

2000

ANNUAL REPORT

• ROBOTICS • PORTALS • CONNECTIVITY • ISOLATION • TRANSPOR

Charting the course to 300 mm



ASYST
ASYST TECHNOLOGIES, INC.

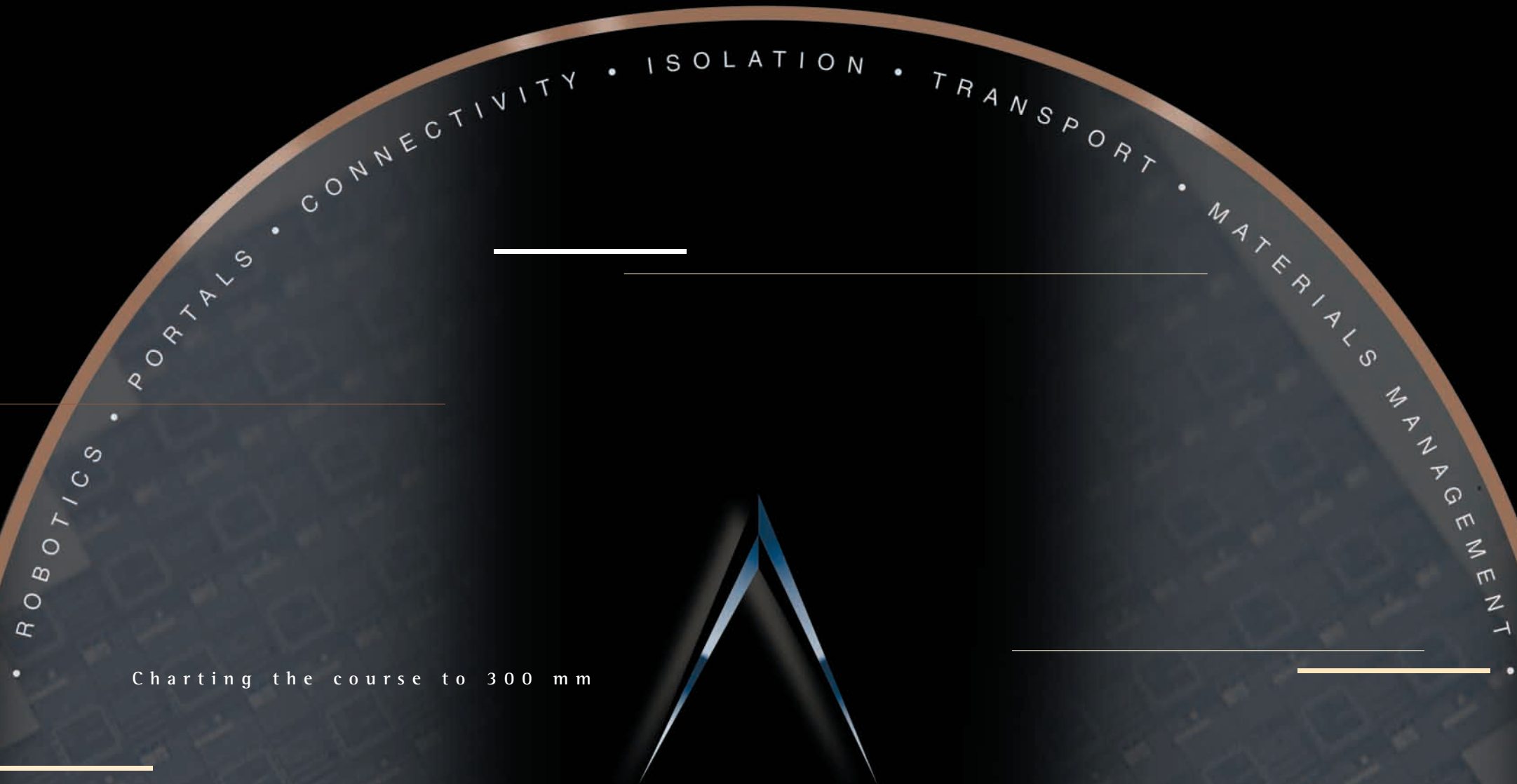
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In September 1999, just days after a devastating 7.6 earthquake struck the island of Taiwan, TSMC, the world's largest dedicated semiconductor foundry, released this photo of normalized operations at one of its Hsin-Chu semiconductor production facilities. TSMC credited SMIF technology, like the Asyst SMIF-Pods and minienvironment installations shown in the foreground, with minimizing wafer loss and contamination in the earthquake—a major factor in TSMC's rapid operational and economic recovery from the disaster.

(Photo courtesy of TSMC)



Asyst's mission is to provide the worldwide semiconductor and related industries with high-quality, integrated solutions using isolation technology, inventory management and automation systems to improve customer productivity and profitability.

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The semiconductor industry shift to 300 mm wafers, represented on the cover of this report, gained momentum in fiscal 2000, with announcements of new 300 mm pilot lines by several global chipmakers. We believe—and industry experts agree—that virtually all new 300 mm pilot fabs are using fab automation technology, which we believe opens the door to important market opportunities for Asyst.



Revolutionary PLUS™ portals, complete interfaces between the fab and the production tool, can be configured for 200 mm or 300 mm wafers, offering chipmakers and OEMs an easy upgrade path to 300 mm production.

Our new SMIF-FL™ 300 front load interface (shown below) or our Versaport™ front load "bridge tool" offer customers important options for managing their transition from 200 mm to 300 mm manufacturing.



Asyst's 200 mm SMIF isolation technology has become an industry standard in production at hundreds of fabs worldwide. Leveraging this, we have developed SMIF-Pod 300™ in a FOUP-based configuration, for the emerging 300 mm market.



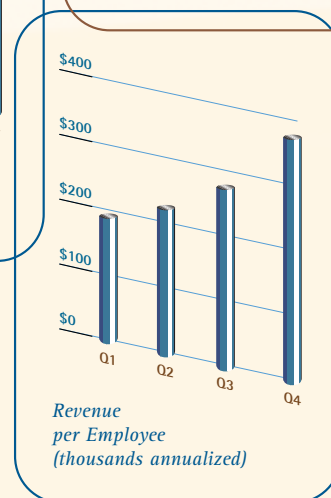
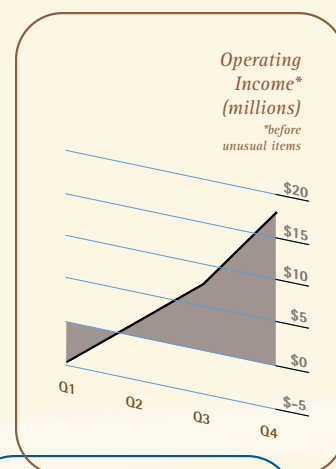
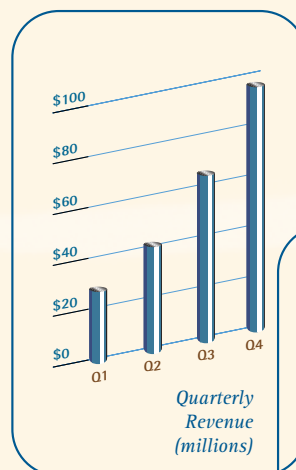
By nearly every measure, fiscal 2000 was an extraordinary period for Asyst. By year-end, we had topped all previous Asyst records, posting fourth quarter revenue of \$94 million—greater than our full fiscal 1999 revenue. By strategically expanding both the breadth and depth of our technology solutions, we entered fiscal 2001 – and the new millennium – with the strongest market position and product line-up in our 16 year history.

Net sales for the year were a record \$226 million, an increase of 143 percent compared to the prior year's results. We recorded four consecutive quarters of greater-than-40 percent sequential revenue increase, and backlog at year-end was an all-time high of \$144 million, up 345 percent from the \$32 million reported on March 31, 1999.

Along with record growth, we also achieved substantial improvement in our operational and asset management. Inventory turns improved, cash flow at year-end was positive and discretionary spending decreased as a percentage of quarterly revenues. Product lead times held steady, even in the face of a strong ramp in customer demand, and productivity, as measured by revenue per employee, improved substantially.

Market Position and Long-Term Growth

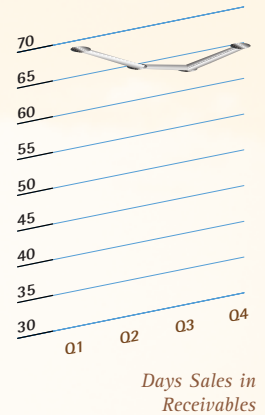
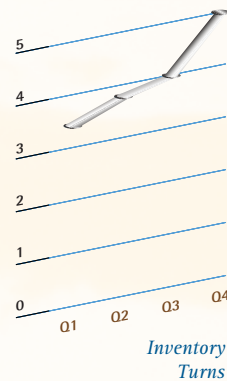
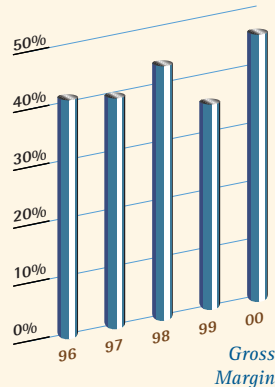
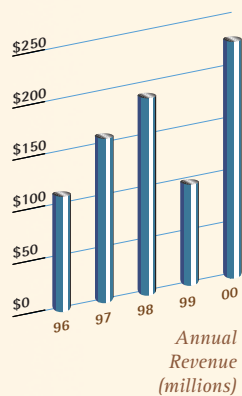
We see Asyst's record growth being fueled by three factors – a dramatic industry upturn, increasing automation spending and expansion of our market share. The industry upturn – driven by rising demand for advanced semiconductors used in Internet, wireless and office automation applications – has resulted in increased levels of capital spending by chipmakers. At present, we estimate that over 75 percent of new 200 mm fabs and planned upgrades are being designed or built with automation systems, up from less than 50 percent a few years ago.



We believe our pioneering SMIF isolation technology, which has been adopted at scores of 200 mm fabs worldwide, is now gaining momentum as the basis for new isolation standards for next-generation 300 mm products. Further, we believe – and industry experts agree – that virtually all new 300 mm pilot fabs are using fab automation technology to resolve difficult handling issues and protect wafer value in this highly cost-sensitive manufacturing process. Our expanding market share during this explosive growth period stems from success with a breadth of global customers and new opportunities, and we have bolstered our position with new technology and products, as well as with acquisitions that augment our strategic initiatives.

Winning Solutions

Recognizing that customers want solutions, not just products, in fiscal 2000, Asyst maintained its focus on global expansion of strategic value assurance capabilities that enable us to capitalize on emerging market and technology trends. Our broadened product sets and deep expertise aid chipmakers in the construction or expansion of 200 mm fabs, the upgrade of older fabs and pilot production plans for new 300 mm fabs. Our solutions are equally important to major equipment OEMs, who are using our automated front-end portals for their production tools. Further, with the advent of large, high value reticle (or “mask”) libraries in fabs, we extended our served market with automation solutions for protecting, storing and handling a large number of reticles.



The vast majority of IC manufacturing capital and equipment spending is for 200 mm fabs, whether they are new fabs or upgrades of existing facilities. Leveraging our historical strength among semiconductor foundries, Asyst has extended its leadership with device makers worldwide, including important wins for new 200 mm fabs at 1st Silicon in Malaysia and SSMC in Singapore, where system selections were strictly limited by the customers to best-of-class solutions. In Japan, where adoption of SMIF and minienvironment isolation has been somewhat slower, we received an order from a leading home entertainment company to equip its most advanced 200 mm chipmaking plant with Asyst fab automation products. Additionally, we expanded our business in fab upgrades with notable wins from leading IC manufacturers in the U.S., including Texas Instruments. We also succeeded with Japanese customers, demonstrating the significant value of extending the life of aging facilities through “on-the-fly” conversions from 150 mm to 200 mm based production.

Among the most significant highlights of fiscal 2000 was Asyst’s rollout of a line of 300 mm optimized products. Over the past year, 300 mm pilot production lines have been announced in the U.S., Taiwan, Europe and Japan. To manage the formidable risks, both chipmakers and OEM equipment manufacturers are turning to Asyst for fab automation based on our proven strengths in 200 mm technology, and a robust product portfolio, ranging from SMIF-Pods™ to fully integrated tool front ends. In addition, we plan to introduce next generation fab-wide transport technologies during the first half of fiscal 2001.

Back Row: James C. Mitchener, Dennis R. Riccio, Patrick V. Boudreau

Front Row: Douglas J. McCutcheon, Mihir Parikh, Ph.D., Anthony C. Bonora

Moving Beyond Traditional Markets

In June 1999, we introduced the PLUS™ portal, the industry's only complete front-end solution for OEM tools, and have seen rapid adoption of this technology by major equipment suppliers. An outgrowth of our work with chipmakers to design the interfaces between production equipment and SMIF and minienvironment products, PLUS portals can speed time to market for the OEM, while accelerating time to full fab automation for global chipmakers. Our portal strategy was strengthened with the addition in the past year of the Versaport™ 200-300 mm bridge tool, a load port that enables equipment makers to evolve their tools as the 300 mm market develops. And with the March 2000 acquisition of a majority interest in MECS Corporation, a leading Japanese robotics supplier, we substantially enhanced our selection of atmospheric wafer handling robotics.

Significantly, the MECS acquisition is a critical linchpin in our strategy to expand Asyst's business in Japan. In addition to robotics capability, we believe that MECS provides a starting point from which to widen market penetration, offering both end-users and equipment suppliers a comprehensive line of U.S.- and Japanese-made automation products, supported by local engineering and customization services which are essential for the Japanese market.

We also moved aggressively in fiscal 2000 to enter the emerging market for reticle automation. We completed the acquisition of Progressive System Technologies, Inc. — an innovator in reticle and wafer handling tools — and have adapted our 200 mm



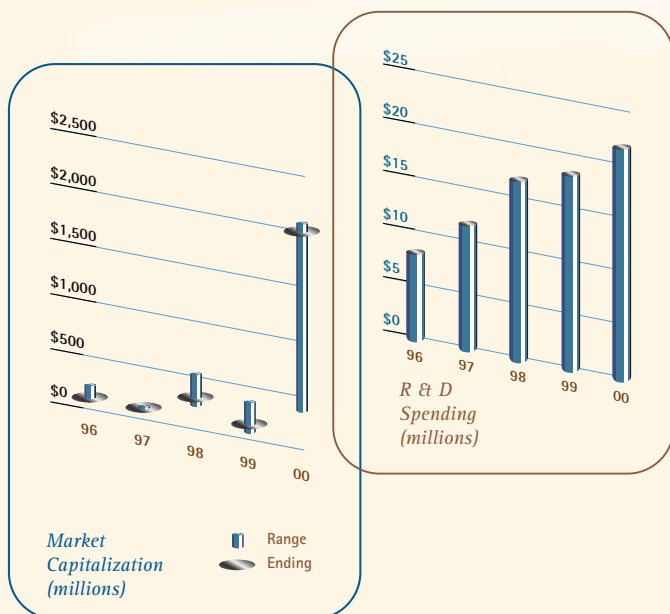
SMIF-based technologies to develop a comprehensive value assurance solution for automated handling, loading and management of reticles in wafer fabs and mask-making facilities.

Moving to the Next Level

In the midst of this substantial industry upturn, we believe Asyst has gathered momentum from compelling solutions attuned to market change. Trends in device design and new manufacturing protocols render the technologies we envisioned years ago a virtual imperative. Capitalizing on these trends and the vast opportunities at hand mandates an organization and infrastructure ready to address the challenges of growing Asyst to the next level — a billion-dollar enterprise. Over the last year we accelerated our investment in our most valuable assets — the people of Asyst. We have recruited experienced talent and strong leadership, established comprehensive training programs for employees and continue to measurably improve our business processes and information systems.

During this time of unprecedented change and growth, the flexibility and loyalty of our employees and the support of customers and shareholders have provided the edge necessary to succeed as we addressed our challenges. They underpin our achievements, and we are most grateful.

As we embark upon the exciting journey ahead, we remain committed to delivering value to customers, investors and employees. This strategy has been the keystone of our success and we are confident that it will enable us to further solidify our position as the leading automation supplier in our industry.

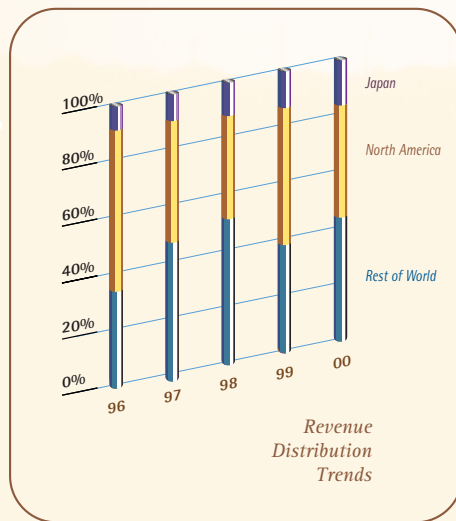


Mihir Parikh

Mihir Parikh, Ph.D.
Chairman and Chief Executive Officer

Asyst's growth—and our agenda for the future—are grounded in the strategies we've embraced in our quest to build a world class company. Our focus has been to understand customer and technology roadmaps, devise solutions—not just products, expand share in legacy markets and enter new markets with organic and acquired technologies. In this report, we will examine the results of several of those strategies and the implications for our future.

One of the most significant strategies is our roll out of second generation 300 mm product offerings, ranging from FOUP-type SMIF-pods to fully integrated tool front ends (or “portals”), at a time when major semiconductor manufacturers worldwide have begun building pilot 300 mm fabs. Equally important were our acquisitions of companies to open new product and global market opportunities. Last, but not least, we believe our initiatives in the area of fab upgrades provide substantial market opportunity as chipmakers look for ways to boost the productivity of their aging fabs.



300 mm Technology— A Giant Step Forward

In a transition driven by chipmakers' need to lower costs, 300 mm manufacturing offers Asyst a number of unique opportunities. First, these larger wafers will potentially contain twice the number of chips found in a 200 mm wafer. With the value of each device rising and the number of devices per wafer doubling, now more than ever, we believe chipmakers need the value assurance technology Asyst delivers to protect wafers throughout the IC fabrication process. Further, the increased size and weight of the 300 mm wafer mandates a growing reliance on fab automation for wafer transport and handling, both for reasons of ergonomics and manufacturing efficiency.

In collaboration with leading IC manufacturers, Asyst has developed a comprehensive set of 300 mm production-ready products designed to help global customers ease the transition to 300 mm, minimize the risks of the change and achieve their profitability goals. These include the SMIF-Pod 300™, which is based on industry-standard FOUP configurations and integrates our new SMART-Tag 8400™ lot ID system, SMIF-FL 300™ front loaders, the Versaport™ load port, a bridge tool for 200 mm or 300 mm wafers and our new 300 mm SMS wafer sorter. We have seen dramatic growth in shipment of 300 mm products late in fiscal 2000. In fact, orders for 300 mm front loads increased by a factor of five from the first quarter to the fourth quarter of fiscal 2000, and SMIF-Pod 300 orders grew an astounding 40 times during the same period. By fiscal year-end, we had received nearly fifty 300 mm design wins from OEM customers alone.

SMIF-Pod 300 isolation systems incorporate SMART-Traveler™ auto ID tags to ensure safe, accurate sequential processing.



The Versaport 200 mm-300 mm load port is a bridge tool that provides needed flexibility as customers transition their production lines.



“Asyst’s PLUS™ portal has taken off as the industry has rapidly shifted to bridge tool architectures. Portal tool architectures have become critical with the world’s move to 300 mm.”

—G. Dan Hutcheson, President, VLSI Research, Inc.

Bridging the Gap

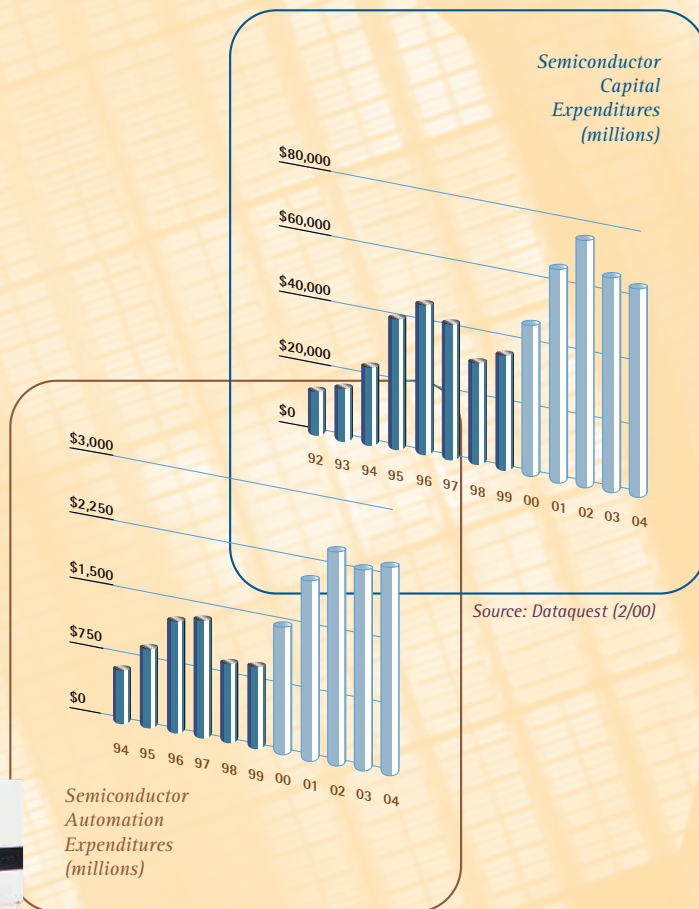
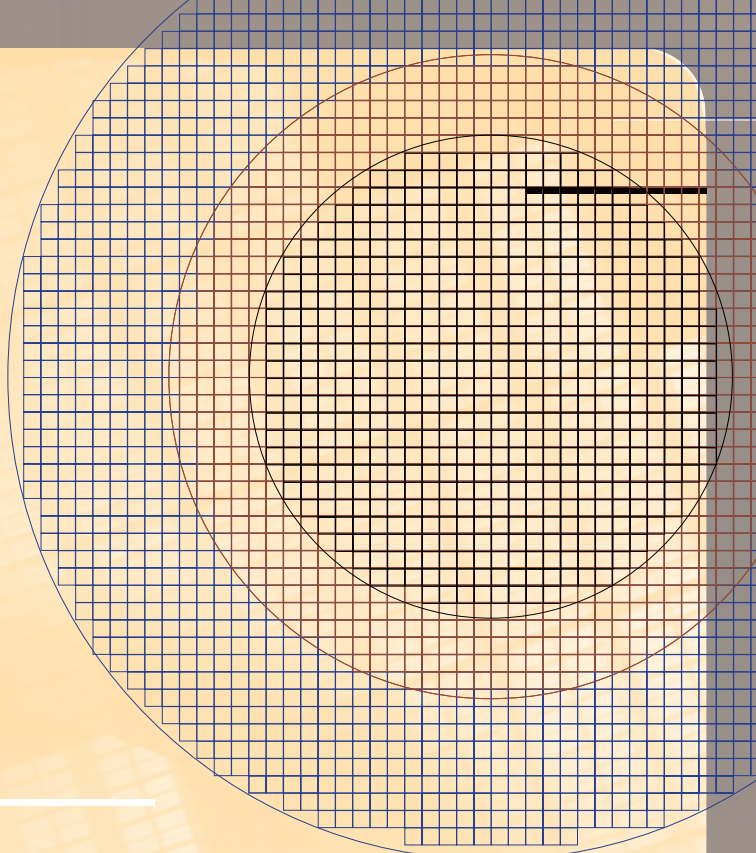
We believe that high volume 300 mm production is closer than ever to becoming a reality. However, the bulk of IC manufacturing continues to be 200 mm production. Thus, both chipmakers and OEMs are seeking extendible solutions—so-called “bridge tools”—that can process 200 mm wafers now, then be easily adapted for 300 mm production when they are ready to make the transition.

Our PLUS portal, introduced in June 1999, is an excellent example of a bridge capability. An integrated, modular process tool front-end, we believe the PLUS portal offers the industry’s most complete solution with its integrated robotics, cassette/pod handling, environmental control systems, automated material handling and connectivity software. Asyst is the first company in the industry to offer this turnkey solution, which we believe is adaptable to most of the production tools being marketed by OEMs today.

The PLUS portal integrates with the front of the production tool, and provides a complete interface between the fab and the tool. A true bridge tool, PLUS can be easily reconfigured for 200 mm or 300 mm wafers and, with SMART-Plus™ control software, is easy to integrate with the production tool and the fab automation software. The flexibility of PLUS satisfies the equipment supplier’s need to design one tool that is compatible with both 200 mm and 300 mm production. For the chipmaker, PLUS fulfills the requirement to have the latest process technology and an easy upgrade path to 300 mm.

We are experiencing rapid market acceptance for PLUS portal technology. With market researchers like Dataquest and VLSI Research forecasting significant growth in semiconductor capital equipment and automation spending over the next several years, we believe this important market offers an extraordinary opportunity for Asyst.

PLUS portals are modular, integrating Asyst’s isolation, interface, robotics, material management and software connectivity products into a flexible 200 mm to 300 mm solution.



Getting To Smaller, Faster, Cheaper

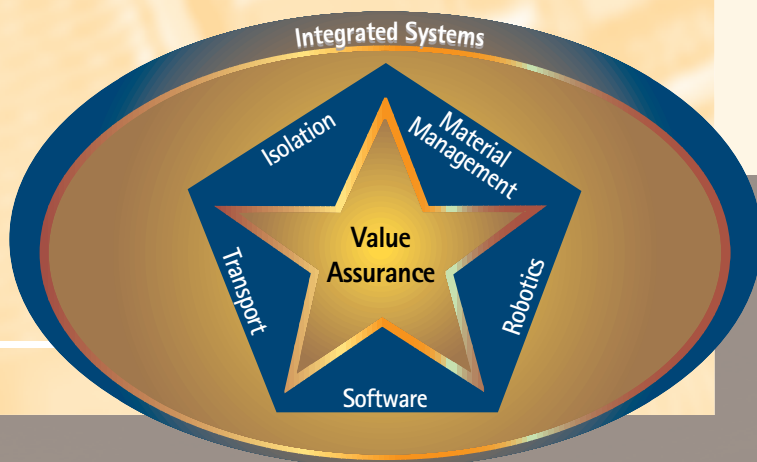
Chipmaking has always been driven by the need to build semiconductors that are smaller, faster, more powerful and less costly to produce. But in this era of complex multi-level devices—with circuit patterns smaller than 1/500th the width of a human hair, built on ever-larger substrates, with machines costing millions of dollars each—this task is more daunting—and the stakes higher—than ever.

Asyst pioneered and continues to innovate the isolation and automation technologies that are helping chipmakers achieve their ambitious goals. Our solutions minimize production risk resulting from a combination of human, environmental and technical hazards that can be the source of as much as 80 percent of wafer loss in production. All of Asyst's efforts are embodied in one proposition—Value Assurance.

Value Assurance — The Measure of What We Do

Value Assurance is our belief that our integrated portfolio of products protect costly wafers from the environment, eliminate misprocessing, enable new levels of automation and boost manufacturing productivity. Recently, Asyst extended this value assurance to the handling of expensive lithography reticles (or "masks"), as well. The pressing need for value assurance escalates with every successive device generation. With each of the 300 or more steps in the production process the value of the wafer—and its production risk—intensifies. By some estimates, a single 200 mm wafer processed with advanced microprocessors is worth in excess of \$100 thousand, and as the market moves toward new 300 mm wafer production, that value more than doubles. Multiply this figure by the 250 thousand to 500 thousand wafer starts annually in an average fab and the incredible value proposition afforded by Asyst's solutions begins to unfold.

Given these trends, now, more than ever, we believe the technologies of Asyst are integral to protecting valued wafer assets from the time they enter a fab until they become revenue-producing products.



Growth Through Strategic Acquisition

Over the past two years, Asyst has completed several key acquisitions to broaden our product portfolio, provide missing links in a number of strategic solutions and help us expand our market position.

Asyst recognized early that a complete portal solution would mandate a variety of wafer handling robots to match the differing needs among equipment makers. Thus, we initiated efforts to build a critical robotics capability with our 1998 acquisition of Hine Design. This has resulted in a line of atmospheric substrate handling products that include the just-announced, high reliability Axys 407™ robot. In the fall of 1999, we began to invest in MECS Corporation of Nagoya, Japan, culminating in the acquisition of an 80 percent interest in the company in March 2000. MECS brings to Asyst a depth and breadth of robotics technologies that include both sophisticated 200 mm and 300 mm designs.

Of particular significance is the opportunity MECS provides for Asyst to improve our position in the important Japanese market, providing a local capability for engineering, integration and manufacturing. In addition to a number of leading semiconductor producers, Japan is also home to many of the world's largest semiconductor equipment suppliers—companies like Dainippon Screen, Canon, Nikon and Tokyo Electron, Ltd. We believe that greater access to customers in Japan will strengthen our ability to sell PLUS portals and fab upgrades in that region.



The new SMS 300 mm Sorter, which helps manufacturers safely and efficiently sort, store and manage wafers, is an outgrowth of our acquisition of Progressive System Technologies, Inc.

Whether customers need to upgrade an existing fab,
build a new fab, automate a production tool,
or manage costly reticles, Asyst offers a solution.

Our June 1999 acquisition of Progressive System Technologies, Inc. (PST), enabled Asyst to expand our automation technologies with advanced wafer sorting and management products, including the new SMS 300 mm Sorter. PST has also opened a new market opportunity for Asyst—the handling, loading and management of reticles, the circuit pattern masks used by chip-makers in the photolithography process. Leveraging Asyst's 200 mm SMIF technologies, we have developed a line of tools that work with our core products to protect, store and handle large numbers of reticles. Among these are our new 9-inch and 6-inch single reticle pods, which are the basis for the new industry standards established by SEMI.

As wafers increase in both value and size, semiconductor manufacturers have become increasingly focused on fully automating the transport and tool loading systems that move these wafers within the fab and from process tool to process tool. This year, Asyst completed the acquisition of Palo Alto Technologies (PAT), signaling our entry into the fab transport market. We expect this breakthrough technology to enable fully integrated fab automation systems that can quickly, efficiently and safely transport and load wafers onto process tools and throughout the fab—without the bottlenecks and shortcomings associated with current generation transport technologies.

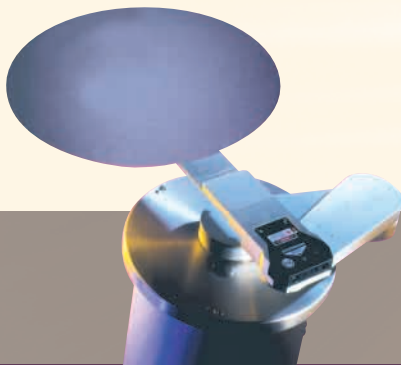
In addition to bringing powerful new capabilities to the table, all of these acquisitions will help drive breakthrough productivity and asset protection solutions for the automated fabs of the future.

New Life For Older Fabs

For many chipmakers, the way to get to the future is by building on the past. With the cost of building a new state-of-the-art fab at \$2 billion or more, they are looking for ways to upgrade existing facilities or introduce advanced technology products without the expense of building a new facility or closing down a revenue producing fab line. Asyst offers the technology expertise and products needed to build custom fab upgrades with SMIF-based automation and complementary technologies. Asyst has upgrade projects underway with a number of customers in the U.S. and Japan, and we have identified a substantial number of fabs worldwide where upgrade strategies are currently under consideration. These upgrades to isolation technology from an open cassette fab architecture allow device manufacturers to maximize the revenue generating potential of their six- and eight-inch toolsets. Several of these completed upgrade projects have generated return on investment well beyond the 200% level, making this type of investment the most cost-effective choice available today for adding die output, while at the same time significantly extending the life of the existing fab line.

In Summary

Taken together, we believe these strategies, create powerful new market opportunities for Asyst. Whether customers need to upgrade an existing fab, build a new fab, automate a production tool, or manage costly reticles, Asyst offers a solution.



Asyst now offers comprehensive robotic solutions that include our recently announced Axys 407™, above, and a full line of atmospheric 200 mm and 300 mm robots through our majority interest in MECS Corporation.

Asyst is developing breakthrough products for fully automated, fab-wide transport and tool loading which we expect to introduce in the first half of fiscal 2001.





Asyst's value assured solutions provide every key technology required to protect, transfer and load wafers into and out of process equipment, step by step throughout the production cycle.

In the first half of fiscal 2001, we will further strengthen this portfolio with the introduction of breakthrough technologies for the efficient transport of pods from tool to tool and throughout the fab.

STOCK LISTING

Asyst Technologies' common stock trades on the Nasdaq National Market under the symbol ASYT.

FORM 10-K

A copy of the Form 10-K Report filed with the Securities and Exchange Commission for Fiscal Year 2000 will be furnished to shareholders upon written request to:

Investor Relations

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ANNUAL MEETING

The Annual Meeting of Shareholders will be held on Friday, September 1, 2000 4:00 PM Pacific Time at the company's headquarters: 48761 Kato Road, Fremont, California.

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