The Role of Management Accounting in Strategic Financial Decision-Making: A Case Study of M&A Transactions

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Abstract. Mergers and acquisitions may be cited as a strategic financial decision that involves a considerable amount of resources in terms of commitment and complexity in the analysis, which cannot be explained through the lens of financial reporting. In this research, the author has attempted to conduct an in-depth case study on the acquisition of KUKA AG by Midea Group in the amount of EUR 4.5 billion (2015-2024) to understand the management accounting tools in various strategic decision-making scenarios. The research has adopted a four-stage analytical methodology in the acquisition process: strategic planning, target evaluation, transaction execution, and post-acquisition integration. The value chain analysis and benchmarking tools were identified in the strategic planning phase. The discounted cash flow method assisted in the estimation of the intrinsic value of the target company (EUR 83.50 to 96.26 per share). The sensitivity analysis and scenario simulations of the DCF method assisted in the understanding of the price determination of the target company at EUR 115 by estimating optimistic, baseline, and pessimistic scenarios. The institutional regulations that require the operational independence of KUKA for a seven-year period also influenced the use of integration-oriented tools such as the balanced scorecard and unified budgeting systems. The research findings highlight the institutional factors as the boundary conditions for the use of management accounting tools. The above explains the reason why the transaction approval requirements limit the ability to integrate the target company. Cross-border acquisitions often encounter challenges when regulatory legitimacy conflicts with integration needs.

Keywords: Management accounting tools, Strategic financial decisions, Cross-border mergers and acquisitions, Institutional constraints, Case study methodology.

1 Introduction

Mergers and acquisitions, capital investment decisions amounting to hundreds of millions of dollars, and the restructuring of organizations are strategic decisions whose consequences are irreversible. These are different from the usual activities of the organization in the sense that they involve the utilization of cash flows over a period of

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years, which are taken in a state of high uncertainty and involve constraints on the paths of the organizations, which may prove to be detrimental (Cartwright & Schoenberg, 2006) [1]. The AOL-Time Warner merger, which cost shareholders $200 billion, is an example of a strategic failure that can haunt organizations for decades.

Nevertheless, conventional financial accounting cannot support in making effective decisions in this respect. Financial accounting, being geared towards reporting to outsiders, uses conventional reporting formats, which are backward-looking in nature and cannot accommodate the level of micro-analysis required for strategic decisions (Nik Abdullah et al., 2022) [2]. A balance sheet does not assist management in determining whether the acquisition of a robotics firm will enhance or weaken the firm's manufacturing capabilities. On the other hand, management accounting uses appropriate tools in making internal decisions, such as DCF analysis, sensitivity analysis, and performance measurement systems, which enable management to assess whether the firm's strategies are being successfully implemented (Garrison et al., 2021) [3]. However, surprisingly, empirical research on the usage of these tools in a high-stakes setting is rare. Most of the literature focuses on the application of these tools in a day-to-day settings (Dahal & Ghimire, 2024) [4], or on the use of a certain tool, such as the balanced scorecard (Tawse & Tabesh, 2023)[5]. The process of M&A involves various stages, namely strategic planning, evaluation, execution, and integration, each of which calls for a different set of skills. The dynamic nature of the change in management accounting, however, has not been examined.

This gap is particularly relevant in the context of cross-border acquisitions, where the cultural and regulatory complexity compounds the analysis. The acquisition of KUKA AG by Midea Group in a deal worth EUR 4.5 billion, which is arguably the largest Chinese manufacturing acquisition in Europe, provides a longitudinal context in which the dynamics of the acquisition can be explored in detail. The acquisition spans nine years from the investment stage in 2015 to the integration stage in 2024 and has generated numerous regulatory documents describing the use of management accounting throughout the process. The scope of the acquisition provides the context in which two questions can be asked: what is the evolution of the use of management accounting tools throughout the deal, and what institutional limitations exist in the use of management accounting tools?

2 Literature Review

Management accounting emerged as a response to the fundamental need in financial accounting for decision-relevant information, as opposed to the standardized information needed externally (Garrison et al., 2021). Strategic management accounting (SMA), as the name suggests, goes one step further by utilizing the firm’s cost information, as well as external information on competitors, markets, and value chains, in order to support critical decision-making (Cadez & Guilding, 2008) [6]. A key question remains: how do these systems operate with regard to the most critical decisions of the firm?

The study by Nik Abdullah et al. (2022) provides a systematic review of literature published over four decades from 1982 to 2022. The themes identified in the study, which were recurrent, related to competitor analysis, customer accounting, and strategic costing. From the study, it is evident that there is a worrying trend in the literature, wherein the efficacy of the tools varies substantially, but the enabling conditions under which these tools could be used have not been examined by the researchers. Dahal and Ghimire (2024) find that management accounting practices improve quality of decisions, but the study was done in a routine context, not a strategic context where a mistake could cost organizations hundreds of millions.

Mergers and acquisitions are classic high-stakes strategic decision. The failure rate ranges from 50% to 70%, resulting in billions of dollars in lost shareholder value annually due to valuation failure and acquisition integration shortcomings (Mirc et al., 2023) [7]. Contemporary research indicates that acquisition failure is primarily a result of shortcomings in pre-acquisition analytics. Bauer and Friesl (2024) [8] propose that acquisition failure is a result of shortcomings in target evaluation, which are embedded in the structure of the transaction, thus limiting post-acquisition options irrespective of integration capabilities. Similar conclusions have been reached by Steigenberger (2017) [9], indicating that post-acquisition success stems from pre-acquisition decisions rather than acquisition integration alone.

This temporal dependency has raised significant questions about the application of management accounting tools in various phases of M&A. Petersen et al. (2017) [10] find that the most widely used tool in practice is still the DCF method, while sensitivity analysis and scenario planning are becoming increasingly important in managing uncertainty. However, their research only examines tools in isolation and not their systematic deployment across various phases of M&A. The institutional factor of cross-border acquisitions may be another important factor in the effective application of management accounting tools. Groening et al. (2024) [11] review 156 research articles, which highlight the importance of institutional constraints in the application of management accounting tools in the context of M&A. Specifically, the research highlights the importance of regulatory pressures and commitment clauses in the post-acquisition integration of the acquired firms. Mariani et al. (2024) [12], in their review of management accounting system stress in the context of M&A, find that various phases of M&A impose different pressures on analytical tools. The review highlights a specific research gap concerning institutional constraints on the application of management accounting tools, which this research aims to address.

Literature available on the subject also seems fragmented, as most researchers focus on individual tools or specific stages of the transaction process, without considering the interaction of the overall M&A process. Institutional theory also recognizes the impact of the environment on organizational behavior (Meyer & Rowan, 1977) [13]. However, the impact of transactional commitments on the role and application of management accounting tools remains underexplored. This study aims to examine the role and application of management accounting tools in four stages of the M&A process, treating the environmental and institutional factors as boundary conditions.

3 Research Design

3.1 Case Selection and Justification

For this investigation, a single longitudinal case study method is employed, as established by Yin (2018) [14]. The case study method is suitable for examining complex phenomena in a real-world context, where a clear boundary between the phenomenon and its environment is not readily apparent. The Midea-KUKA deal satisfies three essential criteria for case selection, making it an appropriate phenomenon for examination.

The strategic significance of the deal is the first criterion. The EUR 4.5 billion deal is one of the largest Chinese cross-border manufacturing acquisitions in European history, making it subject to stricter scrutiny by the German BaFin and Chinese securities regulators. The second criterion is the temporal completeness of the acquisition, which spans nine years from strategic planning in 2015 to the completion of the deal in 2024, a complete lifecycle of an M&A deal which is rarely available to most analysts. The third criterion is data availability, where the jurisdictions have regulations in place, providing unusually comprehensive documentation of the deal.

3.2 Data Sources and Collection

Various sources of data are available for triangulation of perspectives and time horizons. The annual reports of Midea Group (2015-2024), available on the Shenzhen Stock Exchange, provide strategic rationale and financial information that reveal the evolution of acquisition strategy pursued by management. The annual reports of KUKA AG (2015-2022) provide data on the performance of the target entity, which offers alternative perspectives on the progress made in integration. The tender offer document submitted to BaFin in May 2016 is also relevant, as it offers 247 pages of data on the methodology, discounted cash flow model, sensitivity calculations, and opinions provided by the independent financial advisor, Bank of America Merrill Lynch. Other sources of data available in the public domain include regulatory filings with the China Securities Regulatory Commission and industry reports from MIR Industrial Intelligence and the International Federation of Robotics (IFR).

3.3 Analytical Framework

The analytical framework integrates the M&A process model that has been established (Steigenberger, 2017) and the strategic management accounting model (Nik Abdullah et al., 2022), creating a four-stage analytical framework for the M&A process, as shown below. Each stage involves distinct decision-making processes, enabling an evaluation of the functions of different tools at each phase. Fig.1 shows the comprehensive analytical framework, and Table 1 shows the tools and their functionality for the different stages in the M&A process.

Table 1. Management Accounting Tools Supporting Strategic Financial Decisions in M&A.

Decision Stage	Key Decisions	MA Tools	Decision Support Function
Strategic Planning	Where to compete? What capabilities needed?	Value chain analysis, SWOT, Benchmarking	Identify gaps, evaluate alternatives
Target Evaluation	What is target worth? What are the risks?	Financial due diligence, ABC, DCF model	Verify data, quantify intrinsic value
Transaction Execution	What price to offer? How to structure?	Sensitivity analysis, Scenario simulation	Test assumptions, map outcome ranges
Integration	How to realize synergies? How to allocate resources?	BSC, Budget management, Responsibility accounting	Monitor performance, ensure accountability

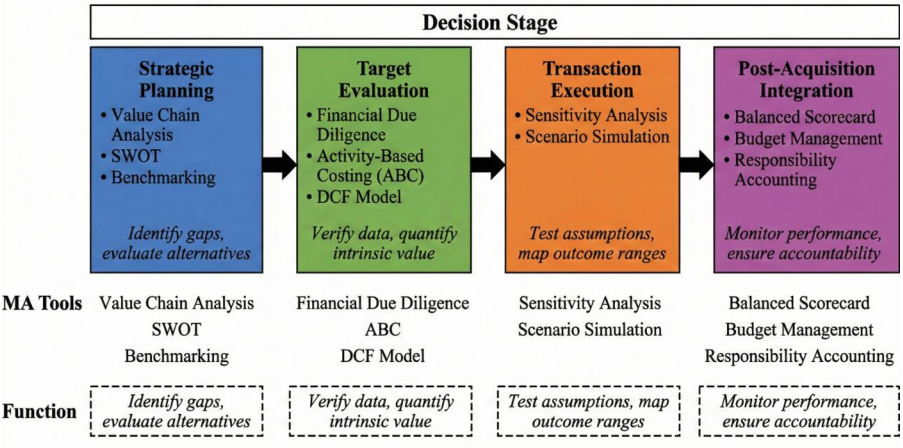

Fig. 1. Management Accounting Tools Across Strategic Financial Decision-Making Stages.

4 Case Analysis: Midea's Acquisition of KUKA

4.1 Case Background

Midea Group is a leading manufacturing company based in China, with 2024 revenue of RMB 409 billion from home appliances and consumer electronics. In contrast, KUKA AG is a leading company in the robotics industry in Germany, a member of the global "Big Four" along with ABB, FANUC, and Yaskawa. The acquisition of KUKA AG by Midea Group was worth EUR 4.5 billion, unfolded in multiple phases over nearly a decade. The acquisition process of KUKA AG by Midea Group started as early as August 2015, with a minor stake of 5.4%, which gradually increased to 13.5% in early 2016. The turning point in the acquisition came in May 2016, when Midea Group made a tender offer of EUR 115 per share. The acquisition closed in January 2017, giving Midea 94.6% of total shares. Privatization was completed in November 2022. The acquisition timeline is presented in Fig. 2.

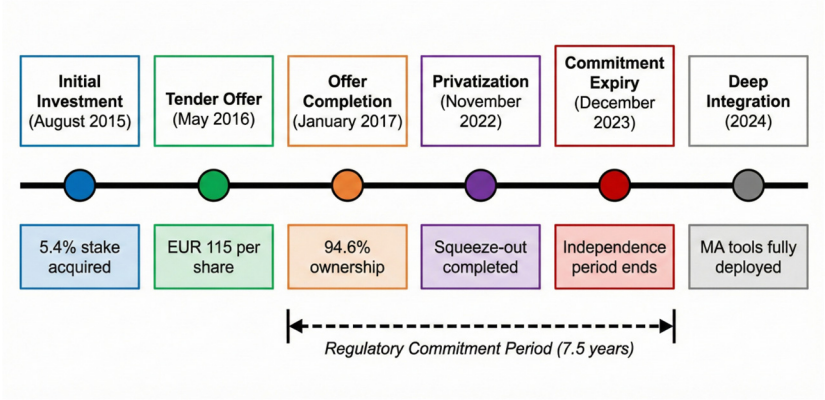

Fig. 2. Midea-KUKA Acquisition Timeline (2015-2024).

4.2 Strategic Planning: Identifying the Capability Gap

Midea's home appliance segment faced growth constraints by the year 2015, as the growth of the overall market slowed to single digits in the major segments of Midea's products. The value chain analysis indicated that there was an identifiable capability gap: Midea excelled in mass production and distribution of the products, but lacked automation technology capabilities. The global industrial robotics market has a compound annual growth rate of 15-20% (IFR, 2016), which represents a high-growth segment for Midea to be part of the "Made in China 2025" initiative in the manufacturing industry in China.

In the context of the SWOT analysis, which has been presented in strategic planning, acquisition is compared with internal development. The strengths of the Midea Group lie in the scale of manufacturing, which exceeds that of global competitors, and the channels of distribution covering emerging markets. The weakness of automation and robotics technology is that internal development would take years. The external factors are favorable in the context of policies and increasing demand for automation, but the labor cost and competition are the areas of concern.

The competitive benchmarking with ABB, FANUC, and Yaskawa helped confirm the logic behind the deal. These firms had built up significant expertise in the field of robots over several decades, and the time investment required by the industry was one that Midea simply could not match, given the pace of change in China. KUKA, therefore, represented the best target in the industry because it specialized in general manufacturing automation rather than automotive automation, and was publicly traded, thus allowing for the gradual accumulation of shares without raising defensive issues.

4.3 Target Evaluation: DCF Valuation and Due Diligence

Bank of America Merrill Lynch was appointed as the independent financial advisor to perform the primary discounted cash flow (DCF) valuation with parameters that are appropriate for KUKA's risk profile and the current European market conditions. The

calculation was based on the weighted average cost of capital (WACC) range of 8.5-11.5%, with the terminal growth rates ranging from 2.0 to 2.5%, which are appropriate given the projections for the Eurozone GDP growth rates, as well as an explicit 10-year forecast period. The revenue growth rates applied to the calculation were 8-12%, which are appropriate given the growth opportunities that exist in the Chinese market, which was considered the main value driver to underpin the strategic rationale.

These figures translate into an estimated intrinsic value of shares ranging from EUR 83.50 to EUR 96.26, as disclosed on page 47 of Midea's tender offer document. The financial due diligence process further revealed layers of complexity in the target, as it had pension underfunding of EUR 154 million, three different business divisions, and revenue recognition strategies. The activity-based costing revealed profitability differences across the segments.

4.4 Transaction Execution: Sensitivity Analysis and Pricing Decision

To translate this valuation into a pricing strategy, sensitivity analysis of these assumptions was required. The changes in the weighted average cost of capital (WACC) of ±1 percentage points resulted in changes in the valuation of 8-10%, whereas changes in the terminal growth rate of ±0.5 percentage points resulted in changes in the valuation of 5-7%. Revenue growth was the most sensitive, with ±2 percentage points change resulting in changes in the valuation of 10-12%, and attention was paid to the underlying assumptions regarding the Chinese market.

Scenario analysis revealed three distinct outcomes. The optimistic scenario, with its 12 % revenue CAGR driven by the high growth in China, had valuations ranging from EUR 105 to EUR 115 per share. The base case, with 10 % revenue growth, had valuations ranging from EUR 88 to EUR 98 per share. The pessimistic scenario, with its 6 % revenue growth and decline in the automotive industry, had valuations ranging from EUR 70 to EUR 80 per share. The EUR 115 tender offer lies within the optimistic scenario, with the addition of the 36.2 % premium over the preannouncement price of EUR 84.41, and within the justified valuation range. Table 2 summarizes the key parameters of the deal.

Table 2. Transaction Parameters and Valuation Inputs.

Parameter	Value
DCF Intrinsic Value Range	EUR 83.50-96.26 per share
Tender Offer Price	EUR 115 per share (36.2% premium)
WACC Assumption	8.5-11.5%
Terminal Growth Rate	2.0-2.5%
Revenue Growth Assumption	8-12% annually
Total Transaction Value	~EUR 4.5 billion

Source: Midea Group tender offer document filed with BaFin, May 2016.

4.5 Post-Acquisition Integration: Institutional Constraints and Tool Deployment

Approval from the German regulator required commitments (Investorenvereinbarung) from Midea that guaranteed the independence of the firm until the end of 2023. This restricted the use of integration-oriented management accounting for tools for seven and a half years. The commitments included location, management and supervisory board, employment, customer contracts, and brand identity.

However, certain constraints limited the application of integration-oriented tools. For instance, unified budget management was not feasible, considering the independent nature of the financial planning for KUKA. In addition, group-level balanced scorecard implementation was not feasible, considering the independent nature of the management compensation for KUKA, as opposed to the Midea Group synergy objectives. Finally, responsibility accounting was not feasible, as KUKA's management could not be accountable for integration outcomes under the two entities' separate governance structures. There was a decline in the performance of the organization between 2017 and 2022. In fact, by 2020, the company had reported an operating loss of approximately RMB 800 million, considering the decline in the automotive sector and the impact of COVID-19. Once the privatization process had been completed in November 2022 and the commitment period had ended in December 2023, the company began applying the integration-oriented tools, as reflected by the improvement in performance, as shown in Fig. 3.

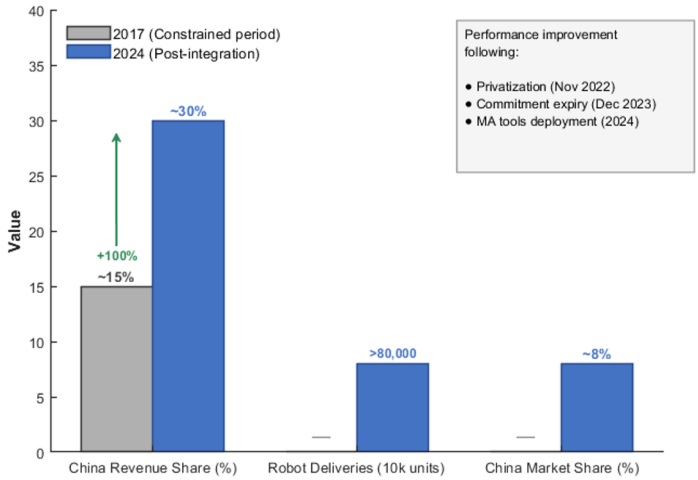

Fig. 3. KUKA China Performance Indicators: 2017 vs 2024.

For budget management, KUKA China was included as part of the processes, while balanced scorecard was used to monitor the integration process based on financial, customer, process, and learning aspects. By 2024, the revenue share of KUKA in the Chinese market had doubled to 30% from 15%, while the robot deliveries from the Shunde

plant had exceeded 80,000 units (MIR Industrial Intelligence, 2024). Table 3 shows the performance measures for the integration process.

Table 3. Integration Performance Metrics.

Indicator	2017	2024
KUKA China Revenue Share	~15%	~30%
Cumulative Robot Delivery (Shunde)	—	>80,000 units
KUKA China Market Position	—	~8% market share

Source: Midea Group annual reports; MIR Industrial Intelligence.

5 Discussion

The Midea-KUKA shows how management accounting tools vary their functions depending on the stages of the M&A process, a phenomenon that contrasts with the assumption of current literature. Qualitative management accounting tools were predominant in strategic planning, as value chain analysis helped to identify the gap in robotics capabilities, SWOT analysis revealed Midea's weaknesses in automation, and competitive benchmarking against ABB, FANUC, and Yaskawa confirmed the superiority of acquisition as a growth strategy over internal development, as shown in Cadez and Guilding's study (2008). Quantitative management accounting tools were dominant in target evaluation and transaction implementation, as DCF analysis helped to obtain the range of intrinsic value for the acquisition, EUR 83.50 to EUR 96.26, and scenario simulation mapping helped to obtain optimistic EUR 105 to EUR 115, base EUR 88 to EUR 98, and pessimistic EUR 70 to EUR 80 scenarios.

The EUR 115 final offer price illustrates how these tools were used in actual decision-making. The price was established above the DCF-derived intrinsic value, yet still within the optimistic scenario limits, reflecting a strategic component necessary for shareholder approval. Pricing decisions of this type support the acquisition-based view (ABV), as a direct relationship exists between pre-acquisition analytical quality and transaction outcomes (Bauer & Friesl, 2024). However, arguably of far greater significance is that regulatory commitments established temporal boundary conditions for the application of these tools, a factor not captured by existing literature. Institutional theory of organizations (Meyer & Rowan, 1977) is used as a foundation for legitimacy demands in cross-border transactions. The seven-year independence commitments made by Midea prevented unified budgeting, balanced scorecard usage, and direct responsibility accounting. This study extends Mariani et al.'s (2024) findings regarding the impact of M&A activity on management accounting systems by determining the constraining factor.

The institutional constraint perspective can offer some insights into M&A integration issues. The acquiring firm may systematically underestimate the impact of its regulatory commitments on management practices after acquisition, because it may overestimate potential synergies during valuation. The 36% premium paid above intrinsic value may be based on synergies that regulatory constraints delayed by years. However, there are several limitations to this study. First, the single case study method has limited

external validity to cross-border manufacturing acquisitions. Second, actual tool use may differ from documented use, as the actual internalization of MA practices may not be accurately reflected. Third, changes in performance after constraint relaxation may be attributed to market factors, such as China's robotics market growth and recovery from COVID-19. Access to internal management discussions would be needed to distinguish actual decision influence from rationalization.

Further research could also be aimed at examining the effects of institutional variation on different regulatory environments, the link between the implementation and integration of tools and their results for larger samples of M&A transactions, and if the link between the duration of the commitment and the delay in the realization of synergies really exists.

6 Conclusion

The specific role of management accounting tools in various phases of the M&A process supports their heterogeneous effectiveness. The case of Midea Group and the acquisition of KUKA Group highlights the potential of qualitative management accounting tools in the identification of gaps in the planning phases of the M&A process and t quantitative tools in target valuation and pricing using DCF models and sensitivity analysis. In monitoring post-acquisition integration, performance measurement systems are relevant, but it is the point of deployment that is crucial. The commitment to comply with regulations constitutes a new boundary condition for the effectiveness of management accounting tools. The case of the Midea Group highlights how a seven-year independence commitment affected joint management of budgets and balanced scorecard implementation, which are the institutional constraints on the M&A integration process.

Consideration also needs to be made with regard to the feasibility of deploying the tools in the structuring of acquisition strategies in the context of the regulatory commitments, while aimed at improving the approval process for transactions, may in turn affect the viability of management practices. The 36% valuation premium, in relation to the intrinsic value, may suggest that markets are not fully aware of the time constraints. The possible avenues for further research could include the comparison of institutions, the effectiveness of the deployment of the tools over the commitment period, and the effect on the trajectories for acquisition strategies, which could also inform policy related to regulatory commitments.

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