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## ERP ZILLA -- 10 ERP deployments show that megaprojects are standing strong-though they've changed in focus and function

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**HIGHLIGHT:** Remember when enterprise-resource-planning projects were risky undertakings, running way over budget and dragging on well past their deadlines? Thankfully, those times are behind most companies, but that doesn't mean Big ERP has disappeared completely. Megaprojects live on, often as extensions of the core applications installed a few years earlier.

By the end of the 1990s, fueled by year 2000 computer upgrades, more than 60% of large companies had invested in ERP to manage financials, manufacturing operations, and human resources. Now many companies are refreshing these ERP infrastructures with product-life-cycle-management, customer-relationship-management, supply-chain, and cross-border capabilities. And they're relying on these deployments to support emerging technologies such as radio-frequency identification and Wi-Fi enabled workforces. All that activity explains why ERP remains a huge market: AMR Research estimates ERP licenses and maintenance will amount to \$14.5 billion this year.

To understand how ERP projects have evolved, InformationWeek decided to profile 10 of the most large-scale ERP deployments we could find, ranging from 1,000 users to more than 10 times that many. Most of the companies wouldn't disclose either the up-front or ongoing costs of their multiyear undertakings, but at least one of them spent \$100 million on its initial deployment, including software, consulting, and desk-top standardization. Beyond the initial cost, it's not unusual for companies to spend \$50 million to \$100 million on upgrades, says AMR analyst Bruce Richardson. Annual maintenance alone is in the neighborhood of 20% to 30% of initial software costs.

Understandably, businesses have grown weary of big up-front investments in ERP applications, causing vendors increasingly to offer modular packages of software and services. For their part, businesses seem to have learned from past mistakes and in recent years have paid more attention to issues such as process standardization and minimal customization to help keep costs more in line.

Twenty years after first installing SAP R/2, BASF Aktiengesellschaft, a chemical company with 37.5 billion euros a year in annual revenue (\$45 billion using exchange rates at press time), continues to invest in its ERP platform. With headquarters just kilometers away from SAP's post in Germany, the company is a third of the way through a three-year project, scheduled for completion in early 2007, to consolidate five SAP R/3 instances into one or two and standardize processes for all divisions. More than 35,000 of BASF's 82,000 employees access the SAP system daily, says Wolfgang Erny, managing director at BASF IT services.

Today you hear less about ERP projects that fail and more about the value gained from upgrading and maintaining what's there. Erny cites the integration of SAP's logistics capabilities into BASF's core ERP platform as being critical to managing production, from aggregating buys to warehousing inventory to managing finances.

Appliance manufacturer Whirlpool Corp.-which began its SAP ERP deployment about five years ago and continues implementations as it opens offices in new corners of the world-believes the value of ERP today is in helping to drive innovation and initiate change. Whirlpool has deployed a single instance of SAP's ERP suite and closes the books for 98% of its businesses on the vendor's financials platform.

The 30-year high in prices of commodities such as steel and copper, combined with record oil prices and a global logistics capacity stretched thin by demand coming from Asia and India, created conditions that put heavy pressure on Whirlpool's margins last year. The company concluded that to manage its margins in this environment, a 5% to 8% increase in prices was needed globally on its products-the first increase in 10 years. "In order to manage and implement those price increases, we had to have the capability to see product by product, category by category, country by country, day to day, the impact of materials costs, logistics costs, and the impact into our margins," says corporate VP and CIO Esat Sezer.

In November, the company leveraged its ERP foundation and used SAP's Business Warehouse to deliver the necessary visibility on a global scale, and it was testing the project by January. "You were never able to do that at that speed and pace without having an ERP infrastructure like we have today," Sezer says.

In the case of Del Monte Foods Co., its ERP deployment is driving its ability to meet Wal-Mart Stores Inc.'s and Target Corp.'s RFID mandates to their suppliers. Del Monte in 2003 began replacing more than 70 legacy systems on a variety of platforms with one instance of SSA Global Technologies Inc.'s ERP software on an IBM AS/400. Now it's tying an RFID application into SSA Global's ERP platform, which is known as SSA ERP LX. "ERP is the solid base from which we plug in specific applications and processes that drive innovation such as data synchronization, RFID, procurement, transportation management, and other critical functions," says CIO Marc Brown.

With operations primarily in North America, Latin America, American Samoa, and the Philippines and just 1,200 users, Del Monte has the smallest of the ERP deployments profiled here. But it's not underestimating the value of the tools, including the EXE Warehouse Management module deployed just last year, as it focuses on its supply-chain-management processes to become a more demand-driven company.

At the other end of the spectrum is Alcoa Inc., the largest aluminum company in the world with revenue of \$23.5 billion a year and operations that stretch across 41 countries and 500 locations, including 350 manufacturing plants. It boasts more than 10,000 users of its Oracle-based ERP deployment, and it's not done yet. The deployment of Oracle requisition-to-pay and finance processes began in Europe in 2001; they wrapped last year. The company this year will complete an Oracle HR implementation across most of its operations except North America, and it expects to be 60% complete implementing its order-to-cash processes by year's end, as well.

Alcoa started with an organization in which line-of-business presidents had responsibility for everything from profit and loss to software selection and IS infrastructure, a setup that led to duplications and inefficiencies. In the new organization, most back-office service functions exist as part of a global shared-business-services model. One example of how far the centralized ERP system has already taken the company: Alcoa North America CIO Kevin Horner cites the savings it has achieved in procurement. Using the Hackett Group's benchmarks to measure its procurement costs against spending, the ratio went down by almost 25%.

"We would suggest that the common optimized processes and common configuration of the software across the company and across the world is a major enabler to drive that home," Horner says. "There's no way we could have ever driven that level of savings in North America alone with 44 different procurement systems." To wring further value out of its procurement processes, in April Alcoa unveiled the creation of a global procurement organization that will

take advantage of the common data platform to analyze which commodities the company buys and from whom.

Getting to those common processes and data is also a challenge for the \$73 billion-a-year home-improvement retailer Home Depot Inc. It has spent \$1 billion to modernize its IT infrastructure and in-store technology, and next month the company will add to that with the installation of SAP for Retail, which includes applications for merchandising and supply-chain management and ties into the company's SAP Financials module. The move will centralize and consolidate 15 order-management systems into one to support the entire enterprise and improve electronic collaboration with suppliers. "We are one of [SAP's] biggest and most cumbersome customers," says Bob DeRodes, executive VP and CIO at Home Depot, noting that the current system is "fraught with error."

One rule other companies have followed to ensure that their systems aren't fraught with errors is to keep implementations simple. Companies spent years debating whether to customize ERP apps, with analysts and vendors, Oracle in particular, leading the charge against the practice. Now, it seems, Oracle and company were right all along. Dow Corning, for instance, runs its SAP ERP system, which at peak times is accessed simultaneously by 1,500 users, with as few modifications as possible.

"We had seen others go down the path of modifying the system to the point that it became their own," CIO Abbe Mulders says. "But then they couldn't keep up with it. So we said no mods." The only changes Dow Corning has made are those that don't fundamentally alter SAP's own code. "When the last sites went live, we had less than 50 modifications, and they were all approved by SAP. That was pretty impressive." The same is true at Alcoa, which says it hasn't changed a line of Oracle code as it has gone through its implementations; it writes interfaces only as needed and specific extensions when Oracle's software doesn't align with direct business requirements.

It's a similar situation at FedEx Corp., which runs one instance of Oracle's PeopleSoft ERP apps, including financials, human resources, inventory, asset management, E-procurement, and expense reporting, for its Express business and its international entities and another for corporate services, freight, and Kinko's, says Scot Struminger, VP of corporate headquarters. "The value proposition is about trying to stay vanilla and not be creative and develop respectable processes," he says. "The creative is in the products, services, and people."

Companies have taken different approaches to the number of ERP instances they run. Dow Corning Corp., for example, runs at its headquarters a single instance of the enterprise system that's used around the world. A single instance is one main data source that all the ERP systems in a company use. Automaker DaimlerChrysler AG runs about 100 instances of SAP modules, having decided to split its deployments into clusters when Daimler Benz and Chrysler merged in the mid-1990s, because it wasn't clear the software and architecture would support so many transactions on a single instance, says Michael Gorriz, CIO of the Mercedes car group and business system at DaimlerChrysler. Systems talk to each other by standard interfaces that SAP supports.

It's clear today that scalability wouldn't be a problem, though, "and if we were to start from scratch, we'd probably concentrate more of the SAP into single instances," he says. But that would require more investment than the automaker wants to make for systems that run well and are well-supported, even as it expands and upgrades its ERP infrastructure, which is based mostly on R/3 release 4.6C but will migrate to mySAP within five years. Most recently, DaimlerChrysler deployed an SAP cluster in Singapore that serves 11 Asian countries, and it's adding 15 European countries in a cluster that will be supported from Stuttgart, Germany.

FedEx didn't start out with a global deployment of its PeopleSoft applications, so it, too, began with multiple instances of the software. But as FedEx learned ERP and got better at it, the company concluded that it didn't want to manage all those instances. "There is so much to

be gained on this common set of practices that we began to shrink those into single instances," Struminger says.

Going forward, companies like these are considering how to take advantage of the next set of changes coming from vendors. These include Oracle's plans to add business insight via embedded analytics and management reporting in its own applications as well as those it has acquired from PeopleSoft, and SAP's move to component-based architectures for its NetWeaver middleware. "NetWeaver is very interesting to us," says Gorriz of DaimlerChrysler, describing an "ideal world" in which NetWeaver is able to be combined with Java extensions to easily integrate other applications and trading partners.

Microsoft is garnering increasing interest as an ERP vendor, as well, taking its place among the top five suppliers in terms of ERP revenue in 2004. The vendor plans to transition its Axapta, Great Plains, Navision, and Solomon ERP platforms to a common architecture and code base in the next few years.

Obviously, there's always more to do on companies' venerable ERP platforms. "There is no steady state for ERP, because you're always looking for upgrades and improvements," says Whirlpool's Sezer. "As new business developments continue, so will the implementations." -with Jennifer Zaino and Beth Bacheldor

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1) Alcoa

Primary ERP provider: Oracle

2004 REVENUE \$23.5 billion

EMPLOYEES 129,000 worldwide

MODULES OR FUNCTIONS USED Financials, human resources, order to cash, requisition to pay

DEPLOYMENT DETAILS Began in 2001 with financials and requisition-to-pay processes at 50 locations in Europe; those are now live across Europe, North America, Australia, Asia, and Latin America. HR processes are complete in Australia and by end of year are expected to be complete in Europe and Latin America. At year's end, order-to-cash processes should be about 60% complete worldwide.

NUMBER OF USERS More than 10,000

2) BASF Aktiengesellschaft

Primary ERP provider: SAP

2004 REVENUE 37.5 billion euros

EMPLOYEES 82,000 worldwide

MODULES OR FUNCTIONS USED Full suite

DEPLOYMENT DETAILS Began at the end of the 1980s and completed in early 1990s. There have been about 10 upgrades in the last few years, most recently updating many systems to R/3 v. 4.7. Now BASF is a third of the way through a project that's scheduled to be done in early 2007, consolidating multiple instances to one or two and standardizing processes.

NUMBER OF USERS 35,000

3) Capital One Financial

Primary ERP provider: Oracle

2004 REVENUE \$1.5 billion

EMPLOYEES 15,000

MODULES OR FUNCTIONS USED PeopleSoft financials, human resources, supply chain, asset management  
Deployment details Began in 2000, focusing on piloting financials in the U.K. HR implementation in the U.K. followed and then U.S. deployment. In 2002, after stabilizing the system, Capital One began a second round of HR and financials-conversion projects for process optimization. A single instance is used by all except U.K. financials, which integrate in roll-up mode. Deployment of BEA Systems-based portal for ERP access was completed in 2004.

NUMBER OF USERS 18,000

COST Tens of millions of dollars

4) Colgate-Palmolive

Primary ERP provider: SAP

2004 REVENUE \$10.6 billion

EMPLOYEES 36,000

MODULES OR FUNCTIONS USED Supply-chain, customer-relationship, supplier-relationship, and human-resources management; financials; composite applications; order processing; bill of materials; manufacturing; employee self-service, and others

DEPLOYMENT DETAILS First pilot went live in 1996. There have been two major upgrades in nine years, and the company continues to roll out SAP R/3, mySAP's Advanced Planning and Optimization, CRM, SAP Portals, and Business Warehouse. Colgate-Palmolive runs five R/3 instances in Europe, North America, Latin America, Asia-South Pacific, and for its Hill's Science Diet brand. There's one global HR system. SAP Business Warehouse database housing all customer data for the various applications is 6 terabytes.

NUMBER OF USERS 15,000

5) DaimlerChrysler

Primary ERP provider: SAP

2004 REVENUE 142.1 billion euros

EMPLOYEES 384,723 worldwide

MODULES OR FUNCTIONS USED Finance, production, logistics

DEPLOYMENT DETAILS Daimler Benz and Chrysler began separate implementations of the R/3 finance modules before the 1996-'97 merger, and these remain separate instances. Mercedes division in 2002 began deploying a separate instance of SAP for production and logistics. SAP clusters throughout DaimlerChrysler, which total about 320 installations and 100 instances of SAP modules, include Asia, where 11 countries are on one instance. An expansion to 15 countries in Europe is next. Most instances are based on R/3 Release 4.6C. NUMBER OF USERS 50,000 worldwide

6) Del Monte Foods

Primary ERP provider: SSA Global Technologies

2004 REVENUE \$3 billion

EMPLOYEES 8,500 full time and 9,800 seasonal in U.S., Latin America, Canada, Mexico, the Philippines, and American Samoa Modules Or functions used Business Planning and Control System ERP suite

DEPLOYMENT DETAILS Began in 2003 with one instance on an IBM AS/400 running DB2 that replaced more than 70 legacy systems on a variety of platforms shortly after Del Monte merged with several businesses that had been spun out of H.J. Heinz Co. Spins-offs already were running SSA Global ERP software. The most recent deployment was the 2004 rollout of the EXE Warehouse Management Module.

NUMBER OF USERS 1,200

7) Dow Corning

Primary ERP provider: sap

2004 REVENUE \$3.37 billion

EMPLOYEES 8,800 worldwide

MODULES OR FUNCTIONS USED Supply-chain, customer-relationship, supplier-relationship, and human-resources management; financials; order processing; composite apps; manufacturing; bill of materials; employee self-service; and others Deployment details Initial project began in 1996 and was completed in late 1998. The most recent update was in June, putting in SAP ERP core components 5.0. At its headquarters, Dow Corning runs a single instance of the enterprise system that's used around the world. The database, SAP Business Warehouse, houses all customer data used by the different apps and has grown into the terabytes

NUMBER OF USERS Almost all Dow Corning employees use the system in one way or another. During peak times, about 1,500 employees actively use it.

COST \$100 million

8) FedEx

Primary ERP provider: oracle

2005 Revenue \$29 billion

EMPLOYEES More than 250,000 worldwide (including contractors)

MODULES OR FUNCTIONS USED PeopleSoft asset management, general ledger, financials, human resources, E-procurement, expense reporting, inventory, project costing, and others

DEPLOYMENT DETAILS Began with PeopleSoft general-ledger and asset-management software in 1997. After two major upgrades in last few years, the most recent in 2004, system includes 12 PeopleSoft modules. FedEx's Express domestic and international operations run on one instance. Corporate Services, Ground, Freight, and Kinko's run another instance.

NUMBER OF USERS More than 20,000

9) Home Depot

Primary ERP provider: sap

2004 REVENUE \$73 billion

EMPLOYEES 325,000 worldwide

MODULES OR FUNCTIONS USED SAP Financials, SAP for Retail

DEPLOYMENT DETAILS Began with SAP Financials. Most recent deployment was to install SAP for Retail.

## 10) Whirlpool

Primary ERP provider: sap

2004 REVENUE \$13.2 billion

EMPLOYEES 68,000 worldwide

MODULES OR FUNCTIONS USED Full suite

DEPLOYMENT DETAILS Began in 1999 and 2000 in North America with Finished-Goods forward processes (excluding Manufacturing processes). Today 98% of business closes its books on SAP's platform. Whirlpool is working on adding Production Planning modules, as well as suite implementations in smaller countries. A single instance of the system at the company's headquarters is used around the world. An IBM DB2 database supports the applications and has grown into the terabytes.

NUMBER OF USERS Close to 10,000

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### GLOBAL SMARTS

Colgate-Palmolive finesses procurement

As Colgate-Palmolive Co. expanded its global presence in the '90s, it became clear that disparate systems around the world and the inability to see inventory in real time was hampering its ability to "enter into the adventure," CIO Ed Toben says. That's when the company opted for standardizing on SAP's core ERP suite from distribution to manufacturing to finance to human resources. "We went from many applications-quite frankly we couldn't count them all-into a core SAP R/3 platform in five deployments around the world," Toben says.

The strategy worked. About 70% of Colgate-Palmolive's \$1.32 billion net income on more than \$10.6 billion in annual revenue last year came from sales outside the United States. With so much business being done outside U.S. borders, the company is taking greater advantage of the Advanced Planning and Optimization module, a component of mySAP's supply-chain software that includes demand and production planning. The module will help Colgate-Palmolive move to regional-procurement systems for the direct materials it uses to manufacture products from toothpaste to pet food and for indirect products used throughout the company, such as computers and paper. Colgate began installing the module in 1998, even before it completed the first phase of its worldwide R/3 rollout that now extends to 15,000 users.

As Colgate has pushed its global R/3 model forward, it has made sure to define and standardize core tasks of more than 100 business processes. "A huge advantage is that, in time, the process matures and improves," says Toben, and newer deployments can leverage the lessons the company learned from earlier ones.

On Colgate's plate now is upgrading to SAP's NetWeaver integration technology. SAP modules beyond the core R/3 functions, such as the business-warehouse, supply-chain, and CRM systems, aren't fully integrated with the traditional R/3 ERP functions, Toben says, so using NetWeaver "to try to have a more seamless process of 'weaving' all that together makes sense to us." -Laurie Sullivan

15,000 Number of users in the worldwide R/3 rollout

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### INNOVATION ENGINE

Dow Corning invests in change

Dow Corning Corp.'s enterprise-resource-planning system, now 9 years old, supports the company's vital supply-chain, human-resources, and financials processes and still serves as the foundation for innovative new business processes. "Any of our general business managers will tell you that SAP is a pivotal part of Dow Corning today," says Abbe Mulders, executive VP and CIO of the \$3.4 billion-a-year chemicals company.

Last year the ERP software was central in two major projects to let customers place orders on the Web. Mulders and her team first built an online site to sell the Xiameter brands, which is a collection of products sold in bulk, including silicone fluids and rubbers. "Because we had SAP, we were able to put up the Web site and launch order-entry capability in less than seven months," Mulders says.

The IT team then re-created the model for its Dow Corning brands, a more complex group of products that meet specific needs of customers ranging from small specialty shops to billion-dollar corporations. "To build a Web site and order capability that bridges across that vast span of a customer base was quite a feat. SAP was the backbone that allowed us to do that," Mulders says.

The 300-person IT team focuses most of its ERP-related time and dollars on new development, not maintenance. "We support that innovation and changing business needs with 60% to 65% of our resources toward new projects," Mulders says.

The company began implementing the ERP software in 1996. Two years and about \$100 million later, it finished the bulk of the implementation. The following year, Dow Corning added SAP's human-resources-management software. Since then, it has upgraded the system-a single instance housed in Dow Corning's Midland, Mich., headquarters-about five times. The customer database is "in the terabytes" now, Mulders says, and at peak times some 1,500 users simultaneously access the various applications from around the world. -Beth Bachelder

\$100 million Cost of implementing SAP's ERP software

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## MODERN WORKFORCE

### Capital One puts ERP at core of work

Just five years ago at Capital One Financial Corp., it took 10 human-resources specialists to sign off on one change-of-address form. With thousands of employees worldwide, that's a lot of paper-pushing. Today, address changes are done via a self-service application that has freed HR to devote time to strategic staffing, program planning, and change management.

This example illustrates a big change that has taken place at the \$1.5 billion-a-year financial-services company since it began rolling out PeopleSoft applications. "It's a cultural change that has freed people to not deal with minutiae but to deal with business value," says **Gregor Bailer**, executive VP and CIO. "It really has been transformative." Bailer envisions more automation ahead, with financials following in the footsteps of HR's "lean-process" design to deal with the mountain of data requests the financials team receives and processes within the group.

The PeopleSoft ERP system, which serves as Capital One's backbone for financials, HR, asset-management, and supply-chain processes, supports about 18,000 users, including Capital One's 15,000 associates and some business partners. The apps are accessible via a Web portal based on BEA Systems Inc.'s technology.

Capital One is exploring the possibility of partnering with ERP application service providers, now that the hard work of correcting data and linking processes is done. Running the applications may be more of a commodity job at this point, but the applications themselves serve as a pillar for the company's future-of-work initiative. Bailer describes this as "a very

mobile, interactive, collaborative environment" designed to support the requirements of the company's biggest asset, its knowledge workers. It's characterized not only by extensive Wi-Fi access, VoIP-enabled laptops, instant messaging, and BlackBerrys, but also by workflows that, for the most part, come to users electronically. Says Bailar, "Everyone's daily life is kind of drawn back to this suite of apps." -Jennifer Zaino

18,000 Number of users ERP system supports

For more on ERP, see the following online:

- Forrester Research's analysis of the latest ERP trends: [informationweek.com/1047/hammerman.htm](http://informationweek.com/1047/hammerman.htm)

- Find out what your peers' ERP deployment plans are in exclusive research: [informationweek.com/1047/charts.htm](http://informationweek.com/1047/charts.htm)

- ERP sites you should know about: [informationweek.com/1047/sites.htm](http://informationweek.com/1047/sites.htm)  
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