



# ERP Controls Integration

## Sustaining Compliance While Implementing Change

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# Introduction



Leaders who look back on their organizations' recent efforts to comply with the Sarbanes-Oxley Act of 2002 (S-O), International Financial Reporting Standards, Basel II, and other regulations probably remember the experience as nothing less than painful.

Many discovered that certain key controls were not being performed. Others spent millions to segregate duties properly and to remediate other controls. Still others saw frequent failure of manual controls. For most, the effort demanded an extraordinary commitment of human and financial resources.

Reducing costs has become a particularly important focus for many organizations that want to improve the efficiency and effectiveness of this process. In evaluating their controls during these compliance efforts, many organizations have found that:

- Many existing key controls had deteriorated over time and were largely manual
- Control benefits of an existing enterprise resource planning (ERP) system have not been fully leveraged
- Monitoring capabilities were nonexistent or inadequate as control failures often went undetected.

Leaders are now evaluating their business needs and opportunities and are considering how to optimize ERP software as one option for improving performance. Their goal in such an effort is to improve the use of information technology (IT) for compliance management and to enable competitive advantage by driving process and control efficiencies and related cost reductions.

Implementing or upgrading an ERP system is an effort that begins with the initial software installation and then extends well beyond it. To realize business value and sustain compliance, the effort calls for integrating the software's control functionality within the organization's internal control and compliance program environment. To achieve the desired return on investment, organizations should seek to implement an ERP solution that integrates and optimizes controls within business processes to realize process and control efficiencies, cost reductions, and effective compliance management.

### Integration Will Be a Key Differentiator

"[Within ERP financial systems, the] financial transactional applications are the foundation for compliance activities. The capability to import general ledger account structures and financial data directly from ERP financial systems into the compliance application should be considered a base capability. The compliance applications of the major ERP vendors will provide the additional advantage of recognizing inherent controls that are embedded in the financial applications, provided they are on a compatible release of these products. While this will be a significant differentiator for these vendors, we find that most companies have a variety of financial systems in-house or are not on the latest releases of the ERP applications."

Forrester Research, March 11, 2004, *Sarbanes-Oxley Solutions—Invest Now or Pay Later*.

### The Challenge

Getting controls "right" during the initial ERP software implementation is often less expensive than retrofitting controls. System implementers tend to focus on issues of functionality rather than control—perhaps spending more time making sure orders can be processed, for example, than on security issues.

Because of the demands of new regulations, organizations installing or upgrading ERP systems now have the opportunity to establish good controls from the beginning so they can be monitored and sustained throughout the life of the system. The alternative has proved expensive: "Going live" before appropriate internal controls are in place will not only decrease business performance and cause unnecessary costs to subsequently retrofit the ERP system but may also cause the organization to report significant control deficiencies and/or material weaknesses. For companies, the result could be adverse audit opinions on the adequacy of their internal controls and financial statements and, potentially, a decline in shareholder confidence.

This white paper explores the potential benefits of integrating controls as part of a system implementation or upgrade. It considers why companies have often failed to achieve strong internal controls in their ERP systems, identifies the business benefits that can result from leveraging ERP controls, and provides questions to consider at each stage of a project.

# The Current Environment



## Investing in ERP Applications to Help Manage Regulatory Imperatives

“Investment in ERP and enterprise applications in general remained the top IT spending priority in 2005, according to Forrester survey data. A major driver for many large companies was complying with regulatory imperatives, such as Sarbanes-Oxley for public companies, Basel II in the banking industry, and FDA Part 11 for biotechnology and pharmaceutical organizations. Regulatory compliance—specifically the need to improve controls—will likely continue to serve as a catalyst for some overdue systems’ consolidations and upgrades. At the same time, companies are recognizing that support and integration costs may be reduced by consolidating systems and applications.”

Forrester Research, June 9, 2005. *ERP Applications – The Technology and Industry Battle Heats Up*, by Paul Hamerman and R. “Ray” Wang.

In an environment focused on the importance of control, leaders implementing ERP systems to help manage regulatory compliance are recognizing that ERP systems change both how and when a control happens and what level of importance a control has in an organization.

### For the Business, ERP Changes Where the Control Is Performed

Historically, controls were applied on information being received by a department and were based solely on the requirements of that department. Controls that help ensure transaction existence, completeness, and accuracy were performed primarily within the boundaries of the accounting/finance organization.

In a process-driven ERP system, a department is responsible for controls operated on behalf of other parts of the organization. Data is captured once and trusted from that point on; thus, weaknesses in boundary controls feed directly through to the financial statements. Also, controls are applied at different points in business processes. Integration between operational and financial processes advances the point in a process at which financial information is captured. Consequently, controls operated later in the business process may become redundant.

To optimize an ERP system, controls are put in place throughout the organization. They are owned, so to speak, by the entity as a whole rather than within a particular department. The responsibility for traditional financial control can pass to nonfinancial staff or is automated and assumed to be functioning.

For example, most controls over the existence and accuracy of a purchase are applied when preparing a purchase order, rather than when paying a purchase invoice. Although this process is safeguarded by templates and master data, the procurement department, not the finance department, now owns and operates these controls.

### For the ERP Implementers, Control Is Not the Top Priority

Disrupting business operations is a major risk in an ERP implementation. The focus throughout design, testing, and cutover is to ensure business as usual by making any system change transparent to customers.

This focus works against achieving robust controls. Indeed, controls are not the implementer’s core competency; he or she focuses on delivering functionality rather than control. In the spirit of minimizing disruption, an implementer may reduce the level of system validation it pursues to mitigate the risk that a transaction will be blocked, an order cannot be taken, or a new product cannot be set up. However, system validation provides a detailed transactional control, which is important to achieving high standards of internal control in ERP-supported processes.



Operations-, finance-, and compliance-based controls mitigate business risk and help achieve business objectives. As part of an ERP implementation or modification, controls should be defined in the requirements definition phase and incorporated into testing, training, and process documentation. However, business users cannot be expected to define controls appropriate to an ERP before they have actually seen how it works. In such circumstances, the business is likely to come up with an “as-is” controls design—a choice that may be understandable but is unlikely to be fully effective in a new ERP solution.

The challenges that are often inherent in an ERP implementation are exacerbated by control requirements—and could result in a control gap. For example, the full functionality of an ERP system is often not used due to the desire for a rapid implementation. Organizations tend to spend a great deal of time identifying the functionality gaps and not closing them due to competing projects and other priorities. Consequently, controls are often lax, a result that can be attributed to the implementation schedule and efforts to minimize distractions when it is time to “go-live.”

Thus, getting the system up and running has often taken precedence over getting controls right. This choice often has a substantial downstream cost when organizations must later redesign controls and remediate weaknesses or deficiencies. Integrating controls within the ERP implementation or upgrade offers cost savings and numerous other benefits, as discussed in the next section.

### **Role and Motivation of the System Implementer**

The system implementer is responsible for delivering the functionality requested by the business. To manage the risk of “scope creep,” system implementers require clearly defined parameters. Too often “to-be” controls represent changes in scope and thus in price. Also, system implementers are likely to focus on their strengths—namely, process, project management, and technology—rather than on “controls.” Indeed, implementers’ contracts typically include a caveat indicating that controls are the responsibility of management.

# The Opportunity: ERP Controls Integration



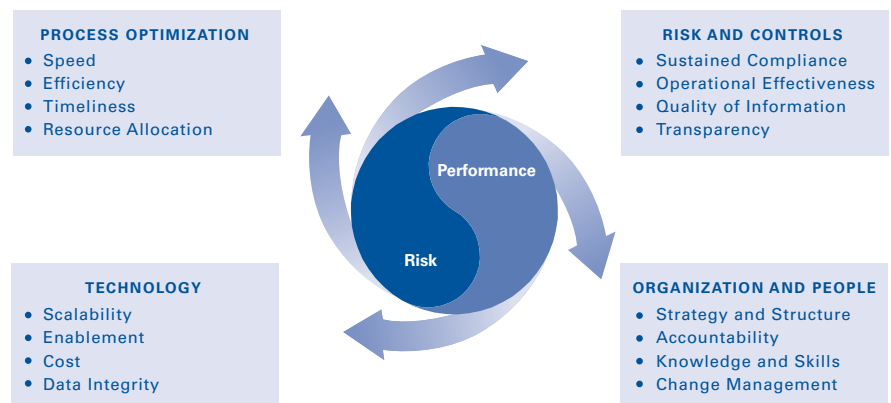
Historically, risk and control considerations have often been under-funded or overlooked during the system implementation process, resulting in decreased organizational benefit and added risk. However, in an environment where companies face numerous and evolving regulations—and are making changes to business controls and operations as a result—consideration of such issues is critical when implementing an effective and efficient internal control environment and for sustaining compliance. As the functionality and underlying technology changes, so must the organization's controls.

## Managing Change: Four Important Dimensions

When managing significant initiatives in the past, organizations may have considered only people, process, and technology. In today's environment, organizations must consider risk and controls as an additional dimension in managing a system change. When designing controls an organization should seek a balance across four dimensions: risk and controls, process optimization, organization and people, and technology (see *Figure 1*). Because of their interdependencies, no single dimension can be the sole focus at any one time. A concerted effort is needed when designing and integrating controls into an ERP system solution.

**Figure 1: Balancing Risk and Controls with Performance Improvement**

*When designing controls an organization should seek a balance across four dimensions: risk and controls, process optimization, organization and people, and technology.*



*Organizations do not have to sacrifice performance improvement for effective compliance; indeed, an organization that pursues both goals in an integrated fashion can achieve both.*

Source: KPMG LLP (U.S.), 2006.



### Potential Business Benefits from Improved ERP Control

Improved controls within ERP systems may result in tangible benefits, as shown below.

Feature	Potential Benefit
<i>Increased control automation and reduction in manual controls</i>	Reduce cost of operation by eliminating less-effective manual controls. Manual controls are subject to human error or neglect, requiring additional supervisory costs. Improve control performance by implementing automated controls.
<i>Centralized control maintenance</i>	Controls are configured and maintained centrally rather than within every operating unit; eliminates duplicate controls.
<i>Reduced cost of testing controls</i>	Automated controls require less testing and provide greater assurance. As designed, ERP systems can generate reports to help test the performance of certain manual controls.
<i>Increased data reliability, integrity, and accuracy</i>	Costs to identify and correct data errors are high; good controls reduce the volume of errors and eliminate the need and cost to correct.
<i>Improved reporting and monitoring of information</i>	Quicker and more reliable information for management enables more precise and responsive business decisions.

System implementations often have a significant impact on the way processes and controls are designed and monitored. As a result of these design changes, new automated and manual controls are typically introduced into the control environment, affecting compliance documentation and testing plans as well as monitoring. Consequently, system implementations and changes offer opportunities to integrate controls that enable effective use of resources and that allow the organization to reconsider the way it does business so that it may derive greater value from the change.

To assist in this process and to help enhance the organization's ability to drive cost reduction and return on investment, management may:

- Standardize/simplify processes
- Identify new/existing risks as processes are modified or added
- Identify new functionality in the system to enable automated controls
- Consider control and risk issues in infrastructure and supporting architecture
- Consider mapping existing controls and risks to new processes to help ensure sustained compliance
- Implement mechanisms to monitor ongoing control effectiveness and manage regulatory compliance

Controls can be a new means of managing risk and identifying opportunities for business improvement. In basic terms, a control can be an activity—whether manual or automated—that validates information and creates a context for action. Controls are (or should be) embedded in processes—and the IT systems that enable them—to help achieve organizational objectives and manage risk. Controls are meaningless without a related objective. To understand whether they have the right controls over the right things, leaders should start with their organizational objectives and risks in managing financial reporting, operations, and compliance.

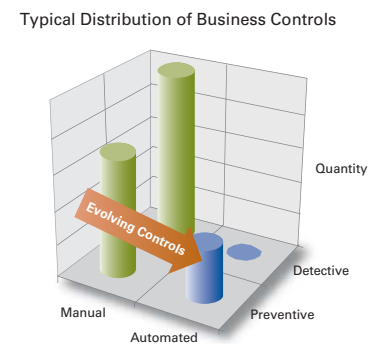
As shown in *Figure 2*, controls can be mapped across four key dimensions—automated versus manual and detective versus preventive.

- Manual controls depend on adequate human resources, a consistent focus, and knowledge, and thus they carry a greater risk of nonperformance.
- By contrast, automated controls can help reduce costs and better manage risk.
- Automated controls—such as balancing control activities, predefined data listings, currency limits, data reasonableness tests, and logic tests—help prevent or detect unauthorized transactions.

Evolving a portfolio of manual, detective controls toward an automated, preventive state is central to reducing costs and increasing the business value of controls over time. However, not all controls should be migrated from manual/detective to automated/preventive. The law of diminishing returns applies to controls migration as it does to many business initiatives. Initial efforts will determine an organization's ability to rapidly evolve and capitalize on new technologies and processes to balance both risk and controls with business improvement.

*Controls can be a new means of managing risk and identifying opportunities for business improvement.*

**Figure 2: Evolving the Controls Portfolio**



*Evolving the portfolio of manual, detective controls toward an automated, preventive state is central to reducing costs, increasing the business value of controls over time, and achieving sustainable value and confidence.*

Source: KPMG LLP (U.S.), 2006.

# An Approach: Integrating Controls As Part of An ERP Implementation



*Integrating controls into an ERP implementation involves actions and decisions in each stage and for each work stream.*

Implementing or upgrading an IT system requires integrating the software functionality with business processes and controls along with the organization's compliance program in a manner that can help realize business value and sustain compliance. An organization should not approach an ERP implementation as separate and distinct from its compliance program. The documentation from the compliance program, specifically a business controls portfolio and related analysis, can be highly leveraged when organizations seek to integrate controls into an ERP implementation. Indeed, businesses can apply what they learned during compliance to make sure they are fully leveraging and optimizing all the functionality available within the ERP.

As described below, a typical implementation encompasses design, build, test, and deploy stages with work streams for organization and people, process optimization, technology, and risk and controls (see *Figure 3*). Integrating controls into an ERP implementation involves actions and decisions in each stage and for each work stream.

**Figure 3: An Integrated Approach**



Source: KPMG LLP (U.S.), 2006.

## Design

The design stage typically includes an evaluation of the existing application(s) and internal controls, known deficiencies, and the capabilities of the new ERP package. An organization would identify the business processes that are in scope and define and document detailed business processes, reporting, interface, conversion, and enhancements to obtain an understanding of its current system. By comparing the capabilities of the new ERP application to the current state, an organization would identify business process redesign opportunities, functionality gaps that may lead to work-arounds, or ERP customization needs. A key output from the design stage is a road map of the organization's requirements for how to configure the ERP application and modify the internal control environment to build a sound financial management system.

Essential to the design stage is a consideration of the four dimensions: organization and people, process optimization, technology, and risk and controls. To design an appropriate future state, an organization needs to define its operations-, finance-, and compliance-based business processes. It should identify how and to what extent controls are configured, designed within, or built around the new ERP application.

Control design specifications would be finalized and linked to business process procedures and configuration and then communicated to the implementation team. The team would consider the controls as a portfolio, performing a risk analysis to determine the need for automated, manual, preventive, and detective controls. Existing IT policies and procedures and known security loopholes would be part of the analysis as would the criteria for exception reporting. The team would also integrate compliance management requirements as well as parameters for identifying and prioritizing business opportunities.

#### *Example Design Key Questions*

- What are the key risks and controls for each business process and how are they configured in the ERP system?
- What gaps exist between current key controls and the newly identified key controls?
- What control procedures are required to ensure complete and accurate conversion?
- What is the security control strategy?
- Are controls being identified and linked to process definition documents?
- How does the organization ensure that its project documentation will satisfy regulatory compliance and monitoring needs?

## **Build**

The build stage involves installing the hardware, operating system, and communication infrastructure based on the design specifications of the ERP application. Once the installation is complete, the business requirements defined during the design stage for the application and control environment are implemented. The ERP global settings are defined and configured and business values are loaded accordingly. The business processes and control points are implemented and documented, and the training materials are built.

The build stage provides the foundation for testing and implementing a sound ERP application and control environment. During this stage, the organization would need to determine whether the controls are properly configured and built into the ERP application or into the internal control environment. These controls are intended to validate and authorize all transactions according to the control objectives defined during the design stage.



#### *Example Build Key Questions*

- Who are all the users of the new system?
- What access and security rights should each user have?
- What data “cleanup” is required/desired before conversion?
- What are the IT change management procedures?
- How are the key controls configured or customized, and who will be responsible for monitoring them?
- How do controls interact with processes?

#### **Test**

The test stage of the implementation is critical in determining whether the system performs as expected. Organizations are testing the input, processing, and output capabilities of the application as well as the control performance, supporting technology, data conversion, and interfacing control environment. Test scenarios and test scripts are defined to validate business processes and to verify that all design requirements are met. Key controls are verified and tested as part of this process. Testing often includes formal training and active mentoring (“shadowing”) assistance to transfer knowledge from the system implementer and controls integrators to the business owners and users. The test stage validates the configured ERP functionality and control environment to support the “go or no-go” decision to implement.

In this phase, the organization would define the controls testing approach and test criteria. It would test the configurable and inherent system controls and modify or improve them as needed. It would also test user and infrastructure security vulnerabilities, IT operations, and disaster recovery preparedness. Efforts to sustain ongoing compliance and to conduct internal training would also be established during this phase.

#### *Example Test Key Questions*

- Are controls linked to the testing scenarios and are end-to-end business processes being tested with key control points?
- Are business roles being evaluated relative to segregation-of-duty conflicts?
- Have interfaces been tested to ensure consistent and accurate information across multiple databases?
- Are trial conversions being executed and balanced/reconciled?
- What are the user acceptance test criteria and sign-off procedures?

## Deploy

Organizations have various options for implementing a new ERP solution, each of which has implications for the validation of the control framework. They can phase in the new system based on business units or geography, or pilot some aspect of the new system. Often, organizations choose to pilot some aspect of the implementation. During a pilot project, system functionality and configuration would be validated and control techniques would be verified. The pilot should also validate the control framework.

Following the launch of the new system, the organization would monitor and evaluate performance. In addition, a post-implementation control review, focused on the implementation of controls and their effectiveness, would provide additional assurance for ongoing monitoring.

### *Example Deploy Key Questions*

- What is the plan to assess control and security performance?
- What is the post-implementation plan to review key risk areas and monitor compliance?
- What is the method to update and control documentation?
- What is the plan to transition documented changes to the compliance program?
- What is the plan to address control accountability during both transition and post-implementation?
- Are users appropriately trained?

With controls properly integrated within the ERP system, organizations can use the documentation to update the controls portfolio and the knowledge it provides to assist in further improving and sustaining compliance.

# Conclusion



*Organizations should pursue an ERP implementation that helps them integrate and optimize controls within finance, operations, and compliance processes.*

Implementing and optimizing controls in ERP systems is not a simple task, yet it is important to achieving full benefits of the system and also to using the ERP to help manage and sustain regulatory compliance. Organizations should remember that integrating controls into an ERP implementation is a collaborative process.

To help ensure a sustainable result, all parties should be engaged early and understand their roles and desired outcomes. Integrating controls into a system implementation project will help enable a business to overcome challenges and deliver a return on the investment. Organizations should pursue an ERP implementation that helps them integrate and optimize controls within finance, operations, and compliance processes. By doing so, they will be better able to realize process and control efficiencies, cost reductions, and sustainable compliance management.

## Key Learnings

*Recognize that controls integration is critical to optimizing an ERP.* Organizations must consider controls related to organization and people, process optimization, technology, and risk and controls, beginning with the design stage and continuing throughout the implementation.

*Appoint a security and controls team.* A system implementer will generally focus on transaction processing efficiency. A security and controls team should help ensure that risks are identified and understood and controls are designed, built, and implemented to mitigate risks and help enable the organization to better realize control and security objectives.

*Emphasize the importance of controls to the ERP project team.* When controls are integrated from the beginning of an ERP implementation, the organization can help ensure that new business changes are appropriately captured and that existing regulatory documentation is updated accordingly.

*Ensure that the controls portfolio and related documentation can be leveraged.* When seeking to integrate controls into the organization's ERP implementation, recognize that the process encompasses the organization's business processes and controls as well as its compliance program.

*Evolve the portfolio of manual/detective controls toward an automated/preventive state.* Evolving the controls portfolio is critical to helping reduce costs and increase the business value of controls integration over time. These decisions should be made early in the design stage.

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