25 Years of Innovation:

The History of Western Digital

WESTERN DIGITAL

Company Values

Integrity

Leadership

Customer Satisfaction

Individual Responsibility

Quality and
Continuous Process Improvement

Teamwork

Western Digital is dedicated to superior customer service. Guided by these fundamental values, Western Digital has committed itself to ISO 9001 and other quality programs to create a corporate structure and culture that ensures efficiency and superior products.

Twenty-Fifth Anniversary

Over the twenty-five year course of its history in the micro-electronics industry, the people of Western Digital have successfully negotiated roller coaster highs and lows, hair-pin turns, roads bumpy and smooth. A look back in time leads you to a curious fact of Western Digital history that looms large in the 1980 Annual Report. On the Report's first page is a photo of a sculpture chosen as the corporate symbol by Western Digital's management team under then President Charles Missler. It is a sculpture of the Phoenix, "the legendary bird said to rise from its own ashes to begin a new and spectacular life." And so it has always been for Western Digital; constantly reinventing itself, stronger and more spectacular with each rebirth.

While industry events have played a role in our history, Western Digital has always been a company composed of adventurous, imaginative, hard-working people who believe in their company and in making things happen. As Dave Schafer, Vice President of Worldwide Sales, puts it—"It's not a company for the faint of heart." We're a league of adventurers, roll-up-your-sleeves and get-it-done types with the savvy to spot an opportunity and run with it. We've succeeded by leveraging existing technology, at times pushing the "leading edge" of technology, and when we've stumbled, we've dusted ourselves off and tackled the next challenge. Because of these qualities, Western Digital has been a responsive company capable of changing directions rapidly to satisfy its customers and moving quickly from concept to finished goods. Even now as we have evolved into a two billion dollar company, we're still pretty nimble and more dedicated to customer satisfaction than ever.

Alvin B. Phillips
Founder & President
1970 - 1976

Mr. Phillips brought 20 years of invaluable semiconductor experience which formed the technological backbone of the company.

The company, originally called General Digital Corporation, was founded in California on April 23, 1970 by Alvin B. Phillips. Mr. Phillips had 20 years of semiconductor experience, which included setting up IC facilities for Motorola, GTE Sylvania and North American Rockwell. The original officers included Mr. Phillips, Larry Alves, Albert Dall, Henry Rodeen, Richard Sirrine, and Joseph Baia. Mr. Baia, also a former Rockwell employee, was an original investor and was to remain with Western Digital for 18 years before retiring as Vice Chairman.

With the financial backing of individual investors and Emerson Electric Company of St. Louis, which provided a major portion of the venture capital, this group of pioneers set up their first headquarters in a 3000-square foot building at 1612 South Lyon in Santa Ana, California. Company operations began in June, 1970 and by September, 1970 the design and development of MOS/LSI had commenced. In March, 1971, the company moved to its new facility at 3128 Redhill in Newport Beach. Shortly thereafter, the first Spartan 770 LSI test system was completed and the company changed its name to Western Digital Corporation (July, 1971).

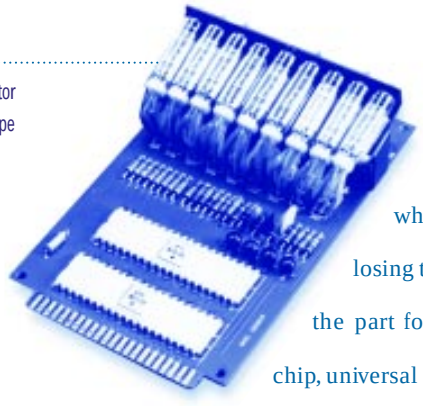
One of the first highly successful products produced was the 1402A UART, the result of a bid on a

Joseph Baia
Founding investor, officer
1970 - 1988

Milestones

- Founded April 23, 1970.
- Manufactured the Spartan LSI tester.
- Manufactured first, single-chip, universal asynchronous receiver/transmitter, the 1402A UART.

- Manufactured MOS/LSI chips for electronic calculators.
- Opened LSI assembly plant in Kuala Lumpur, Malaysia.
- Manufactured a 4K RAM chip.



Calculator Prototype

Digital Equipment Corporation project. A bid made, incidentally, at a time when the company lacked a facility in which to build the product. Although initially losing the contract, Western Digital later produced the part for DEC. It became the world's first, single-chip, universal asynchronous receiver/transmitter (UART) to provide more affordable data communications.

Given the Rockwell connection and extensive semiconductor experience of both Al Phillips and Joe Baia, it is not surprising that Western Digital began as a specialized semiconductor manufacturer. And like Rockwell, Western Digital became heavily involved in calculator chips. In those early years, 80 percent of Western Digital's business was comprised of calculator chips. We rapidly became the largest independent manufacturer of calculator chips in the world—one million chips by 1975.

1971 - 1981 Headquarters
Newport Beach, California

Charles W. Missler
President 1977 - 1982

At a time when the company was dangerously close to dissolution, Chuck Missler provided the critical financial wizardry to obtain funds for product research and development.

By 1975 Western Digital's fortunes changed for a number of reasons. The worldwide oil crisis had brought on a recession; the original Emerson leadership was replaced by an outsider with no ties to Western Digital. Western Digital's largest customer, Bowmar Instruments, went bankrupt and the market for calculator chips slumped due to excess inventory and severe price competition. Gillette Company backed out of an ambitious calculator program. Between 1975 and 1976 Western Digital's founder resigned and the Company lost key customers. The staid Emerson Electric Company had little appreciation for Western Digital's problems which finally resulted in the filing of Chapter XI Bankruptcy in 1976. Emerson wanted to close the doors, but Western Digital would not go easily. In 1977 Charles W. Missler, a turn-around specialist who was brought in to scrub up the company for resale, convinced United California Bank, the principal secured creditor, that Western Digital possessed the core strengths to re-establish itself in the semiconductor industry. Missler became CEO and Chairman of a newly structured Board of Directors as part of the refinancing agreement. Although he acted as Western Digital's President and CEO, he regarded his position as Chairman and visionary as his primary function. By 1980, the year of the Phoenix, Western Digital turned the corner and revenues doubled to $20.6 million. Missler's financial acumen and unusual Product Sponsorship Program, a tax-sheltered investment partnership to obtain funds for much needed research and development, put Western Digital back on its feet.

Milestones

- Western Digital designed the LSI-11 chip set, the first 16-bit microprocessor in the world. This LSI version of DEC's PDP-11 computer could be programmed to emulate other computers. This same chip set was also incorporated in Western Digital's Pascal MicroEngine Computer. Although a successful product, Emerson Electric's disinterest in it led to the founding of Alpha MicroSystems by Western Digital employees who recoded the LSI-11 for use in their products.

- In 1976 Western Digital introduced the first single-chip floppy disk controller; in 1978 it introduced the WD1791 dual-density floppy disk controller. Expertise in floppy disk controllers was later to be the foundation for expertise in storage controllers.
- Other product lines pursued by Western Digital during this period included:
  - Pascal Microengine Computer
  - Communication interface devices
  - Microprocessors, such as the Aztec 32-bit microprocessor camera chip for Spin Physics

Roger W. Johnson
President 1982 - 1993

Roger Johnson provided the business structure needed by a young technology company. He pruned back money-losing ventures and refocused the company on storage devices, and later made acquisitions to diversify the product mix.

During the early Eighties, Western Digital shifted its focus to the newly emerging PC market. There were a few important events that helped propel us in this direction: the development of the floppy disk and IBM's introduction of the PC/XT. Al Shugart of Shugart Associates, later known as Seagate, developed the first 8-inch and 5.25-inch floppy interfaces and form factors. Through our involvement in the design of floppy disk controller chips, we gained much expertise. In August, 1981, IBM introduced the PC, later followed by the PC/XT. Unfortunately, we underestimated the success of the PC/XT and the importance of developing a floppy controller for the PC and XT markets. In the meantime, Shugart had also developed the ST-506 drive and interface.

In 1982, Roger W. Johnson became President and Chief Operating Officer. His critical contribution to Western Digital was to provide the business structure and focus for a young company of engineers and mavericks. He recognized the importance of cultivating business relationships with major OEMs. While we had failed to be on time with an XT hard drive controller, we were ready for the IBM PC/AT in 1983. In 14 days Western Digital produced a wire-wrapped prototype controller to meet with IBM's approval. Negotiations were conducted during a February thunderstorm in Boca Raton. Nearby, while Roger Johnson awaited IBM's decision, he relaxed with a game of Solitaire. The autographed Joker from that fateful deck of cards hangs in Dave Schafer's office today.

Milestones

- 1981 - Headquarters moves to 2445 McCabe Way in Irvine, CA.

- 1982 Roger W. Johnson becomes President and Chief Operating Officer.
- 1983 - Return to profitability. Controller product line is expanded (floppy controllers, Winchester disk drive controller, tape drive controllers).
- 1983 - Opening of subsystem assembly plant in Cork, Ireland; opening of subsystem assembly and test facility in Camarillo, California.
- 1983 - First trading of stock on NASDAQ.
- 1984 - Sales offices are opened in Europe and Japan.
- 1984 - First trading of stock on the American Stock Exchange.
- 1984 - Record earnings of $113.5 million.
- 1985 - Opening of board assembly and test facility in Ponce, Puerto Rico.

Western Digital combined the PC/AT controller design with the WD1010. The 1003 register set which the company developed became the standard compatibility set used for all disk controllers. Since XT controllers were based on the SASI protocol developed by Shugart, which was the precursor of SCSI, it was logical that the protocol for AT controllers might develop along the same lines. With the introduction of the WD1010, the personal computer industry veered away from the SASI protocol. By the middle of 1985, nearly 90 percent of Western Digital's revenue was derived from storage controller products, the rest from communications products. Our success was founded on the decision to become a PC products company in an industry where product compatibility is all important to success. Success was also due to early entry into the major supplier market (IBM, Compaq, Tandy, Hewlett-Packard) of a hugely successful, evolving industry standard. Through our efforts, we became a dominant supplier to major OEMs. We also saw the importance of setting up a good distribution network to serve the many start-up companies as well as expanding our sales force into Europe and Japan.

It's important to note that during this time period, controllers were not the only product Western Digital was working on. We worked with the Massachusetts Institute of Technology to develop an artificial intelligence machine called the "Nu machine" which was later sold to Texas Instruments and became the Explorer LISP machine. The Nu bus was developed by MIT and licensed to Western Digital. It was instrumental in opening up the Macintosh box to accept peripherals and was chosen over several internally developed Apple buses.

Industry Firsts

- 1982 - First single-chip Winchester controller, the WD1010.
- 1984 - Introduced industry's first fully custom-integrated, single-chip Winchester disk drive controller.
- 1984 - Developed the first Winchester disk controller board for the IBM PC/AT and compatibles, which became the industry standard.
- 1984 - Introduced industry's first integrated CMOS data separator.
- 1985 - North America's largest manufacturer of non-captive, high-density surface-mount technology (SMT) circuit boards.

- 1985 - Introduced industry's first ESDI controller board that allowed high-capacity drives to be used in PCs.
- 1985 - A cooperative effort between Control Data, Western Digital and Compaq Computer led to the development of the 40-pin intelligent drive electronics (IDE) interface.

Kathryn A. Braun
Executive Vice President

Kathy Braun joined Western Digital in 1978 as a technical specialist. By 1981, Ms. Braun was leading the Company's nascent storage group, whose annual revenue was $15 million. Today, she leads the same organization, and annual revenue has grown to more than $2 billion.

This was a period of aggressive acquisition, expansion, and risk taking. In 1986 earnings soared to $21 million and sales more than doubled due to a refocus on efficiency, strategy, and recruitment of top talent. It was at this time that Western Digital began working on the concept of IDE disk drives. The fact that drive companies were somewhat contemptuous of controller companies and unwilling to partner the development of an IDE drive (controller electronics mounted on the drive) forced Western Digital to a momentous decision.

With the purchase of the disk drive assets of Tandon Corporation in 1988, Western Digital's Senior Vice President and General Manager of Storage, Kathryn Braun, cast the die in favor of supplying hard disk storage to OEMs. Starting up in the drive manufacturing business was a major undertaking fraught with difficulties. The Singapore team worked hard to transform the former Tandon drive facility into one of the drive industry's most efficient manufacturing operations. Thanks to their efforts, Western Digital can claim to be a quality and time-to-market/volume leader in the data storage industry today.

Milestones

- 1988 - Western Digital becomes a Fortune 500 company.
- 1989 - Opening of a new semiconductor assembly facility in Malaysia.
- 1989 - Opening of SMT manufacturing facility in Seoul, Korea.
- 1990 - Corporate headquarters moves to the Irvine Spectrum and Western Digital opens its new silicon wafer fabrication facility in Irvine.

Singapore Drive Manufacturing Facility

Having elected to become a drive manufacturer, we essentially participated in the demise of stand-alone storage devices and controllers. Fortunately, the demand for storage was great, and the transition from manufacturing controller boards for ST-506 drives to manufacturing IDE drives, though difficult, was a sound one. Our strong desire to succeed and a willingness to sacrifice carried us through. IDE became the standard for the PC market. By quarter ending December 31, 1990, hard disk drives represented 50% of corporate revenue.

Besides the Tandon acquisition, we made several other acquisitions which brought in new technology and highly skilled talent. Adaptive Data Systems contributed skilled engineers and knowledge of SCSI devices. Paradise and Verticom brought in video graphics expertise. Faraday contributed core logic expertise and ViaNetix added software development for LAN systems. Many of these companies were based in the Silicon Valley region of Northern California, establishing to this day a significant Western Digital presence in this high technology hotbed.

Industry Firsts

- 1986 - Introduced industry's first single-chip SCSI interface devices.
- 1987 - Introduced industry's first 16-bit, first-party DMA SCSI host bus adapter.
- 1987 - Shipped industry's highest performance 8-bit Ethernet adapter.
- 1988 - Introduced the Vanilla super chip, the industry's first combination Winchester controller and buffer manager chip.
- 1990 - Introduced the Caviar, the industry's fastest 3.5" IDE drive for high-end, 386SX based AT compatibles.

- 1990 - Introduced the first single VGA chip designed specifically for liquid crystal flat panel displays, pioneering the industry movement toward highly integrated, low-power video solutions for the portable PC market.

Acquisitions:

- 1986 - Paradise Systems, Inc. (video graphics cards).

PARADISE

- 1986 - Adaptive Data Systems, Inc. (SCSI devices).
- 1987 - Faraday Electronics, Inc. (core logic products).
- 1987 - ViaNetix (developer of LAN system software).
- 1988 - Verticom (high-resolution video graphics monitors).
- 1988 - Tandon drive engineering and manufacturing facilities in Northern California and Singapore.

Chuck Haggerty
President 1993 to present

With Chuck Haggerty's guidance, the Company has seen the strengthening of the controls and disciplines essential to continued growth, efficiency, and the delivery of quality products and superior customer service.

The early Nineties began with a harsh test of corporate resolve to withstand the vicissitudes of the market and an economy in recession. Western Digital now had to pay the price for the rapid demise of the stand-alone storage controller and the transition to IDE drives, a new standard which Western Digital had pioneered. In 1991 and 1992 the Company weathered record losses which forced it to lay off employees, endure substantial write-offs and restructure its debt. In this darkest hour, the storage product team decided to design a family of disk drive products for the desktop PC market that would offer lower cost and higher performance. Compaq Computer's move to low-cost PCs in 1992 changed the landscape of PC marketing, making our positioning of the Caviar drive family a fortunate, well-timed move. Today, the Caviar line enjoys enormous recognition for high quality, reliability, and performance at a cost-effective price.

With Roger Johnson departing to Washington, D.C. in 1993 to work for the Clinton administration as head of the General Services Administration, Chuck Haggerty, President and Chief Operating Officer, stepped to the helm, bringing along 28 years of experience with IBM Corporation. Western Digital has been very fortunate throughout its history to find the right leader for every critical juncture in its corporate life. Haggerty's team cemented Western

Milestones

- 1991 - First trading of stock on the New York Stock Exchange.
- 1993 - Sale of silicon wafer fab facility to Motorola.
- 1994 - Company emerges from a major restructuring effort after three years of losses. Net income of $73.1 million on revenue of $1.4 million.
- 1994 - The Company's Malaysia facility is converted into a state-of-the-art hard drive assembly and test operation to complement our Singapore facility.
- 1994 - Establishment of R&D center in Rochester, Minnesota for high capacity hard drives.
- 1994 - International sales represented 44 percent of revenues.

Digital's return to profitability and facilitated its transition to a large corporation by establishing controls and disciplines that re-enforced the Company's commitment to quality products and superior customer service. To maintain focus on this commitment, the Company introduced a guiding set of values with emphasis on quality, customer satisfaction and integrity.

The Company has established technology leadership in the 3.5-inch hard drive business for desktop PCs as well as in the development of graphics devices for portable applications. Revenue has grown to a $2 billion annualized run rate and Company operations are worldwide with more than half of its 7000 people employed outside of the United States. Once more, Western Digital has risen from the ashes to become a stronger, more mature company, fiercely rededicated to its goals and even more competitive.

Industry Firsts

- 1993 - RocketChip (WD24A), the industry's first graphics chip to bring Windows acceleration to notebook computers.

- 1994 - Pioneered the Enhanced IDE specification to support connection of hard drives, CD-ROM and tape drives and to break the 528 MB barrier for hard drives.

ENHANCED IDE

- June, 1994 - First drive vendor to ship an inch-high, three-platter, 3.5-inch EIDE drive in a one gigabyte capacity.
- 1994 - First Fortune 500 company to attain ISO 9001 company-wide registration.

BSI REGISTERED FIRM

CERTIFICATE NO. FM22380
ISO9001 COMPANY-WIDE

Acquisitions:

- 1994 - Modulinc Solutions, Inc. (fibre channel products)

Looking into The Crystal Ball . . .

The legacy of a unique corporate history and the contributions of its outstanding people have made Western Digital what it is today

Western Digital has traveled a long distance from the early days when Al Phillips and Joe Baia, their investors, and a few employees opened the doors for business. From an entrepreneurial startup and close-knit family of employees, Western Digital has grown to a Fortune 500 company that is a leading supplier to the Personal Computer industry. Although the Company has matured into a large, multinational corporation, that founding spirit has sustained itself and still guides the Company.

The markets we serve and the technologies that we employ are moving rapidly towards enabling convergence of many industries. Western Digital is uniquely positioned to serve many facets of these emerging markets as the digitization of data accelerates. Central to all of them is information storage management which is one of our most important strengths. Collectively, our leading position in personal storage, our strong position in I/O products for high-performance storage systems, and the addition of our investment in high-performance disk drives, provide Western Digital an opportunity to take the lead in all facets of information storage management. Products that serve information storage management markets include disk drives, components in RAID/arrays and storage sub-systems, to name a few. Equally important, our Multimedia Products Unit, which serves important user interface markets, is now a leader in high-performance notebook graphics and is positioned to reenter the desktop market with new LSI and board implementations that will lead in performance and function.

Throughout its 25 years of history Western Digital has proved itself to be a resilient, innovative company that from its inception has attracted talented people with imagination and a can-do spirit. The legacy of a unique corporate history and the contributions of its outstanding people have made Western Digital what it is today. That's why, when looking back at all the tribulations and triumphs, looking forward to new horizons, we predict success for Western Digital.

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