



## **SYNOPSYS**

**Transforming Electronic Design Automation with  
SAP® Customer Relationship Management**

### **SAP BUSINESS TRANSFORMATION STUDY**



Synopsys, partnering with SAP, improved efficiency and product quality to position the company for long-term, profitable growth.



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**SYNOPSYS®**

Predictable Success

**SYNOPSYS**

**AT A GLANCE**

<b>Industry</b>	High tech
<b>Revenue</b>	US\$1.096 billion
<b>Employees</b>	5,100
<b>Location</b>	Mountain View, California
<b>Web Site</b>	www.synopsys.com
<b>SAP® Solution &amp; Services</b>	SAP CRM application (integration center and service management)
<b>Implementation Partner</b>	BearingPoint

Synopsys Inc. is a world leader in electronic design automation (EDA) software for semiconductor design. The company delivers technology-leading semiconductor design and verification platforms and IC manufacturing software products to the global electronics market, enabling the development and production of complex systems-on-chips (SoCs). Synopsys also provides intellectual property and design services to simplify the design process and accelerate time to market for its customers. Headquartered in Mountain View, California, Synopsys has offices in more than 60 locations throughout North America, Europe, Japan and Asia.

**Key Challenges**

- Integrate acquisitions
- Improve quality and customer satisfaction while lowering costs
- Build brand value
- Grow market share
- Improve the efficiency and speed of the release process

**Why SAP Was Selected**

- Strong integration of the SAP® Customer Relationship Management (SAP CRM) application with the existing SAP ERP application implementation
- Ongoing SAP investment in CRM
- Single vendor solution
- Positioned for future growth

**Implementation Best Practices**

- Minimized customizations
- Continually improved usability
- Clearly defined processes and process support by SAP CRM
- Established steering committee to address ongoing requirements
- Used performance data to refine processes

**Low Total Cost of Ownership**

- Replaced 17 legacy CRM systems with a single SAP application
- Single global instance of SAP CRM
- Eliminated interfaces to customer Web portal
- Low ongoing support costs

**Financial and Strategic Benefits**

- Prevented 15% market share loss of strategic product
- Grew verification products business
- Leveraged worldwide resources to efficiently handle cases while volume increased
- Cut monthly reporting time from 5 days to 2

**Operational Benefits**

- Reduced the amount of time application consultants spend on reactive support from 33% to 22% and avoided a 4% staff increase
- Improved support cost accuracy from 65% to 90%
- Shifted 40% of support center application engineers to low-cost locations
- Cut minor release cycle time by 50%





**“We wanted the benefits of a single vendor. By moving the company to a uniform, professional, and well-supported CRM system, we are attaining important operational improvements, achieving faster and better decision making, delivering better support to our customers, and further cementing Synopsys as the best-in-class EDA company – period.”**

Aart J. de Geus  
CEO  
Synopsys

# KEY CHALLENGES

Founded in 1986, Synopsys has emerged as a leader in electronic design automation (EDA) tools for developing systems-on-chips (SoCs). With US\$1.096 billion in sales in 2006 and approximately 5,100 employees, the company is one of the largest EDA suppliers. Every major electronics company in the world has adopted its products, and its software helps chipmakers – in semiconductors, computers, communications, and other markets – more effectively design and manufacture SoCs.

Since the 1990s, Synopsys has acquired more than 40 EDA companies. These acquisitions have fueled the development of end-to-end EDA solutions, and today Synopsys products cover the full spectrum of chip design and development. With Synopsys tools, chipmakers can develop chips on time and on budget and with precise performance characteristics.

## Growth Through Acquisition Brings Customer Service Challenges

World-class software requires world-class, global support. Synopsys used customer relationship management (CRM) systems to log customer issues, manage and track software bugs – Synopsys technical action requests (STARs) – and perform related tasks. But as Synopsys acquired companies, it inherited the support software that its acquisitions used.

After a few years of buying companies, Synopsys had 17 different legacy CRM systems. The plethora of systems generated a long list of problems, the biggest of which were the cost to maintain the systems, declining support from the CRM vendors, and difficulty integrating future acquisitions. The tangle of systems also inhibited internal business processes – such as the handoffs from support staff to software engineers – and made it difficult for Synopsys to adapt to market changes.

## Too Many Systems Spoil the Support

Because Synopsys had so many support systems, it couldn't do the following:

- Improve quality and increase customer satisfaction
- Use a unified nomenclature for cases and Synopsys technical action reports (STARs)
- Monitor defects and enable continuous improvement
- Track open issues by customer
- Track interoperability across systems to improve product integration
- Improve the release management process

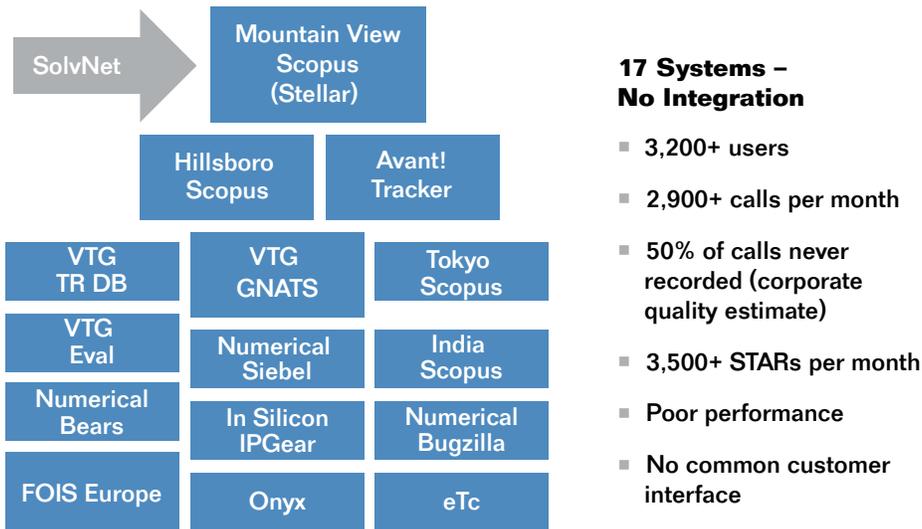


Figure 1: Multiple Call and STAR Tracking Systems

### Missed Marketing Opportunities

Synopsys also faced marketing challenges. It lacked basic customer information and essential processes for managing sales leads, conducting marketing campaigns, and monitoring program effectiveness. The company couldn't monitor its customer and prospect activities, such as attendance at events and seminars. It couldn't track all of its e-mail invitations, and it was hampered by information that was isolated in regional databases. By implementing a single CRM solution, it could simultaneously improve support, customer service, and marketing.

### Building the Synopsys Brand and Fueling Growth

Toolset completeness is essential for building the Synopsys brand and enabling revenue streams. Synopsys wants the other EDA tool vendors to compete with all of Synopsys, not with its individual product lines. Synopsys's message is that customers can choose to cobble together tools and processes – and take their chances – or they can go with Synopsys and achieve predictable success.

Delivering a complete toolset includes streamlined support and service – and consistent marketing messages – to build customer loyalty and remain competitive. And given its challenges with its diversity of product support and marketing systems, the company recognized that a sound CRM platform was essential for future success.

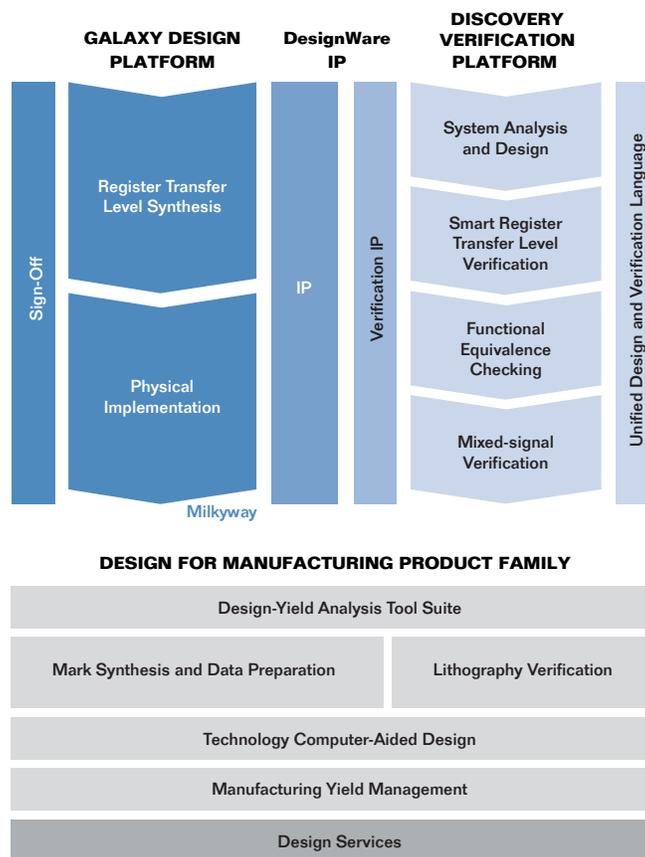


Figure 2: Synopsys Design Platforms

## WHY SAP WAS SELECTED

### **The Need for a Single Case and STAR Tracking Solution**

Synopsys's initial goal was to move to a single solution for case and STAR tracking so it could continually enhance its end-to-end solutions, integrate acquisitions, reduce costs, and deliver information for executive decision making. To reduce costs, the company also wanted to boost the number of customers who used its SolvNet Web portal to resolve issues. To increase portal use, it needed to simplify SolvNet's CRM interfaces, and a single CRM solution would enable this simplification.

### **A Focus on End-to-End Processes**

Synopsys focused on selecting a vendor that could support its end-to-end business processes over the long term. It had already implemented the SAP® ERP application and the SAP Business Information Warehouse component (functionality now found in the SAP NetWeaver® Business Intelligence component). SAP ERP supported many internal processes, including sales and order management, financial management, and human resources. A new CRM solution would need to tightly integrate with its existing SAP software and perhaps a marketing solution in the future.

Synopsys evaluated SAP, other major CRM vendors, and internal software development. The SAP Customer Relationship Management application was a relatively new product when Synopsys evaluated its needs – and other vendors had greater CRM market share at the time – but Synopsys believed that SAP CRM would be the best long-term solution. SAP invests heavily in CRM, and Synopsys expected a stream of enhancements that it could adapt to its needs.

**“SAP CRM is definitely a quality booster.”**

Harish Balan  
Director, Customer  
Support Center, India  
Synopsys

# IMPLEMENTATION PROCESS AND BEST PRACTICES

Synopsys implemented the customer interaction center and service functions of SAP CRM to handle case and STAR tracking. The base implementation was completed in 15 months. A pilot with 100 users (mostly in the United States) was conducted one month before go-live, and the software went live in a big bang rollout with 3,000 users. The company’s 17 legacy CRM systems were decommissioned at that time.

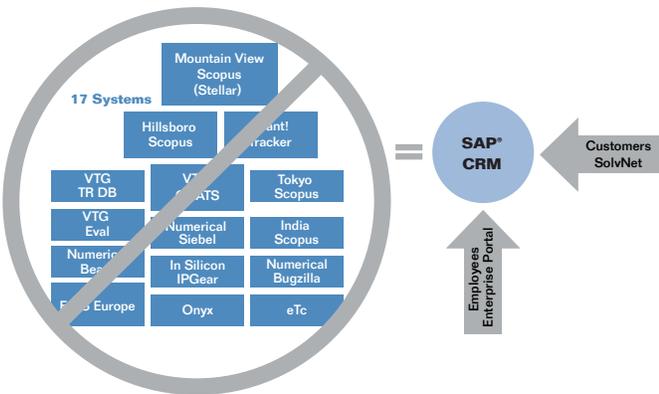


Figure 3: Synopsys’s IT Architecture: Engagement, Case, and STAR Tracking

Before the rollout, Synopsys established a change management program and an internal marketing strategy in which senior support and IT staff promoted the new CRM software to R & D and other Synopsys groups. To support implementation planning and execution, Synopsys established an executive steering committee and a project-level steering committee. The project involved about 20 Synopsys employees, 14 external consultants, and 20 part-time subject matter experts from Synopsys businesses.

Early in the implementation, some users were reluctant in replacing their existing systems because of concerns over usability and lost functionality. Synopsys addressed these issues over time, using business performance data to adapt SAP CRM to better support its processes, gradually improving the user interface, and instituting better internal communication and collaboration.

## Steering Committee to Manage Ongoing Requirements

Once the basic implementation was completed, a steering committee – managed by IT – was established to collect business input and shape future enhancements. The business units attended steering committee meetings to voice their input and requests. After discussing the various views, the group worked to achieve a consensus about the priority of system enhancements.

## SAP CRM Implementation for Marketing in Japan

After the global go-live of SAP CRM functionality for service and interaction center management, Synopsys implemented limited SAP CRM marketing functionality in Japan. The key objectives of this implementation (known as the Kabuki project) were to enable business partner search functions and to comply with a new Japanese law concerning how companies maintain information about and make contact with their customers. The benefits of Kabuki – which replaced a legacy database – included continuing support from SAP and robust access control.

## Synopsys's IT Architecture

SAP® Solutions: SAP CRM (interaction center and service management),  
SAP Business Information Warehouse, and SAP ERP

Number of Users: 3,000

Number of SAP Software Instances: 1

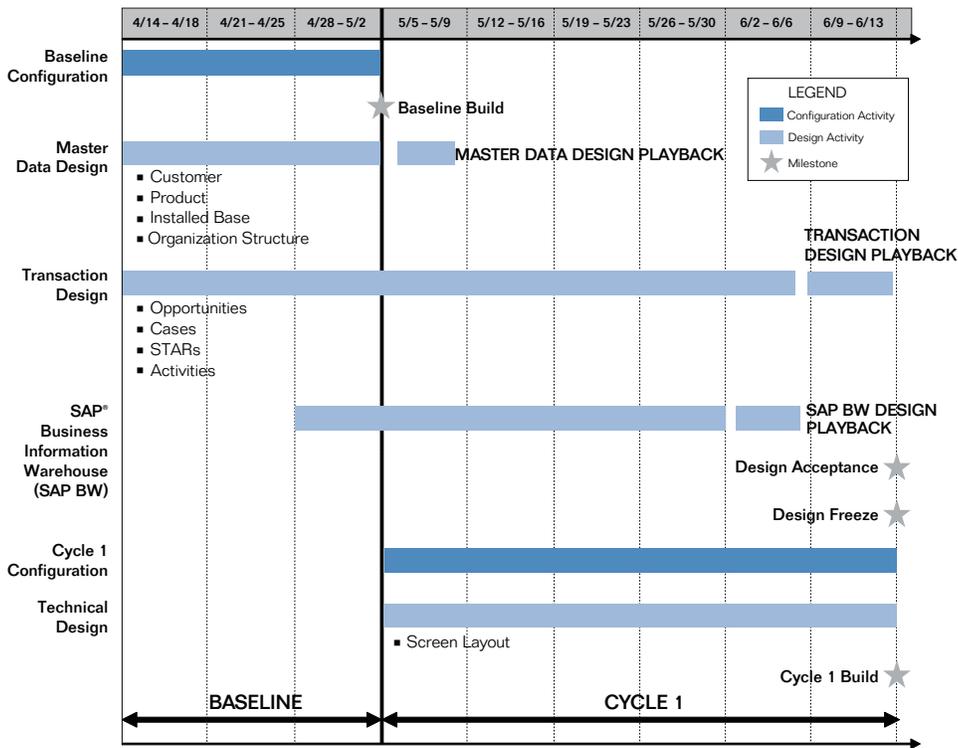


Figure 4: Implementation Timeline

**“Our processes are getting better. The trend for substantially declining postrelease issue rates is clear.”**

Fabio Angelillis  
Vice President of  
Engineering and R & D  
Silicon Engineering Group  
Synopsys

**“We use SAP CRM to monitor worldwide trends. For example, if we identify problems in several of our power applications that prevent customer success, we can deploy the right R & D resources to correct the problems.”**

Carl Wagner  
District Technical Manager  
Synopsys

## **BUSINESS PROCESS TRANSFORMATION AND VALUE REALIZED**

Synopsys's investment in SAP CRM is paying impressive dividends:

- Enhanced quality
- Sustained and increased market share
- Faster execution and greater information accuracy
- Improved productivity and resource allocation

### **Enhanced Quality**

By incorporating best practices into its development and release cycles, Synopsys has enhanced quality as captured in several metrics, including issues per release, release time frame predictability, and customer satisfaction ratings. The company has also sustained its number-one rating by *Electrical Engineering Times* in EDA after-sales service, even though the number of products and issue complexity have grown and case volume has increased from 300 per month before implementation to 2,500 per month today.

The quality gains are not solely attributable to SAP CRM, but CRM-enabled processes – which are subprocesses of the overall software product release cycle – support enhancements to accurate and timely case and STAR resolution.

Synopsys now has more cross-system visibility, and uniformity of case and STAR nomenclature accelerates resolution across multiple product lines. Because it can more effectively distribute the support workload, employees are less likely to be overloaded and can perform better.

Synopsys closely monitors support engagements, such as running benchmark analyses or postsales support for tools used to design a new chip. The company uses the data to identify opportunities for improvement. “If a particular engagement heats up, we want to know about it,” says Carl Wagner, district technical manager at Synopsys.

These quality improvements support Synopsys branding and are key to enabling profitable revenue growth. “We know that quality is continuing to improve over time,” says Richard Leveille, senior program manager, corporate quality at Synopsys.

### **Sustained and Increased Market Share**

Quality improvements have helped sustain and improve market share for Synopsys products. For example, quality improvements for CATS, a Synopsys product for photomask manufacturing data preparation, have contributed to the defense of its 85% market share. And enhanced customer service, enabled by SAP CRM, is responsible for about half of the company's 12% growth in its verification products.

### **Faster Execution and Greater Information Accuracy**

Faster delivery of products and services has also contributed to increased customer satisfaction and revenue growth. Synopsys can now execute a complete release cycle faster and with less overhead. Because it can better monitor issues and focus the use of its resources, the company has reduced the cycle time for a minor release from two weeks to one week, and it has reduced overall case resolution cycle time by 10% to 20%. “I can watch for clusters of problems and for resolution delays,” says Jay Hopkins, a customer application engineer for the R & D group at Synopsys. “When I find issues, I can mobilize the appropriate resources.”

The information used for management decision making has also improved. Synopsys produces monthly reports for its entire product line, including the incoming weighted defect count rates for products, the turnaround time for correcting issues, and the consultant and engineering time spent on issues by product and by customer. These reports required 5 days to produce before SAP CRM; now turnaround time has been reduced to just 48 hours. Precision of the data has also improved. For example, because consultant time is now tracked in SAP CRM (instead of spreadsheets), accuracy has improved from 65% to 90%. “We can now provide more accurate and actionable data, which includes information about support costs by product,” says Rick Thrasher, CRM program manager, global technical service at Synopsys.

### **Improved Productivity and Resource Allocation**

SAP CRM has enabled productivity improvements and cost reductions that allow Synopsys to make the most of its resources. Because of continuing price pressure in the EDA market, these improvements help Synopsys to sustain healthy margins.

SAP CRM has improved flexibility with worldwide resource assignment. By improving issue escalation and other processes, Synopsys can leverage its global staff to resolve cases and STARs even though case volume has increased substantially. And because it better understands how staff time is

spent, the number of open cases and STARs by product group, and the cost to serve customers, management can make better resource allocation decisions.

SAP CRM has also helped ensure that staffers take on work that is best suited to their skills. For example, Synopsys now routes more reactive support to its call centers. This has cut the amount of time application consultants spend on reactive support from 33% to 22%, freeing them to focus on complex, strategic customer issues. And by increasing productivity, Synopsys has reduced the number of new application consultants it needs to hire by 4%.

Better access to information on the Web has also improved productivity, by allowing customers to serve themselves. Synopsys customers can access its knowledge database, STAR status, trouble tickets, and other information online in SolvNet.

**“[Our] CATS [product] has a dominant market share but has faced strong and vocal competition lately. If we hadn’t made the quality improvements to which SAP CRM has contributed, we would have lost about 15 percentage points of share.”**

**Robert Genco**  
Vice President of Operations  
Synopsys

## Synopsys Improves Critical Processes

The following table lists examples of processes that improved as a result of the implementation and the consequences of these changes.

Process Area	Problems	After SAP® Software	Impact
<b>Release Cycle Management</b>	<ul style="list-style-type: none"> <li>■ Inhibited communication across organization because of 17 legacy systems</li> <li>■ No audit trail</li> <li>■ Growing need to integrate systems and resolve the STARs that exist across systems</li> </ul>	<ul style="list-style-type: none"> <li>■ One CRM system</li> <li>■ More uniform definitions of cases, STARs, and related metrics</li> <li>■ Categorization and prioritization of cases and STARs</li> </ul>	<ul style="list-style-type: none"> <li>■ Enhanced quality while sales volume and complexity have grown</li> <li>■ Sustained and improved market share</li> <li>■ Better support for interdependent Synopsys products</li> <li>■ Faster release cycles with less overhead</li> </ul>
<b>Support Execution</b>	<ul style="list-style-type: none"> <li>■ Inflexibility to transfer work to low-cost locations</li> <li>■ Excessive reactive support by application consultants</li> </ul>	<ul style="list-style-type: none"> <li>■ Automated issue routing</li> <li>■ Robust monitoring of customer touch time</li> <li>■ Engagement tracking</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved productivity</li> <li>■ Lowered case resolution cycle time by 10% to 20%</li> <li>■ Shifted support work to low-cost locations</li> <li>■ Cost reductions</li> <li>■ Increasing loss recovery</li> <li>■ Improved reinsurance</li> </ul>
<b>Management Decision Making</b>	<ul style="list-style-type: none"> <li>■ Lack of a holistic view of products and customers</li> <li>■ Insufficient process performance data upon which to base decisions</li> </ul>	<ul style="list-style-type: none"> <li>■ Better data covering true product development and support costs</li> <li>■ Information covering development and service cycle times</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduced time to produce management reports from 5 days to 48 hours</li> <li>■ Better cost- and other fact-based resource allocation decisions</li> <li>■ Improved collaboration with field and factory</li> </ul>

## FUTURE ROAD MAP

Synopsys expects to continue to increase the usability of SAP CRM to improve user adoption and data accuracy. It will also enhance the productivity and effectiveness of case and STAR tracking, continuing to push functionality to the SolvNet portal. It will improve its use of data from SAP CRM for management decision making about priorities and resource allocation.

Synopsys wants to move to a 360-degree view of its customers by collecting per-customer marketing touches, installed products, and service issues together and by using this holistic information to drive account strategy. Success in this area will involve increasing collaboration with the sales organization on future CRM initiatives.

Synopsys expects to pursue the following specific initiatives.

### **Improved Issue-Routing Process**

Currently, issue routing is somewhat inflexible because robust electronic routing is not yet in place. To more effectively route issues to quickly engage the right specialist, Synopsys plans to implement the new rules-based routing engine of SAP CRM. “I want to be able to get an issue to the right person – wherever they are in the world,” says Vito Mazzarino, vice president of field support operations at Synopsys.

### **Access to Service Entitlement Information**

Synopsys now provides service to any customer who asks for help because it can’t yet provide simple access to information about service entitlement. In the future, by integrating service data in SAP CRM with financial and contract data in SAP ERP, Synopsys intends to make this information available internally. This will ensure that the company is not giving away its service resources and will help secure new service revenues.

### **Tiered Service Levels**

Synopsys has identified the top 75 customers of its 25,000 total customers. Synopsys is working to provide premium service to these top accounts and tiered levels of service to the rest of its customers. SAP CRM will help identify the appropriate service level for individual customers.

### **Layered Support**

Synopsys will use SAP CRM to help implement layers of support so that central teams can handle simple problems and reactive support, and field or engineering staff can handle more complex support issues.

**“We’ve realized [resource productivity] due to better reporting, automation, and consistency of our processes. We’ve achieved powerful productivity benefits.”**

Harish Balan  
Director, Customer Support  
Center, India  
Synopsys

### **Centralized Information for Targeted Marketing**

Synopsys tracks training, marketing events, seminars, and user group attendance in various systems and collects market intelligence in databases around the world. The company is evaluating SAP CRM to collect this information in a single database and may build on what was implemented in the Kabuki project.

By centralizing marketing data, Synopsys expects to improve communication to field sales about events and new collateral, as well as to mine the consolidated database for sales leads. Synopsys will also be able to make better decisions in response to its intelligence about the global market for EDA tools.

Most important, Synopsys expects to use this information to streamline marketing campaign execution to accelerate sales. Synopsys will be able to advertise more effectively to its customers and prospects about upcoming events, unify information collected during the event registration process, and better reach executives and others to promote events.



**By centralizing marketing data, Synopsys expects to improve communication to field sales about events and new collateral, as well as to mine the consolidated database for sales leads.**

## LESSONS LEARNED

As the implementation progressed, the company found several important keys to success.

### **Communicate Strategic Benefits**

Synopsys replaced 17 legacy CRM systems for case and STAR tracking with SAP CRM. Inevitably, individual users lost favorite functions in the switch and were dissatisfied. Synopsys believes it can enhance individual user satisfaction with new business solutions by better communicating the trade-offs and the overarching strategic benefits – such as streamlined processes and better data for decision making – that the company will attain.

### **Engage Senior Management**

Synopsys senior management supported the decision to implement SAP CRM but was not deeply involved in the ongoing implementation. Greater executive involvement in future implementations will help align implementations with corporate strategy to achieve the high-level objectives that support growth.

### **Quickly and Clearly Define Business Rules**

Each of the 17 legacy CRM systems supported ad hoc and documented procedures. Over time, Synopsys moved toward consistent documentation of processes enabled by SAP CRM. In the future, Synopsys intends to move more quickly toward uniform and documented business rules, which will accelerate reaping the benefits of streamlined processes and better data.

### **Enable Field Personnel**

The Synopsys field organization is focused on serving customers, and time spent by field-based application consultants on systems issues is time away from their primary customer service mission. In the future, Synopsys will concentrate on system usability, intuitive functionality, and training for its highly distributed field organization. Through these actions, the company expects to secure buy-in more quickly, ensure that data from the application consultants is entered completely, and derive the full value from its business solutions.

**“About half of our 12% growth in verification revenues is due to enhanced customer service processes enabled by our CRM platform.”**

Jay Hopkins  
Customer Application  
Engineer, R & D  
Synopsys

THE BEST-RUN BUSINESSES RUN SAP™



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