

# SYSTEM PERFORMANCE ANALYSIS OF THE MINISTRY OF TOURISM'S ICT DEPARTMENT USING COBIT 4.1 AND IT BALANCED SCORECARD

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## ABSTRACT

Information Communication and Technology (ICT) Department is one of the departments in the ministry of tourism. Information system governance directs and controls an organization in achieving organizational goals by balancing the risks and benefits of the information system and its processes. COBIT 4.1 was developed by the IT Governance Institute (ITGI) which provides business process-oriented guidelines to assist in optimizing investment in information systems by providing a measure of system performance assessment. Recommendations for improvement based on the results of the level of maturity from COBIT are formulated with the IT Balanced Scorecard using Critical Success Factor (CSF) and Key Performance Indicator (KPI). The research focuses on aligning strategic objectives in the ICT Department of Ministry of Tourism and information systems performance analysis methods which is COBIT 4.1 and recommendations for improvement using the IT Balanced



Scorecard perspectives. The result of performance measurement will be the basis of the recommendations proposed in this research are expected to assist in the improvement and development of performance of Information System in ICT Department of Ministry of Tourism.

**Keywords:** COBIT 4.1; critical success factor; ICT; IT balanced scorecard; key performance indicator;

## 1. INTRODUCTION

The development of an increasingly rapid information system has been widely used to support the performance of company or organization in an effort to improve it. The application of information system is widely used in company or organization to meet the needs of time and cost efficiency in the work environment. Therefore, the department relating to the management of information system is a very important for a company or organization. Information system governance directs and controls an organization in achieving organizational goals by balancing the risks and benefits of the information system and its processes. The company gets the benefits from implementing good information system governance by ensuring the control, measurement and improvement of information system performance through a framework that connects IT processes, IT resources, and information with strategy and organizational goals.

The performance evaluation of the system information on a company or organization is done in order for the implemented system has been executed in accordance with the purposes of the company or organization. Performance measurement system is very useful to know the extent to which a company or organization has succeeded in achieving its goals through a predetermined strategy. One model of performance analysis of corporate information systems is COBIT 4.1. COBIT 4.1 was developed by the IT Governance Institute (ITGI) which provides business process-oriented guidelines to assist in optimizing investment in information systems by providing a measure of system performance assessment. COBIT 4.1 is able to provide a detailed and overall picture of the strategy and process settings. Information systems that support business strategies include four domains, namely plan and organize, acquire and implement, deliver and support, and monitor and evaluate.

The assessment specified in COBIT 4.1 is the measurement of the level of maturity that will know the extent of the level of IT management and makes it possible to know anything in the IT Department that needs to be developed and managed by an organization or company. Recommendations for improvement based on the results of the level of maturity are formulated with the IT Balanced Scorecard using Critical Success Factor (CSF) and Key Performance Indicator (KPI). IT Balanced Scorecard aligns system information that is used by businesses that are running. The IT Balanced Scorecard has four perspectives: company contribution, user orientation, operational excellence, and future orientation. The company contribution perspective is the view of executive

management, namely directors and shareholders. The user orientation perspective is the perspective of business users, in this case customer satisfaction. The operational excellence perspective is the perspective of IT management itself and those related to the rules applied. The Future orientation perspective is the perspective of the department itself towards developing internal capabilities to continuously improve performance through innovation and learning.

Ministry of Tourism is in charge of the affairs of the ministry of tourism in Indonesia which is under and responsible to the President. It has four Departments, one of which is Information Communication Technology Department (ICT Department). It manages technology, information and communication implemented in the Ministry of Tourism including LPSE, the Ministry of Tourism Website, Ministry of Tourism e-mail, and geospatial.

In 2017 the Ministry of Tourism has conducted an overall information system audit to obtain a blueprint using COBIT 4.1 then got a framework for 2018-2022. The Ministry of Tourism continues to strive to increase tourist visits and maximize the performance of it. One of the ways to do this is to change the organizational structure of the ministry of tourism in 2018 which is more focused on tourists (customer centric strategy) and change the main function of the Ministry of Tourism. This resulted in a change in the management of the Ministry of Tourism's information system so a re-audit was needed for the post-change information system.

This research discusses the performance of system of information in the ICT Department of Ministry of Tourism to analyse governance system information in the field of it. The research focuses on aligning strategic objectives in the ICT Department of Ministry of Tourism and information systems performance analysis methods which is COBIT 4.1 and recommendations for improvement using the IT Balanced Scorecard perspectives. The result of performance measurement will be the basis of the recommendations proposed in this research are expected to assist in the improvement and development of performance of Information System in ICT Department of Ministry of Tourism.

## 2. LITERATURE REVIEW

Analysis of system performance and information technology using the COBIT framework and IT Balanced Scorecard has been conducted by several researchers before. Previous research related to the analysis of system performance and information technology using COBIT and IT Balanced Scorecard can be seen in Table 1.

**Table. 1** Previous researches

No.	Author	Research Study	Result
1.	Benny, Hoga Saragih, dan Bobby Reza (2014)	Rancangan IT Balanced Scorecard (ITBSC) dan Analisis Gap Berdasarkan Tata Kelola IT di PT Panin Sekuritas, Tbk. Jurnal Teknik dan Ilmu Komputer, Vol. 03.	The Research has been done on PT Panin Sekuritas using COBIT 4.1 and IT Balanced Scorecard. The research is expected to maximize business processes at PT Panin Sekuritas and be able to provide quality and efficient performance. The research uses Gap and KPI analysis to produce the formulation of vision, mission, and strategy in the Information Technology Department of PT Panin Sekuritas. [1]
2.	Wahyu Adi Prabowo (2017)	Perancangan Information Technology Balanced Scorecard Pada PT Tambang Batubara Bukit Asam Tbk. Unit Pelabuhan Tarahan. Seminar Nasional Teknologi Informasi dan Multimedia	The Research has been done in the coal mining sector, IT Department of Bukit Asam Coal Mining Company IT. The Tarahan Port Unit uses COBIT and IT Balanced Scorecard. COBIT is used as a framework that provides broad and comprehensive scope of IT management and IT governance. IT balanced scorecard plays a role in supporting harmony between business and Information Technology. The IT Balanced Scorecard is prepared using a strategy map and work indicators such as KPI and CSF. [2]
3.	Mohamad Chandra, Arif Imam Suroso, Irman Hermadi (2015)	Evaluasi COBIT dan Perancangan IT Balanced Scorecard untuk Perbaikan Penerapan System Development. Jurnal Manajemen Teknologi, Vol.14.	The research has been done in the Information System Technology Division of Bank BRI. The research has been done with the aim of selecting the IT COBIT process used in evaluating the application of SDLC, assessing the maturity level, making recommendations for improvement, and designing a framework with the IT Balanced Scorecard. [3]

No.	Author	Research Study	Result
4.	Izatul Milla (2018)	Audit Sistem Informasi Manajemen Rumah Sakit Menggunakan Framework COBIT dan IT Balanced Scorecard (Studi Kasus RSD Balung). Tesis Universitas Jember.	The object of research is the Balung Regional Hospital with the research objective of conducting an SIMRS audit in Balung Regional Hospital using the COBIT framework and IT Balanced Scorecard to achieve the achievement of the Balung Regional Hospital objectives by implementing SIMRS. [4]
5.	Anrie Prajanueri Kristianto, Ema Utami, Henderi (2018)	Evaluasi Tata Kelola Sistem Informasi Rumah Sakit Condong Catur Menggunakan Framework COBIT 4.1 dan Balanced Scorecard. Sensitek.	The study uses the Yogyakarta Condong Catur Hospital as an object of research that aims to determine the level of implementation of its Information System Management and design recommendations for improving the governance of it. [5]

### 3. RESEARCH PROCESS

This Research is an analysis of the performance of information systems conducted in the Field of Communication Information Technology Development (ICT) of the Ministry of Tourism using COBIT 4.1 framework and IT Balanced Scorecard as a framework for improvement recommendations. The approach taken in this research is to use quantitative and descriptive approaches. Quantitative approach that is describing an event and phenomenon that occurs factually, systematically, and accurately. Quantitative research emphasizes the objective measurement of the object under research. This research uses a questionnaire that is used to obtain data related to system performance created based on the COBIT 4.1 framework. Data generated from questionnaires distributed to respondents were processed so as to obtain a level of maturity in the information system in the ICT Department. This research uses gap analysis, which is a comparison of current performance (as-is) and expected performance (to-be).

A description approach is used to describe the results obtained from a quantitative approach, which is the level of maturity of the COBIT process domain in the ICT Department of the Ministry of Tourism, which consists of the level of current performance (as-is) and expected performance (to-be). The description approach is also used to explain the improvement recommendations made based on the gap analysis produced based on the level of COBIT 4.1 process domain maturity. The improvement recommendations are grouped based on four IT Balanced Scorecard perspectives using the Critical Success Factor (CSF) and Key Performance Indicator (KPI).

#### 3.1 Research object

The object of the analysis of information system performance research using COBIT 4.1 and the IT Balanced Scorecard is the Ministry of Tourism's ICT Department with the organizational structure shown in Figure 1.

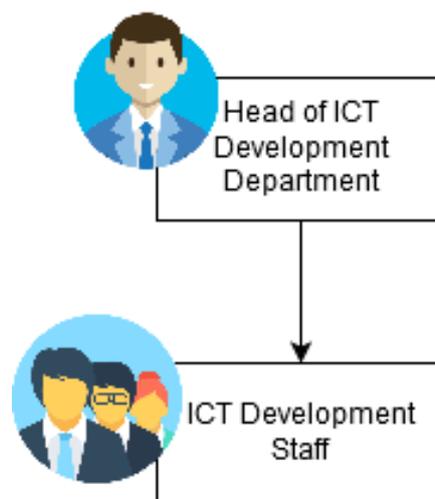


Figure. 1 Organizational structure for ICT department [6]

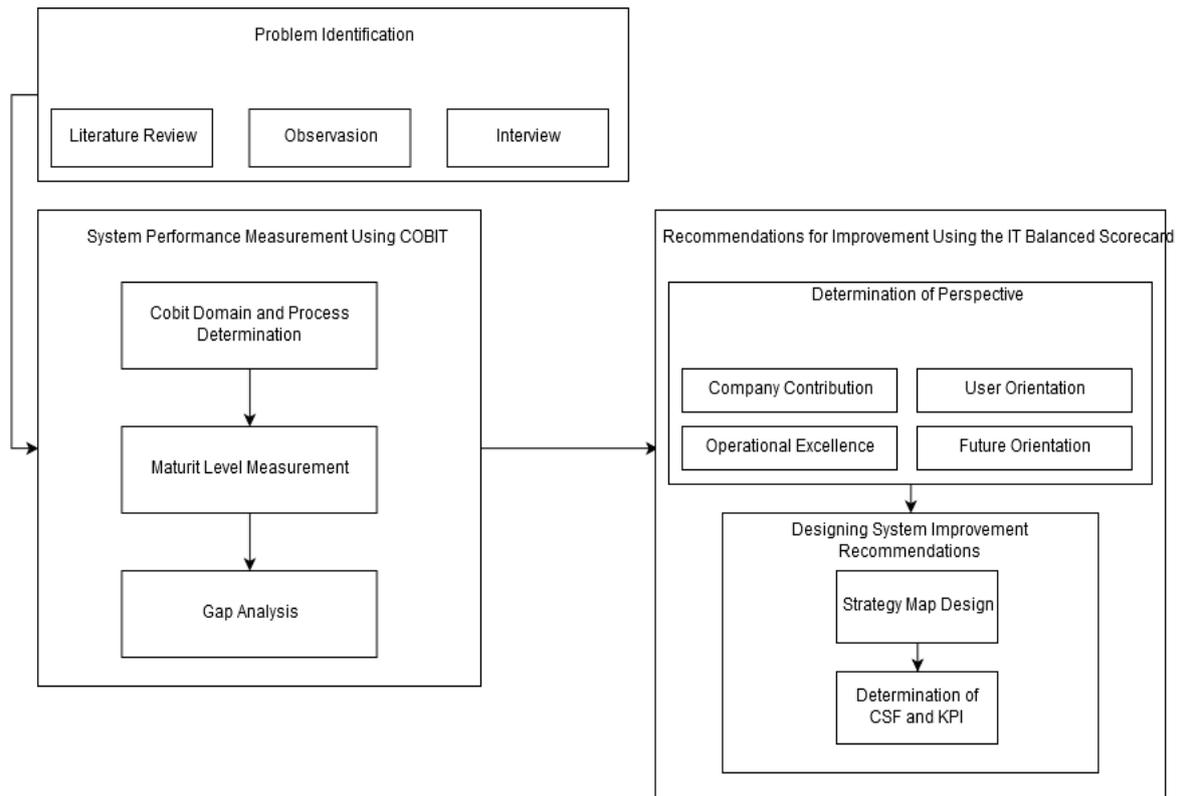
The Field of Communication Information Technology Development (ICT) is a field which is under the Field of Industry and Tourism Regulation with the following tasks:

1. Preparation of formulation material and policy implementation.

2. Coordination and synchronization of policy implementation.
3. Formulation of norms, standards, procedures and criteria.
4. Implementation of technical guidance in the field of application system development, infrastructure, networks, Electronic Procurement Services (LPSE), geospatial information systems, communication information technology devices.
5. Implementation of monitoring and reporting activities.

### 3.2 Research Stages

Information System Performance Analysis Research in the Field of ICT Department in the Ministry of Tourism using the COBIT 4.1 framework and IT Balanced Scorecard. The research steps to be carried out are shown in Figure 2.



**Figure. 2** Research methodology

#### 3.2.1 Identification of problem

The first stage carried out in this study is the identification of problems that exist in the Ministry of Tourism ICT Department. There are three things done at this stage, namely the study of literature, observation, and interviews.

##### a. Literature review

Literature review is a method for finding theoretical references relevant to the problem under study based on books, journals, and related articles.

##### b. Observation

Observation is a method of collecting data by observing and observing directly at the research location. Observations made in this study aim to obtain data and information related to the implementation of information systems in the Ministry of Tourism ICT Department.

##### c. Interview

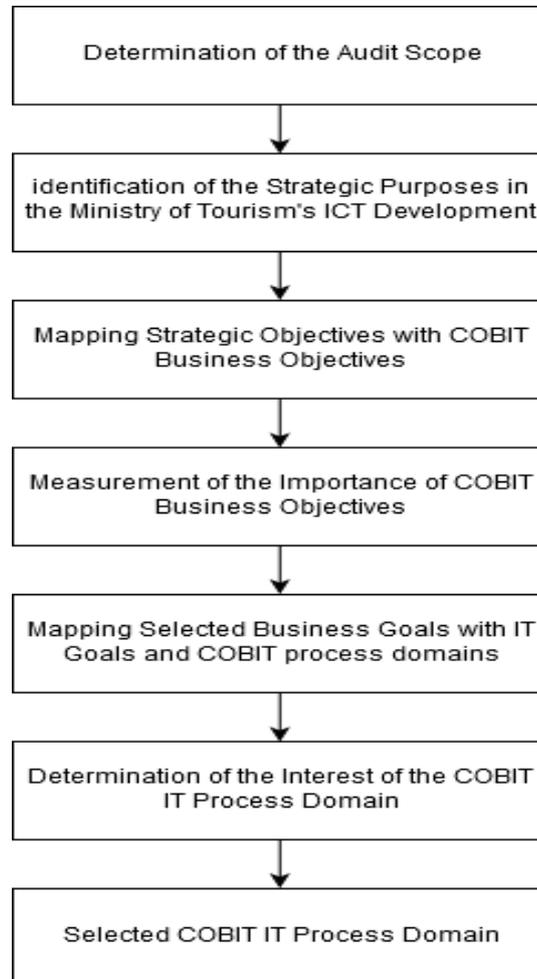
Interview was conducted with the Head of the ICT Department Division of the Ministry of Tourism which aims to obtain information related to the implementation and constraints on the Ministry of Tourism's ICT Department.

### 3.2.2 Measurement of system performance using COBIT 4.1

Analysis of information system performance in the ICT Department of the Ministry of Tourism using the COBIT 4.1 framework with stages of determining the COBIT process domain, calculating the maturity level, and gap analysis.

#### a. Determination of COBIT process domain 4.1

The first stage carried out to measure system performance using COBIT 4.1 is the determination of the COBIT domain and process to be used in the research shown in Figure 3.



**Figure. 3** Domain determination and COBIT process stage

**Determination of the COBIT IT Process Domain** The determination of the COBIT domain and process begins with determining the scope to be analysed. The next step is identifying the strategic objectives of the Ministry of Tourism's ICT Department which will be mapped with the Business Objectives in the COBIT 4.1 framework. COBIT Business Objectives that have been mapped will be measured in importance using a questionnaire aimed at determining the chosen business goals. The selected business objectives will be mapped with the IT objectives and COBIT 4.1 framework process domains. The process domain that is obtained based on the COBIT IT objectives will be measured using a questionnaire so that the COBIT IT process domain is obtained which is used to analyse the performance of the information system in the Ministry of Tourism ICT Department.

#### b. Measurement of maturity level

The measurement of the COBIT 4.1 process domain was chosen using a questionnaire distributed to parties related to the Ministry of Tourism's ICT Department system. The results of the questionnaire distributed were analysed for the maturity level. COBIT has a maturity model to control the IT process using an assessment method with a scale of 0 to 5. The level of maturity describes the condition of the information system in the Ministry of Tourism ICT Department current performance (as-is) and the expected performance (to-be) which are the basis of system improvement recommendations. Maturity level is built from the generic qualitative model with the following attributes:

1. awareness and communication
2. polices, standard, and procedures
3. tools and automation
4. skills and expertise
5. responsibility and accountability
6. goal setting and measurement

The level of maturity of each attribute can be calculated using a formula:

$$\text{Attribute Maturity Level} = \frac{(\text{total answer} \times \text{weight})}{\text{total responden}}$$

After obtaining the attribute maturity level from the respondent, then the process maturity level is calculated using the formula:

$$\text{Process Maturity Level} = \frac{\text{attribute maturity value}}{6}$$

The maturity level of the COBIT process consists of a scale of 0 to 5 which is described in Table 2.

**Table. 2** Process maturity level

<b>Maturity Level</b>	<b>Explanation</b>
0-Non-existent	The organization does not implement procedures to regulate IT processes
1-Initial/ Ad hoc	There is no standard process but it is done as needed
2-Repeatable but Intuitive	The procedure is carried out continuously but there are no formal rules
3-Defined	The procedure has been standardized and documented
4-Managed	Procedures have been carried out, documented, managed and measured
5-Optimised	IT procedures run well and are improved to meet relevant business objectives and future goals

### c. Gap analysis

Gap analysis to determine the gap of current (as-is) and expected (to-be) conditions in the measurement of maturity level which is used as a reference for improvement recommendations in the Ministry of Tourism's ICT Department which are grouped into four IT Balanced Scorecard perspectives.

#### 3.2.3 Recommendations for improvements using IT balanced scorecard

At this stage the design of recommendations for improvement will be carried out based on the results of the gap analysis conducted. The largest gap value in the gap analysis will be the focus of improvements made. Improvement recommendations are mapped according to the IT Balanced Scorecard perspective following the scope of the Ministry of Tourism's Strategic Plan. Strategy map drawn up with cause-effect relationships to find out the cause-and-effect relationships of each recommendation made. Suggested improvements are made using the Critical Success Factor (CSF) and Key Performance Indicator (KPI) in each perspective.

## 4. Results and discussions

### 4.1. Mapping the ministry of tourism's strategic objectives with COBIT business objectives

The first step is mapping the strategic goals and objectives of the Ministry of Tourism with the business goals of COBIT. The goals and strategic objectives of the Ministry of Tourism can be seen in Table 3.

**Table. 3** Ministry of tourism's strategic objectives and targets [7]

<b>Objective</b>	<b>Target of the Ministry</b>
Improve the quality and quantity of tourism destinations	Increasing the quality of tourism destinations
Realizing the tourism industry that is able to drive the national economy	Increased investment in the tourism sector
	Increased contribution of tourism to national employment
Maximizing the productivity of tourism marketing performance by using integrated marketing strategies in an effective, efficient, and responsible manner that is intensive, innovative, and interactive	Increased tourism's contribution to the National Gross Domestic Product (GDP)
	Increasing the number of foreign tourist arrivals
	Increasing the amount of foreign exchange earnings

Objective	Target of the Ministry
	Increasing the number of domestic tourist trips
	Increasing the number of tourists spending on the archipelago
Realizing tourism institutions that are able to synergize the development of tourism destinations, tourism marketing, and the tourism industry in a professional, effective, and efficient manner, and achieve maximum productivity	Increased capacity and professionalism of Tourism Human Resource
	Implementation / realization of the implementation of bureaucratic reform in the Ministry of Tourism Environment
	Increasing the quality of organizational performance of the Ministry of Tourism

COBIT 4.1 business perspectives and objectives that are aligned with the Ministry of Tourism's strategic goals and objectives are shown in Table 4. Perspectives used in the analysis of information system in the Ministry of Tourism's ICT Department are company, customer, learning and growth contributions.

**Table. 4** Business objectives with selected perspectives [8]

Perspective	No	Business Objectives
Company Contribution	1.	Providing good returns on investment from businesses generated by information systems
	2.	Management of business risks associated with information systems
	3.	Increased transparency and corporate governance
Customer	4.	Improved service and orientation to Customer
	5.	Offering competitive products and services
	6.	Determination of service availability and smoothness
	7.	Creation of agility to answer business requests
	8.	Achieving cost optimization from service delivery
	9.	Acquiring useful and reliable information to make strategic decisions
Learning and Growth	16.	Management of product and business innovations
	17.	The acquisition and maintenance of competent and motivated employees

Business perspectives and objectives that are aligned with the goals and strategic objectives of the Ministry of Tourism, then do mapping on each of the goals of the Ministry of Tourism. Mapping is done by adjusting or harmonizing each of the strategic goals and objectives of the Ministry of Tourism with the perspective and business objectives in the COBIT 4.1 framework which can be seen in Table 5.

**Table. 5** Mapping the strategic goals and targets of the ministry of tourism with COBIT 4.1 business objectives

Perspective	Ministry of Tourism Goal	Strategic Targets of the Ministry of Tourism	COBIT Business Objectives 4.1
Customer	Improve the quality and quantity of tourism destinations	Increasing the quality of tourism destinations	1. Improved service and customer orientation 2. Offering competitive products and services 3. Determination of service availability and smoothness 4. The creation of agility to answer business requests 5. Achieving cost optimization from service delivery 6. Acquiring useful and reliable information to make strategic decisions
Company Contribution	Realizing the tourism industry that is able to drive the national economy	Increased investment in the tourism sector	1. Provision of good return on investment from businesses that are
		Increased contribution of tourism to national employment	

Perspective	Ministry of Tourism Goal	Strategic Targets of the Ministry of Tourism	COBIT Business Objectives 4.1
	Maximizing the productivity of tourism marketing performance by using integrated marketing strategies in an effective, efficient, and responsible manner that is intensive, innovative, and interactive	Increased tourism's contribution to the National Gross Domestic Product (GDP)	1. generated by information systems 2. Management of business risks associated with information systems 3. Increased transparency and corporate governance
		Increasing the number of tourist arrivals	
		Increasing the amount of foreign exchange earnings	
		Increasing the number of domestic tourist trips	
		Increasing the number of tourists spending on the archipelago	
Learning and Growth	Realizing tourism institutions that are able to synergize the development of tourism destinations, tourism marketing, and the tourism industry in a professional, effective, and efficient manner, and achieve maximum productivity	Increased capacity and professionalism of Tourism Human Resource	1. Management of product and business innovations 2. The acquisition and maintenance of competent and motivated employees
		Implementation / realization of the implementation of bureaucratic reform in the Ministry of Tourism Environment	
		Increasing the quality of organizational performance of the Ministry of Tourism	

**4.1.1 Measurement of the importance of COBIT business objectives**

COBIT 4.1 business objectives that have been mapped and aligned with the Strategic Objectives and Targets of the Ministry of tourism will then be measured in importance to determine the COBIT business destination which is considered the most important business destination for testing. The level of importance used is the level of primary and secondary importance. COBIT 4.1 Business Objectives with the results of the primary importance used at the COBIT 4.1 process domain selection stage. The level of importance is obtained based on an online questionnaire distributed to the Head of ICT Department as research respondents. The selected business objectives according to their importance are shown in Table 6.

**Table. 6** COBIT 4.1 business objectives selected

Perspective	Business Objectives
Company Contribution	Management of business risks associated with information systems
Customer	Increased transparency and corporate governance
Learning and Growth	Acquiring useful and reliable information to make strategic decisions
	Management of product and business innovations
	The acquisition and maintenance of competent and motivated employees

**4.2. Determination the COBIT process domain**

**4.2.1 Mapping COBIT selected business goals and COBIT IT goals**

The COBIT business objectives chosen in the previous stage will be mapped with IT objectives in the COBIT framework 4.1. The goals of COBIT 4.1 are 28 goals listed in the appendix mapped according to COBIT's rules, shown in Table 7.

**Table. 7** The objectives of COBIT IT 4.1

Perspective	Business Objectives	IT objectives									
		2	14	17	18	19	20	21	22		
Company Contribution	Management of business risks associated with information systems										
	Increased transparency and corporate governance										
Customer	Acquiring useful and reliable information to make strategic decisions										
Learning and Growth	Management of product and business innovations										
	The acquisition and maintenance of competent and motivated employees										

### 4.2.2 Mapping Selected COBIT IT Goals with COBIT Process Domain

The selected COBIT 4.1 IT objectives are mapped to the process domain used to measure the level of maturity in the ICT Department Field. The process domains obtained based on mapping IT objectives and the COBIT process domain are shown in Table 8.

**Table. 8** COBIT process domain 4.1 selected

PO	PO1, PO2, PO4, PO5, PO6, PO7, PO8, PO9, PO10
AI	AI3, AI5, AI6, AI7
DS	DS1, DS2, DS4, DS5, DS9, DS10, DS11, DS12, DS13
ME	ME1, ME2, ME4

### 4.2.3 Determination of the Selected COBIT Process Domain

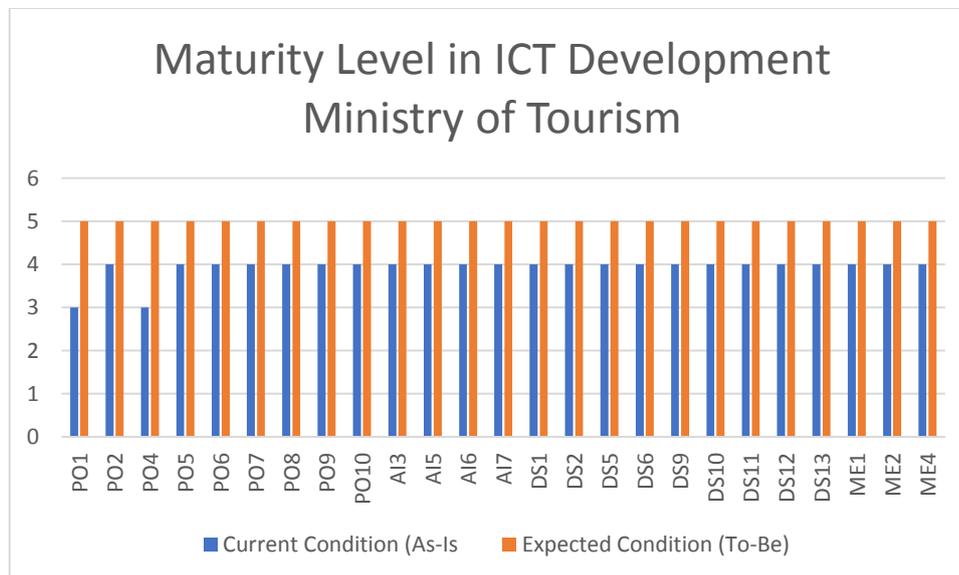
The process domain used to measure the level of importance of information systems in the ICT Department Field is the domain of the process with the highest level of importance. The level of importance of the process domain is obtained by using a questionnaire with respondents namely the Head of ICT Department. The COBIT 4.1 process domain selected with the highest level of importance (very important) is used to measure the level of information system maturity in the ICT Department Field shown in Table 9.

**Table. 9** COBIT 4.1 process domain selected

PO	PO1, PO2, PO4, PO5, PO6, PO7, PO8, PO9, PO10
AI	AI3, AI5, AI6, AI7
DS	DS1, DS2, DS5, DS9, DS10, DS11, DS12, DS13
ME	ME1, ME2, ME4

### 4.3. Maturity level analysis and gap analysis

Aligning strategic goals and objectives contained in the Ministry of Tourism's Strategic Plan Document with business and IT objectives in the COBIT 4.1 framework has been carried out with the results shown in the graph in Figure 4.



**Figure. 4** Maturity level in ICT department

Gap analysis is carried out at the current (as-is) and expected (to-be) levels of maturity. Gap to identify improvement recommendations. Based on Figure 5, the COBIT process domain that has the biggest gap is PO1 and PO4. PO1 domain discusses defining the Strategic Plan of the Ministry of Tourism by the ICT Department there are five (5) attributes of maturity that have the biggest difference. This shows that there are some things that are not optimal related to the definition of the Ministry of Tourism's Strategic Plan including awareness and communication between employees; policies, standards and procedures applied; tools and automation devices used; employee skills and expertise; employee responsibilities and authorities. PO4 Process Domain discusses the definition of information systems processes, organization, and connectedness of information systems processes there are two attributes of maturity that have the biggest difference which is what needs to be improved to get

more optimal performance. This relates to the use of assistive and automation tools used and the determination of objectives and measurements when defining the information system process, organization, and connectedness of the information system process managed by the Ministry of Tourism ICT Department.

#### 4.4. Recommendation for improvement using IT balanced scorecard

Based on the largest gap in the process domain attributes that have been described, improvement recommendations are made for the PO1 and PO4 Process Domains grouped based on four IT Balanced Scorecard perspectives using Key Performance Indicators (KPI) and Critical Success Factors (CSF) as well as a strategy map to determine the causal relationship in each improvement recommendation.

##### 4.4.1 Strategy Map

Improvement recommendations are based on the IT Balanced Scorecard perspective whose scope has been previously defined, namely Customers, Company Contributions, and Future Learning. The IT Balanced Scorecard perspective is then adjusted to the Process Domain which forms the basis for making recommendations for improvement. Based on the PO1 and PO4 process domain attributes described earlier, the perspective used for recommendations for improvement is the perspective of change and customer contributions. Recommendations for improvement are prepared using the Critical Success Factor (CSF) and Key Performance Indicator (KPI). CSF shows the steps that need to be taken while the KPI shows the key used to find out the steps in CSF have produced the expected results.

**Table. 10** Recommendation for improvement

Process Domain	Perspective	Recommendation for Improvement	
		CSF	KPI
PO1	Company Contribution	Establish a measurement standard for information systems so that the information systems applied do not overlap with information systems that have been applied first so that they can support the achievement of strategic plans from the Ministry of Tourism	Increasing the effectiveness of defining the Ministry of Tourism's strategic plan
		increase the use of tools and automations that support the field of ICT developers to define the Ministry of Tourism's strategic plan	
		Rearrange IT strategic planning with a structured approach and make documentation that is socialized to all Human Resource involved in the IT field	Policies and standards that apply when defining the Ministry of Tourism's strategic plan
		set IT direction and objectives to align with business goals	
	Establish IT plans and strategies to align with office objectives	Development of the ICT Department in the process of defining the Ministry of Tourism's Strategic Plan	
	Analyze the possible impact of the risks that will occur so that it can prepare the solutions needed		
	make achievement steps from IT strategic planning so that it can be seen the extent to which the achievements have been made		
Learning and Growth	Learning and Growth	carry out socialization and training to employees in accordance with the work they carry	Development of employee capabilities when defining the Ministry of Tourism's strategic plan
		Define the responsibilities of each employee in defining the Ministry of Tourism strategic plan	Development of the quality of work of employees in accordance with the responsibilities given
PO4	Company Contribution	make documentation with standard standards related to information system functions and be socialized to all Human Resource involved	Development of employee understanding of the definition of information systems processes and the
		utilize the use of tools to support the definition of information systems processes and the	

Process Domain	Perspective	Recommendation for Improvement	
		CSF	KPI
		connectedness of information systems processes that are managed by the ICT Department and disseminate to all employees involved	connectedness of information systems processes
		establish a measurement standard for information systems so that the information system that is applied does not overlap with the information system that has been applied in advance so that it can support the achievement of a strategic plan from the Ministry of Tourism	Information system measurement standards managed by ICT Department

The strategy map illustrating the causal relationship in each perspective of improvement recommendations is shown in Figure 6.

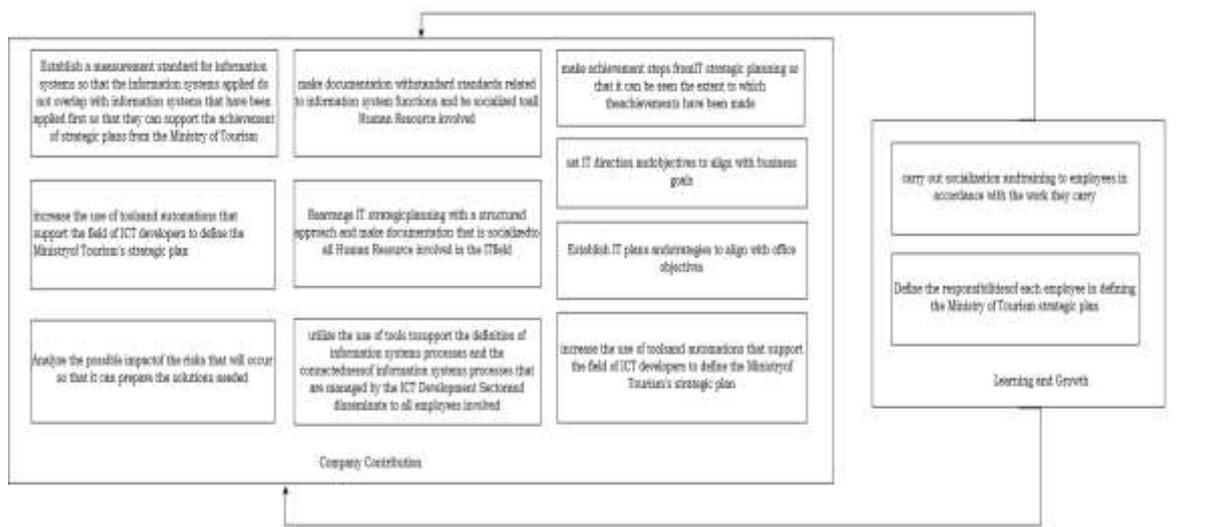


Figure 5. Relationship to cause and effect of recommendations

5. CONCLUSION

Based on the explanation, it can be concluded that alignment of strategic goals and objectives contained in the Ministry of Tourism's Strategic Plan Document with business and IT objectives in the COBIT 4.1 framework has been carried out. Based on the results of the analysis that has been done Information System performance at the Ministry of Tourism is at level 4 which means that the Procedure has been carried out, documented, managed and measured. Recommendations for improvement are made based on the highest difference in the level of maturity of the present (as-is) and expected (to-be) conditions. Based on calculations, the results of recommendations for improvement for the PO1 and PO4 Process Domains that have the biggest gap are 2. Improvement recommendations related to the perspective of the Ministry of Tourism's contribution to the performance of the Information System managed by the IT Development and Learning Sector and the growth of the IT Development Sector to manage the information system implemented by the Ministry of Tourism in an effort to achieve the Ministry of Tourism's Strategic Goals and Targets as stated in the Ministry of Tourism's Strategic Planning Document.

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