

ERP Implementation Risk: Identifying, Monitoring and Remediating Issues Throughout the Project to Ensure Success

Introduction

From hardware and software implementation to support services, organizations spend millions of dollars on enterprise resource planning (ERP) systems. There is little margin for error when undertaking such a significant investment. If deadlines slip or the ERP system does not function as intended, it can quickly derail business decision-making, productivity and profitability.

ERP projects are notorious for high failure rates. Enterprises are often under great pressure to complete ERP projects based on tight schedules and budgets, so corner-cutting and missteps often occur. This can lead to costly problems during the implementation process, which can persist long after go-live. Outlined in this paper are some common risks that arise during the ERP implementation process and recommendations for managing them.

Common Risk Areas for ERP Projects

Project Management and Executive Sponsorship

ERP systems are designed to improve the flow of information throughout the enterprise, and enhance communication and decision-making. Yet one of the most significant and frequently identified risks to project success is lack of communication and slow decision-making among key stakeholders – including executive management, business process owners, the IT organization, and compliance. One reason for lack of engagement by stakeholders is the view that an ERP implementation is simply an “IT project.” And quite often, core business process owners are assigned responsibility for managing all aspects of the process, from overseeing system design to go-live, even if they have little or no experience as project managers or understanding of ERP systems.

ERP implementations should be viewed as a business-driven initiative that will have a lasting impact on how the organization operates. Without question, executive involvement in decision-making is integral to success. There should be a steering committee with senior executive representation from the business areas affected by the implementation. The steering committee should receive regular updates on the project and be consulted by the project team when key issues or decisions cannot be resolved by the project team. In addition, steering committee members often play an important role in mentoring and supporting the business process owners involved in the day-to-day activities of the ERP implementation.

The steering committee is supported by a project management office (sometimes called a PMO), which should be staffed by experienced project managers with clearly defined responsibilities. Large ERP implementations, while commonly thought of as one project, are actually a complex web of multiple, interdependent projects that may involve very different skill sets, such as implementing technical infrastructures, configuring the new business processes or training thousands of end users. The role of the PMO is to provide a common communications framework and a project plan for running the implementation. An integrated project plan that provides milestones the team can manage, and recognizes the dependencies between the various teams involved in an implementation, is another key to success. Other important functions of the PMO include providing an integrated approach across the project for resource planning, issue resolution, status reporting, procurement and cost management.

If no formalized decision-making process for the ERP initiative exists from the outset and project managers or process owners do not feel empowered to make decisions, a great deal of time can be wasted debating issues, resulting in suboptimal solutions. For example, the steering committee needs to provide “tone at the top” with regard to the re-engineering and business goals of the project. Without this guidance, it is common for some teams to pursue a “vanilla” implementation of the ERP package, while other teams develop aggressive, and often

Over-Reliance on the System Integrator

A common pitfall, even for organizations that have been through an ERP implementation in the past and may now be pursuing a system enhancement or upgrade, is putting too much trust in the system integrator. There is an assumption that given a vendor’s ERP expertise, the team assigned to the project will fully understand and acknowledge the client’s needs. However, once the ERP system integrator has been engaged for a project, it is essential for the organization to monitor the vendor’s performance throughout each phase of the implementation process. It also must be determined whether the vendor is delivering on expectations efficiently and effectively and applying leading practices it has developed through work for other customers in the same industry.

Another potential risk area is that even the most established system integrators often engage contractors on ERP assignments – including multimillion dollar projects. Companies hire system integrators under the assumption that the integrator’s employees will work seamlessly together; however, this is often not the case when many contractors are involved who have not worked together in the past or are not well versed in the integrator’s culture and methodology for delivering ERP implementations. Thus, there is no guarantee that every person the vendor presents to work on the project has the same depth of experience and knowledge as the core team of experts the client may have assumed would be devoted to the project.

expensive, processes requiring extensive customization of the base ERP package. Every organization is different, so an ideal level of project management and executive sponsorship will depend largely on the prevailing culture and some “trial and error” by stakeholders to determine what works.

Realistic Development of Project Schedule and Plan

ERP implementations can fail because organizations underestimate the magnitude of the undertaking and develop a project plan with an unrealistic timeline that leaves no contingency to accommodate delays due to even minor unforeseen circumstances. In fact, these “unknowns” can result in significant project overruns, as the dependencies between various implementation activities tend to compound schedule slippage and resource costs because team members are not effectively utilized. Planning and managing milestones are critical success factors for the execution of a successful ERP project schedule and work plan. While it’s important to give consideration to resource loading to ensure the team is equipped to handle the project, it’s extraordinarily difficult to maintain a fully resource-balanced plan at the task level for a large ERP implementation.

In our experience, organizations often find the right balance by establishing critical milestones around which all the interdependent teams on a project can plan. Teams should develop a work plan based on these milestones, and then manage their scope, schedule and resourcing to achieve those critical milestones. This helps limit the risk created by dependencies between workstreams, compounding schedule and cost slippages across the project. The PMO and steering committee together play a critical role in determining the pace of issue resolution and decision-making necessary to support the project schedule by making quick, educated and sometimes tough decisions. Organizations need to develop and adhere to a realistic project schedule that fully considers the complexity of ERP system customization and also helps management prioritize implementation of system features the business needs most – and most immediately.

Organizational Change Management

The impact the user community has on the overall success of an ERP system implementation should not be underestimated. An ERP solution will transform how people work in the organization, making their activities much more connected and transparent. Existing business processes are likely to change or even become unnecessary, as might the responsibilities of individual employees.

Change management – a planned approach to change in an organization – is vital to providing structure for the workforce’s transition and acceptance of the ERP system. A common pitfall is to think of change management as simply “training.” A formal change management plan should be developed and a change management team assembled to work throughout the ERP project life cycle to support change management issues associated with the system’s implementation.

The change management process should begin early in order to create awareness across the organization of the ERP implementation project, its expected benefits, and the impact it will have on people, processes and technology. Later, as functional teams are designing and configuring new business processes, the change management team can play a role in creating awareness of how various tasks and steps in the process impact job design and organizational structure. The understanding of new processes, roles and jobs is critical to the design of a successful training curriculum and plan. At later stages of the project, in addition to driving user

training, the change management team plays a key role in communications and business readiness leading up to go-live.

Appropriate Business Involvement

Another potential risk area during the ERP implementation process is lack of appropriate involvement from the functional areas of the business. Each business process (e.g., Order to Cash, Record to Report and Requisition to Payment) on a large implementation should have a process owner whose full-time job is the success of the ERP implementation. Process owners should be empowered to make functional decisions about the “to-be” business processes, as well as for scoping, testing and issue resolution. In large organizations, the process owner role may become permanent, continuing on after implementation to provide global decision-making, issue resolution and governance for units conducting business within the same ERP system.

Successful organizations formally transfer process owners and other resources from their business areas into ERP projects full-time and work through the associated backfill, compensation and career progression implications. Many organizations utilize incentive programs to ensure retention of key employees and enhance their engagement throughout the ERP implementation. Participation on a large ERP project can give a boost to the careers of high performers, as they have visibility and exposure to executive management and input on the “to be” business processes.

Testing to Ensure Core Business Processes Are Functioning Correctly

Testing is essential to ERP implementation success, but it is often the phase where organizations decide to take shortcuts to meet the planned go-live date. The first phase of testing, often called unit testing, involves testing individual transactions and subprocesses in a stand-alone fashion to ensure the system is meeting all documented requirements and is working as expected. This phase of testing often takes longer than scheduled, resulting in unrealistic compression of the most important phases of testing, which are integration testing and user acceptance testing (UAT).

Integration testing is often the most challenging – and rewarding – stage of an ERP project. Once it is properly completed, the team emerges with confidence that the ERP solution will work, and they are eager to share it with the business. Some attributes of a successful integration test strategy include:

- Involvement of the business to define full end-to-end testing scenarios that simulate real-world business transactions
- Documented test scripts (versus ad hoc testing)
- Use of test data (master data and transactional data) that has been converted from the legacy systems using the conversion tools and processes that will be relied upon at go-live
- Multiple iterations of test execution, progressively resolving defects and issues that increased the complexity of test scenarios completed
- A stable test environment subject to tight change control
- Use of end user access security roles to conduct later stages of integration testing

UAT allows a broad base of users in the organization to review the ERP system and confirm that it meets requirements prior to go-live. Ideally, UAT occurs after user training is complete, but prior to go-live. This allows the user community some “hands-on” time to reinforce the skills learned in training. Some portion of the UAT is typically structured to simulate a period of business activity in order to reconcile the outcomes back to legacy systems. UAT is also a critical time for user access security testing and validation of fully functioning user roles with the required authorization and organizational restrictions.

Data Conversion/Master Data Management

In an ERP implementation, the data conversion and validation process often is not adequately planned and typically takes more time than anticipated. Organizations need to understand the requirements of data conversion and proactively assess its potential impact on the implementation schedule. Mapping existing legacy data structures and fields to the new environment can be tedious and time-consuming. Plans should be made to clean up data in the legacy environment prior to converting it over to the new system.

Data conversion programs and tools need to be tested rigorously through successive waves of mock conversions that demonstrate the ability to load data into the system accurately. Data conversions should be validated by business users who can confirm their accuracy. Statistical sampling techniques are often used to support the review of large volumes of data.

On one recent ERP risk review at a construction industry client, for example, we noted 100 customer master entries that represented the same customer. These duplicates had arisen over time as field offices and various users created customer records to suit their needs. However, based on the design of the new ERP platform, customer data was to be managed centrally by a small group of users; thus, a monumental data cleanup exercise was necessary to prepare the customer database for conversion. In addition, it was necessary to define a governance structure as well as business processes for centralized entry and management of the customer data – an effort that evolved into a separate project unto itself.

Technical Infrastructure and Custom Development

There is a wide range of technical issues – some anticipated in a formal risk assessment, some not – that can delay or otherwise undermine the success of an ERP implementation. Common issues include:

- Insufficient knowledge transfer from the system integrator to the long-term support team
- Network and service-level issues associated with upgrading or outsourcing of data centers
- Insufficient system resources allocated for high demand on middleware and interface architectures
- Stressed network or insufficient bandwidth, especially at remote sites, due to inadequate volume and stress testing of the infrastructure
- Ineffective technical change management processes
- Inadequate or unproven business continuity and disaster recovery plans

Regardless of an organization’s best efforts to implement an ERP solution with minimal customization, there will nearly always be requirements generated from the business that require custom development. Examples include reports, interfaces, conversion programs, code extensions and forms. Limiting customization is a key hurdle to successful ERP implementation.

Delays in the completion of custom development are a common reason for overall project delays, as they limit the ability to perform robust integration testing. Therefore, a process should be in place to justify deviations from standard functionality provided in the package. In addition, custom development should adhere to the system development life cycle (SDLC) and documentation requirements expected by the organization. Consultants may not fully understand these expectations, and deficiencies in this area are a common finding in project risk reviews.

Cutover

Cutover is the period during which the changeover to the new ERP system occurs. Cutover activities may start several weeks ahead of the go-live date and typically continue through the first month-end close on the new system. Cutover involves a comprehensive and highly choreographed set of specific tasks related to shutting down business on existing systems, converting data to the new ERP system, and ramping up business on the new system. The timeline and dependencies between all steps need to be carefully planned out and practiced through mock cutovers. For example, the elapsed time to load data during the cutover window can represent a significant constraint. Underestimating the duration of data loads can result in delays during the cutover period. The cutover plan should include the following key milestones:

- System freeze in the legacy system
- Stoppage of business activity leading up to the cutover
- Go/no-go decision points in the plan
- Financial cutover activities
- Back-out contingency plan in the event unforeseen issues are encountered

A cutover plan should be drafted several months prior to go-live and continuously refined as the go-live date approaches. Since the resource demands for this planning often occur in parallel with system testing activities, many organizations fail to mobilize cutover planning with adequate lead time to address all of the considerations.

After go-live, organizations should ensure increased levels of end user support will be available. This may include retention of some consultants and deployment of a network of “power users” specific to each business process. These users have SAP business process expertise specific to the ERP implementation and can act as a first level of support for end users during the go-live. Planning for the stabilization period after go-live is considered a leading practice and, at minimum, will extend through the first month-end close.

Compliance Regulations, Internal Controls and Security

If there is lack of focus on internal controls and compliance requirements during the ERP implementation, organizations can easily end up going live with a system that later requires additional documentation and rework at significant cost. For instance, many system integrators are not familiar with Sarbanes-Oxley requirements, and as a result, those requirements are not considered or discussed with the business at the early stages of the implementation. Because process leads and team members are not typically experts in the technical aspects of ERP, it is unlikely they will know whether a design is inadequate or inefficient from a compliance standpoint.

Security controls, such as segregation of duties and sensitive access, are an integral concept for internal controls and ERP. Not only should end user access be driven by a segregation of duties and sensitive access rule set that has been approved by both internal and external audit, but the architecture of the security roles should also be designed in a way that is flexible for the organization's needs. Many organizations miss the importance of properly designing ERP user access security, leaving users with an unnecessary segregation of duties and no way to remove access without performing a costly redesign project. In addition, some high-risk segregation of duties issues will need to be mitigated with compensating manual controls, thus increasing the cost of compliance.

Controls should also be considered in the design of business processes. ERP systems are highly configurable, and the project team will make decisions about the setup of processes that have a large impact on internal controls. These automated controls within each business process, such as tolerance levels, approvals and validation checks, will decrease the number of manual control activities that need to take place. Examples include:

- Controls that prevent duplicate payments to vendors
- Tolerance levels and validation checks in the three-way match process
- Review and approval of manual pricing and issuance of customer credit memos
- Review and approval of journal entries based on delegation of authority structures

A leading practice on ERP implementations is to identify a “controls team” that is formally part of the project organization structure. This team works across the project, engaging with the process teams, security team and training team to help ensure internal control and compliance requirements are understood, designed into the system, documented and tested. The controls team also works externally to the project, acting as a liaison to internal and external audit to help provide confidence and evidence that internal controls are being addressed in the implementation.

Engaging an Advocate for Management

Organizations, particularly those going through an ERP implementation for the first time, can benefit from having an external resource to help develop an implementation risk assessment approach by working with management to identify, monitor and mitigate key risks. ERP implementation experience and knowledge of typical risks and leading practices are essential to the success of the project.

A typical approach is to conduct a series of project risk assessments that align with the major milestones of an implementation. This provides the ability to gauge the progress of critical workstreams through each step of the project and to benchmark the teams' risk mitigation progress against prior reviews.

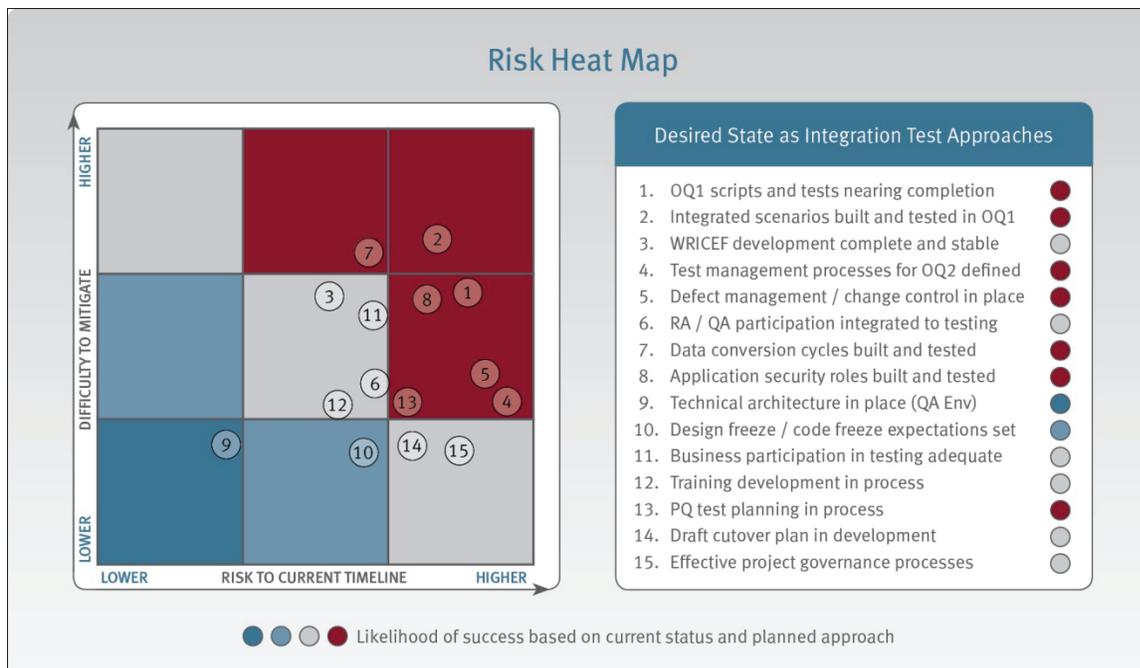
Working as “management's advocate,” this implementation risk monitoring function can help to ensure continuous focus is maintained throughout all phases of the ERP project life cycle – design, build, testing and go-live – on risks that have the potential to undermine success.

Example

A manufacturing firm that provides electronic equipment, instruments and components to both consumer and life sciences markets asked Protiviti to provide an objective review of its ERP implementation process and make recommendations to support the project timeline currently in place. Our team, working with the client's PMO, conducted a thorough analysis of project documentation and interviewed a cross-section of project team members representing both the client and the ERP vendor selected for the project.

Through this process, Protiviti's experts determined that the start date and estimated duration for the next phase of implementation were unrealistic, and that other significant risks had the potential to derail project success. Among the recommendations we provided to the client's PMO were intensifying the focus on tactical project management across the project, including actively measuring progress for creation of a more detailed project plan, and increasing expectations that the system integrator provide recommended approaches, methodologies and leading practices for project activities.

Additionally, Protiviti advised that the client identify and appoint an experienced and responsible owner for all critical workstreams to serve as a single point of accountability to drive day-to-day planning, execution, progress measurement and issue resolution across the ERP project team. Through our analysis of the current approach to the ERP implementation, we found delays occurring in workstreams such as data conversion, test planning and security due to lack of an accountable owner authorized to drive work across the project team. The risk "heat map" below was developed and used to facilitate discussions with management and place emphasis on the most urgent risks.



About Protiviti

Protiviti (www.protiviti.com) is a global consulting firm that helps companies solve problems in finance, technology, operations, governance, risk and internal audit. Through our network of more than 70 offices in over 20 countries, we have served more than 35 percent of FORTUNE® 1000 and Global 500 companies. We also work with smaller, growing companies, including those looking to go public, as well as with government agencies.

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About Protiviti's ERP Implementation Risk Management Practice

Protiviti's ERP Implementation Risk Management professionals help organizations reduce the risk and cost of ERP implementations and achieve the return on investment intended from the initiative. Our consultants help organizations to identify, measure and manage the risks they face in executing major ERP system implementations. With our understanding of best practices for ERP implementations and experience with how system integrators accomplish these initiatives, we are uniquely suited to incorporating the needs of the internal and external audit groups into these projects.

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