microfilming, videotape, or otherwise—without the prior written permission of the publisher.





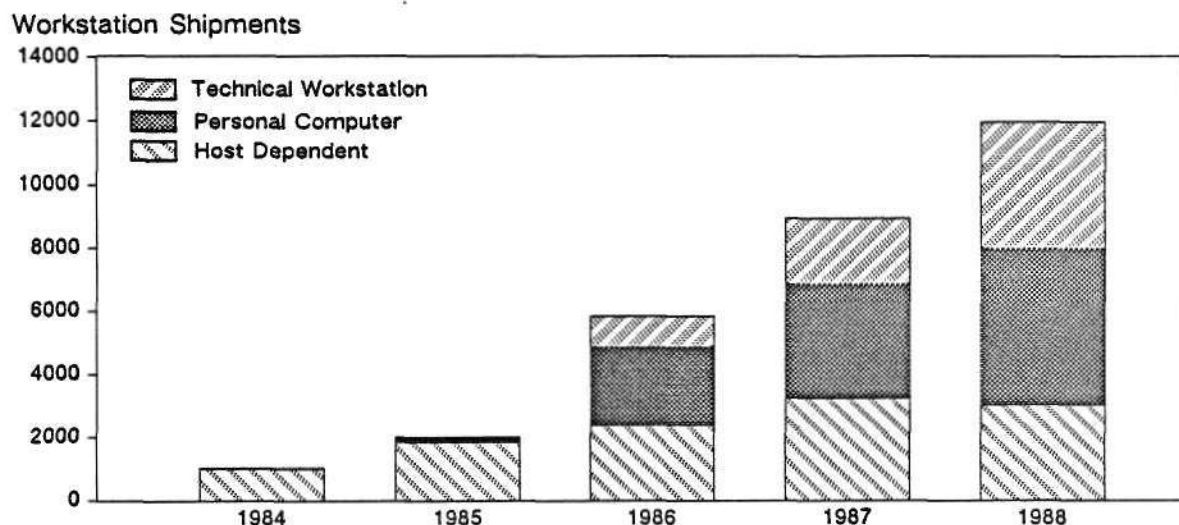
Mapping Industry Overview

SUMMARY

In what has historically been a rather slow-moving industry, dominated by main-frame and turnkey vendors selling automated map drafting systems, the mapping market has suddenly come alive. The results of Dataquest's 1988 comprehensive mapping market review and forecast are given in Tables 1 through 6, included at the end of this document. The market grew nearly 20 percent in revenue and by an astonishing 34 percent in units in 1988 compared with 1987 (see Figure 1). The two major forces driving this industry revitalization are the influx of desktop systems and the emergence of a new class of systems called geographic information systems (GISs), which are used primarily to *analyze* geographic information rather than simply to create maps.

Figure 1

Worldwide CAD Mapping Market Growth by Platform



0003917-1

Source: Dataquest
May 1989

CURRENT INDUSTRY TRENDS

Movement toward Distributed Desktop Platforms

By far, the most dominant trend in the mapping industry today is the growth and acceptance of personal computers and workstations as the platforms of choice for mapping and GIS applications. Although the movement toward distributed computing

already has occurred in other CAD/CAM applications, such as mechanical and electronic CAD, this is a relatively recent phenomenon in mapping. Dataquest believes that mapping's sudden acceptance of distributed computing is due to the following:

- Availability of improved graphics performance and sufficient main memory on personal computers and low-end workstations to support the requirements of map drafting and GIS applications
- Growth of PC local area networks and workstation connectivity tools (e.g., IBM 5080 emulation, DECnet) that enable desktop devices to connect not only to mainframe-based mapping software, but also to corporate data bases
- Emergence of the Apple Macintosh as a viable mapping and GIS platform, which is due in large part to Apple's increased marketing and support efforts in this area
- Increasing availability of PC and workstation-based applications

The platform suppliers that have taken the early lead in this trend toward low-end distributed systems include Apollo, Apple, Digital, IBM (PC products), Intergraph, and Sun.

Introduction of New PC-Based Mapping Applications

Many new PC-based applications burst onto the scene during 1988, including the following:

- ESRI's PC ARC/Info, which is the PC-based version of the company's popular workstation and mainframe ARC/Info GIS software
- Autodesk's new and improved AutoCAD Release 10, which includes special features for mapping and GIS applications (e.g., entity handles) and several AutoCAD piggyback mapping products from Dennis Klein & Associates and Generation 5 Technology
- Several Apple Macintosh-based applications including Business FileVision, GeoQuery, MacAtlas, Mapgraphix, and MapMaker

Dataquest expects to see many more new PC-based mapping and GIS applications introduced in 1989, from existing vendors moving their applications down from mainframes and minicomputers as well as from new vendors entering the marketplace.

Availability of Inexpensive, Off-the-Shelf Map Data Bases

One of the obstacles to tapping the true potential of mapping and GIS has been the lack of inexpensive, commercially available MAP data bases. The market is starting to see evidence of inexpensive land bases being exploited by a whole host of new application users in fields such as real estate, marketing, and agriculture. Cheaper, higher-resolution data from Landsat as well as electronic road maps from companies such as ETAK and Geographic Data Technology will help accelerate the movement of these nontraditional applications into the mainstream.

Glare of the Media and a Glut of Trade Shows

The mapping market suddenly has emerged as a darling of the media and has attracted record levels of trade show activity. *Business Week* and *Fortune* recently have run extensive articles on the desktop mapping market. Unfortunately, all the media hype and attention cannot overcome the fact that there is an oversupply of mapping-related trade shows. In 1988, dozens of shows held in the United States at the national and local levels left vendors with a dizzying array of choices at which to display their latest mapping solutions. Dataquest believes that a major consolidation of mapping-related shows will begin in 1990.

MARKET SHARE

Table 1 lists mapping market shares for the leading vendors in the industry, ranked by revenue.

Intergraph

Intergraph continues to dominate the mapping market with a 25.4 percent share, which is more than twice the size of its next-largest competitor, Digital Equipment Corporation. The company's dominance in this area is due in part to its large, loyal installed base of mapping users that continue to add and upgrade to Intergraph's newer mapping systems (e.g., InterPro workstations and TIGRIS software). More recently, Intergraph has benefited from the rapidly growing international markets. In 1988, for example, Intergraph secured several large European mapping orders, including orders from British Telecom, valued at \$35 million, and Post and Telecommunications of Finland, valued at more than \$20 million.

Dataquest believes that Intergraph's prospects in this market will continue to grow brighter. This growth will be spurred in large part by the company's long-awaited introduction of its object-oriented TIGRIS GIS system. We believe that this system will be a big seller, particularly to existing users of Intergraph's older IGDS mapping system that want to migrate to the newer, more powerful GIS technology.

Digital

Digital continues to do well in the mapping market because its offering is one of the platforms of choice for many third-party mapping and GIS applications. The MicroVAX and VAXStations are major products for Digital in this market. Last year, Digital landed several large mapping platform orders, including the British Gas order in conjunction with Synercom.

The company also has aggressively pursued third-party application developers and has put together several targeted, integrated mapping solutions. For example, Digital recently announced a turnkey solution for utility AM/FM applications that combines Synercom's InforMap III, C-E Engineering Automation's PASCE software, and Power Technologies' PSS/U network analysis package. Dataquest believes that Digital recognizes the value of an integrated, solution-oriented approach to the mapping and GIS market, and that it will continue to emphasize this approach as a way of setting itself apart in the marketplace.

IBM

In the mapping market, 1988 was a year of rebuilding for IBM. The following key events highlight this point:

- IBM reorganized its GFIS effort, moving it out of the Utility Marketing Group and into its own area with the Application Software Division.
- IBM finally began to recognize the value and importance of third-party suppliers in this market, and it formed several marketing relationships with companies such as ACDS, Digital Matrix Systems, and ESRI for PC- and workstation-based software.

Dataquest believes that IBM will become much more aggressive in the mapping and GIS market in the future. However, it is doubtful that its mainframe GFIS offering will be competitive in this market, which is moving rapidly to distributed, workstation-based solutions. IBM may adopt Digital's approach of being a platform supplier and integrator for third-party mapping and GIS software.

ESRI

ESRI remains the premier GIS software supplier in the industry, with revenue growth of more than 36 percent. Dataquest believes that ESRI's success in this market is due to the following factors:

- It was a pioneer in the efforts to legitimize the use of GIS technology, and it is widely recognized as a company that fully understands the problems and solutions for building true GIS data bases.

- Its ARC/Info software is the most mature GIS software system on the market and is available on the widest array of platforms in the CAD/CAM industry.

Among several important events that have occurred recently at ESRI are the introduction of an IBM MVS mainframe version of ARC/Info, which could give IBM a run for its money against GFIS, as well as an innovative deal with EDS that allows its ARC/Info software to be used on a time-sharing basis.

Landmark Graphics

Landmark Graphics had 1988 revenue of \$30 million and is growing rapidly in the Dataquest mapping market share rankings. The company dominates a niche segment of the mapping business that it terms computer-aided exploration (CAEX). Its systems have become the de facto standard among many of the major multinational oil companies. With the price of oil on the rise again, this company will be well positioned if oil exploration bounces back to late 1970 and early 1980 levels.

Other Companies

Synercom Technology rebounded nicely in 1988 with an impressive 49 percent increase in revenue and a much more stable profit picture. The company's new management team, its new MicroVAX-based InforMAP III product, and its several large overseas orders all contributed to the turnaround.

Despite the acquisitions of Computervision and Calma, the temptation to delay entering the fast-growing GIS market was too great for Prime Computer, and it decided to form a joint venture with the European-based GIS vendor, Wild Leitz. This strong GIS partnership is expected to complement Prime's CADDS 4X AM/FM product line.

Several Japanese vendors that took advantage of the rapidly growing mapping and infrastructure market in Japan emerged in 1988. Both Fujitsu with its ICAD mapping systems and Mitsubishi Electric with its MELCAD more than doubled their individual mapping revenue in 1988.

MARKET OUTLOOK ANALYSIS

Regional Forecast

Unlike other CAD/CAM applications, Dataquest expects the regional growth forecast for mapping to be relatively balanced between North America, Europe, and Asia. However, the international markets will be driven by large infrastructure-related purchases, while the North American market will be driven by the explosion in desktop mapping.

Platform Forecast

As the forecasts in Tables 1 through 6 indicate, Dataquest believes that technical workstations will dominate the mapping market during the next five years. Last year, technical workstations nearly equaled host-based systems in revenue. Vendors such as Digital, Hewlett-Packard/Apollo, Intergraph, Silicon Graphics, and Sun will be major benefactors of the rapid growth in CAD/CAM workstations.

Apple and Compaq also should experience high growth rates in the personal computer/workstation area during the next several years. Apple's Macintosh has really taken off as a viable mapping platform, while Compaq's 386 machines are now outselling IBM in the CAD/CAM market.

Although the forecast shows personal computer revenue growth slowing down over time, this trend is a bit misleading. Dataquest believes that personal computers eventually will join the ranks of workstations in terms of functionality. Therefore, the personal computers of today will be made essentially obsolete by the new class of low-end workstations. In the future, we may do away with the term personal computer altogether and add further segmentation to our workstation forecast.

Average Selling Prices

Dataquest forecasts a continuing decline in mapping workstation selling prices, with an average drop of 7.6 percent per year during the next five years. Most of this drop is due to a changing mix that will favor lower-cost systems as opposed to real drops in the price of hardware or software.

Revenue Source Forecast

We continue to believe that mapping software and services will grow much faster than hardware. In 1988, software equaled 29 percent of total market revenue. Dataquest forecasts that software will grow to 41 percent of total market revenue by 1993.

We also believe that, while total personal computer revenue will decline substantially during the next five years, there will be a sizable CAD/CAM software aftermarket for PCs long after workstations have replaced this architecture, particularly in the nontraditional mapping applications.

Distribution Class Outlook

One of the most important trends Dataquest will be watching during the next several years is the change in the way CAD/CAM systems are distributed. Today, turnkey systems still account for the lion's share of the market, with a 61 percent share. Dataquest predicts that by 1993, turnkey system sales will fall to 56 percent of the market, with the balance made up of unbundled sales and sales made through dealers and distributors. We strongly believe that the most successful vendors in the future are likely to be those that have solved the low-end distribution puzzle by successfully managing a multitiered strategy that encompasses all three forms of distribution and strategic marketing alliances.

Table 1

1988 Worldwide Mapping Market Share
(Millions of Dollars, Actual Units)

	Revenue	Units	Revenue Share	Units Share
	*****	*****	*****	*****
Intergraph	163.7	1,792	25.4%	15.0%
Digital	78.0	983	12.1%	8.2%
IBM	45.4	1,260	7.0%	10.5%
ESRI	32.4	44	5.0%	.4%
Landmark Graphics	30.0	233	4.7%	1.9%
Fujitsu	26.9	324	4.2%	2.7%
Prime Computer	18.6	150	2.9%	1.3%
Syscan	17.8	102	2.8%	.9%
Mitsubishi Electric	15.4	56	2.4%	.5%
Synercom	15.3	0	2.4%	.0%
McDonnell Douglas	14.6	162	2.3%	1.4%
Siemens	14.3	270	2.2%	2.3%
GeoVision Corp.	13.4	144	2.1%	1.2%
Autodesk	10.6	0	1.6%	.0%
ICL	10.5	198	1.6%	1.6%
ETAK	9.0	0	1.4%	.0%
Hitech	7.7	75	1.2%	.6%
Sun	6.5	307	1.0%	2.6%
Apple Computer	6.0	1,400	.9%	11.7%
Mitsui Engineering	5.3	61	.8%	.5%
Other	103.6	4,413	16.1%	36.9%
All Companies	644.9	11,975	100.0%	100.0%
All U.S.-Based Companies	521.9	10,391	80.9%	86.8%
All Asian-Based Companies	68.1	654	10.6%	5.5%
All European-Based Companies	54.9	930	8.5%	7.8%
All Hardware Companies	118.6	6,936	18.4%	54.6%
All Turnkey & SW Companies	526.3	5,439	81.6%	45.4%

Source: Dataquest
May 1989

Table 2

Worldwide Mapping Forecast by Region
(Millions of Dollars, Actual Units)

	1988	1989	1990	1991	1992	1993	CAGR
	----	----	----	----	----	----	----
Worldwide							
Revenue	645	787	932	1,071	1,203	1,380	16.4%
Systems	9,708	13,280	17,120	20,340	23,370	26,750	22.5%
Workstations	11,975	15,460	19,140	22,090	24,820	27,920	18.4%
North America							
Revenue	318	381	451	525	593	694	16.9%
Systems	4,969	6,720	8,690	10,060	11,260	12,680	20.6%
Workstations	6,135	7,750	9,590	10,810	11,870	13,150	16.5%
Europe							
Revenue	180	220	260	291	327	372	15.6%
Systems	2,899	4,080	5,300	6,510	7,730	8,980	25.4%
Workstations	3,596	4,820	6,010	7,130	8,240	9,390	21.2%
Far East							
Revenue	120	158	191	222	249	277	18.2%
Systems	1,474	2,020	2,580	3,110	3,630	4,220	23.4%
Workstations	1,787	2,340	2,900	3,410	3,890	4,450	20.0%
Rest of World							
Revenue	27	29	31	33	34	38	6.6%
Systems	367	460	550	660	750	870	18.9%
Workstations	457	540	630	730	820	920	15.0%

Source: Dataquest
May 1989

Table 3

Worldwide Mapping Forecast by Platform
(Millions of Dollars, Actual Units)

	1988	1989	1990	1991	1992	1993	CAGR
	----	----	----	----	----	----	----
All Platforms							
Revenue	645	787	932	1,071	1,203	1,380	16.4%
Systems	9,708	13,280	17,120	20,340	23,370	26,750	22.5%
Workstations	11,975	15,460	19,140	22,090	24,820	27,920	18.4%
Technical Workstation							
Revenue	270	371	487	610	739	896	27.2%
Systems	3,977	5,680	7,830	10,370	13,240	16,550	33.0%
Workstations	3,977	5,680	7,830	10,370	13,240	16,550	33.0%
Host-Dependent							
Revenue	297	298	278	246	209	173	-10.2%
Systems	754	820	840	790	710	620	-3.8%
Workstations	3,021	3,000	2,860	2,530	2,160	1,790	-9.9%
Personal Computer							
Revenue	78	118	168	214	256	310	31.7%
Systems	4,977	6,780	8,450	9,190	9,430	9,580	14.0%
Workstations	4,977	6,780	8,450	9,190	9,430	9,580	14.0%

Source: Dataquest
May 1989

Table 4
Worldwide Mapping
Average Price per Seat Forecast by Platform
(Thousands of Dollars)

	1988	1989	1990	1991	1992	1993	CAGR
	****	****	****	****	****	****	****
Turnkey & Hardware-Only							
Technical Workstation	50.4	47.8	44.7	42.0	39.8	38.7	-5.1%
Host-Dependent	260.2	236.1	220.7	210.8	200.5	190.8	-6.0%
Personal Computer	7.1	6.5	5.8	5.2	4.6	4.2	-10.0%
All Platforms	44.5	38.4	34.1	31.9	30.5	29.9	-7.6%
Turnkey							
Technical Workstation	66.1	64.8	61.6	58.0	54.8	53.1	-4.3%
Host-Dependent	359.3	335.3	316.0	299.8	280.9	266.7	-5.8%
Personal Computer	21.7	21.4	19.7	18.0	16.7	15.2	-6.9%
All Platforms	85.7	78.5	72.1	66.0	60.8	57.3	-7.7%
Hardware-Only							
Technical Workstation	21.5	19.5	17.7	16.0	14.6	13.9	-8.4%
Host-Dependent	154.6	140.7	128.5	117.7	107.6	98.4	-8.6%
Personal Computer	4.0	4.1	4.0	3.8	3.5	3.4	-3.2%
All Platforms	17.5	16.8	12.6	11.1	9.9	9.3	-11.9%

Source: Dataquest
May 1989

Table 5
Worldwide Mapping
Revenue Sources Forecast by Platform
(Millions of Dollars)

	1988	1989	1990	1991	1992	1993	CAGR
	----	----	----	----	----	----	----
All Platforms							
Hardware	353	408	465	512	557	621	12.0%
Software	187	258	330	406	477	568	24.9%
Service	104	122	138	153	169	190	12.9%
Total	645	787	932	1,071	1,203	1,380	16.4%
Technical Workstation							
Hardware	161	214	274	339	407	492	25.1%
Software	63	96	132	171	210	256	32.5%
Service	45	62	80	101	122	148	27.0%
Total	270	371	487	610	739	896	27.2%
Host-Dependent							
Hardware	162	156	147	131	111	92	-10.7%
Software	79	87	80	71	60	50	-8.6%
Service	56	55	51	44	37	31	-11.2%
Total	297	298	278	246	209	173	-10.2%
Personal Computer							
Hardware	30	38	43	43	39	37	4.2%
Software	46	76	119	164	207	262	41.8%
Service	3	5	7	8	10	11	27.4%
Total	78	118	168	214	256	310	31.7%

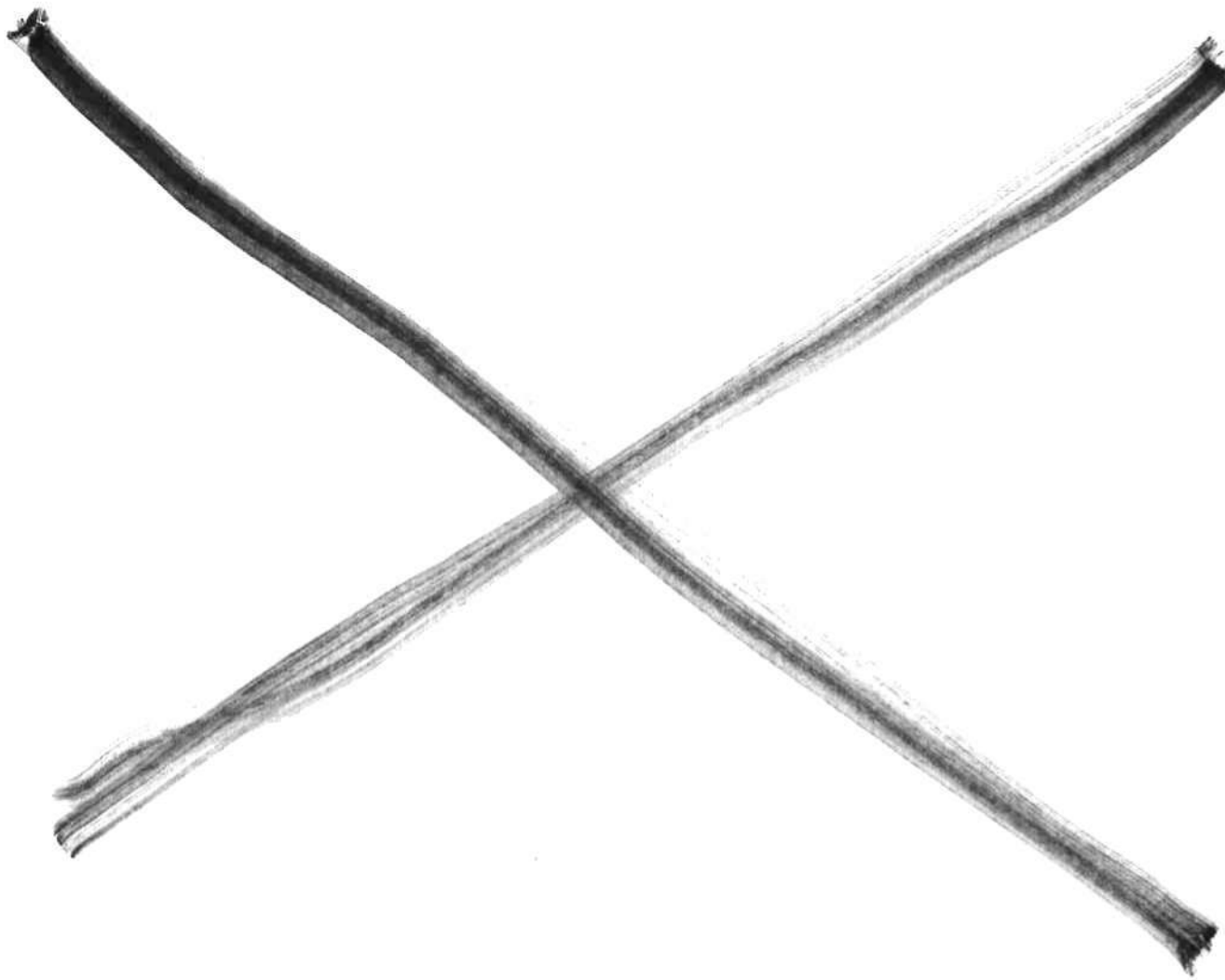
Source: Dataquest
May 1989

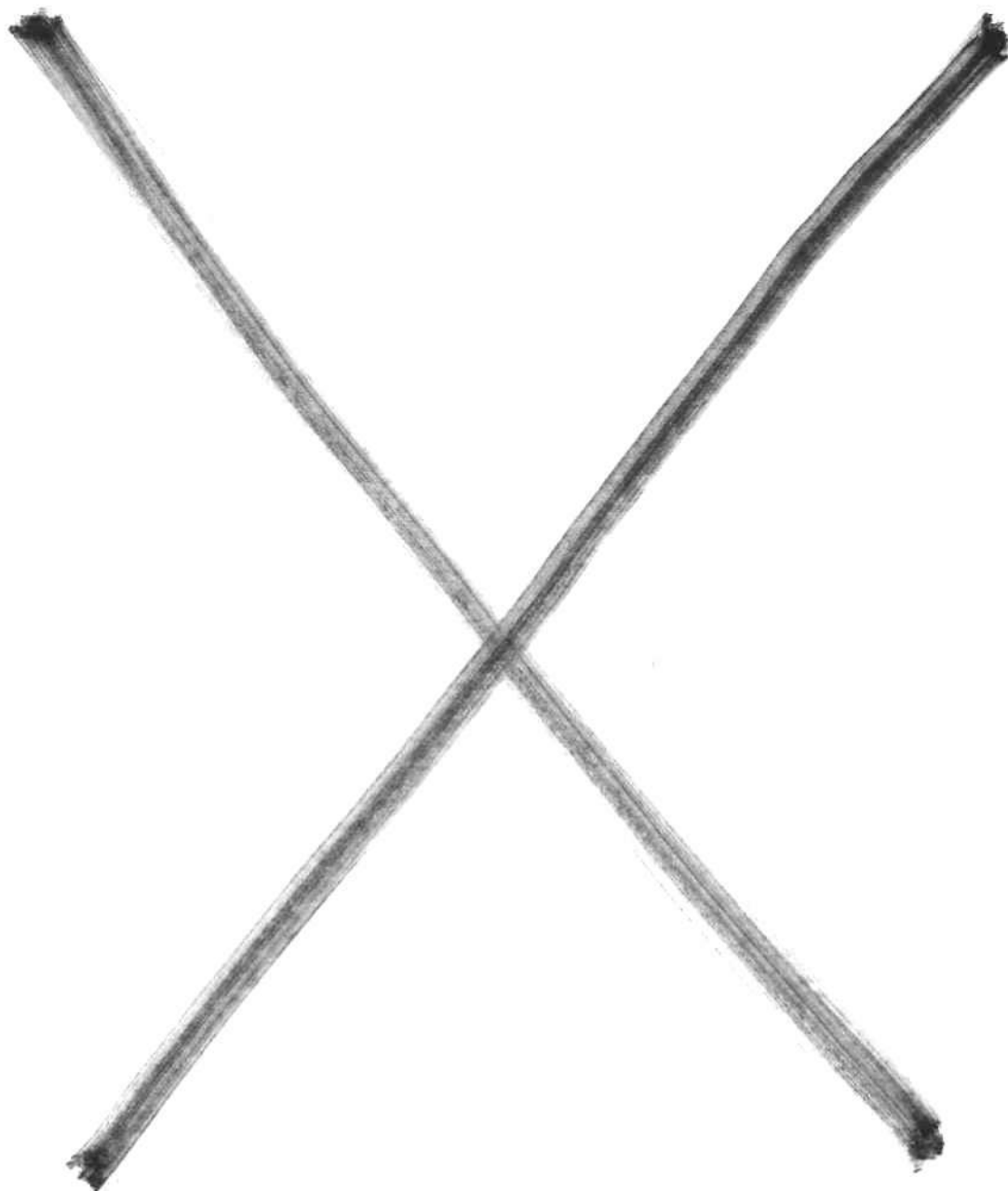
Table 6

**Worldwide Mapping
Forecast by Distribution Class
(Millions of Dollars, Actual Units)**

	1988	1989	1990	1991	1992	1993	CAGR
	****	****	****	****	****	****	****
Total Hardware and Software Revenue							
Turnkey	328	393	454	516	582	666	15.2%
Unbundled	212	273	340	401	452	524	19.8%
Total	540	666	795	918	1,035	1,189	17.1%
Hardware Revenue							
Turnkey	249	291	335	379	426	486	14.3%
Unbundled	104	117	130	132	131	135	5.4%
Total	353	408	465	512	557	621	12.0%
Software Revenue							
Turnkey	79	102	120	137	156	179	17.9%
Unbundled	109	156	210	269	322	389	29.0%
Total	187	258	330	406	477	568	24.9%
Workstation Shipments							
Turnkey	5,439	6,460	7,640	9,010	10,570	12,410	17.9%
Unbundled	6,536	9,000	11,500	13,080	14,260	15,500	18.9%
Total	11,975	15,460	19,140	22,090	24,820	27,920	18.4%

Source: Dataquest
May 1989





Market Share

TABLE NUMBER: 1
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Intergraph	249.1	133.4	49.8	2,619	13.1%	11.4%	10.3%	2.2%
IBM	170.4	119.5	27.4	11,568	9.0%	10.2%	5.6%	9.9%
Fujitsu	123.1	69.0	40.8	2,648	6.5%	5.9%	8.4%	2.3%
Autodesk	105.7	.0	105.7	0	5.6%	.0%	21.8%	.0%
Hewlett-Packard	105.6	80.2	7.9	6,213	5.6%	6.9%	1.6%	5.3%
Digital	97.2	72.9	.0	681	5.1%	6.2%	.0%	.6%
Compaq	93.0	93.0	.0	15,487	4.9%	8.0%	.0%	13.3%
Apple Computer	87.4	76.9	.0	16,800	4.6%	6.6%	.0%	14.4%
Computervision	75.5	33.9	21.7	514	4.0%	2.9%	4.5%	.4%
NEC	70.6	52.1	12.9	4,929	3.7%	4.5%	2.7%	4.2%
McDonnell Douglas	43.8	23.3	14.8	714	2.3%	2.0%	3.1%	.6%
Auto-Trol	34.7	13.9	12.2	440	1.8%	1.2%	2.5%	.4%
ISICAD	34.5	12.6	17.6	329	1.8%	1.1%	3.6%	.3%
Nihon Unisys	27.4	18.4	3.6	230	1.4%	1.6%	.7%	.2%
Hitachi	20.8	10.0	8.7	640	1.1%	.9%	1.8%	.5%
Sun	19.1	16.7	.0	1,515	1.0%	1.4%	.0%	1.3%
Mutoh Industries--NO OEM	18.5	9.5	6.4	349	1.0%	.8%	1.3%	.3%
Accugraph	17.5	7.7	7.9	450	.9%	.7%	1.6%	.4%
Toshiba--NO OEM	16.0	8.0	6.4	291	.8%	.7%	1.3%	.2%
Mitsubishi Electric	13.5	10.8	1.7	250	.7%	.9%	.4%	.2%
ItalCad	13.5	5.8	3.8	129	.7%	.5%	.8%	.1%
CADAM	12.1	1.6	9.4	694	.6%	.1%	1.9%	.6%
Star Informatic	11.9	10.4	3.1	550	.6%	.9%	.6%	.5%
Siemens	11.6	6.8	3.5	244	.6%	.6%	.7%	.2%
Kewill Systems	11.5	3.4	6.3	115	.6%	.3%	1.3%	.1%
t2 Solutions	10.7	5.3	3.8	106	.6%	.5%	.8%	.1%
CAD Centre	9.8	1.5	3.7	11	.5%	.1%	.8%	.0%
Norsk Data	9.0	4.8	1.7	97	.5%	.4%	.3%	.1%
Silicon Graphics	8.8	8.4	.0	220	.5%	.7%	.0%	.2%
Century Research Center	8.8	4.8	3.1	55	.5%	.4%	.6%	.0%
CPU	7.6	.0	7.3	364	.4%	.0%	1.5%	.3%
Dell Computer	7.4	7.4	.0	1,860	.4%	.6%	.0%	1.6%
BATISOFT	7.1	1.1	3.5	230	.4%	.1%	.7%	.2%

(Continued)

Market Share

TABLE NUMBER: 1
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Everex Systems	7.0	7.0	.0	2,118	.4%	.6%	.0%	1.8%
Uchida Yoko	6.1	5.8	.3	97	.3%	.5%	.1%	.1%
Sigma Design	6.0	.0	5.9	305	.3%	.0%	1.2%	.3%
CAP Electronic Sweet's	5.9	.0	4.8	0	.3%	.0%	1.0%	.0%
D.C.A. Software, Inc.	5.8	.0	5.8	0	.3%	.0%	1.2%	.0%
INS Engineering	5.7	4.1	1.0	86	.3%	.4%	.2%	.1%
Dassault	5.3	.0	4.4	0	.3%	.0%	.9%	.0%
Computer-Aided Design Group	5.1	.0	3.7	0	.3%	.0%	.8%	.0%
Technovision	4.7	.0	4.7	0	.2%	.0%	1.0%	.0%
Control Data	4.4	3.2	.5	48	.2%	.3%	.1%	.0%
Integrated Computer Graphics	3.9	2.0	1.4	424	.2%	.2%	.3%	.4%
Research Machines	3.8	3.8	.0	594	.2%	.3%	.0%	.5%
Hitachi Zosen Info Systems	3.8	1.9	1.3	39	.2%	.2%	.3%	.0%
International Software Systems	3.8	.0	3.8	0	.2%	.0%	.8%	.0%
Caditron	3.6	1.8	1.4	56	.2%	.2%	.3%	.0%
Datagraphic	3.4	1.7	1.3	55	.2%	.1%	.3%	.0%
Toyo Information Systems-NO OEM	3.2	2.0	1.0	31	.2%	.2%	.2%	.0%
Infinite Graphics	2.9	.0	2.9	0	.2%	.0%	.6%	.0%
Andor	2.6	.5	2.0	19	.1%	.0%	.4%	.0%
Robocom	2.5	.0	2.5	0	.1%	.0%	.5%	.0%
Gable CAD Systems	2.5	1.0	1.2	34	.1%	.1%	.2%	.0%
Ziegler	2.4	.0	2.4	0	.1%	.0%	.5%	.0%
Bechtel Software	2.3	.0	2.1	0	.1%	.0%	.4%	.0%
Innovative Data Design	2.2	.0	2.2	0	.1%	.0%	.4%	.0%
CADWorks	2.0	.0	1.7	0	.1%	.0%	.4%	.0%
Claris	1.9	.0	1.9	0	.1%	.0%	.4%	.0%
Micrografx	1.9	.0	1.9	0	.1%	.0%	.4%	.0%
Sinus Software	1.8	.9	.9	36	.1%	.1%	.2%	.0%
Moda CAD	1.8	.5	1.3	15	.1%	.0%	.3%	.0%
Bentley	1.8	.0	1.8	0	.1%	.0%	.4%	.0%
Mitsui Engineering	1.7	1.3	.3	11	.1%	.1%	.1%	.0%
Elstree Computing	1.6	.7	.9	50	.1%	.1%	.2%	.0%
CIVILSOFT	1.6	.0	1.6	0	.1%	.0%	.3%	.0%

(Continued)

Market Share

TABLE NUMBER: 1
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Foresight Resources	1.5	.0	1.4	0	.1%	.0%	.3%	.0%
Olivetti	1.5	1.3	.0	254	.1%	.1%	.0%	.2%
Serbi	1.5	.0	1.5	0	.1%	.0%	.3%	.0%
ARKTEC	1.4	.4	1.0	40	.1%	.0%	.2%	.0%
PAFEC	1.4	.0	1.4	0	.1%	.0%	.3%	.0%
Schlumberger	1.4	.5	.5	15	.1%	.0%	.1%	.0%
Land Innovation	1.4	.0	1.4	0	.1%	.0%	.3%	.0%
Ground Modelling Systems	1.3	.9	.6	8	.1%	.1%	.1%	.0%
Micrograph	1.3	.4	.7	22	.1%	.0%	.1%	.0%
Sony	1.3	1.2	.0	77	.1%	.1%	.0%	.1%
Comshoppe	1.3	.0	1.3	0	.1%	.0%	.3%	.0%
Westward	1.2	1.2	.0	70	.1%	.1%	.0%	.1%
Cadtronic	1.0	.5	.4	29	.1%	.0%	.1%	.0%
American Small Business Comp.	1.0	.0	1.0	0	.0%	.0%	.2%	.0%
Mega CADD	.8	.0	.8	0	.0%	.0%	.2%	.0%
Evolution Computing	.8	.0	.8	0	.0%	.0%	.2%	.0%
Radan Computational	.8	.5	.2	34	.0%	.0%	.0%	.0%
Engineering Software	.8	.0	.7	22	.0%	.0%	.1%	.0%
Kubota Computer	.7	.5	.2	35	.0%	.0%	.0%	.0%
GRAPHISOFT	.7	.0	.7	0	.0%	.0%	.1%	.0%
Dynaware	.6	.0	.6	0	.0%	.0%	.1%	.0%
Sycotronic AG	.6	.0	.5	1	.0%	.0%	.1%	.0%
Aura CAD/CAM Systems	.6	.0	.6	0	.0%	.0%	.1%	.0%
Georgia Tech Research Corp.	.6	.0	.6	0	.0%	.0%	.1%	.0%
CADKEY	.6	.0	.6	0	.0%	.0%	.1%	.0%
ACERI SA	.5	.1	.3	3	.0%	.0%	.1%	.0%
IGC Technology	.5	.0	.5	0	.0%	.0%	.1%	.0%
ECOM Associates	.5	.0	.5	46	.0%	.0%	.1%	.0%
A/E Microsystems	.5	.3	.2	40	.0%	.0%	.0%	.0%
Cascade Graphics	.4	.0	.4	0	.0%	.0%	.1%	.0%
DAT Standard Information system	.4	.0	.4	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 1 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
ACDS	.4	.0	.3	0	.0%	.0%	.1%	.0%
Omron	.3	.3	.0	15	.0%	.0%	.0%	.0%
Mc2 Engineering Software	.3	.0	.3	0	.0%	.0%	.1%	.0%
Engineering Systems Corp.	.3	.0	.2	0	.0%	.0%	.0%	.0%
Microcomputer Graphics	.3	.0	.3	0	.0%	.0%	.1%	.0%
Pelton Engineering	.3	.0	.3	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.0%	.0%
A.I. Systems	.2	.0	.2	0	.0%	.0%	.0%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.0%	.0%
Ashlar	.2	.0	.2	0	.0%	.0%	.0%	.0%
CAD-Capture	.2	.0	.0	0	.0%	.0%	.0%	.0%
TOOL Software	.2	.0	.1	4	.0%	.0%	.0%	.0%
Solbourne	.1	.1	.0	11	.0%	.0%	.0%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.0%	.0%
Imagine That	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	201.0	198.5	.1	40,792	10.6%	17.0%	.0%	34.9%
All Companies	1,900.9	1,167.8	485.2	116,875	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	1,436.5	910.5	331.9	103,734	75.6%	78.0%	68.4%	88.8%
All Asian-Based Companies	339.2	202.8	101.6	10,369	17.8%	17.4%	20.9%	8.9%
All European-Based Companies	125.1	54.4	51.6	2,772	6.6%	4.7%	10.6%	2.4%
All Hardware Companies	621.9	569.5	.0	94,629	32.7%	48.8%	.0%	81.0%
All Turnkey & SW Companies	1,279.0	598.2	485.2	22,246	67.3%	51.2%	100.0%	19.0%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 2
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company	Market Share				Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Intergraph	209.2	117.2	37.6	2,327	26.9%	26.3%	19.6%	14.5%
Hewlett-Packard	85.8	64.3	7.9	3,340	11.0%	14.4%	4.1%	20.7%
Computervision	63.8	29.8	17.5	386	8.2%	6.7%	9.1%	2.4%
Fujitsu	50.5	32.0	13.4	1,271	6.5%	7.2%	7.0%	7.9%
Auto-Trol	34.7	13.9	12.2	440	4.5%	3.1%	6.3%	2.7%
McDonnell Douglas	29.8	15.8	10.1	372	3.8%	3.6%	5.3%	2.3%
NEC	26.8	15.0	9.7	1,477	3.4%	3.4%	5.0%	9.2%
ISICAD	24.1	12.6	7.2	329	3.1%	2.8%	3.8%	2.0%
Digital	22.1	16.6	.0	681	2.8%	3.7%	.0%	4.2%
Sun	17.4	15.3	.0	1,437	2.2%	3.4%	.0%	8.9%
Accugraph	15.5	7.6	6.4	431	2.0%	1.7%	3.3%	2.7%
Toshiba--NO OEM	13.6	6.8	5.4	119	1.7%	1.5%	2.8%	.7%
ItalCad	13.5	5.8	3.8	129	1.7%	1.3%	2.0%	.8%
Star Informatic	11.9	10.4	3.1	550	1.5%	2.3%	1.6%	3.4%
t2 Solutions	10.7	5.3	3.8	106	1.4%	1.2%	2.0%	.7%
Hitachi	10.4	5.0	4.4	216	1.3%	1.1%	2.3%	1.3%
Kewill Systems	10.3	3.1	5.7	104	1.3%	.7%	3.0%	.6%
Mutoh Industries--NO OEM	10.2	5.0	3.3	102	1.3%	1.1%	1.7%	.6%
Mitsubishi Electric	10.2	8.9	.7	101	1.3%	2.0%	.4%	.6%
CAD Centre	9.8	1.5	3.7	11	1.3%	.3%	1.9%	.1%
Siemens	9.2	5.4	2.8	215	1.2%	1.2%	1.4%	1.3%
Silicon Graphics	8.8	8.4	.0	220	1.1%	1.9%	.0%	1.4%
Century Research Center	8.8	4.8	3.1	55	1.1%	1.1%	1.6%	.3%
Autodesk	7.4	.0	7.4	0	1.0%	.0%	3.9%	.0%
Uchida Yoko	6.1	5.8	.3	97	.8%	1.3%	.2%	.6%
Norsk Data	6.0	3.5	1.2	75	.8%	.8%	.6%	.5%
INS Engineering	5.1	3.7	.9	35	.7%	.8%	.4%	.2%
Integrated Computer Graphics	3.9	2.0	1.4	424	.5%	.5%	.7%	2.6%
Nihon Unisys	3.8	2.6	.5	45	.5%	.6%	.3%	.3%
Hitachi Zosen Info Systems	3.8	1.9	1.3	39	.5%	.4%	.7%	.2%
IBM	3.7	2.3	.8	35	.5%	.5%	.4%	.2%
Sigma Design	3.2	.0	3.1	305	.4%	.0%	1.6%	1.9%
CADAM	3.2	.0	2.7	0	.4%	.0%	1.4%	.0%

(Continued)

Market Share

TABLE NUMBER: 2
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Gable CAD Systems	2.5	1.0	1.2	34	.3%	.2%	.6%	.2%
Toyo Information Systems-MO OEM	2.4	1.5	.7	9	.3%	.3%	.4%	.1%
Sinus Software	1.8	.9	.9	36	.2%	.2%	.5%	.2%
Dassault	1.8	.0	1.4	0	.2%	.0%	.8%	.0%
Mitsui Engineering	1.7	1.3	.3	11	.2%	.3%	.2%	.1%
Control Data	1.5	1.1	.2	29	.2%	.2%	.1%	.2%
D.C.A. Software, Inc.	1.4	.0	1.4	0	.2%	.0%	.7%	.0%
PAFEC	1.4	.0	1.4	0	.2%	.0%	.7%	.0%
Sony	1.3	1.2	.0	77	.2%	.3%	.0%	.5%
Schlumberger	1.3	.4	.5	12	.2%	.1%	.2%	.1%
Computer-Aided Design Group	1.0	.0	.7	0	.1%	.0%	.4%	.0%
Bechtel Software	.9	.0	.8	0	.1%	.0%	.4%	.0%
Radan Computational	.8	.5	.2	34	.1%	.1%	.1%	.2%
Kubota Computer	.7	.5	.2	35	.1%	.1%	.1%	.2%
Westward	.6	.6	.0	33	.1%	.1%	.0%	.2%
Everex Systems	.6	.6	.0	68	.1%	.1%	.0%	.4%
ARKTEC	.4	.3	.2	18	.1%	.1%	.1%	.1%
ACDS	.4	.0	.3	0	.0%	.0%	.2%	.0%
Omron	.3	.3	.0	15	.0%	.1%	.0%	.1%
A/E Microsystems	.1	.1	.0	10	.0%	.0%	.0%	.1%
Micrograph	.1	.1	.0	4	.0%	.0%	.0%	.0%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.0%	.0%
Serbi	.1	.0	.1	0	.0%	.0%	.0%	.0%
Solbourne	.1	.1	.0	4	.0%	.0%	.0%	.0%
TOOL Software	.0	.0	.0	1	.0%	.0%	.0%	.0%
ECOM Associates	.0	.0	.0	1	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 2 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
	=====	=====	=====	=====	=====	=====	=====	=====
Other Companies	2.6	2.5	.0	193	.3%	.6%	.0%	1.2%
All Companies	778.8	445.1	191.7	16,099	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 539.9	 308.0	 118.2	 10,851	 69.3%	 69.2%	 61.7%	 67.4%
All Asian-Based Companies	158.1	98.8	44.1	3,897	20.3%	22.2%	23.0%	24.2%
All European-Based Companies	80.8	38.3	29.4	1,350	10.4%	8.6%	15.3%	8.4%
All Hardware Companies	86.9	72.9	.0	4,624	11.2%	16.4%	.0%	28.7%
All Turnkey & SW Companies	691.9	372.2	191.7	11,475	88.8%	83.6%	100.0%	71.3%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 3
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
IBM	120.7	73.6	26.5	1,270	29.3%	27.9%	37.1%	23.4%
Digital	75.1	56.3	.0	0	18.2%	21.3%	.0%	.0%
Fujitsu	52.2	29.5	15.5	560	12.7%	11.1%	21.7%	10.3%
Intergraph	32.4	16.2	5.2	292	7.9%	6.1%	7.3%	5.4%
Nihon Unisys	23.6	15.8	3.1	185	5.7%	6.0%	4.3%	3.4%
McDonnell Douglas	14.0	7.5	4.7	342	3.4%	2.8%	6.6%	6.3%
Computervision	9.9	4.0	2.5	123	2.4%	1.5%	3.4%	2.3%
Computer-Aided Design Group	3.8	.0	2.7	0	.9%	.0%	3.7%	.0%
Dassault	3.6	.0	2.9	0	.9%	.0%	4.1%	.0%
Nitachi	3.3	1.6	1.4	277	.8%	.6%	2.0%	5.1%
Norsk Data	3.0	1.3	.5	22	.7%	.5%	.6%	.4%
Control Data	2.9	2.1	.3	19	.7%	.8%	.4%	.3%
CADAM	2.6	.0	2.3	0	.6%	.0%	3.2%	.0%
Siemens	2.4	1.4	.7	29	.6%	.5%	1.0%	.5%
Mitsubishi Electric	2.0	1.0	.6	30	.5%	.4%	.8%	.6%
Hewlett-Packard	1.9	1.6	.0	97	.5%	.6%	.0%	1.8%
Sun	1.7	1.4	.0	78	.4%	.5%	.0%	1.4%
Mutoh Industries--NO OEM	1.7	.8	.5	3	.4%	.3%	.7%	.1%
Bechtel Software	1.1	.0	1.0	0	.3%	.0%	1.5%	.0%
Toyo Information Systems--NO OEM	.9	.4	.3	22	.2%	.2%	.5%	.4%
Georgia Tech Research Corp.	.5	.0	.5	0	.1%	.0%	.8%	.0%
Accugraph	.2	.1	.1	12	.0%	.0%	.1%	.2%
A/E Microsystems	.1	.1	.0	3	.0%	.0%	.0%	.0%
Schlumberger	.1	.0	.0	2	.0%	.0%	.0%	.0%
Solbourne	.1	.1	.0	7	.0%	.0%	.0%	.1%
Engineering Systems Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 3 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	52.2	49.6	.0	2,064	12.7%	18.8%	.0%	38.0%
All Companies	412.1	264.3	71.5	5,436	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	319.2	212.3	46.0	4,297	77.5%	80.3%	64.3%	79.1%
All Asian-Based Companies	83.9	49.3	21.4	1,089	20.4%	18.7%	30.0%	20.0%
All European-Based Companies	9.0	2.7	4.1	50	2.2%	1.0%	5.7%	.9%
All Hardware Companies	130.7	108.7	.0	2,234	31.7%	41.1%	.0%	41.1%
All Turnkey & SW Companies	281.4	155.6	71.5	3,202	68.3%	58.9%	100.0%	58.9%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 4
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Autodesk	98.3	.0	98.3	0	13.8%	.0%	44.3%	.0%
Compaq	93.0	93.0	.0	15,487	13.1%	20.3%	.0%	16.2%
Apple Computer	87.4	76.9	.0	16,800	12.3%	16.8%	.0%	17.6%
IBM	45.9	43.6	.0	10,263	6.5%	9.5%	.0%	10.8%
NEC	43.8	37.0	3.2	3,452	6.2%	8.1%	1.5%	3.6%
Fujitsu	20.4	7.5	11.9	817	2.9%	1.6%	5.3%	.9%
Hewlett-Packard	17.9	14.3	.0	2,776	2.5%	3.1%	.0%	2.9%
ISICAD	10.4	.0	10.4	0	1.5%	.0%	4.7%	.0%
CPU	7.6	.0	7.3	364	1.1%	.0%	3.3%	.4%
Intergraph	7.5	.0	7.0	0	1.1%	.0%	3.2%	.0%
Dell Computer	7.4	7.4	.0	1,860	1.0%	1.6%	.0%	2.0%
Hitachi	7.1	3.4	3.0	147	1.0%	.7%	1.3%	.2%
BATISOFT	7.1	1.1	3.5	230	1.0%	.2%	1.6%	.2%
Mutoh Industries--NO OEM	6.7	3.8	2.6	243	.9%	.8%	1.2%	.3%
Everex Systems	6.4	6.4	.0	2,050	.9%	1.4%	.0%	2.1%
CADAM	6.3	1.6	4.4	694	.9%	.3%	2.0%	.7%
CAP Electronic Sweet's	5.9	.0	4.8	0	.8%	.0%	2.1%	.0%
Technovision	4.7	.0	4.7	0	.7%	.0%	2.1%	.0%
D.C.A. Software, Inc.	4.4	.0	4.4	0	.6%	.0%	2.0%	.0%
Research Machines	3.8	3.8	.0	594	.5%	.8%	.0%	.6%
International Software Systems	3.8	.0	3.8	0	.5%	.0%	1.7%	.0%
Caditron	3.6	1.8	1.4	56	.5%	.4%	.6%	.1%
Datagraphic	3.4	1.7	1.3	55	.5%	.4%	.6%	.1%
Infinite Graphics	2.9	.0	2.9	0	.4%	.0%	1.3%	.0%
Sigma Design	2.8	.0	2.8	0	.4%	.0%	1.2%	.0%
Andor	2.6	.5	2.0	19	.4%	.1%	.9%	.0%
Robocom	2.5	.0	2.5	0	.3%	.0%	1.1%	.0%
Toshiba--NO OEM	2.4	1.2	1.0	172	.3%	.3%	.4%	.2%
Ziegler	2.4	.0	2.4	0	.3%	.0%	1.1%	.0%
Innovative Data Design	2.2	.0	2.2	0	.3%	.0%	1.0%	.0%
CADWorks	2.0	.0	1.7	0	.3%	.0%	.8%	.0%
Claris	1.9	.0	1.9	0	.3%	.0%	.9%	.0%
Micrografx	1.9	.0	1.9	0	.3%	.0%	.9%	.0%

(Continued)

Market Share

TABLE NUMBER: 4
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Computervision	1.9	.1	1.7	5	.3%	.0%	.8%	.0%
Moda CAD	1.8	.5	1.3	15	.3%	.1%	.6%	.0%
Bentley	1.8	.0	1.8	0	.2%	.0%	.8%	.0%
Accugraph	1.7	.1	1.5	6	.2%	.0%	.7%	.0%
Elstree Computing	1.6	.7	.9	50	.2%	.2%	.4%	.1%
CIVILSOFT	1.6	.0	1.6	0	.2%	.0%	.7%	.0%
Foresight Resources	1.5	.0	1.4	0	.2%	.0%	.6%	.0%
Olivetti	1.5	1.3	.0	254	.2%	.3%	.0%	.3%
Serbi	1.4	.0	1.4	0	.2%	.0%	.6%	.0%
Land Innovation	1.4	.0	1.4	0	.2%	.0%	.6%	.0%
Mitsubishi Electric	1.4	.9	.5	119	.2%	.2%	.2%	.1%
Ground Modelling Systems	1.3	.9	.6	8	.2%	.2%	.3%	.0%
Comshoppe	1.3	.0	1.3	0	.2%	.0%	.6%	.0%
Micrograph	1.2	.4	.7	18	.2%	.1%	.3%	.0%
Kewill Systems	1.2	.4	.6	11	.2%	.1%	.3%	.0%
ARKTEC	1.0	.2	.8	22	.1%	.0%	.4%	.0%
Cadtronic	1.0	.5	.4	29	.1%	.1%	.2%	.0%
American Small Business Comp.	1.0	.0	1.0	0	.1%	.0%	.4%	.0%
Mega CADD	.8	.0	.8	0	.1%	.0%	.4%	.0%
Evolution Computing	.8	.0	.8	0	.1%	.0%	.4%	.0%
Engineering Software	.8	.0	.7	22	.1%	.0%	.3%	.0%
GRAPHISOFT	.7	.0	.7	0	.1%	.0%	.3%	.0%
INS Engineering	.6	.4	.2	51	.1%	.1%	.1%	.1%
Dynaware	.6	.0	.6	0	.1%	.0%	.3%	.0%
Sycotronic AG	.6	.0	.5	1	.1%	.0%	.2%	.0%
Aura CAD/CAM Systems	.6	.0	.6	0	.1%	.0%	.3%	.0%
Westward	.6	.6	.0	37	.1%	.1%	.0%	.0%
CADKEY	.6	.0	.6	0	.1%	.0%	.3%	.0%
ACERI SA	.5	.1	.3	3	.1%	.0%	.1%	.0%
IGC Technology	.5	.0	.5	0	.1%	.0%	.2%	.0%
ECOM Associates	.5	.0	.5	45	.1%	.0%	.2%	.0%
Cascade Graphics	.4	.0	.4	0	.1%	.0%	.2%	.0%
DAT Standard Information system	.4	.0	.4	0	.1%	.0%	.2%	.0%

(Continued)

Market Share

TABLE NUMBER: 4
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Computer-Aided Design Group	.3	.0	.2	0	.0%	.0%	.1%	.0%
Bechtel Software	.3	.0	.3	0	.0%	.0%	.1%	.0%
Mc2 Engineering Software	.3	.0	.3	0	.0%	.0%	.1%	.0%
Microcomputer Graphics	.3	.0	.3	0	.0%	.0%	.1%	.0%
Pelton Engineering	.3	.0	.3	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
A.I. Systems	.2	.0	.2	0	.0%	.0%	.1%	.0%
A/E Microsystems	.2	.1	.1	27	.0%	.0%	.0%	.0%
Engineering Systems Corp.	.2	.0	.2	0	.0%	.0%	.1%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.1%	.0%
Ashlar	.2	.0	.2	0	.0%	.0%	.1%	.0%
CAD-Capture	.2	.0	.0	0	.0%	.0%	.0%	.0%
TOOL Software	.1	.0	.1	2	.0%	.0%	.0%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
Imagine That	.0	.0	.0	0	.0%	.0%	.0%	.0%
Schlumberger	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	146.3	146.3	.1	38,535	20.6%	31.9%	.0%	40.4%
All Companies	710.0	458.3	222.0	95,340	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	577.4	390.2	167.7	88,586	81.3%	85.1%	75.6%	92.9%
All Asian-Based Companies	97.2	54.7	36.2	5,383	13.7%	11.9%	16.3%	5.6%
All European-Based Companies	35.4	13.4	18.1	1,371	5.0%	2.9%	8.1%	1.4%
All Hardware Companies	404.3	387.9	.0	87,771	56.9%	84.6%	.0%	92.1%
All Turnkey & SW Companies	305.7	70.5	222.0	7,569	43.1%	15.4%	100.0%	7.9%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 5
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Intergraph	132.9	71.2	26.6	1,397	18.5%	16.5%	14.1%	2.7%
Apple Computer	62.0	54.6	.0	11,928	8.6%	12.6%	.0%	23.0%
Autodesk	58.1	.0	58.1	0	8.1%	.0%	30.7%	.0%
IBM	46.4	33.0	7.2	3,421	6.4%	7.6%	3.8%	6.6%
Compaq	43.7	43.7	.0	7,279	6.1%	10.1%	.0%	14.0%
Digital	43.1	32.3	.0	302	6.0%	7.5%	.0%	.6%
Computervision	39.9	14.9	12.1	227	5.5%	3.5%	6.4%	.4%
Hewlett-Packard	37.7	28.8	2.6	2,281	5.2%	6.7%	1.4%	4.4%
Auto-Trol	29.2	11.7	10.2	371	4.1%	2.7%	5.4%	.7%
McDonnell Douglas	19.5	10.5	5.9	303	2.7%	2.4%	3.1%	.6%
Accugraph	15.7	7.0	7.2	405	2.2%	1.6%	3.8%	.8%
ISICAD	13.8	5.0	7.0	129	1.9%	1.2%	3.7%	.2%
Sun	9.0	7.9	.0	715	1.3%	1.8%	.0%	1.4%
Dell Computer	6.3	6.3	.0	1,581	.9%	1.5%	.0%	3.1%
Everex Systems	6.3	6.3	.0	1,906	.9%	1.5%	.0%	3.7%
CAP Electronic Sweet's	5.1	.0	4.0	0	.7%	.0%	2.1%	.0%
D.C.A. Software, Inc.	5.0	.0	5.0	0	.7%	.0%	2.6%	.0%
Computer-Aided Design Group	4.8	.0	3.5	0	.7%	.0%	1.8%	.0%
Sigma Design	4.5	.0	4.4	305	.6%	.0%	2.3%	.6%
Integrated Computer Graphics	3.9	2.0	1.4	424	.5%	.5%	.7%	.8%
CADAM	3.6	.5	2.8	208	.5%	.1%	1.5%	.4%
Infinite Graphics	2.9	.0	2.9	0	.4%	.0%	1.5%	.0%
International Software Systems	2.8	.0	2.8	0	.4%	.0%	1.5%	.0%
Bechtel Software	2.3	.0	2.1	0	.3%	.0%	1.1%	.0%
Innovative Data Design	2.1	.0	2.1	0	.3%	.0%	1.1%	.0%
Bentley	1.8	.0	1.8	0	.2%	.0%	.9%	.0%
Control Data	1.7	1.2	.2	18	.2%	.3%	.1%	.0%
CIVILSOFT	1.6	.0	1.6	0	.2%	.0%	.9%	.0%
Land Innovation	1.4	.0	1.4	0	.2%	.0%	.7%	.0%
Foresight Resources	1.3	.0	1.2	0	.2%	.0%	.6%	.0%
Comshoppe	1.3	.0	1.3	0	.2%	.0%	.7%	.0%
Claris	1.3	.0	1.3	0	.2%	.0%	.7%	.0%
Micrografx	1.2	.0	1.2	0	.2%	.0%	.7%	.0%

(Continued)

Market Share

TABLE NUMBER: 5
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Moda CAD	1.2	.3	.8	10	.2%	.1%	.4%	.0%
American Small Business Comp.	.9	.0	.9	0	.1%	.0%	.4%	.0%
Mega CADD	.8	.0	.8	0	.1%	.0%	.4%	.0%
CADWorks	.8	.0	.7	0	.1%	.0%	.4%	.0%
Engineering Software	.8	.0	.7	22	.1%	.0%	.3%	.0%
Evolution Computing	.7	.0	.7	0	.1%	.0%	.4%	.0%
GRAPHISOFT	.7	.0	.7	0	.1%	.0%	.4%	.0%
Schlumberger	.6	.2	.2	7	.1%	.1%	.1%	.0%
Dynaware	.6	.0	.6	0	.1%	.0%	.3%	.0%
Aura CAD/CAM Systems	.6	.0	.6	0	.1%	.0%	.3%	.0%
CADKEY	.5	.0	.5	0	.1%	.0%	.3%	.0%
Georgia Tech Research Corp.	.5	.0	.5	0	.1%	.0%	.3%	.0%
IGC Technology	.5	.0	.5	0	.1%	.0%	.3%	.0%
ECOM Associates	.5	.0	.5	46	.1%	.0%	.2%	.1%
A/E Microsystems	.5	.3	.2	40	.1%	.1%	.1%	.1%
Cascade Graphics	.3	.0	.3	0	.0%	.0%	.2%	.0%
ACDS	.3	.0	.3	0	.0%	.0%	.1%	.0%
Mc2 Engineering Software	.3	.0	.3	0	.0%	.0%	.1%	.0%
Microcomputer Graphics	.3	.0	.3	0	.0%	.0%	.1%	.0%
Pelton Engineering	.3	.0	.3	0	.0%	.0%	.1%	.0%
Engineering Systems Corp.	.2	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
A.I. Systems	.2	.0	.2	0	.0%	.0%	.1%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.1%	.0%
Ashlar	.2	.0	.2	0	.0%	.0%	.1%	.0%
Ground Modelling Systems	.1	.1	.1	1	.0%	.0%	.0%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
Serbi	.0	.0	.0	0	.0%	.0%	.0%	.0%
Solbourne	.0	.1	.0	3	.0%	.0%	.0%	.0%
Star Informatic	.0	.0	.0	0	.0%	.0%	.0%	.0%
Imagine That	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 5 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	95.1	93.6	.0	18,496	13.2%	21.7%	.0%	35.7%
All Companies	720.1	431.6	189.1	51,823	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	719.8	431.5	189.0	51,822	100.0%	100.0%	99.9%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.2	.1	.1	1	.0%	.0%	.1%	.0%
All Hardware Companies	300.5	275.4	.0	47,166	41.7%	63.8%	.0%	91.0%
All Turnkey & SW Companies	419.6	156.2	189.1	4,658	58.3%	36.2%	100.0%	9.0%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 6
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	111.6	62.5	20.1	1,242	40.6%	42.6%	30.2%	22.4%
Computervision	31.5	12.3	8.8	164	11.5%	8.4%	13.3%	3.0%
Hewlett-Packard	30.6	23.1	2.6	1,269	11.1%	15.7%	4.0%	22.9%
Auto-Trol	29.2	11.7	10.2	371	10.6%	8.0%	15.4%	6.7%
Accugraph	14.0	6.9	5.7	388	5.1%	4.7%	8.6%	7.0%
McDonnell Douglas	12.9	7.0	3.9	181	4.7%	4.7%	5.8%	3.3%
Digital	9.8	7.4	.0	302	3.6%	5.0%	.0%	5.4%
ISICAD	9.7	5.0	2.9	129	3.5%	3.4%	4.4%	2.3%
Sun	8.2	7.2	.0	678	3.0%	4.9%	.0%	12.2%
Autodesk	4.1	.0	4.1	0	1.5%	.0%	6.1%	.0%
Integrated Computer Graphics	3.9	2.0	1.4	424	1.4%	1.4%	2.1%	7.6%
Sigma Design	2.4	.0	2.3	305	.9%	.0%	3.5%	5.5%
D.C.A. Software, Inc.	1.2	.0	1.2	0	.4%	.0%	1.8%	.0%
IBM	1.0	.6	.2	9	.4%	.4%	.3%	.2%
CADAM	1.0	.0	.8	0	.3%	.0%	1.2%	.0%
Computer-Aided Design Group	.9	.0	.7	0	.3%	.0%	1.1%	.0%
Bechtel Software	.9	.0	.8	0	.3%	.0%	1.2%	.0%
Control Data	.6	.4	.1	11	.2%	.3%	.1%	.2%
Schlumberger	.6	.2	.2	6	.2%	.1%	.3%	.1%
Everex Systems	.5	.5	.0	61	.2%	.3%	.0%	1.1%
ACDS	.3	.0	.3	0	.1%	.0%	.4%	.0%
A/E Microsystems	.1	.1	.0	10	.1%	.1%	.0%	.2%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Star Informatic	.0	.0	.0	0	.0%	.0%	.0%	.0%
ECOM Associates	.0	.0	.0	1	.0%	.0%	.0%	.0%
Solbourne	.0	.0	.0	1	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 6 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	275.0	146.9	66.4	5,550	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	275.0	146.9	66.4	5,550	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	32.6	27.0	.0	1,907	11.9%	18.3%	.0%	34.4%
All Turnkey & SW Companies	242.4	120.0	66.4	3,644	88.1%	81.7%	100.0%	65.6%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 7
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Digital	33.3	25.0	.0	0	24.9%	28.0%	.0%	.0%
IBM	31.7	19.3	7.0	333	23.6%	21.6%	37.8%	17.2%
Intergraph	17.3	8.6	2.8	156	12.9%	9.7%	15.0%	8.1%
Computervision	6.8	2.7	1.7	63	5.1%	3.0%	9.2%	3.3%
McDonnell Douglas	6.6	3.6	2.0	122	5.0%	4.0%	10.9%	6.3%
Computer-Aided Design Group	3.6	.0	2.5	0	2.7%	.0%	13.7%	.0%
Bechtel Software	1.1	.0	1.0	0	.8%	.0%	5.6%	.0%
Control Data	1.1	.8	.1	7	.8%	.9%	.7%	.4%
Hewlett-Packard	.8	.7	.0	41	.6%	.8%	.0%	2.1%
Sun	.8	.7	.0	37	.6%	.8%	.0%	1.9%
CADAM	.8	.0	.7	0	.6%	.0%	3.7%	.0%
Georgia Tech Research Corp.	.5	.0	.5	0	.4%	.0%	2.6%	.0%
Accugraph	.2	.1	.1	11	.1%	.1%	.4%	.6%
A/E Microsystems	.1	.1	.0	3	.1%	.1%	.2%	.1%
Engineering Systems Corp.	.1	.0	.0	0	.0%	.0%	.2%	.0%
Schlumberger	.1	.0	.0	1	.0%	.0%	.1%	.1%
Solbourne	.0	.0	.0	2	.0%	.0%	.0%	.1%
Other Companies	29.2	27.8	.0	1,155	21.8%	31.1%	.0%	59.8%
All Companies	134.0	89.3	18.4	1,931	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	134.0	89.3	18.4	1,931	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	64.2	54.2	.0	1,235	47.9%	60.6%	.0%	64.0%
All Turnkey & SW Companies	69.8	35.1	18.4	696	52.1%	39.4%	100.0%	36.0%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 8
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Apple Computer	62.0	54.6	.0	11,928	19.9%	27.9%	.0%	26.9%
Autodesk	54.1	.0	54.1	0	17.4%	.0%	51.8%	.0%
Compaq	43.7	43.7	.0	7,279	14.0%	22.4%	.0%	16.4%
IBM	13.8	13.1	.0	3,079	4.4%	6.7%	.0%	6.9%
Dell Computer	6.3	6.3	.0	1,581	2.0%	3.2%	.0%	3.6%
Hewlett-Packard	6.3	5.0	.0	971	2.0%	2.6%	.0%	2.2%
Everex Systems	5.8	5.8	.0	1,845	1.9%	3.0%	.0%	4.2%
CAP Electronic Sweet's	5.1	.0	4.0	0	1.6%	.0%	3.9%	.0%
ISICAD	4.2	.0	4.2	0	1.3%	.0%	4.0%	.0%
Intergraph	4.0	.0	3.8	0	1.3%	.0%	3.6%	.0%
D.C.A. Software, Inc.	3.8	.0	3.8	0	1.2%	.0%	3.6%	.0%
Infinite Graphics	2.9	.0	2.9	0	.9%	.0%	2.7%	.0%
International Software Systems	2.8	.0	2.8	0	.9%	.0%	2.7%	.0%
Sigma Design	2.1	.0	2.1	0	.7%	.0%	2.0%	.0%
Innovative Data Design	2.1	.0	2.1	0	.7%	.0%	2.0%	.0%
CADAM	1.9	.5	1.3	208	.6%	.2%	1.2%	.5%
Bentley	1.8	.0	1.8	0	.6%	.0%	1.7%	.0%
CIVILSOFT	1.6	.0	1.6	0	.5%	.0%	1.6%	.0%
Computervision	1.6	.0	1.6	0	.5%	.0%	1.5%	.0%
Accugraph	1.6	.1	1.4	5	.5%	.0%	1.3%	.0%
Land Innovation	1.4	.0	1.4	0	.4%	.0%	1.3%	.0%
Foresight Resources	1.3	.0	1.2	0	.4%	.0%	1.1%	.0%
Comshoppe	1.3	.0	1.3	0	.4%	.0%	1.2%	.0%
Claris	1.3	.0	1.3	0	.4%	.0%	1.2%	.0%
Micrografx	1.2	.0	1.2	0	.4%	.0%	1.2%	.0%
Moda CAD	1.2	.3	.8	10	.4%	.1%	.8%	.0%
American Small Business Comp.	.9	.0	.9	0	.3%	.0%	.8%	.0%
Mega CADD	.8	.0	.8	0	.3%	.0%	.8%	.0%
CADWorks	.8	.0	.7	0	.3%	.0%	.7%	.0%
Engineering Software	.8	.0	.7	22	.2%	.0%	.6%	.0%
Evolution Computing	.7	.0	.7	0	.2%	.0%	.7%	.0%
GRAPHSOFT	.7	.0	.7	0	.2%	.0%	.7%	.0%
Dynaware	.6	.0	.6	0	.2%	.0%	.6%	.0%
Aura CAD/CAM Systems	.6	.0	.6	0	.2%	.0%	.5%	.0%
CADKEY	.5	.0	.5	0	.2%	.0%	.5%	.0%

(Continued)

Market Share

TABLE NUMBER: 8
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
IGC Technology	.5	.0	.5	0	.2%	.0%	.5%	.0%
ECOM Associates	.5	.0	.5	45	.2%	.0%	.4%	.1%
Cascade Graphics	.3	.0	.3	0	.1%	.0%	.3%	.0%
Bechtel Software	.3	.0	.3	0	.1%	.0%	.3%	.0%
Computer-Aided Design Group	.3	.0	.2	0	.1%	.0%	.2%	.0%
Mc2 Engineering Software	.3	.0	.3	0	.1%	.0%	.2%	.0%
Microcomputer Graphics	.3	.0	.3	0	.1%	.0%	.2%	.0%
Pelton Engineering	.3	.0	.3	0	.1%	.0%	.2%	.0%
Caddlink	.2	.0	.2	0	.1%	.0%	.2%	.0%
A.I. Systems	.2	.0	.2	0	.1%	.0%	.2%	.0%
A/E Microsystems	.2	.1	.1	27	.1%	.0%	.1%	.1%
Carrier Corporation	.2	.0	.2	0	.1%	.0%	.2%	.0%
Ashlar	.2	.0	.2	0	.1%	.0%	.2%	.0%
Engineering Systems Corp.	.2	.0	.1	0	.1%	.0%	.1%	.0%
Ground Modelling Systems	.1	.1	.1	1	.0%	.0%	.1%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
Serbi	.0	.0	.0	0	.0%	.0%	.0%	.0%
Imagine That	.0	.0	.0	0	.0%	.0%	.0%	.0%
Schlumberger	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	65.8	65.8	.0	17,341	21.2%	33.7%	.0%	39.1%
All Companies	311.1	195.3	104.3	44,342	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	310.9	195.3	104.2	44,341	99.9%	100.0%	99.9%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.2	.1	.1	1	.1%	.0%	.1%	.0%
All Hardware Companies	203.7	194.3	.0	44,024	65.5%	99.5%	.0%	99.3%
All Turnkey & SW Companies	107.4	1.0	104.3	318	34.5%	.5%	100.0%	.7%

Source: Dataquest
January 1991

(Continued)

Market Share

TABLE NUMBER: 9
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company	Total				Market Share			
	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	90.6	48.5	18.1	953	15.1%	13.2%	12.4%	2.7%
IBM	64.1	45.3	10.1	4,584	10.7%	12.3%	6.8%	12.9%
Hewlett-Packard	50.0	38.2	3.4	3,053	8.3%	10.4%	2.3%	8.6%
Compaq	43.7	43.7	.0	7,279	7.3%	11.9%	.0%	20.5%
Digital	38.9	29.2	.0	273	6.5%	7.9%	.0%	.8%
Autodesk	33.8	.0	33.8	0	5.6%	.0%	23.1%	.0%
McDonnell Douglas	21.5	11.3	8.1	370	3.6%	3.1%	5.5%	1.0%
Apple Computer	21.0	18.5	.0	4,032	3.5%	5.0%	.0%	11.4%
Computervision	19.3	8.9	4.6	159	3.2%	2.4%	3.1%	.4%
ISICAD	19.3	7.0	9.8	187	3.2%	1.9%	6.7%	.5%
ItalCad	13.5	5.8	3.8	129	2.2%	1.6%	2.6%	.4%
Star Informatic	11.8	10.3	3.1	550	2.0%	2.8%	2.1%	1.6%
Kewill Systems	11.5	3.4	6.3	115	1.9%	.9%	4.3%	.3%
Siemens	11.0	6.5	3.3	231	1.8%	1.8%	2.2%	.7%
t2 Solutions	10.7	5.3	3.8	106	1.8%	1.5%	2.6%	.3%
CAD Centre	9.8	1.5	3.7	11	1.6%	.4%	2.5%	.0%
Norsk Data	9.0	4.8	1.7	97	1.5%	1.3%	1.1%	.3%
BATISOFT	6.9	1.0	3.5	225	1.2%	.3%	2.4%	.6%
Dassault	5.3	.0	4.4	0	.9%	.0%	3.0%	.0%
Sun	4.9	4.3	.0	389	.8%	1.2%	.0%	1.1%
Research Machines	3.8	3.8	.0	594	.6%	1.0%	.0%	1.7%
Auto-Trol	3.7	1.5	1.3	47	.6%	.4%	.9%	.1%
Caditron	3.6	1.8	1.4	56	.6%	.5%	1.0%	.2%
Datagraphic	3.4	1.7	1.3	55	.6%	.5%	.9%	.2%
Robocom	2.5	.0	2.5	0	.4%	.0%	1.7%	.0%
CADAM	2.4	.3	1.9	139	.4%	.1%	1.3%	.4%
Ziegler	2.4	.0	2.4	0	.4%	.0%	1.6%	.0%
Gable CAD Systems	2.3	.9	1.1	32	.4%	.3%	.7%	.1%
Control Data	2.3	1.7	.2	25	.4%	.5%	.2%	.1%
Sinus Software	1.8	.9	.9	36	.3%	.3%	.6%	.1%
Elstree Computing	1.6	.7	.9	50	.3%	.2%	.6%	.1%
Olivetti	1.5	1.3	.0	254	.3%	.4%	.0%	.7%
Serbi	1.4	.0	1.4	0	.2%	.0%	1.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 9
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
ARKTEC	1.4	.4	1.0	40	.2%	.1%	.7%	.1%
PAFEC	1.4	.0	1.4	0	.2%	.0%	.9%	.0%
Micrograph	1.3	.4	.7	22	.2%	.1%	.5%	.1%
Ground Modelling Systems	1.2	.8	.6	7	.2%	.2%	.4%	.0%
Westward	1.2	1.2	.0	70	.2%	.3%	.0%	.2%
Dell Computer	1.1	1.1	.0	279	.2%	.3%	.0%	.8%
Cadtronic	1.0	.5	.4	29	.2%	.1%	.3%	.1%
CAP Electronic Sweet's	.9	.0	.7	0	.1%	.0%	.5%	.0%
Accugraph	.9	.4	.4	23	.1%	.1%	.3%	.1%
CADWorks	.8	.0	.7	0	.1%	.0%	.5%	.0%
Radan Computational	.8	.5	.2	34	.1%	.1%	.1%	.1%
Schlumberger	.8	.3	.3	8	.1%	.1%	.2%	.0%
Micrografx	.7	.0	.7	0	.1%	.0%	.5%	.0%
Sycotronic AG	.6	.0	.5	1	.1%	.0%	.4%	.0%
Sigma Design	.6	.0	.6	0	.1%	.0%	.4%	.0%
Everex Systems	.6	.6	.0	169	.1%	.2%	.0%	.5%
ACERI SA	.5	.1	.3	3	.1%	.0%	.2%	.0%
Moda CAD	.5	.1	.3	4	.1%	.0%	.2%	.0%
DAT Standard Information system	.4	.0	.4	0	.1%	.0%	.2%	.0%
D.C.A. Software, Inc.	.2	.0	.2	0	.0%	.0%	.2%	.0%
Foresight Resources	.2	.0	.2	0	.0%	.0%	.1%	.0%
CAD-Capture	.2	.0	.0	0	.0%	.0%	.0%	.0%
TOOL Software	.2	.0	.1	4	.0%	.0%	.1%	.0%
Evolution Computing	.1	.0	.1	0	.0%	.0%	.1%	.0%
Cascade Graphics	.1	.0	.1	0	.0%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.0%	.0%
ACDS	.0	.0	.0	0	.0%	.0%	.0%	.0%
Solbourne	.0	.0	.0	2	.0%	.0%	.0%	.0%
Imagine That	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 9 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	53.6	52.9	.1	10,764	8.9%	14.4%	.1%	30.3%
All Companies	600.4	367.4	146.7	35,491	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	476.5	313.5	95.7	32,739	79.4%	85.3%	65.2%	92.2%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	123.9	53.9	51.1	2,752	20.6%	14.7%	34.8%	7.8%
All Hardware Companies	210.7	191.2	.0	29,820	35.1%	52.0%	.0%	84.0%
All Turnkey & SW Companies	389.7	176.2	146.7	5,671	64.9%	48.0%	100.0%	16.0%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 10
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	76.1	42.6	13.7	847	28.8%	29.1%	20.9%	17.4%
Hewlett-Packard	39.3	29.7	3.4	1,485	14.9%	20.2%	5.2%	30.5%
Computervision	16.3	7.5	3.9	97	6.2%	5.1%	5.9%	2.0%
McDonnell Douglas	15.1	7.9	5.7	167	5.7%	5.4%	8.7%	3.4%
ISICAD	13.5	7.0	4.0	187	5.1%	4.8%	6.1%	3.8%
ItalCad	13.5	5.8	3.8	129	5.1%	3.9%	5.8%	2.6%
Star Informatic	11.8	10.3	3.1	550	4.5%	7.0%	4.7%	11.3%
t2 Solutions	10.7	5.3	3.8	106	4.0%	3.6%	5.9%	2.2%
Kewill Systems	10.3	3.1	5.7	104	3.9%	2.1%	8.7%	2.1%
CAD Centre	9.8	1.5	3.7	11	3.7%	1.0%	5.7%	.2%
Digital	8.9	6.6	.0	273	3.4%	4.5%	.0%	5.6%
Siemens	8.7	5.1	2.6	204	3.3%	3.5%	4.0%	4.2%
Norsk Data	6.0	3.5	1.2	75	2.3%	2.4%	1.9%	1.5%
Sun	4.5	3.9	.0	368	1.7%	2.7%	.0%	7.6%
Auto-Trol	3.7	1.5	1.3	47	1.4%	1.0%	2.0%	1.0%
Autodesk	2.4	.0	2.4	0	.9%	.0%	3.6%	.0%
Gable CAD Systems	2.3	.9	1.1	32	.9%	.6%	1.7%	.7%
Sinus Software	1.8	.9	.9	36	.7%	.6%	1.4%	.7%
Dassault	1.8	.0	1.4	0	.7%	.0%	2.2%	.0%
IBM	1.4	.8	.3	13	.5%	.6%	.5%	.3%
PAFEC	1.4	.0	1.4	0	.5%	.0%	2.1%	.0%
Control Data	.8	.6	.1	15	.3%	.4%	.1%	.3%
Radan Computational	.8	.5	.2	34	.3%	.3%	.3%	.7%
Accugraph	.8	.4	.3	22	.3%	.3%	.5%	.4%
Schlumberger	.7	.3	.3	7	.3%	.2%	.4%	.1%
CADAM	.6	.0	.5	0	.2%	.0%	.8%	.0%
Westward	.6	.6	.0	33	.2%	.4%	.0%	.7%
ARKTEC	.4	.3	.2	18	.2%	.2%	.3%	.4%
Sigma Design	.3	.0	.3	0	.1%	.0%	.5%	.0%
Micrograph	.1	.1	.0	4	.0%	.0%	.0%	.1%
D.C.A. Software, Inc.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Serbi	.1	.0	.1	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 10 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
ACDS	.0	.0	.0	0	.0%	.0%	.0%	.0%
Everex Systems	.0	.0	.0	5	.0%	.0%	.0%	.1%
TOOL Software	.0	.0	.0	1	.0%	.0%	.0%	.0%
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	264.5	146.8	65.4	4,871	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	184.4	108.9	36.2	3,533	69.7%	74.2%	55.4%	72.5%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	80.0	37.9	29.2	1,337	30.3%	25.8%	44.6%	27.5%
All Hardware Companies	31.3	25.7	.0	1,608	11.8%	17.5%	.0%	33.0%
All Turnkey & SW Companies	233.2	121.1	65.4	3,263	88.2%	82.5%	100.0%	67.0%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 11
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
IBM	44.3	27.0	9.7	466	36.2%	34.2%	50.1%	30.1%
Digital	30.1	22.5	.0	0	24.5%	28.5%	.0%	.0%
Intergraph	11.8	5.9	1.9	106	9.6%	7.4%	9.8%	6.9%
McDonnell Douglas	6.4	3.4	2.4	204	5.3%	4.3%	12.5%	13.2%
Dassault	3.6	.0	2.9	0	2.9%	.0%	15.0%	.0%
Norsk Data	3.0	1.3	.5	22	2.4%	1.6%	2.3%	1.4%
Computervision	2.8	1.3	.7	57	2.3%	1.6%	3.5%	3.7%
Siemens	2.3	1.4	.7	27	1.9%	1.7%	3.5%	1.8%
Control Data	1.5	1.1	.2	10	1.2%	1.4%	.9%	.6%
Hewlett-Packard	.8	.7	.0	41	.7%	.8%	.0%	2.6%
CADAM	.5	.0	.5	0	.4%	.0%	2.4%	.0%
Sun	.4	.4	.0	20	.4%	.5%	.0%	1.3%
Schlumberger	.1	.0	.0	1	.1%	.0%	.1%	.1%
Solbourne	.0	.0	.0	2	.0%	.0%	.0%	.1%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
Other Companies	14.9	14.2	.0	590	12.2%	18.0%	.0%	38.2%
All Companies	122.5	79.1	19.5	1,547	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	113.7	76.4	15.4	1,498	92.8%	96.6%	79.2%	96.8%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	8.9	2.7	4.1	49	7.2%	3.4%	20.8%	3.2%
All Hardware Companies	46.3	37.8	.0	653	37.8%	47.8%	.0%	42.2%
All Turnkey & SW Companies	76.3	41.3	19.5	894	62.2%	52.2%	100.0%	57.8%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 12
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Compaq	43.7	43.7	.0	7,279	20.5%	30.9%	.0%	25.0%
Autodesk	31.5	.0	31.5	0	14.7%	.0%	50.8%	.0%
Apple Computer	21.0	18.5	.0	4,032	9.8%	13.0%	.0%	13.9%
IBM	18.4	17.4	.0	4,105	8.6%	12.3%	.0%	14.1%
Hewlett-Packard	9.8	7.9	.0	1,527	4.6%	5.6%	.0%	5.3%
BATISOFT	6.9	1.0	3.5	225	3.2%	.7%	5.6%	.8%
ISICAD	5.8	.0	5.8	0	2.7%	.0%	9.3%	.0%
Research Machines	3.8	3.8	.0	594	1.8%	2.7%	.0%	2.0%
Caditron	3.6	1.8	1.4	56	1.7%	1.3%	2.3%	.2%
Datagraphic	3.4	1.7	1.3	55	1.6%	1.2%	2.1%	.2%
Intergraph	2.7	.0	2.6	0	1.3%	.0%	4.1%	.0%
Robocom	2.5	.0	2.5	0	1.2%	.0%	4.0%	.0%
Ziegler	2.4	.0	2.4	0	1.1%	.0%	3.8%	.0%
Elstree Computing	1.6	.7	.9	50	.8%	.5%	1.5%	.2%
Olivetti	1.5	1.3	.0	254	.7%	.9%	.0%	.9%
Serbi	1.4	.0	1.4	0	.6%	.0%	2.2%	.0%
CADAM	1.3	.3	.9	139	.6%	.2%	1.4%	.5%
Micrograph	1.2	.4	.7	18	.5%	.3%	1.1%	.1%
Ground Modelling Systems	1.2	.8	.6	7	.6%	.6%	.9%	.0%
Kewill Systems	1.2	.4	.6	11	.5%	.2%	1.0%	.0%
Dell Computer	1.1	1.1	.0	279	.5%	.8%	.0%	1.0%
ARKTEC	1.0	.2	.8	22	.5%	.1%	1.3%	.1%
Cadtronic	1.0	.5	.4	29	.5%	.4%	.7%	.1%
CAP Electronic Sweet's	.9	.0	.7	0	.4%	.0%	1.1%	.0%
CADWorks	.8	.0	.7	0	.4%	.0%	1.1%	.0%
Micrografx	.7	.0	.7	0	.3%	.0%	1.1%	.0%
Sycotronic AG	.6	.0	.5	1	.3%	.0%	.9%	.0%
Westward	.6	.6	.0	37	.3%	.4%	.0%	.1%
ACERI SA	.5	.1	.3	3	.3%	.1%	.5%	.0%
Everex Systems	.5	.5	.0	164	.2%	.4%	.0%	.6%
Moda CAD	.5	.1	.3	4	.2%	.1%	.5%	.0%
DAT Standard Information system	.4	.0	.4	0	.2%	.0%	.6%	.0%

(Continued)

Market Share

TABLE NUMBER: 12 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Sigma Design	.3	.0	.3	0	.1%	.0%	.5%	.0%
Computervision	.2	.1	.0	5	.1%	.1%	.0%	.0%
D.C.A. Software, Inc.	.2	.0	.2	0	.1%	.0%	.3%	.0%
Foresight Resources	.2	.0	.2	0	.1%	.0%	.3%	.0%
CAD-Capture	.2	.0	.0	0	.1%	.0%	.0%	.0%
TOOL Software	.1	.0	.1	2	.1%	.0%	.1%	.0%
Evolution Computing	.1	.0	.1	0	.1%	.0%	.2%	.0%
Accugraph	.1	.0	.1	0	.0%	.0%	.1%	.0%
Cascade Graphics	.1	.0	.1	0	.0%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Imagine That	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	38.6	38.7	.1	10,173	18.1%	27.3%	.1%	35.0%
All Companies	213.4	141.5	61.9	29,073	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	178.3	128.2	44.0	27,707	83.6%	90.6%	71.1%	95.3%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	35.1	13.3	17.9	1,366	16.4%	9.4%	28.9%	4.7%
All Hardware Companies	133.1	127.7	.0	27,559	62.4%	90.2%	.0%	94.8%
All Turnkey & SW Companies	80.3	13.8	61.9	1,514	37.6%	9.8%	100.0%	5.2%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 13
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Fujitsu	121.1	67.6	40.3	2,608	22.7%	19.9%	28.8%	9.6%
NEC	70.6	52.1	12.9	4,929	13.2%	15.3%	9.2%	18.2%
IBM	53.8	36.8	9.3	3,010	10.1%	10.8%	6.7%	11.1%
Nihon Unisys	27.4	18.4	3.6	230	5.1%	5.4%	2.5%	.9%
Hitachi	20.8	10.0	8.7	640	3.9%	2.9%	6.3%	2.4%
Mutoh Industries--NO OEM	18.5	9.5	6.4	349	3.5%	2.8%	4.6%	1.3%
Hewlett-Packard	16.2	11.9	1.7	775	3.0%	3.5%	1.2%	2.9%
Toshiba--NO OEM	16.0	8.0	6.4	291	3.0%	2.4%	4.6%	1.1%
Computervision	14.7	9.5	4.5	119	2.7%	2.8%	3.2%	.4%
Mitsubishi Electric	13.5	10.8	1.7	250	2.5%	3.2%	1.2%	.9%
Autodesk	12.7	.0	12.7	0	2.4%	.0%	9.1%	.0%
Digital	11.2	8.4	.0	79	2.1%	2.5%	.0%	.3%
Intergraph	10.5	5.6	2.1	111	2.0%	1.7%	1.5%	.4%
Silicon Graphics	8.8	8.4	.0	220	1.6%	2.5%	.0%	.8%
Century Research Center	8.8	4.8	3.1	55	1.6%	1.4%	2.2%	.2%
CPU	7.6	.0	7.3	364	1.4%	.0%	5.2%	1.3%
Uchida Yoko	6.1	5.8	.3	97	1.1%	1.7%	.2%	.4%
CADAM	6.0	.8	4.7	347	1.1%	.2%	3.3%	1.3%
INS Engineering	5.7	4.1	1.0	86	1.1%	1.2%	.7%	.3%
Technovision	4.7	.0	4.7	0	.9%	.0%	3.3%	.0%
Sun	4.4	3.9	.0	353	.8%	1.2%	.0%	1.3%
Hitachi Zosen Info Systems	3.8	1.9	1.3	39	.7%	.6%	.9%	.1%
Apple Computer	3.5	3.1	.0	672	.7%	.9%	.0%	2.5%
Toyo Information Systems--NO OEM	3.2	2.0	1.0	31	.6%	.6%	.7%	.1%
Compaq	2.8	2.8	.0	465	.5%	.8%	.0%	1.7%
Andor	2.6	.5	2.0	19	.5%	.1%	1.4%	.1%
McDonnell Douglas	2.3	1.3	.7	34	.4%	.4%	.5%	.1%
Auto-Trol	1.8	.7	.6	23	.3%	.2%	.5%	.1%
Mitsui Engineering	1.7	1.3	.3	11	.3%	.4%	.2%	.0%
Sony	1.3	1.2	.0	77	.2%	.3%	.0%	.3%
ISICAD	1.1	.4	.6	10	.2%	.1%	.4%	.0%
Kubota Computer	.7	.5	.2	35	.1%	.1%	.2%	.1%
Sigma Design	.6	.0	.6	0	.1%	.0%	.4%	.0%

(Continued)

Market Share

TABLE NUMBER: 13
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Siemens	.6	.3	.2	12	.1%	.1%	.1%	.0%
D.C.A. Software, Inc.	.4	.0	.4	0	.1%	.0%	.3%	.0%
Accugraph	.3	.2	.2	9	.1%	.0%	.1%	.0%
Omron	.3	.3	.0	15	.1%	.1%	.0%	.1%
CADWorks	.3	.0	.3	0	.1%	.0%	.2%	.0%
Control Data	.3	.2	.0	3	.0%	.1%	.0%	.0%
Moda CAD	.2	.1	.1	2	.0%	.0%	.1%	.0%
Everex Systems	.1	.1	.0	42	.0%	.0%	.0%	.2%
Gable CAD Systems	.1	.1	.1	2	.0%	.0%	.0%	.0%
CADKEY	.0	.0	.0	0	.0%	.0%	.0%	.0%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.0%	.0%
PAFEC	.0	.0	.0	0	.0%	.0%	.0%	.0%
ACDS	.0	.0	.0	0	.0%	.0%	.0%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	46.9	46.6	.0	10,658	8.8%	13.7%	.0%	39.4%
All Companies	534.2	339.6	139.8	27,069	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	196.3	137.8	38.4	16,726	36.7%	40.6%	27.4%	61.8%
All Asian-Based Companies	337.2	201.5	101.2	10,329	63.1%	59.3%	72.4%	38.2%
All European-Based Companies	.7	.4	.3	14	.1%	.1%	.2%	.1%
All Hardware Companies	93.6	87.4	.0	15,447	17.5%	25.7%	.0%	57.1%
All Turnkey & SW Companies	440.6	252.3	139.8	11,622	82.5%	74.3%	100.0%	42.9%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 14
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Fujitsu	49.6	31.4	13.2	1,248	22.5%	22.4%	23.5%	23.4%
NEC	26.8	15.0	9.7	1,477	12.2%	10.7%	17.2%	27.7%
Computervision	14.7	9.5	4.5	119	6.7%	6.8%	8.0%	2.2%
Hewlett-Packard	14.4	10.4	1.7	512	6.5%	7.4%	3.0%	9.6%
Toshiba--NO OEM	13.6	6.8	5.4	119	6.2%	4.9%	9.7%	2.2%
Hitachi	10.4	5.0	4.4	216	4.7%	3.6%	7.8%	4.1%
Mutoh Industries--NO OEM	10.2	5.0	3.3	102	4.6%	3.5%	5.8%	1.9%
Mitsubishi Electric	10.2	8.9	.7	101	4.6%	6.3%	1.2%	1.9%
Intergraph	8.8	5.0	1.6	98	4.0%	3.5%	2.8%	1.8%
Silicon Graphics	8.8	8.4	.0	220	4.0%	6.0%	.0%	4.1%
Century Research Center	8.8	4.8	3.1	55	4.0%	3.4%	5.5%	1.0%
Uchida Yoko	6.1	5.8	.3	97	2.8%	4.1%	.5%	1.8%
INS Engineering	5.1	3.7	.9	35	2.3%	2.7%	1.5%	.7%
Sun	4.0	3.6	.0	335	1.8%	2.6%	.0%	6.3%
Nihon Unisys	3.8	2.6	.5	45	1.7%	1.8%	.9%	.8%
Hitachi Zosen Info Systems	3.8	1.9	1.3	39	1.7%	1.4%	2.4%	.7%
Digital	2.6	1.9	.0	79	1.2%	1.4%	.0%	1.5%
Toyo Information Systems--NO OEM	2.4	1.5	.7	9	1.1%	1.1%	1.2%	.2%
Auto-Trol	1.8	.7	.6	23	.8%	.5%	1.1%	.4%
Mitsui Engineering	1.7	1.3	.3	11	.8%	.9%	.5%	.2%
CADAM	1.6	.0	1.3	0	.7%	.0%	2.4%	.0%
McDonnell Douglas	1.5	.8	.5	20	.7%	.6%	.8%	.4%
Sony	1.3	1.2	.0	77	.6%	.8%	.0%	1.4%
IBM	1.3	.8	.3	12	.6%	.6%	.5%	.2%
Autodesk	.9	.0	.9	0	.4%	.0%	1.6%	.0%
ISICAD	.8	.4	.2	10	.4%	.3%	.4%	.2%
Kubota Computer	.7	.5	.2	35	.3%	.3%	.4%	.7%
Siemens	.5	.3	.1	11	.2%	.2%	.2%	.2%
Sigma Design	.3	.0	.3	0	.1%	.0%	.6%	.0%
Accugraph	.3	.2	.1	9	.1%	.1%	.2%	.2%
Omron	.3	.3	.0	15	.1%	.2%	.0%	.3%
Gable CAD Systems	.1	.1	.1	2	.1%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 14 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Control Data	.1	.1	.0	2	.0%	.0%	.0%	.0%
D.C.A. Software, Inc.	.1	.0	.1	0	.0%	.0%	.1%	.0%
PAFEC	.0	.0	.0	0	.0%	.0%	.1%	.0%
ACDS	.0	.0	.0	0	.0%	.0%	.0%	.0%
Everex Systems	.0	.0	.0	1	.0%	.0%	.0%	.0%
Other Companies	2.6	2.5	.0	193	1.2%	1.8%	.0%	3.6%
All Companies	219.8	140.1	56.2	5,327	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	61.9	41.7	12.1	1,440	28.2%	29.7%	21.5%	27.0%
All Asian-Based Companies	157.2	98.2	43.9	3,875	71.5%	70.0%	78.1%	72.7%
All European-Based Companies	.6	.3	.2	12	.3%	.2%	.4%	.2%
All Hardware Companies	20.7	18.4	.0	970	9.4%	13.1%	.0%	18.2%
All Turnkey & SW Companies	199.1	121.7	56.2	4,357	90.6%	86.9%	100.0%	81.8%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 15
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fujitsu	51.3	28.8	15.3	551	36.0%	33.1%	48.0%	31.1%
IBM	41.1	25.1	9.0	432	28.9%	28.8%	28.3%	24.4%
Nihon Unisys	23.6	15.8	3.1	185	16.6%	18.2%	9.6%	10.4%
Digital	8.7	6.5	.0	0	6.1%	7.5%	.0%	.0%
Hitachi	3.3	1.6	1.4	277	2.3%	1.8%	4.4%	15.6%
Mitsubishi Electric	2.0	1.0	.6	30	1.4%	1.1%	1.8%	1.7%
Mutoh Industries--NO OEM	1.7	.8	.5	3	1.2%	.9%	1.7%	.2%
Intergraph	1.4	.7	.2	12	1.0%	.8%	.7%	.7%
CADAM	1.3	.0	1.1	0	.9%	.0%	3.6%	.0%
Toyo Information Systems-NO OEM	.9	.4	.3	22	.6%	.5%	1.1%	1.2%
McDonnell Douglas	.8	.4	.2	14	.6%	.5%	.7%	.8%
Sun	.4	.3	.0	18	.3%	.4%	.0%	1.0%
Hewlett-Packard	.3	.2	.0	13	.2%	.2%	.0%	.7%
Control Data	.2	.1	.0	1	.1%	.1%	.1%	.1%
Siemens	.1	.1	.0	1	.1%	.1%	.1%	.1%
Other Companies	5.4	5.1	.0	215	3.8%	5.9%	.0%	12.1%
All Companies	142.3	87.0	31.9	1,774	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	59.2	38.2	10.7	694	41.6%	43.9%	33.4%	39.1%
All Asian-Based Companies	83.0	48.7	21.2	1,079	58.3%	56.0%	66.5%	60.8%
All European-Based Companies	.1	.1	.0	1	.1%	.1%	.1%	.1%
All Hardware Companies	14.5	11.9	.0	234	10.2%	13.7%	.0%	13.2%
All Turnkey & SW Companies	127.9	75.1	31.9	1,541	89.8%	86.3%	100.0%	86.8%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 16
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
NEC	43.8	37.0	3.2	3,452	25.4%	32.9%	6.2%	17.3%
Fujitsu	20.2	7.4	11.8	809	11.8%	6.6%	22.8%	4.1%
Autodesk	11.8	.0	11.8	0	6.9%	.0%	22.8%	.0%
IBM	11.5	10.9	.0	2,566	6.7%	9.7%	.0%	12.9%
CPU	7.6	.0	7.3	364	4.4%	.0%	14.0%	1.8%
Hitachi	7.1	3.4	3.0	147	4.1%	3.0%	5.7%	.7%
Mutoh Industries--NO OEM	6.7	3.8	2.6	243	3.9%	3.3%	4.9%	1.2%
Technovision	4.7	.0	4.7	0	2.7%	.0%	9.0%	.0%
Apple Computer	3.5	3.1	.0	672	2.0%	2.7%	.0%	3.4%
CADAM	3.2	.8	2.2	347	1.8%	.7%	4.2%	1.7%
Compaq	2.8	2.8	.0	465	1.6%	2.5%	.0%	2.3%
Andor	2.6	.5	2.0	19	1.5%	.4%	3.9%	.1%
Toshiba--NO OEM	2.4	1.2	1.0	172	1.4%	1.1%	1.9%	.9%
Hewlett-Packard	1.6	1.3	.0	250	.9%	1.1%	.0%	1.3%
Mitsubishi Electric	1.4	.9	.5	119	.8%	.8%	.9%	.6%
INS Engineering	.6	.4	.2	51	.4%	.4%	.3%	.3%
ISICAD	.3	.0	.3	0	.2%	.0%	.6%	.0%
Intergraph	.3	.0	.3	0	.2%	.0%	.6%	.0%
CADWorks	.3	.0	.3	0	.2%	.0%	.5%	.0%
Sigma Design	.3	.0	.3	0	.2%	.0%	.5%	.0%
D.C.A. Software, Inc.	.3	.0	.3	0	.2%	.0%	.5%	.0%
Moda CAD	.2	.1	.1	2	.1%	.0%	.3%	.0%
Everex Systems	.1	.1	.0	41	.1%	.1%	.0%	.2%
Accugraph	.0	.0	.0	0	.0%	.0%	.1%	.0%
CADKEY	.0	.0	.0	0	.0%	.0%	.1%	.0%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.1%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 16 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	38.9	38.9	.0	10,250	22.6%	34.6%	.0%	51.3%
All Companies	172.1	112.6	51.7	19,967	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 75.1	 57.9	 15.6	 14,592	 43.7%	 51.5%	 30.2%	 73.1%
All Asian-Based Companies	97.0	54.6	36.1	5,375	56.3%	48.5%	69.8%	26.9%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	58.4	57.1	.0	14,244	33.9%	50.7%	.0%	71.3%
All Turnkey & SW Companies	113.7	55.5	51.7	5,724	66.1%	49.3%	100.0%	28.7%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 17
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	15.1	8.1	3.0	158	32.6%	27.6%	31.6%	6.3%
IBM	6.1	4.5	.8	553	13.1%	15.3%	8.6%	22.2%
Digital	3.9	2.9	.0	27	8.5%	10.1%	.0%	1.1%
Compaq	2.8	2.8	.0	465	6.0%	9.6%	.0%	18.6%
Fujitsu	2.0	1.3	.4	39	4.4%	4.6%	4.6%	1.6%
Hewlett-Packard	1.8	1.3	.1	105	3.8%	4.6%	1.4%	4.2%
Computervision	1.6	.6	.5	9	3.5%	2.1%	5.1%	.4%
Autodesk	1.1	.0	1.1	0	2.3%	.0%	11.1%	.0%
International Software Systems	.9	.0	.9	0	2.0%	.0%	9.9%	.0%
Apple Computer	.9	.8	.0	168	1.9%	2.6%	.0%	6.7%
Sun	.7	.6	.0	58	1.6%	2.2%	.0%	2.3%
Clarix	.7	.0	.7	0	1.4%	.0%	7.1%	.0%
Accugraph	.5	.2	.2	14	1.1%	.8%	2.4%	.5%
McDonnell Douglas	.4	.2	.1	7	1.0%	.8%	1.4%	.3%
Computer-Aided Design Group	.3	.0	.2	0	.7%	.0%	2.2%	.0%
Sigma Design	.3	.0	.3	0	.6%	.0%	3.2%	.0%
D.C.A. Software, Inc.	.3	.0	.3	0	.6%	.0%	3.1%	.0%
ISICAD	.3	.1	.2	3	.6%	.3%	1.6%	.1%
Control Data	.2	.1	.0	2	.4%	.4%	.2%	.1%
BATISOFT	.1	.0	.1	5	.3%	.1%	.7%	.2%
CADWorks	.1	.0	.1	0	.2%	.0%	.9%	.0%
Star Informatic	.1	.0	.0	0	.2%	.1%	.3%	.0%
Georgia Tech Research Corp.	.1	.0	.1	0	.2%	.0%	.9%	.0%
Innovative Data Design	.1	.0	.1	0	.2%	.0%	.9%	.0%
Solbourne	.1	.1	.0	6	.2%	.2%	.0%	.2%
Aura CAD/CAM Systems	.1	.0	.1	0	.1%	.0%	.6%	.0%
Mc2 Engineering Software	.1	.0	.1	0	.1%	.0%	.5%	.0%
CADAM	.0	.0	.0	0	.1%	.0%	.4%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.3%	.0%
American Small Business Comp.	.0	.0	.0	0	.1%	.0%	.3%	.0%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.1%	.0%
Node CAD	.0	.0	.0	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 17 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Serbi	.0	.0	.0	0	.0%	.0%	.1%	.0%
Sycotronic AG	.0	.0	.0	0	.0%	.0%	.1%	.0%
Other Companies	5.5	5.4	.0	874	12.0%	18.5%	.0%	35.1%
All Companies	46.2	29.2	9.5	2,492	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	44.0	27.8	8.9	2,448	95.1%	95.2%	94.1%	98.2%
All Asian-Based Companies	2.0	1.3	.4	39	4.4%	4.6%	4.6%	1.6%
All European-Based Companies	.3	.1	.1	5	.6%	.2%	1.3%	.2%
All Hardware Companies	17.2	15.6	.0	2,196	37.1%	53.4%	.0%	88.1%
All Turnkey & SW Companies	29.1	13.6	9.5	296	62.9%	46.6%	100.0%	11.9%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 18
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Intergraph	12.6	7.1	2.3	141	64.7%	62.9%	61.2%	40.1%
Hewlett-Packard	1.5	1.2	.1	74	7.8%	10.2%	3.5%	21.2%
Computervision	1.3	.5	.4	7	6.5%	4.4%	9.4%	1.9%
Fujitsu	.9	.6	.2	22	4.6%	5.4%	5.1%	6.3%
Digital	.9	.7	.0	27	4.6%	6.0%	.0%	7.8%
Sun	.7	.6	.0	55	3.4%	5.2%	.0%	15.6%
Accugraph	.5	.2	.2	13	2.4%	2.0%	5.1%	3.7%
McDonnell Douglas	.3	.2	.1	4	1.5%	1.4%	2.2%	1.2%
ISICAD	.2	.1	.1	3	1.0%	.9%	1.6%	.8%
Sigma Design	.2	.0	.2	0	.8%	.0%	4.3%	.0%
IBM	.1	.1	.0	1	.6%	.6%	.5%	.3%
Star Informatic	.1	.0	.0	0	.5%	.4%	.8%	.0%
Autodesk	.1	.0	.1	0	.4%	.0%	1.9%	.0%
D.C.A. Software, Inc.	.1	.0	.1	0	.4%	.0%	1.9%	.0%
Computer-Aided Design Group	.1	.0	.0	0	.3%	.0%	1.1%	.0%
Control Data	.1	.0	.0	1	.3%	.4%	.3%	.3%
Solbourne	.0	.0	.0	2	.2%	.3%	.0%	.7%
CADAM	.0	.0	.0	0	.1%	.0%	.5%	.0%
Georgia Tech Research Corp.	.0	.0	.0	0	.1%	.0%	.5%	.0%
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	19.6	11.3	3.7	350	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	18.6	10.6	3.5	328	94.9%	94.2%	94.1%	93.7%
All Asian-Based Companies	.9	.6	.2	22	4.6%	5.4%	5.1%	6.3%
All European-Based Companies	.1	.0	.0	0	.5%	.4%	.8%	.0%
All Hardware Companies	2.3	1.9	.0	139	11.7%	16.7%	.0%	39.7%
All Turnkey & SW Companies	17.3	9.4	3.7	211	88.3%	83.3%	100.0%	60.3%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 19
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
IBM	3.7	2.2	.8	38	27.5%	24.8%	47.3%	20.9%
Digital	3.0	2.3	.0	0	22.9%	25.2%	.0%	.0%
Intergraph	2.0	1.0	.3	18	14.8%	10.9%	18.3%	9.6%
Fujitsu	1.0	.6	.2	9	7.2%	7.0%	11.8%	5.0%
Computervision	.3	.1	.1	3	2.1%	1.2%	4.1%	1.4%
Computer-Aided Design Group	.2	.0	.2	0	1.7%	.0%	9.5%	.0%
McDonnell Douglas	.2	.1	.1	3	1.1%	.9%	3.0%	1.5%
Control Data	.1	.1	.0	1	.9%	.9%	.6%	.4%
Georgia Tech Research Corp.	.1	.0	.1	0	.5%	.0%	4.1%	.0%
Sun	.1	.1	.0	3	.5%	.6%	.0%	1.6%
Hewlett-Packard	.1	.1	.0	3	.5%	.6%	.0%	1.6%
Solbourne	.0	.0	.0	3	.3%	.4%	.0%	1.7%
Accugraph	.0	.0	.0	0	.1%	.0%	.0%	.2%
CADAM	.0	.0	.0	0	.1%	.0%	.6%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.6%	.0%
Other Companies	2.6	2.5	.0	103	19.7%	27.6%	.0%	56.1%
All Companies	13.3	9.0	1.7	184	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	12.3	8.4	1.5	175	92.8%	93.0%	88.2%	95.0%
All Asian-Based Companies	1.0	.6	.2	9	7.2%	7.0%	11.8%	5.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	5.8	4.9	.0	112	43.8%	54.3%	.0%	61.0%
All Turnkey & SW Companies	7.4	4.1	1.7	72	56.2%	45.7%	100.0%	39.0%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER:

20

TITLE: 1990 Preliminary Market Share Estimates

APPLICATION: AEC

PLATFORM: Personal Computer

REGION: Rest of World

UNITS: Millions of Dollars/Actual Units

Company	Total			Market Share		
	Revenue	Hardware Revenue	Software Revenue	Total Revenue	Hardware Revenue	Software Revenue
=====	=====	=====	=====	=====	=====	=====
Compaq	2.8	2.8	.0	20.8%	31.2%	.0%
IBM	2.3	2.2	.0	17.1%	24.4%	.0%
Autodesk	1.0	.0	1.0	7.3%	.0%	24.0%
International Software Systems	.9	.0	.9	7.0%	.0%	23.0%
Apple Computer	.9	.8	.0	6.5%	8.6%	.0%
Clarix	.7	.0	.7	5.0%	.0%	16.4%
Intergraph	.5	.0	.4	3.4%	.0%	10.3%
D.C.A. Software, Inc.	.2	.0	.2	1.6%	.0%	5.4%
Hewlett-Packard	.2	.1	.0	1.3%	1.6%	.0%
Fujitsu	.2	.1	.1	1.3%	1.1%	1.2%
BATISOFT	.1	.0	.1	1.0%	.2%	1.7%
Sigma Design	.1	.0	.1	1.0%	.0%	3.4%
CADWorks	.1	.0	.1	.7%	.0%	2.2%
Innovative Data Design	.1	.0	.1	.7%	.0%	2.2%
ISICAD	.1	.0	.1	.7%	.0%	2.2%
Aura CAD/CAM Systems	.1	.0	.1	.4%	.0%	1.5%
Computervision	.1	.0	.1	.4%	.0%	1.5%
Accugraph	.1	.0	.0	.4%	.0%	1.0%
Mc2 Engineering Software	.1	.0	.1	.4%	.0%	1.2%
American Small Business Comp.	.0	.0	.0	.2%	.0%	.7%
Engineering Systems Corp.	.0	.0	.0	.2%	.0%	.5%
Computer-Aided Design Group	.0	.0	.0	.1%	.0%	.2%
ForeSight Resources	.0	.0	.0	.1%	.0%	.2%
Moda CAD	.0	.0	.0	.1%	.0%	.2%
CADAM	.0	.0	.0	.1%	.0%	.2%
Serbi	.0	.0	.0	.1%	.0%	.2%
Sycotronic AG	.0	.0	.0	.1%	.0%	.2%

(Continued)

Market Share

TABLE NUMBER: 20 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Other Companies	2.9	2.9	.0	771	21.8%	32.8%	.0%	39.4%
All Companies	13.4	8.9	4.1	1,958	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	13.1	8.8	3.9	1,945	97.5%	98.7%	96.6%	99.4%
All Asian-Based Companies	.2	.1	.1	8	1.3%	1.1%	1.2%	.4%
All European-Based Companies	.2	.0	.1	5	1.2%	.2%	2.2%	.2%
All Hardware Companies	9.1	8.8	.0	1,944	67.5%	98.7%	.0%	99.3%
All Turnkey & SW Companies	4.4	.1	4.1	13	32.5%	1.3%	100.0%	.7%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 21
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	402.6	215.3	80.4	4,225	28.9%	27.3%	21.1%	8.1%
IBM	97.7	71.5	13.8	8,453	7.0%	9.1%	3.6%	16.1%
Digital	90.2	67.6	.0	632	6.5%	8.6%	.0%	1.2%
Siemens	69.4	40.9	20.8	1,495	5.0%	5.2%	5.5%	2.9%
Compaq	60.8	60.8	.0	10,126	4.4%	7.7%	.0%	19.3%
ESRI	53.0	.0	46.9	0	3.8%	.0%	12.3%	.0%
Fujitsu	44.8	24.1	15.8	1,038	3.2%	3.1%	4.2%	2.0%
McDonnell Douglas	43.7	23.4	14.1	880	3.1%	3.0%	3.7%	1.7%
Mitsubishi Electric	38.4	30.5	4.9	709	2.8%	3.9%	1.3%	1.4%
Landmark Graphics	30.7	15.0	9.2	297	2.2%	1.9%	2.4%	.6%
Apple Computer	24.0	21.1	.0	4,620	1.7%	2.7%	.0%	8.8%
Autodesk	24.0	.0	24.0	0	1.7%	.0%	6.3%	.0%
Hitachi	20.8	10.0	8.7	640	1.5%	1.3%	2.3%	1.2%
Sun	20.4	17.7	.0	1,495	1.5%	2.2%	.0%	2.9%
GeoVision Corp.	20.4	14.4	4.5	240	1.5%	1.8%	1.2%	.5%
Uchida Yoko	16.6	15.8	.8	264	1.2%	2.0%	.2%	.5%
ICL	13.5	8.0	4.6	371	1.0%	1.0%	1.2%	.7%
Mitsui Engineering	13.1	8.8	2.9	85	.9%	1.1%	.8%	.2%
Sysscan	12.6	5.6	3.3	144	.9%	.7%	.9%	.3%
Genasys II	11.6	4.1	6.9	40	.8%	.5%	1.8%	.1%
Synercom	11.5	.0	6.9	0	.8%	.0%	1.8%	.0%
Computervision	11.2	5.3	3.0	84	.8%	.7%	.8%	.2%
STI-Straessle	10.6	2.5	5.9	101	.8%	.3%	1.5%	.2%
ETAK	10.3	.5	9.7	27	.7%	.1%	2.6%	.1%
Geobased Systems	7.7	1.5	5.8	161	.6%	.2%	1.5%	.3%
CADIX	7.2	2.7	3.9	51	.5%	.3%	1.0%	.1%
ERDAS	7.2	.9	5.9	47	.5%	.1%	1.6%	.1%
NEC	6.4	3.8	2.1	369	.5%	.5%	.6%	.7%
PAFEC	5.8	.0	5.8	0	.4%	.0%	1.5%	.0%
Mapinfo	5.6	.0	4.5	0	.4%	.0%	1.2%	.0%
Control Data	5.4	4.0	.6	55	.4%	.5%	.2%	.1%
ItalCad	5.3	2.3	1.5	51	.4%	.3%	.4%	.1%
Ground Modelling Systems	5.2	3.5	2.6	32	.4%	.4%	.7%	.1%

(Continued)

Market Share

TABLE NUMBER: 21
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Geographic Systems (IIS)	4.9	.0	2.7	0	.4%	.0%	.7%	.0%
Mutoh Industries--NO OEM	4.8	2.5	1.7	104	.3%	.3%	.4%	.2%
INS Engineering	4.8	2.9	1.4	9	.3%	.4%	.4%	.0%
Zycor	4.5	.0	3.1	0	.3%	.0%	.8%	.0%
Auto-Trol	4.4	1.8	1.6	56	.3%	.2%	.4%	.1%
Strategic Mapping, Inc.	4.3	.0	4.3	0	.3%	.0%	1.1%	.0%
Dynamic Graphics	4.0	.0	3.4	0	.3%	.0%	.9%	.0%
Toshiba--NO OEM	4.0	2.0	1.6	35	.3%	.3%	.4%	.1%
Century Research Center	3.8	1.8	1.7	23	.3%	.2%	.4%	.0%
ACDS	3.6	.0	3.1	0	.3%	.0%	.8%	.0%
LandCadd	3.5	.0	3.3	0	.3%	.0%	.9%	.0%
Geographic Systems (WPS)	3.2	.0	3.2	0	.2%	.0%	.8%	.0%
Norsk Data	3.0	1.6	.5	32	.2%	.2%	.1%	.1%
Alper Systems	2.6	1.3	.7	500	.2%	.2%	.2%	1.0%
PacSoft	2.4	.0	2.4	0	.2%	.0%	.6%	.0%
Tydac Technologies	2.4	.0	2.4	0	.2%	.0%	.6%	.0%
Solbourne	2.3	2.3	.0	169	.2%	.3%	.0%	.3%
Facility Mapping Systems	2.2	.0	2.0	2	.2%	.0%	.5%	.0%
Ultimap	2.2	1.3	.6	28	.2%	.2%	.2%	.1%
GEOVISION Inc.	2.2	.9	.9	842	.2%	.1%	.2%	1.6%
Secagraphics	2.2	1.5	.7	17	.2%	.2%	.2%	.0%
DATAID Technologies	2.2	.0	.4	0	.2%	.0%	.1%	.0%
D.C.A. Software, Inc.	2.2	.0	2.2	0	.2%	.0%	.6%	.0%
Ziegler	2.0	.0	2.0	0	.1%	.0%	.5%	.0%
Hewlett-Packard	1.6	1.3	.0	147	.1%	.2%	.0%	.3%
Cadtronic	1.4	.8	.6	42	.1%	.1%	.2%	.1%
Radian Corporation	1.4	.0	1.1	0	.1%	.0%	.3%	.0%
Pasco	1.4	.6	.7	19	.1%	.1%	.2%	.0%
Terr-Mar	1.4	.4	1.0	32	.1%	.0%	.3%	.1%
Geographix	1.4	.0	1.4	0	.1%	.0%	.4%	.0%
Terra Sciences	1.3	.0	1.3	0	.1%	.0%	.4%	.0%
Daniel Geophysical	1.3	.1	1.2	20	.1%	.0%	.3%	.0%
Dell Computer	1.3	1.3	.0	326	.1%	.2%	.0%	.6%

(Continued)

Market Share

TABLE NUMBER:

21

TITLE: 1990 Preliminary Market Share Estimates

APPLICATION:

GIS/Mapping

PLATFORM:

All Platforms

REGION:

Worldwide

UNITS:

Millions of Dollars/Actual Units

Company	Total		Hardware		Software		Total		Market Share		-----	
	Revenue	Wkstns	Revenue	Shipped	Revenue	Shipped	Revenue	Shipped	Revenue	Shipped	Revenue	Shipped
Geomath	1.3	0	.0	1.3			.11	.0%	.3%	.0%		
Kork Systems	1.1	13	.2	.9			.11	.0%	.2%	.0%		
Autometric	1.0	101	.6	.3			.11	.1%	.1%	.2%		
Research Machines	1.0	154	1.0	.0			.11	.1%	.0%	.3%		
Everex Systems	1.0	286	1.0	.0			.11	.1%	.0%	.5%		
Bentley	.7	0	.0	.7			.0%	.0%	.2%	.0%		
Maptek	.7	0	.0	.7			.0%	.0%	.2%	.0%		
Micrograph	.7	11	.2	.4			.0%	.0%	.1%	.0%		
Accugraph	.6	15	.3	.2			.0%	.0%	.1%	.0%		
Olivetti	.6	93	.5	.0			.0%	.1%	.0%	.2%		
Foresight Resources	.5	0	.0	.5			.0%	.0%	.1%	.0%		
Andor	.5	6	.1	.4			.0%	.0%	.1%	.0%		
Robocom	.4	0	.0	.4			.0%	.0%	.1%	.0%		
Omron	.3	15	.3	.0			.0%	.0%	.0%	.0%		
Engineering Systems Corp.	.3	0	.0	.2			.0%	.0%	.1%	.0%		
MPSI Systems	.3	14	.1	.2			.0%	.0%	.1%	.0%		
Geosoft	.3	0	.0	.3			.0%	.0%	.1%	.0%		
Caditron	.3	4	.1	.1			.0%	.0%	.0%	.0%		
A/E Microsystems	.3	20	.1	.1			.0%	.0%	.0%	.0%		
Caddlink	.2	0	.0	.2			.0%	.0%	.1%	.0%		
Kubota Computer	.2	13	.2	.1			.0%	.0%	.0%	.0%		
CAD-Capture	.2	0	.0	.0			.0%	.0%	.0%	.0%		
Uniras	.1	0	.0	.1			.0%	.0%	.0%	.0%		
A.I. Systems	.1	0	.0	.1			.0%	.0%	.0%	.0%		
Innovative Data Design	.1	0	.0	.1			.0%	.0%	.0%	.0%		
American Small Business Comp.	.1	0	.0	.1			.0%	.0%	.0%	.0%		

(Continued)

Market Share

TABLE NUMBER: 21 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Other Companies	80.0	78.1	.0	12,518	5.7%	9.9%	.0%	23.9%
All Companies	1,390.9	788.2	380.7	52,396	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 1,086.9	 614.0	 284.2	 45,987	 78.1%	 77.9%	 74.7%	 87.8%
All Asian-Based Companies	167.1	106.0	46.7	3,380	12.0%	13.4%	12.3%	6.5%
All European-Based Companies	136.9	68.2	49.7	3,029	9.8%	8.6%	13.1%	5.8%
All Hardware Companies	316.4	284.2	.0	38,114	22.7%	36.1%	.0%	72.7%
All Turnkey & SW Companies	1,074.6	503.9	380.7	14,281	77.3%	63.9%	100.0%	27.3%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 22
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	334.1	187.2	60.1	3,716	44.9%	46.9%	29.6%	30.8%
Siemens	57.6	34.0	17.3	1,356	7.7%	8.5%	8.5%	11.2%
Landmark Graphics	30.7	15.0	9.2	297	4.1%	3.8%	4.5%	2.5%
ESRI	30.2	.0	26.3	0	4.1%	.0%	12.9%	.0%
Mitsubishi Electric	28.8	25.2	1.9	286	3.9%	6.3%	1.0%	2.4%
Digital	20.5	15.4	.0	632	2.8%	3.9%	.0%	5.2%
McDonnell Douglas	20.5	11.1	6.1	288	2.8%	2.8%	3.0%	2.4%
Fujitsu	20.1	11.5	6.7	505	2.7%	2.9%	3.3%	4.2%
Uchida Yoko	16.6	15.8	.8	264	2.2%	4.0%	.4%	2.2%
Sun	15.3	13.5	.0	1,263	2.1%	3.4%	.0%	10.5%
GeoVision Corp.	14.6	10.3	3.1	197	2.0%	2.6%	1.5%	1.6%
ICL	13.5	8.0	4.6	371	1.8%	2.0%	2.3%	3.1%
Mitsui Engineering	13.1	8.8	2.9	85	1.8%	2.2%	1.4%	.7%
STI-Straessle	10.6	2.5	5.9	101	1.4%	.6%	2.9%	.8%
Genasys II	10.4	3.6	6.2	34	1.4%	.9%	3.1%	.3%
Hitachi	10.4	5.0	4.4	216	1.4%	1.3%	2.2%	1.8%
Computervision	9.2	4.5	2.5	57	1.2%	1.1%	1.2%	.5%
Synercom	7.2	.0	4.3	0	1.0%	.0%	2.1%	.0%
CADIX	7.2	2.7	3.9	51	1.0%	.7%	1.9%	.4%
PAFEC	5.8	.0	5.8	0	.8%	.0%	2.9%	.0%
NEC	5.8	3.2	2.1	318	.8%	.8%	1.0%	2.6%
ItalCad	5.3	2.3	1.5	51	.7%	.6%	.7%	.4%
Auto-Trol	4.4	1.8	1.6	56	.6%	.4%	.8%	.5%
Sysscan	4.3	1.9	1.1	38	.6%	.5%	.6%	.3%
Toshiba--NO OEM	4.0	2.0	1.6	35	.5%	.5%	.8%	.3%
Century Research Center	3.8	1.8	1.7	23	.5%	.4%	.8%	.2%
ACDS	3.6	.0	3.1	0	.5%	.0%	1.5%	.0%
ERDAS	3.2	.4	2.7	21	.4%	.1%	1.3%	.2%
IBM	3.1	1.9	.7	29	.4%	.5%	.3%	.2%
Dynamic Graphics	3.0	.0	2.6	0	.4%	.0%	1.3%	.0%
Alper Systems	2.6	1.3	.7	500	.4%	.3%	.3%	4.1%
Zycor	2.4	.0	1.7	0	.3%	.0%	.8%	.0%
Ultimap	2.2	1.3	.6	28	.3%	.3%	.3%	.2%

(Continued)

Market Share

TABLE NUMBER: 22
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Norsk Data	1.9	1.1	.4	23	.2%	.3%	.2%	.2%
Autodesk	1.7	.0	1.7	0	.2%	.0%	.8%	.0%
GEOVISION Inc.	1.6	.9	.4	842	.2%	.2%	.2%	7.0%
Control Data	1.6	1.2	.2	30	.2%	.3%	.1%	.2%
Hewlett-Packard	1.5	1.2	.0	138	.2%	.3%	.0%	1.1%
Mutoh Industries--NO OEM	1.4	.7	.5	14	.2%	.2%	.2%	.1%
DATAID Technologies	1.3	.0	.3	0	.2%	.0%	.1%	.0%
Tydac Technologies	1.2	.0	1.2	0	.2%	.0%	.6%	.0%
ETAK	1.2	.1	1.1	1	.2%	.0%	.5%	.0%
Pasco	1.1	.4	.6	14	.2%	.1%	.3%	.1%
Geomath	1.0	.0	1.0	0	.1%	.0%	.5%	.0%
Geobased Systems	.8	.2	.6	12	.1%	.0%	.3%	.1%
Radian Corporation	.7	.0	.5	0	.1%	.0%	.3%	.0%
Solbourne	.6	.6	.0	45	.1%	.2%	.0%	.4%
Accugraph	.5	.3	.2	14	.1%	.1%	.1%	.1%
D.C.A. Software, Inc.	.5	.0	.5	0	.1%	.0%	.3%	.0%
Autometric	.4	.2	.1	65	.0%	.1%	.1%	.5%
Kork Systems	.4	.1	.3	2	.0%	.0%	.1%	.0%
Omron	.3	.3	.0	15	.0%	.1%	.0%	.1%
Kubota Computer	.2	.2	.1	13	.0%	.0%	.0%	.1%
Facility Mapping Systems	.1	.0	.1	0	.0%	.0%	.0%	.0%
Micrograph	.1	.1	.0	5	.0%	.0%	.0%	.0%
A/E Microsystems	.1	.1	.0	5	.0%	.0%	.0%	.0%
Everex Systems	.1	.1	.0	9	.0%	.0%	.0%	.1%

(Continued)

Market Share

TABLE NUMBER: 22 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	744.8	399.4	203.0	12,068	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	528.8	270.8	138.5	7,784	71.0%	67.8%	68.2%	64.5%
All Asian-Based Companies	112.9	77.6	27.1	1,840	15.2%	19.4%	13.3%	15.2%
All European-Based Companies	103.1	51.1	37.5	2,444	13.8%	12.8%	18.5%	20.3%
All Hardware Companies	38.0	30.7	.0	2,087	5.1%	7.7%	.0%	17.3%
All Turnkey & SW Companies	706.8	368.7	203.0	9,981	94.9%	92.3%	100.0%	82.7%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 23
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Digital	69.6	52.2	.0	0	19.4%	25.0%	.0%	.0%
IBM	59.7	36.4	13.1	628	16.6%	17.4%	16.5%	13.6%
Intergraph	56.4	28.1	9.1	508	15.7%	13.5%	11.4%	11.0%
McDonnell Douglas	23.2	12.3	8.0	593	6.5%	5.9%	10.0%	12.8%
ESRI	18.0	.0	15.9	0	5.0%	.0%	19.9%	.0%
Fujitsu	18.0	9.0	6.5	193	5.0%	4.3%	8.1%	4.2%
Siemens	11.8	7.0	3.5	139	3.3%	3.3%	4.5%	3.0%
Sysscan	8.3	3.7	2.2	106	2.3%	1.8%	2.7%	2.3%
GeoVision Corp.	5.8	4.1	1.4	43	1.6%	1.9%	1.8%	.9%
Mitsubishi Electric	5.8	2.7	1.7	85	1.6%	1.3%	2.1%	1.8%
Sun	5.1	4.2	.0	232	1.4%	2.0%	.0%	5.0%
Geographic Systems (IIS)	4.9	.0	2.7	0	1.4%	.0%	3.4%	.0%
INS Engineering	4.8	2.9	1.4	9	1.3%	1.4%	1.7%	.2%
Synercom	4.3	.0	2.6	0	1.2%	.0%	3.2%	.0%
Control Data	3.8	2.8	.4	26	1.1%	1.3%	.5%	.6%
Hitachi	3.3	1.6	1.4	277	.9%	.8%	1.8%	6.0%
Geographic Systems (WPS)	3.2	.0	3.2	0	.9%	.0%	4.0%	.0%
Secagraphics	2.2	1.5	.7	17	.6%	.7%	.8%	.4%
Computervision	1.9	.8	.5	25	.5%	.4%	.6%	.5%
Solbourne	1.7	1.7	.0	124	.5%	.8%	.0%	2.7%
ETAK	1.6	.1	1.5	7	.4%	.0%	1.8%	.1%
Norsk Data	1.1	.5	.2	8	.3%	.2%	.2%	.2%
Dynamic Graphics	1.0	.0	.9	0	.3%	.0%	1.1%	.0%
Daniel Geophysical	1.0	.1	.8	20	.3%	.0%	1.1%	.4%
Mutoh Industries--NO OEM	1.0	.5	.3	2	.3%	.2%	.4%	.0%
Zycor	.9	.0	.6	0	.2%	.0%	.7%	.0%
DATAID Technologies	.7	.0	.1	0	.2%	.0%	.2%	.0%
Kork Systems	.6	.1	.5	8	.2%	.1%	.6%	.2%
Autometric	.6	.4	.2	36	.2%	.2%	.2%	.8%
Radian Corporation	.3	.0	.2	0	.1%	.0%	.3%	.0%
MPSI Systems	.3	.1	.2	14	.1%	.0%	.3%	.3%
Hewlett-Packard	.2	.1	.0	8	.0%	.1%	.0%	.2%

(Continued)

Market Share

TABLE NUMBER: 23 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
A/E Microsystems	.1	.0	.0	1	.0%	.0%	.0%	.0%
Engineering Systems Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	38.2	36.3	.0	1,508	10.6%	17.3%	.0%	32.7%
All Companies	359.3	209.1	79.6	4,616	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	304.6	181.2	62.4	3,798	84.8%	86.7%	78.4%	82.3%
All Asian-Based Companies	32.8	16.7	11.2	565	9.1%	8.0%	14.1%	12.2%
All European-Based Companies	21.9	11.2	6.0	254	6.1%	5.3%	7.5%	5.5%
All Hardware Companies	114.8	94.5	.0	1,872	31.9%	45.2%	.0%	40.6%
All Turnkey & SW Companies	244.6	114.6	79.6	2,744	68.1%	54.8%	100.0%	59.4%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 24
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Compaq	60.8	60.8	.0	10,126	21.2%	33.8%	.0%	28.4%
IBM	34.9	33.1	.0	7,795	12.2%	18.4%	.0%	21.8%
Apple Computer	24.0	21.1	.0	4,620	8.4%	11.8%	.0%	12.9%
Autodesk	22.3	.0	22.3	0	7.8%	.0%	22.8%	.0%
Intergraph	12.1	.0	11.3	0	4.2%	.0%	11.6%	.0%
ETAK	7.6	.4	7.2	19	2.6%	.2%	7.4%	.1%
Hitachi	7.1	3.4	3.0	147	2.5%	1.9%	3.0%	.4%
Geobased Systems	6.9	1.4	5.1	149	2.4%	.8%	5.2%	.4%
Fujitsu	6.7	3.6	2.7	340	2.3%	2.0%	2.7%	1.0%
Mapinfo	5.6	.0	4.5	0	2.0%	.0%	4.6%	.0%
Ground Modelling Systems	5.2	3.5	2.6	32	1.8%	2.0%	2.7%	.1%
ESRI	4.8	.0	4.8	0	1.7%	.0%	4.9%	.0%
Strategic Mapping, Inc.	4.3	.0	4.3	0	1.5%	.0%	4.4%	.0%
ERDAS	3.9	.5	3.3	26	1.4%	.3%	3.3%	.1%
Mitsubishi Electric	3.8	2.6	1.4	338	1.3%	1.4%	1.4%	.9%
LandCadd	3.5	.0	3.3	0	1.2%	.0%	3.4%	.0%
PacSoft	2.4	.0	2.4	0	.8%	.0%	2.5%	.0%
Mutoh Industries--NO OEM	2.4	1.4	.9	87	.8%	.8%	.9%	.2%
Facility Mapping Systems	2.1	.0	1.9	.	.7%	.0%	1.9%	.0%
Ziegler	2.0	.0	2.0	0	.7%	.0%	2.0%	.0%
D.C.A. Software, Inc.	1.7	.0	1.7	0	.6%	.0%	1.7%	.0%
Cadtronic	1.4	.8	.6	42	.5%	.4%	.6%	.1%
Terr-Mar	1.4	.4	1.0	32	.5%	.2%	1.1%	.1%
Geographix	1.4	.0	1.4	0	.5%	.0%	1.4%	.0%
Terra Sciences	1.3	.0	1.3	0	.5%	.0%	1.4%	.0%
Dell Computer	1.3	1.3	.0	326	.5%	.7%	.0%	.9%
Tydac Technologies	1.2	.0	1.2	0	.4%	.0%	1.2%	.0%
Zycor	1.2	.0	.8	0	.4%	.0%	.8%	.0%
Genasys II	1.2	.4	.7	6	.4%	.2%	.7%	.0%
Research Machines	1.0	1.0	.0	154	.3%	.5%	.0%	.4%
Everex Systems	.9	.9	.0	277	.3%	.5%	.0%	.8%
Bentley	.7	.0	.7	0	.2%	.0%	.7%	.0%
Maptek	.7	.0	.7	0	.2%	.0%	.7%	.0%

(Continued)

Market Share

TABLE NUMBER: 24
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
NEC	.6	.5	.1	51	.2%	.3%	.1%	.1%
GEOVISION Inc.	.6	.0	.6	0	.2%	.0%	.6%	.0%
Olivetti	.6	.5	.0	93	.2%	.3%	.0%	.3%
Micrograph	.6	.1	.4	6	.2%	.1%	.4%	.0%
Foresight Resources	.5	.0	.5	0	.2%	.0%	.5%	.0%
Andor	.5	.1	.4	6	.2%	.1%	.4%	.0%
Robocom	.4	.0	.4	0	.2%	.0%	.4%	.0%
Radian Corporation	.4	.0	.3	0	.1%	.0%	.3%	.0%
Daniel Geophysical	.3	.0	.3	0	.1%	.0%	.3%	.0%
Geomath	.3	.0	.3	0	.1%	.0%	.3%	.0%
Geosoft	.3	.0	.3	0	.1%	.0%	.3%	.0%
Pasco	.3	.1	.1	6	.1%	.1%	.1%	.0%
Caditron	.3	.1	.1	4	.1%	.1%	.1%	.0%
Caddlink	.2	.0	.2	0	.1%	.0%	.2%	.0%
DATAID Technologies	.2	.0	.0	0	.1%	.0%	.0%	.0%
Engineering Systems Corp.	.2	.0	.2	0	.1%	.0%	.2%	.0%
CAD-Capture	.2	.0	.0	0	.1%	.0%	.0%	.0%
Computervision	.2	.0	.1	1	.1%	.0%	.1%	.0%
Kork Systems	.1	.0	.1	3	.0%	.0%	.1%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
A.I. Systems	.1	.0	.1	0	.0%	.0%	.1%	.0%
Innovative Data Design	.1	.0	.1	0	.0%	.0%	.1%	.0%
A/E Microsystems	.1	.0	.1	13	.0%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Accugraph	.1	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 24 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Other Companies	41.8	41.8	.0	11,010	14.6%	23.3%	.0%	30.8%
All Companies	286.8	179.7	98.1	35,711	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	253.6	162.0	83.4	34,406	88.4%	90.2%	85.1%	96.3%
All Asian-Based Companies	21.4	11.7	8.4	975	7.5%	6.5%	8.6%	2.7%
All European-Based Companies	11.8	5.9	6.2	331	4.1%	3.3%	6.4%	.9%
All Hardware Companies	163.6	159.0	.0	34,155	57.0%	88.5%	.0%	95.6%
All Turnkey & SW Companies	123.2	20.7	98.1	1,556	43.0%	11.5%	100.0%	4.4%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 25
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company	Total Hardware Software				Wkstns Shipped	Market Share			
	Revenue	Revenue	Revenue	Revenue		Total Hardware Revenue	Software Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	216.6	115.9	43.3	2,273	36.8%	37.7%	24.2%	10.1%	
Digital	41.9	31.4	.0	293	7.1%	10.2%	.0%	1.3%	
ESRI	36.6	.0	32.4	0	6.2%	.0%	18.1%	.0%	
McDonnell Douglas	29.8	16.1	9.0	462	5.1%	5.2%	5.0%	2.1%	
Compaq	28.6	28.6	.0	4,759	4.9%	9.3%	.0%	21.2%	
IBM	27.4	20.3	3.7	2,516	4.7%	6.6%	2.1%	11.2%	
Apple Computer	17.1	15.0	.0	3,280	2.9%	4.9%	.0%	14.6%	
Landmark Graphics	15.4	7.5	4.6	149	2.6%	2.4%	2.6%	.7%	
Autodesk	13.2	.0	13.2	0	2.2%	.0%	7.4%	.0%	
Sun	10.1	8.8	.0	742	1.7%	2.9%	.0%	3.3%	
Geovision Corp.	9.5	7.5	1.2	113	1.6%	2.4%	.7%	.5%	
ETAK	7.7	.4	7.3	20	1.3%	.1%	4.1%	.1%	
Synercom	7.2	.0	4.4	0	1.2%	.0%	2.4%	.0%	
Geobase Systems	6.9	1.4	5.2	145	1.2%	.4%	2.9%	.6%	
ERDAS	5.5	.7	4.6	36	.9%	.2%	2.6%	.2%	
Geographic Systems (GIS)	4.9	.0	2.7	0	.8%	.0%	1.5%	.0%	
Mapinfo	4.7	.0	3.7	0	.8%	.0%	2.1%	.0%	
Auto-Trol	4.4	1.8	1.6	56	.8%	.6%	.9%	.2%	
ComputerVision	4.1	1.5	1.2	25	.7%	.5%	.7%	.1%	
Strategic Mapping, Inc.	3.7	.0	3.7	0	.6%	.0%	2.1%	.0%	
Landcad	3.5	.0	3.3	0	.6%	.0%	1.9%	.0%	
Geographic Systems (GPS)	3.2	.0	3.2	0	.5%	.0%	1.8%	.0%	
Zykor	3.2	.0	2.2	0	.5%	.0%	1.2%	.0%	
ACDS	3.1	.0	2.6	0	.5%	.0%	1.4%	.0%	
PacSoft	2.4	.0	2.4	0	.4%	.0%	1.4%	.0%	
Dynamic Graphics	2.4	.0	2.0	0	.4%	.0%	1.1%	.0%	
Tydac Technologies	2.4	.0	2.4	0	.4%	.0%	1.3%	.0%	
Ultimap	2.2	1.3	.6	28	.4%	.4%	.4%	.1%	
GEOVISION Inc.	2.2	.9	.9	842	.4%	.3%	.5%	3.7%	
Secagraphics	2.1	1.5	.6	16	.4%	.5%	.4%	.1%	
Facility Mapping Systems	1.9	.0	1.7	2	.3%	.0%	.9%	.0%	
Genasys II	1.9	.7	1.1	6	.3%	.2%	.6%	.0%	
D.C.A. Software, Inc.	1.8	.0	1.8	0	.3%	.0%	1.0%	.0%	

(Continued)

Market Share

TABLE NUMBER: 25
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Control Data	1.8	1.3	.2	18	.3%	.4%	.1%	.1%
Solbourne	1.6	1.6	.0	117	.3%	.5%	.0%	.5%
Terr-Mar	1.4	.4	1.0	32	.2%	.1%	.6%	.1%
Geographix	1.4	.0	1.4	0	.2%	.0%	.8%	.0%
Terra Sciences	1.3	.0	1.3	0	.2%	.0%	.7%	.0%
Geomath	1.3	.0	1.3	0	.2%	.0%	.7%	.0%
Radian Corporation	1.2	.0	.9	0	.2%	.0%	.5%	.0%
Kork Systems	1.1	.2	.9	13	.2%	.1%	.5%	.1%
Dell Computer	1.1	1.1	.0	277	.2%	.4%	.0%	1.2%
Daniel Geophysical	1.1	.0	.9	16	.2%	.0%	.5%	.1%
Autometric	1.0	.6	.3	101	.2%	.2%	.2%	.4%
Everex Systems	.9	.9	.0	258	.1%	.3%	.0%	1.1%
Bentley	.7	.0	.7	0	.1%	.0%	.4%	.0%
Hewlett-Packard	.7	.6	.0	62	.1%	.2%	.0%	.3%
Maptek	.7	.0	.7	0	.1%	.0%	.4%	.0%
Accugraph	.5	.2	.2	14	.1%	.1%	.1%	.1%
Ground Modelling Systems	.5	.4	.3	3	.1%	.1%	.1%	.0%
Foresight Resources	.5	.0	.4	0	.1%	.0%	.2%	.0%
MPSI Systems	.3	.1	.2	14	.0%	.0%	.1%	.1%
Geosoft	.3	.0	.3	0	.0%	.0%	.2%	.0%
A/E Microsystems	.3	.1	.1	20	.0%	.0%	.0%	.1%
Engineering Systems Corp.	.3	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
A.I. Systems	.1	.0	.1	0	.0%	.0%	.1%	.0%
DATAID Technologies	.1	.0	.0	0	.0%	.0%	.0%	.0%
Innovative Data Design	.1	.0	.1	0	.0%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 25 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	40.0	38.9	.0	5,790	6.8%	12.7%	.0%	25.7%
All Companies	587.9	307.3	178.7	22,498	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 587.3	 307.0	 178.4	 22,495	 99.9%	 99.9%	 99.8%	 100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.6	.4	.3	3	.1%	.1%	.2%	.0%
All Hardware Companies	152.3	136.7	.0	17,917	25.9%	44.5%	.0%	79.6%
All Turnkey & SW Companies	435.7	170.6	178.7	4,581	74.1%	55.5%	100.0%	20.4%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 26
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	179.8	100.7	32.3	2,000	60.9%	68.8%	39.3%	43.3%
ESRI	20.8	.0	18.1	0	7.1%	.0%	22.1%	.0%
McDonnell Douglas	19.7	10.6	5.9	276	6.7%	7.3%	7.2%	6.0%
Landmark Graphics	15.4	7.5	4.6	149	5.2%	5.1%	5.6%	3.2%
Digital	9.5	7.2	.0	293	3.2%	4.9%	.0%	6.4%
Sun	7.6	6.7	.0	627	2.6%	4.6%	.0%	13.6%
GeoVision Corp.	6.2	5.1	.6	92	2.1%	3.5%	.7%	2.0%
Synercom	4.6	.0	2.7	0	1.5%	.0%	3.3%	.0%
Auto-Trol	4.4	1.8	1.6	56	1.5%	1.2%	1.9%	1.2%
ACDS	3.1	.0	2.6	0	1.0%	.0%	3.1%	.0%
Computervision	2.8	1.1	.8	15	1.0%	.8%	1.0%	.3%
ERDAS	2.5	.3	2.1	16	.8%	.2%	2.5%	.4%
Ultimap	2.2	1.3	.6	28	.8%	.9%	.8%	.6%
Dynamic Graphics	1.8	.0	1.5	0	.6%	.0%	1.9%	.0%
Genasys II	1.7	.6	1.0	5	.6%	.4%	1.2%	.1%
Zycor	1.7	.0	1.1	0	.6%	.0%	1.4%	.0%
GEOVISION Inc.	1.6	.9	.4	842	.5%	.6%	.4%	18.2%
Tydac Technologies	1.2	.0	1.2	0	.4%	.0%	1.4%	.0%
Geomath	1.0	.0	1.0	0	.4%	.0%	1.3%	.0%
Autodesk	.9	.0	.9	0	.3%	.0%	1.1%	.0%
ETAK	.9	.0	.8	1	.3%	.0%	1.0%	.0%
IBM	.9	.5	.2	8	.3%	.3%	.2%	.2%
Geobased Systems	.8	.2	.6	11	.3%	.1%	.7%	.2%
Hewlett-Packard	.6	.5	.0	58	.2%	.3%	.0%	1.3%
Radian Corporation	.6	.0	.5	0	.2%	.0%	.5%	.0%
Control Data	.5	.4	.1	10	.2%	.3%	.1%	.2%
Accugraph	.5	.2	.2	13	.2%	.2%	.2%	.3%
Solbourne	.5	.5	.0	34	.2%	.3%	.0%	.7%
D.C.A. Software, Inc.	.4	.0	.4	0	.1%	.0%	.5%	.0%
Autometric	.4	.2	.1	65	.1%	.1%	.1%	1.4%
Kork Systems	.4	.1	.3	2	.1%	.1%	.3%	.0%
Facility Mapping Systems	.1	.0	.1	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 26 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
A/E Microsystems	.1	.1	.0	5	.0%	.0%	.0%	.1%
DATAID Technologies	.1	.0	.0	0	.0%	.0%	.0%	.0%
Everex Systems	.1	.1	.0	8	.0%	.0%	.0%	.2%
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	295.0	146.4	82.2	4,614	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	295.0	146.4	82.2	4,614	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.1	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	18.3	14.9	.0	1,020	6.2%	10.2%	.0%	22.1%
All Turnkey & SW Companies	276.8	131.6	82.2	3,594	93.8%	89.8%	100.0%	77.9%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 27
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Digital	32.3	24.3	.0	0	21.6%	28.9%	.0%	.0%
Intergraph	30.3	15.2	4.9	274	20.2%	18.0%	13.7%	15.2%
IBM	16.1	9.8	3.5	169	10.7%	11.7%	9.9%	9.4%
ESRI	12.4	.0	10.9	0	8.3%	.0%	30.7%	.0%
McDonnell Douglas	10.1	5.5	3.1	186	6.8%	6.5%	8.6%	10.3%
Geographic Systems (IIS)	4.9	.0	2.7	0	3.3%	.0%	7.6%	.0%
GeoVision Corp.	3.3	2.4	.7	21	2.2%	2.8%	1.9%	1.2%
Geographic Systems (WPS)	3.2	.0	3.2	0	2.1%	.0%	9.0%	.0%
Synercom	2.7	.0	1.6	0	1.8%	.0%	4.5%	.0%
Sun	2.5	2.1	.0	115	1.7%	2.5%	.0%	6.4%
Secagraphics	2.1	1.5	.6	16	1.4%	1.7%	1.8%	.9%
Control Data	1.3	.9	.1	8	.8%	1.1%	.4%	.5%
ETAK	1.2	.1	1.1	5	.8%	.1%	3.1%	.3%
Computervision	1.2	.4	.3	11	.8%	.5%	.8%	.6%
Solbourne	1.1	1.1	.0	83	.7%	1.3%	.0%	4.6%
Daniel Geophysical	.8	.0	.7	16	.5%	.0%	1.9%	.9%
Zycor	.7	.0	.5	0	.4%	.0%	1.3%	.0%
Kork Systems	.6	.1	.5	8	.4%	.2%	1.4%	.4%
Autometric	.6	.4	.2	36	.4%	.4%	.5%	2.0%
Dynamic Graphics	.6	.0	.5	0	.4%	.0%	1.4%	.0%
MPSI Systems	.3	.1	.2	14	.2%	.1%	.6%	.7%
Radian Corporation	.3	.0	.2	0	.2%	.0%	.6%	.0%
A/E Microsystems	.1	.0	.0	1	.0%	.0%	.0%	.1%
Hewlett-Packard	.1	.1	.0	3	.0%	.1%	.0%	.2%
Engineering Systems Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
DATAID Technologies	.0	.0	.0	0	.0%	.0%	.0%	.0%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 27 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	21.2	20.1	.0	836	14.1%	23.9%	.0%	46.4%
All Companies	150.0	84.0	35.6	1,803	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	150.0	84.0	35.6	1,803	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	57.2	47.6	.0	1,038	38.1%	56.7%	.0%	57.6%
All Turnkey & SW Companies	92.8	36.4	35.6	765	61.9%	43.3%	100.0%	42.4%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER:

28

TITLE: 1990 Preliminary Market Share Estimates

APPLICATION:

GIS/Mapping

PLATFORM:

Personal Computer

REGION:

North America

UNITS:

Millions of Dollars/Actual Units

Company	Total			Market Share		
	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Software Revenue
=====	=====	=====	=====	=====	=====	=====
Compaq	28.6	28.6	.0	4,759	20.0%	37.1%
Apple Computer	17.1	15.0	.0	3,280	11.9%	19.5%
Autodesk	12.3	.0	12.3	0	8.6%	.0%
IBM	10.5	9.9	.0	2,339	7.3%	12.9%
Intergraph	6.5	.0	6.1	0	4.5%	.0%
Geobased Systems	6.2	1.2	4.6	134	4.3%	1.6%
ETAK	5.7	.3	5.4	14	4.0%	.3%
Mapinfo	4.7	.0	3.7	0	3.3%	.0%
Strategic Mapping, Inc.	3.7	.0	3.7	0	2.6%	.0%
LandCadd	3.5	.0	3.3	0	2.4%	.0%
ESRI	3.3	.0	3.3	0	2.3%	.0%
ERDAS	3.0	.4	2.5	20	2.1%	.5%
PacSoft	2.4	.0	2.4	0	1.7%	.0%
Facility Mapping Systems	1.8	.0	1.6	2	1.3%	.0%
D.C.A. Software, Inc.	1.4	.0	1.4	0	1.0%	.0%
Terr-Mar	1.4	.4	1.0	32	1.0%	.5%
Geographix	1.4	.0	1.4	0	.9%	.0%
Terra Sciences	1.3	.0	1.3	0	.9%	.0%
Tydac Technologies	1.2	.0	1.2	0	.9%	.0%
Dell Computer	1.1	1.1	.0	277	.8%	1.4%
Zycor	.8	.0	.6	0	.6%	.0%
Everex Systems	.8	.8	.0	249	.5%	1.0%
Bentley	.7	.0	.7	0	.5%	.0%
Maptek	.7	.0	.7	0	.5%	.0%
GEOVISION Inc.	.6	.0	.6	0	.4%	.0%
Ground Modelling Systems	.5	.4	.3	3	.4%	.5%
Foresight Resources	.5	.0	.4	0	.3%	.0%
Radian Corporation	.4	.0	.3	0	.2%	.0%
Geomath	.3	.0	.3	0	.2%	.0%
Geosoft	.3	.0	.3	0	.2%	.0%
Daniel Geophysical	.3	.0	.3	0	.2%	.0%
Caddlink	.2	.0	.2	0	.2%	.0%

(Continued)

Market Share

TABLE NUMBER: 28 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Engineering Systems Corp.	.2	.0	.1	0	.1%	.0%	.2%	.0%
Genasys II	.2	.1	.1	1	.1%	.1%	.2%	.0%
Kork Systems	.1	.0	.1	3	.1%	.0%	.2%	.0%
Uniras	.1	.0	.1	0	.1%	.0%	.2%	.0%
A.I. Systems	.1	.0	.1	0	.1%	.0%	.2%	.0%
Computervision	.1	.0	.1	0	.1%	.0%	.2%	.0%
Innovative Data Design	.1	.0	.1	0	.1%	.0%	.2%	.0%
A/E Microsystems	.1	.0	.1	13	.1%	.1%	.1%	.1%
American Small Business Comp.	.1	.0	.1	0	.1%	.0%	.1%	.0%
Accugraph	.1	.0	.0	0	.0%	.0%	.1%	.0%
DATAID Technologies	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	18.8	18.8	.0	4,955	13.2%	24.5%	.0%	30.8%
All Companies	142.9	76.9	60.9	16,081	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	142.4	76.5	60.6	16,078	99.6%	99.5%	99.6%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.5	.4	.3	3	.4%	.5%	.4%	.0%
All Hardware Companies	76.8	74.2	.0	15,859	53.7%	96.5%	.0%	98.6%
All Turnkey & SW Companies	66.1	2.7	60.9	222	46.3%	3.5%	100.0%	1.4%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 29
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	145.0	77.6	29.0	1,522	30.8%	28.3%	24.9%	8.3%
Siemens	66.0	38.9	19.8	1,420	14.0%	14.2%	17.0%	7.7%
IBM	36.8	27.2	5.0	3,357	7.8%	9.9%	4.3%	18.3%
Digital	35.4	26.6	.0	248	7.5%	9.7%	.0%	1.3%
Compaq	28.6	28.6	.0	4,759	6.1%	10.4%	.0%	25.9%
ICL	13.5	8.0	4.6	371	2.9%	2.9%	3.9%	2.0%
McDonnell Douglas	12.7	6.6	4.8	399	2.7%	2.4%	4.1%	2.2%
ESRI	11.7	.0	10.3	0	2.5%	.0%	8.9%	.0%
Sysscan	11.6	5.1	3.0	132	2.5%	1.9%	2.6%	.7%
STI-Straessle	10.6	2.5	5.9	101	2.3%	.9%	5.0%	.5%
Landmark Graphics	9.2	4.5	2.8	89	2.0%	1.6%	2.4%	.5%
Autodesk	7.7	.0	7.7	0	1.6%	.0%	6.6%	.0%
Apple Computer	5.8	5.1	.0	1,109	1.2%	1.9%	.0%	6.0%
PAFEC	5.7	.0	5.7	0	1.2%	.0%	4.9%	.0%
ItalCad	5.3	2.3	1.5	51	1.1%	.8%	1.3%	.3%
Sun	4.9	4.2	.0	360	1.0%	1.5%	.0%	2.0%
Computervision	4.8	2.2	1.1	40	1.0%	.8%	1.0%	.2%
Ground Modelling Systems	4.7	3.2	2.4	29	1.0%	1.2%	2.0%	.2%
Synercom	3.5	.0	2.1	0	.7%	.0%	1.8%	.0%
Control Data	3.0	2.2	.3	31	.6%	.8%	.3%	.2%
Norsk Data	3.0	1.6	.5	32	.6%	.6%	.5%	.2%
Alper Systems	2.6	1.3	.7	500	.6%	.5%	.6%	2.7%
DATAID Technologies	2.1	.0	.4	0	.4%	.0%	.4%	.0%
Ziegler	2.0	.0	2.0	0	.4%	.0%	1.7%	.0%
Genasys II	1.6	.6	1.0	6	.3%	.2%	.8%	.0%
ETAK	1.5	.1	1.5	4	.3%	.0%	1.3%	.0%
Cadtronic	1.4	.8	.6	42	.3%	.3%	.5%	.2%
ERDAS	1.3	.2	1.1	8	.3%	.1%	.9%	.0%
Dynamic Graphics	1.0	.0	.9	0	.2%	.0%	.7%	.0%
Research Machines	1.0	1.0	.0	154	.2%	.4%	.0%	.8%
Hewlett-Packard	.7	.6	.0	62	.1%	.2%	.0%	.3%
Micrograph	.7	.2	.4	11	.1%	.1%	.3%	.1%
Olivetti	.6	.5	.0	93	.1%	.2%	.0%	.5%

(Continued)

Market Share

TABLE NUMBER: 29
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Solbourne	.5	.5	.0	36	.1%	.2%	.0%	.2%
Robocom	.4	.0	.4	0	.1%	.0%	.4%	.0%
ACDS	.4	.0	.3	0	.1%	.0%	.3%	.0%
Caditron	.3	.1	.1	4	.1%	.0%	.1%	.0%
Facility Mapping Systems	.2	.0	.2	0	.0%	.0%	.2%	.0%
Daniel Geophysical	.2	.0	.2	3	.0%	.0%	.2%	.0%
Dell Computer	.2	.2	.0	49	.0%	.1%	.0%	.3%
CAD-Capture	.2	.0	.0	0	.0%	.0%	.0%	.0%
D.C.A. Software, Inc.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Everex Systems	.1	.1	.0	23	.0%	.0%	.0%	.1%
Foresight Resources	.1	.0	.1	0	.0%	.0%	.1%	.0%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	22.2	21.7	.0	3,349	4.7%	7.9%	.0%	18.2%
All Companies	470.7	273.9	116.3	18,394	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	339.1	208.6	68.2	15,454	72.0%	76.2%	58.7%	84.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	131.7	65.3	48.0	2,940	28.0%	23.8%	41.3%	16.0%
All Hardware Companies	112.3	100.7	.0	13,112	23.9%	36.8%	.0%	71.3%
All Turnkey & SW Companies	358.4	173.2	116.3	5,281	76.1%	63.2%	100.0%	28.7%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER:

30

TITLE: 1990 Preliminary Market Share Estimates

APPLICATION:

GIS/Mapping

PLATFORM:

Technical Workstation

REGION:

Europe

UNITS:

Millions of Dollars/Actual Units

Company	Total				Market Share			
	Revenue	Hardware	Software	Wkstns	Revenue	Hardware	Software	Wkstns
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	120.4	67.4	21.6	1,339	46.2%	50.0%	29.9%	29.9%
Siemens	54.7	32.3	16.4	1,288	21.0%	23.9%	22.7%	28.8%
ICL	13.5	8.0	4.6	371	5.2%	5.9%	6.4%	8.3%
STI-Straessle	10.6	2.5	5.9	101	4.1%	1.8%	8.1%	2.3%
Landmark Graphics	9.2	4.5	2.8	89	3.5%	3.3%	3.8%	2.0%
Digital	8.1	6.1	.0	248	3.1%	4.5%	.0%	5.5%
ESRI	6.6	.0	5.8	0	2.5%	.0%	8.0%	.0%
PAFEC	5.7	.0	5.7	0	2.2%	.0%	7.9%	.0%
ItalCad	5.3	2.3	1.5	51	2.0%	1.7%	2.1%	1.1%
Computervision	4.1	1.9	1.0	24	1.6%	1.4%	1.4%	.5%
Sysscan	4.0	1.7	1.0	35	1.5%	1.3%	1.4%	.8%
Sun	3.7	3.2	.0	304	1.4%	2.4%	.0%	6.8%
Alper Systems	2.6	1.3	.7	500	1.0%	1.0%	.9%	11.2%
Synercom	2.2	.0	1.3	0	.8%	.0%	1.8%	.0%
Norsk Data	1.9	1.1	.4	23	.7%	.8%	.5%	.5%
Genasys II	1.5	.5	.9	5	.6%	.4%	1.2%	.1%
DATAID Technologies	1.2	.0	.3	0	.5%	.0%	.3%	.0%
IBM	1.1	.7	.3	11	.4%	.5%	.4%	.2%
Control Data	.9	.7	.1	17	.3%	.5%	.1%	.4%
Dynamic Graphics	.8	.0	.6	0	.3%	.0%	.9%	.0%
Hewlett-Packard	.6	.5	.0	58	.2%	.4%	.0%	1.3%
ERDAS	.6	.1	.5	4	.2%	.1%	.7%	.1%
Autodesk	.5	.0	.5	0	.2%	.0%	.7%	.0%
ACDS	.4	.0	.3	0	.1%	.0%	.4%	.0%
ETAK	.2	.0	.2	0	.1%	.0%	.2%	.0%
Micrograph	.1	.1	.0	5	.0%	.1%	.0%	.1%
Solbourne	.1	.1	.0	7	.0%	.1%	.0%	.2%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
D.C.A. Software, Inc.	.0	.0	.0	0	.0%	.0%	.0%	.0%
Everex Systems	.0	.0	.0	1	.0%	.0%	.0%	.0%
Facility Mapping Systems	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 30 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	260.6	134.9	72.3	4,480	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 160.9	 85.7	 35.8	 2,106	 61.7%	 63.5%	 49.6%	 47.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	99.7	49.2	36.4	2,374	38.3%	36.5%	50.4%	53.0%
All Hardware Companies	12.5	9.9	.0	617	4.8%	7.3%	.0%	13.8%
All Turnkey & SW Companies	248.1	125.0	72.3	3,863	95.2%	92.7%	100.0%	86.2%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 31
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Digital	27.3	20.5	.0	0	22.0%	27.3%	.0%	.0%
IBM	21.7	13.3	4.8	228	17.5%	17.7%	20.1%	14.2%
Intergraph	20.3	10.1	3.3	183	16.3%	13.5%	13.8%	11.4%
McDonnell Douglas	12.7	6.6	4.8	399	10.2%	8.8%	20.2%	24.8%
Siemens	11.2	6.6	3.4	132	9.0%	8.8%	14.2%	8.2%
Sysscan	7.7	3.4	2.0	98	6.2%	4.5%	8.4%	6.1%
ESRI	4.0	.0	3.5	0	3.2%	.0%	14.8%	.0%
Control Data	2.2	1.6	.2	14	1.7%	2.1%	.9%	.9%
Synercom	1.3	.0	.8	0	1.0%	.0%	3.3%	.0%
Sun	1.2	1.0	.0	56	1.0%	1.3%	.0%	3.5%
Norsk Data	1.1	.5	.2	8	.9%	.7%	.7%	.5%
Computervision	.7	.3	.2	14	.6%	.4%	.7%	.9%
DATAID Technologies	.6	.0	.1	0	.5%	.0%	.5%	.0%
Solbourne	.4	.4	.0	29	.3%	.5%	.0%	1.8%
Dynamic Graphics	.3	.0	.2	0	.2%	.0%	.9%	.0%
ETAK	.2	.0	.2	1	.2%	.0%	.9%	.1%
Daniel Geophysical	.2	.0	.1	3	.1%	.0%	.6%	.2%
Hewlett-Packard	.1	.1	.0	3	.1%	.1%	.0%	.2%
Other Companies	11.2	10.7	.0	443	9.0%	14.2%	.0%	27.5%
All Companies	124.3	75.0	23.6	1,612	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	103.7	64.5	18.0	1,374	83.4%	86.0%	76.1%	85.2%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	20.6	10.5	5.6	238	16.6%	14.0%	23.9%	14.8%
All Hardware Companies	40.3	32.6	.0	531	32.4%	43.5%	.0%	32.9%
All Turnkey & SW Companies	84.0	42.4	23.6	1,081	67.6%	56.5%	100.0%	67.1%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 32
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Compaq	28.6	28.6	.0	4,759	33.3%	44.6%	.0%	38.7%
IBM	14.0	13.3	.0	3,118	16.3%	20.7%	.0%	25.3%
Autodesk	7.2	.0	7.2	0	8.3%	.0%	35.1%	.0%
Apple Computer	5.8	5.1	.0	1,109	6.7%	7.9%	.0%	9.0%
Ground Modelling Systems	4.7	3.2	2.4	29	5.5%	4.9%	11.6%	.2%
Intergraph	4.4	.0	4.1	0	5.1%	.0%	20.0%	.0%
Ziegler	2.0	.0	2.0	0	2.3%	.0%	9.8%	.0%
Cadtronic	1.4	.8	.6	42	1.6%	1.2%	3.1%	.3%
ETAK	1.1	.1	1.1	3	1.3%	.1%	5.3%	.0%
ESRI	1.0	.0	1.0	0	1.2%	.0%	5.1%	.0%
Research Machines	1.0	1.0	.0	154	1.1%	1.5%	.0%	1.3%
ERDAS	.7	.1	.6	5	.8%	.1%	2.9%	.0%
Olivetti	.6	.5	.0	93	.7%	.7%	.0%	.8%
Micrograph	.6	.1	.4	6	.6%	.2%	1.8%	.0%
Robocom	.4	.0	.4	0	.5%	.0%	2.2%	.0%
Caditron	.3	.1	.1	4	.3%	.2%	.5%	.0%
DATAID Technologies	.2	.0	.0	0	.2%	.0%	.2%	.0%
Facility Mapping Systems	.2	.0	.2	0	.2%	.0%	.9%	.0%
Dell Computer	.2	.2	.0	49	.2%	.3%	.0%	.4%
CAD-Capture	.2	.0	.0	0	.2%	.0%	.1%	.0%
Genasys II	.2	.1	.1	1	.2%	.1%	.5%	.0%
D.C.A. Software, Inc.	.1	.0	.1	0	.1%	.0%	.3%	.0%
Everex Systems	.1	.1	.0	22	.1%	.1%	.0%	.2%
Foresight Resources	.1	.0	.1	0	.1%	.0%	.3%	.0%
Daniel Geophysical	.1	.0	.1	0	.1%	.0%	.2%	.0%
Computervision	.0	.0	.0	1	.0%	.0%	.0%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 32 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	11.0	11.0	.0	2,907	12.9%	17.3%	.0%	23.6%
All Companies	85.8	64.0	20.4	12,302	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 74.6	 58.4	 14.4	 11,974	 86.8%	 91.3%	 70.7%	 97.3%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	11.3	5.6	6.0	328	13.2%	8.7%	29.3%	2.7%
All Hardware Companies	59.6	58.2	.0	11,964	69.4%	91.0%	.0%	97.3%
All Turnkey & SW Companies	26.3	5.8	20.4	337	30.6%	9.0%	100.0%	2.7%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 33
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Fujitsu	44.1	23.7	15.6	1,022	16.7%	13.9%	24.1%	10.4%
Mitsubishi Electric	38.4	30.5	4.9	709	14.6%	17.9%	7.6%	7.2%
IBM	29.9	21.2	4.6	2,170	11.3%	12.4%	7.2%	22.1%
Hitachi	20.8	10.0	8.7	640	7.9%	5.9%	13.5%	6.5%
Intergraph	16.9	9.0	3.4	177	6.4%	5.3%	5.3%	1.8%
Uchida Yoko	16.6	15.8	.8	264	6.3%	9.3%	1.3%	2.7%
Mitsui Engineering	13.1	8.8	2.9	85	5.0%	5.2%	4.6%	.9%
Digital	10.2	7.6	.0	71	3.9%	4.5%	.0%	.7%
CADIX	7.2	2.7	3.9	51	2.7%	1.6%	6.0%	.5%
NEC	6.4	3.8	2.1	369	2.4%	2.2%	3.3%	3.7%
Mutoh Industries--NO OEM	4.8	2.5	1.7	104	1.8%	1.5%	2.6%	1.1%
INS Engineering	4.8	2.9	1.4	9	1.8%	1.7%	2.1%	.1%
Sun	4.5	3.9	.0	327	1.7%	2.3%	.0%	3.3%
Toshiba--NO OEM	4.0	2.0	1.6	35	1.5%	1.2%	2.5%	.4%
Century Research Center	3.8	1.8	1.7	23	1.5%	1.0%	2.6%	.2%
Siemens	3.5	2.1	1.0	75	1.3%	1.2%	1.6%	.8%
ESRI	3.2	.0	2.8	0	1.2%	.0%	4.4%	.0%
Autodesk	2.9	.0	2.9	0	1.1%	.0%	4.5%	.0%
Computervision	2.3	1.5	.7	18	.9%	.9%	1.0%	.2%
Landmark Graphics	2.2	1.1	.6	21	.8%	.6%	1.0%	.2%
Compaq	1.8	1.8	.0	304	.7%	1.1%	.0%	3.1%
Pasco	1.4	.6	.7	19	.5%	.3%	1.1%	.2%
Sysscan	1.0	.5	.3	12	.4%	.3%	.4%	.1%
Apple Computer	1.0	.9	.0	185	.4%	.5%	.0%	1.9%
ETAK	.5	.0	.5	1	.2%	.0%	.7%	.0%
Andor	.5	.1	.4	6	.2%	.1%	.6%	.1%
Genasys II	.5	.2	.3	2	.2%	.1%	.4%	.0%
McDonnell Douglas	.4	.2	.1	5	.1%	.1%	.2%	.1%
Control Data	.4	.3	.0	4	.1%	.2%	.1%	.0%
Omron	.3	.3	.0	15	.1%	.2%	.0%	.2%
ACDS	.2	.0	.2	0	.1%	.0%	.3%	.0%
ERDAS	.2	.0	.2	1	.1%	.0%	.3%	.0%

(Continued)

Market Share

TABLE NUMBER: 33 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Kubota Computer	.2	.2	.1	13	.1%	.1%	.1%	.1%
Hewlett-Packard	.2	.2	.0	19	.1%	.1%	.0%	.2%
Dynamic Graphics	.2	.0	.2	0	.1%	.0%	.3%	.0%
D.C.A. Software, Inc.	.1	.0	.1	0	.0%	.0%	.2%	.0%
PAFEC	.1	.0	.1	0	.0%	.0%	.2%	.0%
Daniel Geophysical	.1	.0	.1	1	.0%	.0%	.1%	.0%
Facility Mapping Systems	.0	.0	.0	0	.0%	.0%	.1%	.0%
Everex Systems	.0	.0	.0	6	.0%	.0%	.0%	.1%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	15.0	14.8	.0	3,081	5.7%	8.7%	.0%	31.3%
All Companies	263.4	170.5	64.6	9,843	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	92.5	62.5	16.7	6,394	35.1%	36.7%	25.9%	65.0%
All Asian-Based Companies	166.4	105.5	46.5	3,363	63.2%	61.9%	71.9%	34.2%
All European-Based Companies	4.6	2.5	1.4	86	1.7%	1.5%	2.2%	.9%
All Hardware Companies	41.4	37.4	.0	5,941	15.7%	21.9%	.0%	60.4%
All Turnkey & SW Companies	222.1	133.1	64.6	3,902	84.3%	78.1%	100.0%	39.6%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 34
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Mitsubishi Electric	28.8	25.2	1.9	286	19.9%	26.4%	5.6%	11.5%
Fujitsu	19.8	11.2	6.6	496	13.7%	11.8%	19.0%	20.0%
Uchida Yoko	16.6	15.8	.8	264	11.5%	16.6%	2.4%	10.6%
Intergraph	14.0	7.8	2.5	156	9.7%	8.2%	7.3%	6.3%
Mitsui Engineering	13.1	8.8	2.9	85	9.0%	9.3%	8.5%	3.4%
Mitachi	10.4	5.0	4.4	216	7.2%	5.2%	12.6%	8.7%
CADIX	7.2	2.7	3.9	51	5.0%	2.8%	11.2%	2.0%
NEC	5.8	3.2	2.1	318	4.0%	3.4%	6.0%	12.8%
Toshiba--NO OEM	4.0	2.0	1.6	35	2.8%	2.1%	4.6%	1.4%
Century Research Center	3.8	1.8	1.7	23	2.6%	1.9%	4.8%	.9%
Sun	3.4	3.0	.0	276	2.3%	3.1%	.0%	11.1%
Siemens	2.9	1.7	.9	68	2.0%	1.8%	2.5%	2.7%
Digital	2.3	1.7	.0	71	1.6%	1.8%	.0%	2.9%
Computervision	2.3	1.5	.7	18	1.6%	1.5%	1.9%	.7%
Landmark Graphics	2.2	1.1	.6	21	1.5%	1.1%	1.8%	.8%
ESRI	1.8	.0	1.6	0	1.3%	.0%	4.6%	.0%
Mutoh Industries--NO OEM	1.4	.7	.5	14	1.0%	.7%	1.3%	.6%
Pasco	1.1	.4	.6	14	.8%	.5%	1.6%	.5%
IBM	1.1	.7	.2	10	.7%	.7%	.6%	.4%
Genasys II	.4	.2	.3	1	.3%	.2%	.7%	.1%
Sysscan	.3	.2	.1	3	.2%	.2%	.3%	.1%
Omron	.3	.3	.0	15	.2%	.3%	.0%	.6%
McDonnell Douglas	.3	.1	.1	3	.2%	.1%	.2%	.1%
ACDS	.2	.0	.2	1	.2%	.0%	.5%	.0%
Kubota Computer	.2	.2	.1	13	.2%	.2%	.2%	.5%
Autodesk	.2	.0	.2	0	.1%	.0%	.6%	.0%
Hewlett-Packard	.2	.2	.0	18	.1%	.2%	.0%	.7%
Dynamic Graphics	.2	.0	.1	0	.1%	.0%	.4%	.0%
PAFEC	.1	.0	.1	0	.1%	.0%	.3%	.0%
Control Data	.1	.1	.0	2	.1%	.1%	.0%	.1%
ERDAS	.1	.0	.1	1	.1%	.0%	.2%	.0%
ETAK	.1	.0	.1	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 34 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
D.C.A. Software, Inc.	.0	.0	.0	0	.0%	.0%	.1%	.0%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	144.6	95.4	34.7	2,479	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	28.7	16.2	6.6	578	19.8%	17.0%	19.1%	23.3%
All Asian-Based Companies	112.6	77.3	27.0	1,831	77.9%	81.1%	77.8%	73.8%
All European-Based Companies	3.3	1.9	1.1	71	2.3%	1.9%	3.1%	2.9%
All Hardware Companies	5.9	4.9	.0	366	4.1%	5.1%	.0%	14.8%
All Turnkey & SW Companies	138.7	90.5	34.7	2,114	95.9%	94.9%	100.0%	85.2%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 35
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	----- Market Share -----			
					Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
IBM	20.1	12.3	4.4	212	28.4%	29.6%	25.3%	20.8%
Fujitsu	17.7	8.9	6.4	190	25.0%	21.4%	36.7%	18.6%
Digital	7.9	5.9	.0	0	11.2%	14.2%	.0%	.0%
Mitsubishi Electric	5.8	2.7	1.7	85	8.1%	6.6%	9.5%	8.3%
INS Engineering	4.8	2.9	1.4	9	6.7%	7.0%	7.7%	.8%
Hitachi	3.3	1.6	1.4	277	4.7%	3.9%	8.0%	27.1%
Intergraph	2.4	1.2	.4	21	3.3%	2.8%	2.3%	2.1%
Sun	1.1	.9	.0	51	1.6%	2.2%	.0%	5.0%
ESRI	1.1	.0	1.0	0	1.5%	.0%	5.4%	.0%
Mutoh Industries--NO OEM	1.0	.5	.3	2	1.4%	1.1%	1.8%	.2%
Sysscan	.7	.3	.2	9	.9%	.7%	1.0%	.8%
Siemens	.6	.4	.2	7	.8%	.8%	1.0%	.7%
Control Data	.3	.2	.0	2	.4%	.5%	.2%	.2%
McDonnell Douglas	.1	.1	.0	2	.2%	.2%	.2%	.2%
ETAK	.1	.0	.1	0	.1%	.0%	.4%	.0%
Daniel Geophysical	.1	.0	.0	1	.1%	.0%	.2%	.1%
Dynamic Graphics	.1	.0	.0	0	.1%	.0%	.2%	.0%
Hewlett-Packard	.0	.0	.0	1	.0%	.0%	.0%	.1%
Other Companies	3.9	3.6	.0	152	5.4%	8.8%	.0%	14.9%
All Companies	70.8	41.4	17.5	1,020	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	37.0	24.2	6.0	442	52.3%	58.4%	34.3%	43.4%
All Asian-Based Companies	32.5	16.6	11.1	562	45.9%	40.0%	63.7%	55.1%
All European-Based Companies	1.3	.7	.4	15	1.8%	1.6%	2.0%	1.5%
All Hardware Companies	12.9	10.5	.0	204	18.2%	25.3%	.0%	20.0%
All Turnkey & SW Companies	57.9	30.9	17.5	816	81.8%	74.7%	100.0%	80.0%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 36
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
IBM	8.7	8.3	.0	1,949	18.1%	24.5%	.0%	30.7%
Hitachi	7.1	3.4	3.0	147	14.7%	10.1%	23.8%	2.3%
Fujitsu	6.6	3.6	2.6	336	13.7%	10.6%	20.8%	5.3%
Mitsubishi Electric	3.8	2.6	1.4	338	8.0%	7.6%	10.8%	5.3%
Autodesk	2.7	.0	2.7	0	5.6%	.0%	21.5%	.0%
Mutoh Industries--NO OEM	2.4	1.4	.9	87	5.0%	4.0%	7.4%	1.4%
Compaq	1.8	1.8	.0	304	3.8%	5.4%	.0%	4.8%
Apple Computer	1.0	.9	.0	185	2.0%	2.5%	.0%	2.9%
NEC	.6	.5	.1	51	1.3%	1.6%	.4%	.8%
Intergraph	.5	.0	.5	0	1.1%	.0%	3.8%	.0%
Andor	.5	.1	.4	6	1.0%	.3%	2.9%	.1%
ETAK	.4	.0	.4	1	.8%	.1%	2.9%	.0%
ESRI	.3	.0	.3	0	.6%	.0%	2.3%	.0%
Pasco	.3	.1	.1	6	.6%	.3%	1.0%	.1%
ERDAS	.1	.0	.1	1	.2%	.1%	.7%	.0%
D.C.A. Software, Inc.	.1	.0	.1	0	.2%	.0%	.8%	.0%
Genasys II	.1	.0	.0	0	.1%	.0%	.2%	.0%
Facility Mapping Systems	.0	.0	.0	0	.1%	.0%	.3%	.0%
Daniel Geophysical	.0	.0	.0	0	.0%	.0%	.2%	.0%
Everex Systems	.0	.0	.0	6	.0%	.1%	.0%	.1%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 36 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
	=====	=====	=====	=====	=====	=====	=====	=====
Other Companies	11.1	11.1	.0	2,929	23.1%	32.9%	.0%	46.2%
All Companies	48.1	33.8	12.5	6,344	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 26.8	 22.1	 4.1	 5,374	 55.7%	 65.5%	 32.9%	 84.7%
All Asian-Based Companies	21.3	11.7	8.4	970	44.3%	34.5%	67.1%	15.3%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	22.6	22.1	.0	5,372	47.0%	65.4%	.0%	84.7%
All Turnkey & SW Companies	25.5	11.7	12.5	972	53.0%	34.6%	100.0%	15.3%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 37
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Intergraph	24.1	12.9	4.8	253	35.0%	35.3%	22.8%	15.2%
GeoVision Corp.	10.9	7.0	3.2	127	15.9%	19.1%	15.3%	7.6%
Genasys II	7.6	2.7	4.6	26	11.1%	7.3%	21.7%	1.6%
Landmark Graphics	4.0	2.0	1.2	39	5.8%	5.4%	5.7%	2.3%
IBM	3.6	2.8	.4	409	5.3%	7.7%	1.9%	24.7%
Digital	2.7	2.0	.0	19	3.9%	5.5%	.0%	1.1%
Compaq	1.8	1.8	.0	304	2.6%	5.0%	.0%	18.3%
ESRI	1.6	.0	1.4	0	2.3%	.0%	6.7%	.0%
Zycor	1.3	.0	.9	0	1.9%	.0%	4.1%	.0%
Mapinfo	1.0	.0	.8	0	1.4%	.0%	3.6%	.0%
Sun	.9	.8	.0	67	1.3%	2.2%	.0%	4.0%
McDonnell Douglas	.9	.5	.3	14	1.3%	1.3%	1.2%	.8%
Synercom	.8	.0	.5	0	1.2%	.0%	2.3%	.0%
Fujitsu	.8	.4	.2	16	1.1%	1.2%	1.1%	1.0%
Geobase Systems	.8	.2	.6	16	1.1%	.4%	2.7%	1.0%
Strategic Mapping, Inc.	.7	.0	.7	0	.9%	.0%	3.1%	.0%
ETAK	.5	.0	.5	1	.8%	.1%	2.3%	.1%
Dynamic Graphics	.4	.0	.4	0	.6%	.0%	1.7%	.0%
Apple Computer	.2	.2	.0	46	.3%	.6%	.0%	2.8%
Autodesk	.2	.0	.2	0	.3%	.0%	1.1%	.0%
Control Data	.2	.2	.0	2	.3%	.5%	.1%	.1%
Radian Corporation	.2	.0	.2	0	.3%	.0%	.9%	.0%
Solbourne	.2	.2	.0	17	.3%	.6%	.0%	1.0%
ERDAS	.1	.0	.1	1	.2%	.0%	.5%	.1%
D.C.A. Software, Inc.	.1	.0	.1	0	.2%	.0%	.5%	.0%
Computervision	.1	.0	.0	1	.1%	.1%	.1%	.0%
Secagraphics	.1	.1	.0	1	.1%	.2%	.1%	.0%
Facility Mapping Systems	.1	.0	.1	0	.1%	.0%	.3%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.1%	.0%
Hewlett-Packard	.0	.0	.0	4	.1%	.1%	.0%	.3%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 37 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	2.8	2.7	.0	298	4.1%	7.4%	.0%	17.9%
All Companies	68.9	36.5	21.1	1,661	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	68.1	36.0	20.9	1,645	98.9%	98.8%	98.9%	99.0%
All Asian-Based Companies	.8	.4	.2	16	1.1%	1.2%	1.1%	1.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	10.5	9.4	.0	1,144	15.2%	25.9%	.0%	68.9%
All Turnkey & SW Companies	58.4	27.0	21.1	517	84.8%	74.1%	100.0%	31.1%

Source: Dataquest
 January 1991

Market Share

TABLE NUMBER: 38
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Intergraph	20.0	11.2	3.6	222	44.8%	49.3%	25.9%	44.9%
GeoVision Corp.	8.4	5.3	2.5	105	18.8%	23.2%	17.9%	21.3%
Genasys II	6.9	2.4	4.1	23	15.4%	10.6%	29.7%	4.6%
Landmark Graphics	4.0	2.0	1.2	39	8.9%	8.6%	8.6%	7.8%
ESRI	.9	.0	.8	0	2.0%	.0%	5.7%	.0%
Zycor	.8	.0	.5	0	1.7%	.0%	3.7%	.0%
Sun	.7	.6	.0	56	1.5%	2.6%	.0%	11.4%
Digital	.6	.5	.0	19	1.4%	2.0%	.0%	3.8%
McDonnell Douglas	.6	.3	.2	8	1.3%	1.4%	1.2%	1.6%
Synercom	.5	.0	.3	0	1.1%	.0%	2.2%	.0%
Fujitsu	.4	.2	.1	9	.8%	1.1%	.7%	1.8%
Dynamic Graphics	.3	.0	.3	0	.7%	.0%	1.9%	.0%
Radian Corporation	.1	.0	.1	0	.2%	.0%	.6%	.0%
IBM	.1	.1	.0	1	.2%	.3%	.1%	.2%
Geobased Systems	.1	.0	.1	1	.2%	.1%	.4%	.2%
Control Data	.1	.1	.0	1	.2%	.2%	.1%	.3%
Solbourne	.1	.1	.0	5	.2%	.3%	.0%	1.0%
Computervision	.1	.0	.0	0	.1%	.1%	.1%	.1%
ERDAS	.1	.0	.1	0	.1%	.0%	.4%	.1%
ETAK	.1	.0	.1	0	.1%	.0%	.4%	.0%
Hewlett-Packard	.0	.0	.0	4	.1%	.2%	.0%	.8%
D.C.A. Software, Inc.	.0	.0	.0	0	.1%	.0%	.2%	.0%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.1%
Autodesk	.0	.0	.0	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 38 (Continued)
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Other Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Companies	44.6	22.7	13.9	495	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 44.3	 22.5	 13.8	 486	 99.2%	 98.9%	 99.3%	 98.2%
All Asian-Based Companies	.4	.2	.1	9	.8%	1.1%	.7%	1.8%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	1.4	1.2	.0	84	3.1%	5.1%	.0%	17.0%
All Turnkey & SW Companies	43.2	21.6	13.9	410	96.9%	94.9%	100.0%	83.0%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 39
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	3.4	1.7	.5	30	23.6%	19.2%	18.8%	16.7%
GeoVision Corp.	2.6	1.7	.7	22	17.9%	19.1%	25.7%	12.0%
Digital	2.1	1.6	.0	0	14.4%	17.8%	.0%	.0%
IBM	1.8	1.1	.4	19	12.5%	12.6%	13.5%	10.3%
ESRI	.5	.0	.5	0	3.8%	.0%	16.7%	.0%
McDonnell Douglas	.3	.2	.1	5	2.1%	1.7%	3.1%	3.0%
Synercom	.3	.0	.2	0	2.1%	.0%	6.3%	.0%
Fujitsu	.3	.2	.1	3	2.0%	1.8%	2.8%	1.7%
Sun	.2	.2	.0	10	1.6%	2.2%	.0%	5.7%
Zycor	.2	.0	.1	0	1.3%	.0%	3.8%	.0%
Control Data	.2	.1	.0	1	1.2%	1.5%	.7%	.6%
Solbourne	.2	.2	.0	12	1.1%	1.8%	.0%	6.6%
Dynamic Graphics	.1	.0	.1	0	.7%	.0%	3.1%	.0%
Secagraphics	.1	.1	.0	1	.6%	.8%	1.0%	.4%
ETAK	.1	.0	.1	0	.6%	.0%	2.4%	.2%
Radian Corporation	.1	.0	.0	0	.4%	.0%	1.4%	.0%
Computervision	.0	.0	.0	0	.2%	.1%	.3%	.1%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.3%	.0%
Other Companies	2.0	1.9	.0	77	13.7%	21.3%	.0%	42.5%
All Companies	14.3	8.7	2.9	182	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	14.0	8.6	2.8	179	98.0%	98.2%	97.2%	98.3%
All Asian-Based Companies	.3	.2	.1	3	2.0%	1.8%	2.8%	1.7%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	4.4	3.8	.0	100	30.9%	43.1%	.0%	55.0%
All Turnkey & SW Companies	9.9	5.0	2.9	82	69.1%	56.9%	100.0%	45.0%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 40
 TITLE: 1990 Preliminary Market Share Estimates
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Compaq	1.8	1.8	.0	304	18.3%	36.3%	.0%	30.9%
IBM	1.7	1.7	.0	390	17.5%	33.1%	.0%	39.6%
Mapinfo	1.0	.0	.8	0	9.5%	.0%	17.5%	.0%
Genasys II	.8	.3	.5	4	7.6%	5.4%	10.6%	.4%
Intergraph	.7	.0	.7	0	7.2%	.0%	15.6%	.0%
Geobased Systems	.7	.1	.5	15	6.9%	2.8%	11.7%	1.5%
Strategic Mapping, Inc.	.7	.0	.7	0	6.5%	.0%	14.9%	.0%
ETAK	.4	.0	.4	1	3.8%	.4%	8.3%	.1%
Zycor	.4	.0	.2	0	3.5%	.0%	5.5%	.0%
Apple Computer	.2	.2	.0	46	2.4%	4.2%	.0%	4.7%
Autodesk	.2	.0	.2	0	2.2%	.0%	5.1%	.0%
ESRI	.1	.0	.1	0	1.4%	.0%	3.2%	.0%
Fujitsu	.1	.0	.1	4	1.2%	.8%	1.4%	.4%
D.C.A. Software, Inc.	.1	.0	.1	0	.8%	.0%	1.8%	.0%
ERDAS	.1	.0	.1	1	.8%	.2%	1.4%	.1%
Radian Corporation	.1	.0	.1	0	.7%	.0%	1.1%	.0%
Facility Mapping Systems	.1	.0	.1	0	.6%	.0%	1.4%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.3%	.0%	.5%	.0%
Foresight Resources	.0	.0	.0	0	.1%	.0%	.0%	.0%
Other Companies	.8	.8	.0	220	8.4%	16.8%	.0%	22.4%
All Companies	10.0	5.0	4.4	984	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	9.8	5.0	4.3	980	98.8%	99.2%	98.6%	99.6%
All Asian-Based Companies	.1	.0	.1	4	1.2%	.8%	1.4%	.4%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	4.6	4.5	.0	960	46.6%	90.4%	.0%	97.5%
All Turnkey & SW Companies	5.3	.5	4.4	24	53.4%	9.6%	100.0%	2.5%

Source: Dataquest
January 1991

Market Share

TABLE NUMBER: 1
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	231.0	123.0	46.0	2,350	13.9%	11.7%	12.1%	2.3%
IBM	178.7	135.1	20.9	14,123	10.7%	12.9%	5.5%	13.8%
Digital	98.9	74.2	.0	676	5.9%	7.1%	.0%	.7%
Fujitsu	93.5	53.2	29.4	2,095	5.6%	5.1%	7.7%	2.0%
Hewlett-Packard	92.4	69.2	7.0	5,776	5.6%	6.6%	1.8%	5.6%
Apple Computer	89.5	78.7	.0	17,200	5.4%	7.5%	.0%	16.8%
Computervision	80.8	33.2	25.1	572	4.9%	3.2%	6.6%	.6%
Compaq	79.9	79.9	.0	13,321	4.8%	7.6%	.0%	13.0%
Autodesk	75.3	.0	75.3	0	4.5%	.0%	19.8%	.0%
NEC	42.4	33.8	5.2	2,686	2.6%	3.2%	1.4%	2.6%
McDonnell Douglas	37.6	20.3	12.4	571	2.3%	1.9%	3.3%	.6%
ISICAD	32.0	13.0	14.2	331	1.9%	1.2%	3.7%	.3%
Auto-Trol	28.9	11.3	7.4	339	1.7%	1.1%	1.9%	.3%
ARC/YAMAGIWA	21.6	13.0	6.5	116	1.3%	1.2%	1.7%	.1%
Nihon Unisys	19.9	13.8	2.3	170	1.2%	1.3%	.6%	.2%
Sun	18.9	17.0	.0	1,428	1.1%	1.6%	.0%	1.4%
Hitachi	18.0	9.1	7.1	528	1.1%	.9%	1.9%	.5%
Toshiba--NO OEM	15.4	7.7	6.2	144	.9%	.7%	1.6%	.1%
Mutoh Industries--NO OEM	11.9	6.0	4.2	238	.7%	.6%	1.1%	.2%
Accugraph	11.6	7.0	3.5	337	.7%	.7%	.9%	.3%
t2 Solutions	10.9	5.8	3.6	102	.7%	.6%	.9%	.1%
Siemens	10.1	6.0	3.0	202	.6%	.6%	.8%	.2%
ItalCad	9.8	5.0	3.6	103	.6%	.5%	1.0%	.1%
Star Informatic	9.5	4.2	2.8	394	.6%	.4%	.7%	.4%
Kanematsu Computer Systems	9.3	5.3	3.7	186	.6%	.5%	1.0%	.2%
PAFEC	8.8	.0	8.8	0	.5%	.0%	2.3%	.0%
Hitachi Zosen Info Systems	7.4	3.8	2.9	68	.4%	.4%	.8%	.1%
Mitsubishi Electric	7.2	5.3	1.2	140	.4%	.5%	.3%	.1%
Century Research Center	6.5	3.3	2.6	39	.4%	.3%	.7%	.0%
Everex Systems	6.2	6.2	.0	1,843	.4%	.6%	.0%	1.8%
Dell Computer	6.0	6.0	.0	1,511	.4%	.6%	.0%	1.5%
Silicon Graphics	6.0	5.1	.0	144	.4%	.5%	.0%	.1%
CPU	5.9	.0	5.6	309	.4%	.0%	1.5%	.3%

(Continued)

Market Share

TABLE NUMBER: 1
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Norsk Data	5.8	2.9	1.8	0	.3%	.3%	.5%	.0%
Computer Aided Planning	5.4	.0	4.3	0	.3%	.0%	1.1%	.0%
Computer-Aided Design Group	5.0	.0	3.6	0	.3%	.0%	1.0%	.0%
Club Informatico SA	4.9	3.7	1.0	108	.3%	.4%	.3%	.1%
Sigma Design	4.7	.0	4.5	252	.3%	.0%	1.2%	.2%
Cadtronic	4.5	3.5	.6	30	.3%	.3%	.2%	.0%
Dassault	4.1	.0	3.4	0	.2%	.0%	.9%	.0%
BATISOFT	4.0	.6	3.0	227	.2%	.1%	.8%	.2%
INS Engineering	4.0	2.8	.8	68	.2%	.3%	.2%	.1%
D.C.A. Engineering	3.8	.0	3.8	0	.2%	.0%	1.0%	.0%
Control Data	3.7	2.6	.4	39	.2%	.2%	.1%	.0%
Integrated Computer Graphics	3.7	1.9	1.5	350	.2%	.2%	.4%	.3%
CADAM	3.6	.0	3.3	7	.2%	.0%	.9%	.0%
Sumisho Electronics	3.6	2.7	.8	173	.2%	.3%	.2%	.2%
Datagraphic	3.6	1.6	1.3	60	.2%	.2%	.3%	.1%
Technovision	3.6	.0	3.6	0	.2%	.0%	.9%	.0%
Olivetti	3.5	1.4	1.2	673	.2%	.1%	.3%	.7%
Endeco Systems	3.0	.0	3.0	0	.2%	.0%	.8%	.0%
Gable CAD Systems	3.0	1.8	1.2	23	.2%	.2%	.3%	.0%
Toyo	2.7	1.6	.9	27	.2%	.2%	.2%	.0%
CADWorks	2.3	.0	1.9	0	.1%	.0%	.5%	.0%
CAD Lab	2.3	.0	1.9	0	.1%	.0%	.5%	.0%
Infinite Graphics	2.3	.0	2.3	0	.1%	.0%	.6%	.0%
Bechtel Software	2.1	.0	1.9	0	.1%	.0%	.5%	.0%
Sumisho Electronic Systems	2.0	.0	1.7	28	.1%	.0%	.5%	.0%
Ziegler	1.8	.1	1.7	59	.1%	.0%	.4%	.1%
Andor	1.8	.3	1.4	16	.1%	.0%	.4%	.0%
Robocom	1.8	.0	1.8	0	.1%	.0%	.5%	.0%
Innovative Data Design	1.7	.0	1.7	0	.1%	.0%	.5%	.0%
Claris	1.5	.0	1.5	0	.1%	.0%	.4%	.0%
ECOM Associates	1.5	.2	1.0	55	.1%	.0%	.3%	.1%
Uchida Yoko	1.4	.7	.6	22	.1%	.1%	.1%	.0%
Bentley	1.4	.0	1.4	0	.1%	.0%	.4%	.0%

(Continued)

Market Share

TABLE NUMBER: 1
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Schlumberger (Applicon)	1.4	.4	.5	17	.1%	.0%	.1%	.0%
CIVILSOFT	1.3	.0	1.3	0	.1%	.0%	.3%	.0%
Foresight Resources	1.2	.0	1.1	0	.1%	.0%	.3%	.0%
Micrografx	1.2	.0	1.2	0	.1%	.0%	.3%	.0%
Mitsui Engineering	1.2	.9	.2	7	.1%	.1%	.1%	.0%
Land Innovation	1.1	.0	1.1	0	.1%	.0%	.3%	.0%
Comshoppe	1.0	.0	1.0	0	.1%	.0%	.3%	.0%
Serbi	1.0	.0	1.0	0	.1%	.0%	.3%	.0%
Solbourne	1.0	.8	.0	70	.1%	.1%	.0%	.1%
Mega CADD	.9	.0	.9	0	.1%	.0%	.2%	.0%
Sony	.9	.8	.0	54	.1%	.1%	.0%	.1%
Raden Computational	.8	.5	.2	33	.0%	.0%	.1%	.0%
Micrograph	.8	.4	.3	20	.0%	.0%	.1%	.0%
ACDS	.8	.4	.2	12	.0%	.0%	.1%	.0%
American Small Business Comp.	.7	.0	.7	0	.0%	.0%	.2%	.0%
Engineering Software	.7	.1	.6	30	.0%	.0%	.2%	.0%
Georgia Tech Research Corp.	.7	.0	.7	0	.0%	.0%	.2%	.0%
Nihon Itek	.7	.4	.3	4	.0%	.0%	.1%	.0%
Evolution Computing	.7	.0	.7	0	.0%	.0%	.2%	.0%
Westward	.7	.7	.0	38	.0%	.1%	.0%	.0%
CADKEY	.6	.0	.6	0	.0%	.0%	.2%	.0%
GRAPHISOFT	.5	.0	.5	0	.0%	.0%	.1%	.0%
Sycotronic AG	.5	.0	.4	1	.0%	.0%	.1%	.0%
PafecS	.5	.0	.5	0	.0%	.0%	.1%	.0%
Kubota Computer	.5	.3	.2	25	.0%	.0%	.0%	.0%
Dynaware	.5	.0	.5	0	.0%	.0%	.1%	.0%
Micro CAD/CAM Systems	.5	.0	.5	0	.0%	.0%	.1%	.0%
A/E Microsystems	.5	.3	.1	45	.0%	.0%	.0%	.0%
IGC Technology	.4	.0	.4	0	.0%	.0%	.1%	.0%
MARC	.4	.0	.4	0	.0%	.0%	.1%	.0%
Graphtec Engineering	.4	.2	.2	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 1 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
DAT Standard Information syste	.4	.0	.4	0	.0%	.0%	.1%	.0%
Cascade Graphics	.3	.0	.3	0	.0%	.0%	.1%	.0%
Engineering Systems Corp.	.3	.0	.2	0	.0%	.0%	.1%	.0%
Challenger Software	.3	.0	.3	0	.0%	.0%	.1%	.0%
Mc2 Engineering Software	.3	.0	.3	0	.0%	.0%	.1%	.0%
Enabling Technologies	.2	.0	.2	0	.0%	.0%	.1%	.0%
Microcomputer Graphics	.2	.0	.2	0	.0%	.0%	.1%	.0%
Pelton Engineering	.2	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.0%	.0%
A.I. Systems	.2	.0	.2	0	.0%	.0%	.0%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.0%	.0%
TOOL Software	.1	.1	.1	5	.0%	.0%	.0%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.0%	.0%
Ashlar	.0	.0	.0	0	.0%	.0%	.0%	.0%
Synthesis	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	313.0	212.2	82.2	34,629	18.8%	20.2%	21.6%	33.8%
All Companies	1,662.3	1,048.0	380.9	102,538	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	1,321.4	864.2	262.5	93,712	79.5%	82.5%	68.9%	91.4%
All Asian-Based Companies	247.1	145.8	74.3	6,749	14.9%	13.9%	19.5%	6.6%
All European-Based Companies	93.8	38.0	44.0	2,077	5.6%	3.6%	11.6%	2.0%
All Hardware Companies	609.3	552.5	.0	86,382	36.7%	52.7%	.0%	84.2%
All Turnkey & SW Companies	1,053.0	495.5	380.9	16,156	63.3%	47.3%	100.0%	15.8%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 2
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Intergraph	182.5	102.2	32.8	1,953	28.4%	28.6%	20.5%	15.6%
Hewlett-Packard	75.3	55.2	7.0	3,174	11.7%	15.4%	4.4%	25.4%
Computervision	63.9	26.6	19.0	383	9.9%	7.4%	11.9%	3.1%
Fujitsu	37.4	22.4	11.2	897	5.8%	6.3%	7.0%	7.2%
Auto-Trol	28.9	11.3	7.4	339	4.5%	3.2%	4.6%	2.7%
ISICAD	26.9	13.0	9.1	331	4.2%	3.6%	5.7%	2.6%
McDonnell Douglas	25.5	13.8	8.4	296	4.0%	3.9%	5.3%	2.4%
Digital	20.5	15.4	.0	676	3.2%	4.3%	.0%	5.4%
Sun	15.8	14.2	.0	1,305	2.4%	4.0%	.0%	10.4%
Toshiba--NO OEM	15.4	7.7	6.2	144	2.4%	2.2%	3.9%	1.1%
t2 Solutions	10.9	5.8	3.6	102	1.7%	1.6%	2.3%	.8%
Accugraph	9.9	5.9	3.0	244	1.5%	1.7%	1.9%	2.0%
ItalCad	9.8	5.0	3.6	103	1.5%	1.4%	2.3%	.8%
Star Informatic	9.5	4.2	2.8	394	1.5%	1.2%	1.8%	3.1%
Mitachi	8.1	4.1	3.2	153	1.3%	1.1%	2.0%	1.2%
PAFEC	7.6	.0	7.6	0	1.2%	.0%	4.8%	.0%
Mitachi Zosen Info Systems	7.4	3.8	2.9	67	1.1%	1.1%	1.8%	.5%
Siemens	7.3	4.3	2.2	170	1.1%	1.2%	1.4%	1.4%
Century Research Center	6.5	3.3	2.6	39	1.0%	.9%	1.6%	.3%
Mutoh Industries--NO OEM	6.4	3.2	2.2	80	1.0%	.9%	1.4%	.6%
NEC	6.4	3.3	2.5	294	1.0%	.9%	1.6%	2.4%
Silicon Graphics	5.6	5.1	.0	144	.9%	1.4%	.0%	1.1%
Nihon Unisys	5.3	3.7	.5	50	.8%	1.0%	.3%	.4%
Autodesk	5.0	.0	5.0	0	.8%	.0%	3.2%	.0%
Mitsubishi Electric	5.0	4.2	.5	56	.8%	1.2%	.3%	.4%
Integrated Computer Graphics	3.7	1.9	1.5	350	.6%	.5%	.9%	2.8%
INS Engineering	3.6	2.5	.7	25	.6%	.7%	.5%	.2%
IBM	3.4	2.2	.6	31	.5%	.6%	.4%	.2%
Norsk Data	3.0	1.5	.9	0	.5%	.4%	.6%	.0%
Gable CAD Systems	2.8	1.7	1.1	21	.4%	.5%	.7%	.2%
Kanematsu Computer Systems	2.6	1.8	.4	30	.4%	.5%	.3%	.2%
Sigma Design	2.5	.0	2.4	252	.4%	.0%	1.5%	2.0%
CAD Lab	2.2	.0	1.8	0	.3%	.0%	1.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 2
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Sunisho Electronics	2.2	1.8	.2	13	.3%	.5%	.2%	.1%
Sunisho Electronic Systems	2.0	.0	1.7	21	.3%	.0%	1.1%	.2%
Toyo	1.8	1.1	.6	7	.3%	.3%	.4%	.1%
Uchida Yoko	1.4	.7	.6	22	.2%	.2%	.4%	.2%
Control Data	1.3	.9	.1	23	.2%	.2%	.1%	.2%
Mitsui Engineering	1.2	.9	.2	7	.2%	.2%	.2%	.1%
Dassault	1.1	.0	.9	0	.2%	.0%	.6%	.0%
CADAM	1.0	.0	.8	2	.2%	.0%	.5%	.0%
Schlumberger (Applicon)	1.0	.3	.3	9	.1%	.1%	.2%	.1%
D.C.A. Engineering	.9	.0	.9	0	.1%	.0%	.6%	.0%
Sony	.9	.8	.0	54	.1%	.2%	.0%	.4%
Raden Computational	.8	.5	.2	33	.1%	.1%	.2%	.3%
Solbourne	.8	.7	.0	56	.1%	.2%	.0%	.4%
ACDS	.8	.4	.2	12	.1%	.1%	.2%	.1%
Bechtel Software	.8	.0	.7	0	.1%	.0%	.4%	.0%
Computer-Aided Design Group	.8	.0	.6	0	.1%	.0%	.4%	.0%
Nihon Itek	.7	.4	.3	4	.1%	.1%	.2%	.0%
Kubota Computer	.5	.3	.2	25	.1%	.1%	.1%	.2%
Graphtec Engineering	.4	.2	.2	0	.1%	.1%	.1%	.0%
Westward	.4	.4	.0	21	.1%	.1%	.0%	.2%
ECON Associates	.4	.0	.3	4	.1%	.0%	.2%	.0%
Everex Systems	.3	.3	.0	36	.0%	.1%	.0%	.3%
MARC	.2	.0	.2	0	.0%	.0%	.1%	.0%
A/E Microsystems	.1	.1	.0	8	.0%	.0%	.0%	.1%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Micrograph	.1	.1	.0	3	.0%	.0%	.0%	.0%
Serbi	.1	.0	.1	0	.0%	.0%	.0%	.0%
TOOL Software	.0	.0	.0	1	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 2 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	50.0	22.7	20.7	1,365	7.8%	6.4%	13.0%	10.9%
All Companies	643.3	357.2	159.5	12,510	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	477.6	269.4	100.5	9,629	74.2%	75.4%	63.0%	77.0%
All Asian-Based Companies	110.1	64.4	34.2	2,034	17.1%	18.0%	21.4%	16.3%
All European-Based Companies	55.6	23.4	24.8	848	8.6%	6.6%	15.6%	6.8%
All Hardware Companies	80.4	66.8	.0	4,566	12.5%	18.7%	.0%	36.5%
All Turnkey & SW Companies	562.9	290.4	159.5	7,944	87.5%	81.3%	100.0%	63.5%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 3
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
IBM	111.2	72.0	20.3	1,166	26.9%	26.6%	32.4%	20.9%
Digital	78.4	58.8	.0	0	19.0%	21.7%	.0%	.0%
Fujitsu	42.1	23.2	12.5	499	10.2%	8.6%	20.0%	8.9%
Intergraph	41.6	20.8	6.7	397	10.1%	7.7%	10.7%	7.1%
ARC/YAMAGIWA	21.6	13.0	6.5	116	5.2%	4.8%	10.4%	2.1%
Computervision	14.9	6.5	4.3	184	3.6%	2.4%	6.9%	3.3%
Nihon Unisys	14.6	10.1	1.7	121	3.5%	3.7%	2.8%	2.2%
McDonnell Douglas	12.1	6.5	4.0	275	2.9%	2.4%	6.3%	4.9%
Computer-Aided Design Group	4.0	.0	2.8	0	1.0%	.0%	4.5%	.0%
Sun	3.1	2.8	.0	122	.8%	1.0%	.0%	2.2%
Dassault	3.0	.0	2.4	0	.7%	.0%	3.9%	.0%
Norsk Data	2.7	1.4	.8	0	.7%	.5%	1.3%	.0%
Siemens	2.7	1.6	.8	32	.7%	.6%	1.3%	.6%
Hitachi	2.7	2.1	.3	15	.7%	.8%	.5%	.3%
Control Data	2.5	1.7	.3	16	.6%	.6%	.5%	.3%
Hewlett-Packard	2.1	1.7	.0	106	.5%	.6%	.0%	1.9%
Mitsubishi Electric	1.4	.7	.4	5	.3%	.2%	.7%	.1%
Mutoh Industries--NO OEM	1.3	.5	.3	2	.3%	.2%	.5%	.0%
CADAM	1.2	.0	1.1	5	.3%	.0%	1.7%	.1%
PAFEC	1.2	.0	1.2	0	.3%	.0%	1.9%	.0%
Bechtel Software	1.1	.0	1.0	0	.3%	.0%	1.5%	.0%
Toyo	.9	.5	.3	20	.2%	.2%	.5%	.4%
Georgia Tech Research Corp.	.6	.0	.6	0	.2%	.0%	1.0%	.0%
Accugraph	.6	.3	.2	65	.1%	.1%	.3%	1.2%
Schlumberger (Applicon)	.4	.1	.2	8	.1%	.0%	.2%	.1%
Silicon Graphics	.4	.0	.0	0	.1%	.0%	.0%	.0%
Gable CAD Systems	.2	.1	.1	2	.1%	.1%	.1%	.0%
MARC	.2	.0	.2	0	.1%	.0%	.3%	.0%
Solbourne	.2	.2	.0	14	.0%	.1%	.0%	.3%
A/E Microsystems	.1	.1	.0	3	.0%	.0%	.0%	.1%
Engineering Systems Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Hitachi Zosen Info Systems	.1	.0	.0	1	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 3 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	71.5	59.4	4.8	2,523	17.3%	21.9%	7.6%	45.3%
All Companies	412.8	271.0	62.6	5,574	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	339.9	230.7	41.6	4,880	82.3%	85.2%	66.5%	87.6%
All Asian-Based Companies	63.1	37.1	15.6	660	15.3%	13.7%	24.9%	11.8%
All European-Based Companies	9.9	3.1	5.4	33	2.4%	1.2%	8.6%	.6%
All Hardware Companies	149.3	122.7	.0	2,760	36.2%	45.3%	.0%	49.5%
All Turnkey & SW Companies	263.6	148.2	62.6	2,813	63.8%	54.7%	100.0%	50.5%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 4
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Apple Computer	89.5	78.7	.0	17,200	14.8%	18.8%	.0%	20.4%
Compaq	79.9	79.9	.0	13,321	13.2%	19.0%	.0%	15.8%
Autodesk	70.2	.0	70.2	0	11.6%	.0%	44.2%	.0%
IBM	64.1	60.9	.0	12,926	10.6%	14.5%	.0%	15.3%
NEC	36.0	30.5	2.7	2,391	5.9%	7.3%	1.7%	2.8%
Hewlett-Packard	15.0	12.3	.0	2,496	2.5%	2.9%	.0%	3.0%
Fujitsu	14.0	7.5	5.7	700	2.3%	1.8%	3.6%	.8%
Hitachi	7.2	2.9	3.6	361	1.2%	.7%	2.2%	.4%
Intergraph	6.9	.0	6.5	0	1.1%	.0%	4.1%	.0%
Kanematsu Computer Systems	6.7	3.5	3.3	156	1.1%	.8%	2.0%	.2%
Dell Computer	6.0	6.0	.0	1,511	1.0%	1.4%	.0%	1.8%
Everex Systems	5.9	5.9	.0	1,807	1.0%	1.4%	.0%	2.1%
CPU	5.9	.0	5.6	309	1.0%	.0%	3.5%	.4%
Computer Aided Planning	5.4	.0	4.3	0	.9%	.0%	2.7%	.0%
ISICAD	5.1	.0	5.1	0	.8%	.0%	3.2%	.0%
Club Informatico SA	4.9	3.7	1.0	108	.8%	.9%	.6%	.1%
Cadtronic	4.5	3.5	.6	30	.7%	.8%	.4%	.0%
Mutoh Industries--NO OEM	4.2	2.3	1.7	157	.7%	.5%	1.1%	.2%
BATISOFT	4.0	.6	3.0	227	.7%	.1%	1.9%	.3%
Datagraphic	3.6	1.6	1.3	60	.6%	.4%	.8%	.1%
Technovision	3.6	.0	3.6	0	.6%	.0%	2.3%	.0%
Olivetti	3.5	1.4	1.2	673	.6%	.3%	.7%	.8%
Endeco Systems	3.0	.0	3.0	0	.5%	.0%	1.9%	.0%
D.C.A. Engineering	2.8	.0	2.8	0	.5%	.0%	1.8%	.0%
CADWorks	2.3	.0	1.9	0	.4%	.0%	1.2%	.0%
Infinite Graphics	2.3	.0	2.3	0	.4%	.0%	1.4%	.0%
Sigma Design	2.2	.0	2.2	0	.4%	.0%	1.4%	.0%
Computervision	2.0	.1	1.8	5	.3%	.0%	1.1%	.0%
Ziegler	1.8	.1	1.7	59	.3%	.0%	1.0%	.1%
Andor	1.8	.3	1.4	16	.3%	.1%	.9%	.0%
Robocom	1.8	.0	1.8	0	.3%	.0%	1.1%	.0%
Innovative Data Design	1.7	.0	1.7	0	.3%	.0%	1.1%	.0%
Claris	1.5	.0	1.5	0	.3%	.0%	1.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 4
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
CADAM	1.5	.0	1.4	0	.2%	.0%	.9%	.0%
Sumisho Electronics	1.5	.9	.5	160	.2%	.2%	.3%	.2%
Bentley	1.4	.0	1.4	0	.2%	.0%	.9%	.0%
CIVILSOFT	1.3	.0	1.3	0	.2%	.0%	.8%	.0%
Foresight Resources	1.2	.0	1.1	0	.2%	.0%	.7%	.0%
Micrografx	1.2	.0	1.2	0	.2%	.0%	.8%	.0%
Accugraph	1.2	.7	.4	29	.2%	.2%	.2%	.0%
ECOM Associates	1.1	.1	.8	51	.2%	.0%	.5%	.1%
Land Innovation	1.1	.0	1.1	0	.2%	.0%	.7%	.0%
Comshoppe	1.0	.0	1.0	0	.2%	.0%	.6%	.0%
Serbi	1.0	.0	1.0	0	.2%	.0%	.6%	.0%
Mega CADD	.9	.0	.9	0	.2%	.0%	.6%	.0%
American Small Business Comp.	.7	.0	.7	0	.1%	.0%	.5%	.0%
Engineering Software	.7	.1	.6	30	.1%	.0%	.4%	.0%
Micrograph	.7	.4	.3	17	.1%	.1%	.2%	.0%
Mitsubishi Electric	.7	.5	.3	79	.1%	.1%	.2%	.1%
Evolution Computing	.7	.0	.7	0	.1%	.0%	.4%	.0%
CADKEY	.6	.0	.6	0	.1%	.0%	.4%	.0%
GRAPHISOFT	.5	.0	.5	0	.1%	.0%	.3%	.0%
Sycotronic AG	.5	.0	.4	1	.1%	.0%	.3%	.0%
PafecS	.5	.0	.5	0	.1%	.0%	.3%	.0%
Dynaware	.5	.0	.5	0	.1%	.0%	.3%	.0%
Micro CAD/CAM Systems	.5	.0	.5	0	.1%	.0%	.3%	.0%
IGC Technology	.4	.0	.4	0	.1%	.0%	.3%	.0%
INS Engineering	.4	.3	.1	43	.1%	.1%	.1%	.1%
DAT Standard Information syste	.4	.0	.4	0	.1%	.0%	.2%	.0%
Cascade Graphics	.3	.0	.3	0	.0%	.0%	.2%	.0%
Challenger Software	.3	.0	.3	0	.0%	.0%	.2%	.0%
Westward	.3	.3	.0	17	.0%	.1%	.0%	.0%
Computer-Aided Design Group	.3	.0	.2	0	.0%	.0%	.1%	.0%
Mc2 Engineering Software	.3	.0	.3	0	.0%	.0%	.2%	.0%

(Continued)

Market Share

TABLE NUMBER: 4 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Bechtel Software	.2	.0	.2	0	.0%	.0%	.2%	.0%
A/E Microsystems	.2	.1	.1	33	.0%	.0%	.0%	.0%
Engineering Systems Corp.	.2	.0	.1	0	.0%	.0%	.1%	.0%
Enabling Technologies	.2	.0	.2	0	.0%	.0%	.1%	.0%
Microcomputer Graphics	.2	.0	.2	0	.0%	.0%	.1%	.0%
Pelton Engineering	.2	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
A.I. Systems	.2	.0	.2	0	.0%	.0%	.1%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.1%	.0%
CAD Lab	.1	.0	.1	0	.0%	.0%	.1%	.0%
TOOL Software	.1	.0	.1	4	.0%	.0%	.0%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
Ashlar	.0	.0	.0	0	.0%	.0%	.0%	.0%
Norsk Data	.0	.0	.0	0	.0%	.0%	.0%	.0%
Synthesis	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	191.4	130.1	56.7	30,740	31.6%	31.0%	35.7%	36.4%
All Companies	606.1	419.8	158.8	84,455	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	503.9	364.0	120.4	79,204	83.1%	86.7%	75.8%	93.8%
All Asian-Based Companies	73.9	44.3	24.6	4,055	12.2%	10.5%	15.5%	4.8%
All European-Based Companies	28.4	11.5	13.8	1,196	4.7%	2.7%	8.7%	1.4%
All Hardware Companies	379.6	363.0	.0	79,056	62.6%	86.5%	.0%	93.6%
All Turnkey & SW Companies	226.6	56.8	158.8	5,399	37.4%	13.5%	100.0%	6.4%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 5
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Intergraph	131.4	70.0	26.2	1,337	18.5%	15.5%	17.0%	2.4%
Apple Computer	63.5	55.9	.0	12,212	8.9%	12.3%	.0%	22.4%
IBM	50.2	38.3	5.7	4,201	7.1%	8.5%	3.7%	7.7%
Digital	47.5	35.6	.0	324	6.7%	7.9%	.0%	.6%
Compaq	44.0	44.0	.0	7,326	6.2%	9.7%	.0%	13.4%
Computervision	42.5	16.4	12.2	253	6.0%	3.6%	8.0%	.5%
Autodesk	42.1	.0	42.1	0	5.9%	.0%	27.4%	.0%
Hewlett-Packard	39.2	29.2	3.1	2,394	5.5%	6.5%	2.0%	4.4%
Auto-Trol	26.3	10.3	6.7	309	3.7%	2.3%	4.4%	.6%
McDonnell Douglas	18.1	9.8	5.4	233	2.5%	2.2%	3.5%	.4%
ISICAD	11.9	4.8	5.3	123	1.7%	1.1%	3.4%	.2%
Sun	11.3	10.2	.0	846	1.6%	2.2%	.0%	1.5%
Accugraph	10.5	6.3	3.1	304	1.5%	1.4%	2.0%	.6%
Dell Computer	5.7	5.7	.0	1,436	.8%	1.3%	.0%	2.6%
Everex Systems	5.6	5.6	.0	1,659	.8%	1.2%	.0%	3.0%
Computer Aided Planning	5.4	.0	4.3	0	.8%	.0%	2.8%	.0%
Computer-Aided Design Group	4.8	.0	3.5	0	.7%	.0%	2.2%	.0%
Integrated Computer Graphics	3.7	1.9	1.5	350	.5%	.4%	1.0%	.6%
D.C.A. Engineering	3.4	.0	3.4	0	.5%	.0%	2.2%	.0%
Sigma Design	2.7	.0	2.6	252	.4%	.0%	1.7%	.5%
Infinite Graphics	2.3	.0	2.3	0	.3%	.0%	1.5%	.0%
Endeco Systems	2.3	.0	2.3	0	.3%	.0%	1.5%	.0%
Bechtel Software	2.1	.0	1.9	0	.3%	.0%	1.2%	.0%
CADAM	1.8	.0	1.6	6	.3%	.0%	1.1%	.0%
Innovative Data Design	1.7	.0	1.7	0	.2%	.0%	1.1%	.0%
ECOM Associates	1.5	.2	1.0	53	.2%	.0%	.7%	.1%
Control Data	1.4	1.0	.2	15	.2%	.2%	.1%	.0%
Bentley	1.4	.0	1.4	0	.2%	.0%	.9%	.0%
CIVILSOFT	1.3	.0	1.3	0	.2%	.0%	.8%	.0%
Micrografx	1.2	.0	1.2	0	.2%	.0%	.8%	.0%
CADWorks	1.2	.0	.9	0	.2%	.0%	.6%	.0%
Land Innovation	1.1	.0	1.1	0	.2%	.0%	.7%	.0%
Comshoppe	1.0	.0	1.0	0	.1%	.0%	.7%	.0%

(Continued)

Market Share

TABLE NUMBER: 5
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Foresight Resources	1.0	.0	.9	0	.1%	.0%	.6%	.0%
Claris	.9	.0	.9	0	.1%	.0%	.6%	.0%
Solbourne	.8	.7	.0	57	.1%	.2%	.0%	.1%
ACDS	.7	.4	.2	12	.1%	.1%	.1%	.0%
Evolution Computing	.7	.0	.7	0	.1%	.0%	.4%	.0%
Mega CADD	.7	.0	.7	0	.1%	.0%	.4%	.0%
Schlumberger (Applicon)	.7	.2	.3	10	.1%	.0%	.2%	.0%
Engineering Software	.7	.1	.5	27	.1%	.0%	.3%	.0%
American Small Business Comp.	.6	.0	.6	0	.1%	.0%	.4%	.0%
CADKEY	.6	.0	.6	0	.1%	.0%	.4%	.0%
GRAPHISOFT	.5	.0	.5	0	.1%	.0%	.4%	.0%
Georgia Tech Research Corp.	.5	.0	.5	0	.1%	.0%	.3%	.0%
PafecS	.5	.0	.5	0	.1%	.0%	.3%	.0%
Dynaware	.5	.0	.5	0	.1%	.0%	.3%	.0%
A/E Microsystems	.5	.3	.1	45	.1%	.1%	.1%	.1%
Micro CAD/CAM Systems	.5	.0	.5	0	.1%	.0%	.3%	.0%
IGC Technology	.4	.0	.4	0	.1%	.0%	.3%	.0%
Cascade Graphics	.3	.0	.3	0	.0%	.0%	.2%	.0%
Challenger Software	.3	.0	.3	0	.0%	.0%	.2%	.0%
Engineering Systems Corp.	.3	.0	.2	0	.0%	.0%	.1%	.0%
Enabling Technologies	.2	.0	.2	0	.0%	.0%	.1%	.0%
Mc2 Engineering Software	.2	.0	.2	0	.0%	.0%	.1%	.0%
Microcomputer Graphics	.2	.0	.2	0	.0%	.0%	.1%	.0%
Pelton Engineering	.2	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
A.I. Systems	.2	.0	.2	0	.0%	.0%	.1%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.1%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
MARC	.1	.0	.1	0	.0%	.0%	.1%	.0%
BATISOFT	.1	.0	.0	0	.0%	.0%	.0%	.0%
Star Informatic	.1	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 5 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Ashlar	.0	.0	.0	0	.0%	.0%	.0%	.0%
Serbi	.0	.0	.0	0	.0%	.0%	.0%	.0%
Synthesis	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	157.1	108.8	41.6	21,586	22.1%	24.0%	27.1%	39.5%
All Companies	711.5	452.7	153.5	54,632	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	710.2	452.7	152.2	54,632	99.8%	100.0%	99.2%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	1.3	.0	1.3	0	.2%	.0%	.8%	.0%
All Hardware Companies	328.2	300.1	.0	50,582	46.1%	66.3%	.0%	92.6%
All Turnkey & SW Companies	383.3	152.6	153.5	4,050	53.9%	33.7%	100.0%	7.4%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 6
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	103.8	58.2	18.7	1,111	39.8%	41.0%	32.9%	21.2%
Computervision	33.6	13.6	8.7	185	12.9%	9.6%	15.3%	3.5%
Hewlett-Packard	32.4	23.6	3.1	1,351	12.4%	16.6%	5.5%	25.7%
Auto-Trol	26.3	10.3	6.7	309	10.1%	7.3%	11.9%	5.9%
McDonnell Douglas	11.9	6.4	3.6	139	4.6%	4.5%	6.3%	2.7%
ISICAD	10.0	4.8	3.4	123	3.8%	3.4%	6.0%	2.3%
Digital	9.8	7.4	.0	324	3.8%	5.2%	.0%	6.2%
Sun	9.0	8.1	.0	760	3.5%	5.7%	.0%	14.5%
Accugraph	8.9	5.3	2.7	220	3.4%	3.8%	4.7%	4.2%
Integrated Computer Graphics	3.7	1.9	1.5	350	1.4%	1.3%	2.6%	6.7%
Autodesk	3.5	.0	3.5	0	1.3%	.0%	6.2%	.0%
Sigma Design	1.3	.0	1.3	252	.5%	.0%	2.3%	4.8%
IBM	.9	.6	.2	8	.4%	.4%	.3%	.2%
D.C.A. Engineering	.8	.0	.8	0	.3%	.0%	1.5%	.0%
Bechtel Software	.8	.0	.7	0	.3%	.0%	1.2%	.0%
ACDS	.7	.4	.2	12	.3%	.3%	.4%	.2%
Computer-Aided Design Group	.7	.0	.6	0	.3%	.0%	1.1%	.0%
Solbourne	.6	.6	.0	46	.2%	.4%	.0%	.9%
CADAM	.5	.0	.4	2	.2%	.0%	.7%	.0%
Control Data	.5	.4	.1	9	.2%	.2%	.1%	.2%
ECOM Associates	.4	.0	.3	4	.1%	.0%	.5%	.1%
Schlumberger (Applicon)	.3	.1	.1	3	.1%	.1%	.2%	.1%
Everex Systems	.3	.3	.0	33	.1%	.2%	.0%	.6%
A/E Microsystems	.1	.1	.0	8	.0%	.0%	.1%	.2%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Star Informatic	.1	.0	.0	0	.0%	.0%	.0%	.0%
MARC	.0	.0	.0	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 6 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Other Companies	8.7	2.4	5.6	626	3.3%	1.7%	9.8%	11.9%
All Companies	261.0	141.9	56.6	5,250	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	260.9	141.9	56.6	5,250	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.1	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	34.8	28.8	.0	2,117	13.3%	20.3%	.0%	40.3%
All Turnkey & SW Companies	226.2	113.2	56.6	3,133	86.7%	79.7%	100.0%	59.7%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 7
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Digital	37.6	28.2	.0	0	25.8%	29.1%	.0%	.0%
IBM	30.0	19.4	5.5	315	20.6%	20.0%	30.3%	15.2%
Intergraph	23.7	11.8	3.8	226	16.2%	12.2%	21.0%	10.9%
Computervision	7.2	2.8	1.8	68	5.0%	2.9%	10.1%	3.3%
McDonnell Douglas	6.2	3.3	1.9	94	4.2%	3.4%	10.2%	4.5%
Computer-Aided Design Group	3.8	.0	2.7	0	2.6%	.0%	14.7%	.0%
Sun	2.3	2.0	.0	86	1.5%	2.1%	.0%	4.1%
Bechtel Software	1.1	.0	1.0	0	.8%	.0%	5.3%	.0%
Control Data	1.0	.7	.1	6	.7%	.7%	.6%	.3%
Hewlett-Packard	.9	.7	.0	44	.6%	.8%	.0%	2.1%
CADAM	.6	.0	.5	5	.4%	.0%	2.9%	.2%
Accugraph	.5	.3	.2	58	.4%	.3%	.8%	2.8%
Georgia Tech Research Corp.	.5	.0	.5	0	.3%	.0%	2.6%	.0%
Schlumberger (Applicon)	.3	.1	.1	7	.2%	.1%	.7%	.3%
Solbourne	.2	.1	.0	11	.1%	.1%	.0%	.6%
A/E Microsystems	.1	.1	.0	3	.1%	.1%	.2%	.2%
Engineering Systems Corp.	.1	.0	.1	0	.1%	.0%	.3%	.0%
MARC	.0	.0	.0	0	.0%	.0%	.2%	.0%
Other Companies	35.7	27.4	4.2	1,157	24.4%	28.2%	23.3%	55.7%
All Companies	146.1	97.0	18.1	2,077	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	146.1	97.0	18.1	2,077	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	71.0	58.4	.0	1,295	48.6%	60.3%	.0%	62.4%
All Turnkey & SW Companies	75.1	38.6	18.1	781	51.4%	39.7%	100.0%	37.6%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 8
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Apple Computer	63.5	55.9	.0	12,212	20.9%	26.1%	.0%	25.8%
Compeq	44.0	44.0	.0	7,326	14.4%	20.6%	.0%	15.5%
Autodesk	38.6	.0	38.6	0	12.7%	.0%	49.0%	.0%
IBM	19.2	18.3	.0	3,878	6.3%	8.5%	.0%	8.2%
Hewlett-Packard	6.0	4.9	.0	999	2.0%	2.3%	.0%	2.1%
Dell Computer	5.7	5.7	.0	1,436	1.9%	2.7%	.0%	3.0%
Computer Aided Planning	5.4	.0	4.3	0	1.8%	.0%	5.5%	.0%
Everex Systems	5.3	5.3	.0	1,626	1.8%	2.5%	.0%	3.4%
Intergraph	3.9	.0	3.7	0	1.3%	.0%	4.7%	.0%
D.C.A. Engineering	2.5	.0	2.5	0	.8%	.0%	3.2%	.0%
Infinite Graphics	2.3	.0	2.3	0	.7%	.0%	2.9%	.0%
Endeco Systems	2.3	.0	2.3	0	.7%	.0%	2.9%	.0%
ISICAD	1.9	.0	1.9	0	.6%	.0%	2.4%	.0%
Computervision	1.7	.0	1.7	0	.6%	.0%	2.2%	.0%
Innovative Data Design	1.7	.0	1.7	0	.5%	.0%	2.1%	.0%
Bentley	1.4	.0	1.4	0	.5%	.0%	1.8%	.0%
Sigma Design	1.3	.0	1.3	0	.4%	.0%	1.7%	.0%
CIVILSOFT	1.3	.0	1.3	0	.4%	.0%	1.6%	.0%
Micrografx	1.2	.0	1.2	0	.4%	.0%	1.5%	.0%
CADWorks	1.2	.0	.9	0	.4%	.0%	1.2%	.0%
Land Innovation	1.1	.0	1.1	0	.4%	.0%	1.4%	.0%
ECON Associates	1.1	.1	.8	49	.4%	.1%	1.0%	.1%
Accugraph	1.1	.6	.3	26	.3%	.3%	.4%	.1%
Comshoppe	1.0	.0	1.0	0	.3%	.0%	1.3%	.0%
Foresight Resources	1.0	.0	.9	0	.3%	.0%	1.1%	.0%
Claris	.9	.0	.9	0	.3%	.0%	1.1%	.0%
CADAM	.7	.0	.7	0	.2%	.0%	.9%	.0%
Evolution Computing	.7	.0	.7	0	.2%	.0%	.9%	.0%
Mega CADD	.7	.0	.7	0	.2%	.0%	.8%	.0%
Engineering Software	.7	.1	.5	27	.2%	.0%	.7%	.1%
American Small Business Comp.	.6	.0	.6	0	.2%	.0%	.7%	.0%
CADKEY	.6	.0	.6	0	.2%	.0%	.7%	.0%

(Continued)

Market Share

TABLE NUMBER: 8 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
GRAPHSOFT	.5	.0	.5	0	.2%	.0%	.7%	.0%
PafecS	.5	.0	.5	0	.2%	.0%	.7%	.0%
Dynaware	.5	.0	.5	0	.2%	.0%	.6%	.0%
Micro CAD/CAM Systems	.5	.0	.5	0	.1%	.0%	.6%	.0%
IGC Technology	.4	.0	.4	0	.1%	.0%	.5%	.0%
Cascade Graphics	.3	.0	.3	0	.1%	.0%	.4%	.0%
Challenger Software	.3	.0	.3	0	.1%	.0%	.3%	.0%
Bechtel Software	.2	.0	.2	0	.1%	.0%	.3%	.0%
Computer-Aided Design Group	.2	.0	.2	0	.1%	.0%	.2%	.0%
A/E Microsystems	.2	.1	.1	33	.1%	.1%	.1%	.1%
Enabling Technologies	.2	.0	.2	0	.1%	.0%	.3%	.0%
Mc2 Engineering Software	.2	.0	.2	0	.1%	.0%	.3%	.0%
Microcomputer Graphics	.2	.0	.2	0	.1%	.0%	.3%	.0%
Pelton Engineering	.2	.0	.2	0	.1%	.0%	.3%	.0%
Engineering Systems Corp.	.2	.0	.1	0	.1%	.0%	.2%	.0%
Caddlink	.2	.0	.2	0	.1%	.0%	.2%	.0%
A.I. Systems	.2	.0	.2	0	.1%	.0%	.2%	.0%
Carrier Corporation	.2	.0	.2	0	.0%	.0%	.2%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
BATISOFT	.1	.0	.0	0	.0%	.0%	.1%	.0%
Ashlar	.0	.0	.0	0	.0%	.0%	.0%	.0%
Serbi	.0	.0	.0	0	.0%	.0%	.0%	.0%
Synthesis	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	112.8	79.1	31.9	19,803	37.0%	37.0%	40.4%	41.9%
All Companies	304.5	213.8	78.8	47,305	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	303.2	213.8	77.5	47,305	99.6%	100.0%	98.4%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	1.3	.0	1.3	0	.4%	.0%	1.6%	.0%
All Hardware Companies	222.5	212.9	.0	47,170	73.1%	99.6%	.0%	99.7%
All Turnkey & SW Companies	82.0	.9	78.8	136	26.9%	.4%	100.0%	.3%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 9
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	77.3	41.2	15.4	786	15.0%	12.7%	13.3%	2.7%
IBM	66.9	51.1	7.5	5,601	13.0%	15.7%	6.5%	19.0%
Hewlett-Packard	45.6	33.9	3.7	2,756	8.9%	10.4%	3.2%	9.3%
Digital	39.6	29.7	.0	270	7.7%	9.2%	.0%	.9%
Compaq	32.0	32.0	.0	5,328	6.2%	9.8%	.0%	18.1%
Autodesk	23.7	.0	23.7	0	4.6%	.0%	20.5%	.0%
Apple Computer	21.5	18.9	.0	4,128	4.2%	5.8%	.0%	14.0%
ISICAD	18.7	7.6	8.3	194	3.6%	2.3%	7.2%	.7%
Computervision	18.3	8.5	4.4	154	3.6%	2.6%	3.8%	.5%
McDonnell Douglas	17.7	9.5	6.4	309	3.4%	2.9%	5.5%	1.0%
t2 Solutions	10.9	5.8	3.6	102	2.1%	1.8%	3.1%	.3%
ItalCad	9.8	5.0	3.6	103	1.9%	1.5%	3.1%	.3%
Siemens	9.6	5.7	2.9	192	1.9%	1.7%	2.5%	.7%
Star Informatic	9.3	4.2	2.8	394	1.8%	1.3%	2.4%	1.3%
PAFEC	8.8	.0	8.8	0	1.7%	.0%	7.6%	.0%
Norsk Data	5.8	2.9	1.8	0	1.1%	.9%	1.5%	.0%
Club Informatico SA	4.9	3.7	1.0	108	1.0%	1.1%	.8%	.4%
Cadtronic	4.5	3.5	.6	30	.9%	1.1%	.5%	.1%
Dassault	4.1	.0	3.4	0	.8%	.0%	2.9%	.0%
BATISOFT	4.0	.6	3.0	227	.8%	.2%	2.6%	.8%
Datagraphic	3.6	1.6	1.3	60	.7%	.5%	1.1%	.2%
Olivetti	3.4	1.3	1.1	638	.7%	.4%	1.0%	2.2%
Sun	3.3	3.0	.0	223	.6%	.9%	.0%	.8%
Gable CAD Systems	2.8	1.7	1.1	23	.5%	.5%	.9%	.1%
CAD Lab	2.3	.0	1.9	0	.4%	.0%	1.6%	.0%
Control Data	1.9	1.3	.2	20	.4%	.4%	.2%	.1%
Ziegler	1.8	.1	1.7	59	.4%	.0%	1.4%	.2%
Robocom	1.8	.0	1.8	0	.3%	.0%	1.6%	.0%
Serbi	1.0	.0	1.0	0	.2%	.0%	.8%	.0%
CADAM	.9	.0	.8	0	.2%	.0%	.7%	.0%
Accugraph	.8	.5	.3	24	.2%	.2%	.2%	.1%
Raden Computational	.8	.5	.2	33	.2%	.1%	.2%	.1%

(Continued)

Market Share

TABLE NUMBER: 9 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Micrograph	.8	.4	.3	20	.2%	.1%	.3%	.1%
Schlumberger (Applicon)	.7	.2	.2	7	.1%	.1%	.2%	.0%
CADWorks	.7	.0	.6	0	.1%	.0%	.5%	.0%
Sigma Design	.7	.0	.6	0	.1%	.0%	.6%	.0%
Westward	.7	.7	.0	38	.1%	.2%	.0%	.1%
Sycotronic AG	.5	.0	.4	1	.1%	.0%	.4%	.0%
Everex Systems	.5	.5	.0	147	.1%	.2%	.0%	.5%
DAT Standard Information syste	.4	.0	.4	0	.1%	.0%	.3%	.0%
Clarix	.3	.0	.3	0	.1%	.0%	.3%	.0%
Dell Computer	.3	.3	.0	76	.1%	.1%	.0%	.3%
Mega CADD	.2	.0	.2	0	.0%	.0%	.2%	.0%
Foresight Resources	.2	.0	.2	0	.0%	.0%	.1%	.0%
D.C.A. Engineering	.2	.0	.2	0	.0%	.0%	.1%	.0%
TOOL Software	.1	.1	.1	5	.0%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
MARC	.1	.0	.1	0	.0%	.0%	.1%	.0%
Engineering Software	.1	.0	.1	3	.0%	.0%	.1%	.0%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
Solbourne	.1	.1	.0	5	.0%	.0%	.0%	.0%
ACDS	.0	.0	.0	0	.0%	.0%	.0%	.0%
Synthesis	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	102.1	71.5	21.6	8,477	19.8%	22.0%	18.7%	28.7%
All Companies	515.0	324.6	115.7	29,498	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	423.5	287.1	73.3	27,465	82.2%	88.5%	63.3%	93.1%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	91.5	37.5	42.4	2,032	17.8%	11.5%	36.7%	6.9%
All Hardware Companies	199.2	178.5	.0	25,079	38.7%	55.0%	.0%	85.0%
All Turnkey & SW Companies	315.8	146.0	115.7	4,419	61.3%	45.0%	100.0%	15.0%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 10
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	61.1	34.2	11.0	654	28.7%	29.3%	20.0%	16.6%
Hewlett-Packard	37.2	27.0	3.7	1,463	17.5%	23.1%	6.7%	37.3%
ISICAD	15.7	7.6	5.3	194	7.4%	6.5%	9.7%	4.9%
Computervision	15.5	7.2	3.7	94	7.3%	6.1%	6.7%	2.4%
McDonnell Douglas	12.4	6.6	4.5	139	5.8%	5.7%	8.2%	3.5%
t2 Solutions	10.9	5.8	3.6	102	5.1%	5.0%	6.6%	2.6%
ItalCad	9.8	5.0	3.6	103	4.6%	4.3%	6.6%	2.6%
Star Informatic	9.3	4.2	2.8	394	4.4%	3.6%	5.1%	10.0%
Digital	8.2	6.2	.0	270	3.9%	5.3%	.0%	6.9%
PAFEC	7.6	.0	7.6	0	3.6%	.0%	13.9%	.0%
Siemens	7.0	4.1	2.1	162	3.3%	3.5%	3.8%	4.1%
Sun	3.3	3.0	.0	223	1.6%	2.6%	.0%	5.7%
Norsk Data	3.0	1.5	.9	0	1.4%	1.3%	1.7%	.0%
Gable CAD Systems	2.5	1.5	1.0	21	1.2%	1.3%	1.9%	.5%
CAD Lab	2.2	.0	1.8	0	1.0%	.0%	3.2%	.0%
IBM	1.2	.8	.2	11	.6%	.7%	.4%	.3%
Dassault	1.1	.0	.9	0	.5%	.0%	1.7%	.0%
Raden Computational	.8	.5	.2	33	.4%	.4%	.4%	.8%
Autodesk	.7	.0	.7	0	.3%	.0%	1.3%	.0%
Accugraph	.7	.4	.2	17	.3%	.4%	.4%	.4%
Control Data	.6	.4	.1	12	.3%	.4%	.1%	.3%
Schlumberger (Applicon)	.6	.2	.2	6	.3%	.2%	.3%	.1%
Westward	.4	.4	.0	21	.2%	.3%	.0%	.5%
Sigma Design	.3	.0	.3	0	.2%	.0%	.6%	.0%
CADAM	.2	.0	.2	0	.1%	.0%	.4%	.0%
Micrograph	.1	.1	.0	3	.0%	.1%	.0%	.1%
MARC	.1	.0	.1	0	.0%	.0%	.1%	.0%
Serbi	.1	.0	.1	0	.0%	.0%	.1%	.0%
Solbourne	.1	.1	.0	4	.0%	.0%	.0%	.1%
ACDS	.0	.0	.0	0	.0%	.0%	.0%	.0%
D.C.A. Engineering	.0	.0	.0	0	.0%	.0%	.1%	.0%
TOOL Software	.0	.0	.0	1	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 10 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Everex Systems	.0	.0	.0	3	.0%	.0%	.0%	.1%
Georgia Tech Research Corp.	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	26.8	12.4	9.9	575	12.6%	10.6%	18.0%	14.6%
All Companies	212.9	116.8	54.8	3,928	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	158.1	93.7	30.2	3,089	74.2%	80.3%	55.1%	78.6%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	54.8	23.0	24.6	839	25.8%	19.7%	44.9%	21.4%
All Hardware Companies	28.4	23.2	.0	1,505	13.3%	19.8%	.0%	38.3%
All Turnkey & SW Companies	184.5	93.6	54.8	2,423	86.7%	80.2%	100.0%	61.7%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 11
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
IBM	40.0	25.9	7.3	420	30.5%	29.4%	40.7%	22.7%
Digital	31.4	23.5	.0	0	23.9%	26.7%	.0%	.0%
Intergraph	13.9	7.0	2.2	133	10.6%	7.9%	12.4%	7.2%
McDonnell Douglas	5.3	2.9	1.9	170	4.0%	3.2%	10.8%	9.2%
Dassault	3.0	.0	2.4	0	2.3%	.0%	13.5%	.0%
Norsk Data	2.7	1.4	.8	0	2.1%	1.5%	4.6%	.0%
Computervision	2.7	1.2	.6	55	2.0%	1.4%	3.5%	3.0%
Siemens	2.6	1.5	.8	30	2.0%	1.7%	4.3%	1.6%
Control Data	1.3	.9	.2	8	1.0%	1.0%	.8%	.5%
PAFEC	1.2	.0	1.2	0	.9%	.0%	6.6%	.0%
Hewlett-Packard	.9	.7	.0	44	.7%	.8%	.0%	2.4%
CADAM	.3	.0	.3	0	.2%	.0%	1.5%	.0%
Gable CAD Systems	.2	.1	.1	2	.2%	.1%	.4%	.1%
Schlumberger (Applicon)	.1	.0	.0	2	.1%	.0%	.1%	.1%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.3%	.0%
MARC	.1	.0	.1	0	.0%	.0%	.3%	.0%
Accugraph	.0	.0	.0	5	.0%	.0%	.1%	.2%
Solbourne	.0	.0	.0	1	.0%	.0%	.0%	.1%
Other Companies	25.7	23.2	.2	979	19.6%	26.3%	.9%	53.0%
All Companies	131.0	88.3	18.0	1,847	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	121.3	85.3	12.7	1,815	92.6%	96.6%	70.5%	98.3%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	9.8	3.0	5.3	32	7.4%	3.4%	29.5%	1.7%
All Hardware Companies	57.6	47.4	.0	1,022	44.0%	53.7%	.0%	55.4%
All Turnkey & SW Companies	73.4	40.9	17.9	824	56.0%	46.3%	99.9%	44.6%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 12
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Compaq	32.0	32.0	.0	5,328	18.7%	26.7%	.0%	22.5%
IBM	25.6	24.4	.0	5,170	15.0%	20.4%	.0%	21.8%
Autodesk	23.0	.0	23.0	0	13.5%	.0%	53.6%	.0%
Apple Computer	21.5	18.9	.0	4,128	12.6%	15.8%	.0%	17.4%
Hewlett-Packard	7.5	6.2	.0	1,248	4.4%	5.2%	.0%	5.3%
Club Informatico SA	4.9	3.7	1.0	108	2.9%	3.1%	2.3%	.5%
Cadtronic	4.5	3.5	.6	30	2.6%	2.9%	1.4%	.1%
BATISOFT	4.0	.6	3.0	227	2.3%	.5%	6.9%	1.0%
Datagraphic	3.6	1.6	1.3	60	2.1%	1.4%	3.0%	.3%
Olivetti	3.4	1.3	1.1	638	2.0%	1.1%	2.7%	2.7%
ISICAD	3.0	.0	3.0	0	1.8%	.0%	7.0%	.0%
Intergraph	2.3	.0	2.2	0	1.4%	.0%	5.1%	.0%
Ziegler	1.8	.1	1.7	59	1.1%	.1%	3.9%	.3%
Robocom	1.8	.0	1.8	0	1.1%	.0%	4.2%	.0%
Serbi	.9	.0	.9	0	.5%	.0%	2.1%	.0%
Micrograph	.7	.4	.3	17	.4%	.3%	.7%	.1%
CADWorks	.7	.0	.6	0	.4%	.0%	1.3%	.0%
Sycotronic AG	.5	.0	.4	1	.3%	.0%	1.0%	.0%
Everex Systems	.5	.5	.0	145	.3%	.4%	.0%	.6%
CADAM	.4	.0	.3	0	.2%	.0%	.8%	.0%
DAT Standard Information syste	.4	.0	.4	0	.2%	.0%	.9%	.0%
Sigma Design	.3	.0	.3	0	.2%	.0%	.7%	.0%
Clarix	.3	.0	.3	0	.2%	.0%	.7%	.0%
Dell Computer	.3	.3	.0	76	.2%	.3%	.0%	.3%
Westward	.3	.3	.0	17	.2%	.2%	.0%	.1%
Computervision	.2	.1	.0	5	.1%	.1%	.1%	.0%
Mega CADD	.2	.0	.2	0	.1%	.0%	.4%	.0%
Foresight Resources	.2	.0	.2	0	.1%	.0%	.4%	.0%
American Small Business Comp.	.1	.0	.1	0	.1%	.0%	.3%	.0%
CAD Lab	.1	.0	.1	0	.1%	.0%	.2%	.0%
D.C.A. Engineering	.1	.0	.1	0	.1%	.0%	.3%	.0%
TOOL Software	.1	.0	.1	4	.1%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 12 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company *****				 Market Share			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Accugraph	.1	.1	.0	2	.0%	.0%	.1%	.0%
Engineering Software	.1	.0	.1	3	.0%	.0%	.1%	.0%
Norsk Data	.0	.0	.0	0	.0%	.0%	.0%	.0%
Synthesis	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	49.6	35.8	11.6	6,923	29.0%	30.0%	26.9%	29.2%
All Companies	171.1	119.5	43.0	23,723	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	144.2	108.1	30.4	22,562	84.3%	90.5%	70.8%	95.1%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	26.9	11.4	12.5	1,161	15.7%	9.5%	29.2%	4.9%
All Hardware Companies	113.2	108.0	.0	22,552	66.1%	90.3%	.0%	95.1%
All Turnkey & SW Companies	57.9	11.6	43.0	1,171	33.9%	9.7%	100.0%	4.9%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 13
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Fujitsu	91.8	52.2	28.9	2,055	23.5%	21.5%	28.0%	12.9%
IBM	55.0	40.4	7.1	3,639	14.1%	16.7%	6.9%	22.9%
NEC	42.4	33.8	5.2	2,686	10.9%	14.0%	5.0%	16.9%
ARC/YAMAGIWA	21.6	13.0	6.5	116	5.5%	5.3%	6.3%	.7%
Nihon Unisys	19.9	13.8	2.3	170	5.1%	5.7%	2.2%	1.1%
Computervision	18.4	7.7	8.1	155	4.7%	3.2%	7.9%	1.0%
Hitachi	18.0	9.1	7.1	528	4.6%	3.8%	6.9%	3.3%
Toshiba--NO OEM	15.4	7.7	6.2	144	3.9%	3.2%	6.0%	.9%
Mutoh Industries--NO OEM	11.9	6.0	4.2	238	3.0%	2.5%	4.1%	1.5%
Kanematsu Computer Systems	9.3	5.3	3.7	186	2.4%	2.2%	3.6%	1.2%
Digital	8.9	6.7	.0	61	2.3%	2.8%	.0%	.4%
Autodesk	8.7	.0	8.7	0	2.2%	.0%	8.4%	.0%
Intergraph	8.5	4.5	1.7	86	2.2%	1.9%	1.6%	.5%
Hitachi Zosen Info Systems	7.4	3.8	2.9	68	1.9%	1.6%	2.8%	.4%
Mitsubishi Electric	7.2	5.3	1.2	140	1.8%	2.2%	1.1%	.9%
Century Research Center	6.5	3.3	2.6	39	1.7%	1.3%	2.5%	.2%
Silicon Graphics	6.0	5.1	.0	144	1.5%	2.1%	.0%	.9%
CPU	5.9	.0	5.6	309	1.5%	.0%	5.4%	1.9%
Hewlett-Packard	5.6	4.7	.0	515	1.4%	1.9%	.0%	3.2%
INS Engineering	4.0	2.8	.8	68	1.0%	1.1%	.8%	.4%
Sumisho Electronics	3.6	2.7	.8	173	.9%	1.1%	.8%	1.1%
Technovision	3.6	.0	3.6	0	.9%	.0%	3.5%	.0%
Apple Computer	3.6	3.2	.0	688	.9%	1.3%	.0%	4.3%
Sun	3.4	3.1	.0	295	.9%	1.3%	.0%	1.9%
Toyo	2.7	1.6	.9	27	.7%	.7%	.9%	.2%
Sumisho Electronic Systems	2.0	.0	1.7	28	.5%	.0%	1.7%	.2%
Andor	1.8	.3	1.4	16	.5%	.1%	1.4%	.1%
Compaq	1.6	1.6	.0	266	.4%	.7%	.0%	1.7%
McDonnell Douglas	1.5	.8	.4	24	.4%	.3%	.4%	.2%
Uchida Yoko	1.4	.7	.6	22	.4%	.3%	.5%	.1%
Mitsui Engineering	1.2	.9	.2	7	.3%	.4%	.2%	.0%
Sony	.9	.8	.0	54	.2%	.3%	.0%	.3%

(Continued)

Market Share

TABLE NUMBER: 13 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
CADAM	.9	.0	.8	0	.2%	.0%	.8%	.0%
ISICAD	.8	.3	.4	8	.2%	.1%	.3%	.1%
Nihon Itek	.7	.4	.3	4	.2%	.2%	.3%	.0%
Sigma Design	.7	.0	.6	0	.2%	.0%	.6%	.0%
Kubota Computer	.5	.3	.2	25	.1%	.1%	.2%	.2%
Siemens	.5	.3	.2	10	.1%	.1%	.1%	.1%
CADWorks	.5	.0	.4	0	.1%	.0%	.4%	.0%
Graphtec Engineering	.4	.2	.2	0	.1%	.1%	.1%	.0%
Accugraph	.4	.2	.1	10	.1%	.1%	.1%	.1%
Gable CAD Systems	.2	.1	.1	0	.1%	.1%	.1%	.0%
Control Data	.2	.2	.0	2	.1%	.1%	.0%	.0%
MARC	.2	.0	.2	0	.1%	.0%	.2%	.0%
Claris	.2	.0	.2	0	.0%	.0%	.1%	.0%
D.C.A. Engineering	.2	.0	.2	0	.0%	.0%	.1%	.0%
Everex Systems	.1	.1	.0	37	.0%	.1%	.0%	.2%
Mega CADD	.1	.0	.1	0	.0%	.0%	.1%	.0%
Solbourne	.1	.1	.0	6	.0%	.0%	.0%	.0%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.0%	.0%
ECOM Associates	.0	.0	.0	1	.0%	.0%	.0%	.0%
Mc2 Engineering Software	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	46.3	27.1	16.7	3,763	11.9%	11.2%	16.2%	23.7%
All Companies	390.8	242.4	103.1	15,888	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	144.7	97.2	29.1	9,169	37.0%	40.1%	28.2%	57.7%
All Asian-Based Companies	245.3	144.8	73.8	6,709	62.8%	59.7%	71.6%	42.2%
All European-Based Companies	.8	.4	.3	10	.2%	.2%	.2%	.1%
All Hardware Companies	65.6	59.1	.0	8,528	16.8%	24.4%	.0%	53.7%
All Turnkey & SW Companies	325.2	183.3	103.1	7,360	83.2%	75.6%	100.0%	46.3%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 14
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Fujitsu	36.7	22.0	11.0	880	24.6%	25.1%	25.1%	29.4%
Toshiba--NO OEM	15.4	7.7	6.2	144	10.3%	8.8%	14.0%	4.8%
Computervision	13.6	5.4	6.3	97	9.1%	6.1%	14.4%	3.3%
Hitachi	8.1	4.1	3.2	153	5.4%	4.6%	7.4%	5.1%
Hitachi Zosen Info Systems	7.4	3.8	2.9	67	4.9%	4.3%	6.5%	2.2%
Intergraph	6.7	3.7	1.2	72	4.5%	4.3%	2.7%	2.4%
Century Research Center	6.5	3.3	2.6	39	4.3%	3.7%	5.8%	1.3%
Mutoh Industries--NO OEM	6.4	3.2	2.2	80	4.3%	3.7%	5.0%	2.7%
NEC	6.4	3.3	2.5	294	4.3%	3.8%	5.8%	9.9%
Silicon Graphics	5.6	5.1	.0	144	3.8%	5.9%	.0%	4.8%
Nihon Unisys	5.3	3.7	.5	50	3.5%	4.3%	1.2%	1.7%
Mitsubishi Electric	5.0	4.2	.5	56	3.4%	4.8%	1.0%	1.9%
Hewlett-Packard	4.0	3.3	.0	277	2.7%	3.8%	.0%	9.3%
IHS Engineering	3.6	2.5	.7	25	2.4%	2.9%	1.6%	.8%
Sun	2.7	2.5	.0	265	1.8%	2.8%	.0%	8.9%
Kanematsu Computer Systems	2.6	1.8	.4	30	1.7%	2.1%	1.0%	1.0%
Sumisho Electronics	2.2	1.8	.2	13	1.5%	2.1%	.5%	.4%
Sumisho Electronic Systems	2.0	.0	1.7	21	1.3%	.0%	3.9%	.7%
Digital	1.9	1.4	.0	61	1.2%	1.6%	.0%	2.0%
Toyo	1.8	1.1	.6	7	1.2%	1.3%	1.3%	.2%
Uchida Yoko	1.4	.7	.6	22	.9%	.8%	1.3%	.7%
Mitsui Engineering	1.2	.9	.2	7	.8%	1.0%	.5%	.2%
IBM	1.2	.7	.2	11	.8%	.8%	.5%	.4%
McDonnell Douglas	1.0	.5	.3	14	.6%	.6%	.7%	.5%
Sony	.9	.8	.0	54	.6%	.9%	.0%	1.8%
Autodesk	.8	.0	.8	0	.5%	.0%	1.8%	.0%
Nihon Itek	.7	.4	.3	4	.5%	.4%	.6%	.1%
ISICAD	.7	.3	.2	8	.5%	.4%	.5%	.3%
Kubota Computer	.5	.3	.2	25	.3%	.4%	.4%	.8%
Graphtec Engineering	.4	.2	.2	0	.3%	.2%	.3%	.0%
Siemens	.4	.2	.1	9	.2%	.3%	.3%	.3%
Sigma Design	.3	.0	.3	0	.2%	.0%	.7%	.0%

(Continued)

Market Share

TABLE NUMBER: 14 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****				 Market Share			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Accugraph	.3	.2	.1	7	.2%	.2%	.2%	.2%
CADAM	.2	.0	.2	0	.2%	.0%	.5%	.0%
Gable CAD Systems	.2	.1	.1	0	.1%	.1%	.2%	.0%
MARC	.1	.0	.1	0	.1%	.0%	.2%	.0%
Control Data	.1	.1	.0	1	.0%	.1%	.0%	.0%
Solbourne	.1	.1	.0	5	.0%	.1%	.0%	.2%
D.C.A. Engineering	.0	.0	.0	0	.0%	.0%	.1%	.0%
Everex Systems	.0	.0	.0	1	.0%	.0%	.0%	.0%
Georgia Tech Research Corp.	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	14.0	7.9	4.7	164	9.4%	9.0%	10.7%	5.5%
All Companies	149.3	87.6	43.9	2,988	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	39.3	23.3	9.8	963	26.3%	26.6%	22.3%	32.2%
All Asian-Based Companies	109.4	64.0	33.9	2,017	73.3%	73.0%	77.3%	67.5%
All European-Based Companies	.6	.4	.2	9	.4%	.4%	.5%	.3%
All Hardware Companies	15.2	13.2	.0	806	10.2%	15.0%	.0%	27.0%
All Turnkey & SW Companies	134.1	74.5	43.9	2,182	89.8%	85.0%	100.0%	73.0%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 15
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Fujitsu	41.3	22.8	12.3	489	33.4%	29.4%	49.2%	33.0%
IBM	37.8	24.5	6.9	397	30.6%	31.5%	27.6%	26.7%
ARC/YAMAGIWA	21.6	13.0	6.5	116	17.5%	16.7%	26.0%	7.8%
Nihon Unisys	14.6	10.1	1.7	121	11.8%	13.0%	7.0%	8.1%
Digital	7.1	5.3	.0	0	5.7%	6.8%	.0%	.0%
Computervision	4.8	2.3	1.8	58	3.9%	3.0%	7.2%	3.9%
Hitachi	2.7	2.1	.3	15	2.2%	2.7%	1.2%	1.0%
Intergraph	1.5	.8	.3	15	1.2%	1.0%	1.0%	1.0%
Mitsubishi Electric	1.4	.7	.4	5	1.2%	.8%	1.7%	.3%
Mutoh Industries--NO OEM	1.3	.5	.3	2	1.1%	.6%	1.3%	.1%
Toyo	.9	.5	.3	20	.7%	.7%	1.2%	1.3%
Sun	.7	.6	.0	30	.6%	.8%	.0%	2.0%
McDonnell Douglas	.5	.3	.2	10	.4%	.3%	.6%	.7%
Silicon Graphics	.4	.0	.0	0	.3%	.0%	.0%	.0%
CADAM	.3	.0	.3	0	.2%	.0%	1.0%	.0%
Hewlett-Packard	.3	.2	.0	14	.2%	.3%	.0%	.9%
Control Data	.2	.1	.0	1	.1%	.1%	.1%	.1%
Siemens	.1	.1	.0	2	.1%	.1%	.2%	.1%
MARC	.1	.0	.1	0	.1%	.0%	.5%	.0%
Hitachi Zosen Info Systems	.1	.0	.0	1	.1%	.0%	.1%	.1%
Georgia Tech Research Corp.	.1	.0	.1	0	.0%	.0%	.2%	.0%
Accugraph	.0	.0	.0	2	.0%	.0%	.0%	.1%
Gable CAD Systems	.0	.0	.0	0	.0%	.0%	.0%	.0%
Solbourne	.0	.0	.0	1	.0%	.0%	.0%	.1%

(Continued)

Market Share

TABLE NUMBER: 15 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	7.8	6.9	.2	304	6.3%	8.9%	.8%	20.5%
All Companies	123.6	77.7	25.0	1,483	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	61.2	40.9	9.6	831	49.5%	52.7%	38.2%	56.0%
All Asian-Based Companies	62.3	36.7	15.4	651	50.4%	47.2%	61.6%	43.9%
All European-Based Companies	.2	.1	.1	2	.1%	.1%	.2%	.1%
All Hardware Companies	16.0	13.0	.0	349	12.9%	16.8%	.0%	23.5%
All Turnkey & SW Companies	107.7	64.7	25.0	1,134	87.1%	83.2%	100.0%	76.5%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 16
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
NEC	36.0	30.5	2.7	2,391	30.6%	39.6%	7.8%	20.9%
IBM	16.0	15.2	.0	3,231	13.6%	19.8%	.0%	28.3%
Fujitsu	13.8	7.4	5.6	686	11.7%	9.6%	16.3%	6.0%
Autodesk	7.9	.0	7.9	0	6.7%	.0%	23.2%	.0%
Mitachi	7.2	2.9	3.6	361	6.1%	3.8%	10.4%	3.2%
Kanematsu Computer Systems	6.7	3.5	3.3	156	5.7%	4.5%	9.5%	1.4%
CPU	5.9	.0	5.6	309	5.0%	.0%	16.4%	2.7%
Mutoh Industries--NO OEM	4.2	2.3	1.7	157	3.5%	3.0%	5.0%	1.4%
Technovision	3.6	.0	3.6	0	3.1%	.0%	10.5%	.0%
Apple Computer	3.6	3.2	.0	688	3.0%	4.1%	.0%	6.0%
Andor	1.8	.3	1.4	16	1.5%	.4%	4.2%	.1%
Compaq	1.6	1.6	.0	266	1.4%	2.1%	.0%	2.3%
Sumisho Electronics	1.5	.9	.5	160	1.2%	1.2%	1.6%	1.4%
Hewlett-Packard	1.4	1.1	.0	225	1.1%	1.4%	.0%	2.0%
Mitsubishi Electric	.7	.5	.3	79	.6%	.6%	.8%	.7%
CADWorks	.5	.0	.4	0	.4%	.0%	1.1%	.0%
INS Engineering	.4	.3	.1	43	.3%	.4%	.2%	.4%
CADAM	.4	.0	.3	0	.3%	.0%	1.0%	.0%
Sigma Design	.3	.0	.3	0	.3%	.0%	.9%	.0%
Intergraph	.3	.0	.2	0	.2%	.0%	.7%	.0%
Clarix	.2	.0	.2	0	.1%	.0%	.4%	.0%
ISICAD	.1	.0	.1	0	.1%	.0%	.4%	.0%
Everex Systems	.1	.1	.0	36	.1%	.2%	.0%	.3%
D.C.A. Engineering	.1	.0	.1	0	.1%	.0%	.3%	.0%
Mega CADD	.1	.0	.1	0	.1%	.0%	.3%	.0%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.1%	.0%
ECOM Associates	.0	.0	.0	1	.0%	.0%	.0%	.0%
Mc2 Engineering Software	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 16 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	24.6	12.3	11.8	3,294	20.9%	16.0%	34.5%	28.9%
All Companies	117.8	77.1	34.2	11,416	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	44.3	32.9	9.7	7,374	37.6%	42.7%	28.4%	64.6%
All Asian-Based Companies	73.6	44.1	24.5	4,042	62.4%	57.3%	71.6%	35.4%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	34.4	32.9	.0	7,373	29.2%	42.7%	.0%	64.6%
All Turnkey & SW Companies	83.5	44.2	34.2	4,043	70.8%	57.3%	100.0%	35.4%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 17
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	13.8	7.4	2.8	141	30.7%	26.0%	31.9%	5.6%
IBM	6.6	5.3	.6	682	14.8%	18.6%	7.3%	27.1%
Digital	3.0	2.2	.0	20	6.6%	7.8%	.0%	.8%
Auto-Trol	2.6	1.0	.7	31	5.8%	3.6%	7.6%	1.2%
Compeq	2.4	2.4	.0	400	5.3%	8.5%	.0%	15.9%
Hewlett-Packard	2.0	1.4	.2	110	4.4%	5.0%	2.1%	4.4%
Fujitsu	1.8	1.0	.6	40	4.0%	3.5%	6.5%	1.6%
Computervision	1.6	.6	.5	10	3.6%	2.3%	5.3%	.4%
Apple Computer	.9	.8	.0	172	2.0%	2.8%	.0%	6.8%
Sun	.9	.8	.0	64	1.9%	2.7%	.0%	2.5%
Endeco Systems	.8	.0	.8	0	1.7%	.0%	8.7%	.0%
Autodesk	.7	.0	.7	0	1.6%	.0%	8.2%	.0%
Sigma Design	.7	.0	.6	0	1.5%	.0%	7.3%	.0%
ISICAD	.5	.2	.3	6	1.2%	.8%	2.9%	.2%
McDonnell Douglas	.4	.2	.1	5	.9%	.8%	1.4%	.2%
Computer-Aided Design Group	.3	.0	.2	0	.6%	.0%	2.1%	.0%
Claris	.2	.0	.2	0	.5%	.0%	2.7%	.0%
Control Data	.2	.1	.0	2	.3%	.4%	.2%	.1%
Olivetti	.1	.0	.0	34	.3%	.1%	.2%	1.4%
Star Informatic	.1	.0	.0	0	.2%	.1%	.2%	.0%
D.C.A. Engineering	.1	.0	.1	0	.2%	.0%	.9%	.0%
Georgia Tech Research Corp.	.1	.0	.1	0	.2%	.0%	.8%	.0%
Innovative Data Design	.1	.0	.1	0	.2%	.0%	.8%	.0%
Foresight Resources	.1	.0	.1	0	.1%	.0%	.6%	.0%
Micro CAD/CAM Systems	.1	.0	.1	0	.1%	.0%	.6%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.3%	.0%
Mc2 Engineering Software	.0	.0	.0	0	.1%	.0%	.5%	.0%
CADAM	.0	.0	.0	0	.1%	.0%	.3%	.0%
ECON Associates	.0	.0	.0	1	.1%	.0%	.1%	.0%
Solbourne	.0	.0	.0	1	.0%	.0%	.0%	.1%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.1%	.0%
Serbi	.0	.0	.0	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 17 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Sycotronic AG	.0	.0	.0	0	.0%	.0%	.1%	.0%
Other Companies	7.5	4.8	2.2	803	16.6%	17.1%	26.0%	31.9%
All Companies	45.0	28.3	8.6	2,521	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	43.0	27.3	8.0	2,447	95.5%	96.3%	92.8%	97.1%
All Asian-Based Companies	1.8	1.0	.6	40	4.0%	3.5%	6.5%	1.6%
All European-Based Companies	.2	.1	.1	34	.5%	.2%	.7%	1.4%
All Hardware Companies	16.3	14.8	.0	2,193	36.2%	52.3%	.0%	87.0%
All Turnkey & SW Companies	28.7	13.5	8.6	328	63.8%	47.7%	100.0%	13.0%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 18
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Technical Workstation
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	10.9	6.1	2.0	117	54.2%	55.9%	46.9%	34.0%
Auto-Trol	2.6	1.0	.7	31	12.9%	9.3%	15.8%	8.9%
Hewlett-Packard	1.8	1.3	.2	82	8.7%	11.5%	4.3%	24.0%
Computervision	1.3	.5	.3	7	6.4%	4.8%	7.9%	2.0%
Fujitsu	.7	.4	.2	17	3.5%	3.8%	5.0%	5.0%
Sun	.7	.6	.0	58	3.4%	5.7%	.0%	16.8%
Digital	.6	.5	.0	20	3.0%	4.2%	.0%	5.9%
ISICAD	.5	.2	.2	6	2.2%	2.0%	3.8%	1.6%
Sigma Design	.5	.0	.4	0	2.2%	.0%	10.0%	.0%
McDonnell Douglas	.3	.2	.1	3	1.3%	1.4%	1.9%	.9%
IBM	.1	.1	.0	1	.5%	.6%	.5%	.3%
Star Informatic	.1	.0	.0	0	.4%	.4%	.5%	.0%
Autodesk	.1	.0	.1	0	.3%	.0%	1.4%	.0%
Control Data	.1	.0	.0	1	.2%	.3%	.2%	.3%
Computer-Aided Design Group	.0	.0	.0	0	.2%	.0%	.7%	.0%
D.C.A. Engineering	.0	.0	.0	0	.1%	.0%	.5%	.0%
Solbourne	.0	.0	.0	1	.1%	.1%	.0%	.3%
CADAM	.0	.0	.0	0	.0%	.0%	.2%	.0%
ECON Associates	.0	.0	.0	0	.0%	.0%	.0%	.0%
Georgia Tech Research Corp.	.0	.0	.0	0	.0%	.0%	.2%	.0%
Other Companies	.6	.0	.5	0	3.1%	.4%	12.0%	.0%
All Companies	20.2	10.9	4.2	344	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	19.4	10.5	4.0	327	96.0%	95.8%	94.5%	95.0%
All Asian-Based Companies	.7	.4	.2	17	3.5%	3.8%	5.0%	5.0%
All European-Based Companies	.1	.0	.0	0	.4%	.4%	.5%	.0%
All Hardware Companies	2.1	1.7	.0	138	10.2%	15.5%	.0%	40.2%
All Turnkey & SW Companies	18.1	9.2	4.2	206	89.8%	84.5%	100.0%	59.8%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 19
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Host/Server
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
IBM	3.3	2.2	.6	35	27.5%	26.9%	38.4%	20.9%
Intergraph	2.5	1.3	.4	24	20.5%	15.6%	25.2%	14.2%
Digital	2.4	1.8	.0	0	19.4%	22.0%	.0%	.0%
Fujitsu	.8	.4	.2	9	6.6%	5.4%	15.1%	5.7%
Computervision	.3	.1	.1	3	2.2%	1.5%	4.4%	1.5%
Computer-Aided Design Group	.2	.0	.1	0	1.6%	.0%	8.8%	.0%
Sun	.2	.2	.0	7	1.4%	1.9%	.0%	3.9%
McDonnell Douglas	.1	.1	.0	2	1.2%	1.0%	2.5%	1.3%
Control Data	.1	.1	.0	1	.8%	.9%	.6%	.4%
Georgia Tech Research Corp.	.1	.0	.1	0	.5%	.0%	3.8%	.0%
Hewlett-Packard	.1	.1	.0	3	.5%	.6%	.0%	1.9%
CADAM	.0	.0	.0	0	.1%	.0%	.6%	.1%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.6%	.0%
Other Companies	2.4	1.9	.2	84	19.8%	24.2%	13.2%	49.9%
All Companies	12.1	8.0	1.6	167	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	11.3	7.6	1.4	158	93.4%	94.6%	84.9%	94.3%
All Asian-Based Companies	.8	.4	.2	9	6.6%	5.4%	15.1%	5.7%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	4.7	3.9	.0	94	38.8%	48.7%	.0%	55.9%
All Turnkey & SW Companies	7.4	4.1	1.6	74	61.2%	51.3%	100.0%	44.1%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 20
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
IBM	3.2	3.0	.0	646	25.2%	32.4%	.0%	32.2%
Compaq	2.4	2.4	.0	400	18.9%	25.6%	.0%	19.9%
Apple Computer	.9	.8	.0	172	7.0%	8.4%	.0%	8.6%
Endeco Systems	.8	.0	.8	0	5.9%	.0%	26.2%	.0%
Autodesk	.7	.0	.7	0	5.1%	.0%	22.7%	.0%
Intergraph	.4	.0	.4	0	3.2%	.0%	13.6%	.0%
Fujitsu	.3	.1	.1	13	2.1%	1.5%	3.8%	.7%
Sigma Design	.2	.0	.2	0	1.9%	.0%	7.3%	.0%
Clarix	.2	.0	.2	0	1.8%	.0%	8.0%	.0%
Hewlett-Packard	.2	.1	.0	25	1.2%	1.3%	.0%	1.2%
Olivetti	.1	.0	.0	34	.9%	.3%	.7%	1.7%
ISICAD	.1	.0	.1	0	.7%	.0%	3.1%	.0%
Innovative Data Design	.1	.0	.1	0	.6%	.0%	2.4%	.0%
Computervision	.1	.0	.1	0	.5%	.0%	2.1%	.0%
D.C.A. Engineering	.1	.0	.1	0	.5%	.0%	2.1%	.0%
Foresight Resources	.1	.0	.1	0	.5%	.0%	1.7%	.0%
Micro CAD/CAM Systems	.1	.0	.1	0	.4%	.0%	1.7%	.0%
Mc2 Engineering Software	.0	.0	.0	0	.3%	.0%	1.4%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.2%	.0%	.7%	.0%
ECOM Associates	.0	.0	.0	1	.2%	.0%	.3%	.1%
American Small Business Comp.	.0	.0	.0	0	.1%	.0%	.3%	.0%
CADAM	.0	.0	.0	0	.1%	.0%	.3%	.0%
Computer-Aided Design Group	.0	.0	.0	0	.1%	.0%	.3%	.0%
Serbi	.0	.0	.0	0	.1%	.0%	.3%	.0%
Sycotronic AG	.0	.0	.0	0	.1%	.0%	.3%	.0%

(Continued)

Market Share

TABLE NUMBER: 20 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: AEC
 PLATFORM: Personal Computer
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	4.5	2.9	1.5	719	35.1%	30.6%	53.5%	35.8%
All Companies	12.7	9.4	2.9	2,010	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	12.3	9.2	2.7	1,962	96.8%	98.2%	94.8%	97.6%
All Asian-Based Companies	.3	.1	.1	13	2.1%	1.5%	3.8%	.7%
All European-Based Companies	.1	.0	.0	34	1.1%	.3%	1.4%	1.7%
All Hardware Companies	9.5	9.2	.0	1,961	74.8%	98.2%	.0%	97.6%
All Turnkey & SW Companies	3.2	.2	2.9	49	25.2%	1.8%	100.0%	2.4%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 21
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Intergraph	308.6	164.4	61.4	3,139	30.6%	29.8%	22.4%	13.1%
Digital	89.9	67.4	.0	615	8.9%	12.2%	.0%	2.6%
IBM	54.0	38.3	7.9	2,664	5.4%	6.9%	2.9%	11.1%
Siemens	53.1	31.3	15.9	1,137	5.3%	5.7%	5.8%	4.7%
ESRI	40.2	.0	35.7	0	4.0%	.0%	13.0%	.0%
McDonnell Douglas	38.4	20.7	12.2	694	3.8%	3.8%	4.4%	2.9%
Fujitsu	31.2	17.7	9.8	698	3.1%	3.2%	3.6%	2.9%
Landmark Graphics	30.7	15.0	9.2	249	3.0%	2.7%	3.4%	1.0%
Mitsubishi Electric	28.8	21.1	4.6	560	2.9%	3.8%	1.7%	2.3%
Hitachi	18.0	11.9	4.3	206	1.8%	2.2%	1.6%	.9%
Synercom	17.5	.0	10.7	0	1.7%	.0%	3.9%	.0%
Compaq	17.4	17.4	.0	2,896	1.7%	3.2%	.0%	12.0%
Autodesk	16.5	.0	16.5	0	1.6%	.0%	6.0%	.0%
Sysscan	15.6	7.0	4.1	116	1.6%	1.3%	1.5%	.5%
GeoVision Corp.	14.9	10.0	3.7	176	1.5%	1.8%	1.4%	.7%
Apple Computer	10.4	9.2	.0	2,000	1.0%	1.7%	.0%	8.3%
ETAK	10.0	1.2	8.5	25	1.0%	.2%	3.1%	.1%
Computervision	9.0	3.8	2.4	67	.9%	.7%	.9%	.3%
Sun	8.4	7.6	.0	650	.8%	1.4%	.0%	2.7%
Mitsui Engineering	8.1	5.6	1.6	50	.8%	1.0%	.6%	.2%
ICL	7.4	4.7	1.9	219	.7%	.9%	.7%	.9%
ACDS	6.8	3.5	2.2	52	.7%	.6%	.8%	.2%
Geobased Systems	6.3	1.3	4.4	113	.6%	.2%	1.6%	.5%
ERDAS	5.5	2.5	2.5	36	.5%	.5%	.9%	.1%
Control Data	5.5	3.9	.7	59	.5%	.7%	.2%	.2%
NEC	5.3	3.0	1.9	260	.5%	.5%	.7%	1.1%
Zycor	5.0	.0	3.5	0	.5%	.0%	1.3%	.0%
Mutoh Industries--NO OEM	4.8	2.3	1.7	96	.5%	.4%	.6%	.4%
Integrated Information Systems	4.7	.0	2.5	0	.5%	.0%	.9%	.0%
CADIX	4.3	1.7	2.2	30	.4%	.3%	.8%	.1%
INS Engineering	4.3	3.0	.9	7	.4%	.5%	.3%	.0%
Uchida Yoko	4.2	2.1	1.7	66	.4%	.4%	.6%	.3%
Mapinfo	4.1	.0	4.1	0	.4%	.0%	1.5%	.0%

(Continued)

Market Share

TABLE NUMBER: 21
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company	Total				Market Share			
	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
STI-Straessle	4.1	1.8	2.0	26	.4%	.3%	.7%	.1%
Dynamic Graphics	4.0	.0	3.6	0	.4%	.0%	1.3%	.0%
Geographic Systems (WPS)	2.9	.0	2.9	0	.3%	.0%	1.1%	.0%
LandCadd	2.6	.0	2.5	0	.3%	.0%	.9%	.0%
Strategic Locations Planning	2.4	.0	2.4	0	.2%	.0%	.9%	.0%
Secographics	2.4	.6	.6	19	.2%	.1%	.2%	.1%
Century Research Center	2.3	1.1	.9	14	.2%	.2%	.3%	.1%
Cadtronic	2.2	1.7	.3	19	.2%	.3%	.1%	.1%
Norsk Data	2.2	1.1	.7	0	.2%	.2%	.2%	.0%
ItalCad	2.2	1.1	.8	23	.2%	.2%	.3%	.1%
PacSoft	1.8	.0	1.8	0	.2%	.0%	.7%	.0%
Radian Corporation	1.8	.0	1.4	0	.2%	.0%	.5%	.0%
Hewlett-Packard	1.7	1.4	.0	159	.2%	.3%	.0%	.7%
Dennis Klein & Associates	1.6	.0	1.6	2	.2%	.0%	.6%	.0%
GEOVISION Inc.	1.5	.6	.7	593	.2%	.1%	.3%	2.5%
Olivetti	1.5	.4	.4	249	.2%	.1%	.2%	1.0%
Ultimap	1.5	.8	.5	20	.1%	.1%	.2%	.1%
Toshiba--NO OEM	1.5	.7	.6	14	.1%	.1%	.2%	.1%
Ziegler	1.3	.0	1.2	45	.1%	.0%	.4%	.2%
Terr-Mar	1.3	.6	.7	36	.1%	.1%	.3%	.1%
D.C.A. Engineering	1.3	.0	1.3	0	.1%	.0%	.5%	.0%
Daniel Geophysical	1.1	.2	.8	10	.1%	.0%	.3%	.0%
Kork Systems	1.1	.3	.8	14	.1%	.1%	.3%	.1%
Dell Computer	1.1	1.1	.0	271	.1%	.2%	.0%	1.1%
Autometric	1.0	.5	.4	85	.1%	.1%	.1%	.4%
Geographix	1.0	.0	1.0	0	.1%	.0%	.4%	.0%
Geometh	1.0	.0	1.0	0	.1%	.0%	.4%	.0%
Terra Sciences	1.0	.0	1.0	0	.1%	.0%	.4%	.0%
Everex Systems	1.0	1.0	.0	291	.1%	.2%	.0%	1.2%
Pasco	.9	.4	.5	12	.1%	.1%	.2%	.0%
Sunisho Electronics	.8	.6	.2	45	.1%	.1%	.1%	.2%

(Continued)

Market Share

TABLE NUMBER: 21 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Micrograph	.6	.3	.2	16	.1%	.1%	.1%	.1%
Bentley	.5	.0	.5	0	.1%	.0%	.2%	.0%
Maptek	.5	.0	.5	0	.0%	.0%	.2%	.0%
Solbourne	.4	.4	.0	30	.0%	.1%	.0%	.1%
Foresight Resources	.4	.0	.4	0	.0%	.0%	.1%	.0%
Andor	.3	.1	.2	4	.0%	.0%	.1%	.0%
Accugraph	.3	.2	.1	9	.0%	.0%	.0%	.0%
Engineering Systems Corp.	.3	.0	.2	0	.0%	.0%	.1%	.0%
MPSI Systems	.3	.1	.2	15	.0%	.0%	.1%	.1%
Robocom	.3	.0	.3	0	.0%	.0%	.1%	.0%
A/E Microsystems	.2	.1	.1	20	.0%	.0%	.0%	.1%
Geosoft	.2	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
Kubota Computer	.2	.1	.1	8	.0%	.0%	.0%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.0%	.0%
A.I. Systems	.1	.0	.1	0	.0%	.0%	.0%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.0%	.0%
Innovative Data Design	.1	.0	.1	0	.0%	.0%	.0%	.0%
Other Companies	166.2	86.4	64.0	6,456	16.5%	15.7%	23.3%	26.9%
All Companies	1,007.7	550.8	274.2	24,034	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	801.8	429.1	215.5	20,102	79.6%	77.9%	78.6%	83.6%
All Asian-Based Companies	115.3	72.1	30.9	2,084	11.4%	13.1%	11.3%	8.7%
All European-Based Companies	90.6	49.6	27.8	1,848	9.0%	9.0%	10.1%	7.7%
All Hardware Companies	200.7	171.1	.0	14,222	19.9%	31.1%	.0%	59.2%
All Turnkey & SW Companies	807.0	379.7	274.2	9,812	80.1%	68.9%	100.0%	40.8%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 22
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Intergraph	243.8	136.6	43.8	2,609	47.0%	48.4%	33.2%	32.7%
Siemens	44.6	26.3	13.4	1,038	8.6%	9.3%	10.2%	13.0%
Landmark Graphics	30.7	15.0	9.2	249	5.9%	5.3%	7.0%	3.1%
Mitsubishi Electric	20.2	16.7	1.8	224	3.9%	5.9%	1.4%	2.8%
Digital	18.6	14.0	.0	615	3.6%	5.0%	.0%	7.7%
McDonnell Douglas	18.5	10.0	5.5	216	3.6%	3.5%	4.2%	2.7%
ESRI	15.7	.0	13.5	0	3.0%	.0%	10.2%	.0%
Fujitsu	12.5	7.5	3.7	299	2.4%	2.7%	2.8%	3.7%
GeoVision Corp.	10.4	7.3	2.3	131	2.0%	2.6%	1.7%	1.6%
Synercom	10.0	.0	6.1	0	1.9%	.0%	4.6%	.0%
Mitachi	8.1	4.1	3.2	153	1.6%	1.4%	2.5%	1.9%
Mitsui Engineering	8.1	5.6	1.6	50	1.6%	2.0%	1.2%	.6%
ICL	7.4	4.7	1.9	219	1.4%	1.7%	1.4%	2.7%
Computervision	6.9	3.0	1.7	40	1.3%	1.1%	1.3%	.5%
ACDS	6.8	3.5	2.2	52	1.3%	1.2%	1.6%	.7%
Sun	6.7	6.1	.0	584	1.3%	2.1%	.0%	7.3%
NEC	4.6	2.4	1.8	211	.9%	.8%	1.4%	2.6%
CADIX	4.3	1.7	2.2	30	.8%	.6%	1.6%	.4%
Uchida Yoko	4.2	2.1	1.7	66	.8%	.7%	1.3%	.8%
Syscan	3.8	1.7	1.0	0	.7%	.6%	.7%	.0%
STI-Stressle	2.8	1.3	1.4	20	.5%	.5%	1.1%	.3%
Zycor	2.5	.0	1.8	0	.5%	.0%	1.3%	.0%
Dynamic Graphics	2.4	.0	2.2	0	.5%	.0%	1.6%	.0%
Century Research Center	2.3	1.1	.9	14	.4%	.4%	.7%	.2%
ItalCad	2.2	1.1	.8	23	.4%	.4%	.6%	.3%
IBM	2.1	1.4	.4	19	.4%	.5%	.3%	.2%
Mutoh Industries--NO OEM	1.9	1.0	.7	24	.4%	.3%	.5%	.3%
Control Data	1.9	1.3	.2	34	.4%	.5%	.2%	.4%
Hewlett-Packard	1.6	1.3	.0	150	.3%	.5%	.0%	1.9%
Ultimap	1.5	.8	.5	20	.3%	.3%	.4%	.3%
Toshiba--NO OEM	1.5	.7	.6	14	.3%	.3%	.4%	.2%
Norsk Data	1.4	.7	.4	0	.3%	.2%	.3%	.0%

(Continued)

Market Share

TABLE NUMBER: 22 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
GEOVISION Inc.	1.1	.6	.3	593	.2%	.2%	.3%	7.4%
Autodesk	1.1	.0	1.1	0	.2%	.0%	.8%	.0%
ETAK	1.0	.1	.9	2	.2%	.0%	.6%	.0%
Geomath	.8	.0	.8	0	.2%	.0%	.6%	.0%
Radian Corporation	.8	.0	.6	0	.2%	.0%	.5%	.0%
Pasco	.7	.3	.4	8	.1%	.1%	.3%	.1%
Geobased Systems	.6	.1	.4	113	.1%	.0%	.3%	1.4%
Sumisho Electronics	.4	.3	.0	2	.1%	.1%	.0%	.0%
Solbourne	.3	.3	.0	24	.1%	.1%	.0%	.3%
D.C.A. Engineering	.3	.0	.3	0	.1%	.0%	.2%	.0%
Kork Systems	.3	.1	.2	1	.1%	.0%	.2%	.0%
Accugraph	.3	.2	.1	7	.1%	.1%	.1%	.1%
Automatrac	.3	.1	.1	47	.1%	.0%	.1%	.6%
Kubota Computer	.2	.1	.1	8	.0%	.0%	.0%	.1%
Micrograph	.1	.0	.0	2	.0%	.0%	.0%	.0%
A/E Microsystems	.1	.0	.0	4	.0%	.0%	.0%	.0%
Everex Systems	.0	.1	.0	6	.0%	.0%	.0%	.1%
Other Companies	36.3	16.3	15.6	1,060	7.0%	5.8%	11.9%	13.3%
All Companies	518.9	282.0	131.8	7,974	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	387.0	201.8	94.2	5,514	74.6%	71.6%	71.5%	69.2%
All Asian-Based Companies	69.7	44.4	18.7	1,158	13.4%	15.7%	14.2%	14.5%
All European-Based Companies	62.2	35.8	18.9	1,302	12.0%	12.7%	14.3%	16.3%
All Hardware Companies	27.3	21.7	.0	1,378	5.3%	7.7%	.0%	17.3%
All Turnkey & SW Companies	491.6	260.3	131.8	6,596	94.7%	92.3%	100.0%	82.7%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 23
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Digital	71.3	53.4	.0	0	20.4%	26.4%	.0%	.0%
Intergraph	55.5	27.8	8.9	530	15.9%	13.7%	11.8%	13.8%
IBM	40.8	26.5	7.4	428	11.7%	13.1%	9.8%	11.1%
ESRI	21.3	.0	19.0	0	6.1%	.0%	25.1%	.0%
McDonnell Douglas	19.9	10.7	6.6	478	5.7%	5.3%	8.8%	12.4%
Fujitsu	14.0	7.8	4.2	166	4.0%	3.8%	5.5%	4.3%
Sysscan	11.9	5.4	3.1	116	3.4%	2.7%	4.1%	3.0%
Mitachi	9.9	7.8	1.1	53	2.8%	3.9%	1.4%	1.4%
Siemens	8.5	5.0	2.6	99	2.4%	2.5%	3.4%	2.6%
Synercom	7.5	.0	4.6	0	2.2%	.0%	6.1%	.0%
Mitsubishi Electric	5.8	2.6	1.7	18	1.6%	1.3%	2.3%	.5%
Integrated Information Systems	4.7	.0	2.5	0	1.3%	.0%	3.3%	.0%
GeoVision Corp.	4.5	2.7	1.5	45	1.3%	1.3%	1.9%	1.2%
INS Engineering	4.3	3.0	.9	7	1.2%	1.5%	1.1%	.2%
Control Data	3.6	2.6	.4	24	1.0%	1.3%	.6%	.6%
Geographic Systems (WPS)	2.9	.0	2.9	0	.8%	.0%	3.9%	.0%
Secagraphics	2.4	.6	.6	19	.7%	.3%	.8%	.5%
ETAK	2.0	.3	1.7	1	.6%	.1%	2.2%	.0%
Computervision	1.9	.8	.5	25	.5%	.4%	.6%	.7%
Sun	1.7	1.5	.0	66	.5%	.7%	.0%	1.7%
Dynamic Graphics	1.6	.0	1.4	0	.5%	.0%	1.9%	.0%
Zycor	1.3	.0	.9	0	.4%	.0%	1.2%	.0%
STI-Straessle	1.2	.6	.6	5	.3%	.3%	.8%	.1%
Daniel Geophysical	1.1	.2	.8	10	.3%	.1%	1.1%	.3%
Mutoh Industries--NO OEM	1.0	.3	.2	1	.3%	.2%	.3%	.0%
Norsk Data	.8	.4	.2	0	.2%	.2%	.3%	.0%
Automatrix	.7	.4	.3	38	.2%	.2%	.4%	1.0%
Kork Systems	.7	.2	.5	9	.2%	.1%	.7%	.2%
Radian Corporation	.5	.0	.4	0	.1%	.0%	.5%	.0%
MPSI Systems	.3	.1	.2	15	.1%	.1%	.2%	.4%
Hewlett-Packard	.2	.1	.0	9	.0%	.1%	.0%	.2%
Engineering Systems Corp.	.1	.0	.1	0	.0%	.0%	.1%	.0%

(Continued)

Market Share

TABLE NUMBER: 23 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Solbourne	.1	.1	.0	6	.0%	.0%	.0%	.2%
A/E Microsystems	.1	.0	.0	1	.0%	.0%	.0%	.0%
Accugraph	.0	.0	.0	2	.0%	.0%	.0%	.0%
Other Companies	72.9	49.2	14.5	1,825	20.8%	24.3%	19.2%	47.4%
All Companies	349.8	202.5	75.6	3,854	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	292.5	169.6	61.1	3,387	83.6%	83.8%	80.8%	87.9%
All Asian-Based Companies	35.0	21.5	8.1	246	10.0%	10.6%	10.6%	6.4%
All European-Based Companies	22.4	11.3	6.5	220	6.4%	5.6%	8.6%	5.7%
All Hardware Companies	119.0	96.8	.0	1,760	34.0%	47.8%	.0%	45.7%
All Turnkey & SW Companies	230.8	105.7	75.6	2,094	66.0%	52.2%	100.0%	54.3%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 24
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Compaq	17.4	17.4	.0	2,896	12.5%	26.2%	.0%	23.7%
Autodesk	15.4	.0	15.4	0	11.1%	.0%	23.1%	.0%
IBM	11.0	10.4	.0	2,216	7.9%	15.7%	.0%	18.2%
Apple Computer	10.4	9.2	.0	2,000	7.5%	13.8%	.0%	16.4%
Intergraph	9.3	.0	8.7	0	6.7%	.0%	13.0%	.0%
ETAK	7.0	.8	6.0	22	5.0%	1.2%	9.0%	.2%
Geobase Systems	5.7	1.1	4.0	0	4.1%	1.7%	5.9%	.0%
ERDAS	5.5	2.5	2.5	36	4.0%	3.7%	3.7%	.3%
Fujitsu	4.7	2.5	1.9	233	3.4%	3.8%	2.8%	1.9%
Mapinfo	4.1	.0	4.1	0	3.0%	.0%	6.2%	.0%
ESRI	3.2	.0	3.2	0	2.3%	.0%	4.8%	.0%
Mitsubishi Electric	2.9	1.8	1.1	317	2.1%	2.7%	1.6%	2.6%
LandCadd	2.6	.0	2.5	0	1.9%	.0%	3.7%	.0%
Strategic Locations Planning	2.4	.0	2.4	0	1.7%	.0%	3.6%	.0%
Cadtronic	2.2	1.7	.3	19	1.6%	2.6%	.4%	.2%
Mutoh Industries--NO OEM	1.9	1.0	.8	72	1.4%	1.6%	1.2%	.6%
PacSoft	1.8	.0	1.8	0	1.3%	.0%	2.7%	.0%
Dennis Klein & Associates	1.6	.0	1.6	2	1.2%	.0%	2.4%	.0%
Olivetti	1.5	.4	.4	249	1.1%	.6%	.7%	2.0%
Ziegler	1.3	.0	1.2	45	1.0%	.1%	1.8%	.4%
Terr-Mar	1.3	.6	.7	36	.9%	.9%	1.1%	.3%
Zycor	1.3	.0	.9	0	.9%	.0%	1.3%	.0%
Dell Computer	1.1	1.1	.0	271	.8%	1.6%	.0%	2.2%
Geographix	1.0	.0	1.0	0	.7%	.0%	1.5%	.0%
Terra Sciences	1.0	.0	1.0	0	.7%	.0%	1.5%	.0%
D.C.A. Engineering	.9	.0	.9	0	.7%	.0%	1.4%	.0%
Everex Systems	.9	.9	.0	285	.7%	1.4%	.0%	2.3%
NEC	.7	.6	.1	49	.5%	.9%	.1%	.4%
Micrograph	.6	.3	.2	14	.4%	.5%	.3%	.1%
Bentley	.5	.0	.5	0	.4%	.0%	.8%	.0%
Maptek	.5	.0	.5	0	.4%	.0%	.7%	.0%
Radian Corporation	.5	.0	.4	0	.4%	.0%	.6%	.0%

(Continued)

Market Share

TABLE NUMBER: 24 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
GEOVISION Inc.	.4	.0	.4	0	.3%	.0%	.6%	.0%
Foresight Resources	.4	.0	.4	0	.3%	.0%	.5%	.0%
Sumisho Electronics	.4	.2	.1	43	.3%	.4%	.2%	.4%
Andor	.3	.1	.2	4	.2%	.1%	.4%	.0%
Robocom	.3	.0	.3	0	.2%	.0%	.4%	.0%
Engineering Systems Corp.	.2	.0	.1	0	.2%	.0%	.2%	.0%
Computervision	.2	.0	.2	1	.1%	.0%	.3%	.0%
Geomath	.2	.0	.2	0	.1%	.0%	.3%	.0%
Geosoft	.2	.0	.2	0	.1%	.0%	.3%	.0%
Pasco	.2	.1	.1	4	.1%	.1%	.1%	.0%
Caddlink	.2	.0	.2	0	.1%	.0%	.3%	.0%
A/E Microsystems	.1	.1	.0	15	.1%	.1%	.0%	.1%
Kork Systems	.1	.0	.1	4	.1%	.0%	.1%	.0%
Uniras	.1	.0	.1	0	.1%	.0%	.1%	.0%
A.I. Systems	.1	.0	.1	0	.1%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.1%	.0%	.1%	.0%
Innovative Data Design	.1	.0	.1	0	.1%	.0%	.1%	.0%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
Worsk Data	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	57.1	20.9	33.8	3,571	41.1%	31.5%	50.6%	29.3%
All Companies	139.1	66.3	66.8	12,206	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	122.4	57.7	60.2	11,201	88.0%	87.0%	90.2%	91.8%
All Asian-Based Companies	10.7	6.1	4.1	680	7.7%	9.2%	6.2%	5.6%
All European-Based Companies	6.0	2.5	2.5	326	4.3%	3.7%	3.7%	2.7%
All Hardware Companies	54.4	52.6	.0	11,084	39.1%	79.3%	.0%	90.8%
All Turnkey & SW Companies	84.6	13.7	66.8	1,122	60.9%	20.7%	100.0%	9.2%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 25
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	175.5	93.5	34.9	1,786	37.0%	39.5%	23.9%	15.8%
Digital	43.2	32.4	.0	295	9.1%	13.7%	.0%	2.6%
Landmark Graphics	30.7	15.0	9.2	249	6.5%	6.4%	6.3%	2.2%
ESRI	28.5	.0	25.3	0	6.0%	.0%	17.3%	.0%
McDonnell Douglas	27.0	14.6	8.1	347	5.7%	6.2%	5.5%	3.1%
IBM	14.9	10.6	2.1	786	3.1%	4.5%	1.5%	7.0%
Synercom	11.0	.0	6.7	0	2.3%	.0%	4.6%	.0%
Compaq	9.6	9.6	.0	1,593	2.0%	4.0%	.0%	14.1%
Autodesk	9.2	.0	9.2	0	1.9%	.0%	6.3%	.0%
ETAK	7.5	.9	6.4	19	1.6%	.4%	4.4%	.2%
Apple Computer	7.4	6.5	.0	1,420	1.6%	2.7%	.0%	12.6%
GeoVision Corp.	7.4	5.5	1.3	88	1.6%	2.3%	.9%	.8%
ACDS	6.4	3.3	2.1	52	1.4%	1.4%	1.4%	.5%
Sun	6.2	5.6	.0	467	1.3%	2.4%	.0%	4.1%
Geobased Systems	5.7	1.1	4.0	113	1.2%	.5%	2.7%	1.0%
ERDAS	4.8	2.2	2.2	31	1.0%	.9%	1.5%	.3%
Integrated Information Systems	4.7	.0	2.5	0	1.0%	.0%	1.7%	.0%
Computervision	4.4	1.7	1.3	28	.9%	.7%	.9%	.2%
Mapinfo	3.8	.0	3.8	0	.8%	.0%	2.6%	.0%
Geographic Systems (WPS)	2.9	.0	2.9	0	.6%	.0%	2.0%	.0%
LandCadd	2.6	.0	2.5	0	.5%	.0%	1.7%	.0%
Zycor	2.5	.0	1.8	0	.5%	.0%	1.2%	.0%
Dynamic Graphics	2.4	.0	2.2	0	.5%	.0%	1.5%	.0%
Strategic Locations Planning	2.2	.0	2.2	0	.5%	.0%	1.5%	.0%
Control Data	2.2	1.5	.3	23	.5%	.6%	.2%	.2%
Secagraphics	1.8	.5	.5	19	.4%	.2%	.3%	.2%
PacSoft	1.8	.0	1.8	0	.4%	.0%	1.2%	.0%
Dennis Klein & Associates	1.6	.0	1.6	2	.3%	.0%	1.1%	.0%
GEOVISION Inc.	1.5	.6	.7	593	.3%	.2%	.5%	5.3%
Ultimap	1.5	.8	.5	20	.3%	.3%	.4%	.2%
Terr-Mar	1.3	.6	.7	36	.3%	.2%	.5%	.3%
D.C.A. Engineering	1.1	.0	1.1	0	.2%	.0%	.8%	.0%
Daniel Geophysical	1.1	.2	.8	10	.2%	.1%	.5%	.1%

(Continued)

Market Share

TABLE NUMBER: 25
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Kork Systems	1.1	.3	.8	14	.2%	.1%	.5%	.1%
Dell Computer	1.0	1.0	.0	258	.2%	.4%	.0%	2.3%
Autometric	1.0	.5	.4	85	.2%	.2%	.2%	.8%
Geographix	1.0	.0	1.0	0	.2%	.0%	.7%	.0%
Geomath	1.0	.0	1.0	0	.2%	.0%	.7%	.0%
Terra Sciences	1.0	.0	1.0	0	.2%	.0%	.7%	.0%
Radian Corporation	.9	.0	.7	0	.2%	.0%	.5%	.0%
Everex Systems	.9	.9	.0	262	.2%	.4%	.0%	2.3%
Hewlett-Packard	.7	.6	.0	67	.2%	.3%	.0%	.6%
Bentley	.5	.0	.5	0	.1%	.0%	.3%	.0%
Maptek	.5	.0	.5	0	.1%	.0%	.3%	.0%
Solbourne	.3	.3	.0	25	.1%	.1%	.0%	.2%
Foresight Resources	.3	.0	.3	0	.1%	.0%	.2%	.0%
MPSI Systems	.3	.1	.2	15	.1%	.1%	.1%	.1%
Accugraph	.3	.2	.1	8	.1%	.1%	.1%	.1%
Engineering Systems Corp.	.3	.0	.2	0	.1%	.0%	.1%	.0%
A/E Microsystems	.2	.1	.1	20	.0%	.1%	.0%	.2%
Geosoft	.2	.0	.2	0	.0%	.0%	.1%	.0%
Caddlink	.2	.0	.2	0	.0%	.0%	.1%	.0%
Uniras	.1	.0	.1	0	.0%	.0%	.1%	.0%
A.I. Systems	.1	.0	.1	0	.0%	.0%	.1%	.0%
Innovative Data Design	.1	.0	.1	0	.0%	.0%	.1%	.0%
American Small Business Comp.	.1	.0	.1	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 25 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	101.2	42.5	48.7	3,663	21.3%	18.0%	33.4%	32.5%
All Companies	474.2	236.5	145.9	11,274	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	474.2	236.5	145.9	11,274	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	100.4	85.9	.0	7,596	21.2%	36.3%	.0%	67.4%
All Turnkey & SW Companies	373.8	150.6	145.9	3,678	78.8%	63.7%	100.0%	32.6%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 26
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Intergraph	138.7	77.7	24.9	1,484	56.6%	61.8%	39.5%	40.3%
Landmark Graphics	30.7	15.0	9.2	249	12.5%	12.0%	14.6%	6.8%
McDonnell Douglas	17.8	9.6	5.3	207	7.3%	7.6%	8.5%	5.6%
ESRI	11.1	.0	9.6	0	4.5%	.0%	15.2%	.0%
Digital	8.9	6.7	.0	295	3.7%	5.3%	.0%	8.0%
ACDS	6.4	3.3	2.1	52	2.6%	2.6%	3.3%	1.4%
Synercom	6.3	.0	3.8	0	2.6%	.0%	6.1%	.0%
GeoVision Corp.	5.0	4.1	.5	65	2.0%	3.3%	.8%	1.8%
Sun	5.0	4.5	.0	419	2.0%	3.6%	.0%	11.4%
Computervision	3.0	1.2	.8	16	1.2%	1.0%	1.2%	.4%
Ultimap	1.5	.8	.5	20	.6%	.6%	.8%	.5%
Dynamic Graphics	1.4	.0	1.3	0	.6%	.0%	2.1%	.0%
Zycor	1.3	.0	.9	0	.5%	.0%	1.4%	.0%
GEOVISION Inc.	1.1	.6	.3	593	.5%	.4%	.5%	16.1%
Geomath	.8	.0	.8	0	.3%	.0%	1.3%	.0%
Autodesk	.8	.0	.8	0	.3%	.0%	1.2%	.0%
ETAK	.8	.1	.6	1	.3%	.1%	1.0%	.0%
Control Data	.7	.5	.1	13	.3%	.4%	.1%	.4%
Hewlett-Packard	.7	.6	.0	63	.3%	.4%	.0%	1.7%
IBM	.6	.4	.1	5	.2%	.3%	.2%	.1%
Geobased Systems	.6	.1	.4	113	.2%	.1%	.6%	3.1%
Radian Corporation	.4	.0	.3	0	.2%	.0%	.5%	.0%
Kork Systems	.3	.1	.2	1	.1%	.1%	.3%	.0%
D.C.A. Engineering	.3	.0	.3	0	.1%	.0%	.4%	.0%
Solbourne	.3	.2	.0	20	.1%	.2%	.0%	.5%
Automatrac	.3	.1	.1	47	.1%	.1%	.1%	1.3%
Accugraph	.2	.1	.1	6	.1%	.1%	.1%	.2%
A/E Microsystems	.1	.0	.0	4	.0%	.0%	.0%	.1%
Everex Systems	.0	.1	.0	5	.0%	.0%	.0%	.1%

(Continued)

Market Share

TABLE NUMBER: 26 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	20.2	9.2	8.4	896	8.2%	7.3%	13.3%	24.3%
All Companies	244.9	125.8	63.0	3,679	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	244.9	125.8	63.0	3,679	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	14.9	12.0	.0	802	6.1%	9.6%	.0%	21.8%
All Turnkey & SW Companies	230.0	113.7	63.0	2,877	93.9%	90.4%	100.0%	78.2%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 27
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Digital	34.2	25.7	.0	0	23.0%	32.9%	.0%	.0%
Intergraph	31.6	15.8	5.1	302	21.3%	20.3%	13.4%	20.2%
ESRI	15.1	.0	13.5	0	10.2%	.0%	35.6%	.0%
IBM	11.0	7.1	2.0	116	7.4%	9.2%	5.3%	7.7%
McDonnell Douglas	9.2	5.0	2.8	140	6.2%	6.3%	7.3%	9.4%
Synercom	4.7	.0	2.9	0	3.2%	.0%	7.6%	.0%
Integrated Information Systems	4.7	.0	2.5	0	3.1%	.0%	6.5%	.0%
Geographic Systems (WPS)	2.9	.0	2.9	0	2.0%	.0%	7.7%	.0%
GeoVision Corp.	2.3	1.4	.8	23	1.6%	1.8%	2.0%	1.6%
Secagraphics	1.8	.5	.5	19	1.2%	.6%	1.2%	1.3%
ETAK	1.5	.2	1.3	1	1.0%	.2%	3.3%	.1%
Control Data	1.4	1.0	.2	10	1.0%	1.3%	.4%	.6%
Sun	1.3	1.1	.0	47	.8%	1.4%	.0%	3.2%
Computervision	1.2	.5	.3	11	.8%	.6%	.8%	.8%
Daniel Geophysical	1.1	.2	.8	10	.7%	.3%	2.1%	.7%
Dynamic Graphics	1.0	.0	.9	0	.6%	.0%	2.3%	.0%
Automatrix	.7	.4	.3	38	.5%	.5%	.7%	2.6%
Kork Systems	.7	.2	.5	9	.5%	.3%	1.3%	.6%
Zycor	.6	.0	.4	0	.4%	.0%	1.2%	.0%
MPSI Systems	.3	.1	.2	15	.2%	.2%	.5%	1.0%
Radian Corporation	.3	.0	.2	0	.2%	.0%	.5%	.0%
Engineering Systems Corp.	.1	.0	.1	0	.1%	.0%	.1%	.0%
Hewlett-Packard	.1	.1	.0	4	.0%	.1%	.0%	.2%
Solbourne	.1	.1	.0	5	.0%	.1%	.0%	.3%
A/E Microsystems	.1	.0	.0	1	.0%	.0%	.0%	.1%
Accugraph	.0	.0	.0	2	.0%	.0%	.0%	.1%

(Continued)

Market Share

TABLE NUMBER: 27 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Other Companies	38.6	21.7	11.2	858	26.0%	27.8%	29.5%	57.5%
All Companies	148.5	78.0	37.8	1,494	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	148.5	78.0	37.8	1,494	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	56.2	45.6	.0	798	37.8%	58.5%	.0%	53.4%
All Turnkey & SW Companies	92.4	32.4	37.8	696	62.2%	41.5%	100.0%	46.6%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 28
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Compaq	9.6	9.6	.0	1,593	11.8%	29.2%	.0%	26.1%
Autodesk	8.5	.0	8.5	0	10.5%	.0%	18.8%	.0%
Apple Computer	7.4	6.5	.0	1,420	9.1%	19.8%	.0%	23.3%
Intergraph	5.3	.0	5.0	0	6.5%	.0%	11.0%	.0%
ETAK	5.3	.6	4.5	17	6.5%	1.8%	10.0%	.3%
Geobased Systems	5.1	1.0	3.6	0	6.3%	3.1%	7.9%	.0%
ERDAS	4.8	2.2	2.2	31	5.9%	6.6%	4.8%	.5%
Mapinfo	3.8	.0	3.8	0	4.7%	.0%	8.5%	.0%
IBM	3.3	3.1	.0	665	4.1%	9.6%	.0%	10.9%
LandCadd	2.6	.0	2.5	0	3.2%	.0%	5.5%	.0%
ESRI	2.3	.0	2.3	0	2.8%	.0%	5.1%	.0%
Strategic Locations Planning	2.2	.0	2.2	0	2.7%	.0%	4.9%	.0%
PacSoft	1.8	.0	1.8	0	2.2%	.0%	4.0%	.0%
Dennis Klein & Associates	1.6	.0	1.6	2	2.0%	.1%	3.5%	.0%
Terr-Mar	1.3	.6	.7	36	1.6%	1.8%	1.6%	.6%
Dell Computer	1.0	1.0	.0	258	1.3%	3.1%	.0%	4.2%
Geographix	1.0	.0	1.0	0	1.2%	.0%	2.2%	.0%
Terra Sciences	1.0	.0	1.0	0	1.2%	.0%	2.2%	.0%
D.C.A. Engineering	.8	.0	.8	0	1.0%	.0%	1.9%	.0%
Everex Systems	.8	.9	.0	257	1.0%	2.6%	.0%	4.2%
Zycor	.6	.0	.4	0	.8%	.0%	1.0%	.0%
Bentley	.5	.0	.5	0	.6%	.0%	1.1%	.0%
Maptek	.5	.0	.5	0	.6%	.0%	1.1%	.0%
GEOVISION Inc.	.4	.0	.4	0	.5%	.0%	.9%	.0%
Foresight Resources	.3	.0	.3	0	.4%	.0%	.6%	.0%
Radian Corporation	.3	.0	.2	0	.3%	.0%	.4%	.0%
Geomath	.2	.0	.2	0	.2%	.0%	.4%	.0%
Geosoft	.2	.0	.2	0	.2%	.0%	.4%	.0%
Engineering Systems Corp.	.2	.0	.1	0	.2%	.0%	.3%	.0%
Caddlink	.2	.0	.2	0	.2%	.0%	.4%	.0%
Computervision	.2	.0	.2	0	.2%	.0%	.4%	.0%
A/E Microsystems	.1	.1	.0	15	.1%	.2%	.1%	.2%

(Continued)

Market Share

TABLE NUMBER: 28 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Kork Systems	.1	.0	.1	4	.1%	.1%	.2%	.1%
Uniras	.1	.0	.1	0	.1%	.0%	.2%	.0%
A.I. Systems	.1	.0	.1	0	.1%	.0%	.2%	.0%
Innovative Data Design	.1	.0	.1	0	.1%	.0%	.2%	.0%
American Small Business Comp.	.1	.0	.1	0	.1%	.0%	.2%	.0%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
Other Companies	42.4	11.7	29.1	1,909	52.5%	35.6%	64.7%	31.3%
All Companies	80.8	32.8	45.0	6,101	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	80.8	32.8	45.0	6,101	100.0%	100.0%	100.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	29.3	28.3	.0	5,996	36.3%	86.4%	.0%	98.3%
All Turnkey & SW Companies	51.4	4.5	45.0	105	63.7%	13.6%	100.0%	1.7%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 29
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	103.3	55.0	20.6	1,050	32.2%	29.8%	27.2%	13.1%
Siemens	50.5	29.8	15.1	1,080	15.7%	16.1%	20.0%	13.5%
Digital	36.0	27.0	.0	246	11.2%	14.6%	.0%	3.1%
IBM	19.9	14.2	2.8	1,048	6.2%	7.7%	3.7%	13.1%
Sysscan	15.6	7.0	4.1	116	4.9%	3.8%	5.4%	1.4%
McDonnell Douglas	10.4	5.6	3.8	333	3.2%	3.0%	5.0%	4.1%
ESRI	8.5	.0	7.5	0	2.6%	.0%	9.9%	.0%
ICL	7.3	4.7	1.9	192	2.3%	2.6%	2.5%	2.4%
Compaq	7.0	7.0	.0	1,158	2.2%	3.8%	.0%	14.4%
Synercom	5.3	.0	3.2	0	1.6%	.0%	4.2%	.0%
Autodesk	5.2	.0	5.2	0	1.6%	.0%	6.9%	.0%
Computervision	4.6	2.1	1.1	39	1.4%	1.1%	1.4%	.5%
STI-Straessle	4.1	1.8	2.0	26	1.3%	1.0%	2.7%	.3%
Control Data	2.8	2.0	.3	30	.9%	1.1%	.5%	.4%
Apple Computer	2.5	2.2	.0	480	.8%	1.2%	.0%	6.0%
Cadtronic	2.2	1.7	.3	19	.7%	.9%	.4%	.2%
Norsk Data	2.2	1.1	.7	0	.7%	.6%	.9%	.0%
ItalCad	2.2	1.1	.8	23	.7%	.6%	1.1%	.3%
Zycor	1.5	.0	1.1	0	.5%	.0%	1.4%	.0%
ETAK	1.5	.2	1.3	4	.5%	.1%	1.7%	.0%
Olivetti	1.5	.4	.4	221	.5%	.2%	.6%	2.8%
Ziegler	1.3	.0	1.2	45	.4%	.0%	1.6%	.6%
Dynamic Graphics	1.0	.0	.9	0	.3%	.0%	1.2%	.0%
Hewlett-Packard	.7	.6	.0	67	.2%	.3%	.0%	.8%
Radian Corporation	.7	.0	.6	0	.2%	.0%	.8%	.0%
Micrograph	.6	.3	.2	16	.2%	.2%	.3%	.2%
ACDS	.3	.2	.1	0	.1%	.1%	.1%	.0%
Robocom	.3	.0	.3	0	.1%	.0%	.4%	.0%
Everex Systems	.1	.1	.0	23	.0%	.0%	.0%	.3%
Foresight Resources	.1	.0	.1	0	.0%	.0%	.1%	.0%
D.C.A. Engineering	.1	.0	.1	0	.0%	.0%	.1%	.0%
Dell Computer	.1	.1	.0	14	.0%	.0%	.0%	.2%

(Continued)

Market Share

TABLE NUMBER: 29 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Solbourne	.0	.0	.0	2	.0%	.0%	.0%	.0%
Accugraph	.0	.0	.0	1	.0%	.0%	.0%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	30.1	22.7	4.8	1,828	9.4%	12.3%	6.4%	22.8%
All Companies	320.9	184.4	75.5	8,020	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	233.1	136.3	48.5	6,283	72.6%	73.9%	64.3%	78.3%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	87.8	48.1	27.0	1,737	27.4%	26.1%	35.7%	21.7%
All Hardware Companies	72.5	61.3	.0	4,666	22.6%	33.2%	.0%	58.2%
All Turnkey & SW Companies	248.4	123.1	75.5	3,355	77.4%	66.8%	100.0%	41.8%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 30
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	81.6	45.7	14.7	873	49.8%	51.1%	36.2%	35.5%
Siemens	42.4	25.0	12.7	986	25.9%	28.0%	31.4%	40.2%
Digital	7.5	5.6	.0	246	4.5%	6.3%	.0%	10.0%
ICL	7.3	4.7	1.9	192	4.4%	5.3%	4.6%	7.8%
Computervision	3.9	1.8	.9	23	2.4%	2.0%	2.3%	1.0%
Sysscan	3.8	1.7	1.0	0	2.3%	1.8%	2.4%	.0%
ESRI	3.3	.0	2.8	0	2.0%	.0%	7.0%	.0%
Synercom	3.0	.0	1.8	0	1.8%	.0%	4.5%	.0%
STI-Straessle	2.8	1.3	1.4	20	1.7%	1.4%	3.5%	.8%
ItalCad	2.2	1.1	.8	23	1.3%	1.2%	2.0%	.9%
Norsk Data	1.4	.7	.4	0	.9%	.8%	1.1%	.0%
Control Data	1.0	.7	.1	18	.6%	.7%	.3%	.7%
IBM	.8	.5	.1	7	.5%	.6%	.3%	.3%
Zycor	.8	.0	.5	0	.5%	.0%	1.3%	.0%
Hewlett-Packard	.7	.5	.0	63	.4%	.6%	.0%	2.6%
Dynamic Graphics	.6	.0	.5	0	.4%	.0%	1.3%	.0%
ACDS	.3	.2	.1	0	.2%	.2%	.3%	.0%
Radian Corporation	.3	.0	.3	0	.2%	.0%	.6%	.0%
Autodesk	.2	.0	.2	0	.1%	.0%	.4%	.0%
ETAK	.2	.0	.1	0	.1%	.0%	.3%	.0%
Micrograph	.1	.0	.0	2	.0%	.0%	.0%	.1%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
Solbourne	.0	.0	.0	2	.0%	.0%	.0%	.1%
D.C.A. Engineering	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 30 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company				 Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Other Companies	2.2	.2	1.6	3	1.4%	.3%	3.9%	.1%
All Companies	163.9	89.5	40.5	2,457	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 103.9	 55.0	 22.3	 1,233	 63.4%	 61.5%	 55.0%	 50.2%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	59.9	34.5	18.2	1,224	36.6%	38.5%	45.0%	49.8%
All Hardware Companies	8.1	6.2	.0	311	5.0%	6.9%	.0%	12.7%
All Turnkey & SW Companies	155.7	83.4	40.5	2,145	95.0%	93.1%	100.0%	87.3%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 31
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Digital	28.5	21.4	.0	0	23.4%	28.8%	.0%	.0%
Intergraph	18.6	9.3	3.0	177	15.3%	12.5%	13.2%	11.6%
IBM	14.7	9.5	2.7	154	12.1%	12.8%	11.9%	10.1%
Syscan	11.9	5.4	3.1	116	9.7%	7.3%	13.7%	7.6%
McDonnell Douglas	10.4	5.6	3.8	333	8.5%	7.5%	16.8%	21.8%
Siemens	8.1	4.8	2.4	94	6.6%	6.4%	10.7%	6.1%
ESRI	4.5	.0	4.0	0	3.7%	.0%	17.7%	.0%
Synercom	2.3	.0	1.4	0	1.9%	.0%	6.1%	.0%
Control Data	1.9	1.4	.2	12	1.5%	1.8%	1.0%	.8%
STI-Straessle	1.2	.6	.6	5	1.0%	.8%	2.7%	.4%
Norsk Data	.8	.4	.2	0	.7%	.5%	1.1%	.0%
Computervision	.7	.3	.2	14	.5%	.4%	.7%	.9%
Dynamic Graphics	.4	.0	.4	0	.3%	.0%	1.6%	.0%
Zycor	.4	.0	.3	0	.3%	.0%	1.2%	.0%
ETAK	.3	.0	.3	0	.2%	.1%	1.1%	.0%
Radian Corporation	.2	.0	.2	0	.2%	.0%	.7%	.0%
Hewlett-Packard	.1	.1	.0	4	.1%	.1%	.0%	.2%
Solbourne	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	18.4	15.6	1.0	617	15.1%	21.0%	4.6%	40.4%
All Companies	121.8	74.2	22.5	1,528	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	99.9	63.1	16.2	1,312	82.0%	85.0%	71.9%	85.9%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	22.0	11.1	6.3	215	18.0%	15.0%	28.1%	14.1%
All Hardware Companies	45.7	37.0	.0	621	37.5%	49.9%	.0%	40.7%
All Turnkey & SW Companies	76.1	37.2	22.5	906	62.5%	50.1%	100.0%	59.3%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 32
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Compaq	7.0	7.0	.0	1,158	19.8%	33.6%	.0%	28.7%
Autodesk	5.1	.0	5.1	0	14.4%	.0%	40.4%	.0%
IBM	4.4	4.2	.0	886	12.5%	20.1%	.0%	22.0%
Intergraph	3.1	.0	2.9	0	8.8%	.0%	23.3%	.0%
Apple Computer	2.5	2.2	.0	480	7.0%	10.6%	.0%	11.9%
Cadtronic	2.2	1.7	.3	19	6.4%	8.3%	2.3%	.5%
Olivetti	1.5	.4	.4	221	4.2%	1.9%	3.4%	5.5%
Ziegler	1.3	.0	1.2	45	3.8%	.2%	9.8%	1.1%
ETAK	1.1	.1	.9	3	3.0%	.6%	7.2%	.1%
ESRI	.7	.0	.7	0	2.0%	.0%	5.5%	.0%
Micrograph	.6	.3	.2	14	1.6%	1.4%	1.8%	.3%
Zycor	.4	.0	.3	0	1.1%	.0%	2.1%	.0%
Robocom	.3	.0	.3	0	.8%	.0%	2.2%	.0%
Radian Corporation	.2	.0	.2	0	.6%	.0%	1.3%	.0%
Everex Systems	.1	.1	.0	23	.2%	.3%	.0%	.6%
Foresight Resources	.1	.0	.1	0	.2%	.0%	.4%	.0%
Dell Computer	.1	.1	.0	14	.1%	.2%	.0%	.3%
D.C.A. Engineering	.0	.0	.0	0	.1%	.0%	.3%	.0%
Computervision	.0	.0	.0	1	.1%	.0%	.0%	.0%
American Small Business Comp.	.0	.0	.0	0	.0%	.0%	.1%	.0%
Norsk Data	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	9.5	6.8	2.2	1,208	27.1%	33.0%	17.7%	29.9%
All Companies	35.2	20.7	12.5	4,036	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	29.3	18.3	10.1	3,738	83.1%	88.1%	80.6%	92.6%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	5.9	2.5	2.4	298	16.9%	11.9%	19.4%	7.4%
All Hardware Companies	18.6	18.1	.0	3,733	53.0%	87.5%	.0%	92.5%
All Turnkey & SW Companies	16.5	2.6	12.5	303	47.0%	12.5%	100.0%	7.5%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 33
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Fujitsu	30.6	17.4	9.6	685	17.9%	16.2%	23.3%	17.5%
Mitsubishi Electric	28.8	21.1	4.6	560	16.9%	19.6%	11.1%	14.3%
Hitachi	18.0	11.9	4.3	206	10.5%	11.0%	10.4%	5.3%
IBM	17.4	12.1	2.7	706	10.2%	11.2%	6.5%	18.1%
Intergraph	11.3	6.0	2.2	115	6.6%	5.6%	5.4%	3.0%
Digital	8.1	6.1	.0	55	4.7%	5.6%	.0%	1.4%
Mitsui Engineering	8.1	5.6	1.6	50	4.7%	5.2%	4.0%	1.3%
NEC	5.3	3.0	1.9	260	3.1%	2.8%	4.5%	6.7%
Mutoh Industries--NO OEM	4.8	2.3	1.7	96	2.8%	2.2%	4.0%	2.5%
CADIX	4.3	1.7	2.2	30	2.5%	1.6%	5.2%	.8%
INS Engineering	4.3	3.0	.9	7	2.5%	2.8%	2.1%	.2%
Uchida Yoko	4.2	2.1	1.7	66	2.5%	2.0%	4.1%	1.7%
Siemens	2.7	1.6	.8	57	1.6%	1.4%	1.9%	1.5%
ESRI	2.4	.0	2.1	0	1.4%	.0%	5.2%	.0%
Century Research Center	2.3	1.1	.9	14	1.3%	1.1%	2.3%	.4%
Autodesk	1.9	.0	1.9	0	1.1%	.0%	4.6%	.0%
Sun	1.7	1.5	.0	145	1.0%	1.4%	.0%	3.7%
Toshiba--NO OEM	1.5	.7	.6	14	.9%	.7%	1.4%	.4%
Pasco	.9	.4	.5	12	.5%	.3%	1.1%	.3%
Sumisho Electronics	.8	.6	.2	45	.5%	.5%	.4%	1.2%
ETAK	.5	.1	.4	1	.3%	.1%	1.0%	.0%
Secagraphics	.5	.1	.1	0	.3%	.1%	.3%	.0%
Apple Computer	.4	.4	.0	80	.2%	.3%	.0%	2.0%
Compaq	.4	.4	.0	58	.2%	.3%	.0%	1.5%
Andor	.3	.1	.2	4	.2%	.1%	.6%	.1%
Control Data	.3	.2	.0	4	.2%	.2%	.1%	.1%
McDonnell Douglas	.2	.1	.1	4	.1%	.1%	.2%	.1%
Hewlett-Packard	.2	.2	.0	20	.1%	.2%	.0%	.5%
Dynamic Graphics	.2	.0	.2	0	.1%	.0%	.4%	.0%
Kubota Computer	.2	.1	.1	8	.1%	.1%	.1%	.2%
D.C.A. Engineering	.1	.0	.1	0	.0%	.0%	.1%	.0%
Solbourne	.0	.0	.0	3	.0%	.0%	.0%	.1%

(Continued)

Market Share

TABLE NUMBER: 33 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Everex Systems	.0	.0	.0	6	.0%	.0%	.0%	.1%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	21.1	14.1	5.0	690	12.4%	13.1%	12.1%	17.7%
All Companies	170.7	107.6	41.3	3,903	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	53.4	34.3	9.8	1,776	31.3%	31.9%	23.8%	45.5%
All Asian-Based Companies	114.7	71.7	30.7	2,071	67.2%	66.7%	74.3%	53.0%
All European-Based Companies	2.7	1.6	.8	57	1.6%	1.4%	1.9%	1.5%
All Hardware Companies	21.3	18.3	.0	1,499	12.5%	17.0%	.0%	38.4%
All Turnkey & SW Companies	149.4	89.3	41.3	2,404	87.5%	83.0%	100.0%	61.6%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 34
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Mitsubishi Electric	20.2	16.7	1.8	224	23.4%	31.0%	8.1%	14.8%
Fujitsu	12.2	7.3	3.7	293	14.2%	13.6%	16.5%	19.3%
Intergraph	9.0	5.0	1.6	96	10.4%	9.3%	7.2%	6.3%
Hitachi	8.1	4.1	3.2	153	9.4%	7.5%	14.6%	10.1%
Mitsui Engineering	8.1	5.6	1.6	50	9.3%	10.4%	7.4%	3.3%
NEC	4.6	2.4	1.8	211	5.3%	4.4%	8.2%	13.9%
CADIX	4.3	1.7	2.2	30	5.0%	3.2%	9.7%	2.0%
Uchida Yoko	4.2	2.1	1.7	66	4.9%	3.9%	7.6%	4.3%
Century Research Center	2.3	1.1	.9	14	2.7%	2.1%	4.2%	.9%
Siemens	2.2	1.3	.7	52	2.6%	2.4%	3.0%	3.4%
Mutoh Industries--NO OEM	1.9	1.0	.7	24	2.2%	1.8%	2.9%	1.6%
Digital	1.7	1.3	.0	55	2.0%	2.3%	.0%	3.6%
Toshiba--NO OEM	1.5	.7	.6	14	1.7%	1.4%	2.7%	.9%
Sun	1.3	1.2	.0	130	1.6%	2.3%	.0%	8.6%
ESRI	.9	.0	.8	0	1.1%	.0%	3.6%	.0%
IBM	.7	.5	.2	7	.8%	.9%	.7%	.4%
Pasco	.7	.3	.4	8	.8%	.5%	1.6%	.5%
Sumisho Electronics	.4	.3	.0	2	.5%	.6%	.2%	.2%
Hewlett-Packard	.2	.2	.0	19	.2%	.3%	.0%	1.3%
Autodesk	.2	.0	.2	0	.2%	.0%	.8%	.0%
McDonnell Douglas	.2	.1	.1	2	.2%	.1%	.2%	.2%
Kubota Computer	.2	.1	.1	8	.2%	.2%	.2%	.5%
Dynamic Graphics	.1	.0	.1	0	.1%	.0%	.5%	.0%
Control Data	.1	.1	.0	2	.1%	.1%	.0%	.1%
ETAK	.1	.0	.0	0	.1%	.0%	.2%	.0%
Solbourne	.0	.0	.0	2	.0%	.1%	.0%	.1%
Accugraph	.0	.0	.0	0	.0%	.0%	.0%	.0%
D.C.A. Engineering	.0	.0	.0	0	.0%	.0%	.0%	.0%

(Continued)

Market Share

TABLE NUMBER: 34 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****	Total	Hardware	Software	Wkstns	----- Market Share -----			
	Revenue	Revenue	Revenue	Shipped	Revenue	Revenue	Revenue	Shipped
	*****	*****	*****	*****	*****	*****	*****	*****
Other Companies	7.6	3.6	3.2	95	8.8%	6.8%	14.4%	6.3%
All Companies	86.1	53.9	22.2	1,519	100.0%	100.0%	100.0%	100.0%
 All U.S.-Based Companies	 14.5	 8.3	 2.9	 314	 16.8%	 15.5%	 13.2%	 20.7%
All Asian-Based Companies	69.4	44.3	18.6	1,152	80.6%	82.1%	83.8%	75.9%
All European-Based Companies	2.2	1.3	.7	52	2.6%	2.4%	3.0%	3.4%
All Hardware Companies	3.3	2.7	.0	207	3.8%	5.0%	.0%	13.6%
All Turnkey & SW Companies	82.9	51.2	22.2	1,311	96.2%	95.0%	100.0%	86.4%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 35
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
IBM	13.9	9.0	2.5	146	20.9%	21.0%	20.4%	21.1%
Fujitsu	13.8	7.6	4.1	163	20.7%	17.7%	33.0%	23.6%
Hitachi	9.9	7.8	1.1	53	14.9%	18.2%	8.6%	7.7%
Digital	6.4	4.8	.0	0	9.7%	11.1%	.0%	.0%
Mitsubishi Electric	5.8	2.6	1.7	18	8.7%	6.0%	13.9%	2.6%
INS Engineering	4.3	3.0	.9	7	6.5%	7.0%	6.9%	1.1%
Intergraph	2.0	1.0	.3	19	3.1%	2.4%	2.6%	2.8%
ESRI	1.3	.0	1.1	0	1.9%	.0%	9.2%	.0%
Nutoh Industries--NO OEM	1.0	.3	.2	1	1.4%	.8%	1.9%	.2%
Secagraphics	.5	.1	.1	0	.7%	.3%	1.0%	.0%
Siemens	.4	.3	.1	5	.6%	.6%	1.0%	.7%
Sun	.3	.3	.0	15	.5%	.7%	.0%	2.1%
Control Data	.2	.2	.0	1	.3%	.3%	.2%	.2%
ETAK	.1	.0	.1	0	.2%	.0%	.6%	.0%
Dynamic Graphics	.1	.0	.1	0	.1%	.0%	.6%	.0%
McDonnell Douglas	.1	.0	.0	2	.1%	.1%	.2%	.2%
Hewlett-Packard	.0	.0	.0	1	.0%	.0%	.0%	.2%
Solbourne	.0	.0	.0	1	.0%	.0%	.0%	.1%
Other Companies	11.4	9.0	1.1	264	17.1%	21.0%	9.1%	38.3%
All Companies	66.5	43.0	12.4	690	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	31.4	21.3	4.3	442	47.2%	49.6%	34.7%	64.0%
All Asian-Based Companies	34.7	21.4	8.0	243	52.2%	49.8%	64.3%	35.3%
All European-Based Companies	.4	.3	.1	5	.6%	.6%	1.0%	.7%
All Hardware Companies	13.2	11.0	.0	273	19.9%	25.6%	.0%	39.6%
All Turnkey & SW Companies	53.3	32.0	12.4	416	80.1%	74.4%	100.0%	60.4%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 36
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Fujitsu	4.6	2.5	1.9	229	25.3%	22.9%	27.7%	13.5%
Mitsubishi Electric	2.9	1.8	1.1	317	15.9%	16.9%	15.9%	18.7%
IBM	2.7	2.6	.0	554	15.1%	24.2%	.0%	32.7%
Mutoh Industries--NO OEM	1.9	1.0	.8	72	10.5%	9.7%	11.8%	4.2%
Autodesk	1.7	.0	1.7	0	9.6%	.0%	26.1%	.0%
NEC	.7	.6	.1	49	4.1%	5.9%	.7%	2.9%
Apple Computer	.4	.4	.0	80	2.3%	3.4%	.0%	4.7%
Sumisho Electronics	.4	.2	.1	43	2.2%	2.2%	2.1%	2.5%
Compaq	.4	.4	.0	58	1.9%	3.3%	.0%	3.4%
ETAK	.4	.0	.3	1	1.9%	.4%	4.5%	.1%
Intergraph	.4	.0	.3	0	1.9%	.0%	4.8%	.0%
Andor	.3	.1	.2	4	1.8%	.6%	3.6%	.2%
ESRI	.2	.0	.2	0	1.0%	.0%	2.8%	.0%
Pasco	.2	.1	.1	4	1.0%	.7%	1.3%	.2%
D.C.A. Engineering	.0	.0	.0	0	.2%	.0%	.6%	.0%
Everex Systems	.0	.0	.0	6	.1%	.2%	.0%	.3%
Other Companies	2.2	1.5	.7	330	12.1%	13.6%	10.0%	19.5%
All Companies	18.1	10.7	6.7	1,695	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	7.5	4.7	2.6	1,020	41.4%	43.5%	38.8%	60.2%
All Asian-Based Companies	10.6	6.1	4.1	675	58.6%	56.5%	61.2%	39.8%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	4.8	4.6	.0	1,019	26.6%	43.1%	.0%	60.1%
All Turnkey & SW Companies	13.3	6.1	6.7	676	73.4%	56.9%	100.0%	39.9%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 37
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	18.5	9.8	3.7	188	44.0%	44.0%	32.0%	22.5%
GeoVision Corp.	7.6	4.6	2.5	88	18.0%	20.4%	21.6%	10.5%
Digital	2.7	2.0	.0	18	6.4%	9.0%	.0%	2.2%
IBM	1.8	1.4	.2	124	4.4%	6.0%	2.0%	14.9%
Synercom	1.2	.0	.8	0	2.9%	.0%	6.5%	.0%
Zycor	1.0	.0	.7	0	2.4%	.0%	6.2%	.0%
ESRI	.8	.0	.7	0	1.9%	.0%	6.2%	.0%
McDonnell Douglas	.8	.4	.2	10	1.9%	1.9%	2.0%	1.2%
ERDAS	.7	.3	.3	5	1.7%	1.4%	2.8%	.6%
Geobased Systems	.6	.1	.4	0	1.5%	.5%	3.8%	.0%
Fujitsu	.6	.3	.2	13	1.4%	1.5%	1.7%	1.6%
Compeq	.5	.5	.0	87	1.2%	2.3%	.0%	10.4%
ETAK	.5	.1	.4	1	1.2%	.3%	3.7%	.2%
Sun	.5	.5	.0	38	1.2%	2.0%	.0%	4.5%
Dynamic Graphics	.4	.0	.4	0	1.0%	.0%	3.1%	.0%
Mapinfo	.3	.0	.3	0	.7%	.0%	2.5%	.0%
Control Data	.2	.2	.0	2	.5%	.7%	.3%	.3%
Strategic Locations Planning	.2	.0	.2	0	.5%	.0%	1.7%	.0%
Radian Corporation	.2	.0	.1	0	.4%	.0%	1.2%	.0%
Autodesk	.2	.0	.2	0	.4%	.0%	1.3%	.0%
Apple Computer	.1	.1	.0	20	.2%	.4%	.0%	2.4%
Computervision	.1	.0	.0	1	.2%	.2%	.2%	.1%
Secagraphics	.1	.0	.0	0	.2%	.1%	.3%	.0%
ICL	.1	.0	.0	26	.2%	.0%	.0%	3.1%
Hewlett-Packard	.1	.0	.0	5	.1%	.2%	.0%	.6%
Olivetti	.1	.0	.0	28	.1%	.1%	.2%	3.3%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.3%	.0%
D.C.A. Engineering	.0	.0	.0	0	.1%	.0%	.3%	.0%
Foresight Resources	.0	.0	.0	0	.0%	.0%	.2%	.0%
Solbourne	.0	.0	.0	1	.0%	.0%	.0%	.1%

(Continued)

Market Share

TABLE NUMBER: 37 (Continued)
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****	Total	Hardware	Software	Wkstns	----- Market Share -----			
	Revenue	Revenue	Revenue	Shipped	Revenue	Revenue	Revenue	Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Other Companies	13.8	7.1	5.5	275	32.8%	31.6%	47.7%	32.9%
All Companies	42.0	22.3	11.5	836	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	41.2	22.0	11.3	769	98.3%	98.4%	98.2%	92.0%
All Asian-Based Companies	.6	.3	.2	13	1.4%	1.5%	1.7%	1.6%
All European-Based Companies	.1	.0	.0	54	.3%	.1%	.2%	6.5%
All Hardware Companies	6.6	5.6	.0	461	15.6%	25.2%	.0%	55.1%
All Turnkey & SW Companies	35.4	16.7	11.5	376	84.4%	74.8%	100.0%	44.9%

Source: Dataquest
 May 1990

Market Share

TABLE NUMBER: 38
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Technical Workstation
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	14.6	8.2	2.6	156	60.9%	63.8%	43.2%	48.9%
GeoVision Corp.	5.4	3.2	1.8	66	22.5%	25.3%	29.0%	20.6%
Synercom	.7	.0	.4	0	2.9%	.0%	7.1%	.0%
Digital	.6	.4	.0	18	2.3%	3.3%	.0%	5.8%
McDonnell Douglas	.5	.3	.2	6	2.2%	2.2%	2.5%	1.9%
Zycor	.5	.0	.4	0	2.1%	.0%	5.8%	.0%
Sun	.4	.4	.0	34	1.7%	2.8%	.0%	10.6%
ESRI	.3	.0	.3	0	1.3%	.0%	4.5%	.0%
Dynamic Graphics	.2	.0	.2	0	1.0%	.0%	3.6%	.0%
Fujitsu	.2	.1	.1	6	1.0%	1.1%	1.2%	1.8%
Radian Corporation	.1	.0	.1	0	.3%	.0%	1.0%	.0%
Control Data	.1	.1	.0	1	.3%	.5%	.2%	.4%
ICL	.1	.0	.0	26	.3%	.0%	.0%	8.2%
Computervision	.1	.0	.0	0	.3%	.2%	.2%	.1%
Geobased Systems	.1	.0	.0	0	.3%	.1%	.7%	.0%
IBM	.1	.0	.0	1	.3%	.3%	.2%	.2%
ETAK	.1	.0	.0	0	.2%	.1%	.7%	.0%
Hewlett-Packard	.1	.0	.0	4	.2%	.3%	.0%	1.4%
Autodesk	.0	.0	.0	0	.0%	.0%	.2%	.0%
D.C.A. Engineering	.0	.0	.0	0	.0%	.0%	.2%	.0%
Solbourne	.0	.0	.0	0	.0%	.1%	.0%	.1%
Other Companies	6.3	3.3	2.5	66	26.4%	25.4%	40.9%	20.6%
All Companies	24.0	12.8	6.1	320	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	23.7	12.7	6.0	288	98.7%	98.9%	98.8%	90.0%
All Asian-Based Companies	.2	.1	.1	6	1.0%	1.1%	1.2%	1.8%
All European-Based Companies	.1	.0	.0	26	.3%	.0%	.0%	8.2%
All Hardware Companies	1.0	.8	.0	57	4.3%	6.5%	.0%	18.0%
All Turnkey & SW Companies	23.0	12.0	6.1	262	95.7%	93.5%	100.0%	82.0%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 39
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Host/Server
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	3.3	1.7	.5	32	25.7%	22.5%	18.6%	22.3%
GeoVision Corp.	2.2	1.3	.7	22	16.8%	17.9%	25.3%	15.6%
Digital	2.1	1.6	.0	0	16.5%	21.7%	.0%	.0%
IBM	1.2	.8	.2	13	9.4%	10.7%	7.7%	9.0%
Synercom	.5	.0	.3	0	4.1%	.0%	11.2%	.0%
ESRI	.4	.0	.4	0	3.3%	.0%	13.3%	.0%
Fujitsu	.3	.1	.1	3	2.1%	1.9%	2.8%	2.2%
McDonnell Douglas	.3	.1	.1	4	2.1%	1.9%	2.8%	2.9%
Zycor	.3	.0	.2	0	1.9%	.0%	6.3%	.0%
Dynamic Graphics	.2	.0	.1	0	1.2%	.0%	4.9%	.0%
Control Data	.2	.1	.0	1	1.2%	1.4%	.7%	.7%
ETAK	.1	.0	.1	0	.8%	.1%	2.8%	.0%
Sun	.1	.1	.0	4	.8%	1.2%	.0%	2.7%
Secagraphics	.1	.0	.0	0	.6%	.3%	1.4%	.0%
Radian Corporation	.1	.0	.0	0	.4%	.0%	1.4%	.0%
Computervision	.0	.0	.0	0	.2%	.1%	.4%	.2%
Engineering Systems Corp.	.0	.0	.0	0	.1%	.0%	.4%	.0%
Hewlett-Packard	.0	.0	.0	0	.1%	.0%	.0%	.2%
Other Companies	4.5	2.9	1.2	85	34.5%	38.6%	42.5%	59.9%
All Companies	13.0	7.4	2.9	143	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	12.7	7.2	2.8	139	97.9%	98.1%	97.2%	97.8%
All Asian-Based Companies	.3	.1	.1	3	2.1%	1.9%	2.8%	2.2%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	3.9	3.2	.0	67	30.1%	43.2%	.0%	47.2%
All Turnkey & SW Companies	9.1	4.2	2.9	75	69.9%	56.8%	100.0%	52.8%

Source: Dataquest
May 1990

Market Share

TABLE NUMBER: 40
 TITLE: 1989 Market Share
 APPLICATION: GIS/Mapping
 PLATFORM: Personal Computer
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
ERDAS	.7	.3	.3	5	14.3%	15.0%	12.5%	1.3%
Geobased Systems	.6	.1	.4	0	11.4%	5.1%	15.6%	.0%
IBM	.6	.5	.0	111	11.0%	24.3%	.0%	29.6%
Intergraph	.6	.0	.5	0	11.0%	.0%	20.3%	.0%
Compaq	.5	.5	.0	87	10.4%	24.3%	.0%	23.2%
ETAK	.4	.0	.3	1	7.0%	1.9%	11.7%	.3%
Mapinfo	.3	.0	.3	0	5.8%	.0%	11.3%	.0%
Zycor	.3	.0	.2	0	5.0%	.0%	7.0%	.0%
Strategic Locations Planning	.2	.0	.2	0	3.8%	.0%	7.4%	.0%
Autodesk	.1	.0	.1	0	2.8%	.0%	5.5%	.0%
Apple Computer	.1	.1	.0	20	2.0%	4.2%	.0%	5.3%
Fujitsu	.1	.1	.0	4	1.8%	2.3%	1.6%	1.2%
ESRI	.1	.0	.1	0	1.2%	.0%	2.3%	.0%
Olivetti	.1	.0	.0	28	1.0%	.9%	.8%	7.4%
Radian Corporation	.1	.0	.0	0	1.0%	.0%	1.6%	.0%
Engineering Systems Corp.	.0	.0	.0	0	.6%	.0%	.8%	.0%
D.C.A. Engineering	.0	.0	.0	0	.4%	.0%	.8%	.0%
Foresight Resources	.0	.0	.0	0	.4%	.0%	.8%	.0%
Other Companies	3.0	.9	1.8	124	59.0%	43.9%	69.5%	33.2%
All Companies	5.0	2.1	2.6	374	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	4.9	2.1	2.5	342	97.2%	96.7%	97.7%	91.4%
All Asian-Based Companies	.1	.1	.0	4	1.8%	2.3%	1.6%	1.2%
All European-Based Companies	.1	.0	.0	28	1.0%	.9%	.8%	7.4%
All Hardware Companies	1.6	1.6	.0	336	32.7%	74.8%	.0%	89.9%
All Turnkey & SW Companies	3.4	.5	2.6	38	67.3%	25.2%	100.0%	10.1%

Source: Dataquest
May 1990

TABLE NUMBER: 1
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Worldwide
 PLATFORM: All Platforms

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	636	11,171	14,695	30,670	71,982	109,820	148,620	191,830	236,460	275,820	226%	31%
Workstation Shipments	1,976	13,112	18,452	34,051	75,681	113,300	151,720	194,400	238,440	277,330	149%	30%
CPU Installed Base	959	9,251	23,072	50,565	121,875	229,150	370,660	545,440	746,300	956,730	236%	51%
Workstation Installed Base	3,305	13,056	30,399	60,722	134,929	244,470	387,480	562,530	762,160	970,290	153%	48%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	414.7	288.7	163.1	112.0	91.4	77.9	66.5	57.7	50.5	45.2	-31%	-13%
Hardware-Only ASP	419.3	16.3	14.5	11.5	5.9	4.7	4.0	3.6	3.2	2.8	-66%	-14%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	559	698	800	938	1,038	1,138	1,197	1,221	NA	9%
CPU Revenue	NA	NA	241	326	368	411	464	516	549	564	NA	9%
Workstation Revenue	NA	NA	237	289	347	442	490	537	565	576	NA	11%
Peripheral Revenue	NA	NA	81	83	85	84	84	85	83	81	NA	-1%
Software Revenue	NA	NA	151	179	235	283	346	424	517	621	NA	21%
Bundled	NA	NA	126	131	141	153	171	191	212	235	NA	11%
Unbundled	NA	NA	25	49	94	131	175	232	305	386	NA	33%
Service Revenue	51	83	97	127	157	171	184	199	214	227	32%	8%
Total Revenue	316	558	813	1,020	1,193	1,392	1,569	1,761	1,927	2,069	39%	12%
Increase over Prior Year	NA	77%	46%	26%	17%	17%	13%	12%	9%	7%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 2
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Worldwide
 PLATFORM: Technical Workstation

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	165	754	1,921	3,317	4,618	6,540	8,790	11,600	15,030	18,690	130%	32%
Workstation Shipments	165	754	1,921	3,317	4,618	6,540	8,790	11,600	15,030	18,690	130%	32%
CPU Installed Base	152	798	2,627	5,671	10,265	16,690	25,120	35,820	49,050	64,740	186%	45%
Workstation Installed Base	152	798	2,627	5,671	10,265	16,690	25,120	35,820	49,050	64,740	186%	45%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	130.4	119.0	87.5	63.1	61.3	57.3	53.6	50.2	46.9	43.7	-17%	-7%
Hardware-Only ASP	40.0	30.5	29.4	26.9	23.2	20.9	18.8	17.1	15.4	13.8	-13%	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	96	124	163	223	278	338	395	437	NA	22%
CPU Revenue	NA	NA	37	51	67	93	118	144	170	189	NA	23%
Workstation Revenue	NA	NA	37	51	67	93	118	144	170	189	NA	23%
Peripheral Revenue	NA	NA	23	23	29	36	42	49	55	59	NA	15%
Software Revenue	NA	NA	46	51	89	112	143	180	224	270	NA	25%
Bundled	NA	NA	44	48	63	77	98	125	156	190	NA	25%
Unbundled	NA	NA	2	3	26	35	45	56	68	80	NA	25%
Service Revenue	7	22	20	39	58	78	97	118	140	158	70%	22%
Total Revenue	26	98	161	219	311	412	518	637	759	865	85%	23%
Increase over Prior Year	NA	273%	64%	36%	42%	33%	26%	23%	19%	14%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 3
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Worldwide
 PLATFORM: Host-Dependent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	472	629	1,078	1,355	1,255	1,190	1,110	1,000	840	720	28%	-11%
Workstation Shipments	1,812	2,571	4,835	4,736	4,955	4,670	4,210	3,570	2,830	2,230	29%	-15%
CPU Installed Base	807	1,251	2,243	3,394	4,650	5,840	6,950	7,950	8,800	9,510	55%	15%
Workstation Installed Base	3,153	5,057	9,570	13,552	17,704	21,160	23,770	25,040	24,660	23,070	54%	5%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	514.9	498.2	444.3	565.7	382.8	359.7	328.8	303.8	279.5	257.3	-7%	-8%
Hardware-Only ASP	544.4	409.2	395.0	241.9	241.7	221.5	199.4	182.1	162.7	144.7	-18%	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	388	464	360	324	275	230	175	134	NA	-18%
CPU Revenue	NA	NA	168	223	168	126	107	90	68	52	NA	-21%
Workstation Revenue	NA	NA	163	185	147	157	133	111	85	65	NA	-15%
Peripheral Revenue	NA	NA	56	55	45	41	35	29	22	17	NA	-18%
Software Revenue	NA	NA	78	76	75	74	71	65	55	45	NA	-10%
Bundled	NA	NA	74	71	60	56	51	45	35	27	NA	-15%
Unbundled	NA	NA	4	5	16	18	20	21	21	18	NA	3%
Service Revenue	44	59	76	84	90	80	70	60	47	37	19%	-16%
Total Revenue	289	359	548	624	525	478	417	354	278	215	16%	-16%
Increase over Prior Year	NA	24%	52%	14%	-16%	-9%	-13%	-15%	-22%	-23%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 4
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Worldwide
 PLATFORM: Personal Computer

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	9,787	11,696	25,997	66,109	102,090	138,720	179,230	220,580	256,410	NA	31%
Workstation Shipments	0	9,787	11,696	25,997	66,109	102,090	138,720	179,230	220,580	256,410	NA	31%
CPU Installed Base	0	7,201	18,202	41,499	106,960	206,620	338,590	501,670	688,450	882,480	NA	53%
Workstation Installed Base	0	7,201	18,202	41,499	106,960	206,620	338,590	501,670	688,450	882,480	NA	53%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	.0	21.5	17.9	22.2	20.8	19.6	18.6	17.6	16.5	NA	-6%
Hardware-Only ASP	.0	10.2	5.9	4.1	3.9	3.6	3.3	3.0	2.7	2.4	NA	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	76	110	277	391	485	571	627	650	NA	19%
CPU Revenue	NA	NA	37	52	133	192	239	282	310	322	NA	19%
Workstation Revenue	NA	NA	37	52	133	192	239	282	310	322	NA	19%
Peripheral Revenue	NA	NA	2	5	11	7	7	7	6	5	NA	-14%
Software Revenue	NA	NA	27	53	71	97	132	178	237	306	NA	34%
Bundled	NA	NA	8	12	19	20	21	22	21	19	NA	-0%
Unbundled	NA	NA	19	41	52	78	111	156	217	288	NA	41%
Service Revenue	0	1	1	4	9	13	17	21	26	32	NA	28%
Total Revenue	0	101	104	177	357	501	634	770	891	989	NA	23%
Increase over Prior Year	NA	NA	3%	71%	102%	40%	27%	21%	16%	11%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 5
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: North America
 PLATFORM: All Platforms

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	467	8,036	9,535	18,368	43,598	66,620	89,420	114,110	139,070	159,900	211%	30%
Workstation Shipments	1,381	9,490	12,169	20,340	45,799	68,480	90,990	115,390	140,020	160,620	140%	29%
CPU Installed Base	844	8,881	18,415	36,781	79,727	144,170	228,010	330,370	446,580	565,930	212%	48%
Workstation Installed Base	2,846	12,327	24,426	44,487	88,996	154,290	238,340	340,130	454,960	572,550	136%	45%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	385.4	276.1	183.4	128.2	129.3	104.2	84.7	69.9	58.1	49.4	-24%	-18%
Hardware-Only ASP	353.4	14.1	13.2	9.5	5.3	4.2	3.6	3.3	2.9	2.6	-65%	-13%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	348	380	439	493	534	574	593	587	NA	6%
CPU Revenue	NA	NA	144	176	195	218	242	264	275	275	NA	7%
Workstation Revenue	NA	NA	159	159	200	233	254	273	283	280	NA	7%
Peripheral Revenue	NA	NA	46	44	44	41	39	37	35	32	NA	-6%
Software Revenue	NA	NA	104	94	105	128	153	185	224	264	NA	20%
Bundled	NA	NA	86	68	64	69	73	77	82	87	NA	6%
Unbundled	NA	NA	18	26	42	59	80	108	142	177	NA	34%
Service Revenue	36	59	73	81	78	80	81	82	82	81	21%	1%
Total Revenue	215	396	526	555	622	700	768	841	899	932	31%	8%
Increase over Prior Year	NA	85%	33%	6%	12%	12%	10%	9%	7%	4%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 6
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: North America
 PLATFORM: Technical Workstation

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	152	620	1,363	2,165	2,394	3,280	4,220	5,270	6,470	7,540	99%	26%
Workstation Shipments	152	620	1,363	2,165	2,394	3,280	4,220	5,270	6,470	7,540	99%	26%
CPU Installed Base	152	772	2,135	4,298	6,669	9,850	13,750	18,330	23,550	29,230	157%	34%
Workstation Installed Base	152	772	2,135	4,298	6,669	9,850	13,750	18,330	23,550	29,230	157%	34%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	134.0	119.3	87.1	61.3	56.2	52.3	48.6	45.1	41.9	38.7	-20%	-7%
Hardware-Only ASP	40.0	30.3	27.1	24.6	22.1	19.7	17.5	16.0	14.5	13.0	-14%	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	66	81	81	104	124	141	157	162	NA	15%
CPU Revenue	NA	NA	26	33	33	44	52	60	67	70	NA	16%
Workstation Revenue	NA	NA	26	33	33	44	52	60	67	70	NA	16%
Peripheral Revenue	NA	NA	14	16	15	17	19	21	22	22	NA	8%
Software Revenue	NA	NA	34	34	36	47	59	72	86	100	NA	22%
Bundled	NA	NA	32	33	28	36	44	53	64	73	NA	21%
Unbundled	NA	NA	2	1	8	11	14	18	23	27	NA	28%
Service Revenue	7	18	14	28	25	32	39	45	52	56	38%	18%
Total Revenue	25	81	114	143	142	183	221	258	295	318	55%	17%
Increase over Prior Year	NA	223%	42%	25%	-0%	29%	20%	17%	14%	8%		

Source: Dataquest
 July 1988

TABLE NUMBER: 7
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: North America
 PLATFORM: Host-Dependent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	315	437	647	723	599	520	460	410	340	290	17%	-13%
Workstation Shipments	1,228	1,890	3,281	2,694	2,800	2,380	2,030	1,680	1,290	1,010	23%	-18%
CPU Installed Base	692	1,129	1,776	2,499	3,097	3,620	4,080	4,490	4,830	5,120	45%	11%
Workstation Installed Base	2,694	4,575	7,787	10,205	12,366	13,740	14,410	14,240	13,210	11,740	46%	-1%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	502.5	493.5	478.7	573.1	488.0	449.0	413.0	379.5	348.0	318.6	-1%	-8%
Hardware-Only ASP	544.4	412.5	338.3	204.0	229.9	206.9	186.2	170.7	152.5	135.6	-19%	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	237	234	203	168	138	112	86	65	NA	-20%
CPU Revenue	NA	NA	96	112	85	66	54	44	34	26	NA	-21%
Workstation Revenue	NA	NA	110	95	90	81	66	54	41	31	NA	-19%
Peripheral Revenue	NA	NA	31	28	27	22	18	14	11	8	NA	-21%
Software Revenue	NA	NA	54	33	38	36	33	29	24	18	NA	-13%
Bundled	NA	NA	51	33	34	32	28	23	19	14	NA	-16%
Unbundled	NA	NA	3	0	3	4	5	5	5	4	NA	4%
Service Revenue	30	41	58	52	52	46	39	32	25	19	15%	-18%
Total Revenue	190	250	350	320	293	250	209	173	135	102	11%	-19%
Increase over Prior Year	NA	32%	40%	-9%	-8%	-15%	-16%	-17%	-22%	-25%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 8
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: North America
 PLATFORM: Personal Computer

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	6,980	7,525	15,480	40,604	62,820	84,750	108,430	132,260	152,070	NA	30%
Workstation Shipments	0	6,980	7,525	15,480	40,604	62,820	84,750	108,430	132,260	152,070	NA	30%
CPU Installed Base	0	6,980	14,504	29,985	69,961	130,710	210,180	307,560	418,200	531,580	NA	50%
Workstation Installed Base	0	6,980	14,504	29,985	69,961	130,710	210,180	307,560	418,200	531,580	NA	50%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	.0	21.5	21.2	16.6	15.3	14.1	12.9	11.9	10.9	NA	-8%
Hardware-Only ASP	.0	9.3	5.7	3.9	3.8	3.5	3.2	3.0	2.6	2.4	NA	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	45	64	155	220	273	320	350	360	NA	18%
CPU Revenue	NA	NA	22	32	76	109	135	159	174	179	NA	19%
Workstation Revenue	NA	NA	22	32	76	109	135	159	174	179	NA	19%
Peripheral Revenue	NA	NA	1	1	2	2	2	2	2	2	NA	-5%
Software Revenue	NA	NA	16	27	31	44	62	84	114	146	NA	36%
Bundled	NA	NA	3	2	1	1	0	0	0	0	NA	-27%
Unbundled	NA	NA	13	25	30	44	61	84	114	145	NA	37%
Service Revenue	0	0	1	1	2	2	3	4	5	6	NA	33%
Total Revenue	0	65	61	93	187	267	338	409	469	512	NA	22%
Increase over Prior Year	NA	NA	-6%	51%	101%	43%	27%	21%	15%	9%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 9
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Europe
 PLATFORM: All Platforms

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	112	1,679	3,383	7,150	18,210	27,870	37,640	48,290	59,160	68,790	257%	30%
Workstation Shipments	394	2,062	3,945	7,833	18,801	28,410	38,090	48,620	59,390	68,950	163%	30%
CPU Installed Base	0	0	3,383	10,533	28,742	56,350	92,810	137,240	187,510	239,710	NA	53%
Workstation Installed Base	0	0	3,945	11,778	30,579	58,720	95,580	140,130	190,210	241,940	NA	51%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	482.0	395.8	165.1	127.3	64.7	54.7	48.7	44.8	42.0	39.2	-39%	-10%
Hardware-Only ASP	546.8	23.1	14.8	9.3	5.6	4.3	3.8	3.4	3.0	2.7	-68%	-14%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	111	135	169	195	225	254	276	286	NA	11%
CPU Revenue	NA	NA	48	65	82	88	103	117	128	133	NA	10%
Workstation Revenue	NA	NA	40	54	73	92	105	119	129	134	NA	13%
Peripheral Revenue	NA	NA	23	16	14	16	17	18	18	18	NA	5%
Software Revenue	NA	NA	24	39	70	83	102	124	150	176	NA	20%
Bundled	NA	NA	20	25	29	30	36	42	51	59	NA	16%
Unbundled	NA	NA	4	13	41	53	66	82	100	117	NA	23%
Service Revenue	11	15	16	22	53	58	65	74	83	90	47%	11%
Total Revenue	67	108	149	212	291	336	392	452	509	552	45%	14%
Increase over Prior Year	NA	63%	38%	42%	38%	15%	17%	15%	13%	9%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 10
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Europe
 PLATFORM: Technical Workstation

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	12	65	383	730	1,227	1,700	2,260	2,950	3,720	4,470	217%	30%
Workstation Shipments	12	65	383	730	1,227	1,700	2,260	2,950	3,720	4,470	217%	30%
CPU Installed Base	0	0	383	1,113	2,340	4,030	6,250	9,050	12,390	16,130	NA	47%
Workstation Installed Base	0	0	383	1,113	2,340	4,030	6,250	9,050	12,390	16,130	NA	47%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	92.1	112.4	86.7	62.3	57.2	53.2	49.4	45.9	42.7	39.6	-11%	-7%
Hardware-Only ASP	.0	31.3	45.6	35.3	25.0	22.2	19.8	18.2	16.4	14.7	NA	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	22	27	45	60	74	89	102	110	NA	19%
CPU Revenue	NA	NA	7	11	19	25	31	38	43	47	NA	20%
Workstation Revenue	NA	NA	7	11	19	25	31	38	43	47	NA	20%
Peripheral Revenue	NA	NA	8	4	7	10	12	14	16	16	NA	18%
Software Revenue	NA	NA	9	11	35	45	57	71	87	102	NA	24%
Bundled	NA	NA	9	10	18	23	30	38	47	57	NA	26%
Unbundled	NA	NA	0	1	17	22	27	33	39	46	NA	22%
Service Revenue	0	2	4	7	27	36	46	56	67	75	217%	23%
Total Revenue	1	8	35	49	108	141	177	216	256	288	197%	22%
Increase over Prior Year	NA	463%	348%	40%	118%	31%	25%	23%	18%	13%		

Source: Dataquest
 July 1988

TABLE NUMBER: 11
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Europe
 PLATFORM: Host-Dependent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	100	140	140	182	312	230	210	170	140	110	33%	-19%
Workstation Shipments	382	524	702	865	904	770	650	500	370	260	24%	-22%
CPU Installed Base	0	0	140	322	634	870	1,070	1,240	1,380	1,480	NA	18%
Workstation Installed Base	0	0	702	1,567	2,471	3,230	3,840	4,140	4,080	3,710	NA	8%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	541.4	528.3	475.8	600.6	199.5	187.4	161.7	143.6	126.3	113.0	-22%	-11%
Hardware-Only ASP	546.8	406.2	1008.1	513.6	234.6	207.3	182.9	167.6	147.0	126.3	-19%	-12%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	70	90	56	38	29	21	15	10	NA	-29%
CPU Revenue	NA	NA	32	45	29	15	11	8	6	4	NA	-33%
Workstation Revenue	NA	NA	23	34	20	19	14	10	7	5	NA	-24%
Peripheral Revenue	NA	NA	15	12	7	5	4	3	2	1	NA	-29%
Software Revenue	NA	NA	10	18	21	18	18	17	16	14	NA	-8%
Bundled	NA	NA	10	15	10	6	5	4	3	2	NA	-27%
Unbundled	NA	NA	0	3	11	12	13	13	13	12	NA	2%
Service Revenue	11	13	12	15	24	20	17	14	12	10	22%	-17%
Total Revenue	65	82	91	123	101	76	64	53	43	34	12%	-20%
Increase over Prior Year	NA	26%	11%	36%	-18%	-24%	-16%	-18%	-18%	-21%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 12
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Europe
 PLATFORM: Personal Computer

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	----	----	----	----	----	----	----	----	----	----	-----	-----
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	1,474	2,860	6,238	16,671	25,940	35,170	45,170	55,300	64,220	NA	31%
Workstation Shipments	0	1,474	2,860	6,238	16,671	25,940	35,170	45,170	55,300	64,220	NA	31%
CPU Installed Base	0	0	2,860	9,098	25,769	51,450	85,490	126,940	173,740	222,100	NA	54%
Workstation Installed Base	0	0	2,860	9,098	25,769	51,450	85,490	126,940	173,740	222,100	NA	54%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	.0	33.4	16.3	5.7	5.1	4.6	4.2	3.9	3.6	NA	-9%
Hardware-Only ASP	.0	12.4	5.8	4.4	4.1	3.8	3.5	3.2	2.9	2.6	NA	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	18	18	68	98	122	144	158	165	NA	19%
CPU Revenue	NA	NA	9	9	34	48	60	71	79	82	NA	19%
Workstation Revenue	NA	NA	9	9	34	48	60	71	79	82	NA	19%
Peripheral Revenue	NA	NA	1	0	0	1	1	1	1	1	NA	36%
Software Revenue	NA	NA	5	10	14	19	27	36	47	60	NA	35%
Bundled	NA	NA	1	1	1	1	1	1	0	0	NA	-15%
Unbundled	NA	NA	4	9	13	19	26	35	47	59	NA	36%
Service Revenue	0	0	0	0	1	2	3	3	4	5	NA	38%
Total Revenue	0	19	23	39	83	119	151	183	210	230	NA	23%
Increase over Prior Year	NA	NA	24%	71%	111%	44%	27%	21%	15%	10%		

Source: Dataquest
 July 1988

TABLE NUMBER: 13
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Asia
 PLATFORM: All Platforms

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	****	****	****	****	****	****	****	****	****	****	****	****
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	46	1,200	1,361	4,491	8,834	13,190	18,570	25,460	33,120	40,900	273%	36%
Workstation Shipments	156	1,287	1,787	5,047	9,590	14,110	19,500	26,270	33,780	41,400	180%	34%
CPU Installed Base	0	0	487	1,805	10,639	23,800	42,210	66,630	96,640	130,560	NA	65%
Workstation Installed Base	0	0	770	2,447	12,036	26,120	45,420	70,520	100,880	134,750	NA	62%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	539.0	259.9	108.0	75.9	69.4	66.2	59.7	54.0	48.3	44.7	-40%	-8%
Hardware-Only ASP	539.7	20.6	32.6	22.2	9.9	8.1	6.2	5.0	4.3	3.7	-63%	-18%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	81	151	169	221	246	274	288	303	NA	12%
CPU Revenue	NA	NA	42	68	81	93	106	119	127	136	NA	11%
Workstation Revenue	NA	NA	29	63	64	104	115	127	133	140	NA	17%
Peripheral Revenue	NA	NA	10	20	24	25	26	27	27	27	NA	3%
Software Revenue	NA	NA	17	41	56	67	82	101	119	141	NA	20%
Bundled	NA	NA	15	34	46	50	58	67	74	84	NA	13%
Unbundled	NA	NA	2	7	10	17	24	33	44	57	NA	42%
Service Revenue	3	5	4	18	22	28	33	38	41	44	70%	15%
Total Revenue	27	42	110	210	247	316	361	412	447	489	73%	15%
Increase over Prior Year	NA	53%	163%	91%	18%	28%	14%	14%	9%	9%		

Source: Dataquest
 July 1988

TABLE NUMBER: 14
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Asia
 PLATFORM: Technical Workstation

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	****	****	****	****	****	****	****	****	****	****	*****	*****
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	44	102	289	887	1,380	2,030	2,920	4,090	5,530	NA	44%
Workstation Shipments	0	44	102	289	887	1,380	2,030	2,920	4,090	5,530	NA	44%
CPU Installed Base	0	0	10	29	916	2,300	4,320	7,230	11,220	16,430	NA	78%
Workstation Installed Base	0	0	10	29	916	2,300	4,320	7,230	11,220	16,430	NA	78%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	134.8	87.4	87.2	97.1	88.4	80.5	73.1	66.5	60.4	NA	-9%
Hardware-Only ASP	.0	31.4	28.8	26.9	23.8	21.6	19.6	17.5	15.5	13.7	NA	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	4	12	33	54	73	96	121	144	NA	34%
CPU Revenue	NA	NA	1	5	13	23	31	42	52	63	NA	36%
Workstation Revenue	NA	NA	1	5	13	23	31	42	52	63	NA	36%
Peripheral Revenue	NA	NA	1	2	6	8	10	13	16	19	NA	24%
Software Revenue	NA	NA	1	5	16	18	24	35	47	62	NA	31%
Bundled	NA	NA	1	4	15	16	22	31	43	57	NA	31%
Unbundled	NA	NA	0	1	1	2	3	3	4	5	NA	33%
Service Revenue	0	1	1	3	6	8	11	14	18	22	NA	32%
Total Revenue	0	5	5	20	55	79	108	145	185	228	NA	33%
Increase over Prior Year	NA	NA	-5%	297%	168%	45%	37%	34%	28%	23%		

Source: Dataquest
 July 1988

TABLE NUMBER: 15
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Asia
 PLATFORM: Host-Dependent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	----	----	----	----	----	----	----	----	----	----	-----	-----
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	46	44	266	355	303	390	390	370	310	270	60%	-2%
Workstation Shipments	156	131	693	910	1,058	1,310	1,310	1,180	970	760	61%	-6%
CPU Installed Base	0	0	179	331	634	1,020	1,410	1,780	2,090	2,360	NA	30%
Workstation Installed Base	0	0	462	973	2,031	3,340	4,620	5,670	6,330	6,550	NA	26%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	539.0	438.9	329.0	523.3	368.2	338.1	311.1	285.5	262.2	239.7	-9%	-8%
Hardware-Only ASP	539.7	404.4	272.1	256.2	266.7	239.4	214.7	193.8	172.8	153.6	-16%	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	67	113	87	102	93	82	62	48	NA	-11%
CPU Revenue	NA	NA	35	53	48	40	36	32	24	19	NA	-17%
Workstation Revenue	NA	NA	23	47	30	50	45	40	30	23	NA	-5%
Peripheral Revenue	NA	NA	9	14	9	13	12	10	8	6	NA	-8%
Software Revenue	NA	NA	11	23	14	17	17	17	13	10	NA	-6%
Bundled	NA	NA	10	22	13	16	16	15	11	9	NA	-8%
Unbundled	NA	NA	0	1	1	1	1	1	1	1	NA	10%
Service Revenue	3	4	3	12	10	12	11	10	8	6	38%	-10%
Total Revenue	27	23	89	148	111	131	122	109	82	64	42%	-11%
Increase over Prior Year	NA	-17%	289%	67%	-25%	18%	-7%	-10%	-25%	-22%		

Source: Dataquest
 July 1988

TABLE NUMBER: 16
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Asia
 PLATFORM: Personal Computer

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	****	****	****	****	****	****	****	****	****	****	****	****
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	1,112	992	3,847	7,644	11,420	16,160	22,160	28,720	35,100	NA	36%
Workstation Shipments	0	1,112	992	3,847	7,644	11,420	16,160	22,160	28,720	35,100	NA	36%
CPU Installed Base	0	0	297	1,445	9,088	20,480	36,480	57,620	83,330	111,780	NA	65%
Workstation Installed Base	0	0	297	1,445	9,088	20,480	36,480	57,620	83,330	111,780	NA	65%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	.0	19.7	17.3	26.8	24.7	22.8	20.9	19.2	17.6	NA	-8%
Hardware-Only ASP	.0	12.3	9.0	4.5	4.0	3.7	3.4	3.0	2.7	2.5	NA	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	11	25	49	65	80	95	105	111	NA	18%
CPU Revenue	NA	NA	5	11	20	31	38	46	51	54	NA	22%
Workstation Revenue	NA	NA	5	11	20	31	38	46	51	54	NA	22%
Peripheral Revenue	NA	NA	1	4	9	4	4	4	3	3	NA	-20%
Software Revenue	NA	NA	5	13	25	32	40	50	59	69	NA	22%
Bundled	NA	NA	4	9	17	18	20	21	20	18	NA	1%
Unbundled	NA	NA	1	5	8	14	21	29	39	51	NA	45%
Service Revenue	0	0	0	3	7	9	11	13	15	17	NA	20%
Total Revenue	0	14	16	41	81	106	132	158	180	197	NA	19%
Increase over Prior Year	NA	NA	19%	152%	98%	30%	24%	20%	14%	10%		

Source: Dataquest
 July 1988

TABLE NUMBER: 17
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Rest of World
 PLATFORM: All Platforms

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	11	255	417	660	1,341	2,140	2,980	3,970	5,100	6,230	231%	36%
Workstation Shipments	45	274	550	832	1,492	2,290	3,140	4,120	5,250	6,370	141%	34%
CPU Installed Base	115	370	787	1,447	2,767	4,830	7,620	11,190	15,570	20,530	122%	49%
Workstation Installed Base	459	729	1,258	2,010	3,318	5,340	8,140	11,750	16,110	21,040	64%	45%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	564.3	167.5	237.9	179.1	163.2	132.9	112.5	91.5	76.3	65.7	-27%	-17%
Hardware-Only ASP	546.1	17.2	13.3	35.2	9.0	7.7	6.8	6.1	5.7	5.5	-64%	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	19	33	24	29	33	36	41	45	NA	14%
CPU Revenue	NA	NA	7	17	11	12	14	16	18	20	NA	14%
Workstation Revenue	NA	NA	9	13	10	14	16	17	19	22	NA	16%
Peripheral Revenue	NA	NA	3	3	3	3	3	3	3	3	NA	4%
Software Revenue	NA	NA	5	5	5	6	9	14	24	39	NA	53%
Bundled	NA	NA	4	4	3	4	4	4	4	5	NA	7%
Unbundled	NA	NA	1	2	1	3	5	10	19	35	NA	93%
Service Revenue	1	3	4	5	4	5	5	6	8	11	52%	21%
Total Revenue	7	12	28	43	33	40	47	56	72	96	47%	24%
Increase over Prior Year	NA	64%	142%	54%	-25%	22%	20%	19%	28%	33%		

Source: Dataquest
 July 1988

TABLE NUMBER: 18
 TITLE: History and forecast
 APPLICATION: Facilities Design
 REGION: Rest of World
 PLATFORM: Technical Workstation

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	26	73	133	109	180	280	450	750	1,160	NA	60%
Workstation Shipments	0	26	73	133	109	180	280	450	750	1,160	NA	60%
CPU Installed Base	0	26	99	231	340	520	790	1,210	1,890	2,950	NA	54%
Workstation Installed Base	0	26	99	231	340	520	790	1,210	1,890	2,950	NA	54%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	105.5	100.8	67.0	54.3	50.5	47.0	43.6	40.4	37.4	NA	-7%
Hardware-Only ASP	.0	29.9	28.2	26.7	25.7	23.4	21.3	19.5	17.6	15.9	NA	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	4	4	4	5	8	11	15	20	NA	41%
CPU Revenue	NA	NA	2	2	1	2	3	5	7	9	NA	45%
Workstation Revenue	NA	NA	2	2	1	2	3	5	7	9	NA	45%
Peripheral Revenue	NA	NA	1	1	1	1	1	1	1	2	NA	21%
Software Revenue	NA	NA	2	1	1	2	3	3	4	5	NA	29%
Bundled	NA	NA	2	1	1	2	2	2	3	3	NA	22%
Unbundled	NA	NA	0	0	0	1	1	1	2	2	NA	46%
Service Revenue	0	2	1	1	1	1	2	2	3	4	NA	37%
Total Revenue	0	4	7	7	6	9	12	16	23	30	NA	38%
Increase over Prior Year	NA	NA	53%	5%	-13%	47%	36%	37%	39%	33%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 19
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Rest of World
 PLATFORM: Host-Dependent

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	====	====	====	====	====	====	====	====	====	====	=====	=====
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	11	8	25	95	41	50	50	50	50	50	39%	4%
Workstation Shipments	45	26	159	266	193	200	220	210	200	190	44%	-0%
CPU Installed Base	115	123	148	243	284	330	390	440	490	550	25%	14%
Workstation Installed Base	459	482	619	807	835	850	910	990	1,040	1,060	16%	5%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	564.3	472.0	689.4	568.4	546.1	502.4	462.2	424.6	389.5	356.6	-1%	-8%
Hardware-Only ASP	546.1	400.7	350.8	218.4	259.3	233.4	210.0	192.5	172.0	153.0	-17%	-10%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	13	26	15	15	16	14	12	11	NA	-6%
CPU Revenue	NA	NA	5	14	7	6	6	5	5	4	NA	-8%
Workstation Revenue	NA	NA	6	10	6	8	8	7	6	6	NA	-3%
Peripheral Revenue	NA	NA	2	2	2	2	2	2	1	1	NA	-7%
Software Revenue	NA	NA	3	2	2	3	3	3	2	2	NA	-3%
Bundled	NA	NA	3	2	2	2	2	2	2	2	NA	-5%
Unbundled	NA	NA	0	0	0	0	0	1	1	0	NA	5%
Service Revenue	1	1	3	4	3	3	3	3	3	2	43%	-6%
Total Revenue	7	4	19	32	21	21	22	19	17	16	31%	-5%
Increase over Prior Year	NA	-38%	329%	73%	-36%	4%	1%	-10%	-11%	-10%		

Source: Dataquest
 July 1988

Forecasts

TABLE NUMBER: 20
 TITLE: History and Forecast
 APPLICATION: Facilities Design
 REGION: Rest of World
 PLATFORM: Personal Computer

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	CAGR 83-87	CAGR 87-92
	----	----	----	----	----	----	----	----	----	----	-----	-----
UNIT SHIPMENT DATA (Workstation Shipments)												
CPU Shipments	0	221	319	432	1,190	1,910	2,640	3,460	4,300	5,010	NA	33%
Workstation Shipments	0	221	319	432	1,190	1,910	2,640	3,460	4,300	5,010	NA	33%
CPU Installed Base	0	221	540	972	2,142	3,980	6,440	9,540	13,180	17,030	NA	51%
Workstation Installed Base	0	221	540	972	2,142	3,980	6,440	9,540	13,180	17,030	NA	51%
AVERAGE SYSTEM PRICE DATA (Thousands of Dollars)												
Turnkey ASP	.0	.0	24.7	21.6	15.9	14.6	13.5	12.4	11.4	10.4	NA	-8%
Hardware-Only ASP	.0	11.9	5.9	4.5	4.4	4.0	3.7	3.4	3.1	2.7	NA	-9%
REVENUE DATA (Millions of Dollars)												
Hardware Revenue	NA	NA	2	2	5	8	10	12	13	14	NA	21%
CPU Revenue	NA	NA	1	1	3	4	5	6	7	7	NA	22%
Workstation Revenue	NA	NA	1	1	3	4	5	6	7	7	NA	22%
Peripheral Revenue	NA	NA	0	0	0	0	0	0	0	0	NA	0%
Software Revenue	NA	NA	1	2	1	2	4	8	17	32	NA	116%
Bundled	NA	NA	0	0	0	0	0	0	0	0	NA	-100%
Unbundled	NA	NA	1	2	1	2	4	8	17	32	NA	117%
Service Revenue	0	0	0	0	0	0	0	1	2	4	NA	153%
Total Revenue	0	3	3	4	6	9	14	21	32	50	NA	53%
Increase over Prior Year	NA	NA	-5%	41%	51%	59%	45%	49%	55%	56%		

Source: Dataquest
 July 1988

Forecasts

Market Share

TABLE NUMBER: 1
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	284.5	178.4	50.1	2,551	23.8%	22.3%	21.3%	3.4%
IBM	119.7	104.4	6.7	15,585	10.0%	13.0%	2.8%	20.6%
Compaq	102.0	102.0	.0	28,650	8.5%	12.7%	.0%	37.9%
Computervision	88.3	25.5	31.4	562	7.4%	3.2%	13.4%	.7%
Digital	74.7	64.3	.0	339	6.3%	8.0%	.0%	.4%
Calma	36.1	18.7	10.2	412	3.0%	2.3%	4.3%	.5%
Fujitsu	34.8	20.5	10.8	400	2.9%	2.6%	4.6%	.5%
Apple Computer	31.7	31.7	.0	11,373	2.7%	4.0%	.0%	15.0%
ISICAD	27.2	12.8	9.5	285	2.3%	1.6%	4.0%	.4%
Auto-Trol	27.0	14.9	8.7	316	2.3%	1.9%	3.7%	.4%
Autodesk	23.6	.0	23.6	0	2.0%	.0%	10.0%	.0%
Prime	21.3	12.8	3.2	236	1.8%	1.6%	1.4%	.3%
NEC	18.9	11.4	5.5	322	1.6%	1.4%	2.4%	.4%
Hewlett-Packard	17.0	10.1	5.4	609	1.4%	1.3%	2.3%	.8%
Apollo	16.2	14.9	.0	662	1.4%	1.9%	.0%	.9%
McDonnell Douglas	13.8	6.9	4.2	221	1.2%	.9%	1.8%	.3%
Hitachi	11.8	6.9	3.8	311	1.0%	.9%	1.6%	.4%
Toshiba (No OEM)	10.8	7.0	2.7	224	.9%	.9%	1.1%	.3%
Mitsubishi Electric	7.0	4.4	1.9	43	.6%	.6%	.8%	.1%
Hitachi Zosen	6.9	2.5	3.7	29	.6%	.3%	1.6%	.0%
Sun	6.0	5.3	.0	260	.5%	.7%	.0%	.3%
ItalCad	5.4	3.6	1.3	52	.5%	.4%	.6%	.1%
PAFEC	5.0	.0	5.0	0	.4%	.0%	2.1%	.0%
Siemens	5.0	3.4	1.1	49	.4%	.4%	.5%	.1%
Control Data	4.9	3.2	.6	10	.4%	.4%	.2%	.0%
Mutoh Industries (No OEM)	4.3	2.4	1.6	150	.4%	.3%	.7%	.2%
CADAM	4.2	2.8	1.0	47	.4%	.3%	.4%	.1%
Zenith	3.3	3.0	.0	1,000	.3%	.4%	.0%	1.3%
Tokyo Electron (No OEM)	2.5	1.4	.8	14	.2%	.2%	.3%	.0%
Dassault	1.7	.0	1.3	0	.1%	.0%	.6%	.0%

(Continued)

Market Share

TABLE NUMBER: 1 (Continued)
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: All Platforms
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
ICL	.8	.6	.2	19	.1%	.1%	.1%	.0%
Other Companies	177.3	124.6	40.8	10,950	14.9%	15.6%	17.4%	14.5%
All Companies	1,193.5	800.4	234.9	75,681	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	1,018.9	707.6	171.1	72,745	85.4%	88.4%	72.8%	96.1%
All Asian-Based Companies	140.6	81.0	46.9	2,553	11.8%	10.1%	20.0%	3.4%
All European-Based Companies	34.0	11.8	16.9	384	2.8%	1.5%	7.2%	.5%
All Hardware Companies	404.4	387.3	.2	66,538	33.9%	48.4%	.1%	87.9%
All Turnkey & SW Companies	789.0	413.0	234.8	9,143	66.1%	51.6%	99.9%	12.1%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 2
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company	Total				Market Share			
	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Intergraph	57.9	29.8	14.4	503	18.6%	18.3%	16.2%	10.9%
Computervision	52.6	19.6	17.7	453	16.9%	12.0%	19.9%	9.8%
Calma	26.3	12.9	8.3	290	8.5%	7.9%	9.3%	6.3%
Auto-Trol	25.7	14.0	8.4	301	8.3%	8.6%	9.5%	6.5%
ISICAD	25.3	12.8	7.7	227	8.1%	7.8%	8.7%	4.9%
Hewlett-Packard	17.0	10.1	5.4	609	5.5%	6.2%	6.1%	13.2%
Apollo	16.2	14.9	.0	662	5.2%	9.1%	.0%	14.3%
Digital	9.7	8.4	.0	339	3.1%	5.1%	.0%	7.3%
Mitachi Zosen	6.9	2.5	3.7	29	2.2%	1.5%	4.2%	.6%
Sun	6.0	5.3	.0	260	1.9%	3.2%	.0%	5.6%
Toshiba (No OEM)	5.4	2.9	1.9	140	1.7%	1.8%	2.2%	3.0%
ItalCad	5.1	3.3	1.3	47	1.7%	2.0%	1.4%	1.0%
PAFEC	4.0	.0	4.0	0	1.3%	.0%	4.5%	.0%
Siemens	2.5	1.6	.7	28	.8%	1.0%	.8%	.6%
IBM	2.3	1.4	.6	39	.7%	.9%	.7%	.8%
Tokyo Electron (No OEM)	2.2	1.1	.7	11	.7%	.7%	.8%	.2%
NEC	1.6	1.4	.0	60	.5%	.9%	.0%	1.3%
Mitsubishi Electric	1.4	.9	.4	14	.5%	.5%	.4%	.3%
Mitachi	1.2	1.2	.0	22	.4%	.7%	.0%	.5%
Control Data	1.1	.3	.6	10	.4%	.2%	.6%	.2%
McDonnell Douglas	1.1	.5	.4	22	.4%	.3%	.5%	.5%
ICL	.8	.6	.2	19	.3%	.4%	.2%	.4%
Fujitsu	.7	.0	.6	0	.2%	.0%	.7%	.0%
Autodesk	.3	.0	.3	0	.1%	.0%	.3%	.0%
Dassault	.3	.0	.2	0	.1%	.0%	.2%	.0%

(Continued)

Market Share

TABLE NUMBER: 2 (Continued)
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Technical Workstation
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
CADAM	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	37.2	17.8	11.4	532	12.0%	10.9%	12.8%	11.5%
All Companies	310.8	163.3	89.0	4,618	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	260.3	140.4	68.3	4,085	83.7%	86.0%	76.8%	88.5%
All Asian-Based Companies	30.3	16.5	10.8	438	9.7%	10.1%	12.2%	9.5%
All European-Based Companies	20.2	6.5	9.8	94	6.5%	4.0%	11.0%	2.0%
All Hardware Companies	38.7	34.6	.2	1,496	12.4%	21.2%	.2%	32.4%
All Turnkey & SW Companies	272.1	128.7	88.8	3,122	87.6%	78.8%	99.8%	67.6%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 3
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Host-Dependent
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Intergraph	223.0	148.6	32.9	2,048	42.5%	41.2%	43.6%	41.3%
Digital	65.0	56.0	.0	0	12.4%	15.5%	.0%	.0%
IBM	38.6	28.5	4.8	443	7.4%	7.9%	6.3%	8.9%
Computervision	32.8	5.7	11.6	69	6.2%	1.6%	15.3%	1.4%
Fujitsu	28.5	20.5	5.1	400	5.4%	5.7%	6.8%	8.1%
Prime	21.3	12.8	3.2	236	4.1%	3.6%	4.2%	4.8%
McDonnell Douglas	12.6	6.4	3.7	199	2.4%	1.8%	4.9%	4.0%
Calma	9.4	5.6	1.8	101	1.8%	1.6%	2.3%	2.0%
NEC	8.3	6.0	1.5	60	1.6%	1.7%	2.0%	1.2%
Mitsubishi Electric	5.6	3.5	1.5	29	1.1%	1.0%	2.0%	.6%
Toshiba (No OEM)	5.4	4.1	.7	84	1.0%	1.1%	1.0%	1.7%
Control Data	3.8	2.9	.0	0	.7%	.8%	.0%	.0%
CADAM	3.3	2.2	.8	30	.6%	.6%	1.1%	.6%
Siemens	2.5	1.8	.4	21	.5%	.5%	.5%	.4%
Dassault	1.4	.0	1.1	0	.3%	.0%	1.5%	.0%
Auto-Trol	1.3	.9	.3	16	.2%	.2%	.4%	.3%
PAFEC	1.0	.0	1.0	0	.2%	.0%	1.3%	.0%
Tokyo Electron (No OEM)	.4	.3	.0	3	.1%	.1%	.1%	.1%
ItalCad	.3	.2	.0	5	.1%	.1%	.0%	.1%
Other Companies	61.0	54.4	5.0	1,211	11.6%	15.1%	6.6%	24.4%
All Companies	525.3	360.3	75.4	4,955	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	457.2	314.6	59.6	4,256	87.0%	87.3%	79.0%	85.9%
All Asian-Based Companies	57.2	40.8	11.1	628	10.9%	11.3%	14.7%	12.7%
All European-Based Companies	10.9	4.9	4.8	70	2.1%	1.4%	6.3%	1.4%
All Hardware Companies	114.0	104.0	.0	1,052	21.7%	28.9%	.0%	21.2%
All Turnkey & SW Companies	411.4	256.3	75.4	3,902	78.3%	71.1%	100.0%	78.8%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 4
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Personal Computer
 REGION: Worldwide
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Compaq	102.0	102.0	.0	28,650	28.5%	36.9%	.0%	43.3%
IBM	78.7	74.5	1.3	15,103	22.0%	26.9%	1.9%	22.8%
Apple Computer	31.7	31.7	.0	11,373	8.9%	11.4%	.0%	17.2%
Autodesk	23.3	.0	23.3	0	6.5%	.0%	33.0%	.0%
Hitachi	10.6	5.7	3.8	289	3.0%	2.1%	5.4%	.4%
NEC	9.0	4.0	4.0	202	2.5%	1.5%	5.7%	.3%
Fujitsu	5.6	.0	5.0	0	1.6%	.0%	7.1%	.0%
Mutoh Industries (No OEM)	4.3	2.4	1.6	150	1.2%	.8%	2.2%	.2%
Intergraph	3.6	.0	2.8	0	1.0%	.0%	3.9%	.0%
Zenith	3.3	3.0	.0	1,000	.9%	1.1%	.0%	1.5%
Computervision	2.9	.3	2.2	40	.8%	.1%	3.1%	.1%
ISICAD	1.9	.0	1.8	58	.5%	.0%	2.5%	.1%
CADAM	.9	.6	.2	16	.3%	.2%	.3%	.0%
Calma	.4	.3	.1	21	.1%	.1%	.2%	.0%
Other Companies	79.1	52.4	24.4	9,206	22.1%	18.9%	34.6%	13.9%
All Companies	357.3	276.8	70.6	66,109	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	301.5	252.6	43.2	64,404	84.4%	91.3%	61.2%	97.4%
All Asian-Based Companies	53.0	23.8	25.0	1,486	14.8%	8.6%	35.5%	2.2%
All European-Based Companies	2.9	.4	2.3	220	.8%	.1%	3.3%	.3%
All Hardware Companies	251.8	248.8	.0	63,990	70.5%	89.9%	.0%	96.8%
All Turnkey & SW Companies	105.5	28.0	70.6	2,119	29.5%	10.1%	100.0%	3.2%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 5
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: All Platforms
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Intergraph	207.3	134.8	35.2	1,819	33.3%	30.7%	33.5%	4.0%
Compaq	71.4	71.4	.0	20,055	11.5%	16.3%	.0%	43.8%
IBM	53.3	48.5	2.6	7,667	8.5%	11.0%	2.5%	16.7%
Digital	37.5	31.9	.0	185	6.0%	7.3%	.0%	.4%
Computervision	32.5	13.9	6.8	211	5.2%	3.2%	6.5%	.5%
ISICAD	23.4	11.0	8.3	195	3.8%	2.5%	7.9%	.4%
Apple Computer	23.1	23.1	.0	8,302	3.7%	5.3%	.0%	18.1%
Calma	21.6	12.4	7.1	304	3.5%	2.8%	6.7%	.7%
Auto-Trol	21.3	12.1	6.7	250	3.4%	2.8%	6.3%	.5%
Autodesk	14.2	.0	14.2	0	2.3%	.0%	13.5%	.0%
Prime	11.8	7.1	1.8	137	1.9%	1.6%	1.7%	.3%
McDonnell Douglas	7.8	3.6	2.7	108	1.2%	.8%	2.5%	.2%
Apollo	7.0	6.2	.0	250	1.1%	1.4%	.0%	.5%
Sun	6.0	5.3	.0	260	1.0%	1.2%	.0%	.6%
Hewlett-Packard	5.9	3.8	1.6	310	1.0%	.9%	1.6%	.7%
Control Data	3.6	2.4	.3	5	.6%	.5%	.3%	.0%
Zenith	3.3	3.0	.0	1,000	.5%	.7%	.0%	2.2%
CADAM	1.7	1.1	.4	18	.3%	.2%	.4%	.0%
Dassault	.6	.0	.5	0	.1%	.0%	.4%	.0%
Other Companies	69.0	47.5	17.0	4,723	11.1%	10.8%	16.2%	10.3%
All Companies	622.4	438.8	105.1	45,799	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	621.7	438.8	104.5	45,799	99.9%	100.0%	99.5%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.7	.0	.6	0	.1%	.0%	.5%	.0%
All Hardware Companies	226.5	218.1	.0	41,792	36.4%	49.7%	.0%	91.3%
All Turnkey & SW Companies	395.9	220.8	105.1	4,007	63.6%	50.3%	100.0%	8.7%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 6
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Technical Workstation
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	21.8	11.4	6.4	228	15.3%	14.0%	17.7%	9.5%
ISICAD	21.8	11.0	6.7	195	15.3%	13.5%	18.3%	8.1%
Auto-Trol	20.2	11.4	6.4	237	14.2%	14.0%	17.7%	9.9%
Computervision	19.0	9.1	4.2	151	13.3%	11.2%	11.5%	6.3%
Calma	15.1	8.2	5.5	207	10.6%	10.0%	15.0%	8.6%
Apollo	7.0	6.2	.0	250	4.9%	7.6%	.0%	10.4%
Sun	6.0	5.3	.0	260	4.2%	6.5%	.0%	10.9%
Hewlett-Packard	5.9	3.8	1.6	310	4.2%	4.7%	4.5%	12.9%
Digital	4.9	4.2	.0	185	3.4%	5.1%	.0%	7.7%
McDonnell Douglas	.9	.4	.4	15	.7%	.5%	1.0%	.6%
IBM	.8	.5	.3	14	.6%	.6%	.7%	.6%
Control Data	.6	.1	.3	5	.4%	.2%	.9%	.2%
Autodesk	.1	.0	.1	0	.1%	.0%	.4%	.0%
Dassault	.1	.0	.1	0	.1%	.0%	.2%	.0%
CADAM	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	18.1	9.9	4.4	338	12.7%	12.2%	12.1%	14.1%
All Companies	142.4	81.3	36.3	2,394	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	142.3	81.3	36.3	2,394	99.9%	100.0%	99.8%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.1	.0	.1	0	.1%	.0%	.2%	.0%
All Hardware Companies	18.5	16.1	.0	729	13.0%	19.8%	.0%	30.4%
All Turnkey & SW Companies	123.9	65.2	36.3	1,665	87.0%	80.2%	100.0%	69.6%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 7
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Host-Dependent
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	183.5	123.4	27.1	1,590	62.7%	60.8%	71.7%	56.8%
Digital	32.7	27.8	.0	0	11.1%	13.7%	.0%	.0%
IBM	13.9	10.2	1.8	159	4.7%	5.0%	4.7%	5.7%
Computervision	12.4	4.7	1.8	51	4.2%	2.3%	4.7%	1.8%
Prime	11.8	7.1	1.8	137	4.0%	3.5%	4.7%	4.9%
McDonnell Douglas	6.8	3.2	2.3	93	2.3%	1.6%	6.1%	3.3%
Calma	6.1	4.0	1.5	76	2.1%	1.9%	4.0%	2.7%
Control Data	3.0	2.2	.0	0	1.0%	1.1%	.0%	.0%
CADAM	1.3	.8	.3	12	.4%	.4%	.8%	.4%
Auto-Trol	1.1	.7	.2	13	.4%	.4%	.6%	.5%
Dassault	.5	.0	.4	0	.2%	.0%	1.0%	.0%
Other Companies	19.9	19.0	.6	668	6.8%	9.4%	1.7%	23.9%
All Companies	292.8	202.9	37.8	2,800	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	292.4	202.9	37.4	2,800	99.8%	100.0%	99.0%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.5	.0	.4	0	.2%	.0%	1.0%	.0%
All Hardware Companies	54.7	48.9	.0	606	18.7%	24.1%	.0%	21.6%
All Turnkey & SW Companies	238.2	154.0	37.8	2,194	81.3%	75.9%	100.0%	78.4%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 8
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Personal Computer
 REGION: North America
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Compaq	71.4	71.4	.0	20,055	38.1%	46.2%	.0%	49.4%
IBM	38.6	37.8	.6	7,494	20.6%	24.5%	1.8%	18.5%
Apple Computer	23.1	23.1	.0	8,302	12.4%	15.0%	.0%	20.4%
Autodesk	14.1	.0	14.1	0	7.5%	.0%	45.4%	.0%
Zenith	3.3	3.0	.0	1,000	1.8%	1.9%	.0%	2.5%
Intergraph	2.1	.0	1.7	0	1.1%	.0%	5.5%	.0%
ISICAD	1.6	.0	1.6	0	.9%	.0%	5.3%	.0%
Computervision	1.1	.1	.9	9	.6%	.1%	2.8%	.0%
Calma	.4	.3	.1	21	.2%	.2%	.4%	.1%
CADAM	.4	.2	.1	6	.2%	.1%	.3%	.0%
Other Companies	31.0	18.7	12.0	3,717	16.6%	12.1%	38.5%	9.2%
All Companies	187.2	154.6	31.0	40,604	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	187.1	154.6	30.9	40,604	99.9%	100.0%	99.6%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.1	.0	.1	0	.1%	.0%	.4%	.0%
All Hardware Companies	153.3	153.0	.0	40,457	81.9%	99.0%	.0%	99.6%
All Turnkey & SW Companies	33.8	1.6	31.0	147	18.1%	1.0%	100.0%	.4%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 9
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: All Platforms
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company	Total				Market Share			
	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
Intergraph	54.0	27.9	10.9	558	18.5%	16.5%	15.7%	3.0%
Computervision	50.5	8.8	23.4	317	17.3%	5.2%	33.7%	1.7%
IBM	31.2	27.4	2.0	3,907	10.7%	16.2%	2.9%	20.8%
Compaq	25.5	25.5	.0	7,163	8.7%	15.1%	.0%	38.1%
Digital	16.6	14.1	.0	65	5.7%	8.4%	.0%	.3%
Calma	10.4	4.4	1.4	83	3.6%	2.6%	2.0%	.4%
Prime	8.9	5.3	1.3	91	3.0%	3.2%	1.9%	.5%
Autodesk	7.4	.0	7.4	0	2.5%	.0%	10.7%	.0%
McDonnell Douglas	5.7	3.2	1.4	109	2.0%	1.9%	2.0%	.6%
ItalCad	5.4	3.6	1.3	52	1.9%	2.1%	1.9%	.3%
Apple Computer	5.4	5.4	.0	1,933	1.8%	3.2%	.0%	10.3%
Hewlett-Packard	5.4	3.2	1.8	279	1.8%	1.9%	2.6%	1.5%
PAFEC	5.0	.0	5.0	0	1.7%	.0%	7.2%	.0%
Siemens	5.0	3.4	1.1	49	1.7%	2.0%	1.6%	.3%
Auto-Trol	3.5	1.6	1.4	41	1.2%	1.0%	2.0%	.2%
Apollo	3.3	2.9	.0	118	1.1%	1.7%	.0%	.6%
ISICAD	1.9	.9	.5	74	.7%	.5%	.8%	.4%
CADAM	1.3	.8	.3	14	.4%	.5%	.4%	.1%
Control Data	1.2	.8	.2	4	.4%	.5%	.3%	.0%
ICL	.8	.6	.2	19	.3%	.4%	.2%	.1%
Dassault	.8	.0	.6	0	.3%	.0%	.8%	.0%
Other Companies	42.6	29.1	9.3	3,926	14.6%	17.2%	13.4%	20.9%
All Companies	291.7	168.9	69.5	18,801	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	258.8	157.2	53.5	18,418	88.7%	93.0%	76.9%	98.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	33.0	11.8	16.0	384	11.3%	7.0%	23.1%	2.0%
All Hardware Companies	95.2	92.0	.0	16,640	32.6%	54.4%	.0%	88.5%
All Turnkey & SW Companies	196.5	77.0	69.5	2,162	67.4%	45.6%	100.0%	11.5%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 10
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Technical Workstation
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	33.1	16.7	7.2	237	30.7%	36.7%	20.5%	19.3%
Computervision	29.6	8.1	12.6	275	27.4%	17.9%	36.1%	22.4%
Calma	7.3	2.9	1.1	61	6.8%	6.4%	3.3%	5.0%
Hewlett-Packard	5.4	3.2	1.8	279	5.0%	7.0%	5.1%	22.8%
ItalCad	5.1	3.3	1.3	47	4.8%	7.3%	3.7%	3.8%
PAFEC	4.0	.0	4.0	0	3.7%	.0%	11.5%	.0%
Auto-Trol	3.3	1.5	1.3	39	3.1%	3.4%	3.8%	3.2%
Apollo	3.3	2.9	.0	118	3.0%	6.4%	.0%	9.6%
Siemens	2.5	1.6	.7	28	2.3%	3.4%	1.9%	2.3%
Digital	2.2	1.8	.0	65	2.0%	4.0%	.0%	5.3%
ISICAD	1.8	.9	.5	16	1.6%	2.0%	1.5%	1.3%
ICL	.8	.6	.2	19	.8%	1.4%	.4%	1.5%
IBM	.7	.4	.2	11	.6%	.8%	.5%	.9%
Control Data	.4	.2	.2	4	.4%	.3%	.6%	.4%
McDonnell Douglas	.2	.1	.1	6	.2%	.1%	.1%	.5%
Dassault	.1	.0	.1	0	.1%	.0%	.3%	.0%
Autodesk	.1	.0	.1	0	.1%	.0%	.3%	.0%
CADAM	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	8.0	1.3	3.6	22	7.5%	2.9%	10.4%	1.8%
All Companies	107.8	45.4	34.9	1,227	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	87.7	39.0	25.2	1,133	81.4%	85.8%	72.2%	92.3%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	20.1	6.5	9.7	94	18.6%	14.2%	27.8%	7.7%
All Hardware Companies	5.8	5.1	.0	204	5.4%	11.2%	.0%	16.6%
All Turnkey & SW Companies	101.9	40.3	34.9	1,023	94.6%	88.8%	100.0%	83.4%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 11
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Host-Dependent
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
Intergraph	19.6	11.3	2.8	321	19.4%	20.3%	13.4%	35.5%
Computervision	19.2	.5	9.5	12	19.0%	.9%	44.9%	1.3%
Digital	14.5	12.3	.0	0	14.3%	22.1%	.0%	.0%
IBM	10.8	7.9	1.4	124	10.7%	14.2%	6.6%	13.7%
Prime	8.9	5.3	1.3	91	8.8%	9.6%	6.3%	10.1%
McDonnell Douglas	5.5	3.1	1.3	103	5.5%	5.6%	6.3%	11.3%
Calma	3.1	1.5	.2	22	3.1%	2.7%	1.0%	2.4%
Siemens	2.5	1.8	.4	21	2.5%	3.3%	1.9%	2.3%
PAFEC	1.0	.0	1.0	0	1.0%	.0%	4.7%	.0%
CADAM	1.0	.7	.2	9	1.0%	1.2%	1.1%	1.0%
Control Data	.8	.7	.0	0	.8%	1.2%	.0%	.0%
Dassault	.6	.0	.5	0	.6%	.0%	2.4%	.0%
ItalCad	.3	.2	.0	5	.3%	.4%	.1%	.5%
Auto-Trol	.2	.1	.1	2	.2%	.2%	.3%	.2%
Other Companies	13.2	10.2	2.3	196	13.0%	18.3%	10.8%	21.7%
All Companies	101.0	55.6	21.1	904	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	90.9	50.7	16.9	834	89.9%	91.2%	80.3%	92.2%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	10.2	4.9	4.1	70	10.1%	8.8%	19.7%	7.8%
All Hardware Companies	22.6	20.3	.0	151	22.3%	36.5%	.0%	16.7%
All Turnkey & SW Companies	78.5	35.3	21.1	753	77.7%	63.5%	100.0%	83.3%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 12
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Personal Computer
 REGION: Europe
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
=====	=====	=====	=====	=====	=====	=====	=====	=====
Compaq	25.5	25.5	.0	7,163	30.8%	37.5%	.0%	43.0%
IBM	19.8	19.1	.5	3,773	23.8%	28.1%	3.3%	22.6%
Autodesk	7.3	.0	7.3	0	8.8%	.0%	54.2%	.0%
Apple Computer	5.4	5.4	.0	1,933	6.5%	7.9%	.0%	11.6%
Computervision	1.8	.2	1.3	30	2.1%	.2%	9.8%	.2%
Intergraph	1.3	.0	1.0	0	1.6%	.0%	7.1%	.0%
CADAM	.3	.2	.1	5	.3%	.3%	.5%	.0%
ISICAD	.1	.0	.0	58	.2%	.0%	.0%	.3%
Other Companies	21.4	17.6	3.4	3,709	25.8%	25.9%	25.1%	22.2%
All Companies	82.9	67.9	13.5	16,671	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	80.2	67.6	11.4	16,451	96.7%	99.4%	84.0%	98.7%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	2.7	.4	2.2	220	3.3%	.6%	16.0%	1.3%
All Hardware Companies	66.8	66.6	.0	16,284	80.6%	98.0%	.0%	97.7%
All Turnkey & SW Companies	16.1	1.3	13.5	386	19.4%	2.0%	100.0%	2.3%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 13
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: All Platforms
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Fujitsu	34.8	20.5	10.8	400	14.1%	12.2%	19.3%	4.2%
IBM	32.0	25.7	1.9	3,552	12.9%	15.2%	3.4%	37.0%
NEC	18.9	11.4	5.5	322	7.6%	6.8%	9.9%	3.4%
Digital	16.8	15.1	.0	75	6.8%	9.0%	.0%	.8%
Hitachi	11.8	6.9	3.8	311	4.8%	4.1%	6.9%	3.2%
Toshiba (No OEM)	10.8	7.0	2.7	224	4.4%	4.2%	4.8%	2.3%
Intergraph	9.0	6.5	1.5	51	3.7%	3.9%	2.8%	.5%
Mitsubishi Electric	7.0	4.4	1.9	43	2.8%	2.6%	3.4%	.5%
Hitachi Zosen	6.9	2.5	3.7	29	2.8%	1.5%	6.7%	.3%
Hewlett-Packard	5.3	2.9	1.9	0	2.1%	1.7%	3.4%	.0%
Apollo	5.3	5.2	.0	270	2.1%	3.1%	.0%	2.8%
Compaq	5.1	5.1	.0	1,433	2.1%	3.0%	.0%	14.9%
Computervision	4.4	2.4	1.1	29	1.8%	1.4%	1.9%	.3%
Mutoh Industries (No OEM)	4.3	2.4	1.6	150	1.8%	1.4%	2.8%	1.6%
Calma	3.4	1.5	1.5	15	1.4%	.9%	2.8%	.2%
Tokyo Electron (No OEM)	2.5	1.4	.8	14	1.0%	.8%	1.4%	.1%
Apple Computer	2.2	2.2	.0	796	.9%	1.3%	.0%	8.3%
ISICAD	1.9	.9	.7	16	.8%	.5%	1.2%	.2%
Autodesk	1.7	.0	1.7	0	.7%	.0%	3.1%	.0%
CADAM	1.3	.8	.3	14	.5%	.5%	.6%	.1%
Auto-Trol	.4	.2	.1	4	.2%	.1%	.1%	.0%
Control Data	.1	.0	.0	0	.0%	.0%	.1%	.0%
Other Companies	61.1	43.7	14.2	1,842	24.7%	25.9%	25.5%	19.2%
All Companies	246.8	168.9	55.7	9,590	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	106.2	87.9	8.7	7,037	43.0%	52.0%	15.7%	73.4%
All Asian-Based Companies	140.6	81.0	46.9	2,553	57.0%	48.0%	84.3%	26.6%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	70.8	66.1	.2	6,823	28.7%	39.1%	.3%	71.2%
All Turnkey & SW Companies	175.9	102.9	55.5	2,766	71.3%	60.9%	99.7%	28.8%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 14
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Technical Workstation
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Hitachi Zosen	6.9	2.5	3.7	29	12.7%	7.6%	23.0%	3.3%
Toshiba (No OEM)	5.4	2.9	1.9	140	9.9%	8.8%	11.9%	15.8%
Hewlett-Packard	5.3	2.9	1.9	0	9.7%	8.7%	11.7%	.0%
Apollo	5.3	5.2	.0	270	9.7%	15.9%	.0%	30.4%
Computervision	3.5	2.1	.8	23	6.4%	6.2%	4.9%	2.6%
Calma	3.4	1.5	1.5	15	6.2%	4.7%	9.5%	1.7%
Digital	2.2	2.0	.0	75	4.0%	6.0%	.0%	8.4%
Tokyo Electron (No OEM)	2.2	1.1	.7	11	4.0%	3.4%	4.5%	1.3%
ISICAD	1.8	.9	.5	16	3.2%	2.7%	3.3%	1.8%
NEC	1.6	1.4	.0	60	2.9%	4.4%	.0%	6.8%
Intergraph	1.5	1.0	.4	22	2.8%	2.9%	2.5%	2.5%
Mitsubishi Electric	1.4	.9	.4	14	2.6%	2.7%	2.3%	1.6%
Hitachi	1.2	1.2	.0	22	2.2%	3.6%	.0%	2.5%
IBM	.8	.6	.2	13	1.4%	1.7%	.9%	1.5%
Fujitsu	.7	.0	.6	0	1.3%	.0%	3.9%	.0%
Auto-Trol	.4	.2	.1	4	.7%	.5%	.5%	.5%
Control Data	.1	.0	.0	0	.1%	.1%	.2%	.1%
Autodesk	.0	.0	.0	0	.0%	.0%	.1%	.0%
CADAM	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	11.0	6.6	3.4	171	20.2%	20.0%	20.7%	19.3%
All Companies	54.6	32.9	16.2	887	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	24.3	16.4	5.4	449	44.5%	49.9%	33.3%	50.6%
All Asian-Based Companies	30.3	16.5	10.8	438	55.5%	50.1%	66.7%	49.4%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	13.1	12.3	.2	522	24.0%	37.3%	.9%	58.9%
All Turnkey & SW Companies	41.5	20.7	16.1	365	76.0%	62.7%	99.1%	41.1%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 15
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Host-Dependent
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Fujitsu	28.5	20.5	5.1	400	25.7%	23.6%	36.4%	37.8%
Digital	14.6	13.1	.0	0	13.2%	15.1%	.0%	.0%
IBM	13.1	9.8	1.5	151	11.9%	11.3%	10.4%	14.2%
NFC	8.3	6.0	1.5	60	7.5%	6.9%	10.6%	5.7%
Intergraph	7.5	5.6	1.1	29	6.7%	6.4%	8.0%	2.7%
Mitsubishi Electric	5.6	3.5	1.5	29	5.1%	4.0%	10.7%	2.7%
Toshiba (No OEM)	5.4	4.1	.7	84	4.9%	4.8%	5.2%	7.9%
CADAM	1.0	.7	.2	9	.9%	.8%	1.7%	.9%
Computervision	.9	.4	.3	6	.8%	.4%	2.0%	.5%
Tokyo Electron (No OEM)	.4	.3	.0	3	.3%	.3%	.3%	.3%
Other Companies	25.6	23.0	2.1	288	23.1%	26.4%	14.6%	27.2%
All Companies	110.9	86.9	14.1	1,058	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	53.6	46.2	3.0	430	48.4%	53.1%	21.4%	40.7%
All Asian-Based Companies	57.2	40.8	11.1	628	51.6%	46.9%	78.6%	59.3%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	31.2	29.7	.0	236	28.2%	34.2%	.0%	22.3%
All Turnkey & SW Companies	79.6	57.2	14.1	822	71.8%	65.8%	100.0%	77.7%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 16
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Personal Computer
 REGION: Asia
 UNITS: Millions of Dollars/Actual Units

Company					Market Share			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
IBM	18.0	15.3	.3	3,388	22.2%	31.1%	1.1%	44.3%
Hitachi	10.6	5.7	3.8	289	13.1%	11.7%	15.1%	3.8%
NEC	9.0	4.0	4.0	202	11.0%	8.2%	15.9%	2.6%
Fujitsu	5.6	.0	5.0	0	6.8%	.0%	19.8%	.0%
Compaq	5.1	5.1	.0	1,433	6.3%	10.4%	.0%	18.7%
Mutoh Industries (No OEM)	4.3	2.4	1.6	150	5.3%	4.8%	6.2%	2.0%
Apple Computer	2.2	2.2	.0	796	2.7%	4.5%	.0%	10.4%
Autodesk	1.7	.0	1.7	0	2.1%	.0%	6.6%	.0%
CADAM	.3	.2	.1	5	.3%	.4%	.3%	.1%
ISICAD	.1	.0	.1	0	.2%	.0%	.5%	.0%
Other Companies	24.4	14.2	8.8	1,382	30.0%	28.9%	34.6%	18.1%
All Companies	81.3	49.0	25.3	7,644	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	28.3	25.3	.3	6,158	34.8%	51.5%	1.2%	80.6%
All Asian-Based Companies	53.0	23.8	25.0	1,486	65.2%	48.5%	98.8%	19.4%
All European-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All Hardware Companies	26.5	24.0	.0	6,065	32.6%	49.0%	.0%	79.3%
All Turnkey & SW Companies	54.8	25.0	25.3	1,579	67.4%	51.0%	100.0%	20.7%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 17
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: All Platforms
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
-----	-----	-----	-----	-----	-----	-----	-----	-----
Intergraph	14.1	9.2	2.4	124	43.3%	38.7%	51.6%	8.3%
Digital	3.8	3.2	.0	14	11.5%	13.5%	.0%	1.0%
IBM	3.1	2.9	.1	459	9.6%	12.1%	3.0%	30.8%
Auto-Trol	1.9	1.1	.6	22	5.7%	4.5%	12.7%	1.5%
Apple Computer	1.0	1.0	.0	341	2.9%	4.0%	.0%	22.9%
Computervision	.9	.4	.2	6	2.8%	1.6%	3.9%	.4%
Apollo	.7	.6	.0	25	2.1%	2.6%	.0%	1.7%
Calma	.7	.4	.2	10	2.1%	1.6%	4.7%	.6%
Prime	.7	.4	.1	8	2.0%	1.6%	2.2%	.5%
Hewlett-Packard	.4	.2	.1	20	1.2%	1.0%	2.4%	1.4%
Dassault	.3	.0	.3	0	1.0%	.0%	5.6%	.0%
McDonnell Douglas	.3	.1	.1	4	.9%	.5%	2.4%	.3%
Autodesk	.2	.0	.2	0	.6%	.0%	4.3%	.0%
CADAM	.0	.0	.0	0	.1%	.1%	.0%	.0%
Control Data	.0	.0	.0	0	.0%	.0%	.0%	.0%
Other Companies	4.6	4.3	.3	459	14.2%	18.0%	7.3%	30.8%
All Companies	32.6	23.7	4.7	1,492	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	32.2	23.7	4.4	1,492	98.9%	100.0%	93.5%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.4	.0	.3	0	1.1%	.0%	6.5%	.0%
All Hardware Companies	11.9	11.3	.0	1,284	36.5%	47.5%	.0%	86.0%
All Turnkey & SW Companies	20.7	12.4	4.7	208	63.5%	52.5%	100.0%	14.0%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 18
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Technical Workstation
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company					----- Market Share -----			
	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped	Total Revenue	Hardware Revenue	Software Revenue	Wkstns Shipped
*****	*****	*****	*****	*****	*****	*****	*****	*****
Auto-Trol	1.8	1.0	.6	21	29.4%	27.3%	38.3%	19.0%
Intergraph	1.5	.8	.4	16	24.6%	21.2%	29.5%	14.2%
Apollo	.7	.6	.0	25	11.6%	17.1%	.0%	22.9%
Computervision	.5	.3	.1	4	8.8%	7.2%	7.4%	3.8%
Digital	.5	.4	.0	14	8.1%	11.6%	.0%	13.3%
Calma	.5	.3	.2	6	7.8%	7.2%	11.4%	5.9%
Hewlett-Packard	.4	.2	.1	20	6.5%	6.6%	7.4%	18.5%
Dassault	.1	.0	.0	0	.8%	.0%	2.7%	.0%
IBM	.1	.0	.0	1	.8%	.8%	.7%	.7%
McDonnell Douglas	.0	.0	.0	1	.5%	.6%	1.3%	.5%
Control Data	.0	.0	.0	0	.2%	.0%	.0%	.1%
Other Companies	.0	.0	.0	1	.8%	.6%	1.3%	1.0%
All Companies	6.0	3.6	1.5	109	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	6.0	3.6	1.5	109	99.2%	100.0%	97.3%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.1	.0	.0	0	.8%	.0%	2.7%	.0%
All Hardware Companies	1.2	1.1	.0	40	20.3%	29.2%	.0%	37.1%
All Turnkey & SW Companies	4.8	2.6	1.5	69	79.7%	70.8%	100.0%	62.9%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 19
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Host-Dependent
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company =====					----- Market Share -----			
	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====	Total Revenue =====	Hardware Revenue =====	Software Revenue =====	Wkstns Shipped =====
Intergraph	12.5	8.4	1.8	108	60.6%	56.5%	74.5%	56.2%
Digital	3.3	2.8	.0	0	15.8%	18.7%	.0%	.0%
IBM	.8	.6	.1	9	3.7%	3.8%	4.0%	4.6%
Prime	.7	.4	.1	8	3.2%	2.6%	4.0%	4.0%
Computervision	.3	.1	.1	1	1.6%	.9%	2.0%	.7%
Dassault	.3	.0	.2	0	1.4%	.0%	8.9%	.0%
McDonnell Douglas	.3	.1	.1	3	1.2%	.7%	3.6%	1.8%
Calma	.2	.1	.1	2	.9%	.9%	2.0%	1.2%
Auto-Trol	.1	.1	.0	1	.4%	.5%	.8%	.6%
CADAM	.0	.0	.0	0	.1%	.1%	.0%	.2%
Other Companies	2.3	2.3	.0	59	11.0%	15.3%	.0%	30.8%
All Companies	20.6	14.9	2.5	193	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	20.3	14.9	2.3	193	98.6%	100.0%	91.1%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.3	.0	.2	0	1.4%	.0%	8.9%	.0%
All Hardware Companies	5.5	5.0	.0	59	26.8%	33.9%	.0%	30.8%
All Turnkey & SW Companies	15.1	9.8	2.5	133	73.2%	66.1%	100.0%	69.2%

Source: Dataquest
 July 1988

Market Share

TABLE NUMBER: 20
 TITLE: 1987 Market Share
 APPLICATION: Facilities Design
 PLATFORM: Personal Computer
 REGION: Rest of World
 UNITS: Millions of Dollars/Actual Units

Company *****					----- Market Share -----			
	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****	Total Revenue *****	Hardware Revenue *****	Software Revenue *****	Wkstns Shipped *****
IBM	2.3	2.3	.0	449	38.8%	43.7%	4.3%	37.7%
Apple Computer	1.0	1.0	.0	341	15.9%	18.3%	.0%	28.7%
Autodesk	.2	.0	.2	0	3.4%	.0%	29.0%	.0%
Intergraph	.1	.0	.1	0	2.3%	.0%	17.4%	.0%
Computervision	.0	.0	.0	0	.5%	.0%	2.9%	.0%
CADAM	.0	.0	.0	0	.2%	.0%	.0%	.0%
Calma	.0	.0	.0	1	.2%	.0%	.0%	.1%
Other Companies	2.3	2.0	.3	399	38.8%	38.1%	46.4%	33.5%
All Companies	6.0	5.2	.7	1,190	100.0%	100.0%	100.0%	100.0%
All U.S.-Based Companies	5.9	5.2	.7	1,190	99.3%	100.0%	94.2%	100.0%
All Asian-Based Companies	.0	.0	.0	0	.0%	.0%	.0%	.0%
All European-Based Companies	.0	.0	.0	0	.7%	.0%	5.8%	.0%
All Hardware Companies	5.2	5.2	.0	1,184	86.6%	99.0%	.0%	99.5%
All Turnkey & SW Companies	.8	.1	.7	6	13.4%	1.0%	100.0%	.5%

Source: Dataquest
 July 1988

