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## DEVELOPING A BALANCED SCORECARD FOR AT THE INTERNATIONAL TELECOMMUNICATION INFRASTRUCTURE DEVELOPMENT INVESTMENT JOINT STOCK COMPANY

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### Abstract

*The aim of this research is to build a balance scorecard suitable for the unique characteristics of telecommunication enterprises in Vietnam, from field-researching in offices, namely International Telecommunication Infrastructure Development Investment joint stock Company., JSC. The research was conducted through a survey combined with in-depth interviews with 25 employees at the company, sorted from Planning, General, Human Resources and Accounting department as well as the Company's management. The results showed that all targets were highly agreed at the above level of "agree" (average value from 3.64 to 4.80) with 21 goals according to each aspect of the balance card. Based on the survey results, a balance points cards were proposed with detailed steps, from strategic map designing, measurements and integration into the management system to suit the strategic goals of International Telecommunication Infrastructure Development Investment joint stock Company.*

**Key Words:** *Balanced Scorecard, Management system, Strategy target, Telecommunication, Vietnam.*

### 1. Introduction

As early as the 1990s, Dr. Robert Kaplan of Harvard Business School and Dr. David Norton developed the Balanced Scorecard - a system for measuring a company's business performance. Since its inception, the balanced scorecard has been used by many organizations to collect information, make decisions and

implement strategies. BSC is proven and highly influential business idea. Honored at Harvard Business Review.

The balanced scorecard (BSC) is a multidimensional measurement model of an organization's performance. It considers four key

areas: Financial, Customer, Internal process, and Learning and Growth (Kaplan and Norton, 1996).

Kaplan and Norton have introduced the BSC approach since 1992 to provide managers with a comprehensive and easy-to-understand theoretical framework. This framework can translate an organization's strategic goals into a set of metrics. It is based on the theory that managers should not only choose financial indicators but "sacrifice" other indicators; Managers need and can achieve balance for sustainable business development.

According to Kaplan and Norton, the BSC Balanced Scorecard combines four dimensions: Financial, Customer, Internal process, and Learning and Growth (Kaplan, R.S. and Norton, D.P., (1996). According to Kaplan and Norton (2001), the process of implementing and managing strategy through these aspects of BSC helps enterprises manage their current situation, business activities and monitor future events. BSC was born mainly to solve two main problems, which are turning strategy into action and linking operational management with strategy. BSC has been chosen by many businesses. According to statistics from the American BSC Association, in 2021, out of 1,000 large businesses in the world, up to 65% of businesses are applying BSC in strategic management shows that BSC is one of the strategy control and implementation tools that has had the greatest impact in the past 75 years (Tawse and Tabesh, 2023).

The BSC management model attracts many scholars to research it both theoretically and practically. Most studies focus on evaluating factors affecting the application of BSC in businesses or the relationship between BSC and business performance. The content of each scorecard must demonstrate four requirements: performance goals, result measures, measurement targets and implementation initiatives.

Through the process of research and study, the author realized that developing BSC for businesses, especially businesses with specific characteristics in the field of telecommunications infrastructure, is still an open topic for empirical research. The Balanced Scorecard system is a well-suited tool for the current practice of the International Telecommunications Infrastructure Development Investment Joint Stock Company. The balanced scorecard not only helps the Company evaluate performance based on measuring financial factors but also on measuring non-financial factors (customer satisfaction, service quality...). This provides Company leaders with a balanced and comprehensive view of the Company's operations. At the same time, the BSC will help the Company's Board of Directors deploy the system's strategies into specific plans and actions to orient operations and create sustainable competitive advantages for the Company.

International Telecommunications Infrastructure Development Investment Joint Stock Company was established in 2002 with its main field of activity being telecommunications infrastructure rental services (lease of BTS). Over 20 years of development, the company has continuously developed and become one of the top companies among telecommunications infrastructure companies in Vietnam. Although affected by the Covid - 19 epidemic, the operating results of International Telecommunications Infrastructure Investment and Development Joint Stock Company in the last 3 years (2021-2023) still achieved growth in revenue and profit.

The Company's goal is to always be in the top position in the telecommunications infrastructure market even when society

moves into the "digitalization" period. However, most businesses in the field of telecommunications infrastructure in Vietnam (including the International Telecommunications Infrastructure Development Investment Joint Stock Company) have not been able to completely replace change traditional BTS. This is especially true in highlands or small provinces, including even big cities, where communication BTS remain in use even if the mechanical equipment is too old and outdated and cannot be maintained, serviced or replaced. So, businesses need to plan clear strategies, outline action plans to take advantage of opportunities, overcome challenges, turn strategies into actions and evaluate them according to their own standards, based on values. Value comes not only from finance but also from customers, internal processes, training and development. These factors all brings competitive advantage to businesses.

This study aims to examine the demand and required conditions to build BSC for Company, based on its mission, vision, and strategic objectives, thereby suggesting BSC conformed to Company. In addition to the introduction, the remaining part of this paper is arranged as follows: Section 2 will relate to methodology. Section 3 will present results and discussion. Section 4 will give a conclusion of the study.

## 2. Research methods

### 2.1. Data collection methods

The research data were collected using survey forms sent to Company. The surveyed team included representatives of the department heads, heads or deputy heads of divisions. The questionnaire was divided into 3 main sections: (i) a general judgment of strategic objectives and strategic map of Company; (ii) a detailed evaluation of KPIs under 04 BSC perspectives; (iii) respondent information. For questions in sections 1 and 2, a Likert scale of 5 degrees which ranges from "strongly disagree" to "strongly agree" was applied. The questionnaire content was inherited from previous BSC studies by Kaplan and Norton with additional department-specific details. In section 3, questions were related to general information of the respondent, including department, position, gender, age, and year of employment. The scale in use was the nominal scale.

The Strategic Mapping Survey was conducted from 12/04/2024 to 14/04/2024 at the International Telecommunication Infrastructure Development Investment joint stock Company (Address: 359 Cau Giay, Dich Vong Ward ,Cau Giay District, HaNoi, Vietnam).

The 25 survey participants are the Company's Board of Directors and employees. Twenty-five survey questions were sent to participants to determind the consensus on the objective system by email and Zalo. The valid forms collected for analysis counted to 25. In addition, the authors conducted in-depth interviews through Google Meet with Company's Director and 03 Company's leaders including 01 Head of Human Resources, 01 Head of Planning - General, 01 Chief Accountant to better clarify objectives, KPIs, metrics, and their integration into management systems. The interviews were conducted with pre-designed survey forms which included closed and open questions directly related to the criteria for a balanced scorecard. The information is recorded for analysis in research results.

### 2.2. Data analysis methods

The survey results were processed through the SPSS 20 software analysis tool that combines analysis and comparison to the collected secondary data set to achieve research goals. A balanced

scorecard needs to be applied throughout from top to bottom levels, from setting objective to developing strategies and implementing strategies. This process should be initiated by the Company leadership and communicated to subordinates. These are specific steps to build a balanced scorecard for Company:

Step 1: Determine mission, vision and strategies

Step 2: Develop a strategic map

Step 3: Develop Key Performance Indicators

Step 4: Integrate the balanced scorecard into the management systems

### 3. Research results and discussion

#### 3.1. Mission, Vision, and Strategic objectives of International Telecommunication Infrastructure Development Investment joint stock Company

Driven by the "Digitalization" motto, the Company's growth goal is to establish a robust digital transformation environment. This will allow them to keep pace with current trend and maintains their leading position in the telecommunications infrastructure service market by providing exceptional quality services that exceed customer expectations. At the same time, the Company always wishes to build environmentally friendly digital BTS. This goal extends beyond simply adopting renewable energy technologies in the industry. The Company envisions a future where its operations

align with the principles of "digitalization," a green economy, and a circular economy.

By creating a positive working environment closely associated with the Company's 5 core values: Trustworthy; Gratitude; Consideration; Accountability; Resilience. They cultivate a culture where employees are always ready to take on challenges and create new values with the motto "trust between people", a shared principle among all employees. These core values serve as the foundation for all company activities and set the standards for implementation and decision-making for all staff.

According to in-depth interview results, Company's mission, vision, and strategic objectives were communicated to each employee, on the company's inside, during celebrations as well as annual summaries and programs to organize gratitude and events of customers.

#### 3.2. Strategic map for International Telecommunication Infrastructure Development Investment joint stock Company

Based on R. S. Kaplan and D. P. Norton's strategic map model, we outlined the Company's strategic map from 4 perspectives: Financial, Customer, Internal process and Learning and Growth.

Survey results of participating specialists on the company's objectives from 4 perspectives are shown in Table 1. All objectives received high consensus with a mean value from 3.64 to 4.80, above the "agree" level.

**Table 1. The objective evaluation survey at International Telecommunication Infrastructure Development Investment joint stock Company**

No.	Perspective	Objective	Mean	Note
1	Financial	Increased sales	4.68	Accepted
2		Increased profit/sales	4.76	Accepted
3		Effective cost management	4.56	Accepted
4		Resource utilization efficiency	4.36	Accepted
5	Customer	New customer engagement	4.20	Accepted
6		Continue to sign and retain old customers	4.64	Accepted
7		Service quality assurance	4.52	Accepted
8		Build reputation in the market	4.72	Accepted
9		Market share of telecommunications infrastructure services	3.64	Accepted
10		Customer satisfaction	4.52	Accepted
11		Time to resolve a customer complaint	4.52	Accepted
12	Internal process	Internal process finalization	3.92	Accepted
13		Improve BTS rescue service	4.60	Accepted
14		Comply with regulations on labor safety and fire prevention	4.36	Accepted
15		Waste treatment upgrade	4.32	Accepted
16		Upgrade task management systems	4.80	Accepted
17	Learning and Growth	Periodic HR training	4.36	Accepted
18		HR coordination to appropriate positions	4.16	Accepted
19		Increased employee satisfaction	4.24	Accepted

20		Professional working culture promotion	4.24	Accepted
21		KPI application to each employee	4.36	Accepted

(Source: Prepared by the authors, 2024)

After the specialists reached a consensus on the objective system (Table 1), we outlined the strategic map of the Company (Figure 1).

### 3.3. Develop Key Performance Indicators

The objectives on the Company's Strategic Map are detailed into KPIs to help evaluate how the Company's objectives are implemented. The indicators are built on the basis of the criteria used by the management to evaluate operational efficiency. In addition, the author proposes to add a number of indicators based on 2 criteria: The index must be associated with the Company's strategic goals to evaluate the implementation of these goals, and at the same time must be easy to understand and measurable.

The KPIs system reached the consensus of survey participants with a total of 40 measures. These measures will be detailed into specific indicators and calculation formulas. The target of each KPIs builds the target for each KPI based on the strategic goals of the Company. In addition, there are a number of indicators that are proposed according to the author's subjective opinion (based on the current situation of development orientation, business history, and potential of the Company), complying with the SMART principle: S - Specific: particular, understandable; M - Measurable: quantitative; A - Achievable: challenging; R - Realistic: practical; T - Time-bound: within a deadline.

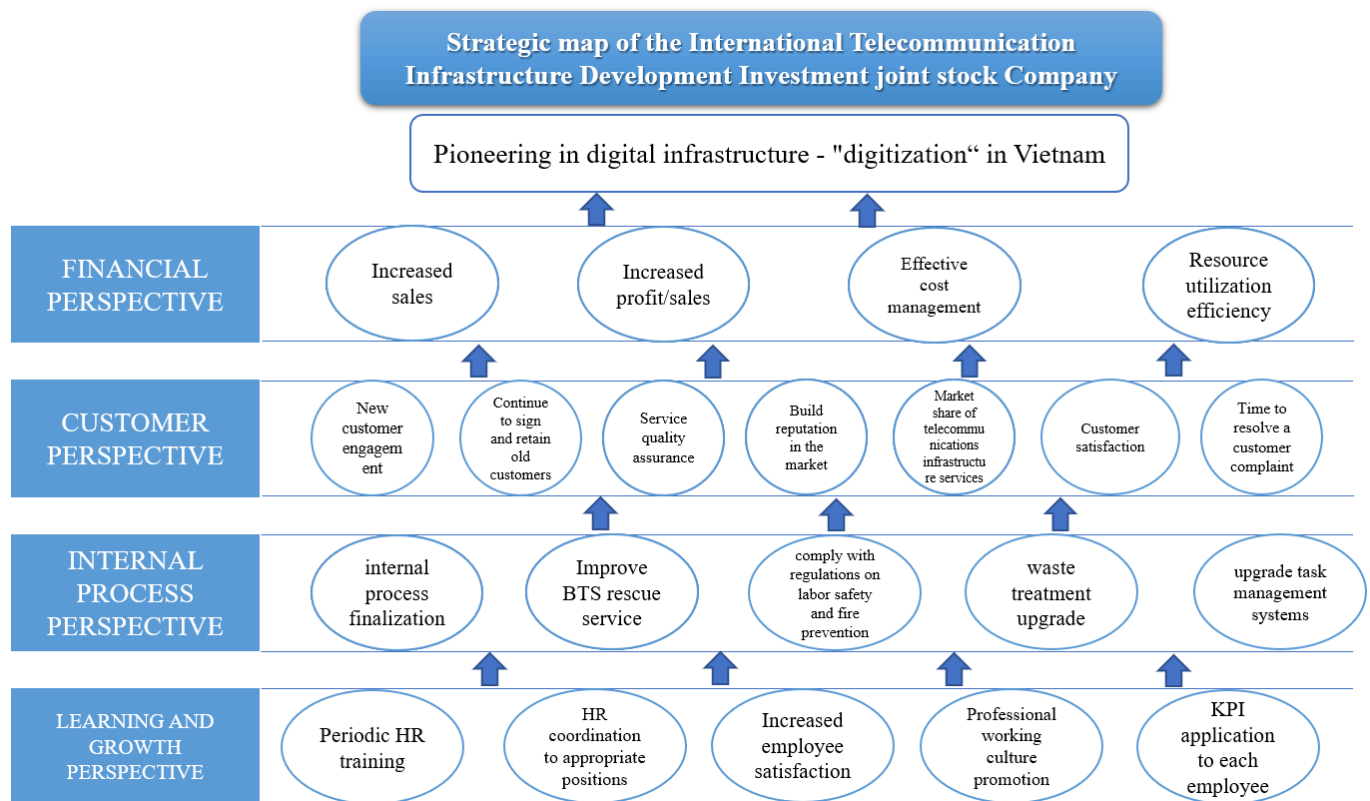


Figure 1. Strategic map of the International Telecommunication Infrastructure Development Investment joint stock Company

(Source: Prepared by the authors, 2024)

The formulas of the indicators are illustrated in Table 2.

Table 2. KPI weight on the Balanced Scorecard

Objective	KPIs	Unit	Formula
Financial perspective			
Increased sales	Sales increase	VND	(Current year sales - Last year sales)
	Sales growth rate (GRW)	%	(Current year sales - Last year sales)/Last year sales
Increased profit/sales	Return on equity (ROE)	%	(Current year ROE - Last year ROE)
	Return on assets (ROA)	%	(Current year ROA - Last year ROA)
	Profit growth rate (GRW)	%	(Current year profit - Last year profit)/Last year

			profit
Effective cost management	Percentage of unreasonable costs out of total costs	%	Unreasonable costs/total costs
	Percentage of costs of sales and business management out of total costs	%	Costs of sales and business management/total costs
Resource utilization efficiency	Return on investment (ROI)	%	(Current year ROI - Last year ROI)
	Return on debt	%	(Current year return on debt - Last year return on debt)
Customer perspective			
New customer engagement	Percentage of new customers	%	Percentage of new customers in the year
	Percentage of sales from new customers	%	Sales from new customers/total sales in the year
Continue to sign and retain old customers	Number of BTS that continue to operate	Stations	Number of old BTS in the year
	The number of BTS expanded	Stations	Number of new BTS in the year
Service quality assurance	Response rate of BTS	%	Number of rescued BTS during the year
	Number of customer complaints about service quality	Times	Number of customer complaints about service quality in the year
Build reputation in the market	Number of old customers continuing to sign contracts	Times	Number of old customers during the year
	Number of new customers signing contracts	Times	Number of new customers during the year
Market share of telecommunications infrastructure services	Maintain market share of telecommunications infrastructure services in the market	%	Total sales of telecommunications infrastructure services / Total sales of the telecommunications infrastructure services market
	Increase market share of telecommunications infrastructure services in the market	%	(Market share of telecommunications infrastructure services this year - Market share of telecommunications infrastructure services last year)
Customer satisfaction	Increase customer satisfaction with the services	%	(Customer satisfaction with current year's services - Customer satisfaction with last year's services)
Time to resolve a customer complaint	First contact resolution rate	Times	First contact resolution times in the year
Internal process perspective			
Internal process finalization	Finalize administrative processes	Number of processes	Number of finalized administrative processes in the year
	Finalize HR policies	Number of policies	The number of HR policies completed during the year
	Finalize working processes	Number of working processes	Number of finalized working processes in the year
Improve BTS rescue service	Number of BTS rescued / Average time to rescue BTS	%	Number of BTS rescued during the year/Average rescue time of BTS during the year
Comply with regulations on labor safety and fire prevention	The number of work accidents in the year	Times	The number of work accidents in the year
	Number of explosion cases	Times	Number of explosion cases in the year

Waste treatment upgrade	Minimize the amount of direct waste discharge	Kg Or m3	(Amount of waste discharged to the environment in the current year - Amount of waste discharged to the environment in the last year)
Upgrade task management systems	Finalize task management systems	System	Number of finalized task management systems in the year
Learning and Growth perspective			
Periodic HR training	The number of training courses organized	Course	The number of training courses organized in the year
	Training participation rate	%	Number of employees attending the course/ Number of training courses organized in the year
HR coordination to appropriate positions	Time for job rotation	Month	Time for job rotation
	Job rotation acceptance rate	%	Number of employees accepting job rotation/ Number of employees rotating jobs
Increased employee satisfaction	Average salary raise rate	%	(Current year total average salary - Last year total average salary)/ Last year total average salary
	Percentage of employees satisfied with compensation and benefits	%	Number of employees satisfied with compensation and benefits/ Total number of employees
	Turnover rate	%	Number of turnovers/ Total number of employees
	Percentage of employees satisfied with the work environment	%	Number of employees satisfied with the work environment/ Total number of employees
Professional working culture promotion	Percentage of professional culture ratings from customers	%	Number of customers rating the company's culture as professional/ Total number of participating customers
	Percentage of professional culture ratings from employees	%	Number of employees rating the company's culture as professional/ Total number of participating customers
KPI application to each employee	Percentage of employees evaluated using personal KPI systems	%	Number of employees evaluated using personal KPI systems/Total number of employees

Based on calculation results, the authors assumed that the KPI weights were fairly balanced across the perspectives. However, the mostly concerned perspectives at HVN include the Customer perspective, the Learning and growth perspective. This was consistent with its strategies.

### 3.4. Integrate the balanced scorecard into the management systems

On the basis of survey evaluation, the authors propose a BSC as in Table 3.

**Table 3. The Balanced Scorecard of the International Telecommunication Infrastructure Development Investment joint stock Company**

Perspective	Objective	KPI
Financial	Increased sales	Sales increase
		Sales growth rate (GRW)
	Increased profit/sales	Return on equity (ROE)
		Return on assets (ROA)
		Profit growth rate (GRW)
	Effective cost management	Percentage of unreasonable costs out of total costs
		Percentage of costs of sales and business management out of total costs
	Increased resource utilization efficiency	Return on investment (ROI)
		Return on debt

Customer	New customer acquisition	New customer acquisition rate
		Percentage of sales from new customers
	Continue to sign and retain old customers	Number of BTS that continue to operate
		The number of BTS expanded
	Service quality assurance	Response rate of BTS
		Number of customer complaints about product quality
	Build reputation in the market	Number of old customers continuing to sign contracts
		Number of new customers signing contracts
	Market share of telecommunications infrastructure services	Maintain market share of telecommunications infrastructure services in the market
		Increase market share of telecommunications infrastructure services in the market
Customer satisfaction	Customer satisfaction with the product	
Time to resolve a customer complaint	First contact resolution rate	
Internal process	Internal process finalization	Finalize administrative processes
		Finalize HR policies
		Finalize working processes
	Improve BTS rescue service	Number of BTS rescued / Average time to rescue BTS
	Comply with regulations on labor safety and fire prevention	The number of work accidents in the year
		Number of explosion cases
Waste treatment upgrade	Minimize the amount of direct waste discharge	
Upgrade task management systems	Finalize task management systems	
Learning and Growth	Periodic HR training	Number of training courses organized
		Training participation rate
	HR coordination to appropriate positions	Time for job rotation
		Job rotation acceptance rate
	Increased employee satisfaction	Average salary raise rate
		Percentage of employees satisfied with compensation and benefits
		Turnover rate
		Percentage of employees satisfied with the work environment
	Professional working culture promotion	Percentage of professional culture ratings from customers
		Percentage of professional culture ratings from employees
KPI application to each employee	Percentage of employees evaluated using personal KPI systems	

(Source: Prepared by the authors, 2024)

#### 4. Conclusion

In today's rapidly evolving world, characterized by advancements in technology and the emergence of modern management methodologies, businesses face a dynamic environment filled with both opportunities and challenges. This is especially true for companies operating in Vietnam, a country currently undergoing a period of industrialization and modernization, where small and medium-sized enterprises (SMEs) are the predominant players.

For managers who have traditionally focused on financial aspects at the expense of other measurable areas, the Balanced Scorecard (BSC) framework presents itself as a particularly effective tool. Developed specifically for companies like the International Telecommunications Infrastructure Development Investment Joint Stock Company, a Vietnamese telecommunications infrastructure enterprise, BSC provides a comprehensive approach to evaluating

a business's effectiveness across four key dimensions: Finance, Customers, Internal Processes, and Training and Development.

Unlike other tools that may be solely measurement-focused or management-oriented, BSC functions as a comprehensive system, encompassing measurement, strategic management, and information exchange. Its strength lies in its balanced approach, considering both financial and non-financial metrics, outcome-based measures alongside those guiding activities, and the cause-and-effect relationships within goals. It measures all four aspects mentioned above.

Within each dimension, BSC offers guidance and translates strategies into specific, actionable goals. This clarity helps the Company chart a clear course for both the short and long term. The information provided and updated by BSC remains closely linked to global advancements and accurately reflects the current and future state of the Company's internal and external operations.

The proposed Key Performance Indicator (KPI) system allows the Company to establish a reward and punishment structure tailored to individual staff members and their positions, applicable both at the office and at BTS locations. This data-driven approach ensures that employees are recognized and motivated for their contributions, fostering a culture of performance excellence.

The findings of this article offer valuable insights not only for the International Telecommunications Infrastructure Development Investment Joint Stock Company in establishing metrics to achieve strategic goals but also serve as a practical example for other Vietnamese telecommunications infrastructure businesses. By adopting the BSC framework, these companies can effectively navigate the challenges and opportunities presented by Vietnam's dynamic business landscape.

Furthermore, this article contributes to the academic literature on BSC applications, providing a valuable reference point for future research. It highlights the effectiveness of BSC in enabling SMEs to achieve sustainable growth and competitive advantage in a rapidly changing environment. As the telecommunications infrastructure sector continues to evolve, further research is needed to explore the nuanced applications of BSC in this specific domain.

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