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ERP and EPM Integration in Large Enterprises: A Review of Implementation Challenges and Success Factors

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Abstract
Enterprise Resource Planning (ERP) and Enterprise Performance Management (EPM) integration has become a strategic priority for large enterprises seeking to align transactional efficiency with performance visibility, planning accuracy, and data-driven decision-making. This review examines the major implementation challenges and critical success factors associated with integrating ERP and EPM systems in complex organizational environments. The study highlights how large enterprises pursue integration to achieve unified financial reporting, streamlined budgeting and forecasting, improved operational control, and enhanced executive insight across business units. Despite these benefits, implementation remains difficult due to legacy system complexity, fragmented data architectures, inconsistent master data standards, cross-functional misalignment, high customization levels, resistance to change, and the significant cost and time commitments required for enterprise-wide transformation. The review further identifies governance-related issues, including weak executive sponsorship, unclear ownership of data and processes, inadequate user training, and poor change communication, as common reasons for delays, budget overruns, and suboptimal post-implementation outcomes. Success factors consistently reported across the literature include strong leadership commitment, a clearly defined integration roadmap, robust data governance, process standardization, phased deployment strategies, and continuous stakeholder engagement from finance, operations, and information technology teams. Equally important are vendor support quality, system interoperability, scalable cloud architecture, and the organization's readiness to adapt business processes rather than over-customize systems. The review emphasizes that ERP–EPM integration should not be approached solely as a technical systems project, but as a broader organizational transformation initiative requiring strategic alignment, capability development, and sustained performance monitoring. When properly executed, integrated ERP and EPM environments can strengthen enterprise agility, improve planning precision, support regulatory compliance, and enable more responsive strategic management in dynamic business contexts. The paper concludes that long-term integration success in large enterprises depends on balancing technological capability with governance maturity, organizational discipline, and a strong focus on business value realization. Future research should further explore industry-specific integration models, post-implementation value measurement, and the role of artificial intelligence in enhancing ERP and EPM synergy.

Keywords: ERP, EPM, System Integration, Large Enterprises, Implementation Challenges, Success Factors, Digital Transformation, Enterprise Systems

1. Introduction
Enterprise Resource Planning (ERP) and Enterprise Performance Management (EPM) have become central pillars of information and decision systems in large enterprises. ERP refers to integrated software platforms used to manage and coordinate core organizational processes such as finance, procurement, supply chain operations, human resources, manufacturing, and sales within a unified database and workflow structure. In large enterprises, ERP systems serve as the operational backbone by standardizing transactions, improving data consistency, and supporting process efficiency across

multiple business units and geographic locations (Adeleke, 2022, Kevin & Oluwasanya, 2022, Mbonu, *et al*., 2022). EPM, in contrast, focuses on the strategic and analytical dimensions of enterprise management. It comprises the tools, frameworks, and processes used to support budgeting, forecasting, financial consolidation, performance measurement, scenario planning, and executive decision-making. While ERP is largely transaction-oriented and operational in nature, EPM is performance-oriented and designed to transform enterprise data into strategic insight for planning and control.

The integration of ERP and EPM has become increasingly important because large enterprises can no longer rely on fragmented systems to manage both operational complexity and strategic performance expectations. ERP systems generate vast amounts of real-time transactional data, but without effective integration with EPM platforms, much of this data remains underutilized for planning, analysis, and performance evaluation. Integrating the two systems enables organizations to connect day-to-day business activities with long-term strategic goals, thereby improving the accuracy of financial reporting, the quality of forecasts, the speed of decision-making, and the alignment between operational execution and corporate strategy (Saltz & Shamshurin, 2016, Sculley, *et al*., 2015). This is particularly important in large enterprises where the scale of operations, diversity of functions, and geographic dispersion can create significant barriers to data visibility and coordinated management.

The growing relevance of integrated enterprise systems in strategic management reflects broader shifts in the business environment. Large enterprises are under continuous pressure to respond to market volatility, regulatory requirements, digital transformation demands, and rising stakeholder expectations for agility, transparency, and accountability. In this context, integrated ERP and EPM environments are increasingly viewed not merely as information technology investments, but as strategic enablers of organizational resilience and competitive advantage. By providing a shared information architecture that links operational performance with financial and strategic planning, such integration supports more intelligent resource allocation, stronger governance, and more responsive management practices (Grover, *et al*., 2018, Hashem, *et al*., 2015, Watson, 2017).

This review therefore aims to examine ERP and EPM integration in large enterprises by synthesizing existing literature on its implementation challenges and critical success factors. The scope of the review covers the conceptual relationship between ERP and EPM, the strategic motivations for integration, the practical barriers that organizations encounter during implementation, and the organizational, managerial, and technological conditions that influence successful outcomes. Particular attention is given to the complexity of large enterprise environments, where system integration efforts often involve legacy infrastructures, high levels of customization, cross-functional coordination, and substantial change management demands (Chen, Mao & Liu, 2014, Delen & Demirkan, 2013).

The review also highlights that the success of ERP and EPM integration depends on more than technical compatibility alone. Implementation challenges often emerge from data quality issues, weak governance structures, resistance to organizational change, limited executive sponsorship, inadequate training, and poor alignment between system design and business needs. At the same time, the literature points to important success factors such as strong leadership commitment, clear integration roadmaps, robust data governance, stakeholder engagement, process standardization, and scalable system architecture (Zaharia, *et al*., 2016). By examining these interconnected issues, this review seeks to provide a comprehensive understanding of how large enterprises can better navigate the complexities of ERP and EPM integration and realize greater strategic value from their enterprise systems.

2.1 Methodology

A suitable methodology for this study is a systematic literature review using PRISMA logic, because the topic is review-based and seeks to synthesize evidence on implementation challenges and success factors associated with ERP and EPM integration in large enterprises. This approach is appropriate for consolidating multidisciplinary evidence from enterprise systems, business intelligence, digital transformation, governance, analytics, and organizational performance literature. The review is designed to examine how ERP and EPM integration is conceptualized, implemented, and evaluated across complex organizational environments, while also identifying the recurring factors that influence integration success or failure. The method draws from foundational literature on enterprise systems, analytics capability, data architecture, and business value realization, including work on ERP critical success factors, data integration, business intelligence, digital governance, and performance management systems (Gunson & De Blasis, 2001; Chen *et al*., 2012; Côrte-Real *et al*., 2017; Al-Amin *et al*., 2022; Taiwo, 2022).

The review process begins with the clear definition of the study objective, which is to investigate the implementation barriers, enabling conditions, and organizational outcomes associated with integrating ERP and EPM platforms in large enterprises. In this context, ERP is treated as the backbone for transactional and operational data, while EPM is positioned as the layer for planning, forecasting, budgeting, reporting, and strategic performance monitoring. This framing allows the review to explore how data interoperability, governance maturity, project capability, analytics infrastructure, and change management practices shape integration outcomes. The formulation of the review objective is also guided by prior studies emphasizing interoperable data systems, dashboard-enabled decision environments, predictive intelligence, and finance-led process redesign as major determinants of enterprise decision quality and transformation outcomes (Adeleke, 2022; Kevin & Oluwasanya, 2022; Farounbi *et al*., 2021; Adesanya *et al*., 2022).

The literature identification stage is based primarily on the studies supplied for the review, supplemented conceptually by the foundational references among them that address dataflow design, data warehousing, big data architecture, process mining, analytics capability, and enterprise digital transformation. The included body of literature spans ERP evolution, Industry 4.0 readiness, business intelligence, risk governance, compliance automation, cloud integration, predictive analytics, and enterprise performance improvement. These studies are especially relevant because ERP–EPM integration in large enterprises typically depends

on shared master data, reliable ingestion pipelines, process standardization, scalable governance, and strong performance analytics. Foundational works on data models, warehousing, and analytics value support the methodological rationale for examining ERP–EPM integration as both a technical and managerial phenomenon (Akidau *et al*., 2015; Inmon, 2005; Kimball & Ross, 2013; Gandomi & Haider, 2015; Grover *et al*., 2018; Mikalef *et al*., 2020).

Study selection is guided by explicit eligibility criteria. Sources are retained when they provide conceptual, empirical, or framework-based insight into at least one of the following areas: enterprise integration architecture, ERP implementation, EPM or FP&A digitization, business intelligence and dashboarding, project and change management capability, governance and compliance, data quality, process redesign, or business value realization. Studies are excluded when their focus is too distant from enterprise integration, or when they address predictive models and sector-specific cases without transferable insight for large-enterprise systems integration. Even where some references originate from adjacent domains such as healthcare analytics, cybersecurity governance, cloud operations, or process optimization, they are included if they offer transferable constructs on interoperability, stakeholder alignment, risk control, data engineering, or performance management. This is justified because ERP–EPM integration is inherently cross-functional and benefits from insights developed in other complex digital environments (Adeleke & Baidoo, 2022; Babalola *et al*., 2022; Essien *et al*., 2021; Mbonu *et al*., 2022; Ofoedu *et al*., 2022).

After selection, each study is subjected to structured data extraction. The extracted elements include author and year, study type, sector or enterprise context, primary technological focus, implementation issue addressed, enabling practice identified, integration mechanism discussed, and reported organizational outcome. Additional emphasis is placed on extracting evidence related to interoperability challenges, legacy system complexity, data governance, cloud readiness, executive sponsorship, user adoption, project competency, finance process redesign, security and compliance requirements, and the relationship between integration maturity and enterprise performance. This structured extraction supports comparability across studies that differ in design and domain, while still allowing a coherent synthesis of the evidence base.

The quality appraisal process is interpretive rather than statistical because the review contains conceptual papers, framework studies, design-oriented papers, and applied digital transformation literature. Each source is assessed for relevance to the topic, clarity of conceptual contribution, internal coherence, practical transferability to large-enterprise settings, and usefulness for explaining integration outcomes. Particular attention is given to whether a study offers insight into enterprise-wide coordination problems, architectural alignment, data consistency, planning integration, governance scalability, or measurable business value. This is important because ERP–EPM integration success often depends not only on technical deployment but also on organizational readiness, leadership capability, process discipline, and the ability to translate integrated data into management action (Sharma *et al*., 2014; Watson, 2017; Côrte-Real *et al*., 2017; Taiwo, 2022).

The analysis stage adopts a thematic synthesis strategy. Extracted evidence is coded iteratively into recurring themes that reflect the core dimensions of ERP–EPM integration in large enterprises. The first cluster of themes relates to technical architecture and includes interoperability, data pipelines, cloud elasticity, warehouse structures, dashboard integration, event-driven systems, and real-time data visibility. The second cluster focuses on organizational and managerial enablers, including leadership sponsorship, project management maturity, stakeholder alignment, functional competency development, process redesign, and user support. The third cluster addresses governance and risk, including data quality, cybersecurity, auditability, compliance automation, internal controls, and policy alignment. The final cluster captures enterprise outcomes such as better forecasting, improved planning consistency, stronger performance visibility, faster decision cycles, cost efficiency, and greater strategic alignment. This thematic approach is suitable because it supports the development of a concept-centric review that goes beyond mere description and instead explains the causal pathways through which integration challenges and success factors shape enterprise outcomes (Batistič & van der Laken, 2019; Provost & Fawcett, 2013; Van der Aalst, 2016; Al-Amin *et al*., 2022).

The synthesis stage then integrates these coded themes into a conceptual review framework for ERP and EPM integration. In this framework, antecedent conditions such as legacy system complexity, fragmented data estates, weak process standardization, and insufficient governance are treated as implementation constraints. Success factors such as executive support, interoperable architecture, robust master data management, analytics capability, structured project governance, cross-functional collaboration, and change management are treated as enabling conditions. These enabling conditions are expected to moderate the relationship between integration effort and enterprise outcomes, such that organizations with stronger governance, clearer data ownership, and higher transformation capability are more likely to achieve accurate planning, unified reporting, improved forecast reliability, and better enterprise-wide decision support. This synthesis is also informed by evidence linking digital transformation investments, business intelligence capability, and data-driven redesign to measurable gains in financial and operational performance (Adesanya *et al*., 2022; Chen *et al*., 2012; Wamba *et al*., 2017; Grover *et al*., 2018; Taiwo & Amoah-Adjei, 2022).

To strengthen rigor, the final stage involves consistency checking across the synthesized findings. Themes are reviewed repeatedly against the selected literature to ensure that no major claim is presented without conceptual support from the evidence base. Overlapping constructs are merged where appropriate, and closely related ideas such as interoperability, data integration, and dashboard-enabled visibility are aligned into a coherent explanatory structure. The final output of the methodology is therefore a narrative, evidence-based review and conceptual flow that explains how ERP–EPM integration succeeds or fails in large enterprises. This makes the methodology suitable for a review paper because it systematically organizes the literature, allows concept development, and produces a defensible account of implementation challenges and success factors without requiring primary field data.

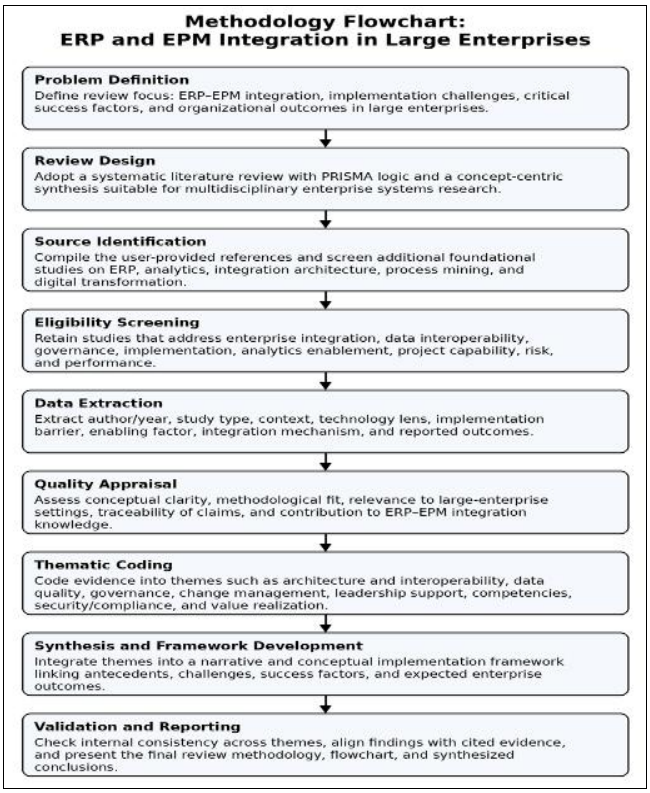

Fig 1: Flowchart of the study methodology

2.2 Conceptual Foundation of ERP and EPM Integration

Enterprise Resource Planning (ERP) and Enterprise Performance Management (EPM) are two closely related but distinct enterprise system domains that play vital roles in the coordination, control, and strategic direction of large organizations. Understanding their conceptual foundation is essential to appreciating why their integration has become increasingly important in modern large enterprise environments. Although both systems contribute to organizational effectiveness, they do so from different functional standpoints (Mikalef, *et al*., 2020, Nii-Okai, 2020). ERP systems are primarily designed to manage and automate operational and transactional processes across the enterprise, while EPM systems are developed to support planning, analysis, monitoring, and performance-driven decision-making. In large enterprises, where operations span multiple departments, subsidiaries, and geographic locations, the integration of these systems creates a stronger link between routine business execution and long-term strategic management.

ERP systems serve as the operational backbone of an organization. Their core function is to integrate major business processes into a unified information system that enables real-time transaction processing, standardized workflows, and centralized data management. In practical terms, ERP systems support finance and accounting, procurement, inventory management, production planning, supply chain coordination, human resources, customer relationship processes, and project management (Taiwo & Amoah-Adjei, 2022, Udechukwu, 2022). By consolidating these functions within a single platform, ERP systems reduce data duplication, improve process visibility, and enhance consistency across departments. In large enterprises, this role is especially valuable because operational activities are often distributed across complex organizational structures. ERP systems help harmonize processes and provide a common data environment that supports efficiency, control, and compliance. They also enable organizations to capture large volumes of transactional data, such as sales orders, payroll records, purchasing activities, inventory movements, and cost postings, which are crucial for daily management and reporting (Sharma, Mithas & Kankanhalli, 2014, Van der Aalst, 2016).

The main strength of ERP lies in its ability to support the accurate recording and coordination of operational events as they happen. It ensures that data flows from one functional area to another in a structured and integrated way. For example, a procurement transaction can automatically affect inventory records, financial accounts, supplier balances, and cash flow projections within the same environment. This level of integration helps reduce manual intervention and enhances the reliability of organizational data. In large enterprises, ERP systems are also important for enforcing internal controls, maintaining audit trails, and supporting regulatory reporting (Adeleke & Baidoo, 2022, Babalola, *et al*., 2022, Mbonu, *et al*., 2022). However, while ERP systems are highly effective in managing business operations and generating structured data, they are not primarily designed to provide advanced strategic analysis, long-term forecasting, or multidimensional performance evaluation. This is where EPM systems become essential. Figure 2 shows critical success factors in an ERP implementation presented by Faizi, Rahman & Hopkins, 2019.

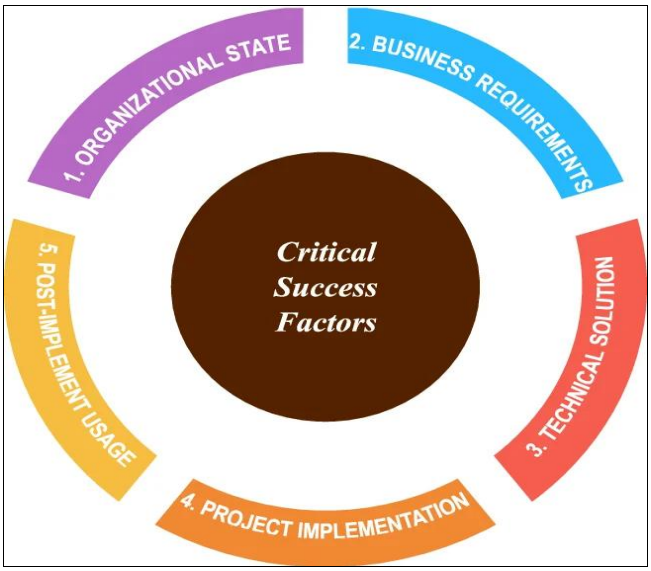

Fig 2: Critical success factors in an ERP implementation (Faizi, Rahman & Hopkins, 2019)

EPM systems focus on transforming enterprise data into strategic intelligence that supports performance planning, monitoring, and improvement. Their core functions typically include budgeting, forecasting, financial consolidation, performance reporting, scenario analysis, profitability analysis, scorecard development, and decision support. Whereas ERP systems emphasize transaction execution and operational integration, EPM systems emphasize management insight and strategic alignment (Côrte-Real, Oliveira & Ruivo, 2017, Provost & Fawcett, 2013). In large enterprises, EPM systems help leadership teams evaluate whether the organization is meeting its financial and

operational objectives, how resources should be allocated, what future scenarios may emerge, and what corrective actions are needed to improve outcomes. These systems are designed to bring structure and discipline to performance management by linking strategic goals with measurable indicators and planning mechanisms.

One of the major strengths of EPM systems is their ability to organize data in ways that support high-level analysis and executive decision-making. They allow organizations to move beyond static reporting and toward a more dynamic understanding of performance. For example, EPM tools can compare budgeted and actual results, assess performance across business units, simulate alternative planning assumptions, and identify drivers of financial or operational outcomes. In large enterprises, where leadership decisions must be based on reliable and timely information from diverse sources, EPM systems offer a platform for interpreting organizational performance in a coherent and strategically relevant way (Akidau, *et al*., 2015, Chen, Chiang & Storey, 2012). They also support collaboration among finance teams, managers, and executives by providing shared planning models and reporting frameworks. Even so, EPM systems depend heavily on the quality, consistency, and availability of enterprise data, much of which originates from ERP platforms.

The conceptual relationship between ERP and EPM is therefore complementary rather than competitive. ERP provides the transactional foundation upon which EPM builds analytical and strategic capabilities. ERP systems generate the detailed operational data that EPM systems require for budgeting, forecasting, reporting, and performance analysis. EPM, in turn, interprets and structures this data to support management decisions, strategic reviews, and future planning (Taiwo, 2022). In essence, ERP tells the organization what has happened and what is currently happening in operational terms, while EPM helps explain what those outcomes mean, why they matter, and what should happen next. In large enterprises, this complementarity is critical because the scale and complexity of operations make it difficult to manage performance effectively when transactional and analytical systems remain disconnected. Figure 3 shows the relation ERP, SCM, CRM, E-Commerce and E-Business presented by Gunson & De Blasis, 2001.

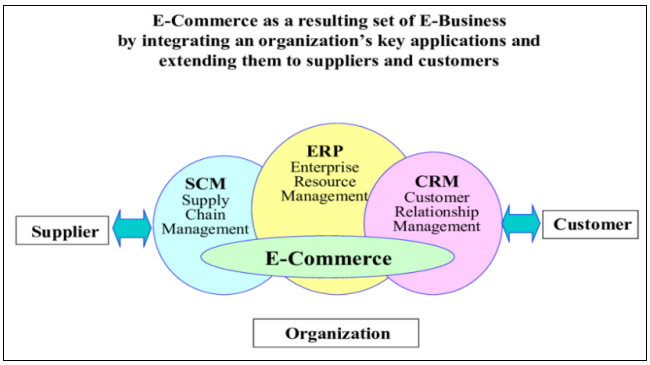

Fig 3: The relation ERP, SCM, CRM, E-Commerce and E-Business (Gunson & De Blasis, 2001)

The integration of ERP and EPM creates a continuous information flow between operational execution and performance management. This relationship is especially important because performance management is only as strong as the quality of the underlying operational data. When ERP and EPM are well integrated, actual business activities can feed directly into performance dashboards, financial planning tools, and management reports. This reduces delays in reporting, minimizes reconciliation problems, and improves confidence in enterprise-wide performance information (Jagadish, *et al*., 2014, Kelleher & Tierney, 2018). For example, real-time sales, production, procurement, and cost data from ERP systems can inform rolling forecasts, budget revisions, and performance reviews within EPM platforms. This enables large enterprises to respond more quickly to changing business conditions and to align planning assumptions with current operational realities.

The relationship between operational data and performance management is central to the value of ERP and EPM integration. Operational data represents the raw evidence of organizational activity. It captures how resources are used, how processes perform, how customers interact with the business, and how revenue and costs evolve over time. Performance management, by contrast, involves interpreting this data within the context of organizational goals, targets, and strategic priorities. Without reliable operational data, performance management becomes speculative and disconnected from business reality (Batistič & van der Laken, 2019, Dubey, *et al*., 2019). Without performance management, operational data remains largely descriptive and underutilized. Integration bridges this gap by ensuring that performance evaluation is grounded in actual enterprise activity and that strategic planning is informed by accurate and current operational signals. Figure 4 shows figure of mobile ERP with business intelligence architecture presented by Al-Amin, *et al*., 2022.

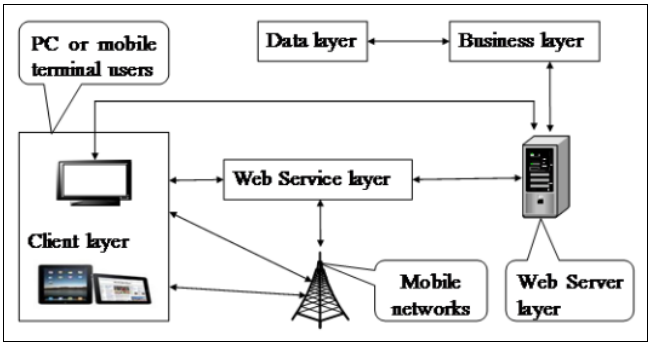

Fig 4: Mobile ERP with business intelligence architecture (Al-Amin, *et al*., 2022)

In large enterprises, the expected outcomes of ERP and EPM integration are significant and multidimensional. One major outcome is improved data consistency and a single source of truth across operational and strategic functions. This reduces the risk of conflicting reports, fragmented planning assumptions, and manual data reconciliation. Another expected outcome is stronger financial and operational visibility. Integrated systems allow managers and executives to trace performance outcomes back to underlying business activities, thereby improving accountability and insight (Gandomi & Haider, 2015, Inmon, 2005, Kimball & Ross, 2013). Organizations also expect enhanced forecasting accuracy because planning models can be updated using timely transactional data from across the enterprise. Faster reporting cycles, more informed decision-making, better cross-functional coordination, and

stronger regulatory compliance are also commonly anticipated benefits.

Beyond these functional improvements, integration is expected to support broader strategic outcomes. Large enterprises seek greater agility in responding to market shifts, economic uncertainty, supply chain disruptions, and internal performance gaps. ERP and EPM integration can improve this agility by connecting execution with strategy in a more responsive and transparent way. It can also encourage process standardization, improve governance, and strengthen performance discipline across decentralized structures. In addition, integrated environments support digital transformation efforts by enabling organizations to leverage automation, analytics, and scalable cloud technologies more effectively. For many large enterprises, the long-term expectation is not simply better systems performance, but a more intelligent and strategically aligned organization (Ayanbode, *et al*., 2019, Bamgboye, *et al*., 2019, Ogbole, *et al*., 2019).

Conceptually, therefore, ERP and EPM integration represents the convergence of operational control and strategic management. ERP systems provide the structural and data foundation for enterprise operations, while EPM systems convert that foundation into planning intelligence and performance insight. Their integration allows large enterprises to link daily transactions with strategic objectives, improve decision quality, and create a more unified management environment. This foundation is critical to understanding both the promise and the complexity of integration efforts in large organizations (Enow, *et al*., 2022, Erigha, *et al*., 2022, Essien, *et al*., 2022). It also provides the basis for examining why implementation challenges arise and what success factors are required to achieve meaningful and sustainable integration outcomes.

2.3 Strategic Importance of ERP and EPM Integration in Large Enterprises

In large enterprises, the strategic importance of integrating Enterprise Resource Planning (ERP) and Enterprise Performance Management (EPM) systems has grown significantly as organizations face increasing pressure to operate with greater precision, speed, and adaptability. Large firms typically manage vast volumes of transactions, multiple business units, diverse product lines, and wide geographic footprints. In such environments, fragmented systems can undermine managerial visibility, weaken coordination, and slow strategic response (Aransi, *et al*., 2019, Bankole, *et al*., 2019, Okeke, Ugwu-Oju & Nwankwo, 2019). ERP and EPM integration addresses these issues by connecting the operational core of the business with the planning, analysis, and performance management functions that guide executive action. Rather than allowing operational data to remain isolated within transactional systems and performance analysis to occur in separate planning environments, integration enables a more unified enterprise architecture that aligns day-to-day execution with strategic priorities.

One of the most important strategic reasons for integrating ERP and EPM is the growing need for real-time data visibility across the enterprise. Large organizations can no longer depend on periodic manual reporting cycles or disconnected spreadsheets to understand business performance. Market conditions, supply chain disruptions, cost fluctuations, customer demand shifts, and regulatory pressures often evolve rapidly, and strategic decisions must be based on timely and reliable information. ERP systems generate real-time operational data from finance, procurement, sales, inventory, production, logistics, and human resources (Gado, *et al*., 2022, Imediegwu & Elebe, 2022, Lawoyin, *et al*., 2022). However, if this data is not effectively linked to EPM systems, leadership teams may experience delays in obtaining performance insights or may rely on reconciled reports that are already outdated by the time they are reviewed. Integration allows current transactional information to feed directly into planning, monitoring, and reporting processes, thereby improving the organization's ability to see what is happening across departments and respond appropriately.

Real-time visibility also supports enterprise-wide coordination, which is especially critical in large firms where different functions are highly interdependent. Procurement decisions affect inventory levels and production schedules. Production output influences sales fulfillment and revenue realization. Workforce allocation shapes operating capacity and service delivery. Financial commitments in one business unit may affect liquidity or investment decisions elsewhere. Without integrated systems, each department may operate with its own data set, assumptions, and reporting structures, increasing the risk of duplication, delays, and conflicting priorities (Pamela, *et al*., 2021, Ugwu-Oju, Nwankwo & Okeke, 2021, Yeboah & Nnabueze, 2021). ERP and EPM integration helps create a shared information environment where departments can work from consistent data and align their activities more effectively. This is strategically important because large enterprises require not only functional efficiency but also coordinated execution across complex value chains and management structures.

The role of ERP and EPM integration in budgeting, forecasting, and reporting is another major reason why it is strategically significant. Budgeting and forecasting are central management processes in large enterprises because they guide resource allocation, target setting, capital planning, and performance control. Traditionally, these processes have often been slow, labor-intensive, and overly dependent on manual data extraction from ERP systems into separate planning tools or spreadsheets (Uzondu & Ofoedu, 2014, Yeboah & Ike, 2020). This creates inefficiencies, increases the chance of errors, and limits the organization's ability to update assumptions quickly. When ERP and EPM systems are integrated, budgeting and forecasting become more dynamic, data-driven, and responsive. Actual financial and operational data can flow automatically into planning models, enabling rolling forecasts, scenario analysis, and faster revisions of budgets based on changing business conditions.

Integrated reporting is equally important. Large enterprises need accurate and timely reports for internal management, board oversight, investors, auditors, regulators, and other stakeholders. These reports often require data from multiple functions and business units, and inconsistencies between operational and financial records can create serious governance and credibility problems. Integration improves reporting reliability by reducing reconciliation burdens and ensuring that the data used for performance reports is drawn from a common operational source (Elebe & Imediegwu, 2020, Essien, *et al*., 2020, Imediegwu & Elebe, 2020). This strengthens internal control, supports statutory compliance,

and enhances the credibility of management information. Strategically, this means that leaders spend less time questioning the accuracy of reports and more time using those reports to drive action and accountability.

ERP and EPM integration also strongly supports executive decision-making. Senior leaders in large enterprises require more than raw transaction data. They need meaningful insight into trends, variances, risks, opportunities, and performance drivers. They need to know not only what has happened but why it happened, what it means for strategic objectives, and what actions should be taken. ERP systems alone are not built primarily for this level of strategic interpretation, while EPM systems depend on ERP-generated data to perform that role effectively (Efobi, Akinleye & Fasawe, 2017, Ekechi, 2019, Ugwu-Oju, Okeke & Nwankwo, 2018). When integrated, these systems allow executives to access dashboards, forecasts, scorecards, and scenario models that are grounded in current operational realities. This improves decision quality because the strategic analysis reflects actual business conditions rather than outdated or partially reconciled information.

This support for executive decision-making becomes even more valuable in situations involving uncertainty and rapid change. For example, when an enterprise faces cost inflation, supply disruptions, declining sales in a region, or shifts in customer demand, executives need fast insight into the likely financial and operational consequences of various response options. An integrated ERP and EPM environment can help leaders model alternative scenarios, assess trade-offs, and implement corrective action with greater confidence (Obuse, *et al*., 2022, Ofoedu, *et al*., 2022, Ugwu-Oju, Nwankwo & Okeke, 2022). It also supports performance dialogue between executives and business unit leaders by providing a shared factual basis for reviewing results and setting priorities. In this sense, integration is not merely a technical improvement; it becomes an enabler of more strategic, evidence-based leadership.

Another important dimension of strategic importance is the contribution of ERP and EPM integration to efficiency, agility, and competitiveness. Large enterprises constantly seek ways to reduce waste, improve process performance, and make better use of resources. Integration helps improve efficiency by reducing manual data handling, eliminating duplicate reporting processes, and streamlining the flow of information from transaction capture to performance evaluation. Finance teams, analysts, and managers can spend less time gathering and validating data and more time interpreting results and supporting decisions. This operational efficiency has strategic value because it lowers administrative burdens and improves the speed of organizational learning and response (Anthony, *et al*., 2019, Bankole, *et al*., 2019, Okeke, Ugwu-Oju & Nwankwo, 2019).

Agility is also enhanced when integration is strong. In modern competitive environments, large enterprises must be able to adjust plans quickly, reallocate resources, and respond to emerging threats or opportunities. Integration makes this possible by shortening the time between operational events and managerial response. Instead of waiting for month-end or quarter-end reporting cycles, organizations can monitor key indicators continuously and make adjustments as conditions evolve. This is particularly important in sectors marked by high volatility, intense competition, and rapid technological change. An enterprise that can quickly identify underperformance, update forecasts, and redirect strategy has a stronger chance of maintaining stability and capturing market opportunities (Anichukwueze, Osuji & Oguntegbe, 2019, Dako, *et al*., 2019, Ugwu-Oju, Okeke & Nwankwo, 2018).

Competitiveness is further strengthened because integrated ERP and EPM systems improve strategic alignment. When operations, finance, and leadership are connected through a common information and planning architecture, the enterprise is better positioned to execute strategy consistently across departments and regions. Strategic goals can be translated more effectively into measurable plans, monitored in real time, and adjusted when required. This improves not only internal performance but also the enterprise's ability to serve customers, manage suppliers, control costs, and invest wisely (Bayeroju, 2020, Dako, *et al*., 2020, Ekechi & Fasasi, 2020). Over time, these capabilities can create sustained competitive advantage, especially in industries where superior coordination and decision speed are critical.

The relevance of ERP and EPM integration is even more pronounced in multinational and structurally complex organizations. Large enterprises often operate across countries, currencies, legal jurisdictions, regulatory regimes, and cultural environments. They may have multiple subsidiaries, shared service centers, joint ventures, regional offices, and decentralized operating units. In such settings, achieving consistency in data, reporting, and performance management is a major challenge. ERP systems help standardize operational processes, while EPM systems help harmonize planning and performance evaluation (Dako, *et al*., 2022, Efobi, Akinleye & Fasawe, 2022, Nduka, 2022). Their integration creates a more coherent enterprise-wide management framework that allows headquarters and regional units to operate with greater transparency and alignment.

For multinational firms, integration supports consolidated financial reporting, cross-border planning, and comparable performance measurement across diverse business environments. It also helps manage the tension between global standardization and local flexibility. Headquarters may require a consistent strategic and reporting framework, while regional entities need tools that reflect local market realities and compliance requirements. An integrated ERP and EPM environment can support both needs by enabling shared core data and governance structures while still allowing appropriate analytical flexibility. This is strategically important because multinational enterprises cannot achieve strong corporate oversight or strategic cohesion without robust information integration (Bukhari, *et al*., 2022, Dako, Okafor & Osuji, 2022, Nduka, 2022).

In conclusion, the strategic importance of ERP and EPM integration in large enterprises lies in its ability to connect operational execution with strategic management in a timely, reliable, and coordinated way. It supports real-time visibility, enterprise-wide coordination, more effective budgeting and forecasting, stronger reporting, and better executive decision-making. It contributes to efficiency, agility, and competitiveness while offering critical value for multinational and complex organizational structures (Ajirotutu, *et al*., 2022, Babatunde, *et al*., 2022, Nwankwo, Okeke & Ugwu-Oju, 2022). For large enterprises navigating scale, uncertainty, and increasing performance expectations, ERP and EPM integration is not simply a systems

enhancement. It is a strategic capability that strengthens control, insight, and the organization's overall capacity to execute strategy successfully.

2.4 Implementation Challenges in ERP and EPM Integration

Implementing ERP and EPM integration in large enterprises is often far more complex than the strategic vision initially suggests. Although organizations pursue integration to improve data consistency, planning quality, reporting speed, and decision-making, the path to achieving these benefits is frequently obstructed by multiple technical, organizational, financial, and managerial challenges. In large enterprises, these challenges are amplified by scale, structural complexity, geographic spread, and the presence of established systems and routines. Integration is rarely a simple matter of connecting two software platforms (Obuse, *et al*., 2022, Ofoedu, *et al*., 2022, Ugwu-Oju, Okeke & Nwankwo, 2022). Instead, it requires the alignment of business processes, data structures, governance mechanisms, people, and technology across the entire organization. For this reason, implementation challenges represent one of the most critical areas in understanding why ERP and EPM integration initiatives often experience delays, cost overruns, reduced user adoption, or incomplete realization of expected value.

One of the most common and difficult challenges is the presence of legacy systems and infrastructure incompatibility. Large enterprises often operate with long-established information systems that were implemented at different times, for different purposes, and with different architectural standards. Some business units may still rely on outdated ERP modules, locally developed databases, spreadsheets, or third-party applications that were never designed to interact seamlessly with modern EPM platforms. In many cases, these legacy environments remain deeply embedded in core operations, making them difficult to replace without business disruption (Uzondu & Ofoedu, 2011, Yeboah & Enow, 2018). Infrastructure incompatibility can arise from differences in data formats, platform architecture, integration protocols, security configurations, and software versions. As a result, organizations may face technical barriers in creating smooth data flows between ERP and EPM systems. This challenge is especially serious in large enterprises with decentralized structures, where different subsidiaries or regions may have adopted different technologies over time. Integration efforts in such environments often require expensive middleware, complex interface development, or even partial system redesign before meaningful interoperability can be achieved.

Closely related to this issue is the challenge of data silos, poor data quality, and inconsistent master data. ERP and EPM integration depends heavily on the availability of clean, consistent, and standardized enterprise data. However, large enterprises often suffer from fragmented data ownership and inconsistent data practices across departments. Operational data may be stored separately in finance, procurement, supply chain, sales, and human resource systems, with varying definitions, naming conventions, and reporting standards. This creates data silos that prevent a unified view of organizational performance (Onovo, Gado & Atobatele, 2012, Patrick, *et al*., 2019, Ugwu-Oju, Okeke & Nwankwo, 2018). Poor data quality further compounds the problem. Missing values, duplicate records, outdated entries, incorrect classifications, and manual data manipulation can all undermine the integrity of the information being transferred from ERP to EPM systems. Master data inconsistency is another major challenge, particularly in relation to customers, suppliers, products, cost centers, entities, and account structures. When different parts of the enterprise define these items differently, integration becomes unreliable and reporting outcomes become difficult to trust. For large enterprises, resolving these issues requires more than technical correction. It involves establishing clear data governance, harmonizing definitions, and creating enterprise-wide standards for data management.

Another significant challenge is the high cost of implementation and the extensive resource demands associated with integration. ERP and EPM integration projects often require substantial financial investment in software licenses, infrastructure upgrades, middleware solutions, consulting services, data migration, staff training, testing, and ongoing technical support. In large enterprises, these costs can escalate rapidly because of the scale of operations, the number of users involved, and the need to coordinate across multiple business units or countries. Beyond direct financial cost, integration also places heavy demands on internal resources (Elebe & Imediegwu, 2020, Essien, *et al*., 2020, Imediegwu & Elebe, 2020). Key employees from finance, IT, operations, and management are often required to contribute significant time to process mapping, requirement definition, testing, validation, and change management activities. This can create strain on normal business operations, particularly when experienced staff must balance project responsibilities with their regular duties. In some cases, organizations underestimate the depth of resource commitment required, leading to project fatigue, reduced focus, and inadequate implementation support. The cost challenge becomes even more serious when unexpected technical issues or scope expansions arise during the project lifecycle.

Customization complexity and integration risks also present major obstacles. Large enterprises frequently have unique processes, reporting structures, compliance requirements, and management preferences that make them reluctant to adopt standard system configurations. As a result, they often customize ERP systems heavily over time, and similar customization pressures emerge when implementing or integrating EPM platforms. While customization may appear necessary to preserve business-specific requirements, it significantly increases implementation complexity. Customized systems are harder to connect, harder to upgrade, and more vulnerable to errors during data exchange (Erigha, *et al*., 2021, Essien, *et al*., 2021, Ezeh, *et al*., 2021). Integration risks grow when organizations attempt to build multiple custom interfaces or modify core logic to force systems to interact in non-standard ways. This can create fragile technical environments that are difficult to maintain and troubleshoot. In addition, over-customization often reduces the ability of organizations to benefit from vendor updates, best practice workflows, and scalable architecture. For large enterprises, the challenge is to find the right balance between accommodating essential business needs and preserving a manageable, sustainable integration design.

Resistance to change among employees and departments is another implementation challenge that should not be underestimated. ERP and EPM integration often alters

established routines, redistributes responsibilities, increases transparency, and introduces new expectations for data discipline and performance accountability. Employees may fear that the new integrated system will make their roles more difficult, reduce their control over information, or expose inefficiencies in their work. Departments that previously operated with relative autonomy may resist efforts to standardize processes or share data across functions. In large enterprises, this resistance can be widespread because different groups may have different priorities, cultures, and levels of digital maturity (Erigha, *et al*., 2019, Filani, Fasawe & Umoren, 2019, Ugwu-Oju, Okeke & Nwankwo, 2018). Finance teams may welcome the promise of better reporting, while operational units may see integration as an added burden. IT departments may be concerned about workload and technical risk, while business managers may be skeptical about the practical value of the project. Without effective change management, these concerns can lead to low engagement, poor adoption, incomplete data entry, and informal workarounds that weaken the integrity of the integrated environment.

Weak project governance and poor communication frequently worsen these difficulties. Successful ERP and EPM integration requires strong leadership, clear accountability, structured decision-making, and transparent communication throughout the project lifecycle. In many large enterprises, however, governance structures are unclear or fragmented. Project ownership may be disputed between finance and IT, senior executives may offer limited ongoing involvement, and decision rights may not be clearly assigned. Without strong governance, integration efforts can lose direction, suffer from inconsistent priorities, or become dominated by narrow functional interests. Poor communication adds another layer of risk. Employees and managers may not understand the purpose of the integration, the timeline, the expected changes, or their role in supporting the initiative (Anichukwueze, Osuji & Oguntegbe, 2020, Efobi, Akinleye & Fasawe, 2020). Miscommunication between technical teams and business stakeholders can also lead to incorrect system design, misunderstood requirements, or unrealistic expectations. In complex organizations, communication failures can create mistrust and confusion, making it harder to secure commitment and coordinate effort. Effective governance and communication are therefore not secondary concerns but central conditions for successful integration.

Time overruns and difficulties in cross-functional coordination are also among the most persistent implementation challenges. ERP and EPM integration projects typically involve multiple departments, processes, technologies, and stakeholder groups, each with its own language, priorities, and constraints. Coordinating these groups requires careful planning and continuous alignment. In large enterprises, this is especially difficult because the project may span finance, operations, procurement, human resources, compliance, IT, and executive leadership across several business units or regions (Ajayi, *et al*., 2022, Babatope, *et al*., 2022, Imediegwu & Elebe, 2022). Delays can arise when requirements are not clearly defined at the beginning, when testing reveals unexpected data issues, when approvals take too long, or when dependent teams do not complete tasks on schedule. Cross-functional coordination problems can also emerge when departments disagree on process ownership, reporting structures, or data definitions. These issues often cause rework, timeline slippage, and frustration among stakeholders. Time overruns are not just a scheduling problem. They can increase costs, weaken executive confidence, reduce staff morale, and delay the realization of anticipated business benefits.

These implementation challenges are deeply interconnected rather than isolated. Legacy systems often contribute to data quality problems. Poor data quality complicates customization decisions and increases project timelines. Weak governance makes it harder to address departmental resistance or control project scope. High costs become more difficult to justify when delays accumulate and expected gains remain distant. In large enterprises, the combined effect of these challenges can be substantial, turning what was intended as a strategic transformation into a prolonged and difficult undertaking. Yet understanding these barriers is essential because it allows organizations to approach integration more realistically and more effectively (Ekechi & Fasasi, 2022, Ekechi, 2022, Ezeh, *et al*., 2022).

Ultimately, the implementation of ERP and EPM integration in large enterprises should be viewed as both a technical and organizational transformation process. The technical difficulties are real and significant, but many failures stem equally from managerial weaknesses, cultural resistance, insufficient planning, and poor coordination. Legacy incompatibility, data fragmentation, cost pressure, customization burden, employee resistance, governance gaps, and coordination delays all illustrate why integration is difficult at scale. Recognizing these challenges early helps enterprises design more practical integration strategies, allocate resources appropriately, strengthen leadership oversight, and build the organizational readiness needed to support long-term success (Adesanya, *et al*., 2022, Bankole, *et al*., 2022, Fasawe, Okpokwu & Filani, 2022).

2.5 Organizational and Managerial Factors Affecting Integration

Organizational and managerial factors play a decisive role in shaping the success or failure of ERP and EPM integration in large enterprises. While technology provides the tools and architecture needed for integration, it is the quality of leadership, collaboration, governance, user preparedness, and strategic alignment that often determines whether these systems deliver meaningful value. In large enterprises, ERP and EPM integration is rarely a purely technical exercise. It is a broad organizational initiative that affects how data is owned, how processes are coordinated, how decisions are made, and how performance is evaluated across the enterprise (Amatare & Ojo, 2021, Dako, Okafor & Osuji, 2021, Nwankwo, Okeke & Ugwu-Oju, 2021). Because these changes touch multiple departments, reporting lines, and management levels, organizational and managerial readiness becomes just as important as software capability. Many integration projects struggle not because the technology is inadequate, but because the enterprise does not create the leadership commitment, shared responsibility, and institutional discipline necessary to sustain the transformation.

One of the most important factors affecting integration is executive sponsorship and leadership commitment. In large enterprises, integration projects often require significant financial investment, cross-functional cooperation, changes to established routines, and long implementation timelines. Without visible and sustained support from senior

leadership, these projects can easily lose momentum or become fragmented by competing departmental priorities. Executive sponsorship is essential because it gives the integration effort legitimacy, strategic importance, and organizational authority (Anichukwueze, Osuji & Oguntegbe, 2021, Elebe & Imediegwu, 2021). When top leaders clearly communicate that ERP and EPM integration is a priority, departments are more likely to cooperate, allocate resources, and remain engaged even when difficulties arise. Strong executive sponsors also help resolve conflicts, remove obstacles, and maintain focus on long-term business value rather than short-term functional preferences. Leadership commitment is especially important during periods of uncertainty, resistance, or project fatigue, when employees and managers may question the relevance or feasibility of the integration effort. In such moments, active senior leadership reassures stakeholders that the initiative is not simply an IT upgrade but a strategic transformation tied to organizational goals.

However, executive sponsorship must go beyond symbolic approval or initial funding. In many failed or underperforming integration projects, senior leaders endorse the initiative at the beginning but become less involved as implementation progresses. This weakens accountability and leaves project teams without sufficient authority to make difficult decisions. Effective leadership commitment requires ongoing participation through governance forums, progress reviews, communication efforts, and strategic decision-making (Obuse, *et al*., 2020, Onovo, *et al*., 2020, Osuji, Dako & Okafor, 2020). It also requires leaders to model the behaviors expected from others, such as supporting process standardization, encouraging data discipline, and using integrated performance outputs in their own decision-making. When executives engage in these ways, they strengthen the credibility of the project and improve the likelihood of enterprise-wide adoption.

Cross-departmental collaboration is another critical organizational factor. ERP and EPM integration cannot succeed when departments operate in isolation or defend their own systems, data structures, and performance definitions. In large enterprises, ERP systems often span finance, procurement, operations, supply chain, human resources, and other functions, while EPM systems rely on input from many of these same areas to support planning, forecasting, and reporting. Integration therefore requires these functions to work together in defining requirements, harmonizing data, aligning processes, and validating outputs (Bankole, *et al*., 2020, Dako, *et al*., 2020, Imediegwu & Elebe, 2020). Cross-departmental collaboration is important because it helps ensure that the integrated system reflects the realities of the whole enterprise rather than the narrow perspective of one department. It also reduces the risk of conflicting assumptions, duplicated effort, and incomplete process design.

The challenge, however, is that large enterprises often contain strong functional silos. Departments may have different priorities, performance incentives, terminologies, and levels of digital maturity. Finance may emphasize control and reporting consistency, while operations may prioritize speed and flexibility. IT may focus on system stability, while business managers may be more concerned with usability and local needs. These differences can create tension during integration projects, especially when decisions must be made about process ownership, data standards, or workflow changes. Effective collaboration requires deliberate effort to build shared understanding and mutual trust among departments (Dako, *et al*., 2021, Davidor, *et al*., 2021, Farounbi, *et al*., 2021). This often involves creating cross-functional project teams, holding regular workshops, and ensuring that all major stakeholder groups are represented in planning and decision-making. In successful integration efforts, departments do not merely contribute technical input; they participate in shaping a common enterprise vision.

Change management and employee readiness are equally central to integration outcomes. ERP and EPM integration typically changes how employees access information, enter data, monitor performance, and participate in planning and reporting processes. For some staff, the change may involve learning new tools and procedures. For others, it may require greater transparency, tighter compliance with standardized workflows, or a shift in how their work is evaluated. In large enterprises, these adjustments can be disruptive, especially when existing practices have been in place for many years. Employees may resist the integration because they fear losing control, being exposed to greater scrutiny, or facing unfamiliar responsibilities (Ofoedu, *et al*., 2022, Tafirenyika, *et al*., 2022). Departments may also resist when they perceive the integrated environment as threatening their autonomy or increasing their workload.

This is why change management must be treated as a core component of integration rather than a secondary communication exercise. Employee readiness depends on whether people understand the purpose of the integration, see its relevance to their work, and feel supported through the transition. Effective change management involves clear messaging, early stakeholder engagement, realistic expectation setting, and continuous feedback. It helps employees understand not only what is changing, but why the change matters and how it contributes to broader organizational improvement. In large enterprises, readiness also depends on timing and sequencing (Filani, Okpokwu & Fasawe, 2020, Gado, *et al*., 2020, Nduka, 2020). If too many changes are introduced at once, users may become overwhelmed. If communication is vague or inconsistent, rumors and mistrust can spread. Successful integration projects therefore manage change as a structured process that builds awareness, acceptance, and confidence across the organization.

Training and user competence development are closely linked to employee readiness but deserve separate attention because they directly influence system usability and adoption. Even when leadership is strong and collaboration is present, integration can fail if users lack the knowledge and skills to operate within the new environment. ERP and EPM systems often involve complex workflows, data rules, reporting tools, and analytical capabilities. In large enterprises, different user groups require different levels and types of competence. Transactional users may need guidance on accurate data entry and workflow adherence (Obuse, *et al*., 2020, Okafor, Dako & Osuji, 2020, Onovo, *et al*., 2020). Managers may need training on dashboards, reports, and planning tools. Finance teams may require more advanced skills in forecasting, consolidation, and scenario analysis. Technical teams may need expertise in system maintenance, data mapping, and integration monitoring.

Training is most effective when it is practical, role-based, and continuous rather than limited to one-time sessions

before go-live. Large enterprises often make the mistake of focusing training too narrowly on system navigation while neglecting the underlying process and data logic that supports integration. Users need to understand not only how to perform tasks, but also how their work affects enterprise-wide data quality, reporting outcomes, and performance visibility. Competence development should therefore include both technical and business dimensions. Ongoing support is also important. Help desks, super users, refresher sessions, and user communities can reinforce learning and address emerging issues after implementation (Anichukwueze, Osuji & Oguntegbe, 2021, Fasawe, Filani & Okpokwu, 2021, Umoren, Sanusi & Bayeroju, 2021). When users feel competent and supported, they are more likely to adopt the integrated system fully and use it in ways that improve organizational performance.

Governance structures for process and data ownership are another major managerial factor shaping integration success. In large enterprises, integration often exposes long-standing ambiguity over who owns specific processes, data elements, and reporting definitions. For example, finance may claim ownership of account structures and reporting hierarchies, while operations may own the underlying transactional processes that generate the data. Human resources may manage workforce data, while business units may interpret or use that data differently in planning. Without clear governance, disputes arise over data definitions, process changes, approval rights, and accountability for errors (Bankole, *et al*., 2020, Efobi, Akinleye & Fasawe, 2020, Nduka, 2020). These disputes can slow implementation, weaken trust in the system, and undermine the consistency needed for enterprise-wide performance management.

Strong governance structures help address these issues by defining roles, responsibilities, decision rights, and escalation paths. They establish who owns master data, who approves process changes, who is accountable for data quality, and how conflicts will be resolved. Governance also creates a mechanism for balancing enterprise standards with local operational needs. In large enterprises, this balance is especially important because complete centralization may ignore legitimate business unit differences, while excessive decentralization can destroy the consistency required for integration (Ekechi & Fasasi, 2020, Ekechi, 2020, Gado, *et al*., 2020). Effective governance therefore supports standardization where necessary while providing controlled flexibility where appropriate. It also reinforces long-term sustainability by ensuring that the integrated environment is monitored, maintained, and improved over time rather than abandoned after initial implementation.

Finally, the alignment of integration goals with corporate strategy is essential. ERP and EPM integration should not be pursued simply because it is technologically possible or because peer organizations are doing it. In large enterprises, integration requires substantial investment and organizational disruption, so its purpose must be clearly connected to strategic priorities. These may include improving forecasting accuracy, enhancing decision speed, strengthening compliance, increasing operational visibility, supporting growth, enabling digital transformation, or improving resource allocation across the enterprise. When integration goals are aligned with corporate strategy, the project is easier to justify, easier to govern, and more likely to receive sustained support from leadership and business units (Yetunde, Onyelucheya & Dako, 2018).

Strategic alignment also influences the quality of implementation decisions. If the enterprise understands exactly what strategic outcomes it wants from integration, it can design the system, processes, and governance structures more effectively. It can avoid unnecessary customization, prioritize high-value capabilities, and define success in business rather than merely technical terms. Conversely, when integration goals are vague or disconnected from strategy, the project may become overly technical, reactive, or fragmented. Departments may focus on local preferences rather than enterprise impact, and leadership may struggle to assess whether the project is succeeding (Fasawe, Umoren & Akinola, 2021, Gado, *et al*., 2021, Imediegwu & Elebe, 2021). In large enterprises, where resources are limited and strategic priorities compete for attention, integration must demonstrate a clear contribution to corporate objectives.

In conclusion, organizational and managerial factors are central to the success of ERP and EPM integration in large enterprises. Executive sponsorship provides direction and authority, cross-departmental collaboration creates shared ownership, change management and employee readiness support adoption, training builds competence, governance structures ensure accountability, and strategic alignment connects the initiative to business value. These factors are deeply interconnected and must be addressed together rather than in isolation. Technology alone cannot integrate an enterprise. It takes leadership, coordination, discipline, and a clear strategic purpose to transform ERP and EPM integration from a technical project into a meaningful organizational capability (Efobi, Akinleye & Fasawe, 2021, Elebe & Imediegwu, 2021, Oparah, *et al*., 2021).

2.6 Technological and Operational Success Factors

Technological and operational success factors are central to the effective integration of ERP and EPM systems in large enterprises. While the strategic rationale for integration is often well understood, successful outcomes depend heavily on the technological readiness of the organization and the quality of its operational execution. In large enterprises, where information systems are extensive, processes are highly interdependent, and performance expectations are demanding, integration success cannot be achieved by software acquisition alone (Moyo, *et al*., 2021, Ofoedu, *et al*., 2021, Okafor, *et al*., 2021). It requires the development of a reliable technical foundation, disciplined operational planning, and ongoing system oversight. These factors help determine whether ERP and EPM integration becomes a stable and value-generating enterprise capability or an expensive initiative that fails to deliver on its promise. Among the most important technological and operational success factors are system interoperability, data governance, scalable infrastructure, phased implementation, quality vendor support, and continuous optimization after deployment.

System interoperability and compatible architecture form the technical backbone of successful ERP and EPM integration. In large enterprises, ERP and EPM systems often come from different vendors, use different data models, or operate on different technological frameworks. If these systems are not architecturally compatible, data exchange becomes difficult, reporting becomes delayed, and planning processes become fragmented. Interoperability refers to the ability of systems to communicate, exchange data, and function together without excessive manual

intervention (Anichukwueze, Osuji & Oguntegbe, 2022, Ezeh, *et al*., 2022). This is essential because ERP systems generate the transactional data that EPM systems rely on for budgeting, forecasting, consolidation, and performance analysis. When interoperability is strong, information flows more smoothly across operational and analytical environments, reducing duplication, minimizing reconciliation errors, and improving confidence in enterprise performance outputs.

Compatible architecture also supports system reliability and future adaptability. Large enterprises need integration solutions that can handle high transaction volumes, multiple entities, diverse reporting requirements, and frequent changes in business conditions. This requires architectural designs that are modular, stable, and capable of supporting both current operations and future expansion. Middleware solutions, application programming interfaces, enterprise integration platforms, and service-oriented designs can all play important roles in achieving this compatibility. However, success depends not only on the availability of such technologies but also on thoughtful architectural planning (Ekechi & Fasasi, 2020, Elebe & Imediegwu, 2020, Nduka, 2020). The enterprise must understand how data will move, where transformations will occur, how security will be maintained, and how performance will be sustained under heavy operational demand. Poor architectural choices can lead to fragile integrations that are expensive to maintain and vulnerable to failure during upgrades or system expansion.

The importance of data governance and standardization cannot be overstated in ERP and EPM integration. Even the most advanced technical architecture will fail to deliver value if the data flowing through it is inaccurate, inconsistent, or poorly controlled. In large enterprises, data often originates from numerous departments, business units, and geographical locations, each of which may use different naming conventions, classifications, and reporting practices. Without strong governance, the integrated environment becomes polluted by conflicting data definitions and unreliable master records (Adesanya, *et al*., 2020, Bankole, *et al*., 2020, Nduka, 2020, Onovo, *et al*., 2020). Data governance provides the policies, responsibilities, controls, and decision structures needed to ensure that enterprise data is consistent, trustworthy, and fit for performance management purposes.

Standardization is a key part of this process. ERP and EPM integration depends on shared definitions of accounts, cost centers, products, customers, suppliers, business units, and performance indicators. When these elements are standardized across the enterprise, planning and reporting become more coherent and comparable. This improves the quality of dashboards, financial consolidation, forecasting models, and management reviews. In contrast, weak standardization leads to confusion, repeated adjustments, and a lack of confidence in reported results. In large enterprises, data governance must therefore go beyond technical cleansing exercises (Nwankwo, Okeke & Ugwu-Oju, 2020, Okeke, Nwankwo & Ugwu-Oju, 2020, Osuji, Okafor & Dako, 2020). It must establish ownership for critical data elements, clarify approval rights for changes, and create mechanisms for maintaining data integrity over time. Data stewardship roles, master data management processes, and enterprise-wide data policies all contribute to integration success by ensuring that the information foundation remains stable and reliable.

Scalable cloud-based solutions and strong digital infrastructure have also become major success factors in large enterprise integration. As organizations grow and operate across wider digital ecosystems, traditional on-premise systems may struggle to provide the flexibility, scalability, and speed required for modern ERP and EPM environments. Cloud-based solutions offer advantages in terms of processing power, remote accessibility, automatic updates, disaster recovery, and the ability to scale capacity as business demands change (Ofoedu, *et al*., 2022, Osuji, Okafor & Dako, 2022). For large enterprises, this scalability is critical because integration requirements often expand over time to include more business units, more data sources, and more sophisticated analytical demands. Cloud environments can support this growth more efficiently than rigid infrastructure models, particularly when the enterprise requires real-time performance visibility across multiple locations.

A strong digital infrastructure is equally important because cloud scalability alone does not guarantee success. Large enterprises need secure networks, strong cybersecurity controls, integration-friendly platforms, reliable data storage environments, and sufficient computing performance to support both ERP transactions and EPM analytics. Infrastructure weakness can lead to latency, downtime, synchronization failures, and limited user confidence in the integrated system. Digital infrastructure also needs to support automation, advanced analytics, and mobile or remote access where necessary (Ayanbode, *et al*., 2019, Bamgboye, *et al*., 2019, Ogbole, *et al*., 2019). As enterprise systems become more interconnected, infrastructure quality becomes a strategic enabler of operational continuity and performance responsiveness. In this sense, scalable cloud-based solutions are most successful when they are supported by a broader digital environment that is resilient, secure, and capable of sustaining enterprise-wide integration demands.

Phased implementation and pilot testing are important operational success factors because they reduce risk and improve organizational learning during integration. Large enterprises often make the mistake of approaching ERP and EPM integration as a single large-scale event, attempting to deploy the full solution across all units and processes at once. This approach can be highly disruptive and difficult to control (Enow, *et al*., 2022, Erigha, *et al*., 2022, Essien, *et al*., 2022). Phased implementation allows the organization to introduce integration gradually, focusing first on specific modules, business units, or functional areas before expanding further. This helps teams identify problems early, validate design assumptions, and refine workflows before broader rollout. It also reduces operational disruption because the enterprise can maintain better control over scope, timelines, and user readiness.

Pilot testing complements this approach by providing a controlled environment for evaluating system behavior, data accuracy, process performance, and user interaction before full deployment. In large enterprises, pilot projects are especially useful because they help surface issues that may not be visible in theoretical system designs or limited technical tests. Pilot testing can reveal data mapping problems, reporting inconsistencies, workflow bottlenecks, user confusion, or performance limitations under actual working conditions. This allows the enterprise to correct issues early and build practical experience before expanding

the integration effort. It also creates internal examples of success that can help build confidence and support across the wider organization (Aransi, *et al*., 2019, Bankole, *et al*., 2019, Okeke, Ugwu-Oju & Nwankwo, 2019). Phased implementation and pilot testing therefore contribute not only to technical reliability but also to better change management and stronger adoption outcomes.

Vendor support, technical expertise, and consulting quality are also critical to successful integration. Large enterprise ERP and EPM integration projects often involve complex configuration decisions, system customization challenges, data migration tasks, testing requirements, and post-go-live support needs. Organizations may not always possess all the internal skills necessary to manage these demands effectively. Vendor support becomes important because software providers understand the design logic, capabilities, and limitations of their own systems. Strong vendor engagement can help organizations configure integration features properly, avoid common mistakes, and access timely technical resolutions when problems arise. This is particularly valuable during periods of system upgrade, architecture transition, or interface redesign (Gado, *et al*., 2022, Imediegwu & Elebe, 2022, Lawoyin, *et al*., 2022).

Technical expertise within the enterprise is equally important. Internal IT staff, business analysts, finance professionals, and data specialists need sufficient knowledge to make informed implementation decisions and to sustain the integrated environment over time. Overdependence on external consultants can create long-term risks if internal capability is not developed alongside the project. At the same time, the quality of consulting support matters greatly. Skilled consultants bring implementation experience, industry insight, process knowledge, and methodological discipline (Pamela, *et al*., 2021, Ugwu-Oju, Nwankwo & Okeke, 2021, Yeboah & Nnabueze, 2021). Poor-quality consulting, by contrast, can result in weak system design, unrealistic timelines, poor stakeholder engagement, and inadequate documentation. Large enterprises benefit most when consulting partners act not just as technical installers but as strategic advisors who understand both enterprise systems and business transformation needs.

Continuous monitoring, troubleshooting, and system optimization are essential because ERP and EPM integration is not complete at the point of go-live. In large enterprises, integrated systems operate in dynamic environments where business structures, regulatory demands, reporting requirements, and strategic priorities continue to evolve. As a result, integration must be actively managed and refined over time. Continuous monitoring helps the organization track system performance, data accuracy, interface reliability, user adoption, and the timeliness of reports and forecasts (Uzondu & Ofoedu, 2014, Yeboah & Ike, 2020). It provides early warning of issues such as failed data transfers, processing delays, inaccurate mappings, or unexpected user workarounds. Without such monitoring, small issues can accumulate and gradually weaken confidence in the system.

Troubleshooting is closely linked to this ongoing oversight. Integrated environments are complex, and problems can arise from source data errors, system upgrades, network disruptions, process changes, or configuration mismatches. Large enterprises need structured support mechanisms to diagnose and resolve these issues quickly. This often includes dedicated support teams, issue escalation paths, service-level expectations, and clear ownership of integration maintenance. Beyond troubleshooting, system optimization is necessary to ensure that the integrated environment continues to deliver increasing value. Optimization may involve refining dashboards, improving forecast models, simplifying workflows, expanding automation, or adjusting data structures to better support management needs (Elebe & Imediegwu, 2020, Essien, *et al*., 2020, Imediegwu & Elebe, 2020). In successful large enterprises, integration is treated as a living capability that must evolve with the business rather than as a static project outcome.

Taken together, these technological and operational success factors show that ERP and EPM integration requires more than technical connectivity. It depends on a robust and compatible system architecture, disciplined data governance, scalable infrastructure, careful implementation planning, reliable support structures, and a commitment to ongoing improvement. Each factor reinforces the others. Strong interoperability is more effective when data is standardized. Scalable cloud solutions perform better when rollout is phased and carefully tested. Vendor support is more valuable when internal technical expertise is also strong (Efobi, Akinleye & Fasawe, 2017, Ekechi, 2019, Ugwu-Oju, Okeke & Nwankwo, 2018). Continuous monitoring becomes more meaningful when governance structures are in place to act on what is discovered. In large enterprises, where system complexity and strategic expectations are both high, these factors are indispensable.

Ultimately, the technological and operational success of ERP and EPM integration lies in creating an environment where data moves reliably, users can trust the system, and management can use integrated outputs to guide the enterprise with confidence. When these success factors are addressed properly, integration supports not only better system performance but also stronger planning, reporting, coordination, and strategic agility. This is what allows large enterprises to transform ERP and EPM integration from a difficult technical initiative into a durable source of organizational value (Obuse, *et al*., 2022, Ofoedu, *et al*., 2022, Ugwu-Oju, Nwankwo & Okeke, 2022).

2.7 Outcomes and Benefits of Successful ERP and EPM Integration

Successful integration of Enterprise Resource Planning (ERP) and Enterprise Performance Management (EPM) systems generates substantial outcomes and benefits for large enterprises by linking operational execution with strategic planning and performance oversight. In many organizations, ERP systems manage the flow of transactional activities such as procurement, production, sales, inventory, payroll, and finance, while EPM systems transform this operational information into tools for budgeting, forecasting, reporting, and performance evaluation. When these two environments are effectively integrated, the enterprise gains a more connected, accurate, and timely management system that supports both day-to-day control and long-term strategic direction (Anthony, *et al*., 2019, Bankole, *et al*., 2019, Okeke, Ugwu-Oju & Nwankwo, 2019). The benefits of this integration are not limited to technical efficiency. They extend to financial accuracy, planning quality, decision-making capability, cost control, compliance strength, and strategic responsiveness. In large enterprises, where complexity and scale often create

gaps between operations and leadership oversight, successful ERP and EPM integration can significantly improve how the organization functions and competes.

One of the most important benefits of successful integration is improved financial reporting accuracy and consistency. In large enterprises, financial reporting often involves data from multiple departments, cost centers, subsidiaries, and regions. When ERP and EPM systems are not properly connected, finance teams may rely on manual extraction, spreadsheet consolidation, and repeated reconciliation to produce internal and external reports. This increases the likelihood of errors, delays, inconsistencies, and disputes over the reliability of reported figures. Integration reduces these problems by allowing financial and operational data captured in ERP systems to flow directly into EPM environments for consolidation, analysis, and reporting. As a result, the organization can create reports based on a shared data foundation rather than fragmented or manually adjusted sources (Anichukwueze, Osuji & Oguntegbe, 2019, Dako, *et al*., 2019, Ugwu-Oju, Okeke & Nwankwo, 2018).

This improvement in accuracy has wide-ranging consequences. First, it increases confidence in financial statements, management reports, and variance analyses. Senior leaders, board members, auditors, and external stakeholders are more likely to trust the numbers when reporting is based on standardized data flows and controlled processes. Second, integration promotes consistency in how information is classified and presented across the enterprise. Revenue, costs, account balances, and performance indicators can be defined and reported in a uniform manner, reducing ambiguity and enhancing comparability across business units (Bayeroju, 2020, Dako, *et al*., 2020, Ekechi & Fasasi, 2020). Third, reporting cycles become faster because the time previously spent on data gathering and reconciliation is reduced. In large enterprises, this speed matters because delayed reporting limits the usefulness of financial information for both operational control and strategic decision-making. Therefore, improved reporting accuracy and consistency is not just an accounting benefit. It is a critical outcome that strengthens enterprise-wide trust, coordination, and managerial effectiveness.

Another major benefit is better planning, forecasting, and budgeting processes. Planning activities are central to the success of large enterprises because they shape resource allocation, performance targets, investment decisions, and strategic priorities. However, when ERP and EPM systems are disconnected, planning often becomes cumbersome, reactive, and vulnerable to outdated assumptions. Budgets may be based on historical data that has already changed, forecasts may require extensive manual data preparation, and planning teams may struggle to connect actual operational performance with forward-looking assumptions. Successful integration helps solve these problems by creating a direct link between current transactional data and planning tools. Actual performance data from ERP systems can automatically inform budgets, rolling forecasts, and scenario models in EPM systems (Dako, *et al*., 2022, Efobi, Akinleye & Fasawe, 2022, Nduka, 2022).

This creates a more dynamic and realistic planning environment. Forecasts can be updated more frequently and more accurately because they are grounded in live operational signals rather than delayed summaries. Budgeting becomes more responsive because actual cost patterns, revenue trends, and business activity data can be incorporated into planning discussions without long delays. Scenario analysis also improves, allowing management to test different assumptions and assess their likely financial and operational consequences. In large enterprises facing volatile market conditions, changing customer demand, supply chain uncertainty, and inflationary pressure, this level of responsiveness is particularly valuable. Better planning and forecasting do not merely improve numbers on a spreadsheet (Bukhari, *et al*., 2022, Dako, Okafor & Osuji, 2022, Nduka, 2022). They enable the enterprise to allocate resources more wisely, anticipate challenges earlier, and maintain stronger alignment between operations and strategy.

Successful ERP and EPM integration also enhances decision-making through unified dashboards and analytics. In complex large enterprises, decision-makers often suffer from information overload on one hand and information fragmentation on the other. Raw operational data may be abundant, but without integration it is difficult to organize that data into meaningful performance insights. Different departments may use different reports, definitions, or timelines, making it harder for executives and managers to develop a common view of enterprise performance. Integration addresses this by creating a unified information environment in which dashboards, scorecards, and analytical tools are fed by consistent operational data and structured through EPM logic (Ajirotutu, *et al*., 2022, Babatunde, *et al*., 2022, Nwankwo, Okeke & Ugwu-Oju, 2022). This allows leaders to monitor key performance indicators, compare actual results to targets, identify emerging risks, and track progress against strategic objectives in a more coherent way.

The value of unified dashboards lies in their ability to transform data into actionable intelligence. Instead of reviewing isolated reports from separate systems, executives can observe the relationship between operational drivers and financial outcomes in one integrated view. They can see how sales performance affects revenue forecasts, how procurement delays influence working capital, or how production efficiency affects cost performance and profitability. This improves the speed and quality of decision-making because management discussions are grounded in a shared factual base. It also supports more proactive leadership (Obuse, *et al*., 2022, Ofoedu, *et al*., 2022, Ugwu-Oju, Okeke & Nwankwo, 2022). Rather than waiting for end-of-period summaries, managers can identify deviations early and intervene before problems escalate. In large enterprises where decisions often affect multiple departments or regions, unified analytics improve coordination and reduce the risk of decisions based on incomplete or conflicting information.

Increased operational efficiency and stronger cost control are additional outcomes of successful integration. Large enterprises typically invest in integration not only for better visibility but also for better execution. When ERP and EPM systems function together effectively, organizations can reduce the inefficiencies associated with manual data handling, duplicate reporting tasks, and fragmented planning processes. Finance teams spend less time collecting, rechecking, and reformatting data. Managers spend less time reconciling conflicting reports from different functions (Uzondu & Ofoedu, 2011, Yeboah & Enow, 2018). Operational teams receive clearer performance feedback and can respond more quickly to efficiency gaps. This improved

information flow reduces administrative burden and helps employees focus on higher-value activities such as analysis, process improvement, and strategic support.

Cost control is also improved because integrated systems make it easier to identify spending patterns, variance drivers, and operational inefficiencies. Managers can trace costs back to specific activities, departments, or units and compare actual expenditure against plan in near real time. This supports earlier intervention when budgets are exceeded or when operational inefficiencies begin to affect profitability. In large enterprises, even small improvements in cost discipline can generate major financial benefits due to the scale of operations. Integration also helps reduce hidden costs such as those caused by reporting delays, poor data quality, duplicated effort, or poor coordination between functions (Onovo, Gado & Atobatele, 2012, Patrick, *et al*., 2019, Ugwu-Oju, Okeke & Nwankwo, 2018). In this way, ERP and EPM integration supports both direct cost management and broader operational productivity.

Another major benefit is stronger compliance, transparency, and accountability. Large enterprises operate under significant regulatory, financial, and governance pressures. They must produce reliable reports, comply with accounting standards, meet audit requirements, and demonstrate sound internal control. When systems are fragmented, compliance becomes harder because data may be inconsistent, approval workflows may be unclear, and audit trails may be incomplete. Successful integration strengthens compliance by creating more controlled and traceable information flows between operational transactions and performance reporting. This improves the reliability of regulatory filings, internal controls, and audit documentation (Elebe & Imediegwu, 2020, Essien, *et al*., 2020, Imediegwu & Elebe, 2020).

Transparency also improves because integrated systems make it easier to see where data comes from, how it moves through the enterprise, and how performance results are generated. This reduces ambiguity and supports more credible management reporting. Accountability is strengthened because managers can no longer attribute performance gaps to incomplete information or inconsistent reporting structures. When operational and performance data are aligned, responsibility for outcomes becomes clearer. Business units can be evaluated more fairly, and leadership can hold departments accountable using consistent metrics and shared evidence. In large enterprises, this stronger transparency and accountability contributes to better governance, more disciplined performance management, and improved stakeholder confidence (Erigha, *et al*., 2021, Essien, *et al*., 2021, Ezeh, *et al*., 2021).

Successful integration also provides greater strategic responsiveness in dynamic business environments. Modern enterprises operate in conditions shaped by rapid technological change, economic volatility, shifting customer expectations, regulatory change, and geopolitical uncertainty. In such environments, organizations must be able to sense change early, assess implications quickly, and adjust strategy without excessive delay. ERP and EPM integration enhances this responsiveness by reducing the time between operational events and strategic insight (Erigha, *et al*., 2019, Filani, Fasawe & Umoren, 2019, Ugwu-Oju, Okeke & Nwankwo, 2018). Instead of waiting for delayed reports or manually assembled analyses, leaders can use integrated data and planning tools to evaluate performance continuously and revise decisions as conditions evolve.

Strategic responsiveness is especially important in large enterprises because the consequences of delayed action are often significant. A supply chain disruption in one region may affect inventory, customer delivery, and revenue performance in another. A shift in exchange rates may alter profitability across multiple markets. A sudden increase in input costs may require rapid changes to budgets, pricing, or capital allocation (Anichukwueze, Osuji & Oguntegbe, 2020, Efobi, Akinleye & Fasawe, 2020). An integrated ERP and EPM environment enables the organization to model these developments more quickly and respond with greater precision. It supports rolling forecasts, rapid scenario testing, and timely performance reviews that help management navigate uncertainty with more confidence. This agility strengthens the enterprise's resilience and competitive position.

Taken together, these outcomes show that successful ERP and EPM integration creates value across financial, operational, managerial, and strategic dimensions. Improved reporting accuracy strengthens trust in information and reduces reconciliation burdens. Better planning and forecasting support more realistic and adaptive management. Unified dashboards and analytics enhance decision-making and coordination. Greater operational efficiency and cost control improve productivity and financial discipline. Stronger compliance, transparency, and accountability reinforce governance and stakeholder confidence. Greater strategic responsiveness equips the enterprise to compete more effectively in uncertain and fast-changing environments (Ajayi, *et al*., 2022, Babatope, *et al*., 2022, Imediegwu & Elebe, 2022).

Ultimately, the true benefit of successful ERP and EPM integration in large enterprises lies in its ability to connect what the organization does with how it understands, manages, and improves its performance. It turns operational data into strategic intelligence and enables leaders to guide the enterprise with greater clarity, speed, and discipline. In an era where large enterprises must manage complexity while remaining agile and accountable, the integration of ERP and EPM systems provides not just better tools, but a stronger foundation for sustained organizational performance and strategic success (Ekechi & Fasasi, 2022, Ekechi, 2022, Ezeh, *et al*., 2022).

2.8 Conclusion

In conclusion, this review has shown that ERP and EPM integration in large enterprises is a strategically significant undertaking that connects operational execution with performance planning, reporting, and decision-making. The literature consistently demonstrates that ERP systems provide the transactional and process foundation of the enterprise, while EPM systems transform enterprise data into tools for budgeting, forecasting, consolidation, analytics, and performance control. Their integration therefore offers large organizations a pathway toward more accurate reporting, stronger planning capability, improved managerial visibility, greater operational coordination, and more responsive strategic management. The review has also made clear that the value of integration is especially pronounced in large enterprise settings, where scale, complexity, geographic dispersion, and functional interdependence require a unified information environment capable of supporting both daily operations and long-term

strategic direction.

At the same time, the review reinforces that successful ERP and EPM integration depends on balancing technological capability with organizational readiness. It is not enough to adopt advanced platforms, cloud infrastructure, or sophisticated integration tools if the enterprise lacks the governance, leadership, collaboration, and user preparedness required to make those technologies effective. Technical compatibility must be matched by data discipline, process alignment, employee competence, and executive commitment. Where this balance is absent, organizations often face delays, resistance, inaccurate outputs, and limited value realization. Conversely, when strong technology is supported by organizational readiness, integration becomes more than a systems improvement. It becomes a reliable foundation for enterprise-wide coordination, performance management, and business transformation.

This review also emphasizes that ERP and EPM integration should be understood as both a technical and a strategic transformation. On the technical side, it involves interoperability, architecture design, data standardization, cloud scalability, testing, support, and continuous optimization. On the strategic side, it reshapes how the enterprise plans, monitors, and governs performance. It changes how data is interpreted, how decisions are made, how departments collaborate, and how corporate goals are translated into measurable outcomes. In large enterprises, this dual character is particularly important because integration affects not only systems and workflows, but also the broader management logic of the organization. It influences how executives gain visibility, how managers respond to performance signals, and how the enterprise adapts to changing internal and external conditions.

The review has restated several major implementation challenges that frequently undermine integration efforts. These include legacy systems and infrastructure incompatibility, fragmented data silos, poor data quality, inconsistent master data, high implementation costs, heavy resource demands, over-customization, technical integration risks, employee resistance, weak governance, poor communication, time overruns, and cross-functional coordination difficulties. These barriers often interact with one another, creating cumulative problems that extend beyond the technical domain. However, the review has also identified critical success factors that can significantly improve the likelihood of positive outcomes. These include strong executive sponsorship, cross-departmental collaboration, effective change management, continuous user training, clear governance structures, data governance and standardization, interoperable architecture, scalable digital infrastructure, phased implementation, pilot testing, vendor and consulting quality, and ongoing system monitoring and optimization. Together, these factors demonstrate that integration success depends on careful attention to both managerial discipline and technological execution.

Looking ahead, there is a clear need for future research to deepen understanding of ERP and EPM integration in ways that are more sensitive to industry context and technological change. Industry-specific practices deserve greater attention because the integration needs, regulatory pressures, process structures, and performance priorities of sectors such as manufacturing, healthcare, energy, finance, retail, and public services can differ significantly. Future studies should also explore the growing influence of emerging technologies such as artificial intelligence, machine learning, robotic process automation, advanced analytics, blockchain, and digital twins in strengthening ERP and EPM integration outcomes. In addition, more longitudinal research is needed to assess post-implementation value realization, user adaptation over time, and the sustainability of integration benefits in dynamic business environments.

Overall, ERP and EPM integration in large enterprises should not be viewed merely as a technical systems project, but as a comprehensive enterprise transformation that links information, performance, governance, and strategy. When approached with a balanced understanding of its technical demands and organizational implications, integration can strengthen agility, improve accountability, enhance decision quality, and support long-term competitiveness. The review therefore concludes that the most successful large enterprises will be those that treat ERP and EPM integration as a deliberate strategic capability, supported by sound architecture, disciplined governance, and a sustained commitment to organizational alignment and continuous improvement.

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