



BY TONY KONTZER

Tony Pagliarulo, Vice President of  
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# Taking the Long View

**BOLD VISION HELPS EMC MANAGE TOUGH TIMES—AND PREPARE FOR THE FUTURE.**

**Y**ou have to give EMC Corporation credit. While many technology companies spent the dot-com bubble buying Super Bowl ads, EMC knew something was amiss.

Yes, business was humming along: customers were snatching up EMC's powerful storage arrays to make room for the mushrooming quantity of data being created by the fast-growing internet business environment. On the surface, times were good. But EMC's IT leadership was well aware that the company was operating with an IT environment characterized by multiple enterprise resource planning (ERP) systems, numerous disparate legacy applications, and a variety of data models and taxonomies that made it challenging to quickly establish a single version of the truth—about customers, products, and certain financial information.

"It was a major business problem," says Tony Pagliarulo, vice president of application development at EMC. "It would take us a significant amount of time to close the books, to get a worldwide view of revenue, to manage our product lifecycle, and to manage the flow of materials through our shop floor."

That environment was undoubtedly having financial impact for EMC in the form of potential lost revenue, added technology costs, and loss of employee productivity. So EMC set out to do something about it.

The contrast today is startling. Powered by an array of Oracle technologies, from the database to middleware to applications, EMC now enjoys the benefits of a single global ERP instance, real-time analysis of its order pipeline, and automated monitoring and support for its customers as well as its own IT environment. Additionally, by combining Oracle Database and Oracle Real Application Clusters with EMC's own information protection technology, the company has established an infrastructure that's highly reliable, available, and scalable.

All of this has enabled the company to accommodate growth, gain efficiencies in its operations, and deliver consistent customer and product information across the organization, while keeping costs down. But achieving such a bold IT transformation within a multibillion-dollar company doesn't happen overnight, and EMC has taken a years-long, phased approach to get where it is. Management still has more work to do, with more upgrades and efforts to further reduce the application portfolio in the offing, but the company has come a long way.

## **NEW IT HORIZONS**

EMC's journey to an Oracle stack started nearly a decade ago, during the tail end of the dot-com boom. The company was on a fast-growth trajectory, with a goal of doubling its annual revenue

to US\$12 billion, if only its IT environment would allow it. That meant investing in a technology platform that could support an ambitious ERP implementation. "We wanted to really provide a foundation for scale for our business," says Pagliarulo.

The company chose Oracle E-Business Suite 11i, running on Oracle8i Database, and began consolidating some 30 legacy systems onto the platform, using the data in those systems to populate Oracle E-Business Suite modules ranging from manufacturing and procurement to financials and order management. It dubbed this effort "Catalyst," reflecting the program's role in kick-starting EMC's technology transformation. The benefits were immediate and far ranging. For example, manufacturing and shop floor management modules helped drive improved quality management and production traceability, and Oracle Financials enabled EMC's finance people to more effectively comply with regulatory requirements related to financial reporting and taxes.

In the midst of its ERP consolidation process, however, the dot-com bubble burst and management had to adapt to a new market. Rather than focusing on its traditional market of the Fortune 200, EMC needed to increase its reach by branching out into small and midsize businesses. And that, of course, meant diversifying its product offerings. To deliver real value to smaller companies, EMC would have to become a solutions provider, expanding the software and services part of its portfolio.

"That required new capabilities from a system and process perspective," Pagliarulo says. "And that led us to our initial implementation with Oracle E-Business Suite in 2002." EMC's initial Oracle E-Business Suite 11i environment—a transformation dubbed "Go To Market"—became home to the company's customer relationship management (CRM) system. It was eventually upgraded to Oracle E-Business Suite 11i Release 11.5.10 during the most recent stage of EMC's technology transforma-

tion effort, called "Synergy." Today, the combined Go To Market/Synergy platform consists of some 70 application modules that are delivering a wide range of business benefits. Its incentive compensation module has helped EMC economize how it compensates its sales organization, for example, while its customer and partner enablement, pricing, and quoting modules make it possible for the global sales and support teams, as well as sales partners, to access data around the clock.

"The improved visibility there has been phenomenal," says Pagliarulo. "It's really allowed us to grow our global services organization. Our customer service agents can sit anywhere in the world and look at one consolidated view of the customer, and that allows us to have a follow-the-sun approach. So someone sits in the U.S., and they punch out at the end of the day. Someone in Asia picks up the case and looks at it, and then someone in Europe picks up the case and looks at it. And again, it's one single view of the customer on that one global instance."

That capability becomes even more critical given that, as part of its expanded strategy to serve the small- and midsize-business market, EMC opted to embark on an aggressive acquisition campaign. Starting in 2003, EMC acquired more than 30 companies over the next four years in order to add the range of software and services its expanded market would need. These acquisitions included established players such as Documentum and VMware and cloud-storage startups Mozy and Pi (which were subsequently combined to form EMC's Decho). The prior investment in a consolidated ERP instance, coupled with the Oracle E-Business Suite 11i deployment, greatly simplified the acquisition process, Pagliarulo says, enabling EMC to integrate each acquired company into its Oracle environment. Manufacturing and financial data was incorporated into the global ERP environment, while customer and product information was merged into the CRM system.

## Working Together

It's not just Oracle's technology at work in the company's partnership with EMC. The tight relationship EMC has with Oracle support and engineering has been nearly as important. The two companies have worked in tandem to solve any issues that arise and to provide a valuable, real-world feedback loop to Oracle's development teams. Whether it has encountered software bugs or feature gaps, EMC has been in direct contact with Oracle. The two have also worked together to combine the flexibility of Oracle technology with EMC's information protection capabilities in order to proactively monitor both the database and appli-

cation tiers, allowing EMC to ensure that its applications are performing at the right service levels.

The combination of Oracle's technology, EMC's measured approach to IT transformation, and a spirit of teamwork between the two companies has resulted in such a fine-tuned environment that Oracle made EMC the focus of a Customer Showcase event in July, held at EMC's corporate headquarters in Hopkinton, Massachusetts. Some 40 Oracle customers gathered to learn more about the best practices EMC has established for getting the most out of its Oracle stack, and the demos they witnessed provided compelling

evidence of what's possible.

For example, EMC showed how it has configured its Oracle Fusion Middleware and Oracle E-Business Suite 11i environments to automatically respond to issues with live customer deployments, enabling it to dispatch repair technicians before the customer is even aware there's a problem.

"When you show customers a demo, there's always a healthy and valid skepticism as to whether the technology really works," says David O'Neill, vice president, Enterprise Solutions Group, at Oracle. "When you show them a live system that's running a business, that's the real deal."

As EMC grew larger and more complex, the need to integrate, monitor, and analyze an expanding pool of data became ever more critical, leading EMC to standardize on Oracle Fusion Middleware and Oracle SOA Suite. That enabled it to start realizing the benefits of an array of middleware components. Oracle BPEL Process Manager has made it possible to orchestrate business processes across multiple applications by creating standard definitions of key data elements, enabling integration to occur outside of applications. This practice, which greatly simplifies the creation of standard business processes, is something Pagliarulo says the company plans to do more of.

As well, EMC used Oracle Business Activity Monitoring to build a visibility tool that has given the company a new level of insight into the order pipeline and the order history for the quarter. Teams from sales, finance, and manufacturing, sitting in a “war room,” use the tool to monitor order activity throughout the day, which helps EMC maintain an unusual zero-backlog approach. As such, EMC has achieved more than a 20 percent compound annual growth rate in its unit sales volumes, while increasing staffing by only 2 percent. “It’s like a bar chart for a patient,” says Jay Buchta, Oracle’s key EMC account director. “Their EOQ [end-of-quarter] war room uses it intensively to manage all the fairly dramatic end-of-quarter tension they have in fulfilling all their orders and optimizing profitability.”

That’s not all: EMC is using Oracle Business Intelligence Enterprise Edition to provide a metadata framework for defining business models, but the company is still just scratching the surface of what Oracle Business Intelligence Enterprise Edition can deliver, says Pagliarulo. Meanwhile, the company’s growing employee base, together with its increasingly integrated applications portfolio, provided an opportunity to simplify access to enterprise resources. The combination of Oracle Virtual Directory, Oracle Internet Directory, and Oracle Identity Manager has enabled EMC to support near-single-sign-on access to its inventory of applications.

“You’re always going to have some legacy application that you can’t integrate that’s got some unique access criteria,” Pagliarulo says, to explain why 100 percent single sign-on isn’t possible. “But overall, we’ve made really great progress.”

While Pagliarulo isn’t able to provide specifics on the bottom-line impact of EMC’s expanding Oracle technology footprint, it’s no coincidence that revenue has grown from just over US\$7 billion in 2001, the year the technology transformation began, to nearly US\$15 billion in 2008. Sure, the

## >> SNAPSHOT

**EMC Corporation**  
**www.emc.com**

**Headquarters:** Hopkinton, Massachusetts

**Revenue:** US\$14.88 billion (2008)

**Employees:** 40,000

**Oracle products:** Oracle E-Business Suite 11i (ERP and CRM modules); Oracle Database 10g Release 2; Oracle Real Application Clusters; Oracle Fusion Middleware, including Oracle SOA Suite, Oracle BPEL Process Manager, Oracle Business Activity Monitoring, Oracle Business Intelligence Enterprise Edition, Oracle Virtual Directory, Oracle Internet Directory, Oracle Identity Manager, and Oracle Application Server 10g

**Partner products and services:** EMC Symmetrix V-Max, EMC CLARiiON CX-4 Series, EMC Celerra Unified Storage Platforms, EMC Centera, EMC Control-Center, EMC Navisphere, EMC SnapView, EMC TimeFinder, EMC Symmetrix Remote Data Facility, EMC Connectrix, EMC Networker, EMC Smarts, VMware Virtualization Technology, EMC Ionix, RSA Technology Solutions, EMC Documentum Content Management Solutions

acquisitions have played a major role, but so has an Oracle technology foundation that has resulted in streamlined business processes and enhanced insight into the state of the business.

“We’ve got Oracle supporting our end-to-end business process from lead identification through to order, fulfillment, and customer service,” Pagliarulo says. One of the most compelling examples of business process improvements is this: EMC has been able to slash the closing of its quarterly books from as much as two weeks to as little as four days. In addition to its success in consolidating its numerous legacy applications into its Oracle E-Business Suite environment, EMC has rationalized hundreds of custom applications from its portfolio over the eight-plus years it has been engaged with Oracle, bringing it down to a manageable number of 450. Pagliarulo says EMC may be able to reduce that number to 200.

EMC’s experience contains lessons for other Oracle customers. Pagliarulo says that because of the process re-engineering and change management that accompany large technology deployments, other large companies can learn from EMC’s phased approach. His advice: focus first on process areas where you can make a difference. Pagliarulo also says IT executives should expect process challenges along the way, no matter how good the technology. “In a large enterprise, there are always going to be unforeseen conditions,” he says. “So expect issues and plan accordingly.”

As for the future, EMC intends to continue building upon and refining its Oracle technology footprint. It’s already begun moving toward virtualizing its critical applications as part of its internal cloud computing infrastructure. The company intends to tie that together with an assortment of third-party, homegrown, and partner-developed external cloud resources. Also on the horizon: EMC is weighing a possible upgrade to Oracle E-Business Suite 12.1 or Oracle Fusion Applications. “I want whatever we do to make business sense,” says Pagliarulo. “So we have to just look at the pros and the cons.” <>

TONY KONTZER is a freelance business and technology writer based in California.

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Oracle E-Business Suite  
[oracle.com/goto/ebs](http://oracle.com/goto/ebs)

Oracle Fusion Middleware Business Integration  
[oracle.com/technologies/integration](http://oracle.com/technologies/integration)