

Audit of Zahir Application at PT Infonet Mitra Sejati Using Cobit 4.1 Framework

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ABSTRACT

In managing inventory, many companies have used inventory applications. One of them is PT Infonet Mitra Sejati or better known as Infonet. Infonet is a retail company of IT goods and use Zahir application to manage its inventory. To find out the maturity level of Zahir application at Infonet, it is necessary to audit using COBIT 4.1 framework on Delivery and Support domain. In this audit, data collection is done by interview method. Interviews were conducted with the management and head of warehouse of Infonet. From this audit, it is known that the maturity level of Zahir application in Infonet is 3.4 on DS3, 2.8 on DS5 domain, 3 on DS7 domain, 3.33 on DS9 domain, 2.5 on DS10 domain, 3.33 on DS11 domain, and 3.4 on the DS13 domain. This shows that there has been standardization of the use of Zahir applications by Infonet, but there has been no monitoring and measurement of compliance with the established standards of use. Although the use has been in accordance with the needs of the company, process development can still be done to optimize the use of Zahir application in Infonet.

Keywords

Audit, COBIT 4.1, Maturity Level

1. INTRODUCTION

Along with the development of the modern era and the progress of the globalization era, people are encouraged to adapt to their environment in order to maintain their survival. The same goes for companies who still want to increase the profits from their business. An information system then used to help the business advance. It will be very helpful when there is implementation of information systems in the company, however, company need to be aware that information system should be checked again to know how far the system have fulfill the needs of the company, then develop a better system in order to obtain optimal results [1].

The information systems are widely used in many aspects, including inventory management. IT provided service provide capabilities for them to meet their citizens or customers' needs [2]. All organizations certainly need to manage their inventory because all organizations must have inventory items. Activities when managing inventory generally consists of inventory data collection as a whole, the expenditure of goods, procurement of goods, the transfer of goods, and so forth. The current data recording system is shifting from a manual to a computerized [3]. Computerized systems are a great way to process data because of its accuracy and its better level of security [4].

One company that uses the system is PT Infonet Mitra Sejati or better known as Infonet. Infonet is a retail company of IT goods and uses Zahir application to manage its inventory. With inventory system used to assist the work within the company, it is necessary for auditors to audit the system used, whether the system is running in accordance with procedures established by the company or there are still problems with the system.

Auditing inventory is one way to evaluate and measure the ability of existing inventory information systems to reduce risk to levels that are acceptable to the company and provide advice to companies to minimize the risks that exist [5].

The framework that can be used to audit the information system is the COBIT 4.1 framework. COBIT 4.1 consists of four domains, namely Planning and Organization, Acquisition and Implementation, Delivery and Support, and Monitoring and Evaluation. The domain we focus on in auditing the Zahir application are Delivery and Support. This domain focus on processes such as the operation of the app along with the results, and the IT support that enables the IT system to operate efficiently and effectively. Managers at all levels in all functions to enable them to make timely and effective decisions for planning, directing and controlling the activities for which they are responsible [6]. The support process is such as solving security and training issues [7].

This research will assist companies in solving and fixing the problems facing the company so that the company can know the reliability and feasibility of the application system to improve work productivity and to improve the security, accuracy, completeness and integrity of data. PT Infonet Mitra Sejati will be called as PT IMS from here. Audit is a process undertaken by collecting and assessing evidence and aiming to provide recommendations on the fairness of the report being examined [8].

2. LITERATURE REVIEW

2.1 Inventory Applications

Inventory application is an application that records the data and associated with assets or goods in an agency. Inventory applications generally have the ability to record procurement, placement of goods, mutation of goods and maintenance of goods [9].

2.2 Zahir

Zahir is accounting software whose purpose is to create financial statements with integrated facilities, and comes with a graphical report analysis, and a useful financial risk analysis to help make decisions by company management. Zahir has a variety of features that are easy to use, so the management can make decisions quickly and precisely [10].

2.3 COBIT 4.1

Control Objective for Information & Related Technology (COBIT) provides good practice across the entire domain and process framework and presents activities in a logical and manageable structure. COBIT's good practices represent the consensus of experts. They are more focused on control and less on execution. These practices will optimize activities that support IT, ensure service delivery and size, and are used when things become wrong [11].

There are 4 main domains in the COBIT 4.1 Framework, namely [12]:

- Planning and Organization (PO)

This domain includes strategies, tactics, and identification of how IT can contribute to achieving business goals. In addition, planning, communication, and management of activities from different perspectives are required to realize the strategic vision. Thus, an organized infrastructure utilizing technology must be in the proper place.

- Acquisition and Implementation (AI):

To realize IT strategy, IT solutions need to be identified and acquired or developed, then implemented and integrated with business processes. In addition, maintenance and changes to existing systems are also covered in this domain ensuring that the system life cycle will continue.

- Delivery and Support (DS)

The focus of this domain is the IT delivery and support aspect. This domain includes processes such as the operation of applications in IT and the results, as well as support that requires that IT systems be operated efficiently and effectively. The support process is like solving security and training issues.

- Monitoring and Evaluation (ME)

The focus of this domain is supervision of control processes within the organization by the management, as well as independent assessments performed by external and internal auditors or assessments derived from other sources. All IT processes need to be monitored and assessed regularly to ensure its quality and compliance with control requirements.

The four main domains have their own processes or sub-domains. In COBIT 4.1, there are 34 total processes from all four domains. These processes also have their own control objective. Control is a practice, procedure, policy, and organizational structure designed to ensure that business objectives will be achieved and unwanted events can be prevented or corrected. COBIT provides the requirements for effective control of any IT process, to be considered by management [9], [12].

2.4 Maturity Level

The maturity level of control over the IT process is based on organizational evaluation results, from a maturity level that non-existent (0) up to optimized (5). Descriptions of these levels are as follows [13], [14]:

0) Non-existent (Level 0 = Index: 0.00–0.49)

Lack of recognizable process. The company has not even realized that there is a problem to be addressed.

1) Initial / Ad Hoc (Level 1 = Index: 0.50– 1.50)

The company has been aware of issues to address. However, the problem handling process has not been standardized; instead, problem solving is applied on a case-by-case basis (ad hoc approach). The entire management approach has not been organized.

2) Repeatable but Intuitive (Level 2 = Index: 1.50– 2.49)

It has progressed to a stage where different people perform similar procedures to perform the same task. There is no formal training or communication regarding standard procedures, and responsibilities are left to the individual. It is very possible that errors in running the procedure due to the high level of dependence on individual knowledge of each.

3) Defined Process (Level 3 = Index: 2.50– 3.49)

Standardized procedures exist and are documented and communicated. However, deviations from the procedure are not detected. The procedure itself is not sophisticated, but it is a formalization of existing practices.

4) Managed and Measurable (Level 4 = Index: 3.50– 4.49)

Management shall supervise and measure compliance with established procedures and take action in case of deviation. The process is improved continuously and provides good practice. Automation and equipment are not used in full or are still fragmented.

5) Optimized (Level 5 = Index: 4.50– 5.00)

Based on the results of modeling improvements and ongoing maturation with other companies, the process has been refined to a good level of practice. IT is used extensively to automate workflow, providing tools to improve effectiveness and quality, so companies can quickly adapt in various situations.

3. RESEARCH METHODOLOGY

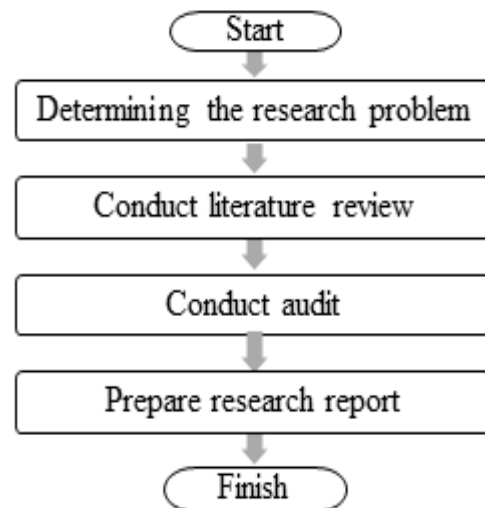


Figure 1. Research Flowchart

Here is a description of each process in the research flowchart that can be seen in Fig. 1 Research Flowchart and Fig. 2. Audit Flowchart.

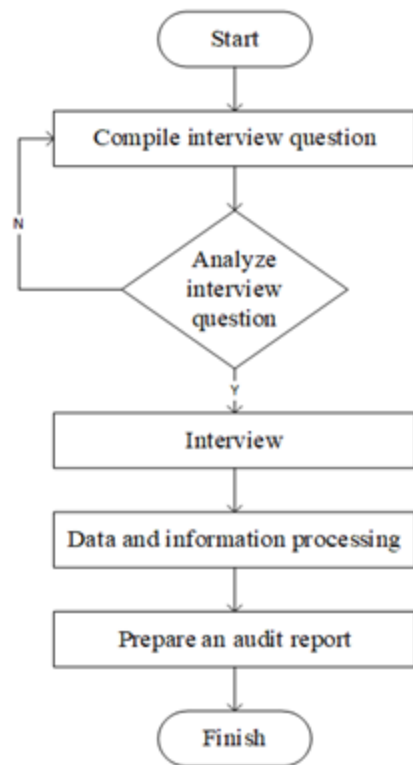


Figure 2. Audit Flowchart

A. Determining the research problem

At this phase, the authors determine the problems that exist in the company.

B. Conduct literature studies

Authors began searching for books and journals related to this research. Information gained from this study will be used as a reference in this study.

C. Conduct audit

After getting some information from related journals. Authors conducted an audit on PT IMS on February 22, 2018.

1) Compile interview questions

Authors compile interview questions to get complete and accurate information.

2) Analyze interview questions

Analyze whether the questions that have been made will produce complete information. If not, the authors will recompile the questions. If it is, then the author will interview the interviewees.

3) Interview

Authors conducted interview with the management and the head of warehouse of PT IMS.

4) Data and information processing

Authors process the data and information that has been obtained from interviews that will be useful for the making of research journals.

5) Prepare an audit report

Authors prepare the audit reports based on data processing and information that has been obtained.

D. Prepare research report

The authors compiled research reports as research evidence.

4. RESULTS AND DISCUSSION

4.1 DS3 Manage Performance and Capacity

This sub-domain focuses on IT performance management and resource capacity. Processing is required to periodically review the current performance and capacity of IT resources. This process includes forecasting future IT needs based on the needs of workload, contingency, and storage. This process provides assurance that information resources that support the business needs are continuously available. This sub-domain consists of five processes, namely:

1) DS3.1 Performance and Capacity Planning

2) DS3.2 Current Performance and Capacity

3) DS3.3 Future Performance and Capacity

4) DS3.4 IT Resources Availability

5) DS3.5 Monitoring and Reporting

Result: There is still a possibility of performance and capacity issues to happen, which are time-consuming to be corrected on Infonet. Infonet has been thinking about future issues, that is, minimizing the risk of service disruption due to lack of capacity or performance degradation, and identifying overcapacity for possible transfers. IT resources owned by Infonet is enough, every employee has been given a computer. Infonet has monitored and reported every item entering and leaving the warehouse through Zahir application, all the data has been registered and the warehouse head is in charge of monitoring it.

The result of maturity level assessment on this sub-domain can be seen in table I.

Table I DS3 Maturity Level

Domain	Process	Maturity Level
DS3.1	Performance and Capacity Planning	3
DS3.2	Current Performance and Capacity	3
DS3.3	Future Performance and Capacity	3
DS3.4	IT Resources Availability	4
DS3.5	Monitoring and Reporting	4
Average		3.4

The average value of maturity level in this process is 3.4 which means Defined Process.

Recommendation: Infonet should be more thorough in regulating the capacity and performance they have. Infonet also have to add 1 or 2 IT assistants to help. The IT assistant is expected to assist the IT head when there is an IT problem.

B. DS5 Ensure System Security

These sub-domains include the construction and retention of IT security roles and responsibilities, standard policies and procedures. Security management also includes conducting regular security monitoring and testing as well as implementing corrective actions to identify weaknesses or security incidents. Security management should be able to protect all IT assets to minimize security vulnerabilities and incidents. This sub-domain consists of eleven processes, namely:

- 1) DS5.1 Management of IT Security
- 2) DS5.2 IT Security Plan
- 3) DS5.3 Identify Management
- 4) DS5.4 User Account Management
- 5) DS5.5 Security Testing, Surveillance, and Monitoring
- 6) DS5.6 Security Incident Definition
- 7) DS5.7 Protection of Security Technology
- 8) DS5.8 Cryptographic Key Management
- 9) DS5.9 Malicious Software Prevention, Detection, and Correction
- 10) DS5.10 Network Security
- 11) DS5.11 Exchange of Sensitive Data

Table II DS5 Maturity Level

Domain	Process	Maturity Level
DS5.1	Management of IT Security	3
DS5.2	IT Security Plan	3
DS5.3	Identify Management	3
DS5.4	User Account Management	3
DS5.5	Security Testing, Surveillance, and Monitoring	3
DS5.6	Security Incident Definition	3
DS5.7	Protection of Security Technology	3
DS5.8	Cryptographic Key Management	3
DS5.9	Malicious Software Prevention, Detection, and Correction	3
DS5.10	Network Security	3
DS5.11	Exchange of Sensitive Data	1
Average		2.8

Result: IT security already planned based on security risk analysis. All goods' data such as name, quantity, process of expenditure, import process, etc. stored and managed through the Zahir application, so the company only allow some people to access the Zahir application. They use antivirus software to prevent and detect malicious software. The security system is tested, but not on a

regular basis. The result of the test then used to do security risk analysis. However, procedures when exchanging sensitive data at PT IMS are still missing, even though they are already aware of the importance of securing the paths used to exchange data. Thus, sending sensitive data is still not secure.

The result of maturity level assessment on this sub-domain can be seen in table II.

Recommendation: PT IMS should do security system testing on a regular basis, so they can adjust their IT security plan according to the current situation. Make sure the antivirus software is up-to-date, otherwise it will not be able to prevent new type of viruses or malwares. They also should send data through other channels. Use trusted channel and make sure it is secure. If they use a channel that is not trusted, data owned by PT IMS could be stolen by unauthorized parties. Also, make sure the warehouse head is a trustworthy person, so that data owned by the company won't be shared with other parties.

The average value of maturity level in this process is 2.9 which means Repeatable but Intuitive.

C. DS7 Educate and Train Users

Effective education for all users of the system requires identification of the training needs for each user group. This process includes defining and implementing strategies for conducting effective training and measuring results. Effective training programs can increase the use of technology effectively by reducing user errors, increasing productivity and improving compliance with key controls, such as user security measures. This sub-domain consists of three processes, namely:

- 1) DS7.1 Identification of Education and Training Needs
- 2) DS7.2 Delivery of Training and Education
- 3) DS7.3 Evaluation of Training Received

Result: There is training provided by PT IMS to newly recruited employees. The training is documented and monitored, but irregularities from standardized procedures cannot be detected. There are evaluations of the training provided, but there is no fixed schedule for the evaluation.

The result of maturity level assessment on this sub-domain can be seen in table III.

Table III DS7 Maturity Level

Domain	Process	Maturity Level
DS7.1	Identification of Education and Training Needs	3
DS7.2	Delivery of Training and Education	3
DS7.3	Evaluation of Training Received	3
Average		3

The average value of maturity level in this process is 3 which means Defined Process.

Recommendation: Add special training that gives certificates. This certificate will be useful to convince the company of the ability possessed by employees. If employees have a good performance, the ability of employees will also make Infonet a more advanced

company. Also, create a fixed schedule to evaluate the training. This way, the company can analyze the effectiveness of its training and improve the training process

D. DS9 Manage the Configuration

A complete and accurate configuration repository needs to be established and maintained to ensure the integrity of hardware and software configurations. The process includes developing configuration management planning procedures, collecting initial configuration information and establishing baselines, verifying and auditing configuration information, and updating configuration repository. Effective configuration management facilitates greater system availability, minimizes production problems and solves problems more quickly. This sub-domain consists of three processes, namely:

- 1) DS9.1 Configuration Repository and Baseline
- 2) DS9.2 Identification and Maintenance of Configuration Items
- 3) DS9.3 Configuration Integrity Review

Result: At PT IMS, the employees themselves maintain the maintenance of inventory applications, software, and hardware. Configurations are set only based on the instructions of the manager. At PT IMS, the tool used to manage configurations is not yet available across platforms.

The result of maturity level assessment on this sub-domain can be seen in table IV.

Table IV DS9 Maturity Level

Domain	Process	Maturity Level
DS9.1	Configuration Repository and Baseline	4
DS9.2	Identification and Maintenance of Configuration Items	3
DS9.3	Configuration Integrity Review	3
Average		3.33

The average value of maturity level in this process is 3.33 which means Defined Process.

Recommendation: PT IMS needs to add tools to manage configuration for all platforms to maximize in its settings. If the configuration already exists throughout the platform, then each platform will be more convenient to use because the company can set any platform at will.

E. DS10 Manage Problems

Effective problem management includes the identification and classification of problems, root problem analysis and problem solving. The problem management process also includes formulating recommendations for improvement, maintenance of problem notes and review of corrective action status. Effective problem management processes maximize system availability, reduce costs, improve service quality, and improve customer satisfaction and convenience. This sub-domain consists of four processes, namely:

- 1) DS10.1 Identification and Classification of Problems
- 2) DS10.2 Problem Tracking and Resolution
- 3) DS10.3 Problem Closure

4) DS10.4 Integration of Configuration, Incident, and Problem Management

Result: Problems that ever happened to PT IMS is categorized into several categories according to their harmful impact and sorted with the difficulty of the completion. If it is fatal, then the problem will be solved first. Even though PT IMS have recognize the need to integrate the configuration, incident, and related issues management process to ensure effective problem management, they do not yet have standard procedure on that matter.

The result of maturity level assessment on this sub-domain can be seen in table V.

Table V DS10 Maturity Level

Domain	Process	Maturity Level
DS10.1	Identification and Classification of Problems	3
DS10.2	Problem Tracking and Resolution	3
DS10.3	Problem Closure	3
DS10.4	Integration of Configuration, Incident, and Problem Management	1
Average		2.5

The average value of maturity level in this process is 2.5 which means Repeatable but Intuitive.

PT IMS needs to integrate the configuration, incident, and problem management processes to manage the issues. Configuration process is done so that problem more easily handled by company. Preventing the problem can be done with strict supervision and control of the gaps that allow problems to occur.

F. DS11 Manage Data

Effective data management requires the identification of data requirements. The data management process consists of the establishment of effective procedures for managing media libraries, backup and data recovery, and proper media disposal. Effective data management helps ensure the quality, timeliness, and availability of business data. This sub-domain consists of six processes, namely:

- 1) DS11.1 Business Requirements for Data Management
- 2) DS11.2 Storage and Retention Arrangements
- 3) DS11.3 Media Library Management System
- 4) DS11.4 Disposal
- 5) DS11.5 Backup and Restoration
- 6) DS11.6 Security Requirements for Data Management

Result: The existing data management on Infonet is good enough, the data is managed using Zahir application and will be saved to the company database. Data is secure because only a few people can access it. PT IMS does not have standard procedures when hardware is discarded. Infonet already has a data backup and restoration procedure.

The result of maturity level assessment on this sub-domain can be seen in table VI. DS11 Maturity Level

Table VI DS11 Maturity Level

Domain	Process	Maturity Level
DS11.1	Business Requirements for Data Management	3
DS11.2	Storage and Retention Arrangements	4
DS11.3	Media Library Management System	3
DS11.4	Disposal	2
DS11.5	Backup and Restoration	4
DS11.6	Security Requirements for Data Management	4
	Average	3.33

The average value of maturity level in this process is 3 which means Defined Process.

Recommendation: PT IMS should establish a standard procedure that can prevent the spread or theft of data when hardware is removed, such as ensuring all data has been removed before hardware disposal. If the data gets stolen by an irresponsible person, then the company will suffer a great loss. The company will find it difficult to manage and there will be many customers who lose confidence in this company. In addition, backup and restoration of data better be stored to several places in case there is a problem with the backup.

G. DS13 Manage Operations

Accurate and complete data processing requires the management of effective data processing procedures and regular hardware maintenance. This process includes establishing operational policies and procedures for effective scheduled processing management, protecting sensitive outputs, monitoring infrastructure performance and ensuring preventive hardware maintenance. Effective operations management can maintain data integrity, reduce business delays, and lower IT operating costs. This sub-domain consists of five processes, namely:

- 1) DS13.1 Operations Procedures and Instructions
- 2) DS13.2 Job Scheduling
- 3) DS13.3 IT Infrastructure Monitoring
- 4) DS13.4 Sensitive Documents and Output Devices
- 5) DS13.5 Preventative Maintenance for Hardware

Result: The operation management procedure at PT IMS is good and has a clear direction. Scheduling the work of each section is set up and arranged by the manager. IT Infrastructure has been monitored by the manager. The hardware maintenance is trusted to each employee. If a problem occurs, the employee can report the problem to the IT section to solve it. However, no alignment has been found between problem management, capacity management, and resource availability management.

The result of maturity level assessment on this sub-domain can be seen in table VII.

Table VII DS12 Maturity Level

Domain	Process	Maturity Level
DS13.1	Operations Procedures and Instructions	4
DS13.2	Job Scheduling	3
DS13.3	IT Infrastructure Monitoring	3
DS13.4	Sensitive Documents and Output Devices	3
DS13.5	Preventative Maintenance for Hardware	4
	Average	3.4

The average value of maturity level in this process is 3.4 which means Defined Process.

Recommendation: PT IMS needs to analyze the problem reports, capacity, and resources to determine the cause of the problem and its resolution with existing capacity and resources. At least add 1 IT assistant to help IT chief take care of things like broken printer and so on. If the head of IT is busy, then he will not have enough time, so the result becomes less than the maximum.

H. Maturity Level Summary

The summary of Zahir application maturity level at PT IMS can be seen on Table VIII.

TABLE VIII. ZAHIR APPLICATION MATURITY LEVEL AT PT INFONET MITRA SEJATI

Domain	Process	Level	Expected Level	Gap
DS3	Manage Performances and Capacity	3.4	4	0.6
DS5	Ensure Systems Security	2.8	3	0.2
DS7	Educate and Train Users	3	4	1
DS9	Manage the Configuration	3.33	4	0.67
DS10	Manage Problems	2.5	3	0.25
DS11	Manage Data	3.33	4	0.67
DS13	Manage Operations	3.4	4	0.6

Zahir application have not met the expected maturity level. However, on DS5 and DS10, Zahir application has small gap to meet the expectation. PT IMS need to focus on these two domains to meet the expected level, then focus on other domains with the recommendation we have given.

5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

Based on auditing process that auditor do to Infonet, we conclude:

1. Zahir application almost fulfill the needs of companies in most domain, although its application can be improved based on COBIT 4.1 framework on the domain Delivery and Support.
2. The maturity level measurements of Zahir application at PT IMS obtained on the DS5 and DS10 domains are at level 2 (Repeatable

but Intuitive), whereas DS3, DS7, DS9, DS11, and DS13 are at level 3 (Defined Process).

3. Some recommendations for PT IMS are establish standard procedures for non-standardized processes, improve the security of data transmission lines, and schedule regular evaluations of application performance.

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