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КАК СИСТЕМЫ ERP УСИЛИВАЮТ СБАЛАНСИРОВАННУЮ СИСТЕМУ ПОКАЗАТЕЛЕЙ: АНАЛИЗ НАУЧНЫХ ПУБЛИКАЦИЙ

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Статья посвящена изучению взаимосвязи между системами управления корпоративными ресурсами (Enterprise Resource Planning — ERP) и сбалансированной системой показателей (Balanced Scorecard — BSC) с целью выявления потенциала ERP-систем в повышении эффективности реализации BSC. В условиях цифровизации экономики и усложнения процессов управления возрастает потребность в интегрированных информационных системах, способных обеспечивать своевременную и достоверную информацию для принятия стратегических управленческих решений. На этом фоне важным направлением научного поиска становится исследование влияния ERP-систем на развитие систем стратегического контроля, включая BSC.

Методологической основой исследования послужил систематический обзор литературы. В анализ включены 58 научных публикаций за период с 1990 по 2023 год, охватывающих эволюцию концепций ERP и BSC, вопросы их внедрения, взаимодействия, а также последствия для управленческого учета и контроля. Особое внимание уделено исследованиям, анализирующим интеграцию ERP и BSC в рамках стратегического управления. Обзор включает как теоретические источники, так и эмпирические данные, полученные на основе кейс-стади в компаниях различных отраслей.

Результаты исследования показывают, что эффективная интеграция ERP-систем с BSC способствует существенному повышению стратегической управленческой эффективности за счет предоставления в реальном времени комплексных и согласованных данных. Это позволяет организациям оперативно мониторить ключевые показатели эффективности, повышать точность и своевременность контроля, а также укреплять стратегическое выравнивание. Кроме того, ERP-системы обеспечивают автоматизацию сбора и обработки данных, что позволяет контролерам переходить от рутинных задач к аналитическим и консультативным функциям. Интеграция BSC в архитектуру ERP расширяет возможности применения предиктивной и прескриптивной аналитики для оценки и корректировки стратегий.

Результаты исследования показывают, что внедрение BSC вне контекста интегрированных информационных систем, таких как ERP, ограничивает её потенциал. Напротив, тесная взаимосвязь между ERP и BSC усиливает проактивный характер стратегического контроля и способствует более быстрому реагированию на внешние и внутренние изменения. Таким образом, ERP-системы не только поддерживают реализацию BSC, но и усиливают её эффективность как инструмента стратегического управления и контроля.

Полученные выводы актуальны для организаций, стремящихся к повышению эффективности системы управления на основе интеграции информационных технологий и стратегических инструментов контроля. Статья представляет интерес для исследователей и практиков в области управленческого учета, цифровой трансформации и стратегического управления, особенно в контексте региональной и отраслевой экономики.

Ключевые слова: ERP-системы, сбалансированная система показателей, информационные технологии, интеграция, управленческий контроль, эффективность.

HOW ERP SYSTEMS EMPOWER THE BALANCED SCORECARD: ANALYSIS OF SCIENTIFIC PUBLICATIONS

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This study aims to explore the relationship between Enterprise Resource Planning (ERP) systems and the Balanced Scorecard (BSC), aiming for identifying the potential of ERP systems to enhance the effectiveness of BSC implementation. In the context of economic digitalization and increasing complexity of management processes, there is a growing need for integrated information systems for providing timely and reliable data for strategic decision-making. Against this backdrop, examining the impact of ERP systems on the development of strategic control tools, including the BSC, has become an important area of academic research.

The methodological basis of this study is a literature review. The analysis includes 58 scholarly publications from 1990 to 2023, covering the evolution of ERP and BSC concepts, their implementation, interaction, and implications for management accounting and control.

The results of the study show that when ERP systems are properly integrated with the BSC significantly improve strategic management performance by offering comprehensive, real-time, and aligned data. This allows organisations to track key performance indicators more quickly, ensure more accurate and timely control, and better align their actions with strategic goals. Moreover, ERP systems automate data collection and processing, allowing controllers to shift from routine tasks to analytical and advisory roles. Integrating the BSC into the ERP architecture expands the use of predictive and prescriptive analytics for strategy evaluation and adjustment.

The study argues that implementing the BSC outside the context of integrated information systems such as ERP limits its potential. However, a strong link between ERP and the BSC strengthens the proactive nature of strategic control and enables more agile responses to internal and external changes. Thus, ERP systems not only support the implementation of the BSC but also enhance its effectiveness as a tool for strategic management and control.

The findings are relevant for organizations seeking to improve management system performance through the integration of information technologies and strategic control tools. The paper is of interest to researchers and practitioners in the fields of management control, digital transformation, and strategic management, particularly in the context of regional and sectoral economies.

Keywords: ERP system, balanced scorecard, information technology, integration, management control, efficiency.

Introduction. By 2026, It is anticipated that the world will spend 3.4 trillion US dollars on digital transformation [1]. The business landscape has been drastically changed by the rapid evolution of Information Technology (IT) in recent decades [2]. In order to stay competitive, companies need to keep up with these rapid IT advancements.

The rapid progress in IT is also projected to transform many accounting tasks and practices. Innovations such as cloud accounting, cryptocurrency, and blockchain are already making a significant impact on the field and are likely to play a key role in shaping its future.

One significant effect of modern technologies on the business world is the ongoing increase in data volume and complexity. Therefore, companies are compelled to replace legacy systems with modern IT solutions to effectively manage data processing and use. Furthermore, real-time and accurate information are crucial for decision-making and survival in today's competitive market, making Information Systems (ISs) the lifeline for companies.

For instance, the evolution of Enterprise Resource Planning (ERP) Systems stands out as one of the advanced applications of modern technologies. They are among the most significant IT implementations in the corporate world, enabling companies to meet their information needs and requirements [3].

Their primary purpose is to integrate all areas and functions of an organization into a unified system, ensuring efficient and timely access to information [4]. As a result, ERP systems influence nearly every aspect of a company, acting as a central tool that provides shared data access across all business functions [5]. Additionally, ERPs enhance information production and control, making them a powerful tool for management accountants and controllers [6].

Therefore, several studies conducted to examine the relationship between ERP implementation and management accounting and control practices [2, 6, 7, 8, 9].

It is important to gain deeper insight into how ERP systems impact and support management accounting

practices and techniques, such as the Balanced Scorecard (BSC) [2]. However, the extent studies that directly explore the connection between ERP systems and the Balanced Scorecard are so little, particularly regarding how these integrated information systems impact the BSC's effectiveness. Therefore, this study aims to address this gap by conducting an extensive literature review to examine how ERP systems can support the effective operation of the Balanced Scorecard (BSC).

The remainder of this paper is structured as follows. The next section presents the research method. Then, a literature review is provided, which forms the core of our study. This review is divided into three parts: first, an overview of Enterprise Resource Planning (ERP) systems; second, an outline of the Balanced Scorecard; and finally, a discussion on the potential impact of ERP systems on the effectiveness of the Balanced Scorecard. The paper concludes with the findings, implications, and suggestions for future research.

Research Method. This study adopts a qualitative research approach, relying on a literature review to explore how ERP implementation may influence the effectiveness of the BSC. The literature review is a well-established method for synthesizing existing knowledge within a specific field. It is generally a systematic approach to collecting and integrating previous research, and can also help to provide an overview of areas in which the research is disparate and interdisciplinary [10].

While extensive research exists on ERP systems and the BSC individually, there is a relative scarcity of studies that examine the impact of ERP on the BSC. To bridge this gap, we conducted a thorough literature review, analysing a wide range of studies to develop a comprehensive understanding of the ERP-BSC relationship. Our review included 59 studies, selected based on their relevance to ERP, BSC, management accounting and controls, and ERP-BSC integration.

To ensure academic rigor, priority was given to peer-reviewed journal articles and high-quality conference proceedings, along with select industry reports. The review focused on publications from 1990 to 2023 to trace the development of ERP systems and the BSC, particularly, following the introduction of the Balanced Scorecard by Kaplan and Norton in 1992.

This approach ensured that we gathered diverse perspectives and insights to inform the research and provide a robust foundation for understanding how ERP systems influence the BSC in practice. Therefore, we hypothesis that the impact of ERP on the BSC is significant.

Literature Review:

An overview of ERP systems. The integration is the operation of combining the different parts of a system and ensuring their compatibility, as well as the well-functioning of the whole system [11]. Enterprise Resource Planning (ERP) systems are the most common approach to information system integration, which integrate and draw data from a common database, they are fundamentally bound up with organizational processes [12].

The ERP systems are defined by several authors and from various perspectives, highlighting their role in business process optimization and information management. For instance, ERP systems are defined as module-based, customizable and integrated IT applications, that aim to optimize business processes, minimize information redundancy, and enhance information integrity [11]. Similarly, they are considered as Information Systems (ISs) that support most aspect of an organization's information needs by offering a single repository and based on best business practices [3, 13]. These definitions emphasize the functionality of ERP systems as tools for streamlining business operations through integration, and as enablers of better decision-making by ensuring data consistency and accessibility.

Between 1980 and 1990, business professionals increasingly acknowledged the importance of organizations proactively anticipating and adapting to change [14]. To achieve this, organizations began automating a substantial portion of their information, which became the key tool for gaining a competitive edge in business. Consequently, by the early 1990s, the ERP systems have been experiencing an accelerated development, striving to fulfil the information age's wildest dream of the unified and coherent IS [11, 15].

Enterprise resource planning systems are considered the generalization and extension of Manufacturing Resource Planning (MRP) systems, as they expanded the scope of the integrated software to encompass the entire organization [5, 11, 14, 16, 17].

Initially, these systems were designed for large manufacturing organizations. However, they are now increasingly being adopted by SMEs and proving to be beneficial for organizations of all types [18,19]. Major commercial ERP systems, including SAP ERP, Oracle ERP, and Microsoft Dynamics, were developed during this period [20]**.** At present, SAP is the leading provider in the large enterprise systems market [18].

These systems can be introduced either through a Big Bang implementation or by gradually increasing the number of modules and entities over time [21, 22]. The Big Bang approach is the installation of ERP system of all modules across the entire organization simultaneously [23].

Additionally, an organization might adopt the core modules offered by an ERP vendor, or might combine modules from various vendors in order to create an IS that better meets its needs (Best-of-Breed approach). Otherwise, organizations might adopt special-

ized industry and complementary modules to extend the system functionality such as Customer Relationship Management (CRM) and Supply Chain Management (SCM) [18].

However, the ERP implementation process is widely regarded as a risky, costly, and challenging endeavor [3, 7, 13, 24]. To illustrate, companies may invest hundreds of millions of dollars and several years in implementing ERP solutions [25]. ERP systems are one of the most expensive IT investments [3], noting that the cost of purchasing the software is merely the "tip of the iceberg," with total implementation costs reaching 8 to 10 times the software's price [5]. In addition, companies may spend up to three times as much money on consultants as they do on the system itself [26].

Furthermore, despite their widespread adoption by organizations worldwide, ERP implementations often fail due to various reasons. Extensive research has documented numerous cases of such failures [13, 24, 27, 28, 29]. For instance, major organizations such as Nike, Dell, Apple, Hershey, Mobile Europe, FoxMeyer, Whirlpool, and more recently, Lidl and Revlon, have faced significant challenges in their ERP implementations [13, 17, 24, 27, 28, 30].

Therefore, ERP implementation success is challenging [16, 24], and requires careful consideration of critical success factors (CSFs) to ensure a smooth transition and realization of its benefits [8, 25, 31]. Nonetheless, when successfully implemented, ERP systems will significantly enhance organizational performance and survival by streamlining business processes, implementing best practices, boosting productivity and effectiveness, enhancing customer satisfaction, reducing inefficient spending and inventory turn-around time, and improving competitive advantage and operational excellence [17, 24, 27, 32, 33, 34].

The Balanced Scorecard BSC. By the 1990s, business people were simply swamped with information, but much of it was either outdated or reflected past performance of the organization, rather than predicting future trends, and with no clear perspective on what would happen next [14]. Further, performance measurement systems relied solely on financial accounting metrics such as Return on Investment (ROI) and Earnings per Share (EPS) [35, 36].

However, these measures were found to be misleading and provided incomplete evaluations, prompting managers and researchers to address these inadequacies [35]. This need prompted the development of a new mechanism to communicate vision and strategy while integrating both financial and operational measures in a balanced manner [36].

The Balanced Scorecard (BSC) concept was introduced in a Harvard Business Review article following a year-long research project with 12 companies considered leaders in performance measurement [35]. The BSC introduced as a set of measures that gives top managers a fast but a comprehensive view of the business, including financial measures and complementing them with operational ones [37].

The Balanced Scorecard offers multiple interpretations of "balance" [38]. It allows organizations to align financial and non-financial measures, balance long-term and short-term objectives, and consider both external and internal perspectives. Additionally, it integrates hard and soft measures while combining historical lagging indicators with future-oriented leading indicators.

Moreover, the BSC approach benefits companies in several ways, as it helps articulate and communicate their vision and strategy. It not only empowers employees but also aligns individual, organizational, and cross-departmental initiatives toward a common goal [14, 39].

Unlike traditional measurement systems that aimed at controlling behaviours and actions, the BSC emerged as an innovative performance measurement system, serving as a communication, information, and learning tool [38, 39]. Over time, it gradually evolved into a comprehensive strategic management framework, driven by a series of academic initiatives from its creators. Its recognition as a proven management system was further reinforced by several case studies [36].

This management framework aims to turn strategy into action by deriving objectives, then converting them into a set of clear, measurable indicators- known as key performance indicators (KPIs) — that clearly communicate the company's vision and strategic intent to the whole organization [14]. In simple terms, KPIs are a set of quantifiable metrics (rates, ratios, averages or percentages) that measures an organization's progress towards its objectives.

The BSC's champions broke down these performance measures into four imporatnt perspectives, reflecting the various views that can be taken of a company, and providing managers with a balanced, comprehensive picture of performance [14, 35]. These perspectives enhance managerial awareness of real-time performance, empowering managers to make more informed decisions, strengthen strategy implementation, and ultimately improve overall financial performance [40].

Several researchers argue that relying on multiple performance measures can create confusion, leading to ambiguous and often conflicting signals about a company's values. However, managing a company is compared to an airplane, emphasizing that flying it while relying on a single instrument in the cockpit would be extremely risky [41]. Managers, much like pilots, need to process a comprehensive set of indicators to effectively navigate and manage their businesses.

Therefore, the BSC addresses four fundamental questions, each corresponding to one of its key per-

spectives: the financial perspective, the customer perspective, the internal business process perspective, and the learning and growth perspective [38, 39]. **Figure 1** summarizes how the BSC translates the organization's strategy into these perspectives and the critical questions they seek to answer.

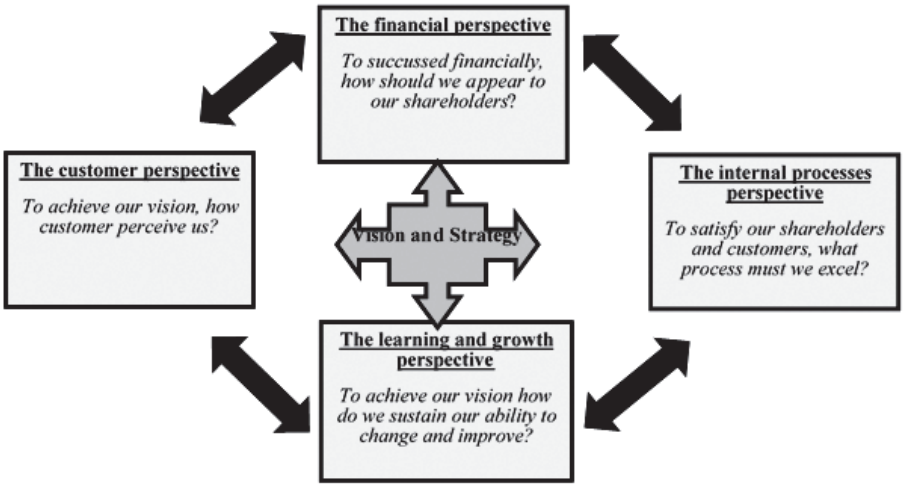

*Fig. 1. Translating vision and strategy: Four perspectives. *Source: [39]*

The BSC translates a company's strategy into specific objectives across four interrelated perspectives (financial, customers, internal process, and learning and growth). These objectives are then further developed into key performance indicators (KPIs), targets, and strategic initiatives [38]. The four perspectives are connected through a series of cause-and-effect relationships, involving a linkage from strategy formulation to financial outcomes [14, 38, 42] Thus, enabling the scorecard to tell the story of a business unit's strategy through a sequence of cause-and-effect relationships, expressed as a series of "if-then" statements [38, 39].

This sequence is summarized in what is known as the strategy map, illustrating that the chain of cause-and-effect relationships spans all four perspectives of the Balanced Scorecard [38]. This is further supported by best practice examples, which suggest that managers should leverage strategy maps to clearly explain the underlying business model [43]. **Figure 2** presents the strategy map concept, first introduced by Kaplan and Norton.

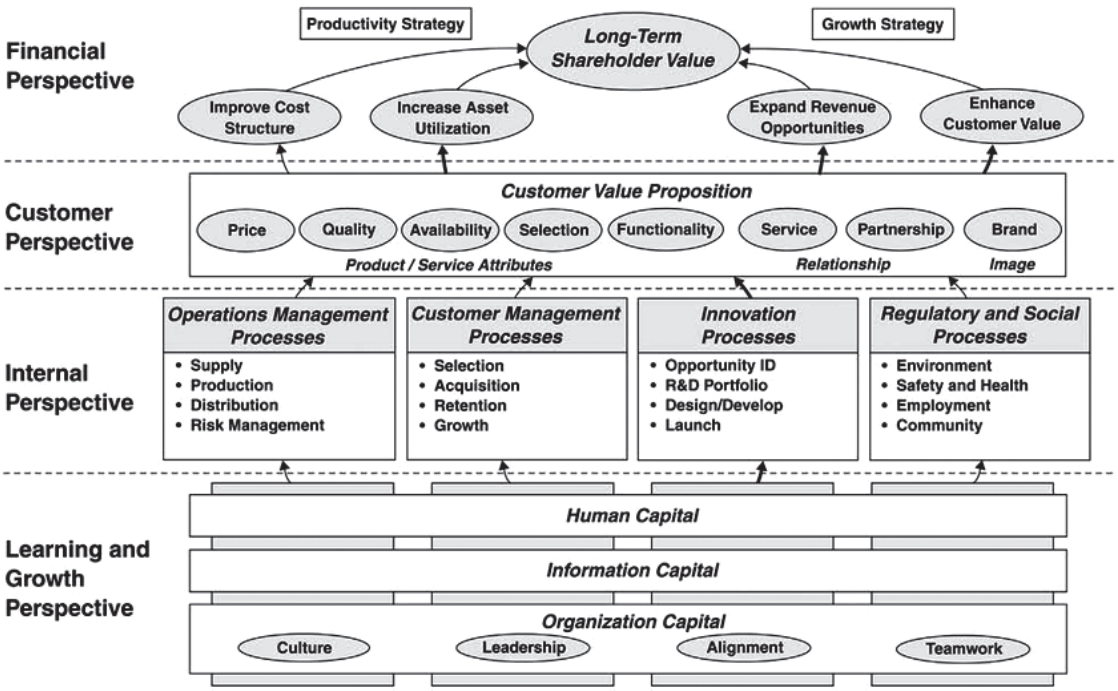

*Fig. 2. The strategy map. *Source: [39]*

The Balanced Scorecard serves as a strategic management framework that translates a company's vision and strategy into a cohesive set of performance metrics that can be automated and seamlessly integrated at every organisational level. This automation not only improves the BSC's role as a communication platform, enabling feedback and information sharing across the organization [14], but also represents a significant practical advancement.

With the support of specialised software, managers can more easily develop, update, and report on the BSC, reducing the complexity that arises when the framework is extended across multiple business units and departments. This technological support not only simplifies management of multiple BSCs but also helps maintain strategic alignment throughout the organisation [44].

This integration becomes even more powerful when the BSC is integrated with ERP systems, which act as a centralised source of real-time data across all business functions [4, 7, 45], a point explored in the following section.

Leveraging ERP Systems to Maximize the Effectiveness of the BSC. The relationship between ERP systems and the Balanced Scorecard has rarely been explored or explicitly discussed in the existing body of literature. Few studies have directly examined this link. These studies emphasize how ERP systems enhance the Balanced Scorecard's effectiveness by providing integrated, real-time data to support performance measurement, management, and strategic decision-making [2, 4, 45, 46].

However, several researchers examining the broader relationship between IT and management accounting have implicitly addressed this link [6, 14, 21, 47].

Early studies exploring the impact of ERP system implementation on management control (MC) suggest that the expected impact is minor [7, 48, 49]. Nonetheless, modern studies claim that the implementation of ERP systems has the potential to change the management control practices significantly [6, 9, 12, 50, 51, 52].

Although ERP systems do not entirely transform management control practices [48], they have the potential to significantly improve and streamline these practices by enhancing their accuracy, timeliness, efficiency, and effectiveness [53, 54, 55, 56].

These systems are widely recognized as powerful tools for management control, as they significantly reduce routine tasks by overcoming traditional limitations in information collection, processing, and storage [21, 46, 51, 54, 57].

Automating routine and administrative tasks through ERP systems, particularly by eliminating data collection and manual entries, not only streamlines operations but also enhances data access and accelerates information flow, ultimately enabling more timely and improved management control compared to the pre-ERP era [7, 46, 52, 57]. ERP systems enhance the flexibility of the entire accounting department by facilitating faster and more efficient data collection and processing [50].

Moreover, some of the key expected benefits of ERP systems in management control include empowering the strategic vision, standardizing processes across organisational units, and enabling transparency in controling [58]. Additionally, ERP systems facilitate the rapid updating of budget information, automatic dashboard adjustments, faster feedback processes, and the provision of flexible, forward-looking information [21, 56, 57]. Furthermore, ERP systems can enhance budgeting and reporting processes by simplifying and accelerating the exchange of data and information, reinforcing their role as a valuable management tool [8]. **Table1** summarises the key benefits of ERP implementation on management control.

Table 1

Key benefits of ERP on MC

Benefits of ERP on MC	Authors
Eliminate the constraints of information collection, recording, and storage	[21, 48, 49, 51, 54, 57]
Improved and streamlined MC practices	[53, 54, 55, 56, 59]
Improved and automatic budgeting and reporting systems	[8, 21, 56, 57]
Improved analytics capabilities in MC	[2, 6, 51, 52, 54]
Drilling down from financial figures to non-financial information	[14, 45, 51, 56]
Shifting from the traditional role of controllers to a more strategic role	[6, 21, 48, 52, 56, 59]
Improved decision-making and overall organizational performance	[52, 54, 55, 56]

*Source: by the authors based on the literature review

Likewise, ERP systems are perceived to drive a significant shift in the role of management controllers (from traditional bean-counters to business analysts and strategic advisors), enabling them to explore data in greater depth and focus on more advanced strategic analysis and the interpretation of KPIs [21, 48, 52, 56, 59].

This transformation is largely attributed to the facilitative features of ERP systems, such as automatic report generation, which allow controllers to devote their attention from routine data collection and recording towards forward-looking tasks like forecasting and in-depth analysis [21, 56].

An ERP system can function as a comprehensive management control package that integrates both accounting and non-accounting systems [53, 58], incorporating transactional data and non-financial information, while maintaining traditional performance measures and financial data [55, 56]. The ability to drill down from financial figures to non-financial information offers granular insights and deeper explanations of performance measures, including the underlying drivers of financial revenue [55].

This capability, along with the advantage of ERP systems serving as a primary data source within an organisation, supports the development and deployment of a strategic management control system aligned with the BSC's perspectives. It also makes it easier to monitor business units and evaluate the organisational progress toward strategic goals [14, 45, 51]. **Table 2** summarizes the key studies that examine the ERP-BSC connection, along with the benefits derived from this integration.

Implementing the BSC outside ERP systems and solely relying on them as a data source may lead to several implications [2]. In contrast, they emphasize that the BSC's effectiveness can be significantly enhanced when embedded within an integrated ERP environment. This highlights the value of integrating the BSC with other IT tools, particularly ERP systems, which strengthen the BSC's role in proactive communication. By tapping into real-time data, organisations can spot problems sooner and respond to opportunities more quickly and effectively [14].

This was further supported by a multiple case study conducted on five Brazilian companies that implemented both ERP systems and the BSC [4]. The study emphasizes that for the BSC to achieve its full potential, it must be integrated within the ERP system. This integration improves data consistency, support faster and more informed decision-making, and reinforces the BSC's role in developing, implementing, and monitoring corporate strategy. The study also identifies several advantages resulting from this integration, such as higher productivity, increased market share, greater transparency, and improved profitability. Together, these benefits enhance organisational efficiency, effectiveness, and competitiveness, ultimately supporting the BSC's core objective of translating strategy into action and aligning operational performance with strategic goals.

The ERP-BSC integration not only enhances real-time performance monitoring but also provides a valuable opportunity to embed advanced data analytics methods into performance measurement and management processes. Several researchers develop a management accounting data analytics (MADA) framework that applies descriptive, predictive, and prescriptive analytics to the four BSC's perspectives [45]. This analytical enhancement transforms ERP systems from passive data repositories into proactive, strategy-oriented management tools, empowering organizations to anticipate trends, simulate scenarios, and make more informed strategic decisions. This highlights that the true potential of ERP systems to support management control is realized when they are directly linked to strategic management tools such as the BSC, rather than being used solely for reporting purposes.

Moreover, by consolidating data from various organisational functions into a unified platform, ERP systems support the creation of comprehensive performance reports that align with perspectives of the BSC [56]. Although the study does not explicitly frame its findings through the BSC lens, it implicitly reveals how ERP systems provide the foundational infrastructure necessary for successful BSC adoption. This supports the view that integrating ERP systems with the BSC, enable organisations to monitor and evaluate strategic objectives more effectively through enhanced internal reporting, real-time data availability, and improved transparency across functional areas.

Table 2

Key Literature on ERP-BSC Integration

Authors	Focus Area	Purpose	Methodology	Key findings on ERP-BSC or IT-MC links
[14]	IT, ERP, and BSC alinement	To examine how ERP systems and the BSC align to support strategic management and performance measurement.	*Conceptual analysis*	• ERP provides real-time, integrated data essential for BSC; • ERP enhances BSC's role in proactive performance management; • ERP supports learning and faster adaptation through timely feedback.
[7, 48]	ERP and MC Evolution	To explore whether ERP drives changes in management accounting methods, control processes, and accountants' roles.	*Multiple case study (10 Finnish companies)/ Longitudinal case study (large manufacturing company)*	• ERP had minor direct impacts on management accounting techniques; • BSCs often sit outside ERP, but ERP provides critical data for them; • Shifting the accountants and controllers' role toward more analytical and business-oriented tasks.

Authors	Focus Area	Purpose	Methodology	Key findings on ERP-BSC or IT-MC links
[2]	ERP and Strategic Performance Management	To assess how integrated systems impact management accounting tasks.	*Questionnaire survey (from Danish companies)*	• ERP alone supports data collection, but integrating ERP with Strategic Enterprise Management (SEM) systems (including BSC) enhances strategic management and expands the use of modern performance tools like BSC.
[4]	ERP-BSC Integration	To examine the synergies and challenges of integrating ERP and BSC in operations management.	*Multiple case study (5 Brazilian companies)*	• ERP supports BSC by providing financial and management reports; • ERP-BSC integration improves efficiency, control, and planning; • Integration enhances competitiveness, decision speed, transparency, and profitability.
[45]	ERP-BSC–Data analytics	To propose a framework combining ERP, BSC, and advanced data analytics.	*Conceptual framework*	• ERP systems combined with the BSC enable descriptive, predictive, and prescriptive analytics across BSC perspectives, transforming ERP into proactive strategic tool rather than passive data repository.
[56]	ERP-Management accounting	To examine ERP adoption motives, benefits, and challenges, and their implications on management accounting.	*Qualitative case study*	• ERP provides real-time data across functions, supporting balanced performance evaluation (BSC).
[46]	Performance measurement (BSC) — ERP	To develop and implement a BSC-based performance management system supported by ERP data.	*Case study*	• ERP-BSC integration improves performance monitoring and data synchronization; • ERP alone can't fully detect strategic and operational issues; • ERP-BSC integration enhances both operational efficiency and strategic management.

*Source: by the authors.

Conclusion. This study investigated the link between ERP systems and the Balanced Scorecard (BSC), with a focus on how ERP implementation can enhance the BSC's effectiveness in supporting strategic management and performance measurement. Although ERP systems and the BSC have been widely studied, the direct link between them remains relatively underexplored. By conducting a comprehensive literature review, this study brought together insights from both early and more recent research, emphasising that ERP systems play a key enabling role by supplying real-time, integrated data across the BSC's four perspectives.

The findings suggest that ERP systems contribute significantly to improved management control by automating data collection and reporting, streamlining information flow, and minimising manual tasks. These capabilities enhance the accuracy and timeliness of performance, allowing managers better align operational processes with strategic objectives. Moreover, the integration of ERP systems with the BSC promotes organisational transparency, supports advanced analytics, and enables management controllers to take on more strategic advisory roles rather than purely operational ones.

However, the review also highlights several challenges. In particular, when the BSC is operated outside ERP systems, its effectiveness can be weakened by fragmented data sources and delayed reporting.

Overall, the study underscores the importance of seamless ERP-BSC integration. Such integration empowers organisations to monitor performance in real-time, respond proactively to internal and external changes, and maintain continuous alignment between strategy and execution. This alignment ultimately enhances decision-making, operational efficiency, competitiveness, and the overall organisational performance.

Implications and Future Research Directions. This study provides practical insights for companies aiming to enhance their management control systems through ERP and BSC integration. Future research could further examine this relationship through empirical case studies across different sectors and company sizes, exploring the role of advanced analytics and emerging technologies in strengthening ERP-BSC integration.

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