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Harnessing internal controls to mitigate risk and enhance value in cloud-based ERP finance transformations

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Executive summary

Enterprise resource planning (ERP) systems have become the digital backbone of modern businesses and the hub of finance and operational transformation for organizations worldwide. Now, these foundational platforms are undergoing a transformation of their own, driven by the rapid rise of cloud computing.

The shift from on-premises ERP to cloud-based systems has become a significant business trend, fueled by the clear advantages of cloud-based intelligent ERP: greater scalability, smarter cost management, effective data integration, remote accessibility, and a steady stream of innovation. Leading ERP system vendors aren't just riding this wave; they're driving it with plans to discontinue support of their legacy on-premises platforms beginning in 2027. In short, for many organizations, adopting cloud ERP is increasingly seen as a matter of when—not if.

A modern, well-designed and effective internal control environment remains an important factor for reducing risk and increasing value before, during, and after an ERP system transformation and migration to the cloud. Automated controls that take advantage of the ERP's inherent capabilities and leverage accelerators, such as artificial intelligence (AI), not only increase operational efficiency but also mitigate risks throughout the ERP implementation life cycle and future-state processes.

Executive summary

Navigating the complexities of cloud ERP

The case for cloud ERP is persuasive, but every journey has its obstacles. Transitioning to the cloud may require giving up direct control over technological infrastructure, which previously resided within the organization's own walls. This transition raises new questions—and risks—around data security, regulatory compliance, and operational oversight. A key challenge, for example, is that the controls you may be responsible for and attest to may be outside your direct purview. For organizations taking the ERP cloud leap, effectiveness hinges on the ability to navigate these complexities with confidence.

Internal controls: The cornerstone of cloud ERP effectiveness

In the move to the cloud, internal controls are important. Controls, supported by accelerators such as AI, are not just safeguards during cloud ERP implementation—they form the foundation for managing ongoing operational, financial, and compliance risks. In fact, the opportunity to modernize and update insufficient or outdated controls to decrease risks is a benefit of a cloud ERP finance system transformation. These risks range from data inaccuracies, financial misstatements, and regulatory penalties to fraud, data breaches, system downtime, and reputational damage.

Organizations that prioritize strong internal controls can be better positioned to mitigate these risks and realize the potential of cloud ERP—simplifying compliance, safeguarding data integrity, and building a resilient foundation for future growth. The sections ahead examine the evolving ERP controls landscape and important considerations for organizations planning a cloud ERP finance transformation.
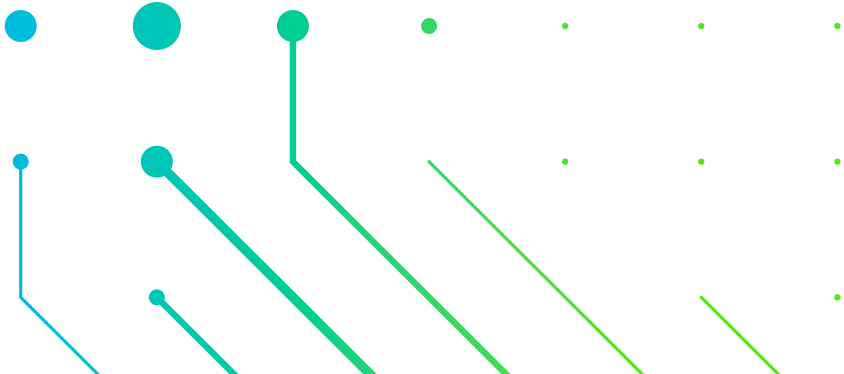
The evolving ERP cloud landscape

The migration from on-premises to cloud-based ERP solutions marks a pivotal shift in how many organizations manage their core business processes. Accelerating this transformation, leading ERP system vendors have announced timelines for sunsetting support of their legacy on-premises platforms some starting as early as 2027.

The message is clear: The future of ERP is in the cloud, and it may be the time to act. Over time, the risks, challenges, and limitations of legacy systems become more difficult to ignore. Eventually, many leaders realize that simply adding new modules or ramping up training won't keep pace with evolving business circumstances. That's usually when an ERP transformation and a move to the cloud becomes the obvious choice.

Managing the complexities of a cloud ERP migration

Cloud ERP platforms offer significant advantages over traditional systems, empowering organizations to access performance enhancements, simplify IT management, and adapt efficiently to changing business needs. However, migrating to the cloud introduces new complexities, especially around system integration, data management, and regulatory compliance.

Cloud ERP environments integrate various business processes—such as finance, procurement, human resources, and supply chain management—into a single platform. These systems also connect with a diverse ecosystem of third-party applications and legacy systems, increasing integration points and potential vulnerabilities. This interconnectedness increases the complexity of data management as well as regulatory compliance processes, making it important to have strong internal controls to prevent errors, fraud, and unauthorized access.

Modernizing controls to unlock cloud ERP value

Unlocking the potential value of cloud ERP investments involves reimagining control processes to be more efficient and responsive, improving and automating controls at every step. These enhanced or "robust" controls protect data integrity by supporting accuracy, reliability, and completeness, which is essential for effective decision-making. Robust controls also improve operational efficiency by automating resource-intensive manual processes and reducing the risk of manual errors. Ultimately, organizations with well-designed internal controls may be better positioned to achieve their strategic objectives, maintain regulatory compliance, and sustain stakeholder confidence.

The Importance of internal controls in an ERP system

Internal controls are integrated processes, procedures, and technical safeguards within ERP systems. They not only protect organizational assets like intellectual property, but also help organizations preserve the accuracy, integrity, and security of their business data, processes, and reporting. A closer examination of the three major categories of controls—financial, operational, and compliance—reveals a range of internal control types that play vital roles within an ERP environment.

Types of controls and their purpose

Preventive controls, such as user access restrictions and segregation of duties, are implemented to stop errors or irregularities before they occur. Detective controls, including audit trails and automated exception reports, are used to identify issues after they have arisen. Corrective controls, such as backup procedures and incident response plans, enable organizations to address and recover from

identified problems. Collectively, these controls form a broad framework that safeguards the integrity and reliability of the ERP system.

Inadequate controls: Risks and consequences

Inadequate internal controls in an ERP system can introduce substantial risk, resulting in serious consequences, such as:

- **A higher risk of errors in financial statements**, which can result in failed audits, misstatements, and a general loss of trust among stakeholders—investors, customers, and employees.

- **Data breaches** that expose sensitive financial or personal information, leading to regulatory penalties and reputational damage.

- **Inefficient operational processes**, which can result in increased operational costs, reduced productivity, and operational disruptions, such as system outages.

- **Compliance failures** such as noncompliance with regulations like Sarbanes-Oxley (SOX), the General Protection Data Regulation (GDPR), or other industry-specific standards, which can result in substantial fines and penalties. Noncompliance can also lead to legal actions against the company, including lawsuits and sanctions, financial losses, and loss of certifications.

Many of these can undercut the organization's long-term success and damage its reputation.
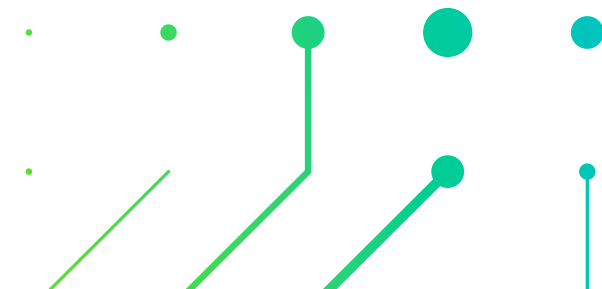
Controls during full implementation and software development life cycle

Implementing a cloud ERP system is a complex initiative that introduces risks throughout the software development life cycle. To prevent compliance issues at go-live, organizations can integrate internal controls into the finance transformation workstream. Embedding robust, modern controls from the outset makes them a core part of the system's architecture—rather than an afterthought—across all phases: requirements gathering, design, development, testing, deployment, and maintenance. This proactive approach helps address risks such as data loss, corruption, and unauthorized access, which are heightened in cloud ERP migrations due to increased connectivity and data movement.

The impact of modern controls within the new production system

During the cutover process to a cloud ERP platform, controls should verify that data is transferred accurately and completely, with thorough reconciliation between the new cloud production environment and the legacy system. Cloud ERP transformations present an ideal opportunity to modernize controls for data mapping and validation, segregation of duties, and maintaining detailed audit trails—leveraging the advanced automation and monitoring capabilities inherent in many cloud solutions. Accelerators, including AI, can bring added efficiency to the process.

By adopting these modern controls during implementation, organizations can enhance control readiness across the ERP environment, increase the effectiveness of risk mitigation, streamline compliance efforts, and reduce manual intervention. Ultimately, prioritizing modern controls throughout the cloud ERP implementation and the software development life cycle lays a strong foundation for secure, reliable, and scalable business operations in today's digital landscape.

Beyond system implementation:
Effective controls for ongoing operations

The need for effective controls continues well after a cloud ERP system goes live; in fact, ongoing financial and risk management controls are crucial in post-implementation operations and should be central to an ERP finance transformation. Similar to the software development life cycle, AI technology and other accelerators can automate and optimize accounting, financial reporting, and operational control processes during the post-implementation stage.

Financial controls

The core objective of an ERP finance transformation is to enhance the efficiency of financial reporting and disclosures with up-to-date internal controls over financial reporting (ICFR). To achieve this goal, financial controls should be designed in alignment with the COSO (Committee of Sponsoring Organizations of the Treadway Commission) framework—the

leading standard for ICFR. COSO's five integrated components—control environment, risk assessment, control activities, information and communication, and monitoring—collectively help foster accuracy of financial statements, prevent fraud, and support compliance with regulations such as the Sarbanes-Oxley Act (SOX).1[1]

COSO Principle 9 addresses changes that could have an impact on the internal controls system, including ERP financial controls.[2] It guides organizations to proactively identify and assess risks throughout the ERP implementation life cycle and helps identify when an ERP modification may represent a material financial reporting change. This process helps avoid costly errors, regulatory noncompliance, and operational disruptions.

Beyond system implementation:
Effective controls for ongoing operations

Financial control examples

Examples of COSO ICFR controls include these essential processes:

- **Access controls:** Access management and role-based access controls restrict access to financial systems and sensitive data to only those employees who need it for their role—reducing the risk of breaches or fraud.

- **Segregation of duties:** With this control, no single individual is responsible for both authorizing transactions and recording or reconciling them.

- **Reconciliation of accounts:** Regularly comparing account balances in the general ledger to supporting documentation (such as bank statements or sub-ledgers) helps detect and promptly correct discrepancies. This control is important for maintaining accuracy and completeness of financial records.

Adopting COSO ICFR standards for your controls framework establishes clear financial reporting policies, procedures, and responsibilities within your ERP system and enables your organization to identify and mitigate financial risks, maintain oversight, and foster accountability.

Other operational controls

Other ongoing operational controls are essential for sustaining security, reliability, and value of a cloud ERP environment over time. Here are a few examples:

- **Change management processes** systematically evaluate, approve, and document modifications to the ERP system, reducing disruptions and compliance issues.

- **Continuous monitoring**, supported by advanced AI and automated tools, provides real-time insights into system performance

and user activities, enabling proactive identification and response to anomalies or security incidents.

- **Regular system audits and continuous improvement** validate the effectiveness of these controls and help the control environment evolve in step with changes in business processes, technology, and regulatory requirements.

Together, these ongoing controls help organizations improve the value of their cloud ERP investment and safeguard against emerging risks.

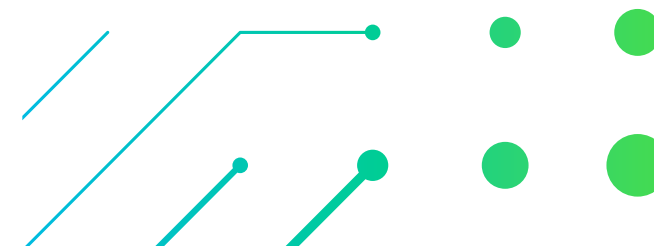# The C-suite's role in ERP control governance

An ERP transformation is not just a technology upgrade; it is a strategic business imperative essential for achieving organizational goals, enhancing operational efficiency, improving controls, and strengthening risk management. For this reason, C-suite executives, particularly CFOs and CIOs—play a pivotal role in the effectiveness of cloud ERP transformation. With oversight from CEOs and board members, these leaders align cloud ERP initiatives with organizational objectives, provide measurable value, and uphold the highest standards of governance and control. This level of C-suite accountability and collaboration marks a shift from the past, when IT often managed ERP projects with minimal business input. Today, leading practices emphasize close coordination among the CIO, CFO, and other business leaders.

A clear commitment to strong governance and controls

C-suite executives can start by setting the tone from the top and demonstrating a clear commitment to strong governance and ethical standards. They are responsible for determining that robust internal controls are integrated throughout the implementation life cycle, from planning to post-deployment. By aligning control frameworks with the organization's business objectives and risk appetite, the C-suite, alongside the board and audit committee, positions controls to support both strategic goals and risk management priorities.

Executives should invest in people, processes, and technology, including advanced accelerators and AI capabilities, to build a resilient and future-ready control environment. Ongoing oversight and continuous engagement are essential; leaders should monitor progress, address challenges, and drive improvement. By fostering a culture where AI and human ability complement each other, ongoing oversight, accountability, and continuous engagement are essential; leaders should monitor progress, address challenges, and drive improvement. By fostering this culture, C-suite leaders can further strengthen internal controls and position the organization for sustained success.

Harnessing cloud ERP's potential by leveraging modern controls

As organizations accelerate their migration to cloud ERP platforms, robust internal controls—enhanced, automated controls embedded into the ERP life cycle—have become the cornerstone of successful finance transformations. The shift to cloud brings tremendous opportunities for scalability, innovation, and operational efficiency, but also introduces new complexities around data security, compliance, and risk management.

By modernizing and prioritizing internal controls, leveraging advanced technologies like AI and other forms of automation—business leaders not only can safeguard their financial processes and simplify regulatory compliance but also can unlock the strategic value of their cloud ERP investments. Ultimately, organizations that embed robust controls into their transformation journey will be better equipped to drive sustainable growth, maintain stakeholder trust, and build a resilient enterprise.

Industry-leading guidance for your ERP transformation

Deloitte stands ready to provide guidance for your transformation journey. Our network of audit and assurance professionals combines business, technology, and industry experience to help address the governance, risk, and controls requirements of your ERP system transformation. Leveraging our demonstrated methodology, we embed modern controls at every stage of the ERP life cycle, resulting in a robust, risk-aware, and control-ready environment.

Want to learn more?

For more information about our internal controls practice and controls framework, contact us:

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Endnotes

1 Deloitte Accounting Research Tool (DART), *Guide for management — Next steps after identifying a deficiency in internal control over financial reporting*, October 2024.

2 US Government Accountability Office (GAO), "Green Book: Principle 9 - Identify, analyze, and respond to change," accessed August 2025.

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