Research Article

# The Relation of COBIT Internal Control and ISO 9001 Quality Management

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## Abstract

The application of Information Technology (IT) in the work system by various types of companies or organizations generally aims to improve performance, achieve goals and objectives, and make a tool of competitive advantage between companies and organizations. In general, the IT governance framework and the controls needed to achieve it are provided by the COBIT (Control Objective for Information and Related Technology) internal control. This method focuses on observing the relationship between companies that adopt the COBIT system and quality management with the aim of revealing data, facts, phenomena, elements, and conditions that occur when they are carried out. Data analysis using COBIT Framework and ISO 9001 Quality Management with ME domain. From the results, it can be seen that the COBIT quality management system and internal control have met the specified requirements. COBIT also looks at control in three dimensions related to IT, namely resources, processes, and information criteria. This of course can link the internal controls that exist in ISO 9001 into a coherent control.

*Keywords: COBIT Internal Control, ISO 9001 Quality Management*

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## 1. Introduction

Information technology has given effect significantly and changed business environment which has been managed and supervised until now. Implementation of information technology on business process of a company is one way to provide the solution that will improve the company competition level. In this case, the framework is very significant to make sure that information technology enables to business, increase advantage, information technology risk must be managed precisely and information technology resources can be applied responsibly. A company is often faced with the situation of determining the choice of

suppliers for production needs. Logically, companies with quality assurance of product quality will have the advantage of being selected compared to companies that do not have quality management standards. Quality management is one of the most important things in the company's operational activities because companies that have quality assurance tools will certainly have their own advantages. In addition, quality management is also beneficial for companies internally, especially to ensure that goods or services are produced according to standards, but to provide maximum control over the operation of quality management, information technology is also needed that is used in various companies today, because this information technology has a very important need to support various business process performances effectively and efficiently in various parts of the country (Marzuki, et al, 2018).

There are many industries, the survival of enterprises becomes very difficult without the widespread use of this information technology. Information systems are becoming more important in helping companies run in the global economy. Various companies are trying to become more competitive and efficient by turning themselves into digital companies or often referred to as information technology companies that use digital technology in their core business processes, customer relations, suppliers, and employees (Yulisfan et al., 2021). The role of information systems (IS) and information technology (IT) is very supportive within the company environment to carry out employee work so that it runs well and there are no problems faced by employees (Pasaribu, 2021).

Basically, the application of Information Technology (IT) in the work system by various types of companies or organizations generally aims to improve performance, achieve goals and objectives, and make a tool of competitive advantage between companies and organizations. But the fact is that not all companies that have utilized IT can carry out and operate these goals properly. This is due to various rejections and resistances by the company's internal circles, then the limited human resources who are mastered and competent in the field of IT and IT governance and various other problems. It can be seen that the role of information technology in a company is very crucial, a problem that often occurs in companies is the use of information technology which is not in line with expectations. The emergence of various problems is that managers and company leaders do not understand and have not applied IT principles properly in implementing IT in the company's work system.

Therefore, so that the implementation of IT governance in a company can take place effectively, companies must be able to evaluate and assess the extent to which IT governance is currently taking place and identify improvements that can be made. In relation to IT governance, it is necessary to have an audit mechanism on the management of information technology. In general, the IT governance framework and the controls needed to achieve it are provided by the COBIT internal control (Control Objective for Information and Related Technology).

## 2. Literature Review
### 2.1. COBIT Internal Control

COBIT is an important internal control framework that is used as an important supporting tool for documenting and an effective internal control tool that meets comprehensive standards (Sunarto, 2021). COBIT is a collection of best practice documentation for IT governance that can help auditors, users (users) and management, to deal with the difference between business risks, control needs and IT technical problems (Yudiantoro, 2021). As a reference in evaluating IT, the COBIT selection is seen from a wider, detailed and detailed scope related to the supervision and management of Information Technology from existing frameworks. To date there are 6 versions of COBIT published, COBIT 1 was published in 1996, COBIT 2 in 1998, COBIT 3 in 2000, COBIT 4.0 in 2005,

COBIT 4.1 in 2007, COBIT 5.0 in 2012 and the last is COBIT 19 published in 2018 (Rumere, Tanaamah & Sitokdana, 2020).

COBIT provides an overarching work structure which helps companies to assist their goals in enterprise IT planning and management and contributes to enterprises in creating maximum value from IT through maintaining a balance between realizing profits and optimizing risk levels and resource use. COBIT is a new framework, which combines corporate governance and management techniques which have practice guidelines, models and analytical tools that are generally obtained to contribute to improving IT governance performance. COBIT assigns auditors, information technology users, and managers, a series of steps, which are generally accepted, good system and application indicators to contribute to helping optimize the benefits derived from the use of information technology and updates offered by the company (Satrio, 2021). COBIT itself consists of 4 domains and developments continue to change to become more comprehensive with the change from COBIT 4.1 to COBIT 5.0 (Marsudi and Dionisius, 2020).

The use of the COBIT method can provide benefits for companies to be able to deal with problems that occur, the goal of COBIT is to provide a basic model that allows the development of clear rules and good practices in controlling information within an organization to achieve its goals (Dirgayusari, 2021). Therefore COBIT has an ongoing relationship to quality management because the main focus of quality management is to meet customer requirements and to strive to exceed customer expectations. Sustained success is achieved when an organization attracts and retains the trust of its customers and other stakeholders. Every aspect of customer interaction provides an opportunity to create more value for customers. Quality management in IT aims to help organizations maximize business revenue, and can assist auditors, users and management in managing business risks and technical problems that occur in the organization. Monitor and Evaluate IT needs to be evaluated on an ongoing basis with the aim of maintaining quality and compliance with control standards. ME IT domain requires management supervision and control within the organization as well as independent evaluation carried out by internal and external auditors (Patawala, 2021).

This can be achieved by making good and appropriate decisions, by applying an accountable or responsible framework, so that every decision making, directly impacts the progress and development of the use of information technology of the organization (Santiago et al, 2021). IT development can be seen from the IT Framework which is designed to align and complement COBIT. IT can be developed as one of the integrated governance frameworks for business providers and IT decision makers. This is done with a comprehensive, consistent and coherent approach to create real and measurable business value.

## 2.2. ISO 9001 Quality Management

ISO 9001 is a model of a quality assurance system in design or development, production, installation, and service or is often referred to as a Quality Management System. ISO 9001 was first born in 1987 known as the Quality Management System (QMS) ISO 9001:1987. There are three versions of implementation options in this 1987 series, namely those that emphasize aspects of Quality Assurance, aspects of QA and Production and Quality Assurance for Testing.

The quality management system is part of ISO 9001 which is one of the customer requirements. As an international standard organization, ISO 9001 has been applied in almost all companies, agencies, institutions or other organizations. Initial preparation to obtain an ISO certificate takes a long time, so that a newly established company or institution does not immediately have the certificate (Supriyati, 2021). ISO defines a general approach to security management that concerns the responsibilities and organizations responsible for security and its policies, classification of critical assets, and risk management. ISO is best used when

security certification and a thorough definition of security processes both logical and physical are required and the basic rules of the security system have been defined. ISO 9001 does not require a specific way of how the organization must meet the requirements, but only shows the guidelines that must be met. Special clauses may be applied to certain organizations to be excluded from certain points of the requirements that have been set, without lowering the overall standard.

One of the standards or measurements commonly used in quality management is ISO 9001. ISO 9001 has 10 clauses or requirements that can serve as guidelines for implementing the concept of a quality management system (Rico, 2020). All work instructions need to be assessed for conformity, whether permanent, undergoing changes or new work instructions. This is done to see the suitability of the work instructions with the activities carried out. All of these existing documents will support the company's readiness to carry out ISO 9001 certification (Prakasa, 2021).

There are several benefits from implementing ISO 9001:2015 that companies will get including placing a greater emphasis on engagement, helping to show risks to the organization and providing structured opportunities, using simplified language and common structures and terms, very useful for organizations that use several management system, directing chain management more effective supply (Randy, 2020). All ISO 9001 management standards are based on the idea that a quality management system that can be understood by third parties is the best prerequisite for an appropriate level of quality. Therefore, the standard establishes minimum requirements that do not depend on the provision of a particular service (product or service) and the size of the organization to allow for uniform and comparable quality standards (Hartanti, 2021).

## 3. Methods

Methodology is the process, principles, and procedures used in analyzing problems and finding answers to existing problems. This method focuses on observing the relationship between companies that adopt the COBIT system and quality management with the aim of revealing data, facts, phenomena, elements, and conditions that occur when they are carried out (Harumi, 2021). The several stages of the method carried out include:

1. Literature Study

This stage focuses on the process of theoretical analysis in relevant previous research which is then used as a theoretical basis in this study.

2. Data Collection

According to Ardianto in Susilowati "The data collection method is a method of collecting, categorizing and analyzing available data (Susilowati, 2017). Data collection through the observation process is carried out with the aim of evaluating business processes. Data collection was also carried out through an interview process with the management department.

3. Data Analysis

This stage focuses on the data analysis process using the COBIT Framework and ISO 9001 Quality Management with the ME domain.

4. Results and Conclusions

At this stage the researcher will write conclusions and recommendations based on data analysis.
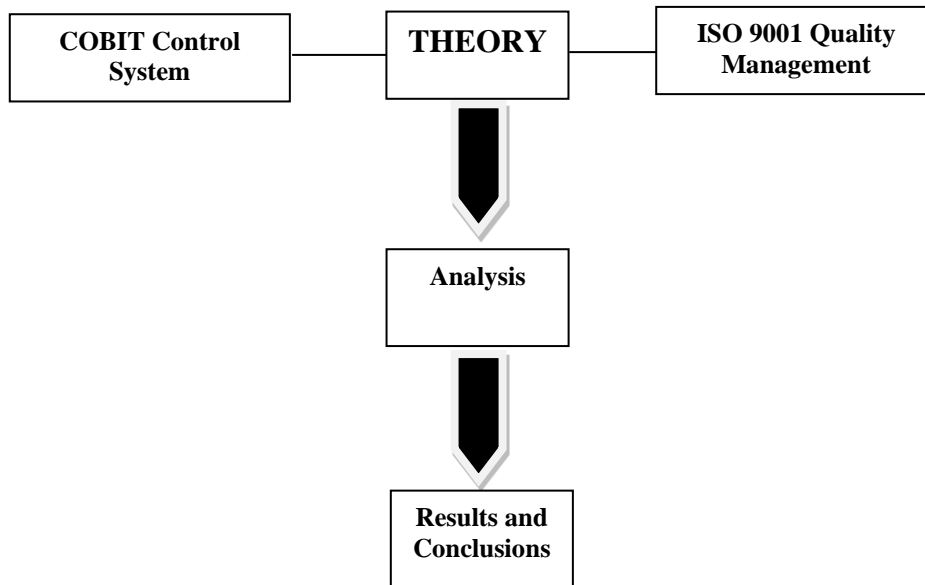
**Study of literature**
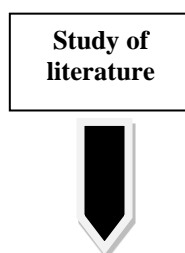
Figure 1. Conceptual Framework

This research only covers the stages of compiling policy documents on the implementation of COBIT Internal Control with ISO 9001. So as for the stages that are passed through this method are:

1) Analyzing each standard through controls and clauses while still being based on the scope of the study.

2) Observation of the data needed to fulfill each clause or control.

3) Observation of conformity and application of clauses and/or controls based on the scope of study.

4) Grouping of supporting data into documents.

5) Mapping of document data contents.

Based on each clause of a standard, it will be analyzed based on the substance domain of the standard and adapted to the circumstances of the organization of the place. After that, guidelines can be formulated for organizations in implementing these clauses. In the implementation process, it is necessary to have data as supporting evidence that the organization has implemented this clause. Therefore, at this stage, what data needs to be made by the organization to fulfill it. If after these stages it is found that the clause/control cannot be implemented in the organization or is not in accordance with the scope of the research, it is necessary to readjust the clause (Harumi, 2021). The stages of grouping the clauses/controls in a company are described as follows:
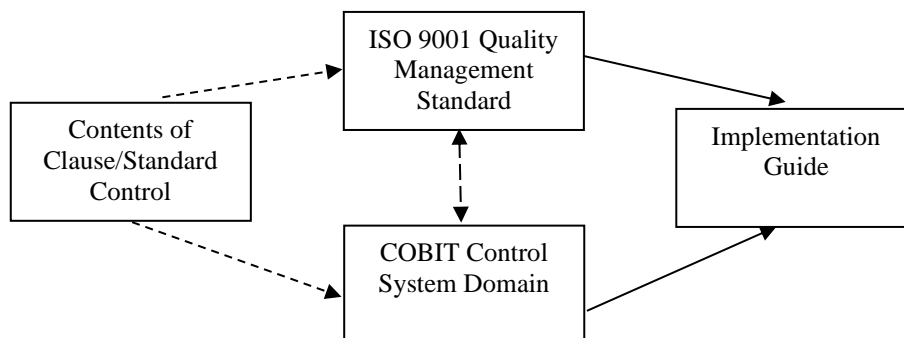
**Figure 2. The stages of grouping the clauses**

An overview of the process stages 1-3 is shown in Figure 3.1. First, checking each clause of a standard will be analyzed, then based on the substance domain of the standard and adjusted to the domain of the COBIT control system used by a company. After that, guidelines can be formulated for organizations in implementing these clauses. In the implementation process, it is necessary to have data as supporting evidence that the organization has implemented this clause. Therefore, at this stage, what data needs to be made by the organization to fulfill it.

## 4. Result and Discussion
## 4.1. Result
### 4.1.1. The Relation between COBIT Internal Control and ISO 9001 Quality Management

As explained in the method section, this research begins by analyzing each standard through details of the controls and clauses they have. First, by taking a manager who wants to improve the quality of integrated information technology governance, the manager can do a mapping by choosing one of the COBIT domains with control from Quality Management from ISO 9001 which is then completed and matched.

The mapping is done by comparing the domain area in COBIT with the requirements or clauses of ISO 9001:2015 which are complementary and can be matched. For example, Clause 4.4 of ISO 9001:2015 which contains the Quality Management system and its processes is in accordance with the domain in COBIT 5, namely the APO 11 domain managing quality. Clause 4.4 requires to establish, implement, maintain and continuously improve the quality management system, including the required processes and their interactions. Domain (Align, Plan and Organise) APO 11 focuses on defining and communicating quality needs/requirements across all processes, procedures including control, monitoring and implementation of practices and standards for continuous improvement and efficient business (Rico, 2020).

Another example is, clause 5.3 in accordance with APO domain 01.02 which both focus on roles and responsibilities in an organization or company. Clause 6.1 on actions to address risks and opportunities is in line with APO 12's domain which focuses on managing risks. For mapping between ISO 9001:2015 and COBIT 5 in general, it can be seen in Table 1. The relationship between COBIT 5 and ISO 9001:2015.

Table 1. The mapping between ISO 9001:2015 and COBIT 5

| COBIT 5 domains | | 1.Context Organisasi | 2.Leadership | 3.Planning | 4.Support | 5.Operation | 6.Performance Evaluation | 7.Improvement |
|---|---|---|---|---|---|---|---|---|
| *Align, Plan &* | 1.Manage framework IT management | | | | | | | |
| | 2.Manage strategy | | | | | | | |
| | 3.Manage architecture company | | | | | | | |
| | 4. Manage innovation | | | | | | | |
| | 5. Manage portfolio | | | | | | | |
| | 6.Manage budget and cost | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7.Manage resource man | | | | | | | |
| 8. Manage connection | | | | | | | |
| 9. Manage agreement service | | | | | | | |
| 10.Manage suppliers | | | | | | | |
| 11.Manage quality | | | | | | | |
| 12.Manage risk | | | | | | | |

As seen in the picture above, ISO 9001:2015 is integrated with COBIT 5 based on the compatibility between the clauses of ISO 9001:2015 with inputs, outputs and activities from the COBIT 5 domain. So that the inputs, outputs and activities used are based on the quality management principles contained in the clause. ISO 9001:2015 control. After the mapping has been carried out, the documents that have been created contain the rules established by the organization based on the clauses and controls resulting from the grouping of the analysis stages 1-7. From the results above, the implementation needs to be carried out periodically so that it can continue to support internal control as a form of commitment in maintaining the quality of services to the public (Desitama et al, 2021).

## 4.2. Discussion

From the results of the translation, it can be seen that the average number of respondents is obtained so that from the results of the data it can be known by checking the score, which means that the COBIT quality management system and internal control have met the specified requirements. In connection with the provisions above, a manager can find out the operations that have been carried out by the company, by looking at the existing control points and the development of documents related to the process domain under study as well as an increase in the number of resources that manage information technology. COBIT also looks at control in three dimensions related to IT, namely resources, processes, and information criteria. This of course can link the internal controls that exist in ISO 9001 into a coherent control.

## 5. Conclusion

Based on the discussion in the previous chapter, it can be concluded several things about the IT quality management system regarding the IT quality management process in this study guided by ISO 9001 which is an international standard for quality management systems that contains requirements or clauses namely organizational context, leadership, planning, support , operation, performance evaluation and improvement. The example in the clause is integrated with COBIT 5 to get the base practice and work product for the existing assessment. For other assessments using general practice and general practice products. The clauses of ISO 9001 and COBIT 5 are integrated based on similarities in complementary and compatible aspects.

Overall, companies and organizations have governance awareness of their performance and can be seen from the level of capability achieved. For clauses/controls on the company's operating internal control system to be more effective if it is carried out at central level agencies and companies, because in the questionnaire there are questions about SOPs, policies or rules that are only known or can be accessed by the public. central level, so that clauses/controls of ISO 9001 and COBIT can be integrated based on similarities in aspects that complement each other and can be matched.

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