



SAP FOR HIGH TECH
STRATEGIES FOR SUCCESS

YOU'RE DOING A LOT TO IMPROVE THE WAY YOUR COMPANY OPERATES



“High-tech companies must manage their portfolio of products across their product-line platforms. Improving enterprise resource planning (ERP) capability represents an opportunity to create common product data views at an early stage. Information reliability is important in the early stages of process maturity, and progression into higher levels of capability requires greater use of collaboration platforms and integrated performance management tools.”

AMR Research Inc., “High-Tech Industry Outlook: New Market Realities Must Drive IT Investment,” September 2004

CHARTING THE BEST COURSE

Semiconductor companies face unprecedented business challenges in today's economic climate. With slim operating margins and high capital investment required to generate revenue, they need to reduce costs by outsourcing certain tasks and sending other processes offshore. Increasingly stringent global competition adds complexity in sales, languages, currencies, and local regulations in a market where high-tech companies must compete globally. This global orientation requires that companies expertly manage compliance regulations such as Sarbanes-Oxley and environmental laws such as RoHS/WEEE across the value chain. Shrinking product life cycles demand that semiconductor companies reduce time to market and time to volume, while enhancing the effectiveness of product planning and execution. Increased customer demand – for new channels and sophisticated products – has created a proliferation of new products with a corresponding increase in the need for flexible, responsive order fulfillment.

In pursuit of these objectives, semiconductor companies are looking beyond standard practices to new strategies that promise results. But what strategies and practices are right for your company? And what are the best solutions for facilitating them? To answer these questions, many companies rely on insights and advice from industry thought leaders.

STRATEGIES FOR SUCCESS

To relay what industry experts are thinking, *SAP Strategies for Success* explores the most recent strategies, solutions, and best practices for each of the more than 25 major industries served by SAP.

Each brochure in this series reflects the views of independent analysts, industry experts, and executives on a specific industry. Take a closer look at these strategies, practices, and tools in the pages ahead and consider how they can help your organization enhance profitability.

“Pent-up demand in business markets and strength in consumer markets have rejuvenated the high-tech industry. However, don’t expect this resurgence to resemble growth spurts of the past. The industry is well past its adolescence and must now deal with mature markets that will grow in line with overall economic expansion and become increasingly competitive.”

AMR Research Inc.,
“High-Tech Industry Outlook:
New Market Realities Must Drive
IT Investment,” September 2004

SAP® SOLUTIONS FOR THE HIGH-TECH SEMICONDUCTOR INDUSTRY

SAP for High Tech solutions support the most important business processes in any high-tech organization and provide tools to help you understand how these processes work. One of these tools is the solution map shown on the following page.

Built using input from customers and industry analysts, plus the technical expertise SAP has acquired through extensive business experience and research, SAP® solution maps are multi-level blueprints of processes defined for a particular industry. They help you visualize, plan, and implement a coherent, integrated, and comprehensive

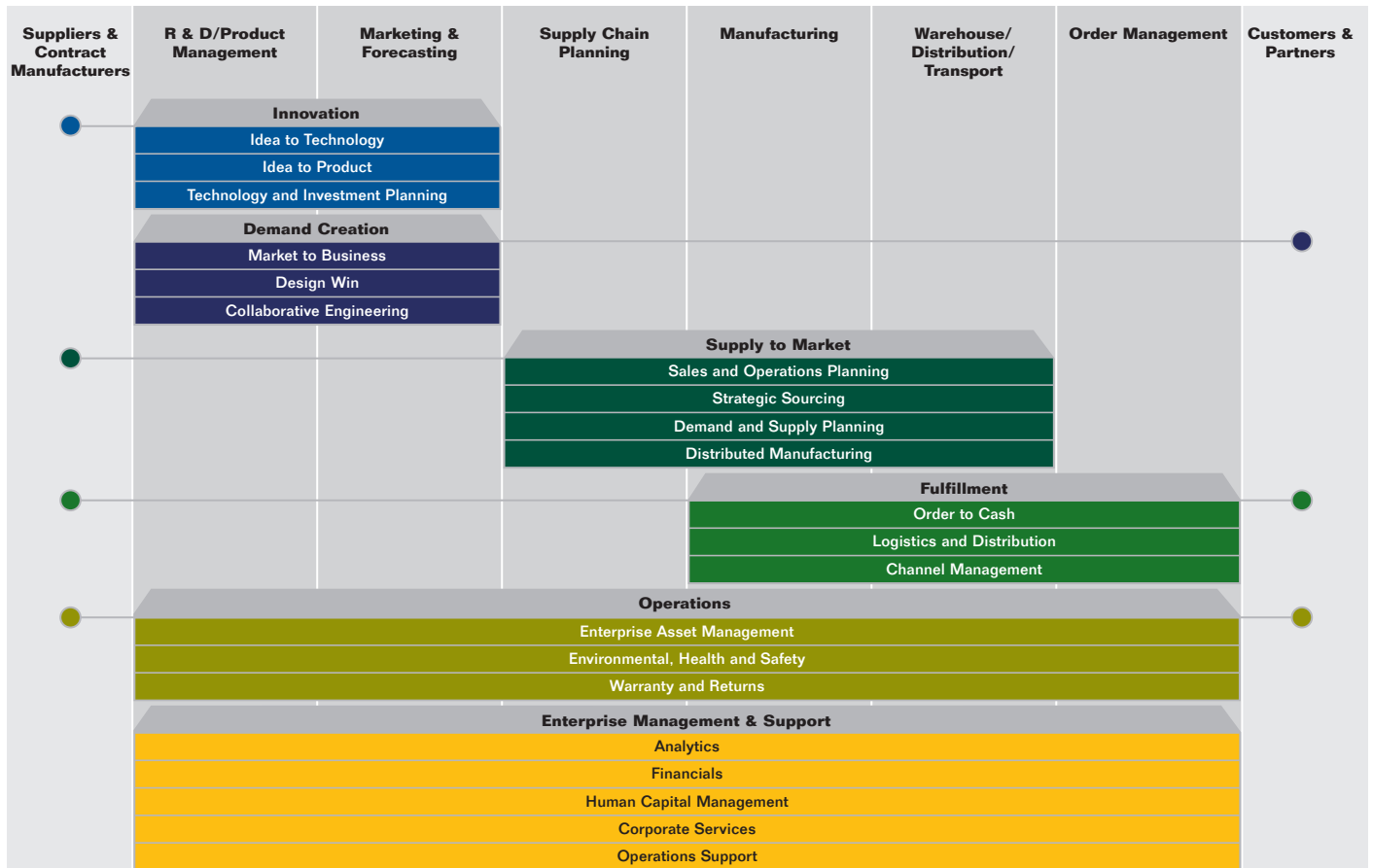
information technology solution. They also show how various processes are covered, including the processes that SAP and its partners support. With solution maps, you quickly understand business solutions and the business value they can bring. The solution map for the high-tech industry is available at www.sap.com/hightech/businessmaps.epx



“In part due to price erosion and in part due to other competitive factors, high-tech manufacturers are under the gun to streamline their operations, increase global visibility, and reduce costs in order to gain a competitive edge. This drive can lead to investments in a variety of solutions, such as outsourcing, supply chain management, and ERP. High-tech suppliers are seeking ways to build flexibility and agility into their businesses.”

Bob Ferrari, Director, Supply Chain Strategies, Manufacturing Insights,
an IDC Company

HIGH-TECH SOLUTION MAP



“SAP serves an incredibly diverse set of customers in dozens of industries, hundreds of countries, and a range of sizes, from 10 employees to 10,000 and more. Some of these customers want complete, integrated business systems while others are just looking to address one business issue right now.”

Jim Shepherd, Vice President of Research, AMR Research Inc., “SAP To Use Strong Profits To Turn [SAP] NetWeaver Into a Business Process Platform,” January 2005



FIND NEW EFFICIENCIES

Streamline Enterprise Management and Support

The competitive environment for high-tech companies is becoming increasingly complex. With the growth of outsourcing, increasing globalization, and the quickening pace of product obsolescence, it is even more difficult for semiconductor companies to manage their financial processes and operations cost-effectively and efficiently. Considering legislation such as Sarbanes-Oxley, global trade requirements, and environmental regulations such as RoHS/WEEE, high-tech companies need to streamline their enterprise management and support or risk facing restricted product distribution or fines.

What Analysts Recommend

Semiconductor companies need to automate and streamline basic operations, reducing costs by automating end-to-end business processes. Doing so requires powerful business systems that help companies improve their ability to close accounting books faster and with greater accuracy. In addition, these organizations need solutions that help them ensure corporate financial, environmental, and global trade compliance.

What SAP Offers

SAP delivers enterprise management solutions that provide end-to-end functionality to manage your business operations, supporting compliance and environmental requirements – no matter where manufacturing takes place. With the help of the SAP Global Trade Services application, you can standardize your business processes while mitigating the risks of noncompliance with legal regulations, corporate governance legislation, and trade requirements. SAP solutions also provide a flexible and open technology framework that lowers your total cost of ownership (TCO).

“The SAP Global Trade Services application is integrated along the entire revenue stream and supply chain path and processes, from order entry through shipping and export.”

James Arthur, Business Systems Analyst, Adaptec Inc.

UNDERSTAND YOUR OPTIONS

Automate Order-to-Cash Process

Distributed manufacturing intensifies the effort needed to track costs and manage the quotation process. For semiconductor companies, automating the order-to-cash process is key to understanding which products are worth manufacturing, where outsourcing is a cost-effective choice, and how quotations should be created and submitted to customers. Existing manual processes are too time-consuming and labor-intensive to properly support today's high-tech companies.

What Analysts Recommend

Automating these fundamental processes requires an integrated solution that links cost- and quotation-management functionality with enterprise business systems. Semiconductor companies need a comprehensive solution that can improve inquiry, quotation, and order management by providing support for product configuration, flexible pricing and automated price calculation, product determination, online product availability checks, substitution for obsolete products and proposals, free-goods and selling bundles, and fulfillment process tracking.

What SAP Offers

SAP provides order-to-cash capabilities that improve service levels by enabling users to easily and automatically develop, verify, and submit contracts tailored to the specific customer need. The solution improves order fill rates by providing real-time visibility into product availability, contract pricing, and product configuration. By automating contract, order processing, and billing activities, the solution reduces operating costs and increases operational efficiency, while providing a flexible framework to create, change, and eliminate processes as driven by the market.

GAIN CONTROL

Distribute Manufacturing

For many semiconductor companies, virtual manufacturing is the strategy of choice – it helps reduce costs and enables the organization to maintain greater focus on core competencies. Yet distributed manufacturing is not synonymous with giving up control. Whether the company outsources manufacturing, assembly, and testing to subcontractors or maintains a mix of in-house and outsourced processes, semiconductor organizations need increased levels of visibility, flexibility, and responsiveness to succeed.

What Analysts Recommend

High-tech companies need to seamlessly integrate external manufacturing operations with planning, order fulfillment, and customer service. Business systems must maximize work-in-process visibility to ensure that customer request dates are met. Integrating work-in-process information into planning from external subcontractors ensures that customers receive accurate available-to-promise quantities and on-time delivery.

What SAP Offers

To help semiconductor companies gain control over virtual manufacturing operations, SAP offers distributed manufacturing capabilities that help organizations enhance customer service and increase cost efficiencies by improving global manufacturing visibility, planning, and execution. Predefined integration to third-party shop-floor control systems combined with a manufacturing intelligence dashboard can improve product quality, manufacturing efficiencies, as well as capital-asset utilization. Enhanced supply network collaboration – including such capabilities as inventory liability alerting and multitier order fulfillment collaboration – enhances supply chain visibility to address off-balance-sheet liability issues, working capital and inventory balances, and planning responsiveness.

CREATE A DEMAND-DRIVEN SUPPLY NETWORK

Match Supply and Demand

Distributed high-tech supply chains cross a vast network of suppliers, each of which contributes goods or services that ultimately combine to deliver manufactured goods to market. For semiconductor companies to be profitable and successful, they must collaborate with customers to understand their demand and with suppliers to understand their ability to deliver components and services. When information is shared among these partners, companies can react quickly to changes in demand or to problems in production – without compromising customer service levels.



What Analysts Recommend

Supporting these collaborative efforts requires a business solution that matches supply and demand at the line-of-business level – creating precise manufacturing requirements that support customer demand. By reducing order lead time and late orders, and enhancing order fill rates and customer retention, such solutions help high-tech companies increase the number of inventory turns, which improves profitability.

What SAP Offers

SAP demand and supply planning solutions support collaboration across your distributed supply chain. They deliver accurate single-number forecasts that match your customer demand and make it visible to your suppliers, thereby streamlining the end-to-end planning process. The solution provides state-of-the-art tools, such as statistical forecasting models, collaborative demand planning, and consensus demand planning, that help you lay the foundation for integrating both demand and supply planning processes. Suppliers can use planning tools to more effectively manage their resources and support capacity planning while improving order fill rates. Using SAP solutions, you can enhance customer service by delivering visibility into both the demand chain of your customers and your supply chain.

“Entegris worked with SAP and Bristlecone Inc. to rapidly improve our demand planning processes and forecasting accuracy, which has resulted in significant gains in customer service levels and reduced operating costs.”

Mike Beller, Project Manager,
Entegris Inc.

EXPERTS SUGGEST THE FOLLOWING APPROACHES FOR SUPPORTING INNOVATION AND GROWTH.

MANAGE THE SALES CHANNEL

Increase Design Wins

A growing percentage of all sales occur through indirect channels, creating a need for semiconductor companies and component manufacturers to manage partner relationships more efficiently and handle design registration more competently. To ensure their mutual success, high-tech companies require full visibility into all sales channels. They also need to help their partners sell more effectively, providing channel partners with better tools to market, sell to, and service end customers.

What Analysts Recommend

High-tech companies need to extend the value of channel management activities beyond merely managing and monitoring partner relationships on a daily basis. Solutions are needed that combine traditional partner relationship management with comprehensive customer relationship management and e-commerce capabilities. Such solutions can help companies develop profitable collaborative relationships with their channel partners and end customers.

What SAP Offers

SAP solutions help you handle all channel management processes, including design registration and win, demand creation, inventory tracking, Web-based quoting, and claims processing. With these solutions, you can automate ship and debit transactions, reducing cost of sales by up to 50%; increase forecast accuracy through visibility into your sales channel and perpetual channel-inventory tracking; reduce channel support costs by automating administrative functions and using partner self-service portals; and boost revenues by providing partners with incentives and access to sales tools and marketing assets.

IMPROVE CUSTOMER SERVICE

Optimize Your Global Sourcing Strategy

Semiconductor companies need to improve customer service by collaborating with business partners and improving service levels. They also must increase revenues by grabbing a larger portion of market share, increasing order fill rates, and enhancing capacity utilization. What's needed is a systemic approach to formulating and optimizing a global sourcing strategy — one that consolidates and anticipates supply needs, analyzes historical buying patterns, and tracks current market trends.

What Analysts Recommend

Creating such a strategy requires a business solution that seamlessly integrates internal and external manufacturing operations with planning, order fulfillment, and customer service. The solution must work in concert with planning from external manufacturing-execution systems or external subcontractors to ensure accurate available-to-promise levels and on-time delivery to customers.

What SAP Offers

SAP offers strategic sourcing and procurement capabilities that deliver automated methods for procurement planning, sourcing, and management of components. By reducing overall transaction and procurement costs as well as inventory levels, you can decrease operating costs and increase operational efficiency. With a systematic approach for formulating and optimizing a global sourcing strategy, the solution enables you to improve customer service by reducing late orders, provide better inventory visibility into your distributed supply chain, and reduce maverick spending by enforcing procurement only from approved suppliers at contracted prices.

“Business pressure to improve product innovation is pushing investment in higher-order applications. . . . Those vendors that have taken the time to build enough domain expertise and process understanding to help immature buyers along the learning curve will be the winners.”

Kevin O'Marah, Vice President of Research, AMR Research Inc.,

“Microsoft Is the No. 1 Vendor in NPDI, but Not for Long.”

September 2004

MANAGE NEW PRODUCT DEVELOPMENT

Create an End-to-End Process

Semiconductor companies face intense pressure from evolving products and rapid obsolescence brought on by high consumer demand and rapidly advancing technology. With product cycles shrinking, high-tech companies find themselves bringing more and more products to market to remain competitive and sustain profitability. Effectively managing the entire new-product development and introduction process — from identification of a market opportunity to a successful product launch — is the only way these companies can succeed.

What Analysts Recommend

Semiconductor companies need to embrace business processes that simplify, streamline, and automate (where possible) the new-product development and introduction process. Solutions that provide visibility into the product portfolio and pipeline can help companies monitor, measure, and control the process in terms of cost, resources, and demand. And technology that automates the process of conducting global trade helps semiconductor companies manage the complexities of designing and manufacturing products for the global marketplace at the beginning of the product life cycle, when information is needed most.

What SAP Offers

SAP solutions provide a solid foundation for successful new-product development and introduction by creating a process for channeling innovation that ensures your best ideas are brought to market through systematic program management. With SAP solutions, you can connect and involve all internal departments — including marketing and sales, planning and production, procurement, and maintenance in one streamlined solution. Moreover, SAP solutions allow you to collaborate easily with partners, suppliers, contract manufacturers, and service providers for efficient and timely design. SAP software provides a single solution that manages the entire introduction process from concept to launch and mitigates your risk through strict design as well as monitoring of contractual and environmental compliance.

GET THE FACTS

Make Decisions with Real-Time Information

Semiconductor companies face business conditions that change weekly, daily, and even hourly. With interconnected supply chains, events that transpire in a company's operations also affect those of its trading partners. Making decisions based on intuition and vague expectations is a recipe for failure. High-tech companies need visibility into hard facts and access to real-time information that is provided quickly and automatically to help decision makers spot trends and patterns and make cost-effective choices.

What Analysts Recommend

Achieving this level of visibility requires business solutions that proactively deliver critical information that decision makers can act on. Semiconductor companies need powerful business analytics that link discrete events with cross-enterprise supply chain results as well as tools that spotlight changes and trends in demand and supply capabilities. Moreover, this information must be delivered automatically to executives in a convenient and easy-to-use format—one that does not require them to interrogate the system for results or have deep experience conducting analysis.

What SAP Offers

The SAP NetWeaver™ platform, an open integration and application platform, delivers the required visibility into distributed manufacturing operations by providing open integration technologies that support process-centric collaboration through the SAP Exchange Infrastructure component and a single view of information through the SAP Enterprise Portal component. With the SAP Web Application Server component, you can deploy highly scalable Web applications and Web services on an open and reliable infrastructure. And the SAP Business Intelligence component gives you all the capabilities you need to identify, integrate, and analyze disparate business data from heterogeneous sources.



"ISAP Business Intelligence allows management to run the company in a more professional way. Our ultimate goal was to have reliable, up-to-date, and quick information on how the company is doing."

Marc Asselberg, Vice President
of Information Systems,
AMI Semiconductor Inc.

ARE YOU READY?



STRATEGIES AT A GLANCE

Enterprise Management Strategies

- Streamline enterprise management and support – by automating end-to-end business processes and mitigating risk
- Expedite order-to-cash process – with workflow-supported cost and quotation management
- Retain control of distributed manufacturing – through seamless integration of external manufacturing operations with planning, order fulfillment, and customer service

Innovation and Growth Strategies

- Match supply and demand – by supporting collaboration across the virtual distributed supply chain
- Increase design wins in the sales channel – by combining traditional partner relationship management with comprehensive customer relationship management and e-commerce capabilities
- Optimize global sourcing strategy – by integrating internal and external manufacturing systems to consolidate and anticipate supply needs, analyze buying patterns, and track current market trends
- Manage new-product development and introduction – through end-to-end automation, simplification, and streamlining of the process

Visibility Strategies

- Base decisions on hard facts – with access to real-time information and powerful business analytics that link discrete events with cross-enterprise supply chain results

INDUSTRY-STANDARD PRACTICES VERSUS INDUSTRY-LEADING PRACTICES

Many organizations are moving away from traditional practices and adopting forward-thinking “leading practices” to support enhanced agility and responsiveness in key areas.

	INDUSTRY-STANDARD PRACTICE	INDUSTRY-LEADING PRACTICE
GLOBAL TRADE COMPLIANCE	Check every order manually or risk shipping to wrong party and having export privileges revoked	Automate processes, maintain detailed audit trails, and protect export privileges
DEMAND PLANNING	Use disconnected spreadsheets and intensive manual labor to get an incomplete picture of supply and demand	Automate sales, operations planning, and demand planning and match to long-term technology forecast
CHANNEL MANAGEMENT	Track projects manually or with rudimentary tools, checking after the fact to see if design win meshes with corporate strategy and notifying marketing of need	Use tools to automate approvals and register for design-win opportunities, connecting manufacturing, marketing, and corporate strategy in a coordinated workflow where approvals are expedited and design time is minimized
FULFILLMENT AND AVAILABLE-TO-PROMISE	Use disconnected legacy systems to track shipments as historical events	Maximize demand and on-time delivery with global available-to-promise technologies that support sales, distribution, and fulfillment

THE ROAD TO PROGRESS

The business processes and information systems throughout your company were developed over decades, and many of them are undoubtedly considered very entrenched. Reengineering them to industry-leading practices won't happen overnight and requires a strong commitment at the highest levels. This is especially true when it comes to integrating processes across departments and divisions.

The good news is that companies that persevere can expect the following rewards:

- Reduced cost of sales by up to 50% with automated shipment and debit transactions
- Increased forecast accuracy through visibility into the sales channel and perpetual channel-inventory tracking
- Greater revenue by providing partners with incentives and access to sales tools and marketing assets
- Decreased channel support costs by automating administrative functions and providing self-service portals for partners
- Increased sales leads, opportunities, and design wins through end-to-end process integration
- Improved gross margins by optimizing quotation and debit processes

“Companies that put initiatives in place to improve the productivity of their processes at all stages of a product platform life cycle will win on an unprecedented scale.”

AMR Research Inc., “High-Tech Industry Outlook: New Market Realities Must Drive IT Investment,” September 2004

EMERGING TECHNOLOGY AND TRENDS

Semiconductor companies have long struggled with how to market, sell, and license the intellectual property that differentiates their chip products. These predefined functional blocks are licensed for use in a chip, but finding the optimum business model for controlling intellectual property has been a challenge. New technically advanced solutions will help companies manage new-product development and introduction processes, to carefully and precisely manage product data, and to automate the order fulfillment process.

Prepare for expanded use of application-specific integrated circuits (ASICs), in which more than half of the device is pre-designed. ASICs provide a platform that enables companies to run higher-level functionality on hardware devices.

Look for light-emitting polymers to advance to higher levels of process technology. By making circuits smaller, faster, and cheaper, this technology will enable companies to put more circuits on each chip.

Look for these management trends

Expanding services value

As electronic products are interconnected increasingly with other technologies, customer services will become a greater percentage of the overall value of products. Service providers may gain influence with customers and may even begin to commission the design and manufacturing of products. This change will create a shift in the dynamics of the semiconductor market.

The next generation of outsourced manufacturing

Outsourcing operations creates problems with inventory liability, unknown exposure, lack of timely information, and an inability to react to change. Semiconductor companies will embrace out-tasking, where original equipment design (OED) companies work closely with specific partners to ensure that tolerances and specifications are met for critical items and items that demand on-time delivery. By moving some control from the manufacturing facility to the OED, out-tasking embraces demand-driven business practices while optimizing costs.

Change management

Increased transistor density causes increased device integration, which reduces cost per chip but magnifies complexity – requiring new design tools, advanced system knowledge, and reusable intellectual property. Companies can manage change by re-considering their role in the industry – be it as fabless manufacturers, vendors of complex system-on-chip devices, or as IP vendors.

Emphasizing consumer markets

A new focus on products created for the consumer market introduces price sensitivity as well as cyclical, sometimes seasonal, and always uncertain customer demand into manufacturers’ production planning. Semiconductor companies must learn to manage rapidly fluctuating demands as well as lower-than-usual product margins.

A COMPLETE FAMILY OF HIGH-TECH SOLUTIONS

SAP continually interviews high-tech thought leaders to identify the biggest challenges and trends facing your company today. This knowledge, combined with our experience with customers worldwide, has led to the most comprehensive portfolio of solutions for the high-tech industry.

For example, the robust SAP NetWeaver platform easily integrates SAP and non-SAP applications for a lower total cost of ownership. The mySAP™ Business Suite family of business solutions – built on the SAP NetWeaver platform – offers powerful, adaptive business solutions with best-of-breed functionality, industry-specific capabilities, and support for collaboration over the Web. And the SAP xApps™ portfolio of packaged composite applications enables continuous business innovation.

SAP also offers affordable, scalable solutions developed expressly for small and midsize organizations. And we back all our solutions with ongoing support and services to help you achieve your objectives and maximize your return on investment.

SAP MEANS ROI FOR HIGH TECH

A survey of leading companies in the high-tech space shows that SAP solutions help achieve real results. In a benchmarking study conducted by Stratascope Inc., SAP customers in the semiconductor industry outperform non-SAP customers by driving higher operating income margins, improving the cost of goods sold 2.5 times faster, and investing 14% less capital to generate the same amount of revenue. One company – Entegris, Inc. – improved planning accuracy by 31%, reduced finished-goods inventory by 10%, and achieved a significant reduction in planning-cycle time using the SAP for High Tech solution portfolio.



For additional information on how SAP for High Tech solutions can help your company operate more efficiently and profitably, please visit: www.sap.com/hightech

The Best-Run High-Tech Semiconductor Companies Run SAP

SAP solutions are currently used by thousands of high-tech companies around the world, including:

- AMI Semiconductor Inc., Belgium
- A.S.E. Korea Inc., Korea
- Applied Materials Europe B.V., Netherlands
- Asia Pacific Microsystems Inc., Taiwan
- ASJ Pte Ltd, Singapore
- ASM Assembly Automation Ltd, Hong Kong
- ATLM Taiwan Inc., Taiwan
- Burr-Brown Corporation, U.S.
- ChipPac Korea Co. Ltd, Korea
- Cirrus Logic Inc., U.S.
- Conexant Systems Inc., U.S.
- Dominion Semi Conductor LLC, U.S.
- Infineon Technologies (Malaysia) Sdn. Bhd., Malaysia
- Kyocera International Inc., U.S.
- Mitsuiwa Singapore Pte Ltd, Singapore
- National Semiconductor Corp., U.S.
- RF Micro Devices, U.S.
- SANYO Electric Co. Ltd, Japan
- SEIKO Instruments Inc., Japan
- Sharp Corporation, Japan
- Skyworks Solutions Inc., U.S.
- Spectrolab Inc., U.S.
- Standard Microsystems Corporation, U.S.
- TridonicAtco GmbH & Co KG, Austria
- TriQuint Semiconductor Inc., U.S.
- Varian Semiconductor Equipment Associates Inc., U.S.
- Vishay Intertechnology Inc., U.S.
- WaferTech LLC, U.S.
- WinBond Electronics Corporation, Taiwan



THE BEST-RUN BUSINESSES RUN SAP™



50 073 667 (05/04)

© 2005 by SAP AG. All rights reserved. SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary. Printed on environmentally friendly paper.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.