



Design of IT Balanced Scorecard In PT. Putra Mulia Telecommunication to Support of Information System and Technology Infrastructure Development

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ABSTRACT

This research was conducted in PT. Putra Mulia Telecommunication (PMT) as a telecommunication service provider company in Indonesia that has been implementing the business since 2011. In this research, authors tried to design Information Technology Balanced Scorecard (IT BSC) to ensure all existing problem in business strategic and operational level can be gradually solved by involving Information System and Technology (IST) infrastructure that currently has been developed by PMT Management Team.

Some of the current operational and performance data from internal and customer that is related to the issues will be strongly used for this research to explore the detail of problem that need to be solved. Authors put all the detail problem into the framework on each stage of the IT BSC perspective. By using IT BSC, authors can summarize the corrective actions that can be taken by management support.

At the final part of this research, authors will share the conclusions and suggestions to PMT management for the IST infrastructure that need to be developed continuously in order to maintain for the sustainability of PMT current business.

Key words: IT balanced scorecard (IT BSC), information system and technology (IST), corrective action, sustainability.

1. INTRODUCTION

Rapid development of technology has an impact on various aspects of human life. One of them is in the use of mobile phones. At first, mobile phones were only used as communication devices that could be carried anywhere easily. But over time, mobile phones are not only used as a means of communication, but also used as a means of positioning, directing, entertainment and to access the internet [1].

The current of cellular telecommunication industry in Indonesia already reached as the one of the top business sector that importantly used by the people widely. The telecommunication operator has been creating a business for many vendors and subcontractors to build and maintain for the quality of network services that providing the telecommunication coverage to the subscribers.

In the telecommunication business services environment, operator can't afford to work by themselves only. They need strategic partners, such as vendor and subcontractor that can work for many operational activities in the field. Operator creates Scope of Work (SOW) and Key Performance Index (KPI) based on Service Level Agreement (SLA) that can be a single reference of performance controlling process and delivery in the cooperation among all companies [2].

Managed Service (MS) is a network maintenance delivery program that is created by the Indonesian operator to ensure the network is always in the services function. PMT as the big subcontractor company has been handling this program since beginning and in order to keep improving for the productivity and efficiency in the business environment process and delivery then PMT is seriously to build IST, especially in Q2 2020. All stakeholder has a big mission to maximizing the financial profitability by managing IST seriously into the operational process and delivery [3].

2. LITERATURE REVIEW

McKinsey and Company (2002) has concluded the impact of information technology (IT) in its controversial Productivity Report 1995–2000. This report challenged the long-held view that IT has been the engine responsible for widespread productivity gains. The McKinsey report relates productivity gains to IT investments in only six economic sectors: retail, wholesale, securities, telecom, semiconductors, and computer manufacturing [4].

The balanced scorecard (BSC) initially developed by Kaplan and Norton, is a performance management system that enables businesses to drive strategies based on measurement and follow-up. In recent years, the BSC has been applied to information technology (IT). IT BSC was primarily focused on the operational level of the IT department. It was acknowledged from the beginning that this could not be the end result. The cascade of balanced scorecards has been established to create a linkage between the business balanced scorecard and different levels of IT balanced scorecards. Furthermore, cause-and-effect relationships across the scorecard are defined to help to understand how the contribution of IT towards the business will be realized.

IT BSC is fully aligned with the business strategic management framework and vision is frequently reviewed, updated and improved. Internal and external experts are engaged to ensure industry best practices are developed and adopted. The measurements and results are part of management reporting and are systematically acted upon by senior and IT management. Monitoring, self-assessment and communication are pervasive within the organization and there is optimal use of technology to support measurement, analysis, communication and training [5].

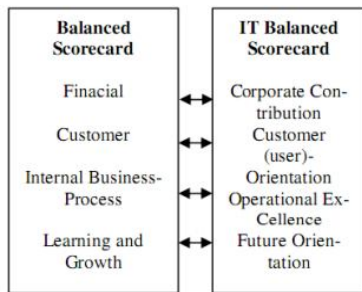


Figure 1. BSC and IT BSC Perspective Correlation

It was recognized by the CIO that building an IT BSC was meaningful under two conditions which required (a) a clearly articulated business strategy, and (b) the new Information Services Division moving from a commodity service provider to a strategic partner as illustrated by Venkatraman (1999) (Table 1): [6]

Table 1. IT division as a service provider or strategic partner

Service provider	Strategic partner
<ul style="list-style-type: none"> • IT is for efficiency • Budgets are driven by external benchmarks • IT is separable from the business • IT is seen as an expense to control • IT managers are technical experts 	<ul style="list-style-type: none"> • IT for business growth • Budgets are driven by business strategy • IT is inseparable from the business • IT is seen as an investment to manage • IT managers are business problem solvers

The goals of an IT BSC are simplistic in scope but complex to execute [7]:

- Align IT plans with business goals and needs.
- Establish appropriate measures for evaluating the effectiveness of IT.
- Align employees' efforts toward achieving IT objectives.
- Stimulate and improve IT performance.
- Achieve balanced results across stakeholder groups.

Martinsons et al. (1997) suggested perspectives of IT BSC [8]:

1. Business value (corporate contribution perspective):
 - Mission: contribute to the value of the business
 - Objectives: establish and maintain a good image and reputation with management, ensure that IT projects provide business value, control IT costs, and sell appropriate IT products and services to third party
2. User orientation (customer perspective):
 - Mission: deliver value-adding products and services to end users
 - Objectives: establish and maintain a good image and reputation with end users; exploit IT opportunities, establish good relationships with the user community, satisfy end-user requirements, and be perceived as the preferred supplier of IT products and services
3. Internal processes (operational excellence):
 - Mission: deliver IT products and services in an efficient and effective manner
 - Objectives: anticipate and influence requests from end users and management, be efficient in planning and developing IT applications, be efficient in operating and maintaining IT applications, be efficient in acquiring and testing new hardware and software, and provide cost-effective training that satisfies end users
4. Future readiness (future orientation perspective):
 - Mission: deliver continuous improvement and prepare for future challenges
 - Objectives: anticipate and prepare for IT problems that could arise, continuously upgrade IT skills through training and development, regularly upgrade IT applications portfolio, regularly upgrade hardware and software, conduct cost-effective research into emerging technologies and their suitability for the business

IT BSC can help to drive long-term goals, such as the consideration of providing proper IST infrastructure for business process improvement. At the end, IT BSC can help to find many ways to increase the value of an organization for the internal and external operational process.

Implementing IT BSC is also related to the work culture and leadership in the organization. One of the main success of IT BSC implementation is related to how each management leader are able to find the best way to implement it together

with all operational team in the organization to get all operational KPI can be achieved.

Continuous increment in a number of projects and employees that is not supported by a strong implementation of internal operational policies and SOP will create a major operational and business risks for PMT in the future. New challenges related to cyber security, fake reporting, EHS issues, security issues, and Business Conduct Governance (BCG) issues are the factors that can make PMT drop in the future.

3 RESEARCH METHODOLOGY

Authors designed the research methodology as following requirements:

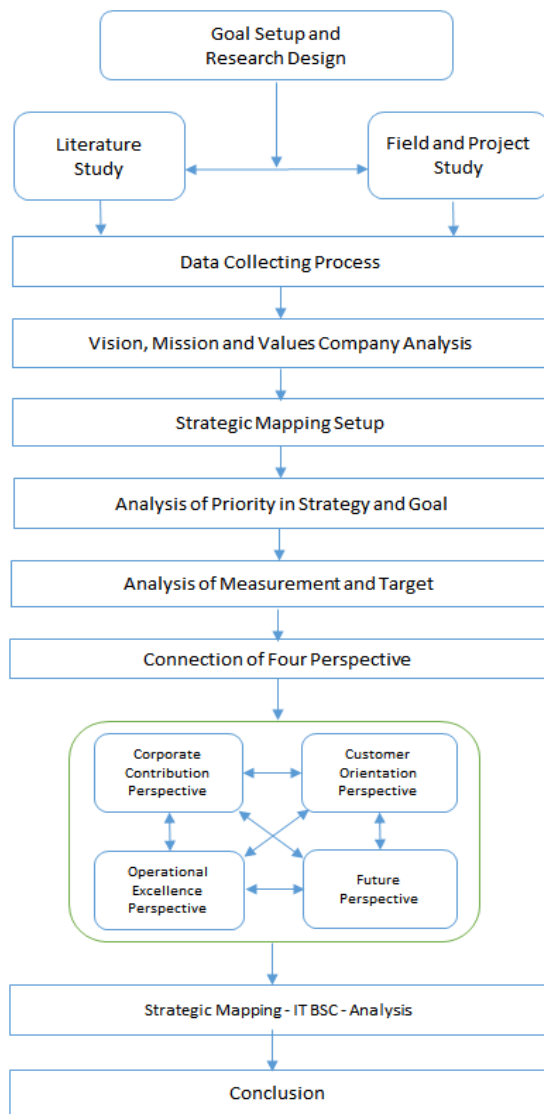


Figure 2. Research Methodology

1. Understanding organization vision, mission and strategy. Doing interview and conducting assessment to all management team in head quarter (HQ) to get many data

about the current actual business process, delivery target, and goal from each department

2. Finding current detail problem and issue to all important stakeholder based on the IT BSC framework category of each perspectives to obtain the detail objective can be proposed as initial answer
3. Creating a strategy map of IT BSC template to map all the detail of IT BSC perspective requirements
4. Making a detail breakdown and continuous progress of each strategy implementation during weekly management discussion
5. Setup the management target and putting gradual achievement in the IT BSC detail template
6. Making corrective action taken to be further proposed and concluded to the CEO as PMT decision maker

4 ANALYSIS & PROPOSE DESIGN

Authors designed for the strategy map as below to follow the research methodology that already discussed before:

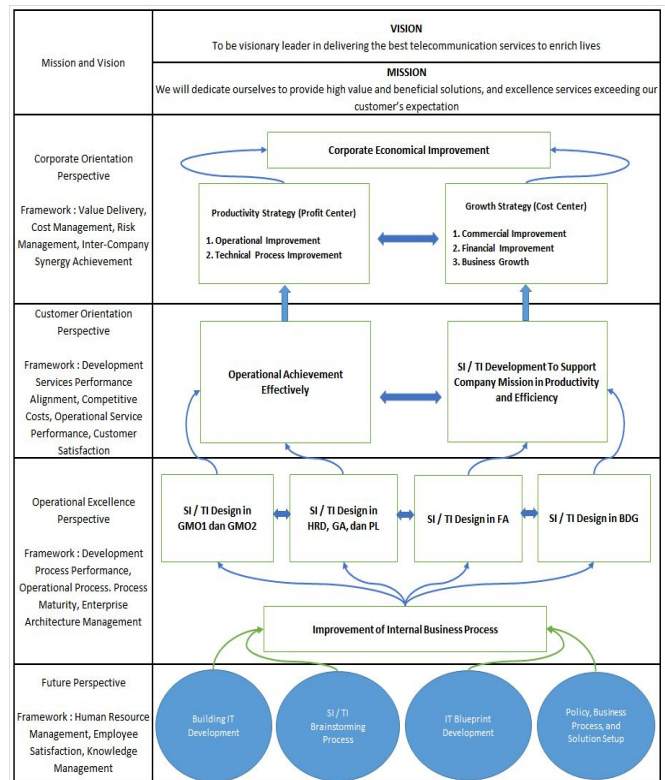


Figure 3. Strategy Map

Strategy map which is shown above in Figure 3 is mentioning about how PMT will make the detail of improvement strategy in achieving organization target by IST supports. Correlation of each IT BSC perspective is the main priority to be defined in term of obtaining the integrated solution from all IT BSC data and information processing.

The quantitative target and measurements in the IT BSC template are the combination of customer KPI and other operational and audit management target. Those item is also processed properly as integrated management KPI in PMT.

Table 2. IT BSC Template at Future Perspective (Capture Page 1 of 11)

PROBLEM	STRATEGY	FRAME WORK	STRATEGY THEME	MGMT INTERVIEW TIME	IMPLEMENTATION	TIME LINE	IMPROVEMENT CATEGORY	ACHIEVEMENT	MEASUREMENT UNIT	RESULT	MANAGEMENT CONCERN AND CORRECTIVE ACTION TAKEN
No available/lacking human resources that concern and capable to the business improvement process in corporate environment according to the mission of IST development infrastructure.	Recruiting human resources that can providing gradual development solution for company in IST infrastructure.	Human Resource Management	Building IT Development	CEO and PMG Meeting - CW 14	Recruiting one IT Manager (operator) that able to build IST blueprint and conduct for internal and external communication with a partners, management, and appropriate company	Q2 2020	Build New Team or Division	100%	Number of person	Achieved	1. Recruiting IT management team based on their capability in translating business strategy to the operational implementation process in company 2. Arranging more technical development process to the third party company by external partnership cooperation 3. Assignment to the internal resources is only for IST design, blueprint setup, implementation, socialization, maintenance, and further business mission 4. IST KPI implementation will be depend on how success the output can change the business environment and approve for profitability - based on productivity and efficiency
		Human Resource Management	Building IT Development	CEO and PMG Meeting - CW 14	Recruiting one local IT Supervisor that able to conduct for programming and execution	Q2 2020	Build New Team or Division	100%	Number of person	Achieved	
		Human Resource Management	Building IT Development	CEO and PMG Meeting - CW 14	Recruiting two local IT Engineer that able to conduct for execution, maintenance and troubleshooting	Q2 2020	Build New Team or Division	100%	Number of person	Achieved	

IT BSC template that is processed by authors are very detail. In this journal, authors only put one (1) pages sample from total thirty-seven (37) pages of all IT BSC perspectives that completely mentioned on the original thesis that authors wrote.

From IT BSC, authors are afford to introduce to the CEO for the new IST blueprint that is valid to be a main reference of whole IST initial infrastructure design which is previously proposed by each department and project in PMT.

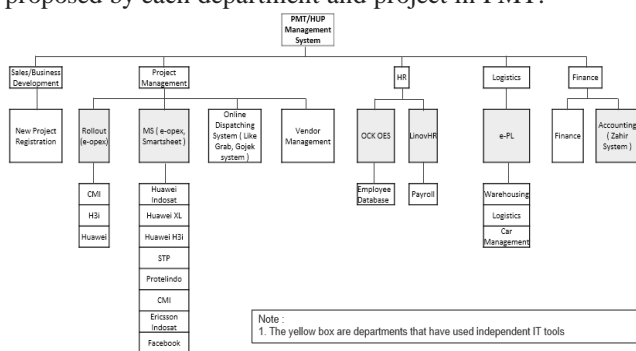


Figure 4. PMT IST Blueprint

Authors created for the IT BSC Summary from improvement category information status in order to simplify the weekly implementation of corrective action status and IST update to management. Before defining this dashboard, authors already confirming the detail framework alignment in the IT BSC. Authors emphasize also to management for the impact that

may be happened if the implementation is not running well after the dashboard is shared to PMT management.

Priority of business efficiency in PMT need to be divided into two parts:

1. Which gives priority to financial matters like cash advance, opex and budget for project, salary, and car rental
2. Which touches on management of site data like internal process for stolen materials, process handling for material relocation. The reason the ERP that will be developed in PMT/HUP is design as such is to give priority on tightening of internal controls on process related to money and after that on internal controls for work management of PMT projects

Table 3. IT BSC Summary of Implementation

Improvement Category	Implementation Achievement						Grand Total	Impact	Handling Process
	Not Started Yet	Not Achieve Yet	Haven't Done	Already Started	Achieved	Implem nted			
Paperless Administration and Storage Management	13			1			14	Productivity and Security	E
Operational Implementation and Improvement	1	1	1	3	6	1	13	Business Performance	B
Brainstorming and Communication			4		1	3	8	IS / IT Development	C
Policy and SOP Implementation	1	6					7	Business Foundation	E
Productivity and Efficiency		1			5		6	Cost Efficiency	B
Fast Query Reporting and Dashboard Management	4	1					5	Decision Making Process	E
Security and Safety Management				4			4	RCS and EHS Issue	B
Sequence Management Process	1	3					4	Routing Approval Process	E
Customer Network Monitoring Management				3			3	Operational Process	A
Build New Team or Division					3		3	Team Structure	A
Business Development and Improvement					2		2	New Business	A
Others - Related to Finance				2			2	Financial Support	A
Financial Performance Improvement					1		1	Cashflow	A
Integration and Management Sharing	1						1	ERP Process	A
Grand Total	21	12	5	10	19	4	73		

Based on the IT BSC summary which has been processed until calendar week 39 (CW 39) - 2020, PMT has not yet give full attention on several improvement IST action such as :

1. Paperless Administration and Storage Management,
2. Policy and SOP Implementation,
3. Fast Query Reporting and Dashboard Management,
4. Sequence Management Process,

But PMT has conducted some of IST improvement seriously such as:

1. Operational Implementation and Improvement,
2. Productivity and Efficiency,
3. Security and Safety Management Process,
4. Some categories of improvisation that are not widely chosen by PMT departments,

Since all the concern as mentioned on IT BSC summary has to be implemented due to the risk may be problem for the company then PMT need to increase the implementation acceleration by:

1. Adding IT team and enlarging the IT department,
2. Adding budget of IST infrastructure support and external partnership
3. Building joint venture and other cooperation form with external partners, customers, or other IT company
4. Training implementation
5. Summarizing the audit result to all employees

Continous socialization of PMT tools usage is key part of an IST tools / application implementation success, therefore IT division need continue to put training / awareness to all employees as a part of KPI. One of the downside of creating a tools without continuous training is non usage of the tools which in turn become a wastage to company.

In a study of overall business in PMT as a whole, more business and customer require different internal business process to smoothen the overall process efficiency of the company. With this in mind, ERP is being developed to increase the efficiency of communication from the project is won, budget released until the closure of the project. Inter dept business process are connected into one overall process in order to achieve the target of internal business efficiency.

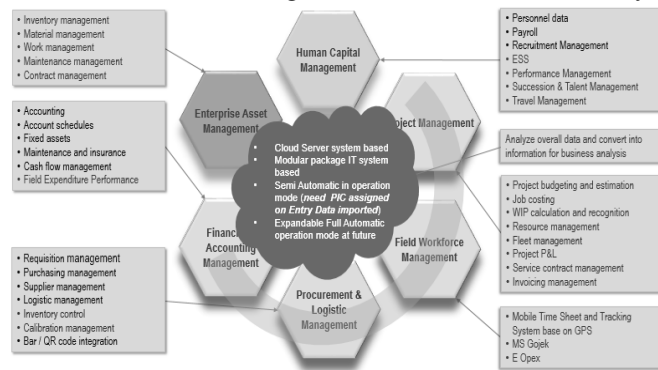


Figure 5. PMT ERP Concept

Cloud computing-based storage is implemented as multi-layer systems which combine commercial server and disk drive groups. To meet QoS requirements, edge-based storage also utilizes load balancing and fault recovery technologies [9]. If the ERP already done, then the storage of all system will be moved to Cloud computing-based storage. Currently PMT is in the process of designing and gradually implementing for the ERP architecture.

5 CONCLUSIONS

Company that is able to do IST innovation in their business environment will keep surviving in the telecommunications business competition in Indonesia. In price competition condition among all telecommunication operators and vendors that together have been lowering down the budget of field operation to their subcontractor companies, then all subcontractor companies need to compete each other by lowering down their cost also. By getting support from proper IST then PMT can keep taking some actions to be more dynamic in cost usage but still able to retain the good quality of field operations. One application sample that is proven can deliver for success in reducing the operational expenditure is PMT eOPEX (eOperational Expenditure) and for capital expenditure is PMT ePL (eProcurement and Logistic).

IT BSC is proven to provide a guidance in consolidating various ideas and proposal from many departments and stakeholders for improvement in operational management process. The integration of information system will lead the process of presenting the continuous update of all information for the CEO and other top management level.

The internal business processes in PMT have been running properly but still in manual operational model. New IST SOP have been gradually designed by the customer and PMT management to be executed well in term of achieving the simplicity of operational reporting and reducing the costs.

KPI measurement which is related to the execution of PMT IST need to be seriously applied to every manager in all departments in order to bring PMT to achieve for the delivery and other performance operational improvement. Although the ERP is still on the development process, but the existing and partial IST that already available in PMT business environment for now is need to be continuously used to get employees ready for the next IST.

The corrective action for all the problem found need to be followed up consistently by management in order to get significant improvement progress to the operational process. Everyweek, PMT management need to have some progress for solving the problem and updating the IST implementation.

Inline with the final goal of the IST development, PMT has to setup the plan for the next transformation from the cost center position to profit center position by adding some business unit to support for selling the IST product to another company. Currently PMT already introduced some of the IT security product to the customer, this will lead for the continuous initiative to another product to be sold.

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