



THE SHAPES OF THINGS TO COME



1998 ANNUAL REPORT

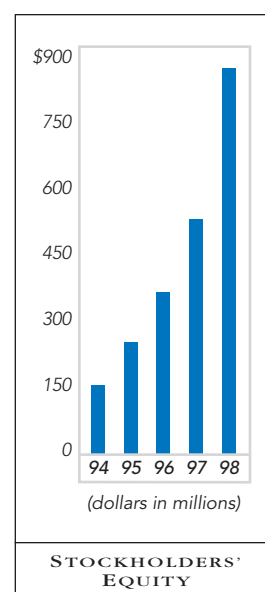
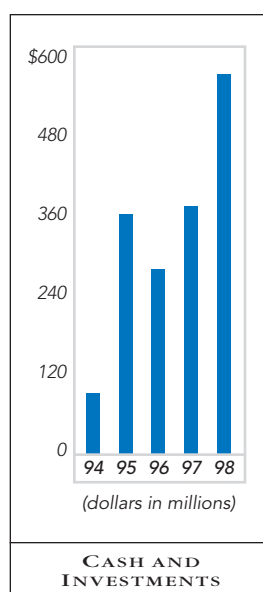
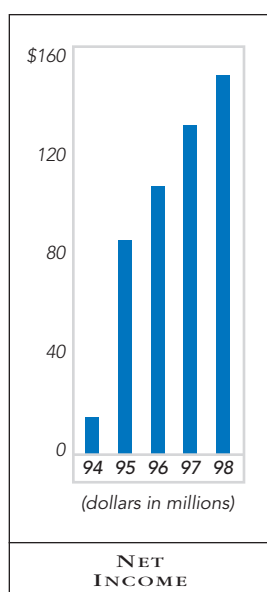
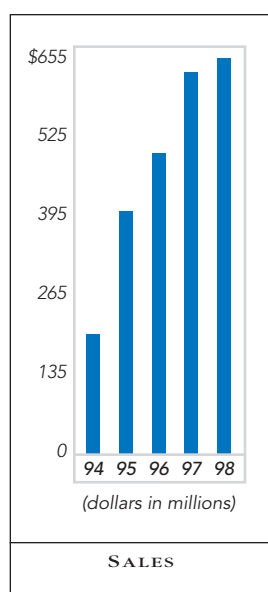
ALTERA CORPORATION, THE PROGRAMMABLE SOLUTIONS COMPANY™, IS A WORLD LEADER IN ONE OF THE SEMICONDUCTOR INDUSTRY'S FASTEST GROWING SEGMENTS: HIGH-DENSITY PROGRAMMABLE LOGIC DEVICES (PLDs) AND ASSOCIATED SOFTWARE TOOLS FOR LOGIC DEVELOPMENT. ALTERA PLDs ARE STANDARD INTEGRATED CIRCUITS THAT OFFER SIGNIFICANT ADVANTAGES OVER CUSTOM LOGIC CHIPS SUCH AS ASICs BY HELPING ELECTRONIC SYSTEMS MANUFACTURERS SHORTEN TIME-TO-MARKET AND REDUCE DEVELOPMENT COSTS. ALTERA SOFTWARE DESIGN TOOLS RUN ON PERSONAL COMPUTERS AND ENGINEERING WORKSTATIONS. THE COMPANY'S

corporate overview

BROAD LINE OF PROGRAMMABLE LOGIC DEVICES AND EASY-TO-USE DEVELOPMENT TOOLS OFFER CUSTOMERS SOLUTIONS FOR THE HIGH-SPEED, HIGH-DENSITY, AND LOWER-POWER APPLICATIONS THAT DRIVE THE ELECTRONICS INDUSTRY'S GROWTH. ALTERA PRODUCTS SERVE OVER 13,000 CUSTOMERS IN THREE PRIMARY MARKET AREAS: COMMUNICATIONS, EDP (ELECTRONIC DATA PROCESSING), AND INDUSTRIAL APPLICATIONS. THE COMPANY SELLS ITS CHIPS WORLD-WIDE AND DERIVES NEARLY HALF OF ITS REVENUES FROM MARKETS OUTSIDE THE UNITED STATES. ALTERA COMMON STOCK IS TRADED ON THE NASDAQ STOCK MARKET® UNDER THE SYMBOL ALTR. ALTERA'S WEB SITE IS LOCATED AT [HTTP://WWW.ALTERA.COM](http://www.altera.com).

FINANCIAL HIGHLIGHTS

(In thousands, except per share amounts)	Years ended December 31,				
	1994	1995	1996	1997	1998
Sales	\$198,796	\$401,598	\$497,306	\$631,114	\$654,342
Income before cumulative effect of change in accounting principle	14,608	86,871	109,135	151,517	154,387
Net income	14,608	86,871	109,135	133,453	154,387
Diluted income per share before cumulative effect of change in accounting principle	0.17	0.95	1.16	1.55	1.56
Diluted net income per share	0.17	0.95	1.16	1.37	1.56
Income from operations	29,359	134,283	168,093	226,955	231,843
Research and development expenses	45,994	33,849	49,513	54,417	59,864
Capital expenditures	10,509	45,820	45,172	80,879	23,950
Cash and short-term investments	92,594	365,219	280,850	377,569	579,106
Stockholders' equity	158,019	255,189	370,245	536,687	881,721





Rodney Smith

*Chairman, Chief Executive Officer,
and President*

I am pleased to report that 1998 was again a year of record revenue and profit for Altera. For the year, revenue grew 4% to \$654 million and, excluding the losses associated with the Company's investment in WaferTech, income from continuing operations increased 9% to \$165 million. In comparison to recent years, revenue growth was modest; however, in a year where the overall semiconductor market was off 8% and the programmable logic market was down 3%—the first decrease ever—Altera continued to grow and maintain market leadership by capturing an additional two percentage points of market share.

Altera's market leadership is directly attributable to the broad range of customer applications addressed by the powerful combination of our MAX® and FLEX® product lines. Almost all high-density programmable logic is implemented through either product-term or look-up table architectures,

Altera's business strategy is to make programmable logic the logic of choice in our customers' products by continuously improving performance and economic attractiveness. Our aggressive product cost reductions during the past year masked a very significant increase in the amount of Altera programmable logic that our customers consumed, and this is an important measure of our success in gaining share in the total CMOS logic market. The basic units we use to measure the amount of logic delivered are the logic element (a 4-input look-up table) for the FLEX families and the macrocell (containing five product terms) for the MAX families. 1998 was a record year for Altera in shipping logic as measured by these fundamental metrics. The number of FLEX logic elements delivered to customers was 9.4 billion, an increase of 131% over the previous year; the number of MAX

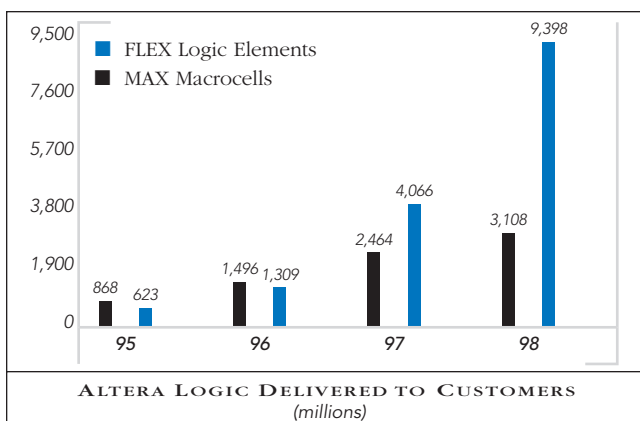
providing the

and only Altera has market-leading products in both areas. The MAX family of devices is Altera's product-term-based offering. Product terms execute logic directly in silicon circuitry and have the advantage of providing the fastest performance and most predictable timing. The MAX architecture is ideal for designs such as the high-speed control logic used in many networking

applications. In contrast, the FLEX architecture implements logic in look-up tables, i.e., memory cells. Look-up tables have the advantage of scalability, enabling very large or high-density logic designs to be implemented on a single chip. The FLEX architecture is ideal for the data path logic used in many communications applications.

macrocells delivered rose to 3.1 billion, an increase of 26%.

Altera's goal in the product-term segment of our business is to continue the product and market leadership that MAX products have enjoyed since introduction. Several competitors have challenged and will continue to challenge our pre-eminence in this market segment. We maintained market leadership during the year with market share in excess of 50%, earned through aggressive actions taken both in product enhancements and pricing. Macrocell deliveries increased 26% over the year; however, due to pricing actions we initiated, the total dollars paid to us by our customers decreased slightly for the year. Our cost leadership in these products enabled us to take pricing actions that deterred price-based market penetration by our competitors while maintaining our profitability. Enhancements to MAX products included completion of the 5.0-volt MAX 7000S family rollout, the introduction of the 3.3-volt MAX 7000A family, and the

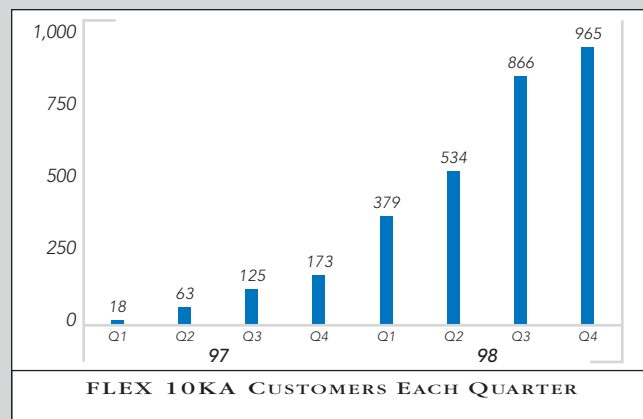


announcement of a new 2.5-volt product line, the MAX 7000B devices, that are planned to ship later this year. All of these families feature in-system programmability (ISP), which allows the device to be programmed after it has been assembled into the customer's product, aiding manufacturability and enabling reprogramming of the device after it has been placed in use. In the fourth quarter of 1998, Altera became the leading supplier of programmable logic that provides ISP functionality. With densities ranging from 32 to 512 macrocells, operating voltages spanning the full range of customer designs from 2.5 to 5.0 volts, and pin-to-pin performance as fast as 4.5 nanoseconds, MAX 7000 offers customers the most complete line of product-term solutions available today and positions Altera for continued market leadership in the future.

Altera's goal in the look-up table segment of the business is to continue to gain

the growth in this market segment and was the only supplier to show growth. During 1998, we positioned ourselves for continued market share gains with a stream of new product introductions. We completed the roll-out of all of the new

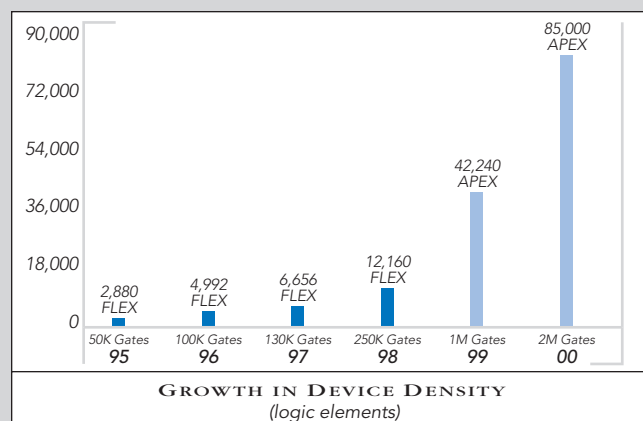
3.3-volt FLEX 10KA devices with sales of this family increasing nearly tenfold over 1997. Moreover, first deliveries of the initial members of the newest FLEX 10K family, the 2.5-volt FLEX 10KE devices—manufactured on an advanced 0.25-micron process—were made to an impressive number of customers with device performance exceeding their expectations.

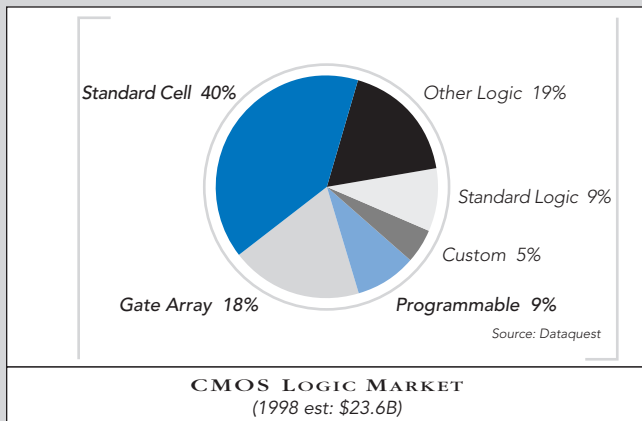


competitive edge

market share and ultimately to become the largest supplier in this market. To this end, the FLEX families of products have been the most successful and fastest growing device architecture introduced to this segment by any supplier in recent years, and in 1998 gained eight points of market share. In the six years since the first FLEX 8000 device was introduced, revenues from FLEX products have grown from \$5 million to \$243 million, a compounded annual growth rate of 117%. The FLEX architecture, which brings to look-up table-based logic a unique continuous hierarchical interconnect, was the first device architecture to offer embedded memory features. These enhancements over FPGAs are the reason for the FLEX families' market success. They allow faster speeds, smaller die size and increased yields, enabling a powerful performance and cost advantage in the market. In 1998, FLEX product sales grew 55% over 1997 compared to an estimated 11% growth for the overall look-up table-based market segment. Altera accounted for 100% of

During 1998, Altera not only led the industry in revenue and revenue growth, but also continued leadership in operating profits and net income as a percentage of revenues at 35.4% and 23.6%, respectively. After adjusting for after-tax charges of \$10.4 million representing our investment in WaferTech, net income as a percentage of revenues was 25.2%. We take pride in running Altera's business as efficiently as possible and being the benchmark among programmable logic companies, not only in product, but also in financial performance. Operating expenses as a percentage of revenue were held flat from 1997 to 1998; however, we were able to increase R&D spending in 1998 from 8.6% to 9.1% of revenue





measure, R&D headcount, increased by 18% year on year. During the year, we opened two new international development centers: the European Technology Center in High Wycombe, U.K., and the Asian Design Center in Penang, Malaysia. Altera's R&D initiatives abroad have enabled us to substantially increase our intellectual capital in a cost-effective manner and to make further

by controlling SG&A expense to offset this increase. In absolute terms, R&D spending increased by 10%, however, this reflects only a portion of the actual increase the Company achieved in R&D resources deployed. A better

made on the 0.25-micron, five-layer-metal process. As a result of these very positive results, we took advantage of an opportunity to increase our equity position in WaferTech, and in the first quarter of 1999 increased our ownership from 18% to 23%, enabling us to secure up to 35% of the output of this state-of-the-art facility.

Another key accomplishment of the year was the formation of Altera's Intellectual Property (IP) Business Unit. During 1998, Altera delivered programmable logic devices that provided up to 250,000 usable gates and by the end of the year 2000, we plan to deliver devices with counts of 2 million usable gates. With this explosion of programmable logic density, we believe there is a significant opportunity for us to assist our customers and, at the same time, promote the use of programmable logic by providing Intellectual Property (IP) to our customers. IP consists of

the shapes of

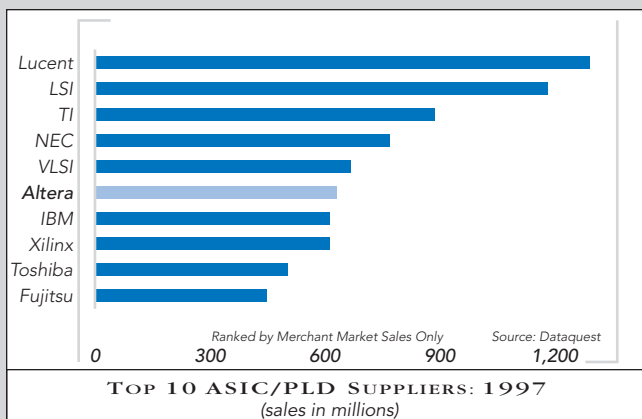
progress toward our goal of conducting "round-the-clock" development activities.

During 1998, WaferTech, our joint venture with Taiwan Semiconductor Manufacturing Company located in Camas, Washington, successfully completed the on-schedule start-up of its wafer fab. By participating in this process, we have established close engineering and manufacturing

ties with WaferTech that we consider to be of great strategic benefit in our current and future product plans. Already, four FLEX 10K and two FLEX 6000 products are being produced in volume and with excellent yields on WaferTech's

pre-designed logic functions (ranging in size from 5,000 to over 50,000 gates) that design engineers can parameterize and readily incorporate into their proprietary designs. The IP Business Unit is responsible for implementing our product initiatives, called megafunctions, in this area of opportunity. Megafunctions are either designed and supplied directly by Altera as MegaCore™ functions, or are supplied to Altera customers by one of the twenty-seven participant firms in our Altera Megafunction Partners Program (AMPPSM). Today we offer over 100 MegaCore and AMPP megafunctions.

In the second half of 1998, Altera made two major product announcements—APEX™, Altera's newest device architecture, and Quartus™, Altera's fourth-generation design tool. The name APEX (Advanced Programmable Embedded MatriX) describes the revolutionary architectural feature of the embedded system block (ESB). The APEX architecture combines the features of the FLEX and MAX products on a single piece



0.35-micron process. Prior to the end of the year, we received first silicon for products

of silicon for the first time. The ESB provides the unique capability of combining look-up table logic with product-term logic and a variety of advanced embedded memory structures. This architecture enables the implementation of System-on-a-Programmable-Chip™ designs containing integrated processors, memory, and interface functions. In the first quarter of 1999, we delivered the first APEX device, the APEX EP20K400 with 400,000 gates (16,640 logic elements), and plan the rollout of six devices during the year with usable gate densities of up to one million gates (42,420 logic elements). The Quartus design software has been developed specifically to address the needs of the high-density logic designs that will be implemented in the APEX family of devices. The Quartus software supports a multi-tasking environment, a requirement for large and complicated design projects where a team or teams of

things to come

engineers are required to work simultaneously on the same design. The Quartus software is also the first programmable logic design tool that has been developed from inception to work in a native mode with all leading electronic design automation (EDA) tools. This feature allows an ASIC or gate array design team to utilize their current design methodology and EDA tools to develop their designs, and then interface seamlessly with the Quartus software to implement the designs in Altera devices. Over the years, independent user surveys have consistently rated Altera as the #1 supplier of design tools for programmable logic. We believe that Quartus will raise the standard by which all other design tools are judged and will ensure Altera's continued leadership in this area.

Dataquest projects that the \$23.6 billion CMOS logic market, of which 9% is programmable, will grow at a 15% rate over the next five years. During the next two years the APEX architecture will enable

Altera devices to provide logic solutions with densities an order of magnitude larger than those available today (two million gates vs. 200,000 gates). This creates a significant opportunity for Altera to participate not only in the growth of the overall market, but also to displace gate array and standard cell ASIC solutions. In developing the logos of our newest products—a *pyramid* for APEX representing peak performance in programmable silicon, a *sphere* for Quartus representing a seamless, integrated suite of design tools, and a *cube* for megafunctions representing the building blocks of Intellectual Property, we have communicated our view of the "shapes of things to come" in the CMOS logic market. Silicon, design tools, and IP are common elements to all CMOS logic, however, combining these elements with programmability provides the significant added value of design flexibility and the fastest time to

market. We believe the "shapes of things to come" will drive customers from ASICs to Altera programmable solutions.

Substantial progress has already been made. In 1994, Altera was ranked fifteenth among suppliers to the worldwide merchant ASIC market. In 1997 Dataquest placed us number six, and during 1998 we are confident in having improved our position to number five. Becoming the #1 supplier in this market is within our grasp and this is the five-year goal we have set for ourselves. We thank you for your support during the past year and look forward to sharing with you the realization of the "shapes of things to come."



Rodney Smith
Chairman, Chief Executive Officer, and President



Five-Year Summary

Years ended December 31,

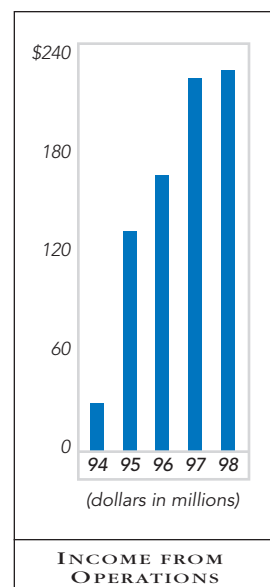
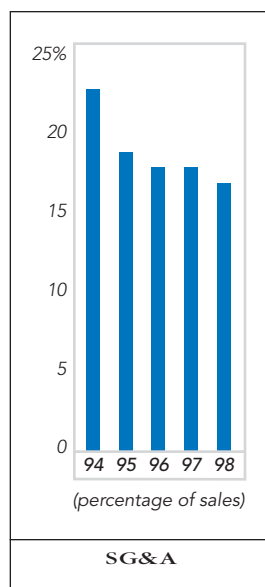
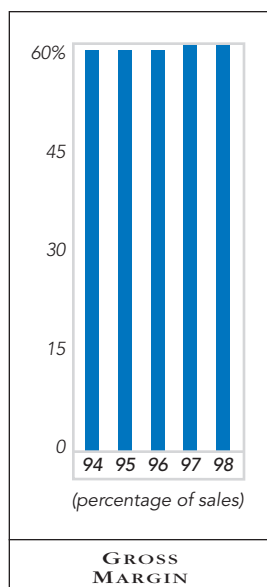
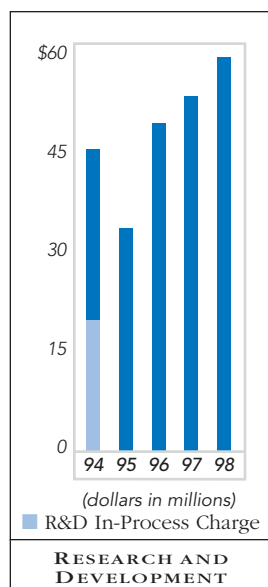
(In thousands, except per share amounts)

Statements of Operations Data:

	1998	1997	1996	1995	1994
Sales	\$ 654,342	\$631,114	\$497,306	\$401,598	\$198,796
Cost of sales	249,474	236,958	191,958	158,808	77,672
Gross profit	404,868	394,156	305,348	242,790	121,124
Research and development expenses	59,864	54,417	49,513	33,849	45,994
Selling, general and administrative expenses	113,161	112,784	87,742	74,658	45,771
Income from operations	\$ 231,843	\$226,955	\$168,093	\$134,283	\$ 29,359
Income before income taxes, equity investment and cumulative effect of change in accounting principle	\$ 244,183	\$229,571	\$169,137	\$137,891	\$ 31,496
Income before equity investment and cumulative effect of change in accounting principle	\$ 164,827	\$151,517	\$109,135	\$ 86,871	\$ 14,608
Equity in loss of WaferTech, LLC	10,440	—	—	—	—
Income before cumulative effect of change in accounting principle	154,387	151,517	109,135	86,871	14,608
Cumulative effect of change in accounting principle	—	18,064	—	—	—
Net income	\$ 154,387	\$133,453	\$109,135	\$ 86,871	\$ 14,608
Income per share before cumulative effect of change in accounting principle:					
Basic	\$ 1.65	\$ 1.71	\$ 1.25	\$ 1.00	\$ 0.18
Diluted	1.56	1.55	1.16	0.95	0.17
Net income per share:					
Basic	\$ 1.65	\$ 1.51	\$ 1.25	\$ 1.00	\$ 0.18
Diluted	1.56	1.37	1.16	0.95	0.17
Shares used in computing income per share:					
Basic	93,493	88,525	87,406	86,625	83,253
Diluted	101,589	102,616	100,813	95,931	86,490

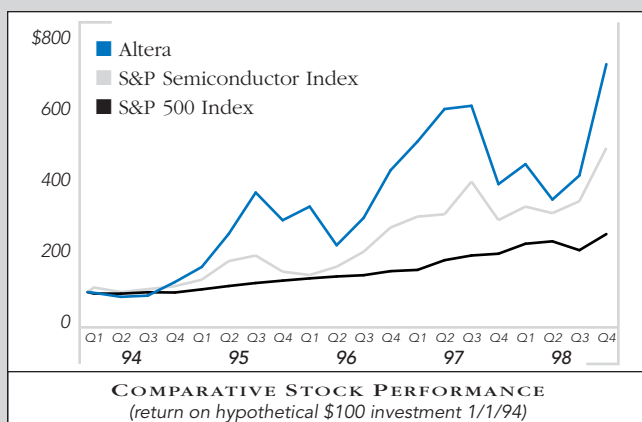
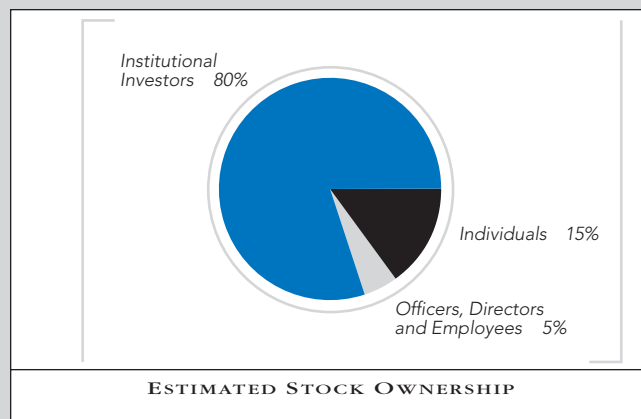
Balance Sheet Data:

Working capital	\$ 587,923	\$430,371	\$295,020	\$346,242	\$121,479
Total assets	1,093,331	952,518	778,212	715,554	213,882
Long-term debt	—	230,000	230,000	288,600	—
Stockholders' equity	881,721	536,687	370,245	255,189	158,019
Book value per share	9.03	6.02	4.23	2.93	1.84



Stock Ownership Profile

The Company estimates that at December 31, 1998, there were more than 36,000 holders of Altera stock.



Stock Price

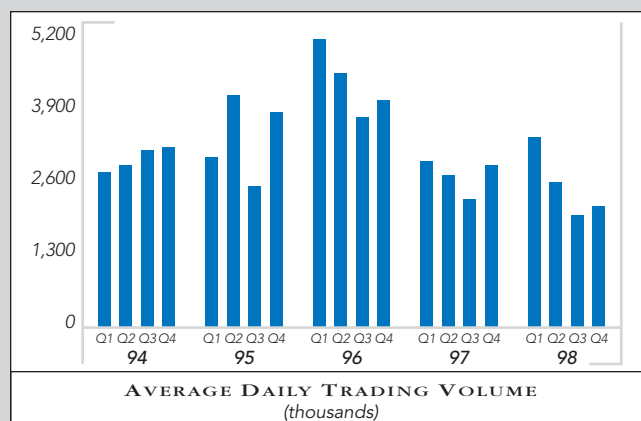
Altera's initial public offering took place on March 31, 1988. The Company's price-to-earnings ratio at each year-end for the last five years was as follows:

1994	1995	1996	1997	1998
26.2	26.2	29.6	21.4	39.0

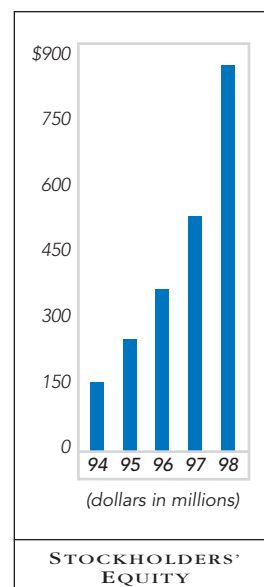
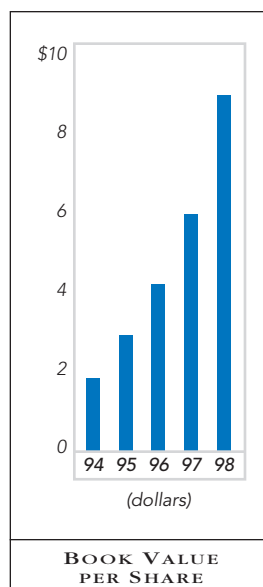
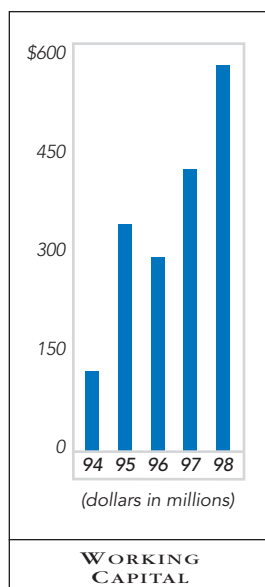
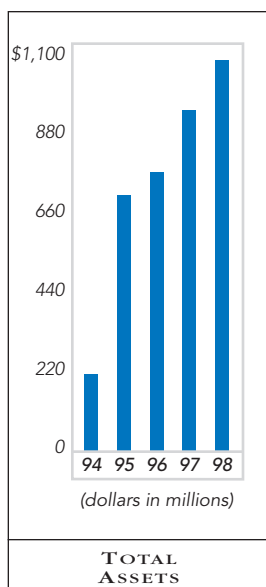
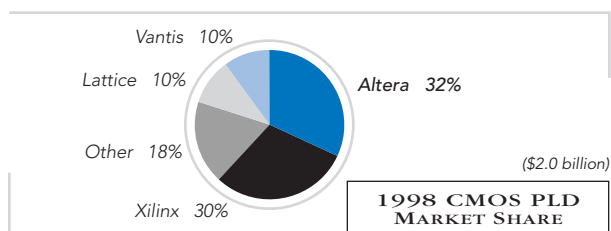
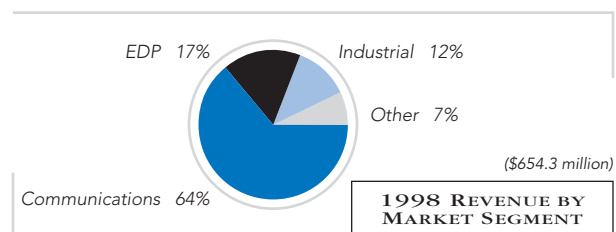
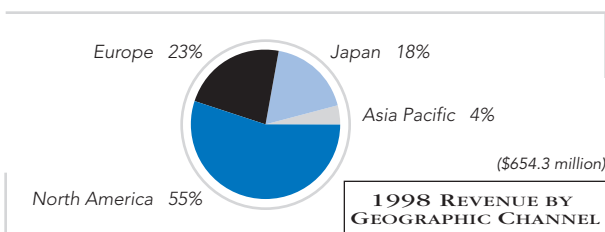
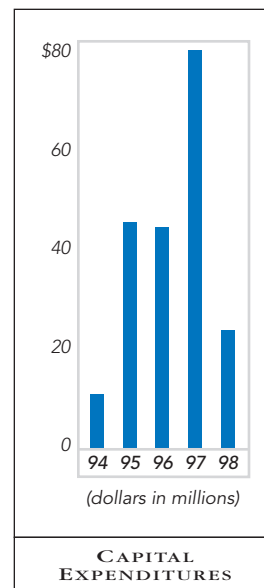
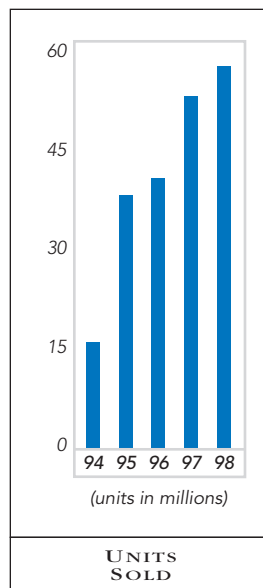
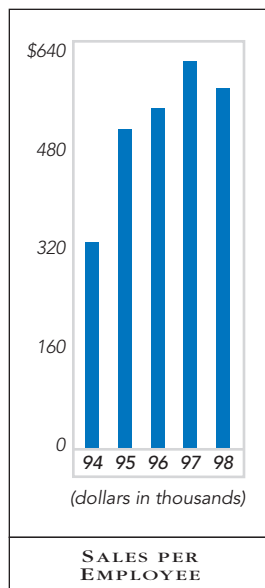
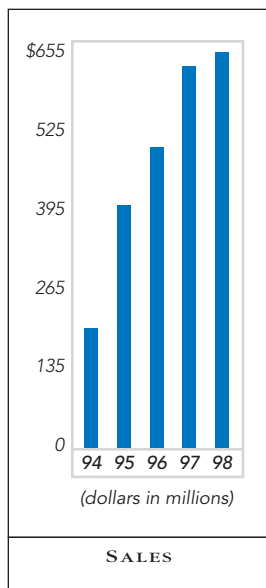
Excludes R&D in-process write-off associated with the acquisition of Intel's programmable logic business in 1994 and the cumulative effect of change in accounting principle in 1997.

Trading Volume

The average trading volume in the Company's stock decreased 7% in 1998 over 1997, as measured by Nasdaq®. Trading volume in 1998 averaged 2.6 million shares per day, compared to 2.8 million per day in 1997 and 4.4 million in 1996, retroactively adjusted for 2-for-1 splits of the Company's common stock in the second quarter of 1995 and the fourth quarter of 1996.



FINANCIAL HIGHLIGHTS



Board of Directors

Rodney Smith
Chairman, President, and
Chief Executive Officer
Altera Corporation

Charles M. Clough
Former Chairman, President, and
Chief Executive Officer
Wyle Electronics

Michael A. Ellison
Chief Executive Officer
Steller, Inc.

Paul Newhagen
Former Vice President,
Administration
Altera Corporation

Robert W. Reed
Former Senior Vice President
Intel Corporation

William E. Terry
Former Director and
Executive Vice President
Hewlett-Packard Company

Deborah Rieman, Ph.D.
President and Chief Executive Officer
CheckPoint Software Technologies, Inc.

Appointed Officers

Bahram Ahanin
Vice President, CAD and
Design Automation

Melonie C. Brophy
Vice President, Finance,
and Treasurer

Donald Faria
Vice President, Customer Marketing
and Applications

Frank L. Hannig
Vice President and
Chief Information Officer

Lance M. Lissner
Vice President, Business
Development and Investor Relations

Corporate Officers

Rodney Smith
President and Chief Executive Officer

C. Wendell Bergère
Vice President, General Counsel,
and Secretary

Denis Berlan
Executive Vice President and
Chief Operating Officer

Erik R. Cleage
Vice President, Marketing

John R. Fitzhenry
Vice President, Human Resources

Nathan Sarkisian
Senior Vice President and
Chief Financial Officer

Peter Smyth
Vice President, Sales

Bruce Mielke
Vice President, Product Engineering

Thomas B. Murchie
Vice President, Operations

Timothy J. Propeck
Vice President, North America Sales

Timothy J. Southgate
Vice President, Software Engineering

Clifton S. Tong
Vice President, Product Marketing

Nigel Toon
Vice President and
Managing Director—Europe

John E. Turner
Vice President, Design Engineering

Corporate Headquarters

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San Jose, California 95134
(408) 544-7000

Independent Accountants

PricewaterhouseCoopers LLP
San Jose, California

Stock Listing

Altera's common stock trades on
The Nasdaq Stock Market® under
the symbol "ALTR".

For the past two years, the quarterly
high and low closing sales prices for
the common stock were:

Quarter	1998		1997	
	High	Low	High	Low
First	44¼	28¾	48⅞	35⅞
Second	44⅝	28¾	54	42⅞
Third	43	29	64⅞	49⅞
Fourth	61⅞	29½	53¾	30⅞

Registrar/Transfer Agent

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(800) 730-6001
www.equiserve.com

Web Site

For current information on Altera
Corporation, visit our web site at
<http://www.altera.com>.

Additional Information

Please direct all requests to:
Investor Relations
101 Innovation Drive
San Jose, California 95134
(408) 544-7707

Earnings releases may be requested
from Altera's Fax-on-Demand service
at (800) 789-2587 in the United States
and Canada and at (408) 894-0466
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