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MOTOROLA
VOYAGER AT NEPTUNE

Motorola is one of the world's leading providers of electronic equipment, systems, components and services for worldwide markets. Products include two-way radios, pagers, cellular telephones and systems, semiconductors, defense and aerospace electronics, automotive and industrial electronics, computers, data communications and information processing and handling equipment. Motorola was a winner of the first annual Malcolm Baldrige National Quality Award, in recognition of its superior company-wide management of quality processes.

The Communications Sector	The Communications Sector designs and manufactures two-way radios, pagers and other forms of electronic communications systems for agriculture, commercial, construction, education, state, local and federal government and health care markets, as well as for industrial, mining, petroleum, radio common carrier, telephone and transportation companies and utilities.
The Semiconductor Products Sector	The Semiconductor Products Sector designs and produces a broad line of discrete semiconductors and integrated circuits, including microprocessors, microcomputers and memories, to serve the advanced systems needs of the computer, consumer, automotive, industrial, federal government/military and telecommunications markets.
The General Systems Sector	The General Systems Sector designs and manufactures computer-based cellular radiotelephone systems, mobile and portable radiotelephones, microcomputer boards, and information processing and handling equipment, such as multi-user microcomputer systems.
The Information Systems Group	The Information Systems Group combines the capabilities of Codex Corp. and Universal Data Systems to provide all the elements for distributed data systems, from basic modems to integrated network management systems.
The Government Electronics Group	The Government Electronics Group specializes in research, development and production of electronic systems and equipment for the U.S. Department of Defense, NASA and other government agencies, commercial and international customers.
The Automotive and Industrial Electronics Group	The Automotive and Industrial Electronics Group serves the motor vehicle and industrial equipment industries through the development and production of a variety of electronic modules, components and power conversion equipment.
New Enterprises	The New Enterprises organization manages Motorola's entry into completely new businesses in emerging high-growth, high-technology arenas, including hospital clinical information systems and real-time distributed computing systems, as well as automation systems for factories, utilities and the semiconductor industry.

On the Cover

Magnified photo of a Motorola microprocessor circuit. Actual size is less than one-half inch per side. Top to bottom: Wrist Watch Pager; MICRO TAC 950 Personal Cellular Telephone; Photo of Neptune transmitted by Motorola equipment on Voyager Spacecraft.

Back Cover: *Top to bottom: Motorola Total Customer Satisfaction card; VME board with 88000 family of RISC microprocessors; Codex network management screen; MTX-810 Portable Two-Way Radio; European vehicle engine control module.*

Financial Highlights

Motorola, Inc. and Consolidated Subsidiaries

Years ended December 31
(In millions, except as noted)

	1989	1988
Net sales	$9,620	$8,250
Earnings before income taxes	646	612
% to sales	6.7%	7.4%
Net earnings	498	445
% to sales	5.2%	5.4%
Net earnings per share (in dollars)	3.83	3.43
Research and development expenditures	784	665
Fixed asset expenditures[1]	1,124	899
Working capital	1,164	689
Current ratio	1.42	1.26
Return on average invested capital (stockholders' equity plus long- and short-term debt, net of short-term investments)[2]	10.3%	11.0%
% of total debt less short-term investments to total debt less short-term investments plus equity[2]	23.7%	24.6%
Book value per common share (in dollars)	29.16	26.02
Year-end employment (in thousands)	104	102

[1]Includes expenditures related to capitalized leases.
[2]Includes short-term investments categorized as cash and cash equivalents.

Contents

To Our Stockholders and Other Friends

1989 was an exciting year for Motorola. Achieving our fourth consecutive year of sales and profit growth, we introduced products that demonstrated quality and technological leadership, and captured the imagination of our customers. As a winner of the first Malcolm Baldrige National Quality Award in 1988, we spread the quality message among our customers, suppliers and employees, and moved forward on our efforts to achieve Six Sigma quality by 1992. We created a university structure in employee training to help our associates develop the skills needed for the technologies of tomorrow.

The events of 1989 enhanced Motorola's reputation as one of the most innovative, high-quality electronics companies in the world. This year's report portrays the platforms on which we are building for the future. This strategic vision, appearing on pages 5-18, is arranged according to four major arenas of electronics—communications, components, computing and control. Operating and financial results by business sectors and groups appear on pages 19-24.

Left to right: George Fisher, Gary L. Tooker, Christopher B. Galvin

Financial Growth

Sales in 1989 increased 17% to a record $9.62 billion from $8.25 billion in 1988. Earnings rose to a record $498 million, or $3.83 per share, from $445 million, or $3.43 per share, in 1988. Net margin on sales was 5.2%, compared with 5.4% a year earlier. Return on average invested capital was 10.3%, compared with 11.0% in 1988.

Higher orders in Motorola's major businesses give us the opportunity for continued growth in 1990 and beyond. The cellular telephone market continues to expand rapidly. Overall, the communications arena promises to be one of the major growth opportunities of the 1990s, as we develop new ways to serve the needs of our customers on the move.

The near-term outlook for the semiconductor industry is more modest, but we see improvement later in 1990, and a return to more traditional rates of growth in future years. More efficient short-cycle manufacturing has reduced inventory buildup and made the industry less volatile than in previous cycles.

We expect more rapid economic growth in 1990 in Asia and Europe than in the United States. Motorola is a global company with a strong financial base, and we are able to manage our businesses accordingly. Our leadership in quality and technology makes us confident that we can gain greater shares of growing markets throughout the world.

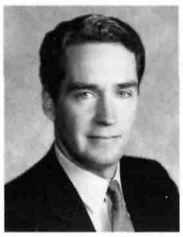
Sector Presidents

The General Systems Group was elevated to sector status in 1989, and the general managers of our three sectors received the new title of sector president. They are Arthur P. Sundry in the Communications Sector; James A. Norling in the Semiconductor Products Sector, and Edward F. Staiano in the General Systems Sector.

They continue to report to the Chief Executive Office, but have greater responsibility for setting the direction of their businesses.

The Next Generation of Leadership

On January 11, 1990, the final phase of the transition plan for the next generation of Chief Executive Office leadership was put into effect. The Board of Directors elected George Fisher chairman of the board and chief executive officer. He had served as chief executive officer and president since January 1988. Gary L. Tooker, formerly chief operating officer and senior executive vice president, was elected president and chief operating officer. Christopher B. Galvin joined the Chief Executive Office as senior executive vice president and assistant chief operating officer. He formerly was executive vice president and chief corporate staff officer.



Robert W. Galvin, who assumed the senior leadership position of the company in 1959, continues to serve as a full-time officer, but in a supporting role. His title has changed from chairman of the board to chairman of the Executive Committee, a newly constituted committee and position of the Board of Directors.

We join the Board in anticipating with pleasure the continuing full-time service of Bob Galvin. It is fitting that this step in the transition was put into effect on January 11, 1990, exactly 50 years after Paul Galvin, the founder of Motorola, invited his son Bob to perform his first function for the company by addressing its national sales convention banquet.

Throughout his career, he has built upon the key beliefs that form the foundation of the Motorola culture: respect for the dignity of the individual, and uncompromising integrity in everything we do. He has applied these values throughout a continuous process of purposeful motion and renewal. The result is a thriving company that constantly transforms itself while adhering to beliefs that are not subject to change.

Robert W. Galvin
Chairman of the
Executive Committee

Motorola University is designed to nurture the creative skills needed to be the best. We are committed to providing one week of training per year for every employee. This exemplifies the many innovations in human resources pioneered by Bob Galvin.

By building on our core beliefs, he has focused the corporation on serving our customers. Winning the Malcolm Baldrige National Quality Award in 1988 was an honor for Motorola, but was only one step toward achieving our fundamental objective of Total Customer Satisfaction. That award is appropriate recognition for the corporation, but, to an even greater extent, it is a fitting tribute to the quality of leadership of Bob Galvin. We deeply value his contributions of the past and his

continuing active leadership role as chairman of the Executive Committee of the Board of Directors.

William J. Weisz
Vice Chairman of the Board

Another phase of the management transition took place in December 1989, when William J. Weisz retired as an officer of Motorola. He had served as vice chairman and chief executive officer in 1986 and 1987, and had been vice chairman and officer of the Board until his retirement.

Bill's distinguished 41-year career at Motorola began in 1948, when the company's main products were television and radio receivers. Annual sales were $58 million, less than 1% of today's sales. As a junior development engineer, he worked on the Handie-Talkie® FM Radiophone, and later received several patents. His technological vision helped Motorola's small two-way communications business become the first to successfully incorporate solid-state technology and ultimately become the world leader.

He became president of Motorola in 1970, at the age of 43, succeeding Elmer Wavering under a management transition plan very similar to the program just completed. Bill Weisz was a member of the Chief Executive Office throughout Motorola's transformation from a consumer electronics company to a global leader in high-technology commercial and industrial electronics. Along with Bob Galvin, he continues to be a vigorous, eloquent champion of free enterprise and fair trade.

In 1988, Motorola was a winner of the first Malcolm Baldrige National Quality Award.

The Board of Directors acceded with reluctance to Bill's request for retirement. We are pleased, however, that he will remain as vice chairman of the Board, as a consultant and Motorola representative on government advisory committees, and as a teacher of management at Motorola University.

The continuity demonstrated during the last 3½ years of executive transition shows that Motorola will keep building on its beliefs into the next decade and century. As the new generation of leadership, we are excited by the possibilities in the years to come. We assure you that enduring values and sound business and ethical principles will continue to guide the conduct of the corporation's affairs.

George Fisher
Chairman of the Board and Chief Executive Officer

Gary L. Tooker
President and Chief Operating Officer

Christopher B. Galvin
Senior Executive Vice President and Assistant Chief Operating Officer

Building for the Future

We have concluded a decade marked by a revolution in microelectronics and communications. The personal computer may have been its most visible symbol, but the technology has embedded itself in virtually all aspects of our daily lives. Our cars, our banks, our hospitals and our homes will never be the same. We have changed the way we watch and listen to news and entertainment. Nations have changed the way they govern and defend themselves. Factories and offices have changed the way they organize themselves.

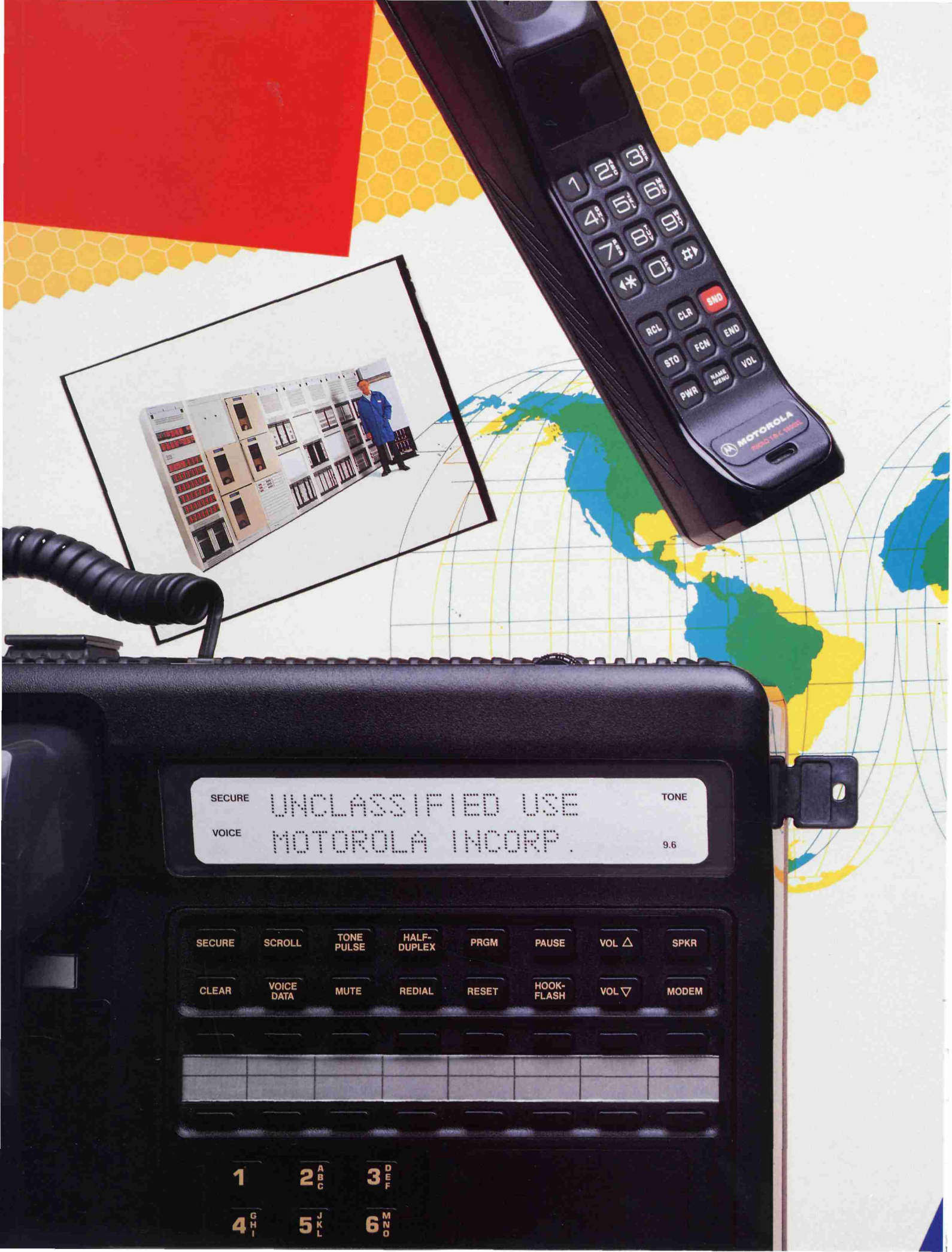
Motorola is an exciting company with the technological platforms to build on its global success into the 1990s.

Motorola products have been involved in many of these changes. In the last 10 years, our sales have grown from less than $3 billion to more than $9 billion. It is an impressive record, but it merely sets the stage for the final decade of the 20th Century.

Motorola is an exciting company with the technological platforms to build on its global success into the 1990s. These platforms are logical extensions of where the company has been. Fifty years ago, Motorola was a pioneer in providing information by two-way radio to people on the move. Our early efforts in solid-state electronics helped us to extend this leadership, and in the last decade, we have applied digital computing and control to the way information is communicated.

This has made our company unique, because no one knows more about radio transmission than Motorola, and no one has a broader portfolio of semiconductors than Motorola.

*In the pages that follow, we would like to show you how we serve our customers in four interdependent arenas of electronics—***communications, components, computing and control.** *These arenas are the platforms on which we are building.*


SECURE
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MOTOROLA INCORP.
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VOL △
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VOICE DATA
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MOTOROLA

The Communications Arena

The 1980s may be remembered as the decade of personal computing, but the 1990s may well be the decade of personal communicating. Motorola products like the MICRO TAC™ personal cellular telephone are already having a dramatic impact. As we move to an all-digital world, which allows transmission of data and images along with voice, it's not hard to imagine turning a personal telephone into a computer terminal and video device. Motorola, the master of radio communication and miniaturization, has the platforms to achieve such a breakthrough.

Our Communications Arena, which includes the cellular and radio communications businesses and parts of the government electronics business, accounts for more than half of our total sales. We are the world's leading supplier of cellular telephone systems as well as mobile and portable phones. These businesses are growing rapidly, and industry analysts expect the world market to increase from almost 7 million subscribers in 1989 to 100 million subscribers by the year 2000.

More than half our cellular revenues already come from outside the United States, even though many countries do not have any cellular capability at all, or have not begun competing systems. In many underdeveloped countries with only limited wireline systems, cellular radiotelephone may become the primary telecommunications system.

Mary Danoski, Joe DelConte, Ron Howard-Rabb and Debbie Moxley represent Order Processing and Management Information Systems, Communications Sector. These organizations won a CEO Quality Award in 1989 for substantially improving order quality, while reducing order cycle time and cost per order.

In the 1990s, the cellular world will evolve from analog to digital, and Motorola will maintain its leadership position. We are providing validation systems for the pan-European digital cellular network.

A new generation of digital telephone systems known as personal communication networks, or PCNs, also will enable users to make and receive calls with portable handsets. Motorola is part of a consortium that has received a license to develop and operate such a system in England.

◀ *Top to bottom: 9800XL™ Portable Cellular Telephone; EMX Cellular Telephone Switching System; STU-III/SECTEL 1500 Secure Telephone.*

Motorola is also the world leader in two-way land-mobile radio. The most familiar systems may be those used by police and fire departments, but our customers include a wide range of businesses and governmental agencies. Unlike cellular, a land-mobile radio system is a private or shared network that enables a user to connect more quickly and easily to the dispatcher controlling the system, or to other mobile or portable system units. We offer private systems on our customers' spectrum, as well as Specialized Mobile Radio systems, or SMRs, that are shared by different users.

As the world's largest manufacturer of paging systems and pagers, Motorola sets the standard for quality and performance. The Wrist Watch Pager, which we jointly developed with Timex Corp., combines a numeric display pager with a digital watch, and is compatible with existing paging systems used throughout the world.

The ability to design systems that are flexible enough to meet specific national regulatory requirements has helped make Motorola twice the size of our nearest two-way radio competitor in Europe. In Japan, we are the only non-Japanese company to supply pagers and car telephones to Nippon Telegraph & Telephone, and we supply equipment to newer Japanese common carriers as well. We are also pioneering the use of private shared trunked two-way radio systems called JSMRs in Japan.

Our share of revenues from radio communications services is increasing. Outside the U.S., we are joint venture partners in operating cellular telephone, trunking and paging systems. These service businesses provide steady revenues and a strong return on capital. They are also less affected by changes in the economic cycle.

We are pioneers in digital voice encryption, and our Secure Telephone Unit, or STU-III, program, is growing rapidly. It is designed to quickly secure sensitive voice and data telecommunications.

Sophisticated applications of radio communications are in military and aerospace markets. Motorola equipment has been on board virtually all U.S. space missions. Photos of the planet Neptune were transmitted by Motorola equipment on the Voyager 2 spacecraft.

▶ *Top to bottom: Mobile Data International TaxiPak™ Dispatch Terminal; MTX-810 Portable Two-Way Radio; Radius® Desktop Paging Base Station.*


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5 JKL
3 DEF
8 TUV
6 MNO
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2 ABC
3 DEF
4 GHI
5 JKL
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MOTOROLA
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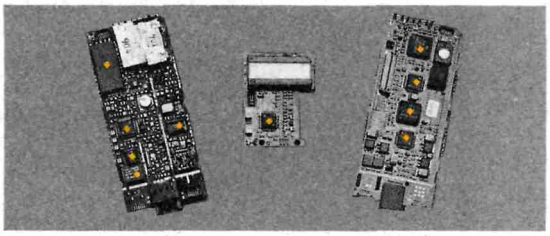
CLEAR
ENTER
MONITOR

Since the invention of the integrated circuit, the number of transistors on a chip of silicon has doubled every two or three years. This has brought revolutionary changes to the world of electronics. We can expect this trend to continue throughout the next decade, resulting in technology limited only by our imagination.

Motorola is in the forefront of this revolution. We are the largest merchant semiconductor manufacturer in North America, and one of the largest in the world. Our portfolio of 50,000 products is the broadest in the industry. We are the only U.S. company, and one of the few in the world, that is a leader in MOS and bipolar integrated circuit technology as well as discrete devices. Products pictured on these pages, like our MICRO TAC personal telephone and Wrist Watch Pager, are filled with Motorola semiconductors. By providing the most advanced components across the corporation, our semiconductor people benefit from leading-edge systems knowledge. Likewise, our close relationship with core customers augments our leadership in technology, enabling us to serve a wide range of automotive, communications, computing, consumer, industrial and military applications.



The inside of a MICRO TAC personal cellular phone is filled with Motorola components as indicated by the symbols.

Microprocessors are often called "computer chips," but in reality, they are the essential building blocks of the entire spectrum of electronic products and systems. Since introducing our M68000 family of 16- and 32-bit CISC (complex instruction set computer) microprocessors in 1979, we have sold more than 30 million devices. About 60% of them have been used in embedded control applications such as telephone switching equipment, laser printers and factory automation. The others are in personal computers and workstations. Systems in the 1990s also will be driven by processors based on our 88000 family of RISC (reduced instruction set computer) architecture.

◀ *Magnified photo of a Motorola microprocessor circuit. Actual size is about one-half inch per side. Products that are filled with Motorola chips, top to bottom: Wrist Watch Pager; MICRO TAC 950 Personal Cellular Telephone; BRAVO® Alphanumeric Display Pager.*

We are the world leaders in 8-bit microcontrollers, which are used in cameras, compact disc players, videocassette recorders, cordless telephones and smart credit cards, as well as in automotive applications. We are developing leadership in such key areas as digital signal processing and the Integrated Services Digital Network. We are also among the leaders in logic devices and discrete semiconductors.

The breadth of our technology makes us a leader in chips that meet specific customer needs by combining a core processing unit with many peripheral devices on the chip itself. Our new 68300 family of 32-bit embedded controllers is designed for myriad applications.

In memory markets, Motorola is a leader in fast static random access memories (RAMs) and has re-entered the dynamic RAM marketplace. We serve our customers worldwide from wafer fabrication plants in Arizona, Texas, Scotland and Japan.

David Sheng, Larry Day, Steve Flannagan, and Peter Gill represent design, development, manufacturing, product, packaging and quality organizations in the Fast Static RAM, Memory Division, SPS. Teamwork resulted in the fastest CMOS Static RAM in the industry and a CEO Quality Award for improved yields and quality of all Fast Static RAMs.

In the 1990s, we will see the full range of our technology portfolio embedded on a single chip. Using our spectrum of capabilities, we can integrate these technologies to create whole new categories of cell-based products, and develop entirely new markets. BICMOS, the combination of bipolar and CMOS technologies, will play an increasingly important role.

The superchip we developed with TRW, described on page 20, and our agreement with IBM Corp. to develop X-ray lithography show that we plan to be a leader in technology well into the 21st Century. To augment our own research and development programs, we are members of key industry consortia, such as Sematech. We intend to continue to set the industry pace, and build on our semiconductor business as the foundation for continued innovation in our equipment and systems businesses.

▶ *Our components serve a wide range of customers. Top to bottom: Sony TR-5 Handycam® 8 mm camcorder; symbols on this car show how semiconductors form an integral part of automotive control systems; Macintosh Portable Computer (Macintosh is a registered trademark of Apple Computer, Inc.).*


SONY
Handycam
esc
tab
control
shift
caps lock
option


MOTOROLA INC.
XC88200R 20
2C67C89 1
XC88200RB20
1C67C8904
XC88200RB20
1C67C8904
HYPERmodule™
SPARE
Control
Views
Manage Resource
KODAK EL 400 5074
KODAK EL 400
Chicago
Detroit
Boston
New York
Philadelphia
Washington DC
9800 NMS
9820 CAP
Houston
Problem
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Previous
Command
8
8A
9
9A
10

Toward the end of the 1960s, a Motorola transponder relayed the first words from the Moon to the Earth. Twenty years later, the computing power that made the lunar mission possible was available on a desktop. Today, a pocket calculator can be as powerful as an early mainframe computer.

As we look into the 1990s, we can see the convergence of communications, computing and control in a portable device the size of a personal telephone. Information will be in the form of voice, data or images. Digital signal processing, miniaturization and radio technology will make it possible. Motorola is building on these platforms.

We offer our customers products ranging from silicon chips to complete systems, along with the networks to tie these systems together. Our Computing Arena includes microcomputer boards and information processing and handling equipment.

Motorola microprocessors are at the core of our VME board-level products sold to computer manufacturers and value-added resellers. These products are designed for high-performance applications serving technical, commercial and government markets. Our newest Delta series models of RISC-based computer systems extend our ability to serve large multi-user customers in industrial, commercial, government and value-added reseller markets. These systems run on AT&T's UNIX® operating system, designed for the more open, flexible systems environment of the 1990s.

In data communications, our Codex and Universal Data Systems subsidiaries provide a full range of products from modems and multiplexers to fully integrated digital communications networks. Codex has entered into several strategic partnerships to develop its digital networking activities. As the corporation becomes more global, the need for global information links will accelerate.

The emerging Integrated Services Digital Network (ISDN) illustrates the convergence of communications and computing. We are building

◀ *Top to bottom: VME board with 88000 family of RISC microprocessors; Delta Series 3000 Multi-user Computer Systems; Codex network management screen; Codex 6525 X.25 Packet Switch; Codex 2680 High Speed Systems Modem; UDS FasTalk™ V.32/42 Modem; UDS TA100 Terminal Adapter for ISDN.*

on our semiconductor technology to help customers migrate their networks to ISDN while making sure their existing equipment doesn't become prematurely obsolete.

The Control Arena serves the aerospace, defense, motor vehicle, industrial, and other markets with advanced electronic modules and equipment. It includes parts of our Government Electronics Group, the Automotive and Industrial Electronics Group, and some of our New Enterprises organizations.

High-technology automotive applications include powertrain and chassis electronics, power controls and sensor products. Among our newer product developments are engine management controls, anti-lock braking system controls, truck instrumentation, agricultural monitoring systems and theft alarm modules for automobiles.

The Thick Film Ignition Engineering/Production Team, AIEG, is represented by Glenn Butler, Jan Romesser, and Andy Czesak. The team won a 1989 CEO Quality Award for implementing a new quality operating system and achieving significant improvements in warranty performance.

We are in a unique position to develop key electronic products for the car of the future, such as voice-activated in-dash navigation systems and multiplex systems.

Our New Enterprises organization is involved in control systems for factories and hospitals. Motorola Computer X designs and manufactures real-time distributed systems for factory automation. Emtek Health Care Systems provides clinical information management systems for hospital intensive care units.

▶ *Top to bottom: Vehicle theft alarm module; Solid state relay/driver; Quality management software package on Computer X cX030 System; European vehicle engine control module.*


MOTOROLA
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Motorola's corporate character is shaped by certain fundamental beliefs in personal integrity and the dignity of the individual. This creates a climate in which a dedicated workforce respects the needs of suppliers and customers alike. At Motorola, we build on our beliefs and thrive on change, creativity and innovation. It is an environment that encourages all our people to develop their own dreams. We know how the world should be for our customers, and this enables us to express our business vision as follows:

We will grow rapidly by providing our worldwide customers what they want, when they want it, with Six Sigma quality and best-in-class cycle time.

In each of our chosen arenas of the electronics industry, we will grow rapidly by providing our worldwide customers what they want, when they want it, with Six Sigma quality and best-in-class cycle time, as we strive to achieve our fundamental corporate objective of Total Customer Satisfaction, and to achieve our stated goals of increased global market share; best-in-class people, products, marketing, manufacturing, technology and service; and superior financial results.

Our semiconductor capability is the foundation of all our other businesses. A strong merchant semiconductor position is vital to driving the technology, cost and quality. We will grow faster than the market in each of our key semiconductor businesses. In equipment businesses, we will strive to grow faster than the components business so as to achieve a business mix that is less subject to the swings of the semiconductor industry. In international markets, our business will grow to about 50% of total revenues, compared with 40% today.

A key mission statement that will drive much of our future growth can be simply stated: "We will build on our semiconductor technology and market position to be the world's premier provider of products, systems and services for communication, computing and control for people and machines on the move." Motorola is the best positioned company in the world to effectively fulfill this mission.

Communications Sector

Communications Sector sales exceeded $3.3 billion in 1989, up 10% from the previous year and more than Motorola's entire sales in 1980. Orders increased 18% and backlog was 20% higher than at the end of 1988. Worldwide demand increased for two-way radio systems, secure voice systems and radio data systems.

Operating profits were lower as a result of investments in product and system development, international distribution and radio data communications, as well as costs associated with a voluntary severance program.

Order growth in the United States was led by commercial, governmental and industrial markets. International orders increased rapidly in Asia, Australia, Japan, Canada and Europe.

We received large orders from trucking companies and government agencies for the new CoveragePLUS™ system of regional or nationwide two-way radio voice and data communication and vehicle location. CoveragePLUS uses our network of shared trunked Specialized Mobile Radio (SMR) systems to enable dispatchers to locate and communicate with vehicles.

In Europe, we received orders from taxi systems in Stockholm, Sweden; Helsinki, Finland; and Paris, France, for Mobile Data International's terminals and dispatch systems.

A license to operate a new public cordless phone service in the United Kingdom was awarded to a consortium of Motorola, Shaye Communications and Mercury Communications. This service will enable subscribers to place calls with cordless telephones through Telepoint base stations to be installed throughout the U.K.

We strengthened our worldwide leadership in paging with large orders in Australia, France, Sweden and the United Kingdom, along with Japan and other Asian countries. Motorola continues to be a major supplier to NTT and the new common carriers in Japan, shipping our one millionth pager to Japan in 1989.

In addition to the Wrist Watch Pager described on page 8, we introduced an alphanumeric display model of our Bravo® pager. Our new KeyNote™ tone and voice pager is 40% smaller than its predecessor and is available in analog and digital signaling formats.

Our new Fascinator encryption technology for mobile two-way radios was the first commercial product of this type endorsed by the National Security Agency for Type I encryption, the agency's highest voice security level.

A new version of the Saber™ two-way radio is the industry's first advanced portable that can operate in secure voice, trunked or conventional systems. We also introduced an advanced trunking version of our Spectra® mobile radio that can be equipped with digital voice security.

We broadened our Radius® line of mobile and portable radios with new models for European markets and an on-site communications system featuring a desktop paging base station, a tone and voice pager, and a portable two-way radio that functions as a talk-back pager. Our global network of Radius resellers was enlarged with a new distribution program in Australia and expansion in Canada, Latin America and Asia.

In January 1990, we announced formation of a new venture with International Business Machines Corp. to provide a nationwide radio data information service in the U.S. The new company, called ARDIS, will give companies and their mobile workforces access to their computer data bases and information systems through two-way radio data terminals.

Motorola Microwave is a new joint venture formed with TeleSciences, Inc., of Fremont, Calif., to develop, manufacture and distribute microwave radio equipment and systems. The new organization will serve worldwide markets and offer a complete range of microwave transmission products and services.

We continue to enhance our ability to provide customers with complete system solutions. These solutions are reflected in contracts ranging from an award from the Royal Canadian Mounted Police for a secure voice two-way system for wide-area communications in Quebec, to a SmartNet™ trunked two-way radio system for the Stockholm Arlanda Airport in Sweden.

Semiconductor Products Sector

The Semiconductor Products Sector achieved record sales and orders in 1989 and produced the world's densest, most complex "superchip."

Sales and orders both increased 11%, while backlog was 12% higher. Operating profits were lower as a result of pricing pressure on some commodity devices, increased investments for research and new facilities, and costs associated with a voluntary severance program.

Orders grew in all major market regions, led by Asia-Pacific and Japan. In key market segments, substantial growth took place in personal computer, consumer and communications. Each of the sector's major product categories recorded higher orders, led by memories, semi-custom logic devices and microprocessors.

The new "superchip," containing 4 million transistors, was designed by TRW, Inc. and fabricated by Motorola under the U.S. Department of Defense Very High Speed Integrated Circuits (VHSIC) Phase 2 program. Known as the CPUAX (central processing unit—arithmetic extended), the 0.5-micron device can perform 200 million floating point operations per second (MFLOPS), the computational equivalent of some supercomputers, and can automatically configure and repair itself. Although intended initially by TRW for defense and space applications, we will use the processing knowledge in future commercial products.

We are participating in the research and development of IBM's synchrotron X-ray lithography technology, which is expected to lead to semiconductors with device features below 0.25 micron.

Product partnerships in 1989 included an agreement with Digital Equipment Corp. to cooperatively design a Fiber Distributed Data Interface (FDDI) chip set supporting data transfer rates of up to 100 megabits per second in a local-area network. An agreement with Bull of France permits us to manufacture and sell the family of self-programmable, one-chip microcontrollers originally developed for the Bull-CP8 "smartcard" used in money transfer, access control and computer security.

We introduced our next-generation CISC (complex instruction set computer) microprocessor, the MC68040. With 1.2 million transistors, it delivers 20 million instructions per second and a sustained rate of 3.5 MFLOPS at 25MHz, 33% faster than its nearest competitor. It is compatible with the $4 billion software base of the M68000 family. The 040 has been endorsed as a platform for future products by 36 customers, including Apple Computer, Bull, Commodore, Hewlett-Packard/Apollo, Nixdorf and Unisys.

Our 88000 family expanded its position as a leading processor for RISC (reduced instruction set computer) systems, and we introduced a low-cost, 16 MHz version. Thomson CFS of France will use the 88000 in a variety of military and space applications and will manufacture a military version under an alternate source agreement with Motorola. More than 150 software packages for the 88000 are being developed by independent software vendors. These packages adhere to the 88000's binary compatibility standard (BCS), which permits the software to run on every 88000-based, BCS-compliant computer without modification.

We introduced the world's first 32-bit embedded microcontroller, the 68332. Based on our 68020 central processing unit, it has been selected by General Motors for control functions in future vehicles. The 68302 Integrated Multiprotocol Processor, was developed for communications applications.

Other new Motorola microcontrollers include a family of 19 customer-specified devices that use existing "chassis" designs to provide customized processors. Our Hong Kong design center developed the new "Dragonkat" microcontroller for portable products like hand-held translators.

For application-specific integrated circuits (ASICs), a new design concept called Customer-Defined Arrays combines array-based and cell-based chip architectures with multiple process technologies on a single circuit. Our new Open Architecture CAD System gives customers a complete ASIC development environment using industry-standard workstations and leading third-party design and verification tools.

We doubled our sales of fast static random access memories (RAMs) in 1989, introduced our 4-megabit dynamic RAM, and achieved volume production of 1-megabit DRAMs in our Japanese joint venture with Toshiba and our facilities in Arizona and Scotland.

Orders for our digital signal processor products were triple the 1988 level. New products included a high-speed 16-bit analog-to-digital converter.

We expanded our discrete portfolio with a family of Scanswitch™ devices for high-resolution video monitors; a line of radio frequency (RF) power modules for the cellular telephone market, and a series of RF amplifiers for applications such as television transmission. We also added to our family of ECLinPS™ high-performance logic devices, and developed a range of digital-analog custom and proprietary circuits.

Construction began on advanced manufacturing facilities in Austin, Texas, and Chandler, Ariz., and the Silicon Harbor facility in Hong Kong neared completion.

We received the "Semiconductor Supplier of the Year" award from Dataquest, a market research firm, and we were named "Preferred Supplier" in the United Kingdom, based on a customer survey by *Electronics Weekly*.

General Systems Sector

The former General Systems Group achieved sector status in 1989 as sales increased 73% to $1.9 billion. Orders advanced 60%, backlog was 8% higher, and operating profits increased.

The MICRO TAC™ personal telephone was introduced in April and immediately established the technical benchmark for body-friendly communications as the smallest and lightest cellular phone on the market. It is the size of a wallet or checkbook, and fits into a pocket or purse, yet it offers the same power, features and performance found in larger cellular phones. Later in the year, we introduced the 9800 XL™ cellular phone, the second smallest, and enhanced the MICRO TAC for in-car use with a new three-watt extended system package.

Subscriber equipment sales were strong throughout the world, as we received several large orders from system operators. In Japan, demand of our J-TAC personal telephones increased dramatically.

Under a settlement in a patent infringement suit brought against Nokia Corp. and Tandy Corp., the two companies were licensed to use Motorola's cellular technology.

The cellular systems business continued to grow rapidly, and several joint ventures were established. In the United Kingdom, Cellnet awarded Motorola an order valued at about $150 million for analog cellular network expansion.

In Japan, the southwest cellular network connecting the Fukuoka, Hiroshima and Osaka areas was completed ahead of schedule and went into commercial service. A bilateral agreement between the United States and Japanese governments to expand access to telecommunications markets in Japan began to have a positive impact on cellular businesses, as well as third-party radio.

Pan-European Digital Cellular (GSM) validation systems were supplied to Norway (for all of Scandinavia), Spain, the U.K., and West Germany, and all began operating.

In the United States, the cutover of cellular systems in Los Angeles, Sacramento and San Diego, Calif., for Pacific Telesis and its affiliates was completed. The voice channel capacity of the new systems was greatly expanded.

The Computer Group achieved significant progress in 1989 with systems based on AT&T's UNIX® operating system. We became one of the industry's top ten UNIX systems suppliers, according to an analysis by International Data Corp. Unit shipments of UNIX systems nearly doubled during the year.

We maintained our leadership in the VME board market, introducing products based on the 88000 RISC microprocessor family and the 50MHz 68030 CISC processor. Several new models and software packages were added to our Delta series of computers.

Information Systems Group

As the Information Systems Group accelerated its transition to digital-based private data and voice communications networks, sales declined 2%, orders increased 6% and backlog was flat. Operating profits were lower.

Demand for Codex high-speed leased-line V.32 modems was strong throughout the year, but did not offset declines in other segments of the analog modem market. The company took several steps to manage this business more efficiently and bring new networking and network management products to market more quickly. It reduced operating expenses, restructured into five product-line profit centers and created separate international and U.S. distribution divisions.

The percentage of Codex revenues from network products and customer services increased in 1989, and the trend is expected to accelerate. Additions to its product lines included:

- Enhancements to its high-end 9800™ Network Management System for medium-to-large network users;
- Two new entry-level products for X.25 networks, and U.S. availability of its international high-end 6600 Series Packet Network products;
- The 6310 EtherSpan Bridge, a local area network (LAN) multiplexing bridge linking T1 and high-speed LAN data traffic.

Through its new DualVIEW™ Management Option, Codex provided IBM NetView™ users with an alternative to IBM-manufactured modems, as well as the ability to manage Codex's 2600 Series modems concurrently from NetView™ or Codex network management systems.

The U.S. Defense Communications Agency awarded Codex its Bulk Modem requirements contract, valued at a minimum of $51 million over five years. The contract establishes Codex as the supplier of network processors and management systems, modems, digital transmission devices and related professional services for all Department of Defense contracting offices in the U.S.

Universal Data Systems had significant increases in sales and orders in 1989. It introduced several new products, including the industry's first V.32 plug-in modem for the IBM PS/2 computer family, as well as models conforming to the new CCITT international standards for error correction and data compression.

A V.32 modem developed jointly between UDS and Elsa, GmbH, became the first such unit approved by the PTT in West Germany.

A major contract was received from Wendy's International, Inc., a fast-food company, which plans to install IBM plug-in versions of the UDS V.32 modem in its company-owned restaurants throughout the U.S.

Government Electronics Group

The Government Electronics Group's sales increased 8% in 1989, orders were up 35% and backlog was 4% higher. Operating profits increased.

Completion of a strategic restructuring enabled the group to compete more effectively in a changing defense electronics environment.

Major contracts awarded in 1989 included a $70 million contract for the development of new architecture for Block I of the U.S. Army Joint STARS Ground Station Module. This system, which incorporates Motorola's 68030 32-bit microprocessor, will provide critical surveillance capability for combat, battle management and peacetime verification.

A $14.6 million contract was awarded from General Electric for 20 telemetry tracking and command transponders for the GPS BLOCK IIR program of navigational satellites.

Equipment designed and developed by the group is providing 100% of the vital communications link to the Magellan Venus probe, which was launched from the Space Shuttle Atlantis on April 28. The primary mission of Magellan is to provide a global view of the geological features of Venus, with sufficient resolution to identify objects as small as one-half mile across.

Automotive and Industrial Electronics Group

Sales in the Automotive and Industrial Electronics Group (AIEG) declined 3%, orders were down 2% and backlog was flat. Operating profits were lower, primarily because of investments in new program development and product launches. The 1988 results include the electronic appliance controls business, which was sold in January of 1989. Sales for the group's continuing operations rose slightly, despite a general slowdown in the North American automotive market.

AIEG expanded its product portfolio and geographic coverage. It received production orders for anti-lock braking system control modules, vehicle monitor modules and agricultural transmission controllers. The group also was awarded a development program for a programmable electronic controller.

Production shipments began for engine management controls for the European marketplace and an instrumentation and monitoring system for farm tractors. The group also began shipping pressure sensors for an automotive application to a new customer in Japan, marking AIEG's entry into the Japanese marketplace.

Operations began at a new state-of-the-art hybrid manufacturing facility in Elma, N.Y.

New Enterprises

The New Enterprises organization's charter is to enable Motorola to enter completely new businesses in emerging high-growth, high-technology arenas.

Motorola Computer X introduced new lines of hardware and software for factory management and automation. Emtek Health Care Systems received strong commitments from leading medical institutions to install clinical information management systems.

Tegal Corp., a supplier of plasma etch and strip systems for the semiconductor industry, was sold to a management group led by Elliott Philofsky, president of Tegal.

Motorola Lighting, Inc. is a new business startup engaged in electronic ballasts for the lighting industry.

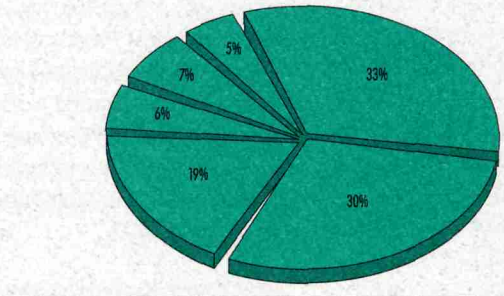
Motorola Management's Discussion and Analysis of Financial Condition and Results of Operations

Motorola management's discussion and analysis includes the Letter to Stockholders found on pages 2-4 and the Review of Operations information found on pages 19-22, in addition to the following commentary. This commentary should be read in conjunction with the financial statements and footnotes presented on pages 25-35 for a full understanding of Motorola's financial position and results of operations.

Results of Operations

Motorola's 1989 sales were $9.62 billion, up 17% from $8.25 billion in 1988. 1987 sales were $6.73 billion. The General Systems Products segment again contributed the highest rate of growth and now represents 19% of sales, up from 13% in 1988. Communications Products and Semiconductor Products maintained strong sales growth and their relative sales positions within Motorola at 33% and 30%, respectively.

1989 Net Sales by Business Segment

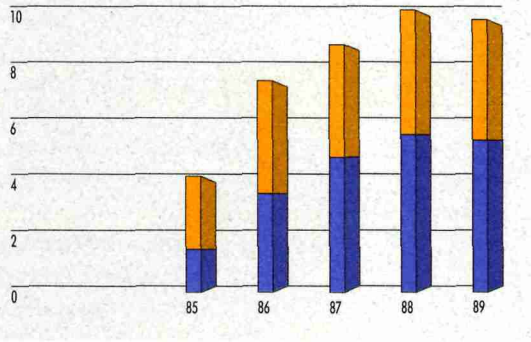


33% Communication Products	$3.31 billion
30% Semiconductor Products	$3.04 billion
19% General Systems Products	$1.90 billion
6% Information Systems Products	$552 million
7% Government Electronic Products	$698 million
5% Other Products	$490 million

Sales in the fourth quarter were $2.65 billion as compared to $2.19 billion in the same period in 1988 or a 21% increase. Earnings per share were $1.01 for the quarter as compared to $0.95 in the same period a year earlier.

Operating profit from all segments was $895 million in 1989, up from $804 million in 1988. In 1987 operating profit was $564 million. The General Systems Products segment became the Company's most profitable operation in 1989, reflecting continued strong demand in the cellular systems business.

Profit Margins
(In percent)



Net earnings of $498 million in 1989 or $3.83 per share exceeded 1988 net earnings of $445 million or $3.43 per share. In 1987, Motorola earned $308 million or $2.39 per share.

Motorola's 1989 earnings reflect a third-quarter pre-tax provision of approximately $43 million covering the anticipated costs of a voluntary severance program. No such charge was provided in the 1988 or 1987 results.

Income taxes. The effective tax rate for 1989 of 23% compares favorably to the 1988 rate of approximately 27% and the 1987 rate of 26%. The decline reflects increased sales activity in international markets and the impact of lower taxes on earnings of foreign subsidiaries.

Liquidity and Capital Resources

Net cash provided by operations totalled a record $1.21 billion in 1989, $725 million in 1988 and $662 million in 1987, which continues to support capital investment in property, plant and equipment over an extended period.

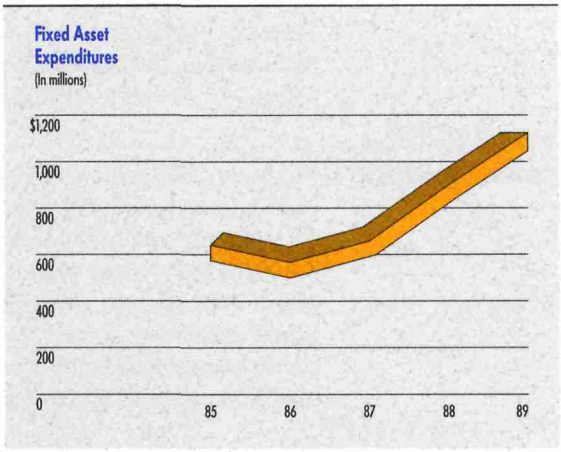
Motorola's current ratio of 1.42 at the end of 1989, up from 1.26 at the end of 1988, and a net debt to net debt plus equity ratio of 23.7%, continue to support the ability to fund capital asset expansion, business acquisitions and joint-venture opportunities through debt or equity offerings, without over-burdening its capital structure.

Accounts receivable weeks outstanding have remained constant, although receivable levels have risen with increased sales and the impact of international trade terms which extend payments over a slightly longer time period. Inventory levels have remained relatively flat from the 1988 levels, reflecting continued emphasis on asset management. Inventory turns have improved to 3.6 at year-end, from 3.0 a year ago.

Short-term financing requirements are met by the Company's currently unused credit arrangements with U.S. and foreign banks totalling $1.11 billion.

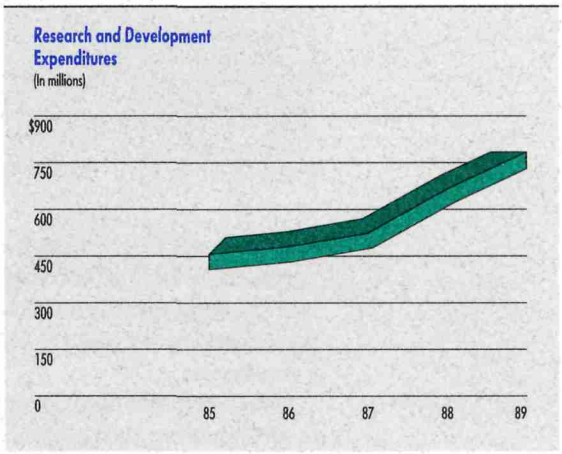
In the third quarter of 1989, Motorola issued $1.32 billion principal amount at maturity of Liquid Yield Option™ Notes (LYON™),* for cash proceeds of $405 million. The LYONs are zero-coupon, subordinated notes, have no periodic interest payments and are convertible into Motorola Common Stock. The issuance of the LYONs at a 6% effective yield will enhance earnings through the establishment of a rate substantially below the short-term commercial paper rates it replaced.

Fixed asset expenditures in 1989 of $1.12 billion were up over the 1988 and 1987 levels of $899 million and $658 million, respectively. Expenditures represent 12% of sales in 1989, compared to 11% in 1988 and 10% in 1987.



Expenditure levels reflect an ongoing commitment to manufacturing technology in all Motorola businesses and the capital intensive nature of the Semiconductor Products segment.

Research and development expenditures, exclusive of government funded work, increased to $784 million in 1989, an increase of 18% over 1988. Motorola continues to believe that a strong commitment to research and development drives long-term growth.



Effects of Inflation

Inflation rates in recent years have declined to a level that is less significant in its impact on operating decisions and ability to cover rising costs. Some of Motorola's operations, most notably the Semiconductor Products segment, experience price disinflation due to rapid advances in technology and intense competition. Motorola has been able to effectively respond to such varied market forces through increased productivity and cost containment programs.

**Liquid Yield Option and LYON are trademarks of Merrill Lynch & Co., Inc.*

Statements of Consolidated Earnings

Motorola, Inc. and Consolidated Subsidiaries

Years ended December 31 (In millions, except per share amounts)	1989	1988	1987
Net sales	$9,620	$8,250	$6,727
Costs and expenses			
Manufacturing and other costs of sales	5,905	5,040	4,071
Selling, general and administrative expenses	2,289	1,957	1,665
Depreciation expense	650	543	494
Interest expense, net	130	98	79
Total costs and expenses	8,974	7,638	6,309
Earnings before income taxes	646	612	418
Income taxes provided on earnings	148	167	110
Net earnings	$ 498	$ 445	$ 308
Net earnings per share	$ 3.83	$ 3.43	$ 2.39
Average shares outstanding	130.0	129.6	128.9

Statements of Consolidated Stockholders' Equity

Years ended December 31 (In millions, except per share amounts)	*Common Stock and Additional Paid-in Capital* 1989	1988	1987	*Retained Earnings* 1989	1988	1987
Balances at January 1	$1,240	$1,231	$1,202	$2,135	$1,777	$1,552
Net earnings	–	–	–	498	445	308
Stock option plans	29	9	29	–	–	–
Dividends declared ($.76 per share in 1989, $.67 per share in 1988 and $.64 per share in 1987)	–	–	–	(99)	(87)	(83)
Balances at December 31	$1,269	$1,240	$1,231	$2,534	$2,135	$1,777

See accompanying notes to consolidated financial statements.

Consolidated Balance Sheets

Motorola, Inc. and Consolidated Subsidiaries

December 31
(In millions, except per share amounts)

		1989	1988
Assets	***Current assets***		
	Cash and cash equivalents	$ 231	$ 195
	Short-term investments, at cost (approximating market)	202	145
	Accounts receivable, less allowance for doubtful accounts (1989 and 1988, $35)	1,683	1,400
	Inventories	1,173	1,144
	Future income tax benefits	337	278
	Other current assets	289	218
	Total current assets	3,915	3,380
	Property, plant and equipment, net	3,337	2,854
	Other assets	434	476
	Total assets	$7,686	$6,710
Liabilities and Stockholders' Equity	***Current liabilities***		
	Notes payable and current portion of long-term debt	$ 787	$1,038
	Accounts payable	789	650
	Accrued liabilities	1,175	1,003
	Total current liabilities	2,751	2,691
	Long-term debt	755	343
	Deferred income taxes	183	155
	Other liabilities	194	146
	Stockholders' equity		
	Common stock, $3 par value		
	Authorized shares: 1989, 300.0; 1988, 300.0		
	Outstanding shares: 1989, 130.4; 1988, 129.7	391	389
	Preferred stock, $100 par value issuable in series		
	Authorized shares: 0.5 (none issued)	–	–
	Additional paid-in capital	878	851
	Retained earnings	2,534	2,135
	Total stockholders' equity	3,803	3,375
	Total liabilities and stockholders' equity	$7,686	$6,710

See accompanying notes to consolidated financial statements.

Statements of Consolidated Cash Flows

Motorola, Inc. and Consolidated Subsidiaries

Years ended December 31

(In millions)		1989	1988	1987
Operating	Net earnings	$ 498	$ 445	$ 308
	Add (deduct) non-cash items			
	Depreciation	650	543	494
	Net change in deferred income taxes	(31)	(60)	32
	Change in assets and liabilities, net of effects of acquisitions			
	Accounts receivable, net	(283)	(247)	(239)
	Inventories	(29)	(223)	(90)
	Other current assets	(71)	20	(56)
	Accounts payable and accrued liabilities	334	325	222
	Other assets	95	(49)	(64)
	Other liabilities	48	(29)	55
	Net cash provided by operations	1,211	725	662
Investing	Businesses acquired and advances to affiliated companies	(53)	(123)	–
	Payments for property, plant and equipment	(1,094)	(873)	(638)
	Other changes to property, plant and equipment, net	(39)	(58)	(30)
	Increase in short-term investments	(57)	(42)	(58)
	Net cash used for investing activities	(1,243)	(1,096)	(726)
Financing	Increase (decrease) in notes payable and current portion of long-term debt	(251)	464	121
	Increase in long-term debt	389	15	12
	Issuance of common stock	29	9	29
	Payment of dividends to stockholders	(99)	(83)	(83)
	Net cash provided by financing activities	68	405	79
Increase in cash and cash equivalents		$ 36	$ 34	$ 15

See accompanying notes to consolidated financial statements.

KPMG Peat Marwick

Certified Public Accountants

303 East Wacker Drive
Chicago, Illinois 60601
(312) 938-1000

The Board of Directors and Stockholders
of Motorola, Inc.:

We have audited the accompanying consolidated balance sheets of Motorola, Inc. and consolidated subsidiaries as of December 31, 1989 and 1988, and the related statements of consolidated earnings, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 1989. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Motorola, Inc. and consolidated subsidiaries at December 31, 1989 and 1988, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 1989 in conformity with generally accepted accounting principles.

KPMG Peat Marwick

January 18, 1990

Notes to Consolidated Financial Statements

1. Summary of Significant Accounting Policies

Consolidation: The consolidated financial statements include the accounts of the Company and all majority-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

Cash Equivalents: The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents.

Inventories: Inventories are valued at the lower of average cost (which approximates computation on a first-in, first-out basis) or market (i.e., net realizable value or replacement cost), less progress payments on long-term contracts. Progress payments included in net inventories were $69 million and $88 million in 1989 and 1988, respectively.

Property, Plant and Equipment: Property, plant and equipment is stated at cost. The cost of buildings, machinery and equipment is depreciated, generally by the declining-balance method, over the estimated useful lives of such assets, as follows: buildings and building equipment, 5-50 years, machinery and equipment, 2-12 years.

Foreign Currency Translation: The Company uses the U.S. dollar as the functional currency for financial reporting. Gains and losses from translation to U.S. dollars are included in net earnings.

Reclassifications: Certain amounts in the 1988 and 1987 financial statements and related footnotes have been reclassified to conform to the 1989 presentation. These reclassifications are not significant.

(In millions, except as noted)

2. Income Taxes

The Company provides for income taxes based on earnings reported for financial statement purposes. Income tax expense differs from income taxes currently payable because of timing differences in the recognition of certain income and expense items for tax and financial statement purposes.

Components of Earnings before income taxes

	1989	1988	1987
United States	$342	$419	$245
Other nations	304	193	173
Total	$646	$612	$418

Components of Income taxes provided on earnings

	1989	1988	1987
Current:			
United States	$117	$154	$ 38
Other nations	29	38	23
State income taxes (U.S.)	33	34	17
	179	226	78
Deferred	(31)	(59)	32
Income taxes	$148	$167	$110

Differences between income tax expense computed at the U.S. Federal statutory tax rate and Income taxes provided on earnings

	1989	1988	1987
U.S. Federal statutory tax rate	34%	34%	40%
Income tax expense at statutory rate	$220	$208	$167
Increase (decrease) in tax expense resulting from:			
Taxes on earnings in other nations and U.S. possessions	(49)	(37)	(48)
State income taxes	21	23	10
Research and experimentation tax credit	(8)	(4)	(2)
Foreign Sales Corporation	(12)	(6)	(5)
Other	(24)	(17)	(12)
Income taxes	$148	$167	$110

Deferred income tax expense (benefit)

	1989	1988	1987
Depreciation	$ 35	$ 26	$ 28
Deferred taxes on earnings in other nations and U.S. possessions	33	10	(2)
Employee benefits	(27)	6	1
Inventory valuations	(11)	(19)	5
Completed contract accounting	(10)	(13)	(21)
General business credit carryforward	–	13	39
Income from long-term equipment leases	–	(10)	(22)
Other, net	(51)	(72)	4
Net change in deferred taxes	$(31)	$(59)	$ 32

Cash payments for income taxes were $159 million in 1989, $212 million in 1988 and $108 million in 1987.

Income taxes have not been provided on the cumulative undistributed earnings of certain of the Company's foreign subsidiaries amounting to $649 million and $551 million at December 31, 1989 and 1988, respectively. It is intended that these earnings will be permanently invested in operations outside of the United States. Should these earnings be distributed, foreign tax credits would reduce the additional U.S. income tax which would be payable.

At December 31, 1989, certain non-U.S. subsidiaries had loss carryforwards for financial reporting purposes of approximately $64 million.

The Internal Revenue Service has examined the Federal income tax returns for Motorola, Inc. through 1983 and the returns have been settled through that year.

In December 1987, the Financial Accounting Standards Board (FASB) issued SFAS 96, Accounting for Income Taxes, which requires an asset and liability approach in accounting for deferred income taxes. The Company has not yet adopted SFAS 96. The FASB has deferred the required implementation until January 1, 1992. The cumulative impact of adoption is not yet determinable.

(In millions, except as noted)

3. Long-term Debt and Credit Facilities

December 31

	1989	1988
12% eurodollar notes due 1994	$ 68	$ 68
11½% eurodollar notes due 1997	93	93
8⅜% ECU notes due 1992	60	59
8% sinking fund debentures due 2007 (callable at 104.0% reducing to 100.0% of the principal amount)	62	62
6½% industrial revenue bonds due 2014	15	20
Zero coupon notes due 2009	413	–
Capitalized lease obligations	45	46
Other long-term debt	16	30
	772	378
Less current maturities	17	35
Long-term debt	$755	$343

On September 7, 1989 Motorola issued $1.32 billion of zero coupon notes referred to as Liquid Yield Option™ Notes (LYON™), due September 7, 2009, for cash proceeds of $405 million. The LYONs are zero coupon subordinated notes convertible into 4.567 shares of Motorola common stock and have no periodic interest payments. Each note was priced to yield 6% to maturity.

Aggregate maturities and sinking fund requirements for long-term debt, in millions, during the next five years are as follows: 1990, $17; 1991, $16; 1992, $76; 1993, $6; 1994, $69.

The Company has domestic and international credit arrangements for short-term borrowings, generally with banks. On its domestic credit arrangements, it pays commitment fees of approximately 1/10% of the domestic lines of credit. Short-term credit lines totalled $1.95 billion at December 31, 1989, of which $1.11 billion remain unused. Domestic credit arrangements primarily back up the issuance of commercial paper.

Outstanding letters of credit aggregated approximately $99 million at December 31, 1989.

4. Property, Plant and Equipment

December 31

	1989	1988
Land	$ 107	$ 107
Buildings	1,575	1,420
Machinery	3,715	3,127
Equipment leased to others	356	325
	5,753	4,979
Less accumulated depreciation	2,416	2,125
Property, plant and equipment, net	$3,337	$2,854

5. Leases

The Company owns most of its major facilities, but does lease certain office, factory and warehouse space, land, data processing and other equipment under noncancellable operating leases. In addition, equipment is leased to others under noncancellable operating leases.

Rental expense, net of sublease income, was $125 million in 1989, $121 million in 1988 and $115 million in 1987.

Capital lease expenditures were $30 million in 1989, $26 million in 1988 and $20 million in 1987.

At December 31, 1989, future minimum lease revenues under noncancellable leases and lease obligations, net of minimum sublease rentals, were as follows:

	Lease Revenues	*Lease Obligations*
1990	$67	$88
1991	37	63
1992	16	51
1993	7	27
1994	2	16
Beyond	1	55

(In millions, except as noted)

6. Employee Benefit and Incentive Plans

Retirement Benefits: The Company and certain subsidiaries have profit-sharing plans, principally contributory, in which all eligible employees participate. The Company makes contributions to profit-sharing funds in the United States and other nations, which are generally based upon percentages of pretax earnings, as defined, from those operations.

Company contributions to all profit-sharing plans totaled $48 million, $44 million and $22 million in 1989, 1988 and 1987, respectively. Both the profit-sharing and pension plans covering most domestic employees were amended, effective January 1, 1988, such that the noncontributory pension plan will provide a higher percentage of the employee's total retirement benefit.

The Company's noncontributory pension plan covers most domestic employees after one year of service. The benefit formula is dependent upon employee earnings and years of service. The Company's policy is to fund the accrued pension cost or the amount allowable based on the full funding limitations of the Internal Revenue Service, if less.

The Company has a noncontributory pension plan for its elected officers which was amended in the fourth quarter of 1988. The amended plan contains provisions for funding the participants expected retirement benefits when the participants meet the minimum age and years of service requirements. This plan was unfunded prior to 1988.

Benefits under all plans are valued based upon the projected unit credit cost method. The actuarial present value of the projected benefit obligations was calculated using a discount rate of 9% and a future compensation rate increase of 5.5% in both 1989 and 1988. The investment return assumption for the plan covering most domestic employees was 9.25% in 1989 and 1988. The investment return assumption for the plan covering elected officers was 8% in 1989.

Components of net U.S. pension expense (income) for the regular pension plan

	1989	1988	1987
Service costs	$ 57	$50	$20
Interest cost on projected obligation	26	20	18
Actual return on plan assets	(103)	(45)	(45)
Net amortization and deferral	51	(4)	4
Net pension expense (income)	$ 31	$21	$(3)

The net U.S. pension expense for the elected officers pension plan was $14 million, $9 million and $6 million in 1989, 1988 and 1987, respectively.

U.S. Funded Plans at December 31

	1989		1988	
	Regular	*Elected Officers*	*Regular*	*Elected Officers*
Actuarial present value of:				
Vested benefit obligation	$(242)	$(27)	$(189)	$(45)
Accumulated benefit obligation	(271)	(39)	(213)	(60)
Projected benefit obligation for service rendered to date	(373)	(53)	(289)	(64)
Plan assets at fair value, primarily listed stocks, bonds and cash equivalents	575	29	481	50
Plan assets in excess (deficit) of projected benefit obligation	202	(24)	192	(14)
Unrecognized net (gain) loss from past experience different from assumptions	(140)	2	(90)	3
Unrecognized prior service cost	2	36	3	40
Unrecognized net transition (asset) liability	(103)	12	(114)	14
Pension asset (liability) recognized in balance sheet	$ (39)	$ 26	$ (9)	$ 43

(In millions, except as noted)

The Company uses a five-year market-related asset value method of amortizing actuarial gains and losses.

Net transition amounts and prior service costs are being amortized over periods ranging from 10 to 15 years.

Certain foreign subsidiaries have varying types of retirement plans providing benefits for substantially all of their employees. Amounts charged to earnings for all foreign plans were $15 million in 1989, $12 million in 1988 and $9 million in 1987.

In addition to providing pension benefits, the Company provides certain health care benefits to its retired employees. The majority of its domestic employees may become eligible for these benefits if they reach normal retirement age while working for the Company. The cost of retiree health care benefits is recognized as expense when claims are paid and totalled $4 million in each of the years 1989, 1988 and 1987. There are no significant post-retirement health care benefit plans in foreign countries.

Management Incentive: The Company may provide up to 7% of its annual consolidated pretax earnings, as defined in the Motorola Executive Incentive Plan, for the payment of cash incentive awards to key employees. During 1989, $24 million was provided for incentive awards, as compared to $25 million and $14 million in 1988 and 1987, respectively.

Stock Options: Under the Company's employee stock option plans, shares of common stock have been made available for grant to key employees. The exercise price of each option granted is 100% of market value on the date of the grant.

Shares subject to option

(In thousands of shares)	1989	1988
Options outstanding at January 1	6,002	5,256
Additional options granted	1,380	1,269
Options exercised	(797)	(475)
Options terminated, cancelled or expired	(83)	(48)
Options outstanding at December 31	6,502	6,002
Shares reserved for future options grants	7,829	3,123
Total shares reserved	14,331	9,125
Total options exercisable	5,099	4,735

Options exercised during 1989 were at per share prices ranging from $14.81 to $46.69. Options outstanding at December 31, 1989 were at per share prices ranging from $17.10 to $69.94.

7. Other Financial Data

Income Statement Information

	1989	1988	1987
Research and development	$784	$665	$524
Maintenance and repairs	178	196	162
Foreign currency gains (losses)	(6)	1	8
Interest expense, net:			
Interest expense	168	135	96
Interest income	(35)	(37)	(15)
Amount capitalized	(3)	–	(2)
Interest expense, net	$130	$ 98	$ 79

Balance Sheet Information

	1989	1988
Inventories:		
Finished goods	$ 350	$ 328
Work in process and production materials	823	816
Inventories	1,173	1,144
Accrued liabilities:		
Compensation	264	232
Taxes other than income	97	109
Income taxes payable	67	75
Contribution to employees' profit sharing funds	48	44
Dividends payable	25	25
Other	674	518
Accrued liabilities	$1,175	$1,003

Financial data of previously unconsolidated financial subsidiaries

	1989	1988	1987
Total revenue	$ 31	$ 26	$ 20
Net earnings	7	7	5
Total assets	166	296	228
Total liabilities	(134)	(249)	(195)
Stockholder's investments and advances	$ 32	$ 47	$ 33

The Company's finance subsidiary purchases customer obligations under long-term contracts from the Company at net carrying value. Its insurance subsidiary insures some of the Company's property risks.

As a result of the consolidation of the wholly-owned finance subsidiary, interest income of $31 million in 1989, $26 million in 1988 and $20 million in 1987 is included in Net sales. Interest expense of $20 million in 1989, $16 million in 1988 and $12 million in 1987 is included in Manufacturing and other costs of sales. In addition, finance receivables of $122 million in 1989 and $230 million in 1988 are included in Other assets.

The Company's cash payments for interest expense (net of amount capitalized) were $175 million in 1989, $157 million in 1988 and $87 million in 1987.

(In millions, except as noted)

8. Stockholder Rights Plan

On November 9, 1988, the Company declared a dividend distribution of one preferred share purchase right on each share of the Company's common stock outstanding on November 20, 1988. Each right may be exercised to buy one-thousandth of a share of the Company's Junior Participating Preferred Stock, Series A at an exercise price of $150 per one-thousandth of a share (subject to adjustment) if a person or group acquires 20% or more of the Company's common stock or announces a tender offer or exchange offer for 30% or more of the Company's common stock. The rights, which do not have voting power, expire on November 20, 1998 and may be redeemed by the Company at a price of $.05 per right prior to the public announcement that 20% or more of the Company's shares have been accumulated by a person or group. If the Company is acquired in a merger or other business combination transaction or 50% or more of its assets or earning power are sold at any time after the rights become exercisable, each right entitles the holder to buy a number of shares of common stock of the acquiring company having a market value of twice the exercise price of the right. If a person or group acquires 20% or more of the Company's common stock or if a 20% holder merges with the Company without exchange of the Company's common stock or engages in specified self-dealing transactions with the Company, each right, not owned by such holder, entitles its holder to buy a number of shares of the Company having a market value of twice the exercise price of the right.

9. Contingencies

The Company is a defendant in various suits and claims which arise in the normal course of business and is obligated under repurchase and other agreements principally in connection with the financing of sales.

In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on the business or financial position of the Company.

10. Information by Industry Segment and Geographic Region

Industry segment information as of and for the years ended December 31

	Net Sales			*Operating Profit*					
	1989	1988	1987	**1989**		1988		1987	
Communications Products	**$3,310**	$3,017	$2,459	**$302**	**9.1%**	$326	10.8%	$255	10.4%
Semiconductor Products	**3,036**	2,741	2,193	**189**	**6.2%**	268	9.8%	171	7.8%
General Systems Products	**1,902**	1,102	801	**340**	**17.9%**	107	9.7%	56	7.0%
Information Systems Products	**552**	566	528	**18**	**3.2%**	68	12.0%	83	15.7%
Government Electronic Products	**698**	648	540	**46**	**6.6%**	25	3.8%	8	1.5%
Other Products	**490**	481	415	**4**	**.7%**	19	4.0%	(6)	(1.4%)
Adjustments and eliminations	**(368)**	(305)	(209)	**(4)**	**–**	(9)	–	(3)	–
Industry totals	**$9,620**	$8,250	$6,727	**895**	**9.3%**	804	9.7%	564	8.4%
General corporate expenses				**(119)**		(94)		(67)	
Interest expense, net				**(130)**		(98)		(79)	
Earnings before income taxes				**$646**	**6.7%**	$612	7.4%	$418	6.2%

	Assets		
	1989	1988	1987
Communications Products	**$2,348**	$2,048	$1,690
Semiconductor Products	**2,590**	2,245	1,875
General Systems Products	**1,139**	941	599
Information Systems Products	**403**	381	361
Government Electronic Products	**396**	389	371
Other Products	**297**	261	272
Adjustments and eliminations	**(44)**	(13)	(44)
Industry totals	**7,129**	6,252	5,124
General corporate assets	**557**	458	393
Consolidated totals	**$7,686**	$6,710	$5,517

(In millions, except as noted)

	Fixed Asset Expenditures			*Depreciation*		
	1989	1988	1987	**1989**	1988	1987
Communications Products	**$ 216**	$182	$148	**$124**	$ 93	$102
Semiconductor Products	**536**	435	327	**306**	253	227
General Systems Products	**182**	98	31	**55**	52	27
Information Systems Products	**36**	39	30	**36**	30	25
Government Electronic Products	**32**	28	34	**29**	30	27
Other Products	**43**	41	53	**17**	18	15
General corporate	**79**	76	35	**36**	26	25
Consolidated totals	**$1,124**	$899	$658	**$603**	$502	$448

Expenditures and depreciation do not include amounts for equipment leased to others.

Geographic area information as of and for the years ended December 31

	Net Sales			*Operating Profit*				
	1989	1988	1987	**1989**		1988		1987	
United States	**$8,123**	$7,017	$5,869	**$623**	**7.7%**	$628	8.9%	$375	6.4%
Other nations	**4,910**	3,968	2,937	**313**	**6.4%**	228	5.7%	209	7.1%
Adjustments and eliminations	**(3,413)**	(2,735)	(2,079)	**(41)**	**–**	(52)	–	(20)	–
Geographic totals	**$9,620**	$8,250	$6,727	**895**	**9.3%**	804	9.7%	564	8.4%
General corporate expenses				**(119)**		(94)		(67)	
Interest expense, net				**(130)**		(98)		(79)	
Earnings before income taxes				**$646**	**6.7%**	$612	7.4%	$418	6.2%

	Assets		
	1989	1988	1987
United States	**$4,653**	$4,131	$3,567
Other nations	**2,605**	2,211	1,652
Adjustments and eliminations	**(129)**	(90)	(95)
Geographic totals	**7,129**	6,252	5,124
General corporate assets	**557**	458	393
Consolidated totals	**$7,686**	$6,710	$5,517

The Company operates predominantly in one industry, electronic equipment, systems, and components. Operations involve the design, manufacture and sale of a diversified line of products, which include, but are not limited to, two-way radios, pagers, cellular telephones and systems; semiconductors, including integrated circuits and microprocessor units; data communication and distributive data processing equipment and systems; and electronic equipment and industrial electronics products. The Company operates manufacturing and distribution facilities outside of the United States. No single country outside of the United States accounts for more than 10% of consolidated net sales or total assets.

Operating profit was computed as total revenues less operating expenses which exclude general corporate expenses, net interest and income taxes. Identifiable assets are those assets of the Company that are identified to classes of similar products or operations in each geographical area, excluding intersegment receivables. Corporate assets are principally cash and marketable securities and the corporate administrative headquarters. Intersegment sales, principally semiconductor components, amounted to $382 million for 1989, $298 million for 1988 and $205 million for 1987. Intersegment and intergeographic transfers are accounted for on an arm's length pricing basis and are consistent with rules and regulations of domestic and foreign taxing authorities.

Sales to United States federal government agencies aggregated $1.07 billion for 1989, $1.05 billion for 1988 and $830 million for 1987. No other single customer (or group of customers under common control) accounted for 10% or more of the Company's sales.

The equity in the net assets of non-U.S. subsidiaries amounted to $1.58 billion at December 31, 1989 and $1.34 billion at December 31, 1988.

Five Year Financial Summary

Motorola, Inc. and Consolidated Subsidiaries

Years ended December 31
(In millions, except as noted)

		1989	1988	1987	1986	1985
Operating Results	Net sales	$9,620	$8,250	$6,727	$5,905	$5,456
	Manufacturing and other costs of sales	5,905	5,040	4,071	3,656	3,413
	Selling, general and administrative expenses	2,289	1,957	1,665	1,437	1,470
	Depreciation expense	650	543	494	459	441
	Interest expense, net	130	98	79	86	87
	Total costs and expenses	8,974	7,638	6,309	5,638	5,411
	Earnings before income taxes	646	612	418	267	45
	Income taxes (benefits) provided on earnings	148	167	110	73	(27)
	Net earnings	$ 498	$ 445	$ 308	$ 194	$ 72
	Net earnings as a percent of sales	5.2%	5.4%	4.6%	3.3%	1.3%
Per Share Data (In dollars)	Net earnings	$ 3.83	$ 3.43	$ 2.39	$ 1.53	$ .61
	Dividends declared	.76	.67	.64	.64	.64
Balance Sheet	Total assets	$7,686	$6,710	$5,517	$4,826	$4,448
	Working capital	1,164	689	867	759	892
	Long-term debt	755	343	344	334	705
	Total debt	1,542	1,381	917	786	1,076
	Total stockholders' equity	$3,803	$3,375	$3,008	$2,754	$2,284
Other Data	Current ratio	1.42	1.26	1.47	1.50	1.71
	Return on average invested capital	10.3%	11.0%	8.8%	5.9%	2.3%
	Return on average stockholders' equity	13.9%	13.9%	10.7%	7.4%	3.2%
	Year-end employment (in thousands)	104.0	102.0	97.7	94.4	90.2
	Average shares outstanding	130.0	129.6	128.9	126.5	119.0

Quarterly and Other Financial Data

(In millions, except per share amounts)

(Unaudited)	1989				1988			
	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
Net sales	$2,175	$2,385	$2,408	$2,652	$1,955	$2,095	$2,007	$2,193
Gross profit	842	960	886	1,027	783	810	770	847
Net earnings	123	154	89	132	114	120	87	124
Net earnings per share	.95	1.18	.69	1.01	.88	.93	.67	.95
Dividends:								
Declared	.19	.19	.19	.19	.16	.16	.16	.19
Paid	.19	.19	.19	.19	.16	.16	.16	.16
Stock prices:								
High	47.63	60.38	62.00	61.75	53.50	54.63	54.50	42.75
Low	39.50	41.13	51.00	53.00	38.50	43.50	40.25	35.88

The number of holders of record of Motorola Common Stock on January 31, 1990 was 15,019.

Sectors, Groups and Divisions

Communications Sector
Communications Systems Group
Commercial Markets Systems Division
Digital Systems Division
Special/National Markets Systems Division
Distribution Service Group
National Service Division
Parts Division
Domestic Distribution Group
National Markets Division
Special Markets Division
State and Local Government Markets Division
International Group
Asia Division
International Markets Division
Pacific Division
Manufacturing Technologies Group
Component Products Division
Manufacturing Technologies Division
Mobile Data International
Motorola Storno Communications Group
Radio Technologies Group
Fixed Products Division
Mobile Products Division
Portable Products Division
Paging Products Division
Radius Division
U.S. Federal Government Division

Semiconductor Products Sector
Discrete and Special Technologies Group
Opto, Sensor and Commodity Products Division
Power Products Division
RF Products Division
Final Manufacturing Group
International Semiconductor Group
Asia Pacific Semiconductor Products Division
European Semiconductor Group
Discrete and Analog Products Division (Toulouse)
European Logic and ASIC Division (Munich)
MOS Memory and Microprocessor Division (East Kilbride)
Microprocessor Products Group
High-End MPU Division
Microcontroller Division
Standard Logic and Analog Integrated Circuits Group
Bipolar Analog Integrated Circuits Division
Logic Integrated Circuits Division
MOS Digital-Analog Integrated Circuits Division
Application Specific Integrated Circuits Division
MOS Memory Products Division

General Systems Sector
Cellular Subscriber Group
International Subscriber Division
European Subscriber Division
North American Subscriber Division
Computer Group
Computer Systems Division
International Division
Microcomputer Division
Radio-Telephone Systems Group
Cellular Infrastructure Division
Field Service Division

Information Systems Group
Codex Corp.
Universal Data Systems

Government Electronics Group
Communications Division
Strategic Electronics Division
Tactical Electronics Division

Automotive and Industrial Electronics Group
Automotive Powertrain and Chassis Electronics Division
Electronic Systems and Components Division

Motorola Worldwide

Major facilities in:
Australia
Melbourne
Canada
British Columbia
Richmond
Ontario
Brampton, North York
Costa Rica
Guadalupe
Denmark
Copenhagen
France
Angers, Bordeaux, Toulouse
Hong Kong
Kowloon
Israel
Arad, Tel Aviv
Japan
Aizu Wakamatsu, Sendai, Tokyo
Korea
Seoul
Malaysia
Kuala Lumpur, Penang, Seremban
Mexico
Guadalajara, Leon, Mexico City
Philippines
Manila
Singapore
Switzerland
Geneva
Taiwan
Chung-Li
United Kingdom
Basingstoke, East Kilbride, Stotfold, Swindon
United States
Alabama
Huntsville
Arizona
Chandler, Mesa, Phoenix, Scottsdale, Tempe
California
Cupertino, Lawndale
Florida
Boynton Beach, Fort Lauderdale
Illinois
Arlington Heights, Northbrook, Schaumburg
Iowa
Mount Pleasant
Massachusetts
Canton, Mansfield
New Mexico
Albuquerque
New York
Arcade, Elma
Texas
Austin, Dallas, Fort Worth, Seguin
Washington
Bothell
Puerto Rico
Vega Baja
West Germany
Flensburg, Munich, Taunusstein

CEO Quality Awards

The Chief Executive Office Quality Award is Motorola's highest award for quality performance. Winners in 1989 were:

Communications Sector

MaraTrac™/Mitrek® Product Development, Manufacturing and Support Teams (Fort Worth, Texas)

HT600, MTX800 & MT1000 Manufacturing and Support Teams (Plantation, Fla.)

Thin Film Manufacturing/Support Teams (Plantation, Fla.)

Order Processing Organization and Management Information Systems (Schaumburg, Ill.)

Semiconductor Products Sector

Memory Division (Austin, Texas)

MOS Wafer and Purchasing Teams (Austin, Texas and Mesa, Ariz.)

Zener/Rectifier Processing Team (Phoenix, Ariz.)

Automotive and Industrial Electronics Group

Thick Film Ignition Engineering/ Production Team (Arcade/Elma, N.Y., and Northbrook, Ill.)

1989 Dan Noble Fellows

The Dan Noble Fellow is the highest honorary award that can be made to a technologist within Motorola. It recognizes outstanding technical creativity, innovative ability and productive achievements. It is named for Dan Noble, a visionary technological pioneer, former vice chairman of Motorola and chairman of its Science Advisory Board.

Fellows chosen in 1989 are:

Fred Cho
Government Electronics Group, Scottsdale, Ariz.

Duane Lundy
Government Electronics Group, Scottsdale, Ariz.

Phil Tobin
Semiconductor Products Sector, Austin, Texas

Syd Wilson
Semiconductor Products Sector, Phoenix, Ariz.

Ken Zdunek
Communications Sector, Schaumburg, Ill.

Directors of Motorola, Inc.

George M.C. Fisher

Gary L. Tooker

Christopher B. Galvin

Robert W. Galvin

John F. Mitchell

William J. Weisz
Vice Chairman of the Board; formerly Officer of the Board and CEO, Motorola, Inc.

David R. Clare
Chairman of the Finance Committee, Johnson & Johnson

Wallace C. Doud
Retired; formerly Vice President, International Business Machines Corporation

John T. Hickey
Retired; formerly Executive Vice President and Chief Financial Officer, Motorola, Inc.

Lawrence Howe
Executive Director, Civic Committee of the Commercial Club of Chicago; formerly Vice Chairman, Jewel Companies, Inc.

Anne P. Jones
Partner, Sutherland, Asbill & Brennan law firm

Donald R. Jones

Stephen L. Levy
Retired; Senior Advisor and Deputy Representative for the Chief Executive Office, Motorola, Inc.

Walter E. Massey
Vice President for Research and for Argonne National Laboratory, The University of Chicago

William G. Salatich
Retired; formerly President, Gillette North America, and Vice Chairman of the Board, Gillette Company

Gardiner L. Tucker
Retired; formerly Vice President for Science and Technology, International Paper Company

B. Kenneth West
Chairman of the Board and Chief Executive Officer, Harris Bankcorp, Inc.

Director Emeritus

Elmer H. Wavering
Formerly Vice Chairman and Chief Operating Officer, Motorola, Inc.

Elected Officers of Motorola, Inc.

As of 1/1/90

Corporate

	Age	Years of Service
*George M.C. Fisher *Chairman of the Board and Chief Executive Officer*	49	13
*Gary L. Tooker *President and Chief Operating Officer*	50	27
*Christopher B. Galvin *Senior Executive Vice President and Assistant Chief Operating Officer*	39	17
*Robert W. Galvin *Chairman of the Executive Committee*	67	49
John F. Mitchell *Vice Chairman of the Board and Officer of the Board*	61	36

Finance

	Age	Years of Service
Donald R. Jones *Executive Vice President and Chief Financial Officer*	59	39
*Carl F. Koenemann *Corporate Vice President and Assistant Chief Financial Officer*	51	19
Richard H. Weise *Senior Vice President, General Counsel and Secretary*	54	21
Kenneth J. Johnson *Corporate Vice President and Controller*	54	18
Victor R. Kopidlansky *Corporate Vice President and Assistant General Counsel*	58	24
A. Peter Lawson *Corporate Vice President and Assistant General Counsel*	43	9
Garth L. Milne *Corporate Vice President and Treasurer*	47	10
*Benny L. Smothermon *Corporate Vice President and Director of International Finance*	50	13

International Operations

	Age	Years of Service
Carl E. Lindholm *Executive Vice President, International Operations*	60	22
Wilhelm Braxmaier *Corporate Vice President and Director for Eastern Europe*	59	21
Chi-Sun Lai *Corporate Vice President and General Manager, Motorola China Ltd.*	53	19
Elisha Shahmoon *Corporate Vice President and Managing Director, Motorola Israel Limited*	50	19

Japanese Group

	Age	Years of Service
Arnold S. Brenner *Executive Vice President and General Manager, Japanese Group*	52	30
Toshiaki Irie *Corporate Vice President and Chairman, Nippon Motorola Limited*	56	5
Richard W. Younts *Corporate Vice President and President, Nippon Motorola Limited*	50	22

New Enterprises

	Age	Years of Service
Levy Katzir *Senior Vice President and General Manager, New Enterprises*	57	33
*Philip D. Gunderson *Corporate Vice President, Engineering and Technology, Motorola Lighting, Inc.*	51	21

Personnel

	Age	Years of Service
James Donnelly *Executive Vice President and Motorola Director of Personnel*	50	20
*Joseph F. Miraglia *Senior Vice President and Assistant Motorola Director of Personnel*	53	11
Carlton Braun *Corporate Vice President and Director, Educational Institutes and Labs*	60	39
William B. Dimitro *Corporate Vice President and Director, Career Direction Center*	60	22
*Robert L. Hammer *Corporate Vice President and Director of Strategic Personnel Management*	54	16
*A. William Wiggenhorn *President, Motorola University, and Corporate Vice President of Training and Education*	45	9

Staff

	Age	Years of Service
*David W. Hickie *Senior Vice President and Chief Corporate Staff Officer*	56	27
Keith J. Bane *Senior Vice President and Motorola Director of Strategy*	50	16
*William V. Braun *Senior Vice President and Motorola Director of Research and Development*	54	31
C. Travis Marshall *Senior Vice President and Motorola Director of Government Relations*	63	19
Vincent J. Rauner *Senior Vice President for Patents, Trademarks and Licensing*	62	19
Richard Buetow *Corporate Vice President and Motorola Director of Quality*	58	31
James D. Burge *Corporate Vice President and Director of Government Affairs—Personnel*	55	31
James W. Gillman *Corporate Vice President and General Patent Counsel*	56	16
*Les Shroyer *Corporate Vice President and Director of Management Information Systems and Telecommunications*	45	5
*Mauro J. Walker *Corporate Vice President and Motorola Director of Manufacturing*	54	18

Communications Sector

	Age	Years of Service
*Arthur P. Sundry *President and General Manager, Communications Sector, and Executive Vice President, Motorola, Inc.*	61	32
David K. Bartram *Senior Vice President and Assistant General Manager, Communications Sector*	53	29
Morton L. Topfer *Senior Vice President and Assistant General Manager, Communications Sector*	53	18
*Robert W. Bigony *Senior Vice President and General Manager, International Group Communications Sector*	48	23
Gordon Comerford *Senior Vice President and Group General Manager, Operations and Staff*	53	15
Ronald E. Greenwell *Senior Vice President and General Manager, Domestic Distribution Group*	51	27
*Robert L. Growney *Senior Vice President and General Manager, Radio Technologies Group*	47	23
*Robert S. Hall *Senior Vice President and General Manager, ManufacturingTechnologies Group*	60	28
Kenneth R. Hessler *Senior Vice President and General Manager, Distribution Service Group*	56	32
Theodore Saltzberg *Senior Vice President and Director of Technology*	62	33
*Stanley A. DeCosmo *Corporate Vice President and General Manager, Radius Division*	44	21
*Merle Gilmore *Corporate Vice President and General Manager, Portable Products Division*	41	19
*Don Holt *Corporate Vice President and Assistant General Manager, Domestic Distribution Group*	60	33
*Barclay Isherwood *Corporate Vice President, Communications Sector, and President, Mobile Data International*	44	1
Wayne H. Leland *Corporate Vice President and General Manager, U.S. Federal Government Division*	46	24
*Jerome C. Leonard *Corporate Vice President and General Manager, Paging Division*	52	28
John E. Major *Corporate Vice President and General Manager, Communications Systems Group*	44	11
*Dale J. Misczynski *Corporate Vice President and Sector Director of Quality*	47	23
*Irvin A. Neruda *Corporate Vice President and Sector Director of Finance*	60	39
*Larry D. Shockley *Corporate Vice President and General Manager, International Markets Division*	51	25

	Age	Years of Service
James W. Wagner *Corporate Vice President and General Manager, Mobile Products Group*	44	23
Francis T. Wapole *Corporate Vice President and General Manager, Motorola Storno Communications Group*	45	23
Robert L. Wasni *Corporate Vice President and General Manager, Parts Division*	57	33

Semiconductor Products Sector

	Age	Years of Service
*James A. Norling *President and General Manager, Semiconductor Products Sector, and Executive Vice President, Motorola, Inc.*	47	24
Thomas D. George *Senior Vice President and Assistant General Manager, Semiconductor Products Sector*	49	10
Andre Borrel *Senior Vice President and General Manager, International Semiconductor Group*	53	22
Gordon C. Chilton *Senior Vice President and General Manager, Discrete and Special Technologies Group*	50	9
Murray A. Goldman *Senior Vice President and General Manager, Microprocessor Products Group*	52	20
Gary M. Johnson *Senior Vice President and General Manager, Standard Logic and Analog Integrated Circuits Group*	45	22
Geno Ori *Senior Vice President and Director of Customer Relations*	52	27
Hector Ruiz *Senior Vice President and Director of Technology Management*	44	11
Charles E. Thompson *Senior Vice President and Director of World Marketing*	60	20
R. Gary Daniels *Corporate Vice President and General Manager, Microcontroller Division*	52	23
*Weldon D. Douglas *Corporate Vice President and Director, Sales and Marketing, Federal Segment*	52	29
Larry L. Gartin *Corporate Vice President and Director, Sector Finance*	46	22
Jim George *Corporate Vice President and General Manager, MOS Memory Products Division*	47	13
Thomas G. Gunter *Corporate Vice President and General Manager, High-End MPU Division*	42	17
Brian O. Hilton *Corporate Vice President and Director, Worldwide Distribution*	47	22
Bob J. Jenkins *Corporate Vice President and Director of External Technology Evaluation*	55	25
George A. Needham *Corporate Vice President and General Manager, Final Manufacturing Group*	54	28
*Michael J. Pollak *Corporate Vice President and General Manager, RF Division*	44	21
David L. Pulatie *Corporate Vice President and Sector Director of Personnel*	47	24
*Fred Shlapak *Corporate Vice President and Director of European Marketing*	46	19
Paul J. Shimp *Corporate Vice President and Director of Sector Support Operations*	50	25
C. D. Tam *Corporate Vice President and General Manager, Asia/Pacific Semiconductor Products Division*	45	21
Barry Waite *Corporate Vice President and General Manager, European Semiconductor Group*	41	7

General Systems Sector

	Age	Years of Service
*Edward F. Staiano *President and General Manager, General Systems Sector, and Executive Vice President, Motorola, Inc.*	53	16
Lawrence R. Paggeot *Senior Vice President and General Manager, Cellular Subscriber Group*	49	21
Bernard R. Smedley *Senior Vice President and General Manager, Radio-Telephone Systems Group*	53	13
*Thomas A. Beaver *Corporate Vice President and General Manager, Motorola Computer Group*	47	25
*James A. Bernhart *Corporate Vice President and Director of Distribution, Cellular Subscriber Group*	57	30
*Don Burns *Corporate Vice President and General Manager, European Cellular Subscriber Division*	47	17
*Burnham Casterline *Corporate Vice President and Director of Quality and Manufacturing Technology*	60	32
John P. Salcius *Corporate Vice President and General Manager, International Subscriber Division*	46	23
Robert N. Weisshappel *Corporate Vice President and General Manager, North American Subscriber Division*	45	19

Information Systems Group

	Age	Years of Service
John A. Lockitt *Senior Vice President, Information Systems Group, and President, Codex Corporation*	47	12
*George R. Grumbles *Corporate Vice President, Information Systems Group, and President, Universal Data Systems*	56	11

Government Electronics Group

	Age	Years of Service
David G. Wolfe *Senior Vice President and General Manager, Government Electronics Group*	54	25
James R. Baum *Corporate Vice President and Assistant General Manager, Government Electronics Group*	59	32
*Durrell Hillis *Corporate Vice President and General Manager, Strategic Electronics Division*	49	26
*David M. Neuer *Corporate Vice President and General Manager, Communications Division*	48	27
*Julie Sackett *Corporate Vice President and Group Director of Personnel*	46	15

Automotive and Industrial Electronics Group

	Age	Years of Service
Frederick T. Tucker *Senior Vice President and General Manager, Automotive and Industrial Electronics Group*	49	24
Parviz Mokhtari *Corporate Vice President and Assistant General Manager, Automotive and Industrial Electronics Group*	48	7

**Assumed new title or advanced in rank since previous Annual Report.*

Communications Sector
Automatic Vehicle Location Systems
Closed Circuit Television Systems
Communications Control Centers
Communications System Installation and Maintenance
Emergency Medical Communications Systems
FM Two-Way Radio Products
- Base Station and Repeater Products
- Mobile Products
- Portable Products

FM Two-Way Radio Systems
- Advanced Conventional Systems
- Digital Voice Protection Communications Systems
- Trunked Radio Systems

HF Single Sideband Communications Systems
Integrated Security and Access Control Systems
Mobile Data Systems
- Data Radio Networks
- Portable and Mobile Data Terminals
- RF Modems

Radio Paging Systems
Signaling and Remote Control Systems

Semiconductor Products Sector
Bipolar and MOS Analog ICs
Bipolar and MOS Digital ICs
Bipolar, BIMOS, CMOS and Combined Technology Semicustom Circuits
Custom and Semicustom Semiconductors
Customer Defined Arrays
Data Conversion Circuits
Digital Signal Processors
Fiber Optic Active Components
Field Effect Transistors (FETs)
Industrial Control Circuits
Interface Circuits
Microcomputers and Peripherals
Microcontroller ICs
Microprocessors and Peripherals
Microwave Transistors
MOS and Bipolar Memories
Motor Control Circuits
Open Architecture CAD Systems
Operational Amplifiers
Optoelectronics Components
Power Supply Circuits
Pressure and Temperature Sensors
Rectifiers
RF Modules
RF Power and Small Signal Transistors
SMARTmos™ Products
Telecommunications Circuits
Thyristors and Triggers
TMOS™ and Bipolar Power Products
Voltage Regulator Circuits
Zener and Tuning Diodes

General Systems Sector
Cellular Mobile, Portable, Transportable and Personal Subscriber Products
Cellular Radiotelephone Systems
Electronic Mobile Exchange (EMX) Series
HD, LD and HD II Series Cellular Base Stations
Microcomputer (VME) Board Level Products
Multi-User Super Microcomputer Systems and Servers
Software for Workgroup and Network Computing Communications

Information Systems Group
Digital Service/Channel Service Units
Distributed Communications Processors
Electronic Data Switches
ISDN Terminal Adaptors
LAN/WAN Internetworking Products
Micro-to-Mainframe Products
Modems: Leased Line, Dial, Custom and Limited Distance
Multiplexers: Statistical, Digital and Time Division
Network Design, Installation and Maintenance Services
Network Management Systems
Network Monitoring Services
Protocol Converters
T1/E1 Nodal Processors
X.25 Packet Switches and PADs

Government Electronics Group
Command, Control, Communications and Intelligence Systems
Countermeasures Systems
Electronic Proximity Fuze Systems
Electronic Test Systems
Intelligent Display Terminals and Systems
Manpack Satellite Communications
Missile Guidance Systems
Multi-function Radar Transponders
Positioning and Tracking Systems
Radar Data Links
Radar Surveillance Systems
Secure Communications
Space Communications Systems
Surveillance, Reconnaissance and Verification Support System (Joint STARS)
Tactical Communications
Tactical Simulation and Training Systems
Unmanned Airborne Vehicle Electronics

Automotive and Industrial Electronics Group
Agricultural Vehicle Controls
Anti-lock Braking System Controls
Automotive and Industrial Sensors
Automotive Body Computers
Gas and Diesel Engine Controls
Ignition Modules
Instrumentation
Keyless Entry Systems
Motor Controls
Multiplex Systems
Power Modules
Solid State Relays/Drivers
Steering Controls
Suspension Controls
Transmission Controls
Vehicle Navigation Systems
Vehicle Theft Alarm Modules
Voltage Regulators

New Enterprises
Deposition Equipment for the Semiconductor Industry
Electronic Ballasts for the Lighting Industry
Factory Automation Computer Control Systems
Software and Hardware for Hospital Intensive Care Units
Supervisory Control Data Acquisition (SCADA) Systems

Transfer Agent, Registrar, Dividend Disbursing Agent and Dividend Reinvestment Agent	Harris Trust and Savings Bank, Corporate Trust Operations Division P.O. Box 755, 111 West Monroe–11th Floor Chicago, Ill. 60690 312-461-2339
Investor Relations	Security analysts, investment professionals and shareholders should direct their business related inquiries to: Investor Relations Corporate Offices 1303 E. Algonquin Road Schaumburg, Ill. 60196 Or call 708-576-4995
Common Stock	Motorola common stock is listed on the New York, Midwest, London and Tokyo Stock Exchanges.
Annual Meeting of Stockholders	The annual meeting will be held on May 14, 1990. A notice of the meeting, together with a form of proxy and a proxy statement, will be mailed to stockholders on or about March 29, 1990, at which time proxies will be solicited by the Board of Directors.
Form 10-K	After the close of each fiscal year, Motorola submits a report on Form 10-K to the Securities and Exchange Commission containing certain additional information concerning its business. A copy of this report may be obtained without charge by addressing your request to the Secretary, Motorola, Inc., Corporate Offices, Motorola Center, 1303 E. Algonquin Road, Schaumburg, Ill. 60196.
Auditors	KPMG Peat Marwick 303 E. Wacker Drive Chicago, Ill. 60601

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OUR FUNDAMENTAL OBJECTIVE
(Everyone's Overriding Responsibility)

Total Customer Satisfaction

MOTOROLA INC.