Performance Indicator of Diskominfo XYZ City Based on IT Balanced Scorecard

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ABSTRACT

In managing the government, XYZ City is assisted by the Department of Communication and Information (Diskominfo), whose function is to formulate technical communication, informatics, and public relations policies. XYZ City's performance results are reported annually in the Government Agency Performance Accountability Report (LAKIP). In the 2020 LAKIP, it was still found that the formulation of performance indicators was not relevant to the goals/targets to be achieved, and it was also found that performance indicators needed to be more precise on how to be measured. In addition, the formulation of the document performance indicators and the performance indicators in the e-SAKIP application is different. Because it is related to the application, this is the domain of Diskominfo XYZ City. This study aims to design performance indicators at the Diskominfo XYZ City and each field in the Diskominfo XYZ City using the IT Balanced Scorecard approach that COBIT has adopted with the term COBIT Goals Cascade. This research produces Enterprise goals, IT-Related Goals, and KPIs for each strategic target in each IT field at the Diskominfo XYZ City.

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1. Introduction

Government accountability is a concept of relationships where government institutions provide information or justification for their actions [1]. In the world of bureaucracy, government accountability is a form of success or failure in carrying out the organization's mission. Based on the LAKIP (Laporan Kinerja Instansi Pemerintah) website, XYZ City still needs performance indicators relevant to the goals to be achieved. From the achievement of the AKIP (Akuntabilitas Kinerja Instansi Pemerintah) evaluation score, the city only received the predicate of "BB" (excellent), while the target got the predicate "A" (satisfactory). This score will affect public perception of organizational quality.

Some performance indicators still need to be clarified on how to measure them. Such as the indicator on the target of "Increasing the Capacity and Accountability of Bureaucratic Performance", which only explains that the evaluation of AKIP is measured following Ministerial Regulation No. 12 of 2015 concerning Guidelines for Evaluation of the Implementation of the Performance Accountability System of Government Agencies [2]. The measurement should contain what aspects are assessed to make the value calculation more accurate. There is also an inconsistency between the performance indicators on the document and the e-SAKIP (Sistem Akuntabilitas Kinerja Instansi Pemerintah).

This research answers the achievement and measurement problems by proposing performance indicators based on all perspectives using IT Balanced Scorecard at the Enterprise Level (XYZ City), IT Department Level (Diskominfo XYZ City), and IT Department Fields Level (each field in the Diskominfo XYZ City). IT Balanced Scorecard implementation can align IT plans with business goals and needs whilst establishing appropriate measures for evaluating the effectiveness of IT [3]. Proposed performance indicators can help XYZ City realise its vision, mission, goals, and objectives..

2. Materials and Method

The design of this research adopts the Hevner conceptual model. A conceptual model is a reference object that aims to identify the essence oopen-accessrch objectives and their relationships [4]. The conceptual model has three processes covering the Environment, Information Systems Research, and Knowledge Base [5]. The environment involves people or employees at Diskominfo XYZ City, and the organization includes strategies, structures, and processes. Knowledge base refers to the IT Balanced Scorecard and COBIT Goals Cascade. Research conducted on the environment and supported by the knowledge bases will produce instruments in performance indicators validated in case study organizations.

This research was conducted by taking into account research that had been carried out previously in Indonesia in various sectors: PT Telkom Indonesia [6], PT Telekomunikasi Selular [7], RSUD Kota Batu [8], and PT Capella Medan [9] for services sector; BRI TSI Division [10] for finance sector; STIKI Malang [11] for the education sector; Diskominfo Surabaya City [12] and Disdukcapil Ambon City [13] for public services sector. All of these studies are related to measuring the performance of IT service provider organizations, where almost all of them use the IT Balanced Scorecard except for the research in Diskominfo Surabaya City, which still uses the original Balanced Scorecard. Most of these studies use or state COBIT as a framework that can be harmonized with the IT Balanced Scorecard in measuring the performance of IT service providers.

This research has three stages. The first stage begins by identifying current and targets Enterprise Goals for each balanced scorecard perspective using COBIT Goal Cascade [14], which consists of the enterprise goals in four perspectives: stakeholder, customer, internal business process, and learning and growth. It should be noted that on the balanced scorecard in the public sector, the financial perspective is replaced with a stakeholder perspective, as stated in [15]. The data needed in this stage are the organization's vision, mission, goals, objectives, and performance indicators. The second stage is identifying the current and target IT-Related Goals to know the relevant targets for the IT department based on several aspects: corporate contribution, user orientation, operational excellence, and future orientation. The third stage is identifying and defining Key Performance Indicators (KPIs) for each strategic target in the IT division.

3. Result and Discussion

The performance indicators for Enterprise Level and IT Department Level were designed based on the objectives organisation shown in Table 1, and the objectives of Diskominfo XYZ City, shown in Table 2. There is one vision that needs to be realized through several missions with specific goals and objectives.

Table 1 Vision, Mission, Goals, and Objectives of XYZ City

Vision		
The Realization of a Superior, Comfortable, Prosperous, and Religious City		
Mission	Goals	Objectives
Building a humanist, religious, quality, and competitive **society**	Building an independent society with quality, fair and equitable education, and health insurance based on religious and cultural values	Increased quality of public education
		Increased level of public health
Realizing assistive, effective, efficient, and clean **governance**	Implementing effective and efficient bureaucratic reform	Increased capacity and accountability of bureaucratic performance
Building an independent, strong, and just **economy**	Creating advanced, sustainable, and equitable economic growth	Increased the city's economy
		Reduced poor people
		Increased job opportunities
Realizing a **comfortable** city	Realizing quality and environmentally friendly urban infrastructure and spatial planning	Increased comfortability and sustainability of urban spaces
		Increased integration and quality of city infrastructure
		Improved clean water services
		Increased the environmental quality
Developing participatory, collaborative, and integrated city **financing**	Optimizing participation and collaboration in the development	Increased community participation and collaboration in the development
		Increased private participation and collaboration in the development

According to Table 2, each mission has its focus and will relate to one of the four domains in the balanced scorecard. Based on Table 3, Diskominfo XYZ City supports the achievement of one of XYZ City's missions.

Table 2 Vision, Mission, Goals, and Objectives of Diskominfo XYZ City

Vision		
The Realization of a Superior, Comfortable, Prosperous, and Religious City		
Mission	**Goals**	**Objectives**
Realizing assistive, effective, efficient, and clean **governance**	Realizing improved capacity and accountability of bureaucratic **performance**	Increased e-government-based governance
	Realizing **open data** XYZ City	Increased the reliability and accountability of data
	Realizing the optimal use of **encoding** in the regional unit	Increased use of coding information systems on regional unit
	Realizing improved performance and **services**	Improved performance and services

The performance indicators were designed by adding missing indicators that are needed to improve government and management practices for each of the four domains at the enterprise (City) level, then cascaded into the IT department (Diskominfo XYZ City) level, and finally into the IT department fields level.

3.1. Indicators for Enterprise Level

3.1.1. Stakeholder Domain

This domain represents the success in managing finances to achieve transparency and stakeholder trust. Currently, there are no indicators related to the financial domain, so it is proposed to add them as shown in Table 3.

Table 3 Stakeholder Domain

Objective E-1	
Increased participation and collaboration in the development	
Enterprise Goals	**Measurement**
EG01 Stakeholder value of business investments	Percentage of conformity of total regional property data with fixed assets data in the Government Balance
	Increase in the amount of domestic and foreign investment
EG02 Portfolio of competitive products and services	Percentage of products and services that meet or exceed customer satisfaction
EG03 Managed business risk (safeguarding of assets)	Percentage of regional asset management administration carried out in an orderly manner following the laws and regulations

3.1.2. Customer Domain

The target of this domain is to raise the level of public health and infrastructure. Based on current indicators, the related enterprise goal is identified, see Table 4.

Table 4 Customer Domain

Objective E-2.1	
Increased quality of public service delivery	
Enterprise Goals	**Measurement**
EG08 Agile responses to a changing business environment	Public Satisfaction Index for community service activities in the sub-district
Objective E-2.2	
Increased quality of urban spaces and infrastructure	
Enterprise Goals	**Measurement**
EG07 Business service continuity and availability	Regional Innovation Index

3.1.3. Internal Business Process Domain

In this domain, the satisfaction index of the regional apparatus needs to be classified as "good". Currently, no indicators are related to the internal business process domain, so it is proposed to add them, as shown in Table 5.

Table 5 Internal Business Process Domain

Objective E-3	
Increased capacity and accountability of bureaucratic performance	
Enterprise Goals	Measurement
EG12 Optimization of business process costs	Percentage of findings from the City Inspectorate, Provincial Inspectorate, and Financial Supervisory Agency that have been followed up
EG13 Managed business change programs	Percentage of achievement of regional development planning targets

3.1.4. Growth and Learning Domain

This domain relates to resources in managing XYZ City. Based on current indicators, the related enterprise goal is then identified, see Table 6.

Table 6 Growth and Learning Domain

Objective E-4	
Increased quality of public service delivery	
Enterprise Goals	Measurement
EG16 Skilled and motivated people	Percentage of Established Community Institutions

3.2. Indicators for IT Department Level

The indicators for Diskominfo XYZ City were designed by analyzing the gap between the existing state and the target to be achieved, which cascaded from the indicators for the enterprise level.

3.2.1. Corporate Contribution Domain

This domain focuses on how companies view the Information Technology Department to achieve business contributions from IT investments, see Table 7.

Table 7 Corporate Contribution Domain

Objective IT-1	
Increased e-government-based governance	
IT-Related Goals	Measurement
ITG02 IT compliance and support for business compliance with external laws and regulations	The number of public bodies that comply with the provisions of Law No. 14 of 2008 concerning KIP
	Percentage of the utilization of ICT regulations
ITG05 Realized benefits from IT-enabled investments and services portfolio	Percentage of utilization and security of ICT infrastructure

3.2.2. User Orientation Domain

The user orientation domain focuses on how users view the Information Technology Department as an application or system provider and take advantage of business opportunities using Information Technology, see Table 8.

98

Int. J. Appl. Inf. Technol. Vol. 06 No. 02 (2022)

Table 8 User Orientation Domain

Objective IT-2	
Increased the reliability and accountability of data	
IT-Related Goals	Measurement
ITG07 Delivery of IT services in line with business requirements	Percentage of the utilization of XYZ City's information communication channel
ITG08 Adequate use of applications, information, and technology solutions	Percentage of application usage

3.2.3. Operational Excellence Domain

This domain focuses on measuring the effectiveness of Information Technology processes in an organization, see Table 9.

Table 9 Operational Excellence Domain

Objective IT-3	
Improved performance and services	
IT-Related Goals	Measurement
ITG09 IT agility	Structural satisfaction index with the use of Information Technology toward business needs

3.2.4. Future Orientation Domain

The future orientation domain focuses on the infrastructure of the organization to support the achievement of the goals of the three domains above, see Table 10.

Table 10 Future Orientation Domain

Objective IT-4	
Increased use of coding information systems on regional unit	
IT-Related Goals	Measurement
ITG16 Competent and motivated business and IT personnel	Number of employees taking certified IT short course
ITG17 Knowledge, expertise, and initiatives for business innovation	Number of state civil servants who understand the use of internal service applications

3.3. Indicators for IT Department Fields Level

In this part, the Performance Indicators will be determined for each field in the Diskominfo XYZ City to make employees easily carry out their duties according to job descriptions. There are low-performance indicators regarding Information Technology, so new indicators must be added in each field in the Diskominfo XYZ City. There are five fields: Data and Statistics, Encryption and Informatics Applications, ICT Infrastructure, Planning, Evaluation and Development of ICT Resources, and Information Dissemination [16]. The indicators for each field, respectively, are shown in Table 11-15.

3.3.1. Data and Statistics Field

Table 11 Indicators for Data and Statistics Field

Section	Measurement
Surveys and Data Acquisition	Level of satisfaction of users and IT employees with IT services
	Level of customer satisfaction with IT Knowledge Base
	User satisfaction level with Request Fulfillment service
Data Processing and Analysis	Percentage of employee involvement in making an IT innovation
Publication and Open Data	Percentage of employee involvement in making an IT innovation

3.3.2. Encryption and Informatics Applications Field

Table 12 Indicators for Encryption and Informatics Applications Field

Section	Measurement
Application Management	Percentage of projects using Enterprise Architecture services
	Percentage of change in investment program relevant to IT portfolio
	Percentage of stakeholder satisfaction with the completeness of the testing process
Encryption and Information System Security	Number of IT security-related incidents
	Number of clearly defined IT security roles
	Percentage of backup media sent and stored safely
	Number of IT security vulnerabilities found
	Number of Firewall breaches
Information System Integration	Percentage of IT changes in an emergency to be repaired
	Percentage of critical operational activities handled by the automated detection system
	Percentage of traceable transaction log completeness log

3.3.3. ICT Infrastructure Field

Table 13 Indicators for ICT Infrastructure Field

Section	Measurement
Interconnection and Network	Percentage of implementation of IT initiatives that can provide the expected benefits
	Percentage of employee involvement in making an IT innovation
Information and Communication Technology Hardware Management	Percentage of IT services according to the time provided
	Percentage of IT vendors who can meet the need for IT services
	Insufficient amount of IT assets
	Percentage of employee involvement in making an IT innovation
Public Information Technology Infrastructure	Percentage of IT vendors who can meet the need for IT services
	Percentage of implementation of IT initiatives that can provide the expected benefits
	Insufficient amount of IT assets

3.3.4. Planning, Evaluation, and Development of ICT Resources Field

Table 14 Indicators for Managing ICT Resources Field

Section	Measurement
Information and Communication Technology Policy Planning	Number of identified and managed IT potential risks
	Percentage of IT initiatives supported by non-IT units
	Percentage of IT investment that follows Diskominfo's strategy standards
	Percentage of alignment of IT services with Diskominfo's business needs
	Percentage of customer satisfaction with IT services following SLA
Information and Communication Technology Evaluation	Number of reports on Information Technology Governance issues
	Number of critical business systems not covered by the continuity plan
	Number of security solutions that deviate from the plan
	Level of stakeholder satisfaction with IT needs at Diskominfo.
Development of Information and Communication Technology Resources	Stakeholder satisfaction level on IT resource optimization
	Percentage of IT employee performance in achieving the desired IT strategy
	Percentage of employee involvement in making an IT innovation
	Percentage of IT resources capable of meeting IT-related initiatives
	Percentage of vacancies in Information Technology
	Number of issues related to resources

3.3.5. Information Dissemination Field

Table 15 Indicators for Information Dissemination Field

Section	Measurement
Strengthening Information and Public Disclosure	Percentage of inaccurate IT reports
Community Information Partnership	*(No related indicators found in COBIT)*
Extension and Information Control	The level of stakeholder satisfaction in communicating a change
	Percentage of reporting requirements met by each stakeholder

4. Conclusions

This research produces proposed indicators (based on Balanced Scorecard Domain) that XYZ City can use in realizing its vision, mission, goals, and objectives. This indicator is divided into three levels, namely the Enterprise level, the IT Department level, and the IT Department Fields Level. At the Enterprise Level, there are several perspectives whose indicators are still empty, such as finance and internal business processes. New indicators were added to complete the unmet perspectives. Meanwhile, from the perspective of customers and growth and development, the author adds several recommended indicators to improve the existing indicators. For the IT Department level, it was found that the indicators for the company's contribution perspective were still empty, so a new indicator was determined. Several indicator recommendations are added to improve existing indicators for several other views, such as user orientation, operational improvement, and future orientation. For the IT Department Fields Level, there are insufficient indicators in each field in the Diskominfo XYZ City, so new indicators need to be added.

This research has limitations, where all proposed indicators must be selected together with stakeholders to determine which indicators are feasible to implement. Further researchers can conduct cascade indicators using COBIT in other case studies and add indicators selection process with stakeholders into their research stages.

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