Designing the Performance Measurement System for A Digital Enterprise using Balanced Scorecard

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ABSTRACT

The main issue is the absence of a comprehensive KPI system to effectively measure the performance of digital products. Currently, the company PT XYZ unit tracks only two KPIs, such as revenue and total sales. This narrow focus overlooks aspects of achieving business success such as ensuring business fulfillment, business assurance, and employee competence in a growth and agile focus environment. As a result, performance targets are not fully met, and customer satisfaction declines in meeting service level agreements and service level guarantees. This research aims to fill these gaps by designing a performance measurement system using a Balanced Scorecard, and AHP is used for weighing the level of importance. Based on the research, the measurement system was developed, consisting of 7 Strategic Factors (SF), 9 Strategic Objectives (SO), and 12 KPI that are assessed on a quarterly basis. AHP analysis assigns the highest weight to financial perspective (56.60%), SF "market expansion and product innovation" (56.60%), SO "increase the revenue" (29.88%), and KPI "net profit margin growth" (26.72%). Once implemented, this system will standardize digital product performance measurement, aligning with company goals to drive revenue growth and operational efficiency.

Keywords: BSC, AHP, KPI, Performance Measurement, and Digital Product.

Introduction

The rapid evolution of competition and advancements in the telecommunications industry has resulted in shifts in business and operational approaches toward agility and efficiency [1]. The company of PT XYZ is a digital enterprise in the telecommunication industry, and as part of the transformation agenda, the company has launched the "5 Bold Moves", focusing on both B2C and B2B [1]. A key component of this agenda involves the development of B2B products is digital products, referred to as the "7+2 digital product" aimed to accelerating business transformation and securing new opportunities [1]. Based on the internal environment analysis, an issue was identified, which is the absence of comprehensive KPI system to effectively measure the performance of digital products [1]. The objective of the company is to increase revenue and profitability [1]. The company has a unit called unit ABC, responsible for designing and evaluating performance through the KPIs that have been developed [1].

Based on the interview with three stakeholders of the unit, they said they currently only measure two KPIs, such as digital product revenue and total sales. The results of the interview are in line with the weekly annual report document, measuring only two aspects are digital product revenue and total sales. As a result of the limitations in measuring two other aspects, which do not consider other aspects such as customers, internal business processes, and human resources, this leads to two significant issues. The first issue is extended times in service level agreements and service level guarantees for business fulfillment and process assurance hinder digital product performance, resulting in unmet targets and underdeveloped customer experience, ultimately impacting customer satisfaction [1]. This is supported by a view about high quality in service and products in business fulfillment and assurance influences customer experience, exactly customer satisfaction [2]. Also, other statements supported that service guarantees in business assurance can positively impact customer perceptions regarding quality, customer satisfaction, and customer loyalty [3]. The second issue is that the company requires an enhancement in employee and leadership competencies, emphasizing the need for an agile and growth mindset [1].

The absence of KPI as a performance measurement system has an impact on the company losing focus on its strategic goals and may lead to failure in executing the strategies that have been designed [4]. Based on the analysis above by finding problems on the white paper and interview of the stakeholder, there is an urgency of the research to fill these gaps by designing a performance measurement system that integrated various aspects of finance, customer, internal business, and human resources. It was challenging to address these gaps, as the 7+2 digital product's plays a crucial role in PT XYZ's B2B strategy, aiming to drive revenue growth, capitalize on emerging opportunities, and accelerate the company transformations [5]. A performance measurement system is an assessment process used to measure performance against the goals and objectives set by the company [6]. A performance measurement system is required by public companies to determine the success of mission, achievements, strategic goals, productivity, quality, and the effectiveness of the organization's mission as an integral part of the quality management system [7]. In the performance measurement system, there are three popular models of integrated and comprehensive systems, such as Balanced Scorecard (BSC), Integrated Performance Measurement System (IPMS), and PRISM Performance [8].

In the process of determining the appropriate method among the three options, several critical aspects are evaluated such as:

a. The first aspect considered is the comprehensiveness of both internal and external for each method based on strength and weakness where the PRISM and IPMS methods have limitations in their ability to measure financial performance, a crucial factor for the company objectives that focus on revenue and profitability [8]. Meanwhile, the BSC methods have been comprehensive and integrated from four aspects of financial, customer, internal business, and learning and growth [8]. In alignment with company objectives on revenue and profitability obtained, the BSC methods offer a comprehensive framework that can fulfill these needs through an integrated approach.

b. The second aspect considered is strategic alignment in design stages. Based on interviews with the stakeholders, the company requires a performance measurement system that algins with vision and strategy of the company. The design stages of PRISM were developed by stakeholder desires and needs without incorporating strategic, process, or capability considerations [9]. Meanwhile, the design stages of IPMS were developed by considering stakeholder input and competitive positioning [8]. For the design stages of Balanced scorecard were developed by company vision and strategy [4]. Aligned with the company's requirement on strategic and vision, the BSC is identified as the optional framework for developing an integrated performance measurement system.

c. The third aspect considered is the applicability of the BSC on the company. The BSC method is applicable across both large and small businesses, provided employees align with strategic targets [10]. Besides that, the BSC is versatile for use in public and private organizations [11]. Furthermore, in 2019, the company implemented the BSC for performance measurement management system in other business sectors [12].

In this study, the AHP is utilized for weighting as it complements the structure framework of the BSC. AHP has ability to transform complex problems into hierarchical models and provides hierarchical structuring by categorizing system elements into different level [13]. This aligns with the BSC's need to organize performance metrics into clear categories. Besides that, AHP ensures logical consistency and accurate prioritization [13]. So, in this study, the AHP will be used for weighting because it aligns well with the structure framework of BSC. Based on the analysis, the author aims to address existing gaps by designing the performance measurement system for a digital enterprise using the Balanced Scorecard. The design of performance measurement system will encompass strategic formulation, strategic objectives, and key performance indicators, integrated across four core perspectives such as financial, customer, internal business process, and learning and growth. The scope of this research is limited to the design phase only. Upon implementation, this framework is expected to standardize digital product performance evaluation, aligning with company objectives to enhance revenue and profitability growth.

A. Performance Measurement System (PMS)

A Performance measurement system combines various metrics or indicators design to measure actions effectively and efficiently [14]. Performance measurement system is the result of comparative analysis of performance measurement system on Table 1 [8].

Table 1 The Comparative Performance Measurement System Methods

PMS	Strengths	Limitations
Balanced scorecard	Provide comprehensive framework by covering both the external and internal environment. It is integrated into four perspectives from internal	The BSC lacks a focus on external stakeholders, which may be less in-depth

PMS	Strengths	Limitations
	factors (financial, internal business, and learning, and growth) and external factors (customer).	compared to the stakeholder-focused approaches seen in PRISM and IPMS.
PRISM	Provide a stakeholder-centered approach that integrated five aspects such as stakeholder contribution, process, capabilities, satisfaction, and strategies. The framework aligns with the needs and expectations of stakeholders, making it particularly suitable for organization with a strong stakeholder focus	Less emphasis on financial metrics, which may be insufficient for organizations that are highly finance focused. Besides that, lack of financial mentoring and forecasting capabilities, it have an impact on drawback of business that required detailed financial insights.
Integrated Performance Measurement system	Provide a measurement of business into four levels such as corporate, business process, business unit and activity where enable to cater to diverse organizational business level and specific stakeholder requirements effectively.	Does not provide detailed integration with financial measures, which limits its effectiveness for organizations that prioritize financial metrics.

B. Balanced Scorecard (BSC)

The BSC translates a company's vision and strategy into comprehensive performance measurements where four integrated aspects such as financial, customer, internal business process, and learning and growth, aligning organizational or company objectives with measurable outcomes [4]. The financial perspective evaluates company performance by aligning strategy and execution across all levels, focusing on metrics like profitability, revenue, and economic value with the main goals are revenue and sales growth [4]. The customer perspective identifies target customer segments and measure outcomes such as customer satisfaction, acquisition, retention, and loyalty within these segments [4]. The internal business perspective evaluates internal processes aimed at enhancing products to improve customer satisfaction and company performance [4]. The learning and growth perspective forms the foundation of the BSC by focusing on employee skills and systems, aiming to drive growth across the financial, customer, and internal business perspectives [4].

C. Key Performance Indicators (KPI)

KPI are focused measures that assess a company's or organization's performance, capture the current performance, and predict the future performance [15]. The recommended number of KPIs should not exceed 20 based on Kaplan and Norton, while Hope and Fraser suggest using fewer than 10 [15].

D. Analytical Hierarchy Process (AHP)

The AHP is a pairwise comparison approach used in multi-criteria on decision making to prioritize options by assigning weights to alternatives through a hierarchical structure of goals, criteria, and sub-criteria [16]. Decision – making in AHP is guided by expert judgments, leveraging the expertise of those familiar with the problem [16]. The method typically involves two to one hundred expert respondents [17]. AHP is favored for its hierarchical structuring of criteria and sub-criteria and for validating consistency within a tolerance level ensuring robust decision support [18]. Data processing in AHP is considered consistent if the consistency ratio (CR) is 0.10 (10%) or less; if the CR exceeds this threshold, the data is deemed inconsistent and requires revision [16].

Research Methods

In this study, to design a performance measurement system for a digital enterprise using the Balanced Scorecard (BSC) methodology and Analytical Hierarchy Process (AHP) is employed to determine the priority weight of the KPIs based on their relative importance. The research methodology utilized in this study is illustrated in the following conceptual model such as below on Figure 1.
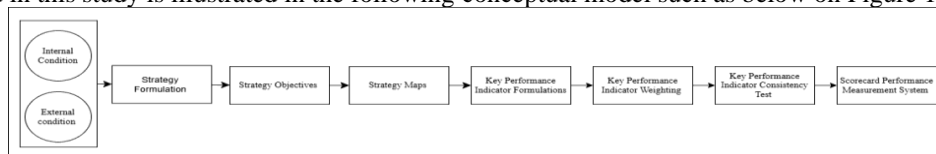

Figure 1 Conceptual Research Methods

The research process begins with an assessment of internal and external conditions utilizing the SWOT analysis method, specifically aligned with the strategy program of PT XYZ. SWOT analysis is a method utilized for planning and management in organizational or corporate strategy by analyzing two key aspects such as internal factors and external factors [19]. Next step is identification of strategy formulation using TOWS Matrix. The TOWS Matrix serves a strategic framework that facilitates conceptual and systematic analysis by linking external factors with internal factors to develop actionable strategies [20]. Both the strategy formulation and the identification of strategy formulation in this study are informed by a literature review of internal company documents, including the 2023 white paper, ensuring alignment with company goals.

Ater defining the strategy formulation, the next step is to establish strategy objectives by detailing each point of the strategy formulation. Strategic objectives serve as measurable indicators that must be translated into specific goals [21]. After identifying the strategy objectives, the next step involves linking each point through the development of strategy map. A strategy map is generic architecture that illustrates the cause-and-effect relationship among strategies, enabling the company to view them in a well-integrated and systematic [22]. The analysis of strategy maps in this study is conducted through a literature review and the company's internal documents, ensuring a comprehensive understanding of strategic linkages. The next phase is key performance indicator formulation based on the previously strategic objectives. In this research, the number of KPIs is determined with a range of $1 \leq x \leq 20$. The number is based on recommendations by Kaplan and Norton, who suggest a maximum of 20 KPIs, while Hope and Fraser, who suggest fewer than 10 KPIs [15].

The stage involves verifying the design results to ensure they align with the requirements of unit ABC. This verification serves as the foundation for determining the weight of importance of KPIs using the Analytical Hierarchy Process (AHP). If the verification criteria are not met, the process reverts to the initial phase of the assessment of internal and external conditions. If the verification is met, the process advances to the next stage, key performance indicator weighting using the Analytical Hierarchy Process. At this stage, the design of the questionnaire is required, which involves constructing a pairwise comparison matrix [18]. The pairwise comparison matrix is developed using intensity scales of importance such as 1 (equal importance), 3 (moderate importance), 5 (strong importance), 7 (demonstrated importance), and 9 (extreme importance) [23]. The AHP questionnaire is completed by three expert respondents, consisting of senior manager and two managers, selected based on their unit decision and job responsibilities to ensure the relevance and credibility of the responses. Following the distribution and completion of the questionnaire, data processing is conducted using the AHP methodology. This process is facilitated through Microsoft Excel AHP Software K.D Goepel, as illustrated in the figure below on Figure 2.
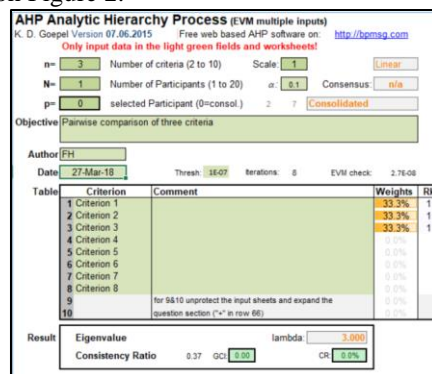

Figure 2 Example of AHP Calculation using Microsoft Excel

The Microsoft Excel template used for AHP calculations provides key information, including the derived weight of importance levels and the consistency ratio. The next phase involves conducting a KPI consistency test. The consistency test evaluates the acceptability of the consistency ratio, with a threshold of ≤10% for the data to be considered consistent, if the ratio exceeds, the data are inconsistent and require revision by distributing the questionnaire again. In this stage, as the software has already calculated and displayed the consistency ratio, the process is limited to verifying the consistency values provided. If in the previous stage, there are weights equal to 100% due to the absence of alternative branches, the next step involves normalization analysis of the AHP weighting. The final stage of this research involves the development of scorecard for the performance measurement system.

Results and Discussion

Identification of Internal and External Condition using SWOT Method

The results of the identification external and internal conditions by SWOT methods are summarized in Table 2

Table 2 Result of Identification Analysis by SWOT Method

Strength	Weakness
• The company has been intensively marketing the 7+2 digital product. • The digital product has a strong position on specific market segmentation. • The market – winning program for the digital product is scheduled regularly.	• Challenges exist in marketing the digital products, particularly in the need for further development of products. • The performance of digital products has not yet met the set targets. • Customer experience with digital products needs significant improvement to enhance satisfaction. • Employee competencies require further improvement.
Opportunities	**Threats**
• There is a large market size, addressable market, and significant business to business prospects for the digital products in West Java. • Significant potential exists in the business-to-business market in West Java for the 7+2 digital product. • The company has a competitive advantage, with a high possibility of outperforming competitors in the 7+2 digital product market. • There is a potential business community for the 7+2 digital product in West Java.	• Competitors pose a potential threat to each product and market segment in West Java Province. • Loss of opportunities to meet end-user needs and preferences.

Strategy Formulation using TOWS Methods

Strategy formulation involves the structured presentation of strategies that have been measured and shown to deliver positive impact [21]. The process is grounded in SWOT analysis, which is integrated by TOWS Matrix. The TOWS Matrix serves as a framework to systematically align external factors (opportunities and threats) with internal factors and external factors [20]. The result of the identification strategy formulation is summarized in Table 3.

Table 3 Strategy Formulation Based on TOWS Matrix

Strength – Opportunities (SO)	Weakness – Opportunities (WO)
• Customer centric and relationship building solutions. • Market expansion and product innovations.	• Improved performance on process business fulfilment 7+2 digital product for increased efficiency and effectiveness. • Improved performance on business process assurance 7+2 digital product for improved efficiency and effectiveness.
Strength – Threats (ST)	**Weakness – Threats (WT)**
• Improves the customer by becoming and advantage as a competitive strategy.	• Improved the quality and capabilities of employees by implementing growth and agile mindset on business-to-business transformation on 7+2 digital products. • Increase the leader top value.

After identifying the strategy formulation, the strategies were categorized into the four perspectives of the Balanced Scorecard. The result of categorization of strategy formulation into the four perspectives of the Balanced Scorecard is summarized in Table 4.Table 5

Table 4 Strategy Formulation Categorization

BSC Perspective	Code	Strategy Formulation
Financial Perspective	SF.1	Market expansion and product innovations.

Customer Perspective	SC.1	Improves the customer by becoming an advantage as a competitive strategy.
	SC.2	Customer Centric and relationship building solutions.
Internal Business Perspective	SI.1	Improved performance on process business fulfilment 7+2 digital products for increased efficiency and effectiveness.
	SI.2	Improved performance on business process assurance 7+2 digital products for increased efficiency and effectiveness.
Learning and Growth Perspective	SL.1	Improved the quality and capabilities of employees by implementing growth and agile mindset on business-to-business transformation on 7+2 digital products.
	SL.2	Increase the leader top value.

The analysis of strategy formulation categorization, based on a literature review, is summarized as follows:

a. The "SF 1" aims to increase market share and revenue, positively impacting financial performance and driving income growth. This is based on characteristics of revenue growth including product innovation and the ability to reach new markets and customers [4]. Thus, the strategy is categorized into the financial perspective.

b. The "SC 1" aims to improve customer satisfaction and loyalty, strengthening the company's competitive edge. Meanwhile "SC 2" focuses on increased strong customer relationships to increase retention, loyalty, and reduce churn. The customer perspectives measure through customer satisfaction, acquisition, retention, and loyalty within defined target markets [4]. Thus, the strategy are categorized into the customer perspective.

c. The "SI 1" has focused on enhancing operational efficiency in fulfilment and quality delivery to customers. Meanwhile, "SI 2" aims to optimize product fulfilment and reduce issue resolution time. The internal business perspective involved evaluating internal processes, including process innovation, operational stages, and post-sales services to enhance customer and company performance [4]. Thus, the strategies are categorized into the internal business perspective.

d. The "SL.1" and "SL.2" focus on human resources. The learning and growth perspective emphasizes employee capabilities as a key category. Thus, these strategies are categorized under the learning and growth perspective.

Strategy Objectives

The next step involves defining strategy objectives that outline specific goals to be achieved for each point in the strategy formulation. The identified strategy objectives are summarized as follows on Table 5.

Table 5 Strategy Objectives

BSC Perspective	Code	SO
Financial Perspective	SOF.1.1	Increase the revenue of 7+2 digital products by reaching a set of revenue target
	SOF.1.2	Increase the profitability of 7+2 digital products by achieving a set profitability target.
Customer Perspective	SOC.1.1	Increase customer satisfaction on 7+2 digital products.
	SOC.1.2	Increase customer loyalty on 7+2 digital products.
	SOC.2.1	Increase sales growth 7+2 digital products.
Internal Business Perspective	SOI.1.1	Improved efficiency and effectiveness on product fulfilment through monitoring SLA values.
	SOI.2.1	Improved efficiency and effectiveness on business assurance through monitoring SLG values.
Learning and Growth Perspective	SOL.1.1	Improved the competence of employees in the implementation of B2B 7+2 Digital Products.
	SOL.2.1	Increase the leader top value.

Strategy Maps

The next step after grouping the four BSC perspectives is designing a strategy map. The integration of each strategy objective within the strategy maps is based on a literature review and the company's internal documents. The strategy map will visualize the four perspectives that are summarized as follows on Figure 3.
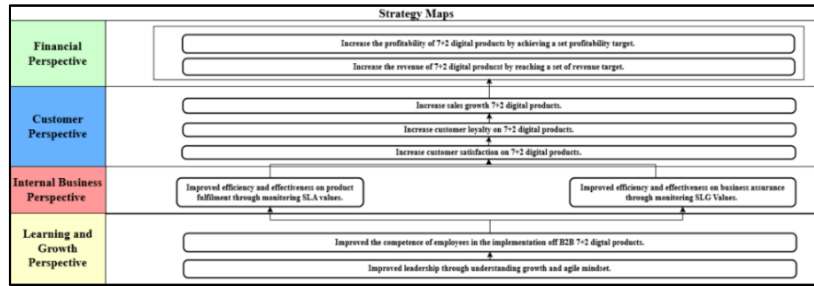
Figure 3 Strategy Maps

It is begun with the SO "Improved leadership through understanding growth and agile mindset" which serves as a foundational element of the strategy map. Effective leadership drives transformation and sustains organizational performance [24]. This SO align with "Improved the competence of employees in the implementation of B2B 7+2 digital products". There is a significant positive relationship between leadership and employee performance [25]. The SO before are linked to the other strategy objective "Improved efficiency and effectiveness on product fulfillment through monitoring SLA values" and "Improved efficiency and effectiveness on business assurance through monitoring SLG values". A significant positive correlation between employee competencies and organizational performance, leading to increased productivity and customer satisfaction [26]. Also, employee performance directly influences the quality of services delivered to customers [27].

Strategy before is linked to the other SO "Increase customer satisfaction on 7+2 digital product". High quality products and services significantly enhance customer satisfaction [2]. Further empathize that service guarantees positively impact customer perceptions of quality, satisfaction, and loyalty [3]. The strategy before is linked to the other SO "Increase customer loyalty on 7+2 digital products". Enhancing competitive advantage is highly competitive business markets requires a focus on customer loyalty, which is influenced by customer satisfaction, and there is a positive correlation between customer satisfaction and customer loyalty [28]. The strategy before is linked to the other SO "Increase sales growth 7+2 digital products". Customer loyalty as a commitment to repeat purchases which directly impacts a company's financial performance, including sales growth [29].

The strategy before is linked to the other SO "Increase the revenue" and "Increase the profitability". The increasing target sales volume directly impacts revenue growth [2]. This is aligned with company goals of enhancing profitability and revenue. Also, in the financial perspectives of the BSC should include metrics for both profitability and revenue to evaluate organizational performance [4]. In conclusion, the analysis of interconnections between SO has been successfully conducted and visualized through strategy maps.

Key Performance Indicators

After identifying the strategy maps, KPI formulation based on the previously strategic objectives. In this research, the number of KPIs is determined with a range of $1 \leq x \leq 20$. In designing the KPI, a determination analysis was conducted through literature review and internal company documents. In this stage, 12 KPI have been developed, comprising 3 KPI for financial, 3 KPI for customer, 2 KPI for internal business, and 4 for learning and growth, ensuring comprehensive performance measurement indicators across all the BSC dimensions. The identified KPI are summarized as follows on Table 6.

Table 6 Designing KPI

Perspective	SF Code	SO Code	KPI Code	KPI
Financial Perspective	SF.1	SOF.1.1	KF.1.1.1	Revenue growth 7+2 digital products.
			KF.1.1.2	EBITDA growth 7+2 digital products.
		SOF.1.2	KF.1.2.1	Net profit margin growth 7+2 digital products
Customer Perspective	SC.1	SOC.1.1	KC.1.1.1	Achievement of customer satisfaction index through NPS on 7+2 digital products.
		SOC.1.2	KC.1.2.1	Decrease in customer churn rate on 7+2 digital products.
	SC.2	SOC.2.1	KC.2.1.1	Increased sales growth on 7+2 digital products.
	SI.1	SOI.1.1	KI.1.1.1	Percentage value of efficiency and effectiveness of SLA as service fulfilment.

Internal Business Perspective	SI.2	SOI.2.1	KI.2.1.1	Percentage value of efficiency and effectiveness of SLG as quality services.
Learning and Growth Perspective	SL.1	SOL.1.1	KL.1.1.1	Increased percentage value assessment growth mindset.
			KL.1.1.2	Increased percentage value assessment agile mindset.
			KL.1.1.3	Training completion rate
	SL.2	SOL.2.1	SOL.2.1.1	Increased percentage of agile coach certification completion for senior leader

Verification

The key performance indicator for the 7+2 digital products was verified with stakeholder input with the updates included adding KPI KF.1.2.1 to SOF.1.1 and a new strategy objective "Increase profitability" with KPI KF.1.2.1. The final design is a performance measurement system in a digital enterprises BSC comprises 7 SF, 9 SO, and 12 KPIs.

KPI Weighting Using the AHP Method

The next step involves weighing the 7+2 digital product performance scorecard using the AHP, which applies pairwise comparisons from expert assessment to establish priority scales [23].An example of the calculations generated by the software is presented below on Figure 4.
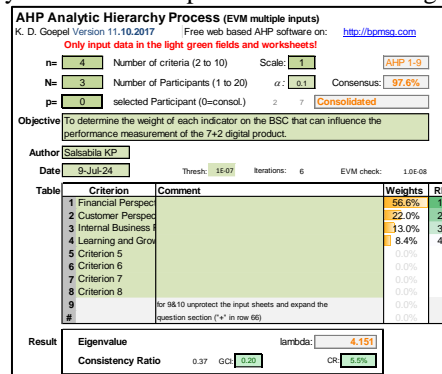

Figure 4 The Example of Calculations AHP by Software

Based on Figure 4, the AHP analysis results prioritize the four Balanced Scorecard perspectives for the 7+2 digital product. The financial perspective has the highest weight (56.6%), followed by the customer perspective (22%), internal business process perspective (13%), and learning and growth perspective (8.4%). The consistency ratio on the picture shown as 5.5% or 0.055, meeting the requirement for consistency ≤10%, confirming the reliability of the data processing. The same AHP software-based weighting process was applied to strategy formulation, strategy objectives, and KPIs. The detailed results of weighing for each component are presented in Table 7.

Table 7 Initial Weight

Perspective	Weight	SF Code	Weight	SO Code	Weight	KPI Code	Weight
Financial Perspective	56.60%	SF.1	100%	SOF.1.1	52.80%	KF.1.1.1	79.90%
						KF.1.1.2	20.10%
				SOF.1.2	47.20%	KF.1.2.1	100%
Customer Perspective	22.00%	SC.1	31.70%	SOC.1.1	43.00%	KC.1.1.1	100%
				SOC.1.2	57.00%	KC.1.2.1	100%
		SC.2	68.30%	SOC.2.1	100%	KC.2.1.1	100%
Internal Business Perspective	13.00%	SI.1	50.00%	SOI.1.1	100%	KI.1.1.1	100%
		SI.2	50.00%	SOI.2.1	100%	KI.2.1.1	100%
Learning and Growth Perspective	8.4%	SL.1	63.10%	SOL.1.1	100%	KL.1.1.1	26.90%
						KL.1.1.2	31.30%
						KL.1.1.3	41.80%
		SL.2	36.90%	SOL.2.1	100%	SOL.2.1.1	100%

The normalization process adjusts initial weights, ensuring accurate distribution across all components. It involves calculating strategy formulation weights (initial perspectives x strategy

formulation weight), strategy objective weights (normalized strategy formulation weight x strategy objective initial weight), and KPI weights (normalized strategy objective weight x KPI initial weight). The final normalized scorecard weights are presented in Table 8

Table 8 Normalization Weight

Perspective	Weight	SF Code	Weight	SO Code	Weight	KPI Code	Weight
Financial Perspective	56.60%	SF.1	56.60%	SOF.1.1	29.88%	KF.1.1.1	23.88%
						KF.1.1.2	6.01%
				SOF.1.2	26.72%	KF.1.2.1	26.72%
Customer Perspective	22.00%	SC.1	6.97%%	SOC.1.1	3.00%	KC.1.1.1	3.00%
				SOC.1.2	3.98%	KC.1.2.1	3.98%
		SC.2	15.03%	SOC.2.1	15.03%	KC.2.1.1	15.03%
Internal Business Perspective	13.00%	SI.1	6.50%	SOI.1.1	6.50%	KI.1.1.1	6.50%
		SI.2	6.50%	SOI.2.1	6.50%	KI.2.1.1	6.50%
Learning and Growth Perspective	8.4%	SL.1	5.30%	SOL.1.1	5.30%	KL.1.1.1	1.43%
						KL.1.1.2	1.66%
						KL.1.1.3	2.22%
		SL.2	3.10%	SOL.2.1	3.10%	SOL.2.1.1	3.10%

After normalizing the AHP weights, the final analysis of the scorecard for the 7+2 digital product performance measurement system was completed. The final weighted priorities for the scorecards are represented by graphics on Figure 5.
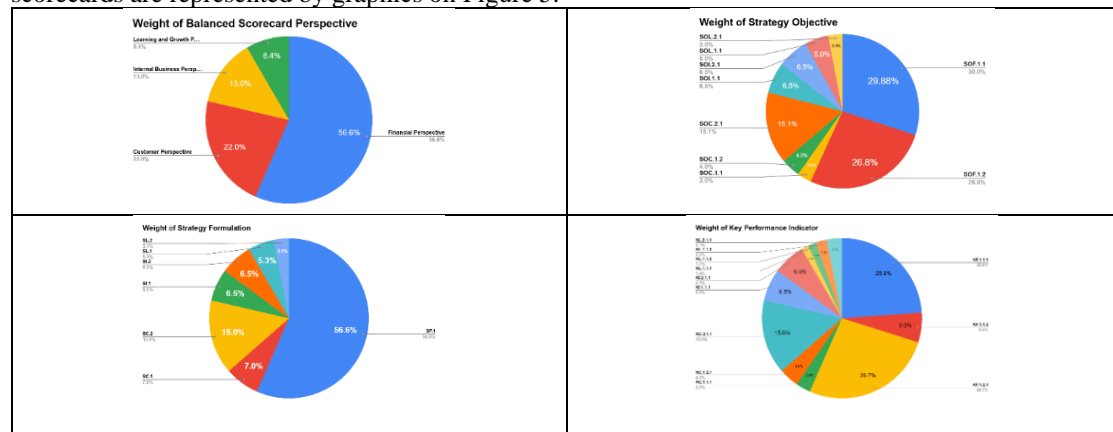

Figure 5 Graphics Visualization of Final Weight Distribution

Based on Figure 5 , the highest weights were identified across components of BSC such as financial perspective (56.60%) in perspectives, SF.1 (56.60%) in strategy formulations, SOF.1.1 (29.88%) in strategy objectives, and KF 1.2.1 (26.72%) in KPIs.

Scorecard Performance Measurement System
The integrated performance scorecard for digital enterprise of 7+2 digital products aligns with the four Balanced Scorecard perspectives, comprising 7 SF, 9 SO, and 12 KPIs. Based on interviews, performance measures will be conducted quarterly, adhering to company policies. The finalized scorecard is presented in Table 9Table 9

Table 9 Scorecard Performance Measurement System of Digital Enterprise on 7+2 Digital Products

Perspective	Weight	SF Code	Weight	SO Code	Weight	KPI Code	Weight
Financial Perspective	56.60%	SF.1	56.60%	SOF.1.1	29.88%	KF.1.1.1	23.88%
						KF.1.1.2	6.01%
				SOF.1.2	26.72%	KF.1.2.1	26.72%

0Customer Perspective	22.00%	SC.1	6.97%	SOC.1.1	3.00%	KC.1.1.1	3.00%
				SOC.1.2	3.98%	KC.2.1.1	3.98%
		SC.2	15.03%	SOC.2.1	15.03%	KC.2.1.1	15.03%
Internal Business Perspective	13.00%	SI.1	6.50%	SOI.1.1	6.50%	KI.1.1.1	6.50%
		SI.2	6.50%	SOI.2.1	6.50%	KI.2.1.1	6.50%
Learning and Growth Perspective	8.4%	SL.1	5.30%	SOL.1.1	5.30%	Kl.1.1.1	1.43%
						KL.1.1.2	1.66%
						KL.1.1.3	2.22%
		SL2	3.10%	SOL.2.1	3.10%	KL.2.1.1	3.10%

Conclusion

The 7+2 digital products scorecard integrated the four Balanced Scorecard perspectives, comprising 7 strategies, 9 strategic objectives, and 12 KPIs, where the unit ABC will evaluate every quarterly aligned with the company. Using AHP for weighting, the highest priorities were identified as follows financial perspective (56.60%), the strategy formulation "Market expansion and product innovations" (56.60%), the strategy objectives "Increase the revenue of 7+2 digital products by reaching a set of revenue target" (29.88%), and the KPI "Net profit margin growth" (26.72%). Once implemented, this system will standardize digital product performance measurement, aligning with company goals to drive revenue growth and operational efficiency.

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