Information Technology Analysis Using COBIT 5 Domain DSS in Sub. Bagian Infrastruktur Pertanahan ATR/BPN Kota Bengkulu

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Abstract— ATR/BPN Kota Bengkulu uses information technology to manage land records, draw plots of land, and to document activities carried out in each area for reporting. In the use of IT, it has not implemented Best Practice and has never been evaluated so that it does not yet know the level of maturity. The purpose of this study is to provide recommendations to the ATR/BPN Kota Bengkulu to report to the center. The framework used in IT analysis is COBIT 5 with a focus on Domain DSS (Delivery, Service and Support). The result of this research is to map the strategic plan of ATR/BPN Kota Bengkulu with IT-Related Goals COBIT 5 with BSC (Balanced Score Card) dimension which gets the domains DSS01, DSS02, DSS03, DSS04, DSS05, and DSS06. And the results of each DSS domain used are DSS01 Manage Operations with a value of 3.75, DSS02 Manage Service Requests and Incidents with a value of 3.63, DSS03 Manage Problems with a value of 3.5, DSS04 Manage Continuity with a value of 3.70, DSS05 Manage Security Services with a value of 3.64 and DSS06 Manage Business Process Control with a value of 3.92. With these results the DSS domain gets a value >3. So that the rounding is done including into Level 4 Predictable Process and recommendations are given to achieve the next criteria, namely Level 5 Optimizing Process.

Keywords— Information Technology, Analysis, COBIT 5, DSS

I. INTRODUCTION

With the regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency (ATR/BPN) regarding Electronic Certificates, previously making land certificates consisting of Land Books and Measurement Letters still in analog form will be replaced with Electronic Certificates (Peraturan Menteri Agraria Nomor 1, 2021). To obtain this Electronic Certificate, of course, the requirements are needed. With this regulation, it is hoped that in the future public land services will be more controlled and faster in data collection on land parcels. It also supports the government towards a better Indonesia or Go-Green (Badan Pertanahan Nasional, 2020).

BPN in each region that issues evidence of ownership of a plot of land owned by the community, namely the Land Book and Measurement Letter. With the Land Book and Measurement Letter, the government issues the legality of ownership of the plot of land which is signed and stamped by the Head of the respective regional ATR/BPN Offices [26]. The Bengkulu City Land Office is a work unit in the Bengkulu City area that is responsible for community service activities in the land sector, especially in Bengkulu City. The services provided are in the form of making land certificates for the first time, maintaining land data, mediating land cases and land acquisition (Peraturan Pemerintah No. 24, 1997).

With the regulation of the Minister of Agrarian Affairs and Spatial Planning above, it will later be faced with changes in Information Technology in making Land

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Certificates, the system used will also change and further system development is needed. Not only that, ATR/BPN Kota Bengkulu in its vision and mission also wants to realize modern IT and office services, but has not implemented Best Practice in its IT so that there is no alignment between IT strategy and business strategy. ATR/BPN Kota Bengkulu has never evaluated its IT because it is centralized so that the level of maturity is not known or other problems such as infrastructure development, system mismatches to users which can cause company business processes to be hampered, system development maintenance, and even others [6]. Efforts made by ATR/BPN Kota Bengkulu to reduce this problem such as providing training every 6 months so that it is hoped that this problem will not always continue. Information technology used in ATR/BPN Kota Bengkulu includes servers, computers/laptops, E-Office applications, Computerized Defense Activities Applications (KKP), and Geo-KKP (BPN Kota Bengkulu, 2019).

Based on the existing and observed factors, the analysis method was chosen using COBIT 5 with a focus on the DSS domain. COBIT 5 was chosen because the COBIT 5 framework is the most recent, COBIT 5 also provides guidance on the goals that must be achieved by an organization in providing IT services, and the COBIT 5 assessment model has research criteria that are more accurate, consistent, and objective [13] [15]. Therefore they state that the research model based on ISO 15504 is superior, which is better known as the Capability Level Model in COBIT 5. The choice of DSS domain is due to the IT conditions in Sub. The Land Infrastructure Division, which has been planned (plan), has been built, and is currently being run [13] [15]. The research objective to be achieved is Knowing the condition of Information Technology in Sub. Land Infrastructure Section of ATR/BPN Kota Bengkulu based on the COBIT DSS domain 5. Assessing the level of process capability and providing recommendations based on analysis findings in the COBIT 5 DSS domain as the basis for improvement and development of information technology in Sub. Land Infrastructure Division of ATR/BPN Kota Bengkulu.

II. METHOD

In this study using descriptive research methods. Descriptive method is a research method that examines a group, object, or thought in the present and makes a systematic description, factual and accurate data and the relationship between the phenomena studied. The following is a research flowchart:

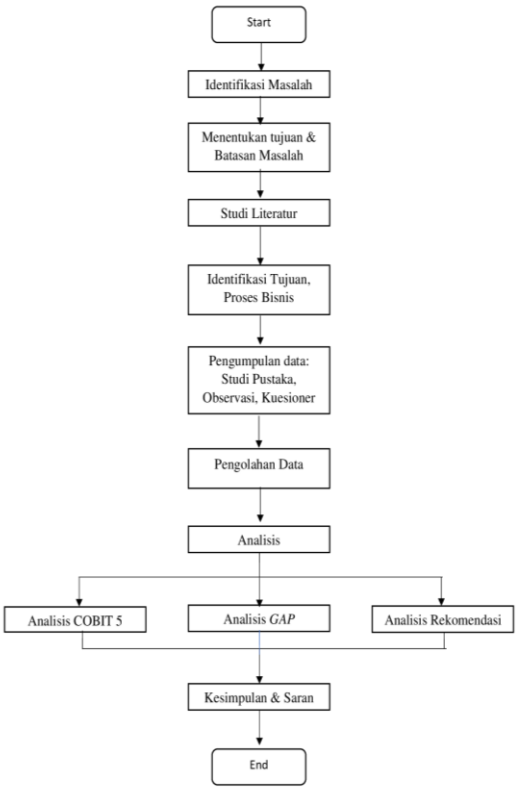

Figure 1. *Flowchart* penelitain

The population in this study were employees in the Land Infrastructure section of ATR/BPN Kota Bengkulu, totaling 9 employees. The sample in this study will use a questionnaire in order to obtain appropriate data and actual facts. This research was conducted from June to September 2021 at ATR/BPN Kota Bengkulu. The research instrument used was a questionnaire, the

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questionnaire was taken based on the COBIT 5 manual which would be given to 9 employees in the Sub. Land Infrastructure Division of ATR/BPN Kota Bengkulu. The questionnaire will later be processed into data with the highest value chosen by respondents with a scale of Level 0 to 5. Next, a COBIT 5 analysis will be carried out to determine the level obtained after distributing the questionnaire, and a Gap analysis will be carried out to determine the current level gap and Target level. After that, an analysis of the recommendation results for improving information technology will be carried out based on the Gap analysis obtained.

III. RESULTS AND DISCUSSION

A. RESULT

Mapping of Enterprise Goals based on the strategic goals of ATR/BPN Bengkulu City is EG1 to EG17. Mapping IT-Related with Corporate Goals yields IT-Related 1-17. Process Control Mapping with IT-Related obtained COBIT 5 mapping with Process Control to DSS01-DSS06 which means all DSS domains are the scope of the analysis process. After analyzing the results of the questionnaire, the validity test, reliability test, and normality test were also carried out. The validity test was carried out on the results of the questionnaire to see whether the questions were valid or not. Reliability test was conducted to see whether the questions given to the respondents could be understood or not. While the Normality Test is used to see the filling curve of the respondent's answer, whether it is appropriate or not (providing answers with all the same values). As well as the results of observations made in Sub. Bagian Infrastruktur Pertanahan ATR/BPN Kota Bengkulu, values were obtained for each activity domain from DSS01 to DSS06. The following is the result of the recapitulation of the COBIT 5 process values for the DSS01 to DSS06 domains.

Tabel 3.1. COBIT 5 Domain DSS01 DSS06 Recapitulation

Process Name	Capability Level
DSS01 - *Manage operations*	4
DSS02 - *Manage Service Request and Incidents*	4
DSS03 - *Manage problems*	4
DSS04 - *Manage continuity*	4
DSS05 - *Manage security services*	4
DSS06 - *Manage Business Process Controls*	4

After obtaining the Capability Level value for COBIT 5 Domains DSS01 to DSS06, evidence is collected again to support the current Capability Level obtained. Current condition obtained is described in Table 3.2.

Tabel 3.2. Level Existing

No.	Level Existing DSS01
1	In operation, it has used a picket system and documents that have been designated for regions in Bengkulu City
2	Activity recording is carried out using the Computerized Land Activities Application (KKP)
3	If there are problems related to Information Technology, it has been centralized, and the system will be repaired immediately
4	Monitoring documents in the form of recapitulation of the number of Land Books per region, Measurement Letters, and IT Assets
5	In the KKP application, there is a history of changes related to land data
6	In the KKP application there is a history of changes related to land data
7	For user rules, it has been regulated in Government Regulation no. 24 of 1997 concerning the application of KKP and Geo-KKP
8	The use of a computer or laptop is still for personal use, but if there is damage, you can report it to get a guarantee
9	If there is a defect in the use of Information Technology, the central party will come to check in order to expedite the reporting process to the center
10	In using the KKP application, it must require users to login, and the room has air conditioning to maintain server

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No.	Level Existing DSS01
	conditions

No.	Level Existing DSS02
1	In the service, the applicant previously reported to the waiter, who, if he had been invited to appear before the Section Head for the classification of problems that had been scheduled.
2	Record service requests the problem will be recorded in the KKP application, and will use the Land Book and Measurement Letter

No.	Level Existing DSS03
1	In managing the problem, the complainant is required to register at the service section, which will later be notified personally regarding the problem
2	Classification problems, and included in a report in the form of a book according to the problem area
3	The cause of the problem or change will be printed at the end of the land book
4	Troubleshooting will use the KKP application in updating data
5	When communicating with the reporter, the sub. The Ip department was asked to meet with the complainant regarding the land issue.

No.	Level Existing DSS04
1	The business process has been stipulated in Government Regulation no. 25 Year 2004
2	Disturbances that often occur in the form of a disconnected connection to the center that can't upload data
3	Capability (maturity) assessment has never been done before
4	If there is a problem with Information Technology and there is no connection to the center, it will be repaired manually by the network section
5	In expediting business processes, Sub. The IP department is very dependent on the community to solve the related problems
6	Problem response must be in accordance with the procedure to go to the relevant department
7	The goal has been carried out with PTSL (Complete Systematic Land Registration) which has been scheduled annually
8	Recording, recommendations and reviews are carried out using the KKP application and meetings related to PTSL, problems, and registration are carried out 2-3 times a week
9	In supporting IT needs, it must be accompanied by an official purchase memorandum
10	Training is conducted 2 times a year for KKP and Geo-KKP application users
11	Data backup is centralized but there are other servers

No.	Level Existing DSS05
1	The use of a computer or laptop already uses an antivirus and a firewall to maintain the security of data transfers
2	Check the data on the server every 6 months
3	There is no penetration test on Sub yet. Previous IP section
4	To use the KKP application, users are required to log in first, which is regulated and limited by input behavior
5	The account can be accessed if the user has agreed
6	Inventory of goods is recorded on the blackboard
7	Security recording and data backup is done when inputting the system

No.	Level Existing DSS06
1	The results of the business process are reprinted on the back of the land book
2	The problem documents or copies are in the archives section and the Land Infrastructure section
3	The list of role allocations has been given to each coverage area
4	If there is data that does not match it will be re-checked using the KKP application

After knowing the current condition (Existing), a Gap Analysis will be carried out. Gap analysis is done by finding the difference between Existing Level and Target Level. The target level here is obtained, namely Level 5 due to Existing DSS01 to DSS06 conditions already getting Level 4, so it requires a target to Level 5.

B. DISCUSSION

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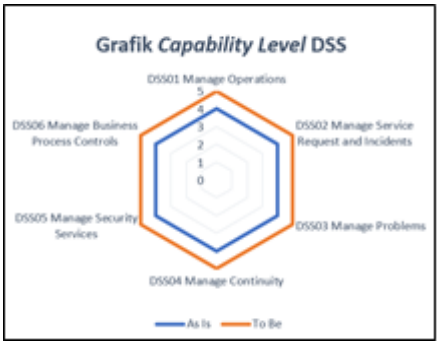

Figure 2. Gap Analysis DSS01-DSS06

After conducting the Gap Analysis, to achieve the target level, namely Level 5, the thing that must be done is to make innovations and information technology development strategies to help accelerate business processes. The following are recommendations that can be made based on the findings of evidence and the targets to be achieved:

Tabel 3.2. Recommendation

No.	Recommendation DSS01
1	In the operational schedule document, there should be officers who provide daily assignments and scheduled pickets so that uploader work is limited to a day and can be a maximum of annually.
2	In order to maintain a centralized information technology, guidelines should be given on how to use information technology in order to maintain data, be it servers or documents.
3	To monitor surveillance, you should install CCTV in the corner of the room
No.	**Recommendation DSS02**
1	Install reporting guidelines related to land disputes if you have registered at the service section
2	Making attendance manuals or the like to find out if there are reporters who want to meet with the Head of Section is easier, because you know if the Head of Section is there or not
3	In the recording, it is better to make a new document to record the status of the problem or other important things that are vulnerable if lost or better to make a QR Code which can later be scanned by the public so that they know how far the problem has progressed.
No.	**Recommendation DSS03**
1	Make system monitoring or additional officers specifically for notification of which level of problem status reports have been reported
2	create a document, or a system specifically for the reporting problem or better make a QR Code which can later be scanned by the public so that they know how far the problem has progressed
No.	**Recommendation DSS04**
1	Every daily data record, backup data to prevent network disruption or connection to the center
2	Meetings for Information Technology and other activities are held regularly or consistently so that the Strategic Plan of ATR/BPN is achieved in the next 5 years
3	Training should be carried out more often, because the use of the KKP application changes depending on the data format from the center and to add insight to application users
No.	**Recommendation DSS05**
1	Perform Penetration Test on the network gradually
2	Encryption to keep data safe during transmission and add a paid internet antivirus to prevent data from being stolen when sent to the center
3	Create an account level so that not many people can access
No.	**Recommendation DSS06**
1	Archiving should be done online or locally, not using a copy of the land book and certificate of measurement
2	Monitor Information Technology assets or not, and evaluate them

IV. CONCLUSION

Based on the analysis that has been done in Sub. The Land Infrastructure Section of ATR/BPN Kota Bengkulu uses COBIT 5 focused on Domains (Deliver, Service and Support), the conclusion obtained is that at the pre-audit stage, process mapping has been carried out from Mapping Enterprise Goals, Mapping IT-Related Goals with Enterprise Goals, Mapping Process Control With IT-Related Goals, the DSS domain scope is obtained, namely DSS01, DSS02, DSS03, DSS04, DSS05 and DSS06. From the results of the analysis, the Capability Level results are obtained where from all the selected DSS scopes, both DSS01 to DSS06, get a Level 4. Target Level is obtained from

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the Existing condition or the current Level previously obtained Level 4 and in COBIT 5 the highest level is 5, so that the target level to reach the maximum is level 5. Gap analysis is determined by the condition of the current level with the target level, where the current level is 4 and the target level is 5 so that the result of the gap analysis is 1. The target level is 5 Optimizing Process so that. The recommendations compiled for the whole are in order to maintain a centralized information technology, it is better to provide guidelines on how to use information technology located in the Sub. Land Infrastructure Division of ATR/BPN Kota Bengkulu. Making documents or information systems that are specialized for recording problems so that the reporter does not have to bring the Land Book, Measurement Letter, or other important things related to the problem. Making a special attendance information system for employees that is useful for reporters if they want to meet employees regarding problems. The existence of conducting Penetration Tests so as to avoid digital attacks. Tightening supervision of ongoing processes so as to maintain ongoing processes. Making innovations, both in terms of information technology or services, so that business processes run well.

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