By March 1997, almost 2 years after the launch of Advantage 2000, Owens Corning was well on its way toward meeting its goal of implementing common, simple, global processes. It would also be one of the first U.S.-based companies to have SAP R/3 globally installed. In fact, Advantage 2000 had brought the company some bottom-line gains ahead of schedule:

A key benefit of SAP is the integration of our businesses into a common global system. This increases our purchasing leverage, and we expect to save more than $17 million over the next 3 years. SAP also gives us a powerful tool to analyze our spending. We expect to reduce material inventories by 50 percent by the year 2000.

—Chief Procurement Officer, Global Sourcing

The financial benefits already are appearing, and I believe they will exceed our expectations. With these systems we expect to perform our monthly closings in just 2 days by next year and in a day by the year 2000. SAP alone will give our business a full percentage point gain in productivity.

—Chief Financial Officer

The Advantage 2000 project had also played an important role in the company’s 1996 launch of System Thinking™, a growth strategy that shifts the market focus from individual products to system-driven solutions. This strategy leverages the company’s brand and distribution strengths by offering whole-project solutions to consumers and industrial customers. For example, a roofing system solution not only fends off outside elements, but also lets moisture out from the inside and comes with a warranty. This solution requires not just shingles, but a full system solution of underlayment and ventilation materials as well as shingles. In the future, even Owens Corning’s small building-materials customers could have one-stop shopping: With a single phone call, they could order all the construction materials they needed—not just roofing materials, but eventually exterior siding, insulation, doors, windows, and pipes as well.

According to CEO Hiner:

The System Thinking concept calls for an integrated focus, a common resolve, a new way of doing business, and a sense of team that is always at the heart of success. It is a mandate for the way we think. It spells out how we approach our markets. It is the path of growth, and no one else in our industry can lay claim to this position.

—Glen Hiner, CEO

Advantage 2000 had also enabled the company to move toward a more process-oriented structure. Process executive roles for Finance and Sourcing were held by the CFO and chief procurement officer. In early 1997, a new process-executive position for customer fulfillment had been filled with a former business unit president. This appointment sent a clear signal that the process executives were on equal footing with the business unit presidents under a matrixed, process-oriented structure.

The key to our new process organization is the ability of Advantage 2000 systems to deliver data. With the data it provides across our businesses, the opportunities for process improvement are tremendous. Our customer fulfillment process, which spans all of our business units and business regions, will deliver more than $30 million in cost savings over the next 2 years through gains in productivity in each part of our process.

—Process Executive, Customer Fulfillment

Yet Hiner’s management team knew that when they took the industry lead with a project as large as Advantage 2000, they would make some mistakes. There was no defined path for the

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1Founded in 1972, SAP AG is based in Walldorf, Germany. R/3 is SAP’s enterprise-level software solution for a client/server platform that includes modules for Accounting/Finance, Materials Management, Manufacturing/Operations, Sales and Distribution, and Human Resources processes.
organization to follow in pursuit of its vision of common, simple, global processes. But that’s what industry leadership is all about: pushing forward with what you believe to be the best path and not being afraid to make a few mistakes along the way.

The Owens Corning Turnaround

Owens Corning’s history began in 1935, when it was formed as a joint venture of Corning Glass and Owens-Illinois Glass to exploit a new technology: glass fiberization. By the mid-1990s, it was a world leader in building material systems and a leading producer of advanced composites and glass-fiber insulation. Its 1995 sales of $3.6 billion were primarily from five businesses that produced and marketed more than 25,000 separate products, including glass fiber and foam insulation; roofing materials; doors, windows, and outdoor vinyl siding; large industrial pipes made of reinforced glass; and glass-fibers and resins for synthetic yarns and composite products. Headquartered in downtown Toledo, Ohio, in early 1996 it had 11 business units, 17,000 employees in 30 countries, a 45-percent market share in the composites materials market, and the leading market position in glass-fiber insulation.

However, the company was heavily in debt when Glen H. Hiner took over as CEO of Owens-Corning Fiberglas in January 1992, after a 35-year career with General Electric Company. Its successful defense against a takeover bid in the mid-1980s had required major cash and stock payouts to shareholders, and it was faced with a slew of litigation related to an insulation product that contained asbestos, a product it manufactured for 14 years from 1958 to 1972. During the next 3 years, Hiner infused his management team with outside talent, including a strategic planner, a new CFO from Honeywell, a new vice president of procurement, and two other new vice presidents he had worked with at General Electric (Research & Development, and Human Resources).

Under its new management team, Owens Corning began to make its customers its first priority and renewed its focus on R&D. Noncore businesses were sold, and new plants were built in Europe, Latin America, and Asia. In mid-1996, the company’s New York Stock Exchange ticker symbol was changed from OCF to OWC to reflect its name change from Owens-Corning Fiberglas to Owens Corning. By July 1996, its earnings per share had more than quadrupled and its first dividend in a decade had been declared. Its trademarked pink color and Pink Panther logo had begun to be leveraged in the new System Thinking™ campaign.

Vision 2000

By early 1994, CEO Hiner had established ambitious financial, business, and workplace goals for the year 2000, driven by three core values: customer satisfaction, individual dignity, and shareholder value (see Exhibit 1). To achieve these outcomes, the company would have to change the way it did business. The intent was to “commoditize” what did not deliver value to the customer. This would allow the company to focus on the things that did make a difference to its customers and to make its aggressive growth goals a reality.

Hiner’s Vision 2000 also included a new way of working, as summarized in Exhibit 2. These eight qualities drove his design for a new world headquarters building that became a visible symbol for the abandonment of an old hierarchical culture for the new, more entrepreneurial way of working. Completed in fall 1996, the new 3-story building replaced the 28-story tower in downtown Toledo, a few blocks away from the new site on the city’s riverfront. The new headquarters is of modular design and has walls of glass with views of the Maumee River. Teamwork is supported by open workspace

EXHIBIT 1

Year 2000 Goals

| Sales: | $5 billion in sales |
| Globalization: | 40% sales outside the U.S. |
| Earnings per share: | 2x sales growth |
| Workforce: | Diverse |
| Productivity: | 6% improvement each year |
| Workplace: | Preferred place of employment |

EXHIBIT 2

Guiding Principles

Three Core Values:

Customer Satisfaction
• Worldwide product availability, pricing, delivery commitments and accurate order status at anytime

Individual Dignity . . . for everyone
• Global, diverse, world-class work environment with real-time information at the fingertips of anyone in the company who needs it anywhere

Shareholder Value . . . improve productivity
• Improve pre-tax earnings by more than 1% of sales

Workplace Vision:
global team-oriented
mobile learning-based
paper-free customer-focused
integrated technology-enabled
"pods," an abundance of formal meeting rooms, and lots of informal gathering places.

We want to leverage the breadth and depth of the organization by engaging as many people as possible in problem-solving. Our focus is on decision making closer to the customer and a culture that is more diverse and entrepreneurial.

—Process Executive, Customer Fulfillment

As a first step toward achieving Vision 2000, three business-process reengineering (BPR) projects were initiated by Hiner in early 1994: reengineering of the logistics and customer service processes and consolidating the finance function. Deloitte & Touche Consulting Group (CG) was engaged to work with these BPR teams. It did not take long for the teams to conclude that the company’s existing information systems would not be able to support the envisioned new processes. Information technology would therefore need to play a critical role in this companywide transformation.

New Role for the Information Systems Organization

Information systems at Owens Corning (OC) had been custom-developed in the past in order to support separate businesses and single functions. Computer interfaces were written to move data across separate functional systems and to consolidate business unit data for corporate information systems. In some cases, the old computer systems could not talk to each other, so inventory or production numbers had to be manually reentered. It was often impossible for a salesperson to know the availability of a product or to research an invoice problem for a major account. By 1994, the company had a complex, incompatible, and highly redundant set of more than 200 legacy systems. Due to different data definitions and years of maintenance, some of these systems now also had reliability problems.

A string of business managers had been at the helm of the information systems (IS) organization since the mid-1980s; a career manufacturing executive had most recently been the IS head. When the reduction of overall IS costs became a business priority in 1993, all IS units that had been reporting to business managers throughout North America were recentrized. The IS heads and their systems development teams were relocated to Toledo and began reporting to corporate IS. At the time of the reengineering projects, about 75 percent of the IS budget was directed at legacy systems enhancement and support. New development was done only on a limited basis.

In May 1994 Michael Radcliff was brought on board as the company's chief information officer. Radcliff and OC’s chief financial officer had been executives at Honeywell at the same time. Radcliff’s selection signaled top management’s decision to hire a career IS executive with a significant track record who could also work well with the top management team. He arrived with a clear mandate: to help move the company into the next century by strategically aligning the IS organization to the ambitious vision for year 2000 and to significantly cut IS operational costs worldwide.

Prior to Radcliff’s coming on board, top management had assumed that the newly centralized IS group would build systems to support the new processes being designed by the BPR teams. In the past the IS organization had primarily been an order-taker, rather than a key participant in exploring alternative systems solutions to meet business needs. There was no significant IS management involvement on the BPR projects.

By June 1994, Radcliff had reoriented the logistics and customer service reengineering teams to focus on global, enterprise-wide BPR and common processes that could be supported with integrated systems. A global supply-chain view of the enterprise (see Exhibit 3.) was developed with the Deloitte & Touche CG consultant team as part of the enterprise process modeling over that summer.

After there was a buy-in to an enterprise-wide integrated systems solution, the organization sought to identify an off-the-shelf enterprise resource planning (ERP) system that could simplify the support of common, global business processes and enable OC managers to do the following:

- **access worldwide information in real time** (for inventory, production, pricing, and distribution information)
- **customize responses to meet customer needs** (for pricing, production and delivery schedules, and purchasing forecasts)
- **make fully informed decisions**
- **communicate paper-free** (internal and external in-person communications and business transactions)

Radcliff also asked for and received an early management buy-in to an open systems client/server solution. This would mean migrating from an older mainframe architecture to a UNIX-based platform and a centralized relational database. Terminals connected to mainframes would be replaced with standard desktop technologies.

Making fact-based decisions in real time is the new playing field. But you have to take care to avoid multiple images of an SAP or Oracle database or you may not get this benefit and you won’t have a standard template to bring in an acquisition.

—Mike Radcliff, CIO

In parallel with the selection for an ERP system, an outsourcing vendor for Owens Corning’s legacy systems was also sought. Outsourcing would enable the company to move from fixed cost to variable cost funding for mainframe data center operations and legacy system maintenance until the systems were replaced. An estimated $30 million in legacy system costs would be redirected toward the funding of the ERP project.
In late fall 1994, the BPR teams were brought into a lab for a hands-on investigation of SAP R/3. The feasibility of an enterprise process model and global systems solution for Owens Corning was validated. SAP’s R/3 client/server enterprise system was chosen as the foundation package, and a contract was signed in December. The contract with SAP represented an enterprisewide commitment to a global initiative that would involve the redesign of most of the company’s supply-chain processes and the replacement of virtually all of its major systems. It also meant a large number of business users would need to be trained on Windows and personal productivity tools, including many factory floor workers who had never used computers before.

For the first time, the IS organization would be partnering with business management on a project that would radically transform the business. The new IS role was not to be an order-taker, but to “lead the parade” by managing the project teams responsible for enterprisewide implementation of common, simple, global business process redesign and systems integration. A key challenge for the IS organization was to transform itself to be in “planetary alignment” with the business transformation.

The company has said that we’ll all use the same processes. Information systems is leading the parade here because we have told the businesses that “they will” have common processes. This is a macro systems change that takes the right mix of consultants, IS, and business folks. After this implementation, the process owners will have the tool they need to drive it to best in the business.

—VP of Global Sourcing and Logistics

In January 1995, more than 200 legacy systems were outsourced to Hewlett-Packard for operations and support. The contract included the selling of data center assets to HP and the transfer of over 50 IS personnel who remained in the Toledo area. Outsourcing the legacy systems sent a clear signal to the whole company that the old systems were “ships to be burned” as the new systems came online. There was no turning back.

The fencing off of legacy system support via an outsourcing contract was also considered critical for another reason. It allowed IS managers to focus on acquiring the new skill sets that were needed for the ERP initiative—coined Advantage 2000.

**The SAP Implementation Plan**

A senior executive steering committee for the Advantage 2000 project was formed by the end of 1994. The members of the steering committee included the CFO, three business unit heads, a VP of corporate human resources, and two other functional VPs. The makeup of the committee clearly reflected the top-down leadership support that would be needed for a multiyear initiative with an estimated $100 million price tag.

By early 1995, a 100-week implementation plan had been agreed on for reengineering the company’s global business processes and replacing about 200 of its legacy systems with SAP’s client/server system. The 100-week schedule also helped both IS and business managers have an end in sight. However, OC’s top managers also believed that no other company was trying to do an implementation of this scope so fast.

Advantage 2000 is a bold move for Owens Corning. We’re replacing 200 legacy systems across the company with a handful of systems using SAP as the backbone.

—Chief Financial Officer
An aggressive timetable was a critical decision. The intent was to minimize the likelihood that a key senior business executive would “jump ship” or cease to support the project goals before it was completed. Top management was sure that the pain would be considerable, but the pain to achieve integration would be the same whether an aggressive schedule was followed or not. Full support and leadership at the top executive level was the only way a project of this magnitude could succeed. Some thought that the longer a project dragged on, the greater the risk that midlevel managers would design ways to protect the status quo. Weekly goals of 1 percent progress were identified and reported on each week to the project steering committee.

We decided to learn not by studying it and then training on it, but by doing it.

—Mike Radcliff, CIO

The longer you take, the harder it is: managers change and the business requirements change. We have been very careful not to delay unless it was absolutely necessary. In the old Owens Corning we would have changed this schedule 50 times for all different reasons. Today we plow through.

—Global Development Leader, Sales Advantage

The 2-year schedule for a global implementation also meant that “good enough” process reengineering would be the initial focus. Achieving an integrated process solution was the initial implementation outcome, not achieving best-in-class processes. Multiple project teams would work in parallel to identify and gain buy-in to simple, common, global process solutions across its business units. Variations would be driven by customer and product differences, not business unit differences. A perfection mentality would not work under this plan—initially there would be no bells and whistles. Instead, successive waves of process-driven change would be directed at achieving world-class outcomes by the year 2000.

We told the division presidents we’re going to piss off a lot of people, but it is more important that systems work for the whole company than to have all the bells and whistles everyone wants.

—Mike Radcliff, CIO

The development process basically had four steps. First the business team members would design the global process. Then the business and IS team members would look at SAP, identify the gaps, and work through them. A prototype was built, and then the system configuration was finalized. Multiple SAP releases were planned over the 100-week period. The release concept entailed “shrink wrapping” several products—new processes and new systems—into a single release. This avoided the problem of business units having to contend with multiple delivery dates by multiple project teams. The number of releases was intentionally small. At a given point in time, then, the SAP global teams would be engaged in different project phases for a given release.

The release plan in effect in early 1996 is shown in Exhibit 4. Release 1 targeted a single corporate function (finance), which was one of the original reengineering projects and had computer-sawy leaders. Release 2 included a full set of manufacturing and distribution modules using version 2.2 of SAP R/3 for a major business unit outside the United States (Building Materials Europe), as well as several fabrication plants in North America. Release 3 implemented a standard client/server infrastructure in about 100 North American locations. It entailed installing wide area networks, local area networks, and about 5,000 new desktops (hardware and software) that would be able to access the centralized Oracle database in Toledo. Release 4 would begin to exploit the multinational and multilingual capabilities of a new R/3 version (3.0) that would be implemented over several waves. By 1997, the scope had grown to more than 140 locations and more than 10,000 end users.

The 4-release plan was also designed to take advantage of organizational learning from earlier releases. Release 1 would require learning the package and development tools as well as a new systems integration methodology by the project teams. It also needed to be an “early win.” Release 2 would be the pilot for implementing a full global supply-chain set of modules within a single business unit and would serve as a pilot for change management and end-user training. Release 4 would have multiple waves so that mistakes made in the first business unit implementation could be corrected before the next wave. In the literature this became known as a “slow burn” type of a “big bang strategy.”

EXHIBIT 4
100-Week 4-Release Plan as of March 1996

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2Based on a quote reported in the June 19, 1995, issue of Forbes.

3For example, see Christopher Koch, “Flipping the Switch,” CIO, June 15, 1996, pp. 43–66.
At the time of the formal Advantage 2000 launch in April 1995, Radcliff did not have an IS work force with the capabilities needed to manage this megaproject, let alone a work force skilled in client/server technologies and global IS-business partnering. To be successful, the IS organization would also have to take the lead in learning to work in new ways.

Creating a High-Performance IS Organization

Radcliff knew when he arrived in Toledo that he would need to transform the IS organization from a maintenance and support mind-set to a high-performance mind-set. But he did not yet know how to design a high-performing IS organization or exactly what it would take to get there. His ideas began to crystallize as he became familiar with Hiner’s vision for the new world headquarters and worked with that planning group. At a 2-day retreat with his IS management team a few months after his arrival, Radcliff shared his overall vision for a high-performance, project-based IS organization focused on rapid systems delivery. Moving to an integrated, cross-functional systems environment was a paradigm shift for this IS organization. So were the “stretch” project goals and highly visible milestones of Advantage 2000.

One of the outcomes of the IS team’s discussions about what high performance really meant was a set of six values (see Exhibit 5). The first three values emphasized work changes critical to the 100-week schedule: invention, fast tracking, partnership. The other three values were slogans that characterized a team-based project environment: IS employees in the new IS organization would have to be encouraged to challenge the status quo, initiate bold changes, and learn, but to also work fast and be a team player. The “attitude wins” value was intended to help set up an environment in which an individual was free to fail.

We needed to create an environment for the new playing field, but this was a big change. Our strategy was to be an easy, friendly, desirable company to do business with, and we needed the best, happiest, empowered people to do this. But empowering people to do their jobs—so that they don’t have to ask permission to make good decisions—had a much broader range of personal reactions than we thought. Some people gravitated to it and jumped across to lead in the new way right away. Others went through a “feeling bad” stage, then confusion until they found a ladder or a rope that helped them figure it out. Then there’s a “not so bad” stage before the final stage in which you can see some advantages from the change.

—Mike Radcliff, CIO

Deloitte & Touche CG (D&T) was the consulting company engaged by OC’s top management prior to Radcliff’s arrival due to their expertise in organization design, BPR, and change management. In consultation with D&T, the new IS organization was graphically designed as three primary structures, linked to each other and to the business units (see Exhibit 6). First, Global Development Teams of IS employees and business representatives were responsible for delivering the four releases over the 100-week project. Second, IS Consultants would serve as account managers for each business unit (or region). They would not only ensure ongoing IS service levels (by the out-sourcing vendor) during the transition period, but would also help prepare the business units for SAP deployment. Third, IS Capability teams would be established to diffuse new methods, build new skill sets, and integrate initiatives across the IS organization.

EXHIBIT 5
Six Values for the IS Organization

<table>
<thead>
<tr>
<th>Invention</th>
<th>Invent the future; continuously challenge the status quo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Tracking</td>
<td>Performance: start now, deliver soon, learn quick</td>
</tr>
<tr>
<td>Partnership</td>
<td>Collaborate for results; harness diversity</td>
</tr>
<tr>
<td>Everything Is a Project</td>
<td>Achieve your goals: Aim high, set directions, plan milestones</td>
</tr>
<tr>
<td>We All Contribute</td>
<td>World-class organizations are built by world-class people; competitive advantage from personal growth</td>
</tr>
<tr>
<td>Attitude Wins</td>
<td>Integrity, pride, and enthusiasm count</td>
</tr>
</tbody>
</table>
By early 1995, some of the Advantage 2000 project teams started to be formed and people began to be identified for the IS and business roles on these teams. Once the Advantage 2000 project was launched, an average of 50 to 75 consultants (including consultants from SAP AG) worked side by side with OC’s IS managers as IS Capability leaders, global development subteam leaders, and technology trainers as well as in other development and implementation roles. Full-time D&T consultants were relied on for their systems integration and project management expertise.

Two “IS transformation” workshops were held in order to communicate to the entire IS community the new high-performance environment (HPE) objectives. The June 1995 workshop focused on the vision and values of IS, and the October 1995 workshop focused on how the IS organization would be organized to do it. How to juggle three balls at once was a skill taught to all IS employees as a metaphor for learning how to manage a complex megaproject, as well as learning how to help each other.

Juggling is a great metaphor for what we are doing, which is getting everybody involved, mastering their competencies, and learning by doing. We all have a responsibility to ourselves for individual transformation, but we also have a collective responsibility to help everyone on the team make the transformation as well. We are not done until everybody can juggle.

—Mike Radcliff, CIO

We needed to move people from a comfort zone to an awkward zone, but not get people in a fear zone where they’d be paralyzed. You can’t learn to juggle three balls at once. You have to learn to juggle one, learn to juggle two and then learn to juggle three. We also made it fun; it broke up the day.

—Bob Heinaman, IS Director

During the fall of 1995, the new HPE design began to come together for those in the new IS leadership positions. At its peak, a total of about 250 internal employees were assigned full-time to the Advantage 2000 project, including approximately 120 IS, 115 business, and 12 full-time human resources personnel. Having about half of the team members come from the business side meant that the focus was on achieving the business outcomes.

The human resources employees included 10 to 12 change management, organization design, and training employees who were dedicated to Advantage 2000 from the outset of the project. HR staff worked closely with the BPR teams, doing a lot of benchmarking. They also worked alongside the Deloitte & Touche CG/ICS experts to develop and deliver training to the project teams on process simplification. The HR unit had a contractual arrangement with DDS, one of SAP AG’s partners, for the development of end-user training materials, including language translations (e.g., French). Change management was critical for the project to succeed, and the HR component of the Advantage 2000 project was viewed as an integral piece.

A juggling CIO Mike Radcliff was featured on Computerworld’s cover for their June 1996 “The 100 Best Places to Work” issue.
The HR staff also helped design two financial incentive plans to help retain employees critical to the project. The first incentive plan took advantage of a preexisting incentive structure at OC: a year-end bonus. OC employees already a part of this plan were eligible for a bonus of 15 to 40 percent of one year’s salary; employees not on this plan were eligible for a bonus of up to 15 percent. The second incentive plan was unique to the Advantage 2000 project: a project completion bonus in the form of stock options at 20 percent of the employee’s annual salary (or higher). The plans were put in place at the time of the Advantage 2000 launch.

Finding the right mix of consultants and internal employees was an ongoing challenge. Top management knew they needed external expertise for this scope and type of organizational change. However, if the external consultants were relied on to lead project teams, then project management skills and SAP knowledge might not be transferred to OC’s workforce as quickly. By early 1996, each D&T consultant was paired with two OC managers—one with a business focus, one with a technology focus—as part of a plan to transition out the consultants. By the fall of 1996, all full-time consultants had been transferred out of the IS organization.

We were clear up front that we were hiring expertise for knowledge transfer. Determine what you want the consultants to do and have that as an agreement in the consultant contract. Don’t hand the project over to an outside integrator.

—David Johns, Director of Global Development

More detailed descriptions of the groups and roles represented by the three arrows in Exhibit 6 are provided in the following sections.

**Global Development Teams**

A Global Development Team of IS and business representatives was created for each of the global processes in the revised business process model (see Exhibit 7). The primary objective of each global team was to develop and deliver process and systems solutions on time. Five teams were given responsibility for the supply-chain processes (product development, sourcing, manufacturing, sales, and customer service). Each global development team also had subteams. For example, the Sales Advantage Team had three subteams: Field Sales Automation, Pricing, and Demand Forecasting. Two additional teams were responsible for enterprise support.

A third enterprise support team (Workplace Technology) was initially charged with selecting standard desktop tools and rolling them out to every link in the value chain. However, after release 2 it was decided that these tasks could be better achieved if these team members were integrated into the other Global Development Teams. Except for a small subset of team members who were responsible for the technology for the new headquarters building scheduled to open in fall 1996, the Workplace Technology team was disbanded and its members were reassigned.
A standard report format was used to keep the Steering Committee members informed. Three “vital signs” were reported on by each project team on a weekly basis: scope, schedule, and budget. For each vital sign, there was a color code:

- **Red**: External intervention required (“in trouble”)
- **Yellow**: Behind, but recoverable (“caution”)
- **Green**: On track (a “go”)

For any vital sign not coded green, a plan “to get to green” was part of the report.

Each team had a **Global Development Leader** (GDL) who was responsible for project planning and making sure the team was “on course” in terms of both schedule and budget. Each GDL was a full-time OC employee, although some consultants were assigned to be leaders of subteams. Initially, some GDLs had responsibility for more than one project team, but as the project teams became established and the project work was launched, each project team had its own GDL.

Most of the GDLs had previously been systems development managers reporting to business unit heads a few years earlier. This meant that the typical GDL had already established extensive working relationships with key members of the business community. This IS leadership experience came to be recognized as a major work force asset for the Advantage 2000 project.

All GDLs have experience in the business units, many in multiple businesses. That means they are credible on the business side and have a huge informal network.

—Global Development Leader, Sales Advantage

The only external IS hire for a GDL position was David Johns who had worked with CIO Radcliff at Honeywell. Johns originally headed up both the Finance and Sourcing Advantage project teams when he arrived in fall 1994, and then he became the GDL for Finance alone. But in July 1995, it became clear that integration across the supply chain project teams needed to be focused on by someone on a weekly and daily basis, and Johns moved into the new Director of Global Development position.

The integration of SAP is one of its biggest benefits, but also the most difficult part of it. Everything has touchpoints. Each team wants to focus on their own project, but complete integration is needed across the development teams. A director position is the best approach to fit a very aggressive timeframe. This was a big lesson learned.

—David Johns, Director of Global Development

Multiday, intensive workshops with GDLs and other IS managers were held in order to plan a new release. When major issues arose among business executives, Johns and Radcliff helped provide “air cover” for the GDLs and their team members so that they could stay focused on the release deadlines.

Success in a GDL position required a mixture of solid technology, business, and leadership experience. They needed to be comfortable with learning new technologies, as well as leading a cross-functional team with business managers and IS professionals. GDLs also needed excellent interpersonal skills as they sometimes had to make some unpopular decisions. They also had to get comfortable with and trust the business leaders on their teams, as the success of the project relied heavily on the process knowledge and negotiation skills of these team members.

GDLs also needed to be able to help create a work environment based on the new IS organization values in which it was all right to take risks and make some mistakes. The aggressive schedule often meant that they themselves had to believe in the Advantage 2000 project goals, even though they might not yet know how they would achieve them.

**Business Roles on the Global Development Teams**

A co-leadership role with the GDL was played by Business Process Leaders (BPLs) who had primary responsibility for business process reengineering. BPLs were senior managers or other high achievers from a function or business unit who were typically assigned to an Advantage 2000 project team full-time.3 They were the primary business interface for their team during the life of the project. Having a high-level business manager assigned full-time to an IS project was new at OC, so the BPL role was a highly visible sign that Advantage 2000 was a strategic business initiative.

For example, the Manufacturing Advantage team had four BPLs who were responsible for business process innovation across four major business units (Insulation-North America, Composites, Roofing & Asphalt, Building Materials), two smaller business units (Windows, Foam), and the VP of engineering. One BPL was assigned to each of the three global manufacturing processes (product definition, manufacturing planning and execution, plant maintenance), and the fourth BPL was a “floater.”

All business team members were physically located (“co-located”) with the IS team members at the Toledo headquarters. For example, all four of the manufacturing BPLs had relocated to Toledo in order to take this Advantage 2000 assignment. Team members saw each other daily, and OC’s top management team shared the same building.

The BPLs were responsible for taking global business process redesign to the point of buy-in from the process owners in each affected business unit and corporate function. The business process owners were typically at the VP level within a function or business unit; in a few cases the BPL on a project team was also

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3Some compromise arrangements were made for those from Europe: not all were full-time.
a process owner. In the past, business units did not regularly confer with each other; they were “stovepiped.” The BPL’s job thus entailed getting buy-in to common processes across constituencies that had not been required to work together before. The BPL was responsible for ensuring that all process owners endorsed the new common, global processes and enterprise-wide systems products that the project team was preparing to configure and deliver. Because business process redesign was required for every release, this was a critical role.

Accepting a BPL position involved some career risks. A BPL sometimes needed to convince high-level business managers of the value of a new process design that could be significantly different from the old way of doing things. Sometimes a BPL had to persuade old bosses to accept a suboptimization of an existing business process within their own former business unit in order to optimize a given process for the good of the enterprise. A customized legacy-system solution could have offered more functionality than would be provided by an SAP module. Getting buy-in to common processes therefore often required giving up a former business allegiance or personal loyalty. BPLs needed to be open and candid communicators and persuasive negotiators.

There were also some risks on the part of the business units. A business unit may have given up one of their best and brightest to the Advantage 2000 project in order to increase the likelihood that a new global process would be closer to world class during the initial SAP implementation. Business unit heads also had to decide whether or not to “backfill” a BPL’s job in the business unit. In most cases, the business units could not afford to leave a business unit position open for the duration of the project and did replace the manager. They also had to resist pulling off one of their prized managers from the Advantage 2000 project as time went on, although the vast majority of BPLs were expected to return to a business unit assignment after the release 4 rollout. Management also had to figure out ways to keep their key business representatives informed of important business changes. Many BPLs had a high-level mentor to help them stay current; those from international sites tried to arrange in-person visits to the home unit.

In addition to the BPLs, other business personnel were full-time members on the development teams as business process experts and analysts. Managers at lower levels than the BPLs were relied on for their detailed knowledge of old business processes and their ability to learn how to script the new processes for SAP. For many of these business managers, there was also considerable personal sacrifice: Relocation to Toledo was required, and for some this meant an international move (from Europe, Latin America, or Asia). Some business personnel were transitioned back to a business or corporate unit prior to a release in order to become a resident process expert and business champion.

The IS Consultant Role

Under the prior IS organization structure, each North American business unit had its own IS head and systems development teams that serviced its needs with considerable autonomy. In recent years IS developers had often performed heroic systems maintenance efforts for them as their legacy systems became unwieldy. This relationship changed in 1993, when North American IS units were centralized into a corporate IS group as part of the company’s overall recentralization strategy.

There was a tremendous sense of loss. Business managers were asking “who is my IS guy?” They needed a senior person who was an IS spokesperson, who could help match their systems plan with the business plan.

—Mike Radcliff, CIO

Under Radcliff, the former IS unit heads continued to be the senior IS strategists for their business units. Similar to an account manager in a consultant organization, they would sit on the leadership team of their business unit and often were treated as if they continued to report to the business unit head, rather than to the new CIO. However, as the IS leadership team began to identify what management skills were needed for the Advantage 2000 projects during the initial months of planning in 1995, essentially all of these recentralized IS unit heads were tapped for global project team roles due to their business process knowledge and project management experience.

Other IS managers were therefore selected for the new account manager roles represented by the rightmost vertical arrow in Exhibit 6. These IS consultants became the business unit’s new primary point of contact and spokesperson for corporate IS. Key attributes were really understanding the business and having an interest in partnering with senior business managers; acquiring hot technology skill sets was not the key focus of this role. Two IS consultants also had larger operational roles for non-U.S. regions: one for the United Kingdom and Europe and the other for Asia (including China).

Because legacy systems operations and support in North America were outsourced to Hewlett-Packard, a primary IS consultant responsibility was to serve as the business unit’s liaison with HP to ensure satisfactory service levels. The goal was to decrease legacy spending, but to keep the old mainframe systems operational until the new systems were implemented. Managing the IS outsourcing costs became a key concern as the Advantage 2000 project costs increased. The IS Consultant helped plan the business unit’s budget for any legacy systems maintenance during the transition period. Only changes that were absolutely necessary were to be contracted for—such as changes dictated by a regulatory agency or other competitive conditions.

All IS consultants also played a key role in helping to plan for the Advantage 2000 releases. For release 3 they inventoried
existing desktop tools, helped the IS organization understand the business unit’s end-user computing needs, and oversaw the local implementation of the standard networked desktop. For release 4 they worked with business unit management to get business resources assigned to the local deployment teams. By early 1997 the relatively free-standing IS consultants were given an even stronger accountability to corporate IS by assigning them to the Sourcing & Alliances capability; the intent was to improve the management of contracts and relationships with legacy system and desktop support vendors.

**Developing New IS Capabilities**

The implementation of cross-functional global project teams for systems integration and IS consultants for single-point-of-contact roles for business managers are organization designs that can be found in many other organizations. However, the design and implementation of the new IS capabilities represented by the horizontal arrow in Exhibit 6 was a much bigger challenge for Radcliff’s management team. The objectives were not the problem. It was clear that new capabilities needed to be developed to ensure both speed and quality—hallmarks of a high-performance work environment. What was not clear was what kind of structure should be developed in order to provide new standard processes and methods, new supporting tools, and human resources skilled in these methods and tools. Another unknown was the range of capabilities that would be needed.

As a result, the needed IS capabilities continued to evolve over the 100-week implementation plan. For example, Exhibit 8 shows the eleven capabilities in place in March 1996. The first four were related to the systems integration life cycle—Planning & Project Management, Process Innovation, Technology Applications (development work, including SAP configuration and scripting), and Release Management. Three other capabilities were related to ongoing IT infrastructure planning and systems support: Architecture, Service Operations, and Sourcing & Alliances. The last four capabilities provide ongoing support to project teams, the IS leadership team, and sometimes the IS organization as a whole: Communications (including an intranet), Resource Development, Finance, and Administration.

Each capability had a **Capability Leader** who was accountable for the processes, methods, and tools of the capability, as well as the development of the skill sets for the people assigned to the capability. Usually reporting to each leader were one or more **Capability Experts** who concentrated on the identification and transfer of best practices for the capability. Most capabilities also had a **Capability Council** that served as the training center for the capability.

Each member of a Global Development Team was assigned to a capability, and each team had at least one representative on an Capability Council. Subteams within the councils worked on special initiatives. Initially, the capability assignments were made for each project team member based on their old job duties. Eventually, all IS assignment (job) descriptions included not only project team responsibilities, but also capability responsibilities.

Each project team member was responsible for balancing their time between global team project tasks and tasks to enhance an IS capability. However, the tie-breaker for an individual team member was clearly the project. The primary allegiance was to the project team. This was a paradigm shift for the IS employees, because in the past, an individual had considered himself or herself to be a database person or a telecommunications person first. A key capability leader role, then, was to help an individual negotiate the best balance when project team and individual capability objectives were in conflict.

When Advantage 2000 was launched, some of the capability leaders for the systems integration life cycle were Deloitte & Touche CG/ICS consultants. For example, the **Planning & Project Management Capability** had a D&T leader after the project was underway in order to leverage the consultants’ expertise in managing this type and scope of project. As the Advantage 2000 project plans progressed, more focus was placed on transferring project management skills. David Johns became the director of the five supply chain teams in late 1995. Several months later he moved into the capability leader position and formed a council of GDLs that began to meet weekly. By late summer 1996, all other capability leader positions were also held by Owens Corning staff.

The **Release Management Capability** was responsible for product deployment, which included two primary tasks: release preparation, including the “cleansing” and converting...
of data and infrastructure work; and actual deployment and coordination of post-installation support. Deploying a product release required coordination across multiple project teams, HR personnel responsible for training, and local business unit managers. For releases 1 and 2, the primary responsibility for deployment was in the hands of the GDLs and their team members assigned to this capability. For the desktop implementation in release 3, the capability Leader took the lead role because the focus was on infrastructure rather than system development. This meant that the global development team leaders could stay tightly focused on getting the release 4 products ready for on-time delivery.

Another capability closely tied to the GDLs was the **Intranet/Communications Capability**. Initially part of the Planning and Project Management Capability, it became a separate capability after it became clear that communications and information sharing would be key success factors for the Advantage 2000 project. Each global development team had at least one member assigned to the Communications Capability, which was responsible for communications across global project teams and the rest of the IS community as well as for communications between the IS organization and the rest of the company. Each capability member was responsible for providing monthly reports and sharing best practices for their project team. After the implementation of a standard desktop technology (Windows 95 platform) in release 3, the emphasis shifted from hardcopy reports to intranet communications. Progress reports from the project teams and new procedures could be posted on a single Web server, and documents could be quickly and easily shared across geographic distances.

Another capability that did not initially exist was the **Sourcing & Alliances Capability**, responsible for managing vendor relationships for the IS organization. At the start of the project, there was only one major outsourcing partner (Hewlett-Packard for legacy systems operation and support), and the management of the outsourcing relationship was dispersed across the IS consultants (described previously). This plan made sense because in the past systems had been custom developed for the business units. However, under this dispersed structure, the execution of the outsourcing contract with HP turned out to be a very bumpy ride. The legacy system costs continued to be a larger organizational expense than expected.

The Sourcing & Alliances capability set up a superstructure for coordinating contacts across the IS consultants who previously had acted on behalf of their business managers, not on behalf of the enterprise as a whole. Giving the responsibility for managing this strategic alliance to a high-level capability manager meant that the rest of the IS leadership team could stay focused on the systems integration goals. The capability Leader position was given a dual reporting arrangement—reporting not only to the CIO, but also to the VP of sourcing—in order to establish high-level accountability to the senior business managers. As business units encountered problems with service levels provided by the outsourcing vendor (e.g., help desk services) the IS consultants worked with the capability leader to identify the scope of the problem and to provide input to enterprise-level solutions.

An external hire who had previously worked with Radcliff at Honeywell was brought in to lead the Sourcing & Alliances Capability, and the scope of his responsibilities expanded as new vendor contracts were established. For example, HP was also contracted for wide area network support and help desk support for the new systems, and Vanstar was engaged to provide LAN and desktop support.

The transformation of the IS organization to a high-performance environment required a whole new structure for the IS organization as well as a whole new set of human resource practices and processes. Radcliff originally planned to rely heavily on OC’s HR department, and a corporate HR staff member was assigned to the IS organization. However, after a few months it became apparent that the IS people were receiving inadequate attention. With the blessing of the new senior vice president of HR, a **Resource Development Capability** was established within the IS organization in August 1995, and Bob Heinaman was designated the capability leader. The establishment of this capability was a clear signal to the IS work force that the new IS organization was committed to developing a high-performance work force.

Several reasons surfaced to explain why the original plan for an HR partnership did not work. Some felt that the assigned HR employee was not in a senior enough position to expeditiously implement all of the changes needed to move an entire unit from job-based work to project-based assignments and from manager-initiated to employee-initiated career development. Others pointed out that the global development leaders and some of the other capability leaders had aggressive project milestones, and their attention was supposed to be focused on project demands, not the people side. Their incentives were directed at short-term results, not long-term development of internal human resources.

Several major HR initiatives were championed by Heinaman (see Exhibit 9). For example, a new six-level broadband compensation scheme that was competency-based was initiated in the first quarter of 1996. Each project team role was assigned a competency level and an IS capability assignment. Within each level there were three sublevels to ensure that IS employees would help each other: learning, can do, and can teach. Another early initiative was the implementation of an employee-led appraisal process with 360-degree feedback: Employees solicit evaluations from up to 10 people of their
choice who are in positions below, above, and beside their own, or some other relevant sampling.

We tried to stay aligned with the resource development of OC as a whole and act as a pilot. We didn’t want to look as if we were on attack. We focused on what was IS-specific and identified individual skill sets and stretch goals for their development.

—Bob Heinaman, Resource Capability Leader

By early December 1996, after new processes and structures had been successfully implemented for the IS organization, it was decided to “turn back the keys” to HR for these initiatives. The separate IS capability was terminated, and Heinaman moved on to the People Advantage GDL assignment responsible for HR systems.

Learning from the Early SAP Releases

Release 1: Finance Consolidation

Release 1 involved implementing SAP as part of the consolidating of financial operations, including the centralization of accounts payable, expense and travel accounts, and payroll systems. The reengineering project for Finance was one of the early ones, and the process reengineering began an entire year before Radcliff’s arrival. By late 1994, these functions had pretty much been consolidated, one North American factory at a time, and operations were being run out of headquarters and out of an accounting center set up in West Virginia. The SAP R/3 system replacement was scheduled for release 1 because it would provide an SAP project experience for a corporate function that had already been heavily reengineered.

Release 1 was scheduled for October 1995 and was completed on time. This was an early, visible win for the project and bolstered confidence that the 100-week plan was on target.

You need to do everything you can to make the first cycle happen as quickly as possible. We focused on speed. The consultants brought to the plate an understanding of SAP. Having the project teams live together and work together also helped.

—Global Development Leader, Sourcing Advantage

That does not mean there were not some implementation problems. For example, a software glitch that delayed the printing of payroll checks was highlighted in an article published in *Forbes.*

Release 2: Supply Chain Processes Pilot

Release 2 was scheduled for early 1996 and involved rolling out SAP R/3 version 2.2E at eight fabrication plants in North America, five plants in the United Kingdom (Building Materials Europe), and in the corporate research and engineering function. Release 2 was viewed as critical for finding out what it took to deploy new processes and systems within a business unit release, including SAP training and change management. This would allow for

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adjustments to be made to the deployment plans before release 4, when a newer SAP version would be rolled out to all business units, including sites in Latin America and the Asia Pacific.

Building Materials Europe (BME), an organization with a total of 750 employees in the United Kingdom, served as a business unit pilot. Because BME had been developed, in large part, with acquisitions from 1994 to 1996, its management had inherited multiple systems that did not provide the information they needed to run the business. The BME president and his leadership team were all willing to risk the problems associated with being first, because it would mean a major step forward toward system integration and process improvements.

BME’s legacy systems were outsourced to HP shortly after a new IS manager came on board at the end of 1994 as the business unit’s IS head and new corporate IS manager for all of Europe. The intent was to do only “good enough reengineering” as part of the release. The six values put together by the IS leadership team in 1994 helped serve as “navigation instruments” for this IS team, which was working in a different culture with different work habits.

The values are all the more important for me since I’m not in Toledo. We have a laminated card that gives us three- to four-word sentences about what high performance means.

—IS Consultant for BME and Service Capability Leader for Europe

The release 2 deployment was driven by the global development teams, along with corporate HR. BME did not have the advantage of being able to learn from other business units in the United Kingdom or any other OC business units. In fact, most companies in Europe were implementing SAP module by module, rather than in the “big bang” approach being used at OC.

One of the biggest surprises from release 2 was that the resources needed for deployment preparation and for actual deployment had been significantly underestimated. The training programs were expanded to include not just basic PC navigation skills, but also process training. This would mean a lot more business involvement in the training. Deployments also began to be planned much further in advance, and the training was timed to be as close to actual deployment as possible. The training and deployment cost estimates for 1995 to 1997 were increased to $35 million, with a projected total project cost of $110 million.

Release 2 had also significantly increased the confidence of the project team members; the consultants were gone, and the release was successful. They also had learned a lot about each other: The business process leaders better understood the trials and tribulations faced by IS managers, and the IS people learned to appreciate how changes in business execu-

tives and business processes affected the work of the business process leaders. Co-locating the project team members had helped create a learning environment. While still housed in the glass tower in downtown Toledo, the global team members worked in four-person pods alongside the consultants and global team leaders. Some building walls were even physically removed, and the CIO and his director of the SAP project worked without walls between their key administrative assistants and their own desks. The first end-of-year bonus for the global development teams also had worked well in terms of the systems release schedule and proved to be “battery-recharging.”

Release 3: Developing a Global Infrastructure

Like many large organizations, OC had multiple e-mail systems and network standards as well as many different PC platforms and desktop software applications across its business units. The objective of release 3 was to implement a simple, common, global infrastructure solution that would enable reliable desktop access to the Toledo headquarters worldwide as well as lower global support costs. Initially about 80 geographic locations were involved, but the scope and complexity of the project grew over the life of the 100-week project due to acquisition activity and other growth initiatives. By the time of deployment, release 3 entailed installing wide area networks, local area networks, and about 5,000 standard desktop setups for more than 10,000 end users at more than 140 locations.

The responsibility for selecting the new standards and planning the infrastructure upgrades initially resided in an independent enterprise support team—a Workplace Technology team. Microsoft was selected as the vendor standard for microcomputer operating systems (Windows 95 and NT) and personal productivity software (Microsoft Office). In order to support the global implementation of a client/server application such as SAP, the network implementation included upgrading “by orders of magnitude” to a cost-effective solution capable of handling the anticipated increase in global communications traffic (via frame relay). At the time of release 3 deployment, most of the original team members had been reassigned and a core technology team oversaw the global implementation, including the new world headquarters.

Release 3 was therefore the first Advantage 2000 implementation that involved widespread technology change across the company. It also was on the critical path for release 4 because it established both the client/server infrastructure and the basic end-user computing skills required for the effective SAP R/3 deployment at OC’s largest business units. The HR members of the Advantage 2000 project partnered with an outside vendor to deliver end-user training. The IS consultants played a key role in inventoring the pre-existing desktop tools; the knowledge they gained about end-user computing in these business units was used in the selection of local deployment teams for release 4.

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7In January 1998, BME’s organizational name was changed to International Building Materials Systems.
Release 4: Global R/3 Implementation

The primary systems objective of release 4 was to get all of the business running on a common platform. SAP was to be deployed in successive waves—a mini “big bang,” one business unit at a time. In the original 100-week plan, deployment would begin in the summer of 1996. The plan was initially revised to roll out the new SAP version at BME and the three major business units (Composites, Roofing & Asphalt, Insulation North America) during the first quarter of 1997. In some time later it was determined that the company would not be able to sustain the successive 30-day deployments at these major business units, and the plan was changed to allow 60 days between waves. The deployment of a field sales automation tool would follow 4 to 6 weeks after a business unit switched over to SAP.

The holiday window at the end of December 1996 was used to upgrade the release 2 sites to version 3.0d of SAP R/3. This wave involved not only a new R/3 version, but also new configurations due to process changes as well as new functionality. December 25 was the only day the project teams were not working. The first new business unit implementation (Roofing & Asphalt) was scheduled for March 1997, with the Insulation division to follow 60 days later, followed by Composites.

We’ve become experts in system testing and very good at understanding what SAP integration means. The release deployment was changed because we had significantly increased the scope. We now have 140 locations, instead of about 80 as originally planned, because of acquisitions. The scope has also increased as we have turned over the rocks; we have increased the functionality and have additional bolt-ons. We also need time to pay attention to the lessons learned from what other business units did.

—David Johns, Director of Global Development

The delays were greeted with mixed emotions. This is an intense project, and we wanted to be done. But the people had been giving as much as they could, and they didn’t want to jeopardize the success of the project. Still, it was tough to have an installation over the holidays.

—Global Development Leader, Sourcing Advantage

Release 4 involved a champion/employee ratio of 1:7 instead of 1:10 or 1:15 in some plants. The typical-sized plant would have multiple trainers and support personnel at the local sites. This resulted in a champion/employee ratio of 1:7 instead of 1:10 or 1:15 in some plants. The typical-sized plant would have multiple champions trained for each process.

The March 1997 Roofing & Asphalt Rollout

Domenico Cecere had been corporate controller and a member of the original steering committee for Advantage 2000 during the release 1 financial accounting rollout. As president of Roofing & Asphalt, he opted to be the first major North American business unit to “go live” with release 4. Cecere told his plant managers that SAP R/3 would free them up to visit their large customers, to come up with new product ideas, and to move the business forward. All their paperwork would be done for them at headquarters beginning with the release 4 implementation.

The Roofing & Asphalt implementation involved 32 plants. Fifteen of these were shingle plants with an average of 100 workers. The 17 asphalt plants had about 13 workers per plant. Logistics for this division involved 700 to 900 trucks a day.

Process consolidation and simplification to improve profitability were the major release 4 goals for Roofing & Asphalt. The division did not have enough business leader resources to fully populate the project teams, so it was decided to have some of the Insulation division’s business leaders represent Roofing & Asphalt’s interests. The teams looked at every piece of their business in order to identify inefficiencies that had evolved over the past 20 years and to rewrite their business rules. In the past, sales transactions could be informal and inefficient, with special scenarios. The business process owners would also be more involved in and have greater accountability for the deployment.

The number of business employees that would receive training at corporate headquarters was also significantly increased. Instead of the 500 “champions” in the original plan, more than 900 people were identified and trained to become the onsite trainers and support personnel at the local sites. This resulted in a champion/employee ratio of 1:7 instead of 1:10 or 1:15 in some plants. The typical-sized plant would have multiple champions trained for each process.

I told the plants “we’re the best,” so we’ll be the first to do it. We’ll show everybody else how to do it. The project forced us...
to look at every piece of our business and find out how many
dumb practices we had. We rewrote our business rules.
—Dom Cecere, President, Roofing & Asphalt

Cecere looked forward to when he could begin each day by
pulling up a few screens to learn how well his more than 30
plants had done the day before and to check the month-to-
date totals—by plant, by product, and by customer. He could
even get the information over a cup of coffee at home, before
leaving for the office. If he had questions, he could just call his
plant manager, and they could look at the numbers together
because the managers could see everything he could see.

Several implementation risks were identified just prior to
the decision date for turning the switch. First, only about 60
percent of the workers had been certified close to the “go-live”
date. A contributing factor here was that one person might
play multiple roles in many of the asphalt plants—production
scheduler, production ordering, inventory management, stock
checking, sourcing—because of their small size. This factor
alone significantly increased the training complexity. Also, the
original training plan had not been designed to allow enough
time for a single individual to come up to speed that quickly
for multiple processes.

We only had about a 60 percent certification level. One-third
of the Roofing & Asphalt sites were flawless. Another third needed
help—they weren’t comfortable yet but were getting there.
Another third were struggling. We had to decide: Do we learn
from that and “go live,” or do we minimize the risk and then “go
live”? We got the certification level up to 70 percent and
accepted this level of risk to support the go-live date.
—Director, Human Resource Development

The switchover to the new system took place in early March
1997. Beginning that day, all order processing would be handled
at the Toledo headquarters. This meant that new trainees
would be talking with customers as they switched over to SAP.
Everyone on the project knew that changing processes and
systems at the same time increased the project risks, but going
live with the change to consolidated ordering and logistics was
rockier than hoped. CEO Hiner was quoted as saying on a front
is about a 6 or a 7 on a scale where 10 is a hurricane.”

The implementation problems were analyzed according to
five categories: system, data, people, process, and organizational.
The system problems included about 60 bugs in the
new SAP version. Some of the people problems were the function
of the size of the plants. Others were due to consolidating
the customer service function.

Customer service was changed from 32 systems to 1 at the
same time as we went live with Advantage 2000. It was a big
mistake. There was so much change and so many variables it
was very difficult to understand and fix.
—David Johns, Director of Global Development

It was a complete nightmare. Everything that could go wrong,
did. Some of our mistakes were also visible to our customers.
—Dom Cecere, President, Roofing & Asphalt

**What to Do Next**

Despite 2 years of aggressive milestones, bought-out vacations,
and well-honed SAP skill sets, it looked like the implement-
ation schedule was once again in jeopardy. The time
between the release 4 waves had already been extended from
30 to 60 days to better prepare for the next business unit
deployment. The question was whether to delay even longer
before going live with Insulation, given the rocky Roofing &
Asphalt implementation. Changing business processes at the
same time as completely replacing the systems to support them
proved to be even more difficult than anticipated.

Turning the switch for Roofing & Asphalt with only a 70-
percent certification level had been a risky move. When a fac-
tory floor worker enters a shipment into the computer, SAP
generates a general ledger entry. That is how tightly integrated
the software is: everything drives everything else.

How much time should the company spend incorporating
what they learned before implementing the next wave for the
Insulation business? Could they delay the training of the Insula-
tion plant workers, even though the training vendor was already
on site? Could the business leaders on the SAP project teams
be asked again to delay their return to the business units? What
would be the impact on morale?

Radcliff was also unsure how long he could ask his IS work
force to stay in an overdrive mode. His IS employee turnover
was still about what it had been before—only 8 percent. This was
partly because many of his workers had lived in the region all
their lives. Would another schedule delay increase the risks of los-
ing IS project team members before release 4 was completed?
Could he ask his leaders once again to not take vacations? Advan-
tage 2000 was clearly the best game in town, and not too many
had jumped ship so far, but he knew that their newly acquired
SAP skill sets would be highly valued outside of Toledo.

Another concern was the end-of-project bonus. It had
already been delayed 6 months from the original plan. Would
top management stick to the November timetable for issuing
the end-of-project bonuses if the rollout was incomplete?

Some folks have been pirated by the consulting craze; all the
best are looking here. At some point the organization will need
to just “declare victory.”
—Mike Radcliff, CIO