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Risk and compliance considerations in ERP implementations

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Abstract

The main reason why a modern business needs Enterprise Resource Planning (ERP) systems is that the latter offers an all-in-one solution to some of the most fundamental operations a business has, like finance, supply chain, human resources, customer relationship management and others. But ERP implementations are full of risks in terms of security, operational efficiency, compliance as well as financial sustainability. Other regulations like the General Data Protection Regulation (GDPR) the Sarbanes-Oxley Act (SOX) and any compliance standards in the industry place an extra burden on the entities that implement an ERP system. Elements of risk considered in this paper in terms of ERP implementations include organizational resistance, data security vulnerabilities, financial limitations, and third-party risks. It also recalls compliance frameworks that regulate the governance of ERP and explores the best practices in overcoming regulatory risks. It also considers how the emerging technologies can be used in enhancing the risk management and compliance in ERP and the importance of artificial intelligence (AI), blockchain, robotic process automation (RPA), and advanced analytics. The technologies are advanced to increase predictive risk detection, automated compliance, and secure data in ERP systems. The future trends seem to demonstrate greater regulatory attention, the rise of cloud EVP options, and the inclusion of IoT to view the risks in real-time. To conclude this paper, the author has offered several major recommendations to be used by the organizations to improve their risk management strategies concerning ERP, such as centralized governance compliance, automation using artificial intelligence and data security, and blockchain-based compliance auditing. By promoting prior research and highlighting the most serious cases of knowledge gaps in the field, the current paper adds to the existing body of information on the topic of ERP governance and risk mitigation. Research results can be of great help to scholars, information technology practitioners, and entrepreneurs interested in a secure and compliant ERP implementation in a growing regulatory environment.

Keywords: Enterprise Resource Planning (ERP); Risk management; Regulatory compliance; Artificial Intelligence (AI); Blockchain; Robotic Process Automation (RPA)

1. Introduction

Enterprise Resource Planning (ERP) systems have become an essential part of any contemporary business and can provide a unified platform on which the organization can manage its important processes like finance, human resources, supply chain, and customer relations. This is because these systems increase efficiency, precision of information, and decision-making since they combine various processes into one system. Nonetheless, the fact is that ERP implementations can be quite complicated with the risks of information security, compliance with the regulations, and discreteness of operations [1]. Both the rising number of businesses being digitized and developing regulatory frameworks like the GDPR and SOX make risk management and compliance an especially important topic in terms of ERP deployment [2].

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1.1. Relevance of the Topic in Today's Research Landscape

Over the past couple of years, the importance of risk and compliance factors in the ERP implementation process has increased, given the rising number of cyber threats, the internationalization of commercial operations, and strict legal demands. Organizations are under immense pressure to ensure that their ERP systems match the industry standards and regulatory requirements, as they also need to reduce the risks of letting information leak through data breaches, operations, project failures, and overruns [3]. Researches also show that a significant portion of ERP projects fail or run into significant mishaps because of poor risk evaluation and compliance arrangements [4]. With the evolution of ERP systems in terms of adoption of cloud-based solutions, artificial intelligence, and real-time analytics, the issue of regulatory adherence and risk prevention has become more complex as well.

1.2. Significance in the Broader Field

ERP risk management in risk and ERP compliance is essential to ensure not only the regulatory compliance but also corpus security and financial security. Badly run ERP projects may cost a company finances, legal consequences, and their reputation, and so businesses ought to come up with well-organized modules where they can deal with risks [5]. The cross-functional nature of ERP systems (legal, financial, and cybersecurity fields) makes it important to conduct interdisciplinary studies that will create best practices on compliance and risk reduction strategies. Moreover, the increasing popularity of cloud-based ERP systems provides another layer of compliance issues connected with data sovereignty, access management, as well as risks related to third parties, so new models of governance should be adopted [6].

1.3. Key Challenges and Gaps in Current Research

Even though there is currently a substantial amount of literature covering ERP initiatives, there are substantial research missing spots such as proactive risk management, risk automation, emerging technologies, and their effects. Most previous research has concentrated on technical and fiscal components of ERP implementations, and not much attention has been paid to broad compliance enforcement regimes that cover both the development of regulations and the containment of business industry particulars [7]. Besides, failure mode and effects analysis (FMEA) and risk-based project management methodologies have been discussed, but there are no standardized models customized to ERP settings [8]. The adaptive nature of the regulatory environments further adds to the complexity of compliance, shedding light on the necessity of risk management approaches that are light and flexible.

1.4. Purpose and Structure of This Review

This review will set out to examine the burning issues of risk and compliance in ERP implementations; synthesize the earlier research findings, unravel the most significant risks and challenges, and proffer new strategies for improving governance during the ERP project. In the next sections, common risk factors, regulatory compliance frameworks, and best practices for ensuring successful ERP deployments will also be analyzed in detail. Also, the review will discuss the relevance of the emerging technologies in reducing risks and strengthening the compliance potential. In focusing on these, this paper would be attempting to contribute to the current discourse on ERP governance and provide a dimension that may be used by future academic studies, as well as provide a dimension of how the same may be applied in practice.

2. Risk factors in ERP implementations

Enterprise Resource Planning (ERP) implementations are complex by nature and have huge risks that may affect the success of the project. The risks have various causes, which include business issues in an organisation, technical problems, regulatory compliance problems, and financial issues. These risks are very high, and the inability to deal with them may result in projects going off schedule, cost escalation, and in extreme situations, total project failure [9]. It is imperative that by unravelling the most common risk factors that precede ERP implementations, organisations are able to come up with effective risk mitigation measures to ensure the success of ERP projects.

2.1. Organizational and Change Management Risks

Among the major risk factors in ERP implementation is change aversion within an organization. The employees might resist accepting the new processes through a lack of understanding, inadequate training that is inadequate or fear of being displaced by new processes [10]. Research indicates that one of the reasons behind the ERP failures is organizational resistance since it has a direct influence on the acceptance and usability of such systems [11]. Active measures of change management, such as stakeholder involvement, training sessions as well as leadership encouragement, are essential to deal with resistance and easily move to the new ERP system.

The other major organizational risk is the lack of alignment between the ERP functionalities and the processes in the business. Most of the firms are unable to tailor the generic ERP systems to their own operational requirements, and thus they end up with inefficiencies and disrupted workflows [12]. This type of incorrect mapping of business requirements to the capabilities of ERP can result in expensive customizations, which complicate the system and make it harder to maintain [13].

2.2. Technical and Implementation Risks

The other significant risk in ERP implementations is the technical problems. These are system integration problems, information transfer complexities, as well as software verification problems [14]. Lots of companies use legacy systems that cannot be used with newer ERP solutions easily, causing inconsistency in data and disrupting their operations [15]. Another risk, which can result in poor quality data during migration, is incorrect or incomplete data that may decrease the accuracy of business intelligence and reporting [16]. ERP implementations also demand a lot of IT skills, and moreover, a lack of skilled individuals may cause configuration errors and poor performance of the system [17]. Companies need to define the technical competence of the respective IT departments or the implementation partners to deal with the complexity of the ERP deployments, customizations, and maintenance processes.

2.3. Regulatory Compliance and Security Risks

As the importance of data privacy and compliance within regulatory frameworks grows, it is the responsibility of organizations to maintain ERP systems that are compliant with a specific industry, like GDPR, SOX, and HIPAA [18]. The inability to adhere to these rules and regulations may lead to huge fines, legal action, and loss of image [19]. Another area of vulnerability in the field of ERP systems is compliance, in that it appears mostly within cloud-based ERP applications, where the data residency and accessibility are a serious issue of control [20]. Security vulnerability is another issue that can be very risky in ERP systems where vital business and customer data is stored. Hacking, ransomware attacks, and insider penetrations are cyber threats that can jeopardize confidential data and halt the operations of a business [21]. To prevent these risks, companies need to instate strong security policies such as encryption, multi-factor authentication, and constant monitoring.

2.4. Financial and Budgetary Risks

ERP projects involve huge financial investments, and overruns are a popular pitfall. Studies show that the majority of ERP projects run over budget, having gone into a scope creep because of unanticipated technical issues and lengthy roll-out periods [22]. Misjudged cost estimates and poorly funded change management strategies contribute to financial risks even more [23]. Also, there is always a tendency to underestimate all long-term expenses that revolve around the use of ERP systems, such as annual licenses, system upgrades, and support services [24]. It should carry out a financial risk assessment prior to the implementation of ERP, where planned budgets should be in line with the needs of the project.

2.5. Vendor and Third-Party Risks

Most organizations hire third-party vendors and consultants to implement ERP, which incur more risks in terms of the reliability of the vendor, contractual issues, and the level of service delivery [25]. The improper selection of the implementation partner may result in delays, inefficient optimization of the system, and overpricing. The dependence on third-party plugins and customizations is another important factor that companies should consider as a way of getting rid of these risks [26]. Since these add-ons ease the roles of ERP, they might also bring a problem of compatibility and might be difficult to update the system [27]. To avoid encountering difficulties in the future of their operations, organizations should make sure that they evaluate the long-term effects of specific third-party integrations.

ERP implementations are associated with many risks that may compromise project success unless adequately contained. Managing risks such as organizational, technical, regulatory, financial, and vendor risks will enable companies to ensure that the ERP implementation environment will be straightforward and the implementation relatively successful. Particular compliance models and the most efficient practices that may be accepted by organizations to alleviate these threats and guarantee compliance with regulations will be discussed in the next section.

3. Compliance frameworks and best practices in ERP implementations

Regulatory compliance is one of the most important elements of effective Enterprise Resource Planning (ERP) implementations. With a growing complexity in the legal and regulatory situation in which businesses have to operate, non-compliance with industry standards may lead to penalties in the form of monetary fines and fees, negative reputational outcome and legal implications [28]. When an organization adopts ERP, its processes should be aligned

with regulatory guidelines, including but not limited to General Data Protection Regulation (GDPR), Sarbanes-Oxley Act (SOX), Health Insurance Portability and Accountability Act (HIPAA) and Compliance rules of the particular industry [29]. The development of efficient governance, risk management and compliance (GRC) strategies can enable an organization to struggle through these control issues as well as to acquire the greatest rewards out of ERP systems.

3.1. Key Compliance Frameworks in ERP Implementations

3.1.1. General Data Protection Regulation (GDPR)

The European Union has laid down strong standards of data privacy and security known as GDPR. The data stored in ERP exceeds huge volumes of personal and financial data, thus the GDPR compliance becomes a significant one to organizations with operations or touching data of EU origin [30]. According to GDPR, the firms need to exercise proper technical and organizational practices in safeguarding the personal data, such as encryption, data minimization, and decision-effective access [31]. In order to always be in compliance, ERP vendors and organizations must also make sure that the data processing agreements (DPAs) are arranged with the third-party service providers [32].

3.1.2. Sarbanes-Oxley Act (SOX)

In the United States, publicly traded companies must comply with SOX as it regulates severe reporting and internal control standards in the financial reporting. ERP systems are important in the proper recording of financial data and the audit of the same [33]. To comply with SOX, ERP systems must enable financial transparency, permit real-time reporting, and enable tight controls to forestall mischief [34]. To satisfy the requirements of the SOX, organizations need to incorporate access control features, audit trails, and automated reporting features [35].

3.1.3. Health Insurance Portability and Accountability Act (HIPAA)

In the case of healthcare organizations, ERP systems should support HIPAA safety standards, which contain the rules of protecting patient health information (PHI) [36]. HIPAA compliance requires data storage, access controls by role, and an audit log to monitor all activities to patient data stored in the ERP [37]. Penalties may be severe in case of non-compliance, so the adherence to HIPAA-centered ERP conceptions can be extremely important to medical providers [38].

3.1.4. Industry-Specific Compliance Frameworks

In addition to the global regulations, across the various industries, compliance specifications exist, which must form part of the ERP implementations. As an example, the Financial Industry Regulatory Authority (FINRA) regulatory body regulates financial institutions and the International Organization of Standardization (ISO) offers structures like ISO 27001 approach supervising data security [39]. The manufacturing companies are obliged to meet their industry standards such as the Good Manufacturing Practices (GMP) and the Occupational Safety and Health Administration (OSHA) regulations [40].

3.2. Best Practices for Ensuring ERP Compliance

3.2.1. Implementing Governance, Risk, and Compliance (GRC) Solutions

Most organizations combine their GRC solutions with their ERP systems in an effort to make compliance management easier. GRC tools assist a business to keep track of regulatory needs, test possible risks and implement compliance policies at all organizational levels [41]. The automated compliance monitoring has minimised the chances of non-compliance since it makes necessary changes of regulations be reflected in the ERP configurations in real-world time [42].

3.2.2. Role-Based Access Control (RBAC) and Data Security Measures

Roll-Based Access Control (RBAC) makes it so that employees will have access to only the information that they need to perform their job [43]. To secure sensitive information, ERP systems must include multi-factor authentication (MFA) or data encryption and security audit checks at frequent intervals [44].

3.2.3. Continuous Auditing and Real-Time Monitoring

ERP systems must be able to enable constant auditing capabilities and real-time monitoring to identify any anomalies or non-authoritative transactions or any non-compliances [45]. Regulatory reporting is enhanced by automated audit trails and has become more accurate and efficient because organizations endeavor to be more transparent and accountable [46].

3.2.4. Vendor Compliance Management

Companies have to evaluate the compliance capacity of the vendors and third-party service providers to ERP implementation. Additional measures that should be mentioned in vendor agreements to reduce regulatory risks include defining particular compliance requirements, data protection, and service commitment levels (SLAs) [47]. Vendor auditing and security testing can be performed on a regular basis to help guarantee current vendor adherence to industry standards [48].

3.2.5. Employee Training and Awareness Programs

Compliance is not only an issue of technology; it needs an educated workforce. Regular training on data privacy, security best practices, and regulatory compliance should also be carried out for organizations so that employees have a firm grip of the roles they play to ensure that they maintain compliance [49]. The aspect of regulatory compliance changes the chances of human errors that might result in the violation of regulatory compliance [50]. Regulatory compliance is an undoubtedly essential element of ERP implementations, which requires that organizations adapt their systems to the international and industry-specific regulations. Business enterprises can use compliance frameworks like GDPR, SOX, and HIPAA, and integrate best practices, like GRC solutions, RBAC, and continuous auditing, to further compliance activities to reduce legal risks. In the second part, the discussion will touch on the contribution of new technologies in enhancing the management of risk and compliance in ERP systems.

4. Role of Emerging Technologies in ERP Risk Management and Compliance

Due to the ongoing developments of ERP systems, new technologies, including artificial intelligence (AI), blockchain, robotic process automation (RPA), and advanced analytics, are increasingly contributing to improved risk management and compliance. They are the technologies that organizations can use to identify potential risks proactively, streamline the process of compliance, and enhance governance in ERP implementation. Businesses have an opportunity to eliminate potential threats connected with issues of cybersecurity, regulatory breaches, and organizational inefficiency through innovation [43].

4.1. Artificial Intelligence (AI) and Machine Learning in ERP compliance

With AI and machine learning (ML), organizations have been able to manage their ERP risks differently because they are able to predict and automate the process of checking their organizations to ensure they are compliant with the laws, plus detect fraudulent mechanisms [44]. The AI-driven ERP system is capable of reading massive data and spotting potential anomalies or compliance breaches and providing real-time recommendations on the corrective measures to implement [45].

4.1.1. Predictive Analytics for Risk Detection

Predictive analytics based on AI allows organizations to detect possible risks and address them before they become critical. AI models have the capability to forecast security breaches, fraud, and operational collapses by analyzing natural data [46]. The proactive strategy will assist organizations to have preventing ERP-related dangers and ensure they meet the regulations [47].

4.1.2. Automated Compliance Monitoring

The classic solution to compliance management is the manual management of any regulatory updates and internal audits through which is time-consuming and therefore subject to human error. Compliance monitoring with the help of AI-powered ERP solutions can be automated, wherein compliance rules can be tracked, and internal policies can be periodically updated based on any changes to the regulatory compliance [48]. This will guarantee that organizations stay in line with the changes and evolutions of the legal demands, including GDPR, SOX, and HIPAA, no longer on the basis of vast human resources mobilization [49].

4.1.3. AI-Based Fraud Detection

An important element of ERP security is fraud detection, especially when it comes to money transfer and procurement. The AI algorithms will be able to assess the patterns of transactions and warn about suspicious activity that might result in fraudulent practices [50]. Since AI-based tools can be used to detect fraudulent activities in ERP systems, their implementation can minimize the possibility of committing economic crimes, including embezzlement and invoice fraud.

4.2. Blockchain for Enhanced Security and Compliance

With blockchain technology, a tamper-proof ledger system is provided, which is decentralized and boosts ERP security and compliance. Blockchain technology has the potential to assist organizations in becoming compliant with regulations and eliminate the threats of data interference by cyberattacks and the manipulation of data due to its inherent data integrity, transparency, and immutability capabilities [48-50].

4.2.1. Secure and Transparent Transactions

The benefit of one of the most important advantages of the blockchain is that it has offered transparent and auditable transaction records. Blockchain provides the opportunity to check the veracity of the financial transactions, supply chain processes, and contracts in ERP systems. This makes all the ERP activities traceable and conform to the regulations in the industry [50].

4.2.2. Smart Contracts for Regulatory Compliance

Smart contracts refer to agreements (blockchain) that automatically drive the legal stipulations of a contract under predetermined circumstances. Smart contracts: Within ERP implementation, the smart contracts will enable automation of rules of law and finance, thus reducing the requirement of manual supervision [46-50]. As an example of how smart contracts would be used, one can note that in the process of procurement, smart contracts would be used to provide the release of payment to the vendor only when the requirements of compliance are achieved.

4.2.3. Data Integrity and Cybersecurity

The ERP systems usually contain sensitive business and customer data, which makes them an easy target for cyberattacks. The cryptographic security systems of blockchain exclude unauthorized access, data manipulation, and make it impossible to change compliance-related records, which are readable and audit-protected [1, 48]. This enhances the security of ERP and reduces the threat of non-compliance because of the leakage of data.

4.3. Robotic Process Automation (RPA) for Compliance Efficiency

Robotic Process Automation (RPA) is transforming the ERP compliance space, especially in instances where most of the duties are repetitive, like data entry, report filing, and regulatory filings. RPA tools also aid an organization to eliminate human mistakes and enhance efficiency, besides ensuring proper documentation of compliance activities.

4.3.1. Automated Data Entry and Reporting

ERP compliance may involve the need to create detailed reports about financial transactions, audit logs, and risk analysis. These processes can be automated by the RPA bots, and as such, the reports can also be generated in real-time and accurately. This saves the employees' administrative work and enhances the accuracy of compliance [50].

4.3.2. Audit and Risk Assessment Automation

Manual preparation of internal audit and risk assessment has the potential of being inefficient and cost-ineffective. The automation of such processes is possible with the help of RPA tools, which help to collect and analyze the data connected with compliance and identify mismatches, and create audit-ready reports. This increases the efficiency of the internal controls and timely remedies on risks [42].

4.3.3. Policy Enforcement and Regulatory Adherence

RPA may be configured so that it makes sure that organizational policies are adhered to, automatically identifying the non-conforming activities and acting upon them. As an example, when an employee tries to access forbidden financial information without using adequate authorization, an RPA bot will be able to send an alarm and prevent such a demand. This also makes sure that the ERP systems are kept on track with the participation requirements at all times [50].

4.4. Advanced Analytics for Continuous Monitoring

Big data analytics and real-time monitoring tools are advanced analytics solutions that empower organizations to gain more about ERP risk and corresponding compliance levels. Using data visualization and dashboard tools and technologies, the organization can monitor the important compliance metrics and identify the upcoming risks in advance [47].

4.4.1. Real-Time Compliance Dashboards

A great number of current ERP systems include real-time compliance dashboards, which give executives live access to the compliance status, security alerts, and regulation changes. Such dashboards assist organizations to make informed decisions and deal with compliance risks on time [42].

4.4.2. Big Data for Compliance Risk Analysis

A concept known as big data analytics enables organizations to digest significant amounts of data on compliance data, derive a trend, and forecast risk. The knowledge of business compliance weaknesses can be gained through the means of analyzing its structured and unstructured data and taking precautionary measures in adopting a dynamic approach to deal with such risks [39, 47, 49]. The new technologies (Artificial Intelligence, blockchain, RPA, and advanced analytics) are reshaping risk management and compliance during ERP implementations. These advancements promote better risk prediction, automatic compliance, and data safety, giving companies a way out of the maze of regulatory compliance. These technologies enable businesses to use ERP-related risks, allow enhanced operational efficiency, and ensure long-term sustainability of compliance. Future trends and recommendations on the improvement of risk and compliance management in the ERP systems will be covered in the following section.

5. Future trends and recommendations in ERP risk management and compliance

As organizations continue to adopt and refine their Enterprise Resource Planning (ERP) systems, the landscape of risk management and compliance is evolving rapidly. Emerging regulatory frameworks, technological advancements, and shifting business environments necessitate proactive strategies for mitigating risks and ensuring sustained compliance. This section explores future trends in ERP governance, discusses anticipated regulatory developments, and provides key recommendations for organizations to enhance their risk and compliance strategies.

5.1. Future Trends in ERP Risk Management and Compliance

5.1.1. Increased Regulatory Scrutiny and Evolving Compliance Standards

Regulatory and government bodies in all countries are increasing the requirements of compliance, especially in data privacy, cybersecurity, and financial reporting. As data breaches and online fraud become more common, legislations and regulations like the GDPR, California Consumer Privacy Act (CCPA), and future international cybersecurity laws will also be expected to necessitate tougher security and reporting procedures in ERP systems [50]. Moreover, the needs of the compliance framework in the organizations will become updated regularly in order to find an opportunity to correspond to the new requirements and avoid legal penalties. In addition to this, there is a prediction that the industry-specific compliance requirements will change, especially in industries like the healthcare sector, finance, and manufacturing. As an example, greater demand for supply chain transparency and sustainability does not necessarily imply new compliance requirements that ERP systems will have to embrace. Organizations have thus been required to embrace the agile models of compliance that are able to flexibly adapt to the modifications in regulations.

5.1.2. AI-Powered Risk Prediction and Compliance Automation

The application of artificial intelligence in the management of risks is bound to be a norm in the implementation of the ERPs. Both machine learning models and predictive analytics will help an organization to be in a better position to identify and stop risk before it becomes a reality. Future modules in ERP systems will also comprise risk detection engines based on AI that will simulate historical trends and anomalies, including recommendations on how to address related risks on a real-time basis. In addition to this, the manual processes of regulatory monitoring and enforcement of controls will also be simplified through risk compliance. Regulatory monitoring: the adoption of AI-based chatbots and virtual assistants will help organizations to manage changes in regulations, conduct automated tests of compliance, and prepare audit reports with the lowest involvement of human staff members [35-42].

5.1.3. Blockchain for Enhanced Data Security and Regulatory Transparency

It is believed that more and more functions of ERP compliance, especially data integrity and security, may be provided using blockchain technology. Blockchain can improve financial reporting accuracy by creating irremovable audit trails that lessen the possibility of fraud in enterprise resource planning (ERP) systems. Organizational data, data provided, and data used will be given the chance to be provided through blockchain-enabled smart contracts that will refine the compliance process since the transactions that take place will put the regulations in place that the transactions have to follow before they can take place. The blockchain will also enhance compliance in the supply chain since it will bring about end-to-end visibility of the supply of goods and also the movements of financial transactions. The businesses will

be in a position to certify the genuineness of the suppliers, monitor the sources of products, and to follow the international commercial provisions more effectively.

5.1.4. Expansion of Cloud-Based and Hybrid ERP Solutions

The shift towards cloud-based ERP solutions is expected to continue, with organizations adopting hybrid models that balance cloud and on-premises capabilities. Cloud-based ERP systems offer scalability, cost savings, and improved accessibility, but they also introduce new compliance challenges related to data residency, third-party access control, and vendor dependency [80]. Organizations will need to establish robust cloud governance frameworks to manage compliance risks associated with data sovereignty and cross-border data transfers.

5.1.5. Integration of IoT and Real-Time Risk Monitoring

ERP systems will be better in real-time risk monitoring, and codes will be integrated into the Internet of Things (IoT) technology. Applications of IoT-enabled sensors and smart devices will offer constant data feeds to businesses and associate risks in their operations, especially in the process of manufacturing, logistics, and asset management. As an example, the ERP solution powered by IoT can locate the malfunction of equipment, disruption of the supply chain, or security compromise automatically and call in compliance activities on the fly.

6. Conclusion

Change in regulatory standards, technological advances, and the rising security attacks will influence the future of ERP risk management and compliance. The proactive approaches, such as compliance automation by AI, blockchain security, and cloud governance, have to be implemented by organizations to manage ERP risks effectively. These recommendations will help businesses to improve their compliance posture, reduce financial and operational risk, and may also help to have a successful ERP in the long term. With the further evolution of ERP systems, there is a need to conduct additional research to create a universal risk management framework and adaptive compliance frameworks capable of dealing with the dynamism of digital transformation.

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