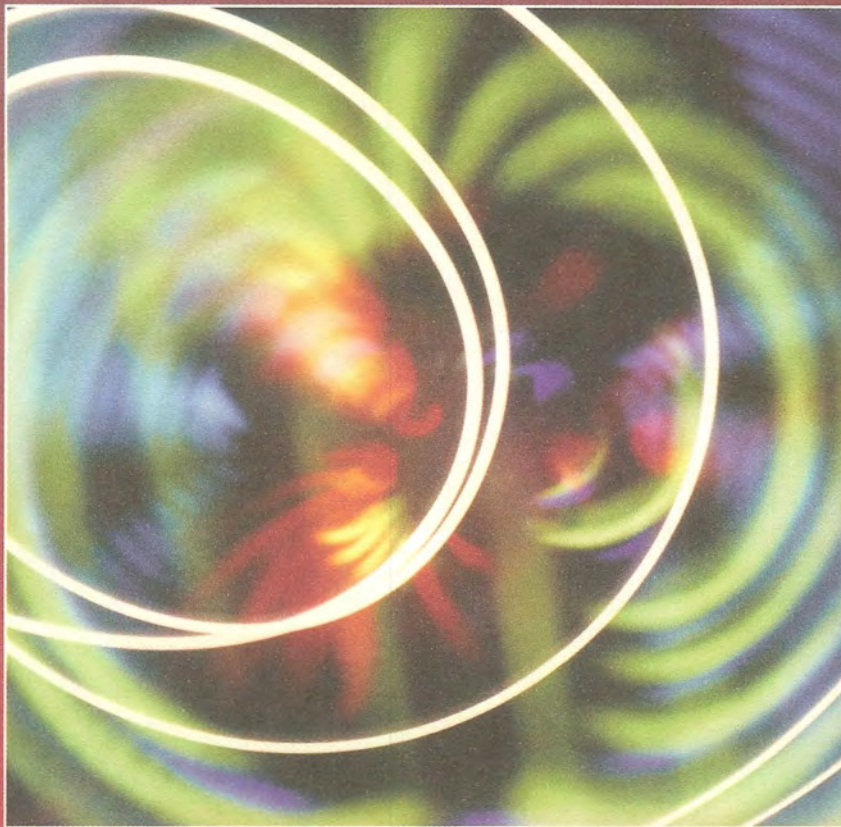


Repositioning the IT Organization to Enable Business Transformation



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Repositioning the IT Organization

To Enable Business Transformation

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For Mike Radciff —
One of the true visionaries
who shared his ideas so that
others could learn from them.
With heartfelt thanks —
Carol V. B.

Practice-Driven Research in IT Management Series™

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CHAPTER 5

REPOSITIONING IT ORGANIZATIONS FOR PROCESS INTEGRATION

Process Integration

Building sense-and-respond capabilities through global and enterprise-wide common processes that bind together organizational units

This chapter focuses on the repositioning of IT to enable business transformations in which the primary strategic thrust is process integration: business transformations aimed at building sense-and-respond capabilities through enterprise-wide processes that facilitate more intimate relationships with customers and the rapid delivery of solutions to customers' needs.

Three of our case studies were pursuing process integration thrusts: Tran-Integrate, Diverse-Synergy, and Material-System. We begin by discussing how these firms used the five IT transformation vectors presented in Chapter 3. Then we illustrate the transformation journey at Material-System in some detail in order to highlight some specific tactics, including a totally new IT organization structure, as well as some of the challenges of this type of IT repositioning. The chapter closes with a short set of executive guidelines for IT transformations to enable process integration, based on the lessons learned from these three firms.

IT Transformation Strategies

Table 5.1 summarizes the IT transformation strategies for enabling process integration that we discuss in detail below. Two of our case studies, Tran-Integrate and Diverse-Synergy, used only three of the transformation vectors—governance redesign, pacing, and lateral organization capability—to reposition their IT organizations. Neither of these firms had IT performance gaps at the time of the transformation. An IT performance gap existed at Material-System and this firm managed its transformation along all five vectors, including the infusion of new talent and the outsourcing of legacy systems.

In the following sections we describe in detail the use of all five IT transformation vectors for repositioning the IT function to enable process integration.

Vector 1: Infusion of New IT Management Talent



The existing IT management at Tran-Integrate and Diverse-Synergy possessed a good reputation and credibility because of their partnerships with their senior business executives and a track record of IT innovation success. In fact, the CIOs of both of these companies were also respected by their peers for being innovative and successful leaders. For example, the CIO at Tran-Integrate was a formal member of the top management team and had established relationships with senior business executives that had

Table 5.1: IT Transformation Strategies for Enabling Process Integration

Transformation Vectors	Tran-Integrate	Diverse-Synergy	Material-System
Infusion of new IT management talent			New CIO New senior IT executives for program management, external alliance management
Governance redesign	CIO membership in top management team	CIO's elevation to membership on the corporate executive team Matrix reporting for divisional IT heads	Recentralization of IT units prior to hiring of first "true" CIO
Pacing	Concurrent	Concurrent	Dynamic balancing
Sourcing			Outsourcing of legacy systems (operations and maintenance)
Lateral coordination capability <i>Integrator roles</i>	Divisional information officers Client liaisons	Market information officers with matrix reporting to CIO	Business process leaders Account managers Capability leaders
<i>Groups</i>	Executive council Divisional steering committees enterprise-wide	Executive council Expertise centers	Executive council IT management council Competency centers (IT capability centers)
<i>Processes</i>	IT strategic planning process	IT strategic planning process	New standard processes for business process innovation, software package releases, and other new IT capabilities
<i>Informal relationship-building</i>			Physical co-location of business process experts IT community briefings
<i>Human resource practices</i>			Redesigned human resource practices including appraisal process, short-term incentive plans

facilitated IT alignment in the past. Not unexpectedly, the infusion of new IT management talent was not part of these firms' IT transformation strategies.

In contrast, at Material-System, a "string of businesspeople" had been at the helm of the IT organization. The last of these, a career manufacturing executive, assumed the leadership of the IT function in 1993. However, as the firm's reengineering teams identified significant gaps between the systems needed for new global processes and the current IT organization's track record, new IT leadership with significant IT management expertise was sought from outside the firm to both enable the business transformation and reposition the IT organization. The new CIO held both strong general management and IT management expertise as well as the leadership skills to forge a new kind of IT organization.

In turn, as part of the IT transformation itself, the new CIO also recognized that new IT management talent needed to be brought in from the outside, not just developed from within. Two key directors were hired, both with earlier ties to the current CIO: a program manager and a manager of external alliances.

Vector 2: Governance Redesign



Material-System redesigned its IT governance structure just prior to hiring a new CIO as part of an overall corporate recentralization initiative: previously decentralized IT units were recentralized. A recentralized organization was perceived to be the best structure as the firm began to move forward with process integration. Recentralization of IT would enable a consolidated IT effort under the leadership of a corporate function with authority for enterprise-wide process integration. Earlier, the IT organization had significantly decentralized IT decision authority to the business units.

In contrast, both Tran-Integrate and Diverse-Synergy had federal governance arrangements in place that enabled the corporate IT function to provide significant oversight and coordination over enterprise-wide IT issues. Given the lack of performance gaps and high level of credibility of these IT organizations, these two firms did not recentralize previously decentralized IT units. However, at Diverse-Synergy a matrix reporting relationship was established for its new market information officers to increase responsibility for enterprise-wide initiatives.

At Diverse-Synergy, governance redesign also occurred in the form of the CIO's reporting relationship being elevated: the CIO now reported to the vice-chair of the firm, instead of the CFO. Further, the CIO was also formally included as a member of the corporate executive team.

Vector 3: Pacing



Both Tran-Integrate and Diverse-Synergy adopted a concurrent pacing strategy. Tran-Integrate and Diverse-Synergy had been quite successful with their use of IT to enable business strategies in the past. As they repositioned their IT organizations, they did not want to destroy the existing IT management competencies that had brought them success to date. A concurrent pace would enable both of these firms to keep the IT transformation in synch with the business transformations under business executive leadership in these organizations.

In contrast, the new CIO at Material-System faced deficiencies in current IT performance that needed to be quickly addressed in order for the IT function to facilitate process integration. Therefore, the CIO took some dramatic actions to rapidly transform the IT function ahead of the business itself. For example, a new emphasis on standard processes was a key element of its new competency centers, and new human resource practices were designed and implemented within the IT organization ahead of the rest of the business. This meant that at times the pace of IT transformation would be concurrent with the pace of the business transformation, whereas at other times the IT organization would be ahead—that is, a dynamic balancing pacing strategy.

Vector 4: Sourcing



The CIO at Material-System recognized early on that the existing burden of legacy applications would constrain both the transformation to a new IT role and the enablement of the process integration thrust within the business. At the same time that the organization was selecting a software package to support

its process integration goals, it was also selecting an outsourcer to operate and maintain its legacy systems. This initiative reduced total legacy systems costs and redirected the cost savings to investments in the process integration project. This outsourcing strategy also allowed Material-System to “fence off” activities that would have dragged the pace of the transformation and inhibited the IT function from focusing on the new capabilities needed for the process integration thrusts.

The other two firms, Tran-Integrate and Diverse-Synergy, did not have significantly large numbers of staff burdened with legacy system maintenance, and they did not undertake any significant sourcing decisions as part of their IT transformation strategies.

Vector 5: Lateral Coordination Capability



As illustrated in Table 5.1, all three firms architected a portfolio of coordination mechanisms to build a new lateral coordination capability across the enterprise. At Tran-Integrate and Diverse-Synergy, specific mechanisms were either introduced for the first time as part of the IT transformation effort, or were modified and combined with other mechanisms in different ways to develop a new lateral capability.

Lateral Capability at Tran-Integrate

Traditionally, Tran-Integrate had used an executive council to facilitate attention on the linkage between IT initiatives and business strategies. As part of its federal governance design, each business unit also had a divisional information officer (reporting to the business unit head) responsible for the strategic IT actions of their business unit.

However, new coordination mechanisms were also implemented at Tran-Integrate as part of the IT transformation. First, the *strategic planning process* underwent significant changes to facilitate the new thrust toward process integration. Previously, each business unit conducted its own IT planning that was subsequently consolidated into an enterprise plan. The new strategic planning process placed the corporate IT function in a more active role. The corporate IT function reviews plans for each business unit with its divisional information officer and business executives. Further, the corporate IT function identifies the top half-dozen enterprise-wide projects that will enhance process integration and develops plans for their implementation and resource requirements. The planning process therefore became more integrated and enterprise-focused in comparison to the autonomous business unit planning process of the past.

Second, Tran-Integrate formalized *divisional steering committees* within all business units. In the past, some business units had this mechanism in place, while others did not. As a result, the extent to which business executives were active in IT projects varied across the units. The goal of implementing divisional steering committees enterprise-wide was to enhance senior business executives' appreciation of the role of IT in enabling the development of common enterprise processes. Through these committees, business executives were encouraged to champion their IT projects and work with senior IT executives in generating innovative ideas for business use of IT.

Third, Tran-Integrate introduced *client liaisons* in order to achieve its goal of building customer-oriented common processes that will enable the firm to offer integrated logistics solutions. These individuals were senior managers in business units. Each of these client liaisons was assigned the responsibility for

delivering integrated services to specific clients who transacted large business volumes with Tran-Integrate. Client liaisons worked with other executives (both business and IT) from different business units to diagnose their clients' logistics needs, develop solutions, and design processes and applications to deliver those solutions. This new mechanism reflects the firm's focus on IT-enabled customer-oriented processes that will deliver integrated solutions to customers' needs.

Lateral Capability at Diverse-Synergy

Diverse-Synergy also implemented new coordination mechanisms to facilitate process integration. As described in Chapter 2, the firm reorganized its business divisions into five market centers. Therefore, one new mechanism was integrator roles for these market centers—that is, *market information officers*. These five individuals reported to their respective market center business heads as well as the corporate CIO and were responsible for the strategic IT activities in their respective market centers. The *divisional information officers* of the individual business divisions within each market center now reported to these new market information officers. The role of the new IT executives was to facilitate IT-enabled integration of customer-oriented processes across the divisions within each market center. They were also expected to work with the CIO in facilitating enterprise-wide synergy across the market centers.

While Diverse-Synergy had traditionally used an executive council, significant changes occurred to this council in light of the organizational transformation to market centers. The new *executive council* included the business heads of five market centers, the head of international operations, and the VPs of logistics, finance, manufacturing, and engineering, in addition to the CIO. It continued to be chaired by the vice-chair of the corporation. The redesigned executive council was expected to reinforce the corporate desire for process integration across the divisions and market centers.

Traditionally, the IT *strategic planning process* at Diverse-Synergy had been driven by the corporate IT function. The process involved interviews with the top 50 executives (corporate officers and heads of key business divisions) to surface the corporate priorities. Strategic IT plans were then developed to respond to these priorities. However, this process was discovered to be ineffective in surfacing specific IT projects from the corporate priorities. Therefore, a new planning process was introduced in which the CIO, the five market information officers, and key corporate IT executives identified key IT projects that would provide a link to the corporate priorities and enable the implementation of common processes across the market centers and the firm.

Finally, Diverse-Synergy implemented *expertise centers* to facilitate the infusion of technical expertise throughout the enterprise. Within corporate IT, groups of experts provided consulting support to business units on topics such as telecommunications, applications development methodologies, and relational and object databases.

Lateral Capability at Material-System

The introduction of new coordination mechanisms at Material-System was the most radical application of this vector within these three organizations: a completely new portfolio of formal and informal mechanisms was implemented. In the next section we describe in detail these mechanisms as we present Material-System's IT transformation tactics and the challenges it faced along its IT transformation journey.

The IT Transformation Journey at Material-System¹

Table 5.2 summarizes some of the pertinent background characteristics of Material-System presented in Chapter 2. The IT organization was recentralized in 1994 as part of an overall organization recentralization, and a CIO was brought in from the outside to play a new integrative IT leadership role.

Table 5.2: Process Integration at Material-System: Background

Business characteristics	Ranked as world leader in building material systems and advanced composite materials New CEO brought in for financial turnaround
Factors motivating the business transformation thrust	Enhanced customer satisfaction through superior solutions that leverage the firm's product range Sharpened value proposition of customer intimacy Growth that exploits global reach of the business
Vision for transformation	<i>Process Integration Actions</i> Common, simple, global business processes for value chain and corporate support <i>Complementary Transformation Actions</i> Corporate vision that emphasizes core values: global, mobile, paper-free, integrated, team-oriented, learning-based, customer-focused, and technology-enabled New integrative leadership role for IT

The Business Transformation Thrust

Material-System's transformation was initiated by a CEO brought in for a financial turnaround. Some of his initial actions were to infuse his top management with new talent, divest some of the firm's noncore businesses, and invest in new manufacturing plants across the globe. He established new core values and aggressive growth goals for the year 2000, and process integration became part of the vision for achieving them.

Setting the Stage for Business Transformation

In early 1994 three business process reengineering (BPR) projects were initiated: the reengineering of the logistics processes, customer service processes, and a consolidation of the finance function. A Big 6 consulting group at the time was engaged to work with these BPR teams, and it didn't take long for the teams to conclude that the company's existing IT would not be able to support the following BPR objectives:

- Accessing worldwide information in real time (for inventory, production, pricing, and distribution information)
- Customizing responses to meet customer needs (for pricing, production and delivery schedules, purchasing forecasts)

- Communicating paper-free (internal and external in-person communications and business transactions)
- Making fully informed decisions

In the past, the IT organization had primarily been an “order taker.” Initially, top management’s assumption was that IT would build the applications to support the new business processes being designed by the three separate BPR teams. The danger with this approach was that there was no integration across the reengineering teams and that the requested systems would lead to “silo” solutions rather than the common, integrated processes that the firm was seeking.

By mid-1994, a major reorientation of the reengineering efforts was initiated after the new CIO came on board: the three teams were asked to explore whether their separate process redesign efforts could be supported by common, global systems solutions. The result was a refocusing of the teams toward enterprise-level core processes that could be supported by enterprise-level systems solutions. With help from external consultants, a global process model was developed as a template for guiding the enterprise process integration.

Once there was management buy-in to the global process model, the organization sought to identify an off-the-shelf enterprise resource planning (ERP) solution that could support common business processes and real-time integrated information demands and other BPR objectives across multinational and multilingual business environments. By September 1994, the feasibility of an enterprise process model and global systems solution for Material-System was established, and a six-month planning process was begun. By December 1994, SAP’s R/3 client-server enterprise system was selected as the foundation package.² This solution meant buy-in to a new-open systems client-server architecture. The signing of this contract therefore represented a top management commitment to a global initiative that would involve the redesign of most of the company’s supply chain processes as well as replacement of virtually all of its major systems.

By early 1995, a two-year implementation schedule (100-week plan) for reengineering the company’s global business processes and implementation of the SAP R/3 was established. An aggressive schedule was viewed as a critical decision: it minimized the likelihood that a key senior 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.

Multiple SAP releases were planned over the 100-week period. The release concept entailed the “shrink wrapping” of several new processes and new system modules into a single release. This avoided the problem of business units having to contend with multiple implementation dates by multiple project teams. The number of releases was also intentionally small. Release 1 was finance modules only and would build on the original reengineering project. Release 2 would include a full set of supply chain modules for a major business unit outside the United States that needed replacement systems to accommodate recent acquisitions. Release 3 implemented a standard client-server infrastructure in about 100 North American locations, including wide area networks, local area networks, and about 5000 new desktops that would access a centralized Oracle database at headquarters. Release 4 would begin to exploit the multinational and multilingual capabilities of a new R/3 version that would be implemented

in several waves across multiple businesses and multiple continents. The four-release plan was also designed to take advantage of organizational learning from earlier releases. In particular, the Release 4 waves were designed so mistakes made in the first business unit implementation could be corrected before the next wave.

To meet the aggressive schedule goals, the plan was that “good enough” reengineering would be its initial focus. Achieving integrated processes was the initial implementation outcome, not achieving best-in-class processes. Variations to the common, simple, global processes would be driven by customer and product differences, not business unit differences. Successive waves of process-driven change would be directed at achieving world-class outcomes by the year 2000.

Motivation for IT Transformation

When the reengineering projects began in early 1994, Material-System 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. The IT organization was saddled with the burden of legacy maintenance: about 75% of the IT budget was directed at legacy systems enhancements and support rather than new development.

The IT organization’s “order-taking” mentality fit this type of IT support role for “silo” systems. However, the new IT role as enabler of the business transformation would require a whole new mindset and IT leadership roles. When the new CIO came on board, he arrived with a clear mandate: to help move the company into the next century by strategically aligning the IT organization to the ambitious vision for the year 2000. This would be the first time the IT organization would be partnering with business management on a project that would radically transform the business.

Setting the Stage for IT Transformation

In mid-1994, when the CIO arrived, he knew that he would need to transform the IT organization from a maintenance and support mindset to a high performance mindset. Although he didn’t yet know how to specifically reposition the IT organization, he did know that they would need to focus on acquiring new sets of skills, including diverse technical skills and methodologies, at the same time as they were beginning to plan for an enterprise-wide systems megaproject.

During the second half of 1994 when Material-System was selecting an ERP vendor, they were also evaluating outsourcing alternatives for legacy systems that would be replaced at the end of the ERP implementation schedule. An initial driver was to reduce total legacy systems costs by moving from fixed cost to variable cost funding; as they were generated, these cost savings could then be redirected to systems investments for the new global processes project. In January 1995, more than 200 legacy systems were outsourced to a major vendor for operations and support. The contract included the selling of data center assets and the transfer of over 50 IT personnel to the outsourcer.

The “fencing off” of legacy systems support via an outsourcing contract allowed the remaining IT staff to focus on the new IT capabilities needed for the ERP implementation initiative as well as a future IT organization heavily dependent on packaged solutions. Outsourcing the legacy systems also sent a clear signal to the whole firm that the old systems were “ships to be burned”; there would be no turning back.

The Transformed IT Function

The transformation of the IT organization to a “high performance environment” was in keeping with the thrust toward high performance for the corporation as a whole as it pursued process integration. In consultation with the same consulting firm that worked on the reengineering projects (and would be implementation partners for the ERP project), a graphic design with three primary structures was developed to direct and communicate the IT organization’s transformation (see Figure 5.1):

- **Project teams:** Multidisciplinary project teams of IT employees and full-time business representatives (and at the outset also implementation partners) responsible for business process redesign and systems integration tasks under global development leaders and for other IT service delivery.
- **Account managers (IT consultants).** IT managers with no direct reports who serve as the primary point of contact for a business entity.
- **IT capabilities: councils, roles, and processes.** IT employees (and at the outset also implementation partners) responsible for standard IT processes, IT skill development, and project integration. Each member of a project team also belonged to an IT capability.

Figure 5.1: New IT Organization at Material-System



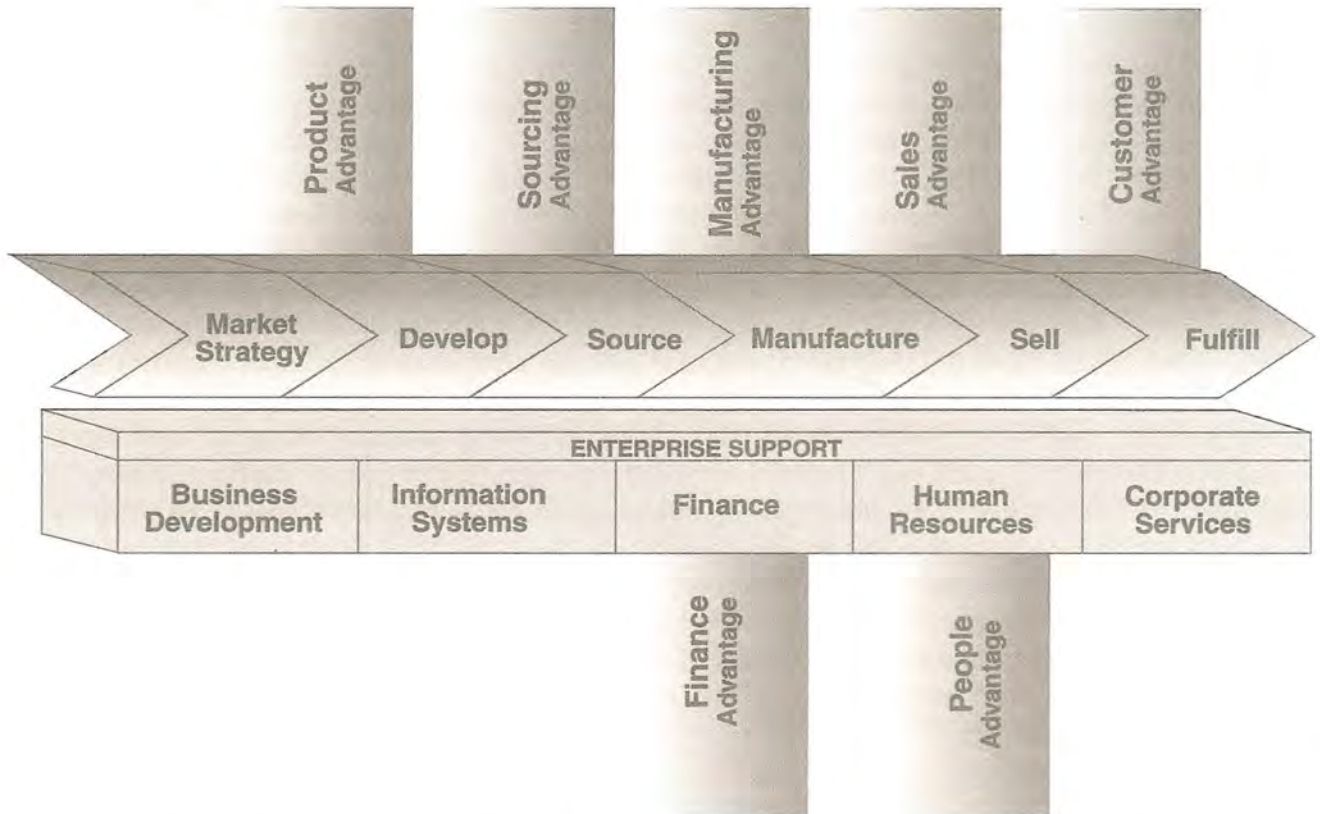
Readers of Chapter 4 will recognize that the design embodies all three types of formal mechanisms introduced in our iceberg metaphor: roles, groups, and processes. The portfolio of mechanisms implemented by Material-System also included mechanisms “below the waterline”: informal relationship-building and human resource (HR) practices. The HR practices in particular proved to be a key part of the IT transformation.

Project Teams for Global Development

A Global Development Team of IT and business representatives was created for each of the global processes in the business process model (see Figure 5.2). 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.

Figure 5.2: Global Process Model and Project Teams at Material-System



Each team had a *Global Development Leader (GDL)* responsible for project planning and making sure the team was “on course” in terms of both schedule and budget. All GDLs were full-time Material-System employees, although some consultants were assigned to be leaders of subteams. 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, which came to be recognized as a major IT organization asset.

GDLs needed to be comfortable with learning new technologies, as well as leading a cross-functional team with business managers and IT professionals. GDLs also needed excellent interpersonal skills, since they sometimes had to make some unpopular decisions. They also had to get comfortable with and trust the business leaders on their teams, because the success of the project relied heavily on the process knowledge and negotiation skills of these team members. In addition, GDLs needed to be able to help create a work environment based on the new IT 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 transformation goals, even though they might not yet know how they would achieve them.

A few months after the formal ERP project kickoff, it became clear that another integrator role was needed: an IT manager to focus on integration across the supply chain project teams on a daily basis.

An external GDL hire (who had worked with the CIO elsewhere) was moved into the new program management position. To plan a new release, multiday, intensive workshops with GDLs and other IT service managers were held. When major issues arose among business executives, the program manager and the CIO helped provide “air cover” for the GDLs and their team members so that they could stay focused on the release deadlines.

A co-leadership role with the GDL was played by *Business Process Leaders (BPLs)*, who had primary responsibility for business process reengineering. They were the primary business interface for their team during the life of the project. BPLs were senior managers or other high achievers from a function or business unit who were typically assigned to a project team full time. (Some compromise arrangements were made for European business leaders.) Having a high-level business manager assigned full time to an IT project was new at Material-System, so business commitment to the BPL role was a highly visible sign that this joint IT-business initiative was part of the business transformation.

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 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. Since business process redesign was required for every release, this was a critical role. Getting buy-in to common processes often required giving up a former business allegiance or personal loyalty; BPLs needed to be open and candid communicators as well as persuasive negotiators.

Business unit heads had to decide whether or not to “backfill” a BPL’s job in the business unit. In most cases, the business units couldn’t 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 project as time went on, although the vast majority of BPLs were expected to return to a business unit assignment after the final (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.

Account Managers (IT Consultants)

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

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

Under the new CIO, the former IT unit heads were designated as senior IT strategists for their former business units. Like 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 CIO. However, as the IT leadership team began to identify what management skills were needed for the ERP projects during the initial months of planning in 1995, essentially all of these recentralized IT unit heads were tapped for global project team roles, due to their business process knowledge and project management experience. Other IT managers were therefore selected for the new account manager roles and became the business unit's new primary point of contact and spokesperson for corporate IT. Key attributes were really understanding the business and having an interest in partnering with senior business managers. Two IT 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).

Since legacy systems operations and support in North America were now outsourced, a primary IT consultant responsibility was to serve as the business unit's liaison with the outsourcer 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. The IT consultant helped plan the business unit's budget for any "absolutely necessary" legacy systems maintenance during the transition period. The IT consultants also played key liaison roles for the ERP rollouts. For Release 3, they inventoried existing desktop tools, helped the IT 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 freestanding IT consultants were assigned to a new corporate IT capability: Sourcing & Alliances (description follows). The intent was to improve the coordination of current and future vendor contracts and relationships.

IT Capabilities: Councils, Roles, and Processes

The design and implementation of the new IT capabilities represented by the horizontal arrow in Figure 5.1 was an even bigger challenge for the IT management team. It was clear that new IT capabilities were needed to ensure both speed and quality—hallmarks of a high performance work environment. What wasn't clear was what kind of structure should be developed 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 IT capabilities that would be needed.

As a result, IT capabilities needed for the new IT organization have continued to evolve. For example, Figure 5.3 shows the 11 IT capabilities in place at the time of the Release 3 rollout. The first four capabilities 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 IT leadership team, and sometimes the IT organization as a whole: Communications (including the intranet), Resource Development, Finance (an IT Controller), and Administration.

Figure 5.3: Eleven IT Capabilities at Material-System

System Integration	Planning & Project Management
	Process Innovation
	Technology Applications
	Release Management
Architecture & Alliances	Architecture
	Service Operations
	Sourcing & Alliances
Intranet / Communications	
Resource Development	
Finance	
Administration	

Each capability had a *capability leader* accountable for the processes, methods, and tools of the capability, as well as for the development of the skillsets for the people assigned to the capability. Usually reporting to each leader was one or more *capability experts* who concentrated on the identification and transfer of best practices for the capability. Further, most IT capabilities also had a *council*, 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 each relevant capability council. Subteams within the councils worked on special initiatives. Initially, the capability assignments were made for each project team member based on their current job duties. Eventually, all IT assignment (job) descriptions included not only project team responsibilities, but also capability responsibilities. 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 the new IT organization structure was initialized in 1995, some of the capability leaders for the systems integration life cycle were ERP implementation partners (Big 6 consultants). For example, the initial leader of the *Planning & Project Management Capability* was a consultant in order to leverage the consultancy’s expertise in managing this type and scope of project. The GDLs were all members of the council for this capability. BPLs were members of the Process Innovation Capability. Another key process-oriented capability was Release Management. Key processes of this capability involved release preparation, including the “cleansing” and converting of data and infrastructure work, and actual deployment and coordination of postinstallation support. Deploying a product release required coordination across multiple project teams, HR personnel responsible for training, and local business unit leaders.

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 communica-

tions and information sharing became recognized as 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 IT community as well as for communications between the IT organization and the rest of the company.

Another capability that did not initially exist was the *Sourcing & Alliances Capability*, responsible for managing vendor relationships for the IT organization. At the start of the project, there was only one major external alliance: the outsourcer for legacy systems operation and support. The management of the outsourcing relationship was initially dispersed across the IT consultants. 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 turned out to be a very “bumpy ride” and the legacy systems costs continued to be a larger organizational expense than expected.

The Sourcing & Alliances Capability set up a superstructure for coordinating contacts across the IT consultants who previously had acted on behalf of their business managers, not on behalf of the enterprise as a whole. An external hire who had previously worked with the CIO was brought in to lead the Sourcing & Alliances Capability. Giving the responsibility for managing this strategic alliance to a high-level capability manager meant that the rest of the IT 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 business. As business units encountered problems with service levels provided by the outsourcing vendor—for example, help desk services—the IT consultants worked with the capability leader to identify the scope of the problem and to provide input to enterprise-level solutions.

Informal Relationship-Building

Typically, co-location is used to place IT employees in physical proximity with dispersed business management. For the ERP project, the critical co-location mechanism was to physically house all team members at the same location. All business team members were physically co-located with the IT team members at the company headquarters in the same building as Material-System’s top management team. Team members saw each other daily. The close physical proximity helped the business process leaders better understand the trials and tribulations faced by IT managers, while the IT people learned to appreciate how changes in business executives and business processes affected the work of the business process leaders. The IT organization also implemented several workspace changes that reflected the CEO’s vision for the “new way of working” enterprise-wide. Some walls were actually torn down so that the CIO and some of his directors could work with minimal physical obstruction. Before the first wave of Release 4 implementations, the teams moved into the firm’s new world headquarters, which became a physical symbol for its transformation values: the new building had a modular design with work areas designed to be optimal for high performance teams—that is, four-person pods.

A special emphasis was placed on “public” communication—in other words, information sharing about the project to the firm’s community at large. The consensus was that keeping the project “public” sets up opportunities for people to come forward rather than keep issues “boiling under the surface.” Regular reporting of the status of the project teams in public forums provided such opportunities. The successful outcomes of the two IT transformation workshops held for the IT community in 1995 persuaded the IT leadership that such a community briefing mechanism should be continued into 1996—regardless of the actual topic.

Human Resource Practices

The transformation of the IT organization to a high performance environment required a whole new structure for the IT organization as well as a whole new set of HR practices and processes. The CIO originally planned to rely heavily on the corporate HR department, and an HR staff member was assigned to the IT organization. However, after a few months it became apparent that the “care and feeding” of the IT people was receiving inadequate attention and constraining the IT transformation. With the blessing of the new senior vice president of HR, a *Resource Development Capability* was established within the IT organization in August 1995, and a seasoned IT director was designated the leader. The establishment of this capability was a clear signal to the IT workforce that the new IT organization was committed to the transformation to a new kind of IT organization.

Several major HR initiatives were championed under this director. 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 given an IT capability assignment. Within each level there were three sublevels to ensure that IT 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.

In addition to these long-term HR initiatives, two *special incentive plans* were put in place at the outset of the project to help retain “critical” employees who had ERP skills highly valued in the marketplace. The project was highly visible within the firm as a whole, and “being a part of it” was expected to be an intrinsic reward for some managers. However, it was also recognized that marketplace salaries for employees with SAP R/3 experience could be powerful incentives; by early 1996 it appeared to one participant that salaries had “doubled overnight.”

The first incentive plan took advantage of a preexisting incentive structure at Material-System: a year-end incentive or bonus plan. For those employees already a part of this plan, there was an opportunity for a bonus equivalent to 15–40% of one year’s salary; for employees not on this plan, a year-end bonus up to 15% was possible.

The second incentive plan was unique to the company: an *on-time project completion bonus* in the form of stock options worth 20% of the employee’s annual salary. In addition, individuals in roles considered “critical” for the project would receive an additional 10–20% (in stock options or cash) for on-time completion of the project. Having a special incentive based on the “criticality” of a role was also unique to the company.

Navigating the Transformation Journey at Material-System

What were some of the challenges that Material-System faced as it repositioned its IT organization, and what planned solutions and management improvisations³ were devised to address them?

Mobilizing Commitment Through Shared Values

The transformed IT function was predicated on a totally new view of the workplace and the individual’s role in it. This was reflected in the three core values (customer satisfaction, individual employee dignity,

shareholder value) and eight workplace qualities (including paper-free, team-oriented, technology-enabled) espoused by the CEO. At a mid-1994 retreat with its new CIO, the IT management team also developed a set of six values to communicate what a high performance IT organization really meant (see Figure 5.4). 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: IT employees in the new IT organization would 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.

Figure 5.4: Six Shared Values for the IT Organization at Material-System

Invention	Invent the future; continuously challenge the status quo
Fast Tracking	Performance: start now, deliver soon, learn quick
Partnership	Collaborate for best results; harness diversity
Everything Is a Project	Achieve your goals by aiming high, setting directions, planning milestones
We All Contribute	World-class organizations are built by world class people; competitive advantage from personal growth
Attitude Wins	Integrity, pride, and enthusiasm count

Evolving the IT Leadership Team

Initially, an IT Management Council was utilized by the CIO to communicate and coordinate decision making across all 20 of his direct reports; this IT leadership team initially met together on a weekly basis with the CIO. By March 1996, however, an upper-level IT council or board concept was implemented: its members included the CIO and four IT directors. Four IT “working groups” were set up, one under each director, responsible for the Global Process project (all project management issues), Resource Development (organization structure and HR issues), Business Operations (total IT expenses, including legacy systems projects for business units), and Sourcing & Alliances (including legacy systems issues). The expectation was that other leaders (internal or external to the IT organization) would be invited to meet with the council on issues related to the strategic positioning of the IT organization in the future.

Personal networks due to prior job positions were also being leveraged. The CEO’s hires for his new top management team provided an early model: his new VPs for R&D and HR had also worked at his prior company. The CIO, controller, and CFO had worked together for another employer. Similarly, the CIO’s outside hires for two key directorships had prior ties with the CIO: the program manager for the ERP project teams and the capability leader for Sourcing & Alliances. IT managers who had been the heads of decentralized IT units were also recognized as key assets due to their established networks with business managers.

Partnering with Human Resource Experts

The transformed IT function required a whole new set of HR practices and processes. For example, an early change in the IT organization was to move from the concept of job-based work to project-based assignments, and from the concept of manager-initiated to employee-initiated career development. Beginning in January 1995, after the legacy systems operations and support functions had been outsourced, the remaining IT organization personnel became personally responsible for applying for new work assignments. The underlying assumption here was that the majority of individual learning would occur under new assignments—that is, “learning by doing.” Further, acceptance of an assignment typically meant up to an 18-month commitment. The second assumption was that the opportunity for more frequent assignments would lead to more rapid learning. If an employee decided after nine months in a new assignment that it would be best for him or her to make an assignment change, it was the responsibility of the individual employee to find their replacement.

In the new workplace environment, then, project team heads advertised for employees, but individuals marketed their own capabilities (“self-nomination process”). For the individual, the goal was financial reward and marketability based on skills or competencies. For the organization, the goals were to pay for performance (demonstrated skills or competencies) and to have employees who were specialists in more than one area.

The initial plan was to rely heavily on HR department personnel to develop and implement new HR practices and processes in consultation with the IT management team. The IT organization’s model and the new HR practices that would evolve with it were viewed as a “pilot” for the CEO’s vision of a new workplace. A new VP of HR, who arrived in early 1995, viewed it as an “incubator” for transforming the company as a whole.

However, several months into the 100-week ERP implementation, it became clear to the IT management team that people issues were taking a distant backseat to project issues. To ensure a more balanced approach—and to avoid a personnel crisis situation—HR management became a separate IT capability with its own full-time capability leader beginning in August 1995. In March 1996, the new Resource Capability leader within the IT organization was working on “connecting the dots” between the HR initiatives—for example, linking new IT competency models with the capability component of team project assignments, compensation schemes, and so on.

Transferring Knowledge From External Consultants

External consultants played a significant role in the repositioning of the IT function at Material-System. Initially, they supplied expertise in business process reengineering and the development of a global process model. Subsequently they were involved in the IT organization redesign and ERP project management expertise. An average of 50 to 75 consultants (including consultants from the software vendor) worked side by side with Material-System’s IT managers.

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 ERP knowledge might not be transferred to their own workforce as quickly. By early 1996, each Big 6

consultant was paired with two Material-System 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 IT organization.

Executive Guidelines

The experiences of these three case firms suggest some key guidelines for repositioning the IT organization to enable the business transformation thrust of process integration.

Guideline 1

Establish a corporate IT organization with an enterprise-wide coordination mandate.

Process integration efforts cannot succeed in a context that continues to reward “silos” of individual business units or functions. At all three firms, the process integration thrust required that corporate IT be a prime facilitator. In two of these firms, a corporate IT oversight and coordination role had already been established. At Diverse-Synergy, it was strengthened by the introduction of matrix reporting to the CIO for the new Market Information Officers. At Material-System this oversight role was a new one, and required both an IT governance redesign and new CIO. More important, the new incumbent was regarded as the first true CIO for the business firm in contrast with a string of business executives who had been appointed to the position in the past.

Guideline 2

Match the transformation pace to the pace of the business transformation thrust.

Process integration thrusts require significant changes to the existing structures, processes, and information flows within an enterprise. Given the magnitude of the changes, they are likely to generate cultural conflicts, concerns about the impacts of these changes on existing business competencies, and some level of power struggles across prior stakeholders. Therefore, the pace of the IT transformation must to some degree mirror the pace of the business transformation—that is, be at a concurrent pace.

However, sometimes, the IT organization must also focus on building capabilities in advance of the business transformation. This imperative might exist when there are significant deficiencies in the types of IT capabilities needed to enable the transformation thrust or when the IT organization needs to establish its credibility as a potential strategic enabler. Under such circumstances, it is much more appropriate to use a dynamic balancing strategy that switches the pace of the IT transformation between anticipatory and concurrent. In the anticipatory mode, the CIO can direct attention to some core IT capabilities; in the concurrent mode, the CIO can fine-tune the IT transformation in synchronization with the business transformation thrust.

Guideline 3

Use formal mechanisms to quickly align with new business structures.

As is evident from all three case sites, significant attention was directed toward the use of formal mechanisms (roles, groups, processes) to link the IT organization with new business structures and roles. In some cases, old mechanisms were modified. In other instances, new mechanisms were designed. Informal relationship-building and HR practices also proved critical to the effectiveness of the new formal mechanisms at the case site with a dynamic balancing strategy (Material-System).

Guideline 4

Fence off the legacies to focus on the new capabilities.

Legacy applications are associated with a set of IT capabilities and behaviors. When IT performance gaps exist, continuing to support legacy applications is likely to significantly impede transformational progress. This was the situation at Material-System. Fencing off the legacy applications by outsourcing released knowledgeable IT resources and also signaled the IT organization's commitment to the development of new skills.

Guideline 5

Leverage prior relationships and build new partnerships with non-IT units.

Process integration thrusts are likely to run into structural, cultural, and political barriers that are a consequence of the traditional organization structures that were designed to promote differentiation. Individual units could well impede the development of enterprise-wide processes because they are focused on their own products, markets, and processes. At each of the three firms, significant attention was devoted to reinforcing old relationships with business leaders by fine-tuning existing coordination mechanisms (for example, the role of Market Information Officers at Diverse-Synergy) or introducing new ones (for instance, Account Managers at Material-System).

Further, strong partnerships with the leadership of the HR function was critical to the IT transformation at Material-System: the IT organization's new high performance model required new job descriptions, career paths, and incentive systems. The IT directors were given the authority by their HR counterparts to move forward in advance of the rest of the organization in order to have the IT capabilities needed to help lead the business transformation.

Endnotes

- 1 Portions of this story have also been told in a teaching case prepared by one of the researchers. See Case IV-3 in *Managing Information Technology: What Managers Need to Know* by E. W. Martin, C. V. Brown, D. W. DeHayes, J. A. Hoffer, and W. C. Perkins, Prentice Hall, Upper Saddle River, N.J., 1999.
- 2 SAP R/3 is an enterprise-level software solution that encompasses the Accounting/Finance, Human Resources, Sales/Distribution, Materials Management, and Operations functions. Material-System retained PeopleSoft for its HR packaged solution but implemented the other SAP R/3 modules.
- 3 The improvisational metaphor for the management of change and transformation is described in W. J. Orlikowski and J. D. Hofman, An improvisational model for change management: The case of groupware technologies, *Sloan Management Review*, Winter 1997: 11–22.

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