CAN INTERGRAPH CATCH IBM IN CAD/CAM MARKET?

ITS MARKET SHARE GROWS FROM 14% TO 17% IN THE PAST TWO YEARS; SOME SAY COMPANY COULD HIT IBM's 20% BY 1987

HUNTSVILLE, ALA.

When a group of engineers left IBM Corp. in 1969 to start up M&S Computing Inc., the possibility that someday they would end up challenging their former employer for the lead in a $4 billion market was probably the furthest thing from their minds.

That tiny startup, however, has quietly evolved into Intergraph Corp. (the name changed in 1980), the fastest-growing maker of turnkey interactive-graphics systems in the U. S. The company is now gaining share in the computer-aided design and manufacturing market at a pace that could soon make it IBM's equal.

Intergraph has expanded its share from 14% to 17% in the past two years and could reach IBM's 20% level by 1987, some industry analysts predict. With 1985 revenue totaling more than $526 million—up 30% from the $404 million achieved in 1984—Intergraph was the only company besides IBM to grow faster than the CAD/CAM market itself last year. Its growth rate so far in 1986 is running at 37%. This year the market should hit $5.2 billion, according to Dataquest Inc. And by 1990, the San Jose, Calif., market researcher predicts sales will total $11.5 billion.

Intergraph gets high marks from some industry experts for its heavy investment in applications software and in the use of Digital Equipment Corp. VAX minicomputers, which it customizes extensively for CAD/CAM uses. Other observers argue that the company emphasizes hardware at the expense of software, which they predict will soon become more important.

Much of Intergraph's success comes at the expense of such former leaders as Computervision, General Electric Co.'s Calma subsidiary, and Applicon [*Electronics*, April 14, 1986, p. 46]. CAD/CAM makers generally had a relatively dismal 1985 as the industry went through what Dataquest called a permanent market correction. Industrywide, revenue growth slowed to 22% from its historical annual rate of 35% to 40%. IBM grew 24%, to $870 million; Computervision slipped 21% to $441 million.

"What we want to provide is interactive solutions to engineering, corporate, and project-level problems," says Keith H. Schonrock, executive vice president. He attributes the company's success to its tight focus on interactive graphics and applications solutions along with its dedication to serving customer needs.

FIRM COMMITMENT. "Intergraph is firmly committed to not just being a workstation supplier, or a components supplier, or a software-package supplier," says Schonrock, who says the company wants to be known for doing well in all three categories. He founded the company along with president James W. Meadlock and executive vice president Nancy B. Meadlock.

Industry analysts agree that the commitment to customers has fueled the company's rise. "What Intergraph has that other companies don't have is a great awareness of what the customer means to them," says Peter D. Schleider, an analyst at L. F. Rothschild

FOR INTERGRAPH, BOTH REVENUE ...

SOURCES: INTERGRAPH CORP., INDUSTRY SOURCES
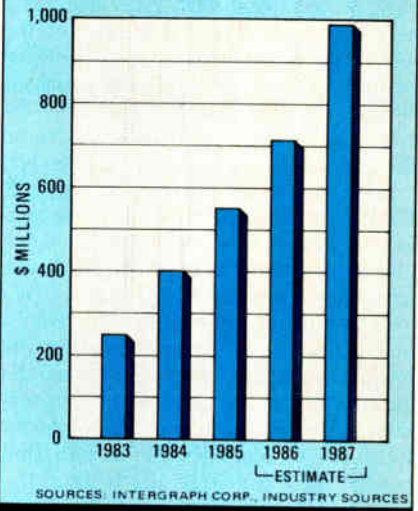
Unterberg Towbin Inc., New York. Nevertheless, he is among those who say that the company "focuses too much on hardware. That's a mistake."

Instead, he argues that makers of CAD/CAM systems should focus on software development. The emphasis on hardware is misguided, he says, because performance has become a secondary consideration for customers. Predictably, Intergraph executives disagree. "I don't think there's any less emphasis or interest in responsiveness," Schonrock says. "The need for responsiveness is what's pushing the [engineering] marketplace." Adds William D. Zarecor, executive vice president for product marketing, "You need to tailor your hardware to maximize the use of your software." As far as unbundling software, says Zarecor, "It's a pretty good way to go broke."

Intergraph first made its name by developing mapping systems for the government. It's still a major supplier to the Defense Department's Mapping Agency. Its strategy to expand into the major CAD/CAM market segments began in the mid-1970s. The company went on to garner nearly 33% of the architectural and engineering design market.

By 1983, it had expanded a line of mechanical-design and drafting packages first introduced in 1980, shipped its first electronic CAD systems for printed-circuit-board routing and layout, and entered the technical-publishing market. And working with Tangent Systems Corp., Santa Clara, Calif.—which helped develop the Unix-based Interpro 32 work station—Intergraph has moved into very-large-scale integrated-cir-

IMPORTANT. The Intermap Analytic Stereoplotter is a big seller.

Bar chart: $MILLIONS vs years 1983, 1984, 1985, 1986, 1987 (ESTIMATE)
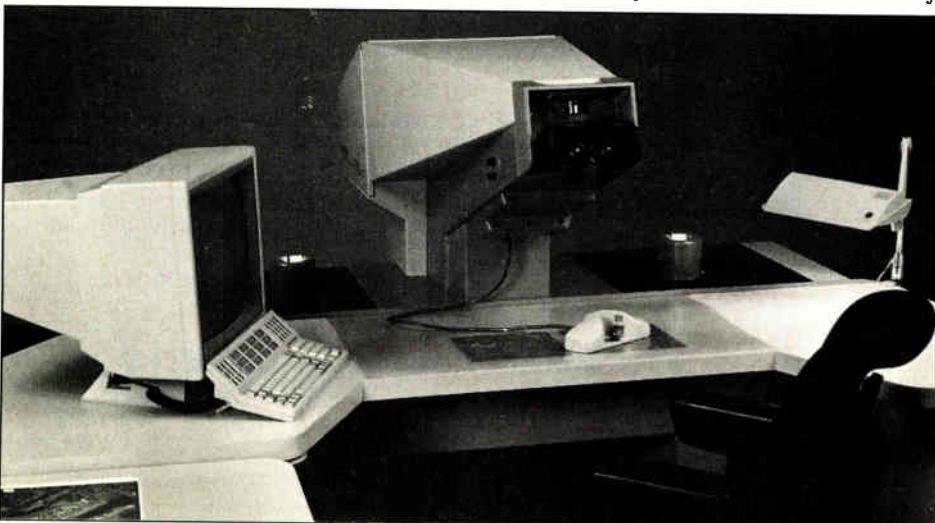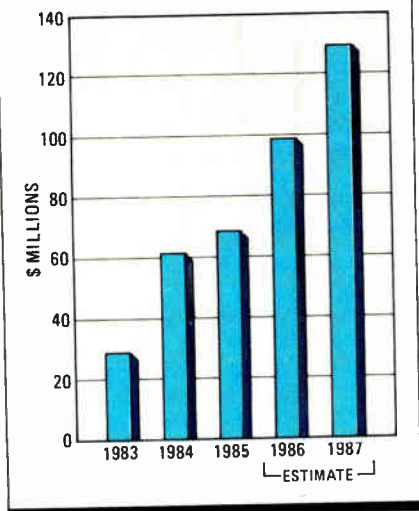
cuit and standard-cell design.

H. W. Barbour, executive manager for electronics marketing, says Intergraph is now beta testing software packages for such activities as logic-circuit simulation and schematic-design capture. Unlike other CAD/CAM players, Barbour argues, Intergraph is taking existing technology and leveraging it into a new market segment.

That strategy seems to be working. "We project Intergraph will snare fully 9% of the ECAD business by 1987," says Peter E. Heymann, of Drexel Burnham Lambert Inc., New York.

To attain its goals, the company recently bolstered and restructured its sales force. Marketing head Zarecor says the skyrocketing number of appli-cations dictated the creation of a vertical sales force divided into three areas: mapping and energy exploration, mechanical design, and electronics and electronic publishing. The sales force alone has grown by one third since late 1985, and Intergraph is adding new employees at a net rate of 100 per month. The company employs 5,289 now versus 3,483 in November 1984.

CRITICAL ISSUE. Intergraph is also keeping its eye on the factory floor by endorsing the Manufacturing Automation Protocol (MAP), a communications protocol for factory-automation equipment championed by General Motors Corp. In addition, it is embarking on a network-development effort code-named Bed Rock. Intergraph considers network development to be a critical customer issue, says William Payne, executive manager for technical marketing. Indeed, doing more than merely paying lip service to network support is what would allow it to be more than a niche supplier, says Schonrock.

With activity picking up in March and a 1986 growth rate estimated by Drexel Burnham's Heymann to be about 37%, Intergraph is setting its sights on IBM. And officials show no signs of modifying their time-tested strategy.

"You maximize performance, throughput, and bang-for-the buck in a system if you intimately integrate software, hardware, and firmware design," says Schonrock in explaining Intergraph's success. "Our growth as a company over the past 10 years has certainly reflected our successful implementation of that philosophy."   —George Leopold

HYBRID CIRCUIT USE TO HIT $9 BILLION BY 1990

The consumption of hybrid circuits in the U.S. climbed to slightly more than $5 billion last year and could reach $9 billion by 1990, according to a new study by Gnostic Concepts Inc., a San Mateo, Calif., market-research company. That represents an average annual growth rate of 12.9%, or nearly 2.5 percentage points per year faster than the growth in consumption of electronics equipment in the U.S. in the same period, the company estimates. Of the total hybrid production in the U.S. last year, 61% was captive production. This should fall to 58% by 1990, Gnostic Concepts estimates, as more companies turn to the merchant market for their needs.

SYMBOLICS, MERRILL LYNCH IN R&D DEAL

Symbolics Inc., the Concord, Mass., artificial-intelligence computer company, will get help in funding its next generation of products from Merrill Lynch Ventures Limited Partnership, New York. Under terms of a research and development agreement between the two organizations, Merrill Lynch Ventures will contribute about $7 million over the next several years to Symbolics' $16 million project to develop an advanced computing system based on full-custom very large-scale integrated circuits. Symbolics will provide the rest of the funds.

DECISION DATA ACQUIRES PANATEC

Decision Data Computer Corp., a supplier of products and services for IBM Corp.'s System/3X line of computers, has acquired Panatec, a Garden Grove, Calif., software developer. Terms were not disclosed. Decision Data, of Horsham, Pa., said the addition of Panatec would help support its strategy of developing advanced computer products and vertical-market applications software.

FIBER-OPTIC STARTUP GETS $1.1 MILLION

Lightcom Inc., a two-year-old company that makes a fiber-optic universal data multiplexer, has raised $1.1 million in its second round of venture financing. The Hayward, Calif., company said this brings its total financing to $2.6 million. The company's multiplexer is targeted to large companies that need high-speed, cost-effective data communication in large buildings, on campuses, and in campus-like environments.

FIRST IT WAS THE YUGO, NOW IT'S THE ISKRA VME

FARMINGDALE, N. Y.

Good things in small packages seem to come these days from Yugoslavia. The country that brought you the $4,000 automobile—the Yugo—is now ready to take a run at single-board computers with its own brand of VMEbus technology. Iskra, a name well known in Europe, is about to try to crack the U.S. market through its Iskra VME Technologies Inc. unit. And because the young company can count on the backing of its 40-year-old, $2 billion parent, Iskra VME would seem to have the resources needed in order to play this high-stakes game.

Iskra VME is making its debut with some impressive hardware: two thoroughbred single-board computers with full operating-system support [Electronics, April 28, 1986, p. 13]. Several more CPU cards and a raft of controller cards are already in production in Europe, and industry observers are betting they will be introduced to the U.S. Add to the equation the parent company's software talent and Iskra appears to be a potent force among more than 100 companies scrambling for a piece of the

ZIVKOVIC: The head of Iskra VME Technologies has big plans for his U. S. company.