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MICROCOMPUTER SYSTEMS CORPORATION
PRESS BACKGROUND INFORMATION

Prepared By:

REGIS MCKENNA PUBLIC RELATIONS
348 Waverley Street
Palo Alto, CA 94301
Roberta Brosnahan (415) 329-0810

For:

MICROCOMPUTER SYSTEMS CORPORATION
432 Lakeside Drive
Sunnyvale, CA 94086
Don Sumner (408) 733-4200

MICROCOMPUTER SYSTEMS CORPORATION

AN OVERVIEW

Since its founding in 1974, Microcomputer Systems Corporation (MSC), has grown to be the largest supplier of intelligent disk drive controllers to original equipment manufacturers (OEMs) in the United States. Starting with an initial investment capitalization of \$8,000, the Sunnyvale, California-based company is now doing about \$15 million in annual sales.

MSC pioneered the use of microprocessors in high-performance disk systems for minicomputers. Its intelligent controllers support industry standard disk drives with capacities to 600 megabytes per drive. They are used with many microcomputer, minicomputer, and mainframe processor types from companies such as Data General, Digital Equipment, Hewlett-Packard, IBM, Microdata, Perkin-Elmer, and Texas Instruments.

In 1979, building on its established technological capability, MSC introduced its first product aimed specifically at the end user market--the MSC-05/06 disk drive subsystem. Based on a new system architecture that offered customers a 15 to 25 percent cost reduction over comparable systems, the MSC-05/06 was the first independent disk drive system to be fully plug-compatible with Digital Equipment Corporation's (DEC) MassbusTM controllers.

While MSC will continue to supply the OEM market, it will also increase its emphasis on creating new products for the end user market.

MSC Is A Growth Company

Even by the standards of the high-flying computer industry, MSC's growth pattern is an enviable one. It has grown from \$100,000 in sales during its first full year of operation to more than \$10 million in the fiscal year ended in September 1979.

Estimates for the current year indicate that MSC's sales will exceed \$14 million in 1980.

Unlike most young electronics companies, MSC is not backed by venture capital. Corporate growth has been funded by a combination of engineering development fees and retained earnings. Each year MSC reinvests approximately 24 percent of its profits into research and development.

This sales growth has been achieved through the efforts of a talented team of management, engineering and manufacturing personnel. The company has grown to 160 full-time employees, including more than 40 engineers. Its 60,000 square-foot headquarters contain manufacturing, engineering and marketing departments at 432 Lakeside Drive in Sunnyvale.

A Changing Marketplace

MSC's early success was based on its ability to provide cost-effective and dependable intelligent disk drive controllers to OEMs. Its latest thrust, one that potentially is far more rewarding, is to develop computer peripheral products for end users.

MSC's entry into the end user arena came about as a result of the changing buying patterns of the customers in this market. Until recently, end users normally purchased or leased an entire computing system from one vendor. The system would include a central processing unit (CPU) and peripherals necessary to do the job the customer had in mind. Since the purchasing decisions were usually made by technical people for whom a computer represented a tool rather than a capital investment, this simplified procedure had a lot of appeal.

For MSC and the many other companies producing peripheral equipment, this purchasing pattern meant that their major market was selling to original equipment manufacturers.

MSC entered this market in 1974 by producing an innovative class of intelligent peripherals. Utilizing microprocessors, MSC developed an intelligent disk storage system for use with the Hewlett-Packard 2100 computer. Functions that had been performed by the computer's CPU could now be performed by the microprocessor in the peripheral, thus freeing the CPU to accomplish on-line functions much faster.

During the late 1970s, however, the computer marketplace began to change dramatically. Since peripheral products from independent firms were often less costly and provided greater system flexibility, end users started shopping around for components, breaking the pattern of buying an entire system from a single vendor. Today, more and more computer systems are being put together combining the CPU of one vendor with the

peripherals of others. Industry analysts estimate that the potential end user market for peripherals is several billion dollars per year.

With this vast market in mind, MSC's management encouraged the development of the MSC-05/06 disk drive controller system. This product, introduced in 1979, was the company's entry into the end-user business.

Low-Cost Disk Drives

The MSC-05 and the MSC-06 are disk storage subsystems designed to be plug-compatible with Digital Equipment Corporation's MassbusTM peripheral system. These subsystems offer users of DEC's powerful and popular line of minicomputers, such as the System 10, the System 20, the PDP-11, the PDP-11/70, and the VAX-11/780, the option of selecting either the DEC-supplied disk units (RP-05/06) or the MSC-supplied disk drive (MSC-05/06).

The MSC-05/06 systems provide this option at a significantly lower cost by utilizing an innovative architecture. The change in architecture is totally transparent to the operating system software.

MSC's management decided to develop the concept into an end user product for several reasons, the most important of which were (1) management felt that the time was right for the company to enter the end user marketplace, (2) a clear, well-defined market existed for the product, (3) the dollar potential of the end user market justified the investment of development

resources, and (4) the product, a peripheral controller subsystem using microprocessors, was consistent with MSC's experience and technical thrust.

Wide Product Line For The OEM

While setting its sights on this new market, MSC is not ignoring its other customers. Its product development program has resulted in a series of economical and flexible controllers and disk storage subsystems that is the most complete in the industry for this class of product. MSC offerings for the OEM customer include:

1980

- MSC-1990: Disk controller for Texas Instruments TI-990 series minicomputer.
- MSC-1086: Single-board controller for microcomputer systems using the industry standard Multibus™ bus structure.
- MSC-1088: Disk controller for Winchester disk drives and the IEEE-488 bus.

1979

- MSC-1101: Single-board disk controller for the DEC PDP-11 series minicomputer.

1978

- MSC-1300: Single-board disk controller for Data General Nova and Eclipse computers, and for emulator CPUs.
- MSC-1400: Disk controller for Interdata 7/16 and 8/32 computer systems.
- MSC-2900: Cartridge disk controller for the SBC-80 bus made by both Intel and National Semiconductor.

1977 MSC-1500: Disk controller for the Microdata reality system.

1976

MSC-1693: Disk storage subsystem for the HP-3000 series computer using a variety of industry standard 300-megabyte disk drives.

MSC-2600: Cartridge disk controller for the HP-2640 series intelligent terminal.

1975

MSC-1677: Disk storage subsystem for the HP-3000 series computer that uses an industry standard 200-megabyte drive unit.

MSC-1100: Disk storage subsystem for the DEC PDP-11 series computers using storage module disk drives ranging in capacity from 80 to 300 megabytes.

The potential OEM market for this class of products is approximately \$40 million annually. If current trends continue, MSC will soon be servicing over half of this marketplace.

The Future

The opportunity to compete in the emerging end-user market while solidifying its position as a leading supplier to OEM customers is the challenge facing MSC today.

Founder and company president James Toreson believes MSC is in a position to do both jobs well.

"The major trends in our industry are to develop peripherals with more on-board intelligence, and to develop

cost-efficient integrated subsystems performing the total peripheral function," Toreson said. "We have the resources, the people and the experience in designing successful peripherals and systems to take advantage of these trends."