

Designing a Balanced Scorecard-Based Performance Measurement System for PT XYZ's Fabrication and Maintenance Unit

Linda Ekalita*, Arry Ekananta, Dikky Indrawan

School of Business, IPB University, Jl. Pajajaran Bogor 16151, Indonesia

*Corresponding author:
Email: mail.lindaekalita@gmail.com



ABSTRACT

Background: The oil and gas industry is a crucial sector that significantly contributes to the global economy. PT XYZ, as a contractor in this industry, must conduct performance measurements to evaluate the factors influencing its success.

Purpose: This study aimed to design a performance measurement system using the Balanced Scorecard (BSC) model for the Fabrication and Maintenance (FM) Business Unit of PT XYZ.

Design/Methodology/Approach: The study employed in-depth interviews and literature reviews to collect qualitative and quantitative data. The findings indicated that the existing performance measurement system did not cover all critical aspects, so revisions were needed to better align it with the company's vision and mission.

Findings/Results: The implementation of the BSC enabled the establishment of relevant and measurable key performance indicators (KPIs). The study suggested that adopting the BSC model could enhance PT XYZ's business strategy effectiveness, ensure customer satisfaction, and provide a systematic framework for performance evaluation across all levels of the organization.

Conclusion: This study evaluated PT XYZ's performance measurement system using the Balanced Scorecard (BSC) within the Fabrication and Maintenance (FM) Business Unit. The findings highlighted a misalignment in strategic goals, emphasizing the need for a cascading BSC implementation. Key recommendations included refining strategic objectives, applying the Analytic Hierarchy Process (AHP) for weighting, and improving key performance indicators to enhance accuracy, alignment, and overall company performance.

Originality/Value (State of the Art): The novelty of this research lies in its application of the Balanced Scorecard (BSC) to PT XYZ's performance measurement, addressing gaps in existing evaluation methods. By integrating BSC perspectives with the company's strategic vision, this study provides a tailored, industry-specific approach to performance assessment and continuous improvement.

ARTICLE INFO

Keywords:

balanced scorecard,
oil and gas industry,
customer satisfaction,
performance
measurement

Article history:

Received:
8 April 2025
Revised:
30 April 2026
Accepted:
15 August 2026

How to Cite: Ekalita, L., Ekananta, A., & Indrawan, D. (2026). Designing a Balanced Scorecard-based performance measurement system for PT XYZ's fabrication and maintenance unit. *Business Review and Case Studies*, 7(2), 196. <https://doi.org/10.17358/brcs.7.2.196>

INTRODUCTION

The oil and gas industry is a complex and diverse sector that is responsible for the exploration, production, and provision of the world's most valuable energy source. The industry plays a vital role in driving the global economy, impacting industries and individuals alike. The oil and gas industry makes a significant contribution to the global economy and growth and development around the world. The oil industry alone accounts for nearly 3% of global gross domestic product. Furthermore, the oil trade sector reached US\$640 billion in 2020, making it one of the most extensively traded commodities worldwide (ILO, 2022).

The oil and gas industry comprises a substantial network of companies and organizations engaged in various stages of the energy lifecycle (BRC, 2022). These entities include: Upstream (Includes oil and gas exploration and production activities); Midstream (Includes oil and gas processing,

transportation, and storage activities); Downstream (Includes oil and gas distribution, marketing and sales activities).

According to Saud's (2020) explanation, in addition to companies engaged directly in the upstream, midstream, and downstream domains, there are also companies that provide supporting services such as survey and exploration services, engineering, construction and installation, manufacturing, and maintenance and repair services. These companies are referred to as upstream oil and gas service companies or better known as Oilfield Service Companies (OFSCs) or contractor companies.

PT XYZ is a private contractor company in the oil and gas industry that was established in 1995 and is headquartered in Jakarta, Indonesia. Initially operating within the supply sector, the company's primary focus was on the provision of subsea system needs, pipes, fittings, flanges, cranes and associated accessories, pumps, electricity, and instruments, along with

wellheads and Christmas trees (oil wellhead). Over time, PT XYZ has diversified its business portfolio, venturing into the domains of fabrication (manufacturing), installation, and maintenance. Guided by its vision, the company aspires to become the preeminent integrated product and service entity within the Indonesian oil and gas sector. As a private contractor, PT XYZ has collaborated with several upstream oil and gas companies in Indonesia, one of which is PT Pertamina Hulu Energi ONWJ.

In the business context of PT XYZ, performance measurement is needed as an evaluative instrument to identify the drivers and inhibitors of company performance, align performance with the company's vision, and ensure customer satisfaction. Bandonio and Nugroho (2023) noted that performance measurement is highly useful for comparing a company's performance across past and future periods. Quantifiable metrics show whether performance has increased or decreased, clarify the effectiveness of business strategies, support the evaluation of product and service quality, and help identify opportunities for innovation. Performance measurement therefore guides operational efficiency and supports the company's adaptation to market changes and customer needs, keeping customer satisfaction at the center as a pivotal factor in long-term success. PT XYZ has used key performance indicators (KPIs) in its performance measurement, adapted from the company's KPIs when it moved into supplying oil and gas system needs in November 2023, as shown in Table 1.

As Table 1 shows, the performance measurement then in place did not capture the company's overall performance. It also did not reflect the company's vision and mission, which include meeting customer expectations by providing quality

products and services on time. PT XYZ therefore saw the need to re-evaluate its performance, because the existing evaluation system did not reflect several pivotal aspects of its operations. The re-measurement aimed to align performance assessment more closely with the company's vision, mission, and strategy. Several methods were considered as its foundation: the Balanced Scorecard (BSC), Objectives and Key Results (OKR), and Objectives, Goals, Strategies, and Measures (OGSM). These methods differ in time orientation. BSC emphasizes long-term achievement with continuous monitoring (Kaplan & Norton, 1992); OKR focuses on short-term goals, typically on a quarterly or annual cycle; and OGSM prioritizes tactical strategy implementation, mainly through annual planning. Table 2 compares the main goal focus of the three methods.

Because the methods differ mainly in the time horizon they emphasize, choosing among them requires careful consideration of the organization's objectives and the dynamics of its internal and external environment. Table 3 shows the differences in the focus period of each method. In addition, each of these methods has advantages and disadvantages in its implementation. The advantages and disadvantages of these methods are shown in Table 4.

PT XYZ requires comprehensive and thorough performance measurement that can be implemented at various levels. A comparison of the three methods (BSC, OKR, and OGSM) shows that BSC is the most appropriate because of its numerous advantages over the other two. BSC systematically examines performance across four perspectives: financial, customer, internal business processes, and learning and growth.

Table 1. Company key performance index measurement results 2023

KPI	KPI Weight	% KPI of Achieved	Difference between Target and Achievement
HSSE	20%	18.52	-1.48
Operational Efficiency	20%	16.25	-3.75
People and Organization	15%	15	0
Cost and Finance	10%	5.88	-4.12
Fabrication and Refurbish Workshop	15%	8.25	-6.75
QA/QC	15%	13.75	-1.25
Innovation	5%	0	-5

Table 2. Comparison of the main goal focus of BSC, OKR, and OGSM methods

Method	Main Goal Focus
Balanced Scorecard (BSC)	Provides a framework for measuring organizational performance through four key perspectives: financial, customer, internal processes, and growth and learning.
Objectives and Key Results (OKR)	Focuses on aligning objectives and achieving key results as a means to improve organizational performance.
Objective, Goals, Strategies, and Measures (OGSM)	Incorporates setting objectives, specific goals, developing strategies, and establishing performance measures.

Table 3. Comparison of timeframe focus of BSC, OKR, and OGSM methods

Method	Target Timeframe	Approach	Key Perspectives
BSC	Long-term (ongoing and sustainable)	Holistic (comprehensive) and integrated	- Finance - Customers - Internal processes - Learning and growth
OKR	Short term (quarter)	Achievement of goals	Key objectives and outcomes
OGSM	Annual (tactical annual goals)	Fulfillment of tactical measures of organizational goals	Objectives, strategies and tactical actions (internal to the company)

Table 4. Advantages and disadvantages of BSC, OKR, and OGSM methods

Method	Advantages	Disadvantages
BSC	Provides a holistic view of organizational performance from four key perspectives (financial, customer, internal processes, and learning/growth). Able to integrate financial and non-financial aspects to provide a complete picture. Can be adapted for various levels of the organization, from corporate level to business units.	BSC implementation can be complex and require significant resources. Requires time to collect data and produce comprehensive reports.
OKR	Emphasize the achievement of clearly measurable and quantifiable results. Can be adopted easily by organizations with different structures.	May be too simple for organizations that require more complex performance monitoring. Too focused on short-term goals. Does not provide the overall context of how goals are achieved. Too much focus on specific outcomes can overlook other important aspects.
OGSM	Offers a structured approach to performance planning and measurement. Emphasizes tactical steps to achieve goals and strategies.	Does not provide a holistic view like the BSC (more focused on the internal company). Too much focus on tactical measurements may overlook broader strategic aspects.

Moreover, given the cooperation contract between PT XYZ and PT Pertamina Hulu Energi ONWJ, selecting BSC is even more rational, because BSC accommodates external customer factors as one of its main perspectives. BSC can also be implemented across organizational levels, such as the FM (Fabrication and Maintenance) Business Unit, which makes it a suitable basis for a holistic and integrated performance measurement system. This aligns with Lueg and e Silva (2013), who stated that BSC can be implemented at the business unit and functional levels of an organization.

METHODS

This study utilized the Balanced Scorecard (BSC) model to design a performance measurement system for the FM business unit. The existing KPIs were reviewed, categorized into the four BSC perspectives, and linked to PT XYZ's strategic objectives. Qualitative and quantitative data were collected, processed, and analyzed to answer the research questions. Figure 1 outlines the stages of the study.

This study was conducted at the FM (Fabrication and Maintenance) business unit at PT XYZ's headquarters in Jakarta from May to July 2024. Both qualitative and quantitative data were used. Qualitative data were obtained from interviews with respondents regarding KPIs, strategic objectives, strategic initiatives, and the strategy map. Quantitative data were collected through questionnaires

completed by respondents to assess the strategic objectives and KPIs across the four BSC perspectives.

Both primary and secondary data were used. Primary data were obtained directly at the research site through interviews with purposive sampling to gather information about the processes and conditions in the FM business unit, together with supporting documentation. Secondary data were collected from literature, libraries, and scientific journals related to the Balanced Scorecard.

This research was a non-experimental case study. Data were collected in two ways:

1. Interview: Primary data were obtained through in-depth interviews with selected managers from the FM unit.
2. Literature study: Data were gathered from various sources, including documents, records, and other relevant information. Quantitative data in reports and archives were analyzed to measure the four BSC perspectives. The literature study also provided an in-depth understanding of the problems that commonly arise in a particular industry, business unit, or factory.

The literature study reviewed previous studies documented in scientific journals, books, and online sources. It aimed to identify strategic targets and performance indicators applicable to performance measurement, especially across the four BSC perspectives.

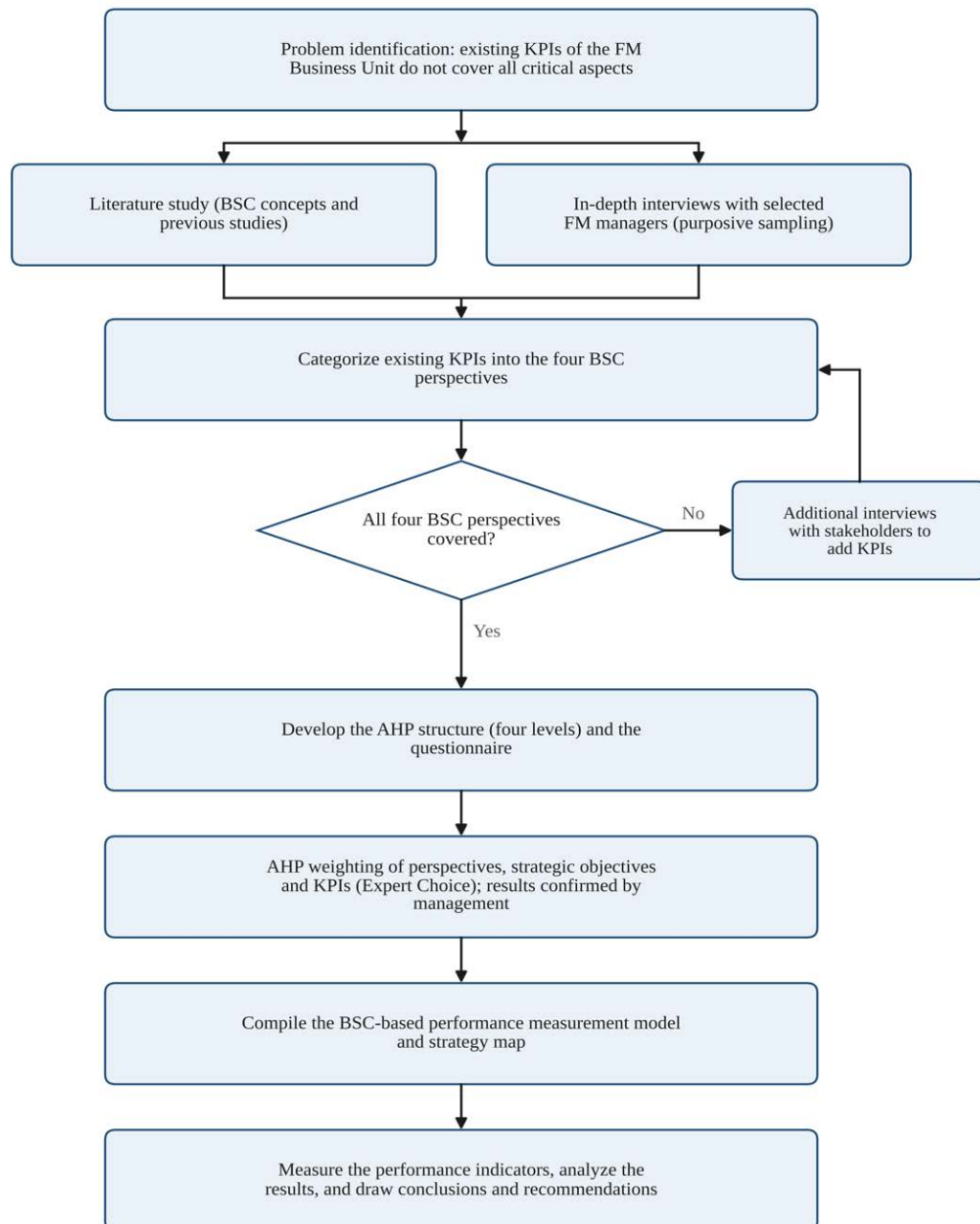


Figure 1. Research Flowchart

The collected and processed data were then analyzed in several stages to design a performance measurement model based on the BSC perspectives, as follows:

1. The existing KPIs were sorted and categorized into the four BSC perspectives. Where they did not fully cover all four perspectives, the missing aspects were supplemented through additional interviews with relevant stakeholders, aligned with the BSC perspectives. This stage produced a set of KPIs that comprehensively covered all four perspectives. Each BSC perspective and KPI was then weighted using the Analytic Hierarchy Process (AHP), a crucial step in this research. The AHP structure was developed first and served as the basis for the questionnaire distributed to respondents.
2. Newly added performance indicators that had not yet been weighted were processed using AHP, and the weighting results were confirmed by respondents, particularly management. AHP was chosen because

it provides a systematic and objective approach to managing the complexity of the factors involved in measuring the performance of the FM business unit, and it builds on the preferences and priorities set by stakeholders. The AHP structure consisted of four levels:

- Level 0 was the objective of using AHP: to calculate the weights for the performance measurement design of the FM business unit.
- Level 1 comprised the four BSC perspectives: financial, customer, internal business processes, and learning and growth. AHP was used to measure the relative weight of each perspective based on stakeholder preferences and priorities.
- Level 2 comprised the strategic objectives established for the FM unit under the contractor division. AHP was used to assign a relative weight to each strategic objective based on the values provided by respondents.

- Level 3 comprised the KPIs of the FM business unit, which were the focus of this study.
3. After the additional indicators were weighted, the researcher compiled a BSC-based performance measurement model adjusted to the needs of PT XYZ.

After the BSC-based measurement model was developed, the stipulated performance indicators were measured. The results were then analyzed to identify the areas that met the stipulated requirements and the areas that still required improvement.

RESULTS

CER Strategic Perspective and Objective Weighting

Based on Table 5, the pairwise comparison matrix shows that the Financial perspective is rated significantly more dominant compared to the Customer, Internal Business Process, and Learning & Growth perspectives. Based on Table 6, the final weighting results indicate that the CER sub-unit prioritizes Finance as the highest priority

at 51.2%, followed by Customer (29.5%), Internal Business Process (10%), and Learning & Growth (9.3%) (Table 6).

HSSE Strategic Perspective and Objective Weighting

Based on Table 7, the pairwise comparison matrix shows that the Internal Business Process perspective is given a higher comparison value against the Finance and Customer perspectives. The final weighting places Internal Business Process at the highest position with a weight of 45.2%, followed by Learning & Growth (23.5%), Customer (16.4%), and Finance (15%) (Table 8).

QA/QC Strategic Perspective and Objective Weighting

Based on Table 9, the pairwise comparison matrix demonstrates that the Customer and Internal Business Process perspectives are equally prioritized over the Finance and Learning & Growth perspectives. The weighting results show an equal proportion between Customer (37.5%) and Internal Business Process (37.5%), while Finance (12.5%) and Learning & Growth (12.5%) hold smaller weights (Table 10).

Table 5. Pairwise comparison matrix of BSC perspectives, CER sub-unit

Perspective	Finance	Customer	Internal Business Process	Learning & Growth
Finance	1	3	3	5
Customer	1/3	1	5	3
Internal Business Process	1/3	1/5	1	1
Learning & Growth	1/5	1/3	1	1

Table 6. BSC perspective weights, CER sub-unit

Perspective	Weight (%)
Finance	51.2%
Customer	29.5%
Internal Business Process	10%
Learning & Growth	9.3%
Total weighting	100%

Table 7. Pairwise comparison matrix of BSC perspectives, HSSE sub-unit

Perspective	Finance	Customer	Internal Business Process	Learning & Growth
Finance	1	1	1/5	1
Customer	1	1	1/3	1
Internal Business Process	5	3	1	1
Learning & Growth	1	1	1	1

Table 8. BSC perspective weights, HSSE sub-unit

Perspective	Weight (%)
Finance	15%
Customer	16.4%
Internal Business Process	45.2%
Learning & Growth	23.5%
Total weighting	100%

Site Installation Strategic Perspective and Objective Weighting

Based on Table 11, the pairwise comparison matrix records the highest value in the comparison between Internal Business Process and Finance. The weighting results are identical to the HSSE sub-unit, where Internal Business Process dominates at 45.2%, followed by Learning & Growth (23.5%), Customer (16.4%), and Finance (15%)(Table 12).

Fabrication Workshop Strategic Perspective and Objective Weighting

Based on Table 13, the pairwise comparison matrix highlights that the Internal Business Process perspective heavily dominates the evaluation against the Customer and Learning & Growth perspectives. The highest priority is held by Internal Business Process (52.9%), followed by Finance (21.2%), Learning & Growth (13.8%), and Customer (12.1%) (Table 14).

TPCC Strategic Perspective and Objective Weighting

Based on Table 15, the pairwise comparison matrix shows the dominance of the Learning & Growth and Internal Business Process perspectives over the Financial perspective. This sub-unit features a unique characteristic with the largest priority placed on Learning & Growth (42.5%), followed by Internal Business Process (28.2%), Customer (21.3%), and Finance (8%) as the smallest proportion (Table 16).

FM Business Unit Balanced Scorecard Performance Measurement Model Design

After the Balanced Scorecard (BSC) was cascaded to the FM (Fabrication and Maintenance) Business Unit, a specific performance measurement model was formulated for each Sub-Unit in collaboration with the respective managers. This ensured that each Sub-Unit had relevant and measurable KPIs supporting the achievement of FM's strategic objectives. The resulting model serves as a comprehensive tool for evaluating and improving the performance of each Sub-Unit in line with the dynamics of the oil and gas industry.

Table 9. Pairwise comparison matrix of BSC perspectives, QA/QC sub-unit

Perspective	Finance	Customer	Internal Business Process	Learning & Growth
Finance	1	1/3	1/3	1
Customer	3	1	1	3
Internal Business Process	3	1	1	3
Learning & Growth	1	1/3	1/3	1

Table 10. BSC perspective weights, QA/QC sub-unit

Perspective	Weight (%)
Finance	12.5%
Customer	37.5%
Internal Business Process	37.5%
Learning & Growth	12.5%
Total weighting	100%

Table 11. Pairwise comparison matrix of BSC perspectives, Site Installation sub-unit

Perspective	Finance	Customer	Internal Business Process	Learning & Growth
Finance	1	1	1/5	1
Customer	1	1	1/3	1
Internal Business Process	5	3	1	1
Learning & Growth	1	1	1	1

Table 12. BSC perspective weights, Site Installation sub-unit

Perspective	Weight (%)
Finance	15%
Customer	16.4%
Internal Business Process	45.2%
Learning & Growth	23.5%
Total weighting	100%

Table 13. Pairwise comparison matrix of BSC perspectives, Fabrication Workshop sub-unit

Perspective	Finance	Customer	Internal Business Process	Learning & Growth
Finance	1	3	1/3	1
Customer	1/3	1	1/3	1
Internal Business Process	3	3	1	5
Learning & Growth	1	1	1/5	1

Table 14. BSC perspective weights, Fabrication Workshop sub-unit

Perspective	Weight (%)
Finance	21.2%
Customer	12.1%
Internal Business Process	52.9%
Learning & Growth	13.8%
Total weighting	100%

Table 15. Pairwise comparison matrix of BSC perspectives, TPCC sub-unit

Perspective	Finance	Customer	Internal Business Process	Learning & Growth
Finance	1	1/3	1/3	1/5
Customer	3	1	1	1/3
Internal Business Process	3	1	1	1
Learning & Growth	5	3	1	1

Table 16. BSC perspective weights, TPCC sub-unit

Perspective	Weight (%)
Finance	8%
Customer	21.3%
Internal Business Process	28.2%
Learning & Growth	42.5%
Total weighting	100%

Alignment and Mapping of PT XYZ's Vision and Mission Achievement Strategy

This alignment focused on reassessing the previous strategic objectives, based on the elaboration of PT XYZ's vision and mission, the evaluation of the Contractor Division's strategic objectives, and the Cascading Balanced Scorecard process for each Sub-Unit. It was made possible by the performance measurement model based on the Cascading Balanced Scorecard. The new strategic objectives of the FM Business Unit, aimed at achieving PT XYZ's vision and mission, were defined for each Sub-Unit.

Each Sub-Unit had different strategic priorities and objectives according to its scope of work, which could be measured using key performance indicators from each Balanced Scorecard perspective. The combined analysis enabled the formulation of short-, medium-, and long-term strategic objectives that fit the needs and conditions of each Sub-Unit. Implementing the Cascading Balanced Scorecard with AHP not only facilitated appropriate strategic objectives for each Sub-Unit but also allowed the FM Business Unit to develop a strategy map with a measurable and relevant timeline supporting the overall achievement of PT XYZ's vision and mission.

Based on discussions with the entire FM Business Unit management team, the initial strategy mapping was carried out using a top-to-bottom approach, with the tier 2 cascading results adapted for the FM Business Unit as a reference. This served as a foundation for further development according to the prioritized long-term strategic objectives, which were adapted from the Contractor Division's approach and the specific strategic priorities of each Sub-Unit. The FM Business Unit's basic strategy map is shown in Figure 2.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the research findings on the performance measurement design of the Fabrication and Maintenance (FM) Business Unit using the Balanced Scorecard model, it was found that PT XYZ's approach during the establishment of the FM Business Unit was not entirely appropriate. The breakdown of PT XYZ's vision and mission into the FM Business Unit level is a crucial initial step in formulating more measurable and systematic strategic objectives. This ensures that the FM Business Unit has a clear direction aligned with PT XYZ's overall goals.

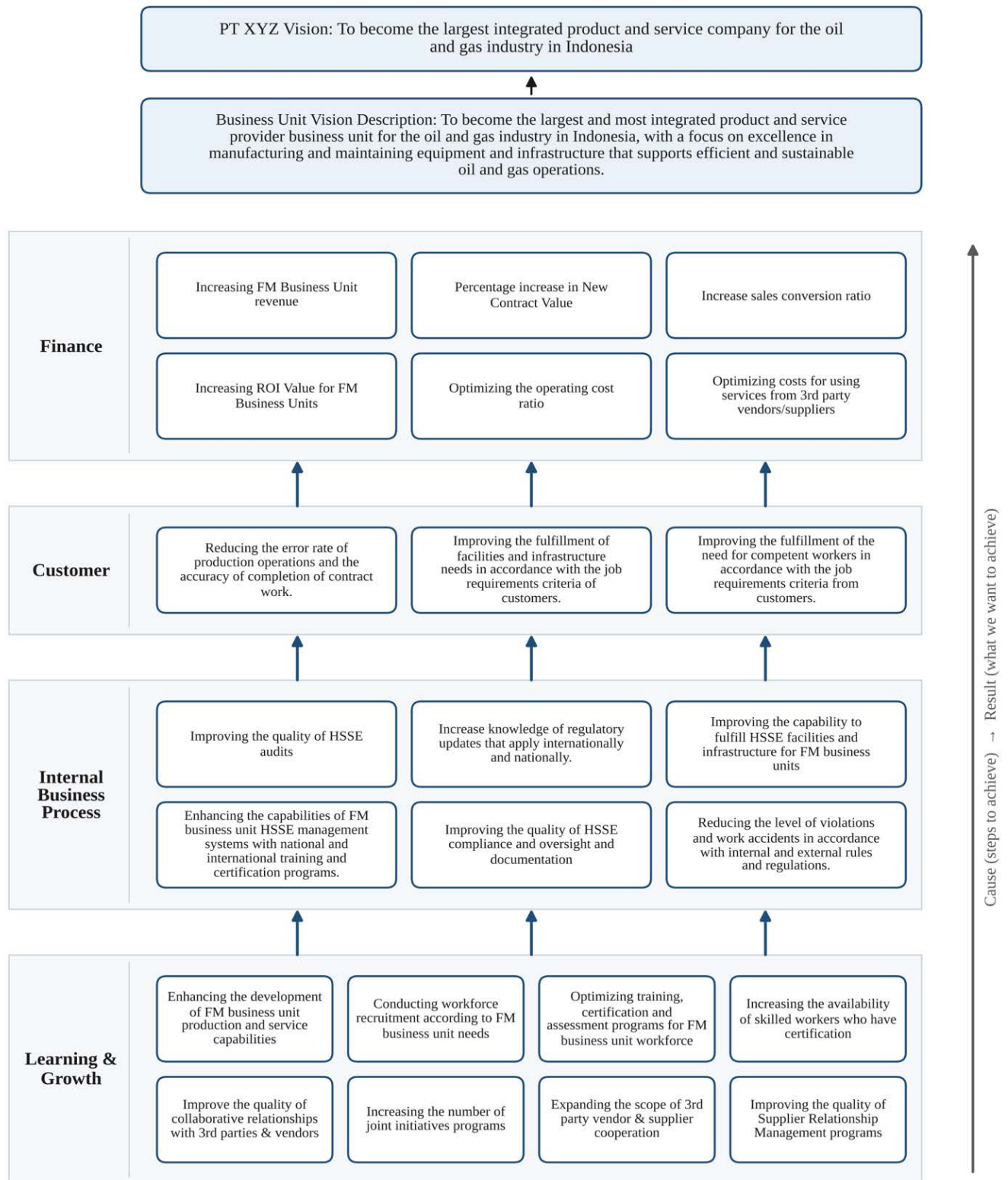


Figure 2. FM Business Unit basic strategy map

An evaluation of the previous strategic plan implemented by the Contractor Division revealed that it did not fully incorporate the four Balanced Scorecard (BSC) perspectives: financial, customer, internal business processes, and learning and growth. This limitation highlights the need to revise and realign existing strategic objectives to encompass all aspects that influence PT XYZ's success.

Recommendations

Following this, the Cascading Balanced Scorecard was implemented from the corporate level to the business unit and down to the Sub-Unit level. This approach enables strategic objectives to be systematically and consistently cascaded across all levels, including Sub-Units with different characteristics. Through this cascading process, each Sub-Unit receives strategic objectives structured according to BSC perspectives that align with their respective functions and scopes of work. Once the strategic objectives for each Sub-Unit were established, the next step was to define Key Performance Indicators (KPIs) to measure the achievement of these objectives through in-depth interviews. The KPI results from these interviews then served as the foundation for the new performance measurement model.

With the new performance measurement design model, strategy mapping can be structured based on the priorities of each Sub-Unit. This aims to support PT XYZ's vision and mission achievement in a more cohesive, measurable, and systematic manner while ensuring alignment with previously formulated strategic goals. This process enables a more comprehensive strategic alignment across all organizational elements, allowing each Sub-Unit within the FM Business Unit to contribute optimally to PT XYZ's success.

FUNDING STATEMENT: This research did not receive any specific grants from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICTS OF INTEREST: The authors declare no conflicts of interest.

REFERENCES

- Al-Fattah, S., & Al-Fattah, S. (2020). The evolving role of oil and gas companies in the energy industry. SSRN. <https://doi.org/10.2139/ssrn.3569308>
- Anand, S. (2016). *Execution excellence: Making strategy work using the balanced scorecard*. John Wiley & Sons, Inc.
- Badaruddin, M. (2018). *Dinamika industri migas dan pertambangan di Indonesia [Laporan penelitian]*. Universitas Bakrie.
- Bandono, A., & Nugroho, S. H. (2023). The assessment of company performance target using balanced scorecard methods. *International Journal of Professional Business Review*, 8(5), e01968. <https://doi.org/10.26668/businessreview/2023.v8i5.1968>
- Blackridge Research & Consulting. (2022). Upstream, midstream, and downstream explained. <https://www.blackridgeresearch.com/blog/what-is-upstream-midstream-downstream-oil-and-gas-industry-sector>
- Buskerud, D. Ø., & Stenheim, T. (2015). The balanced scorecard: A review of five research areas. *American Journal of Management*, 15(2), 87–116.
- Chimtengo, S., Mkandawire, K., & Hanif, R. (2017). An evaluation of performance using the Balanced Scorecard model for the University of Malawi's polytechnic. *African Journal of Business Management*, 11(4), 84–93. <https://doi.org/10.5897/AJBM2016.8201>
- Dess, G. G., McNamara, G., Eisner, A. B., & Lee, S.-H. (2021). *Strategic management: Text and cases* (9th ed.). McGraw-Hill Education.
- Fauzi, A., & Nugroho, R. H. (2020). *Manajemen kinerja*. Airlangga University Press.
- Gulati, R. (2013). *Maintenance and reliability best practices*. Industrial Press, Inc.
- Hasan, R. U., & Chyi, T. M. (2017). Practical application of Balanced Scorecard—A literature review. *Journal of Strategy and Performance Management*, 5(3), 87–103.
- Imelda. (2014). Implementasi Balance Scorecard pada organisasi publik. *Jurnal Akuntansi dan Keuangan*, 6 (November 2004), 106–122.
- Indartono, S. (2016). *Pengantar manajemen*. Fakultas Ekonomi Universitas Negeri Yogyakarta.
- International Labour Organization. (2022). *The future of work in the oil and gas industry*. ILO.
- Kaplan, R. S. (2010). Conceptual foundations of the balanced scorecard (Working Paper 10-074). Harvard Business School. <https://doi.org/10.2139/ssrn.1562586>
- Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard—Measures that drive performance. *Harvard Business Review*, 70(1), 71–79.
- Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: Translating strategy into action*. Harvard Business School Press.
- Kaplan, R. S., & Norton, D. P. (2006). *Alignment: Using the balanced scorecard to create corporate synergies*. Harvard Business School Press.
- Kementerian Energi dan Sumber Daya Mineral. (2020). *Kerangka sumber daya migas Indonesia*. ESDM.
- Luckyta, A. C., Kartika, L., & Rahmawati, S. (2020). Evaluasi kinerja organisasi menggunakan Balanced Scorecard. *INVEST: Jurnal Inovasi Bisnis Dan Akuntansi*, 1(1), 38–44. <https://doi.org/10.55583/invest.v1i1.15>
- Lueg, R., & e Silva, A. L. C. (2013). When one size does not fit all: A literature review on the modifications of the Balanced Scorecard. *Problems and Perspectives in Management*, 11(3), 86–94.
- Luis, S., & Biromo, P. A. (2013). *Step by step in cascading balanced scorecard to functional scorecards*. Gramedia Pustaka Utama.
- Madsen, D. O., & Stenheim, T. (2014). Perceived benefits of Balanced Scorecard implementation: Some preliminary evidence. *Problems and Perspectives in Management*, 12(3), 81–90.
- Malgwi, A. A., & Dahiru, H. (2014). Balanced Scorecard financial measurement of organisational performance: A review. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 4(6), 1–10. <https://doi.org/10.9790/5933->

0460110

- Putri, D. I., Baga, L. M., & Burhanuddin. (2017). Performance criteria of rubber UKM based on cooperative using balance score card method. *Indonesian Journal of Business and Entrepreneurship*, 3(1), 34–42. <https://doi.org/10.17358/ijbe.3.1.34>
- Rumawas, W. (2021). *Manajemen kinerja*. Universitas Sam Ratulangi (Unsrat Press).
- Salama, S. A., & Ajmal, M. M. (2018). Determinants of operational efficiency in the oil and gas sector: A balanced scorecard perspective. *Benchmarking: An International Journal*, 25(8), 2822–2843. <https://doi.org/10.1108/BIJ-04-2017-0079>
- Tawse, A., & Tabesh, P. (2022). Thirty years with the Balanced Scorecard: What we have learned. *Business Horizons*, 65(4), 431–442. <https://doi.org/10.1016/j.bushor.2022.03.005>
- Tweedie, D., Wild, D., Rhodes, C., & Martinov-Bennie, N. (2019). How does performance management affect workers? Beyond human resource management and its critique. *International Journal of Management Reviews*, 21(1), 76–96. <https://doi.org/10.1111/ijmr.12177>