INTEGRATING ERP AND BUSINESS INTELLIGENCE FOR FINANCIAL DECISION-MAKING IN MID-SIZED COMPANIES

Sardorbek Yunusaliyev
Second-year MBA student, Turin Polytechnic University
sardorchasys@gmail.com
https://doi.org/10.5281/zenodo.22828795

Abstract: This study examines how the integration of enterprise resource planning and business intelligence systems can improve financial decision-making in mid-sized companies. Fragmented spreadsheets and separate departmental records often delay reporting, weaken data consistency, and prevent managers from identifying profitability drivers in time. An integrated architecture can consolidate accounting, sales, and operational data into a shared analytical model. The study adopts a conceptual research design based on a structured review of academic literature, technology frameworks, and established principles of financial information management. It is expected that ERP-BI integration will shorten reporting cycles, improve traceability, and support more accurate evaluation of revenue, cost, cash flow, and segment profitability. The study also identifies implementation conditions that influence value creation, including master-data discipline, clear ownership of metrics, user training, system compatibility, and managerial commitment. The paper argues that mid-sized firms do not need a complex data platform at the beginning. A controlled integration of core ERP data with focused dashboards can provide a practical foundation for evidence-based financial management.

Keywords: ERP integration, business intelligence, Power BI, Business Central, financial decision-making, mid-sized companies, data quality, financial reporting

Introduction

Mid-sized companies produce substantial financial and operational data, yet many of them still manage this information through disconnected spreadsheets, accounting files, and departmental reports. This structure creates repeated data entry, conflicting figures, and delays between an operational event and its financial interpretation. Managers may receive a correct report only after the period in which corrective action would have been most valuable. Business intelligence becomes useful when it connects transaction-level records with a consistent set of managerial indicators rather than functioning as a separate visualization tool (Chen et al., 2012).

Enterprise resource planning systems address part of this problem by standardizing transactions and storing them in a common environment. However, an ERP system alone does not guarantee analytical decision-making. Managers need models that translate general-ledger entries, customer transactions, sales activity, and operating costs into measures such as gross margin, cash conversion, budget variance, and profitability by product or business segment. The integration of ERP data with BI dashboards creates this analytical layer and allows users to move from a summary indicator to the transactions that explain it (Sharda et al., 2018).

This paper examines ERP-BI integration as a general financial-management model for mid-sized organizations. It asks how transactional and analytical systems can be combined to improve financial visibility, which controls are necessary to preserve data reliability, and which recurring managerial decisions can benefit most from an integrated information environment.

Literature Review

Research on business intelligence shows that organizational value depends on more than software acquisition. BI creates value when information quality, system maturity, and decision routines reinforce one another (Popovic et al., 2012). Wixom and Watson (2010) similarly argue that a BI-based organization develops repeatable practices for collecting, governing, and using information. These findings are important for mid-sized companies because limited resources increase the cost of poorly designed integrations.

Data quality remains a central condition. Inconsistent customer codes, incomplete cost allocation, duplicate transactions, and unclear posting dates can produce visually convincing but misleading dashboards. Redman (1998) demonstrates that poor-quality data creates both direct correction costs and indirect decision losses. ERP standardization can reduce these problems, but only when account structures, dimensions, posting groups, and responsibility for master data are clearly defined.

The literature also distinguishes operational reporting from analytical decision support. Operational systems record what happened, whereas BI models compare performance, isolate causes, and support forward-looking choices (Davenport & Harris, 2017). For smaller and mid-sized firms, the OECD (2021) identifies skills, finance, and digital capability as recurring constraints. This suggests that successful ERP-BI adoption should be phased, focused on high-value financial questions, and supported by employee learning rather than treated as a single technology project.

Methodology

The study uses a qualitative conceptual design because the research question concerns the interaction of technology, financial processes, and managerial practice across mid-sized organizations. Evidence is drawn from peer-reviewed studies, academic books, institutional reports, and official documentation concerning ERP architecture, business intelligence, data quality, and financial decision support.

The analysis follows three stages. First, thematic review identifies recurring mechanisms through which ERP and BI systems influence financial decisions. Second, conceptual process mapping explains how transactions can move from operational systems into standardized accounting records and analytical measures. Third, comparative synthesis evaluates the conditions under which integrated dashboards can support revenue analysis, cost control, receivables monitoring, and cash-flow management.

Reliability is strengthened by comparing arguments across independent academic and institutional sources. The proposed model requires dashboard totals to reconcile with ERP control accounts, while definitions for revenue, direct cost, gross margin, and reporting periods remain consistent. Metrics that cannot be traced to a defined source and calculation rule should not be used for managerial decisions.

Expected Results

The integrated model is expected to reduce manual consolidation and provide a consistent view of financial and operational performance. Managers should be able to compare actual results with plans, identify cost deviations, and trace an unusual figure to the related customer, supplier, business segment, or transaction. This visibility is likely to improve both the speed and the defensibility of financial decisions.

The theoretical synthesis is also expected to show that integration quality matters more than dashboard quantity. A limited set of reconciled measures can create more value than numerous visuals built on inconsistent data. The strongest benefits should appear in recurring decisions involving sales performance, gross margin, customer balances, supplier exposure, liquidity, and period-end review.

Implementation risks are expected to include inconsistent master data, incomplete use of analytical dimensions, manual overrides, and limited user confidence. These risks should

decline when the company establishes data ownership, validation checks, access controls, and scheduled reconciliation between ERP reports and BI outputs.

Discussion

The expected findings support the view that analytical capability is an organizational system rather than a software feature. Business Central can provide transaction control, while Power BI can provide interactive analysis, but the connection produces value only when financial definitions remain stable. This relationship explains why some firms invest in modern tools yet continue to debate which report is correct (Marchand & Peppard, 2013).

Analytical dimensions are particularly important in integrated systems. Products, services, customers, suppliers, sales channels, projects, and responsible units should be represented consistently at the time of posting. If these attributes are added later through manual classification, the dashboard becomes harder to audit and maintain. Embedding them in the ERP workflow shifts analytics from retrospective correction to continuous management control.

A practical adoption sequence begins with reconciled financial statements and a small number of management indicators. An organization can then add customer, product, project, and supplier profitability, followed by cash-flow forecasting and scenario analysis. This sequence controls cost and allows employees to develop confidence in each layer before more advanced models are introduced.

Conclusions

ERP-BI integration can improve financial decision-making in mid-sized companies by combining transaction reliability with accessible analysis. The theoretical evidence indicates that the main gains are likely to come from faster reporting, improved traceability, consistent performance measures, and earlier identification of adverse cost or margin movements.

Technology alone is insufficient. The company must define metric ownership, standardize master data, reconcile dashboards with accounting records, and train users to interpret results. A phased approach centered on a few high-value decisions is more suitable for resource-constrained firms than a broad implementation without clear priorities. When these conditions are met, Business Central and Power BI can form a scalable financial management system that supports both operational control and strategic planning.

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