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The Study on Planning and Evaluation for IT Governance Domain PO and ME Quality Control Using the Cobit Framework 4.1

Dadan Nugraha[1], Panji Novantara[2]
[1]Sistem Informasi Informatika, Fakultas Ilmu Komputer, Universitas Kuningan.
[2]Manajemen Informatika, Fakultas Ilmu Komputer, Universitas Kuningan.

E-mail: [1]dadan.nugraha@uniku.ac.id, [2]panji@uniku.ac.id

Abstract—Tata kelola TI merupakan bagian dari tata kelola dan sebuah organisasi, selain itu tata kelola TI merupakan struktur hubungan dan proses untuk mengarahkan dan mengendalikan organisasi untuk mencapai tujuan. Penelitian di Kementerian PUPR akan menghasilkan rekomendasi Tata Kelola TI yang merupakan pengembangan dari Tata Kelola TI yang sudah dilakukan, namun saat ini proses Tata Kelola TI belum dilakukan secara menyeluruh. Perencanaan dan Evaluasi serta pengendalian kualitas tata kelola teknologi informasi perlu dilakukan untuk mengetahui tingkat keberhasilan atau kemajuan TI dan mengukur apakah TI di Kementerian PUPR sudah digunakan secara efektif dan efisien. Rekomendasi Tata Kelola TI dibuat untuk meningkatkan kinerja TI di Kementerian PUPR. Pada penelitian ini, framework yang digunakan adalah COBIT (Control Objective for Information and Related Technology) versi 4.1, domain yang dipilih pada penelitian ini adalah domain Plan and Organize (PO) dan Monitoring and Evaluate (ME). Tingkat kematangan digunakan untuk melihat gambaran kondisi tata kelola teknologi informasi saat ini dan peningkatannya di masa yang akan datang. Dari pemetaan maturity model tersebut, diharapkan tingkat tingkat kematangan untuk Kementerian PUPR berada pada level 3, sehingga tingkat kematangan masing-masing proses kontrol dapat lebih baik dengan adanya rekomendasi pengelolaan TI untuk mendukung tercapainya tujuan tata kelola TI yang dilakukan dan diharapkan berada pada level maksimal. Hasil dari penelitian ini berupa evaluasi dan rekomendasi TI di Kementerian PUPR untuk domain PO dan ME.

Kata Kunci—Tata kelola TI, COBIT, Kematangan, Organisasi, Evaluasi

Abstract—IT governance is part of governance and an organization, in addition IT governance is the structure of relationships and processes to direct and control the organization to achieve goals. Research at the Ministry of PUPR will produce an IT Governance recommendation which is the development of IT Governance that has been carried out, but currently the IT Governance process has not been carried out thoroughly. Planning and Evaluation and quality control of information technology governance need to be done to determine the success rate or progress of IT and measure whether IT in the Ministry of PUPR is used effectively and efficiently. The IT Governance recommendation was made to improve the performance of IT in the Ministry of PUPR. In this research, the framework used is COBIT (Control Objective for Information and Related Technology) version 4.1, the domain chosen in this study is the Plan and Organize (PO) domain and Monitoring and Evaluate (ME). Maturity level is used to see a picture of the current condition of information technology governance and improvement in the future. From the mapping of the maturity model, it is expected that the level of maturity level for the Ministry of PUPR is at level 3, so that the maturity level of each of the control processes can be better with the IT management recommendations to support the achievement of IT governance objectives carried out and expected to be at maximum level. The results of this study are in the form of evaluation and IT recommendations at the Ministry of PUPR for the PO and ME domains.

Keywords— IT governance, COBIT, Maturity, Organization, Evaluation

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Corresponding Author:
Dadan Nugraha,
Sistem Informasi
Universitas Kuningan
dadan.nugraha@uniku.ac.id

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I. PENDAHULUAN

Perkembangan teknologi informasi telah menjadi bagian yang tidak terpisahkan dari kehidupan manusia, dan memegang peranan penting dalam bisnis dan organisasi. Dalam menyikapi perkembangan tersebut, perlu dilakukan evaluasi dan pengendalian untuk mengetahui kinerja dan kesesuaian sistem yang digunakan. Kegiatan ini dikenal dengan istilah audit sistem informasi. Audit sendiri merupakan suatu proses pengumpulan dan pengevaluasian bahan bukti tentang informasi yang dapat diukur mengenai suatu entitas ekonomi yang dilakukan oleh seorang yang kompeten dan independen untuk dapat menentukan dan melaporkan kesesuaian informasi dengan kriteria-kriteria yang telah ditetapkan. (Arens dan Loebbecke, 2003). Dengan adanya audit, dampak risiko dalam penggunaan Teknologi Informasi

Teknologi Informasi (TI), seperti kehilangan data, penyalahgunaan komputer, kesalahan dalam pengambilan keputusan, risiko kebocoran data dan kesalahan perhitungan dapat dikurangi. Banyak audit yang telah dilakukan sebelumnya dengan menggunakan berbagai macam metode, salah satu yang sering digunakan adalah metode Framework Control Objectives for Information and Related Technology (COBIT).

Teknologi Informasi dan Komunikasi (TIK) saat ini telah dikembangkan sebagai sarana untuk meningkatkan efisiensi dan efektivitas penyelenggaraan pemerintahan serta aksesibilitas informasi dan pelayanan kepada masyarakat. e-Government yang diimplementasikan di Kementerian Pekerjaan Umum dan Perumahan Rakyat (PUPR) dapat membantu meningkatkan efisiensi operasional dan biaya dalam pelaksanaan kegiatan baik yang bersifat administratif maupun teknis. Disamping itu, perlu adanya adanya kontrol tata kelola TI sebagai pengendalian proses untuk mendukung tercapainya tujuan tata kelola TI yang dijalankan dan diharapkan berada pada level maksimal di Kementerian PUPR.

Penyampaian data dan informasi dari Kementerian Pekerjaan Umum dan Perumahan Rakyat kepada pihak-pihak yang membutuhkan dan masyarakat luas juga merupakan salah satu upaya dalam mewujudkan pelaksanaan UU No. 14 Tahun 2008 tentang Keterbukaan Informasi Publik. Selain itu, Instruksi Presiden No. 1 Tahun 2010 tentang Percepatan Pelaksanaan Prioritas Pembangunan Nasional, menugaskan Kementerian Pekerjaan Umum untuk melakukan

percepatan pelaksanaan 32 (tiga puluh dua) Rencana Aksi Percepatan Pembangunan Infrastruktur yang menjadi prioritas Presiden. Selain itu, berdasarkan Peraturan Menteri Badan Usaha Milik Negara nomor per-02/1vibu/2013 tentang Pedoman Penyusunan Pengelolaan Teknologi Informasi Badan Usaha Milik Negara. Dengan kata lain, pemanfaatan dan pengembangan teknologi informasi BUMN dilakukan berdasarkan tata kelola teknologi informasi (TI). Untuk itu, diperlukan suatu sarana untuk memantau perkembangan pelaksanaannya, yang di dalamnya termasuk penerapan TIK.

Berdasarkan Peraturan Menteri Pekerjaan Umum No. 20/PRT/M/2016, Pusat Data dan Teknologi Informasi (PUSDATIN) mempunyai tugas melaksanakan pembinaan, pengembangan, pengelolaan, penyediaan data dan teknologi informasi, serta penyelenggaraan sistem informasi untuk mendukung manajemen kementerian. Salah satu fungsi PUSDATIN adalah penyusunan rencana dan program pembinaan, pengembangan, pengelolaan data dan teknologi informasi. Oleh karena itu, dalam rangka mewujudkan efisiensi dan efektivitas tata kelola pemerintahan berbasis TIK di Kementerian PUPR, sekaligus meningkatkan aksesibilitas informasi dan layanan kepada masyarakat, perlu dilakukan pengendalian terhadap kualitas penyelenggaraan TIK Kementerian PUPR agar sejalan dengan Cetak Biru TIK Kementerian PUPR.

Pengendalian kualitas TIK Kementerian PUPR yang dilakukan oleh PUSDATIN pada dasarnya merupakan kegiatan perencanaan, evaluasi dan pemantauan kualitas proses dan hasil implementasi TIK. Perencanaan, evaluasi dan pemantauan dimaksudkan untuk mengidentifikasi, mengkaji, membina, serta meningkatkan kualitas perencanaan, proses dan hasil implementasi TIK di Kementerian PUPR.

Dengan adanya penelitian ini, diharapkan pengendalian kualitas implementasi TIK di kementerian sesuai dengan Cetak Biru TIK Kementerian PUPR. Cetak Biru TIK merupakan perwujudan pedoman tata kelola Teknologi Informasi dan Komunikasi pemerintah untuk mendukung kinerja kementerian dalam melaksanakan tugas pemerintahan yang dituntut untuk bekerja secara efisien, efektif, transparan, dan profesional dalam rangka mewujudkan tata kelola pemerintahan yang baik.

II. METODE

2.1 IT Governance

Another definition of IT governance that is more well-known is: “IT governance is the responsibility of executives and the board of directors, and consists of the leadership,

organizational structures and processes that ensure that the enterprise's IT sustains and extends the organization's strategies and objectives." (ITGI, 2007). From the above understanding, it can be seen that the governance of information technology is the responsibility of the board of directors and executive management. It is an integral part of corporate governance and comprises the leadership and organizational structures and processes that ensure that the information technology organization underpins and extends the organization's strategy and objectives.

2.2 COBIT 4.1

COBIT is Control Objectives for Information and Related Technology, which is an information system audit and basic control created by the Information Systems Audit and Control Association (ISACA), and the Information Technology Governance Institute (ITGI) in 1992, to provide information needed by companies to achieve goals, then the basic principles of COBIT explain (Simonsson & Johnson, 2006):

- Business information requirements, terdiri dari: Effectiveness, Efficiency, Integrity, Availability, and Reliability of information.
- High-Level IT Processes, terdiri dari: IT Domains (Planning and Organisation, Acquisition & Implementation, Delivery & Support, Monitoring and Evaluation); IT Process (IT strategy, Computer operations, Incident handling, Acceptance testing, Change management, Contingency planning, Problem management); Activities (Record new problem, Analyse, Propose solution, Monitor solution, Record known problem.)
- Information Technology Resource: Expert staff, Applications, Technology, Facilities, Database Management System, Hardware, Software, Multimedia.

COBIT 4.1 has a very broad scope and not all organizations have or cover all of these processes. (Kania, 2011) explains that every company has a variety and range of utilization of information technology and not all steps in COBIT can be applied, only in certain parts that are in accordance with the needs of the Company. In line with what has been described (ITGI, 2007) This standard does not require application to every component but can choose only related parts.

2.3 Level Maturity Model

One of the measurement tools of the performance of an information technology system is the maturity level model. The maturity model for the management and control of information technology processes is based on the organization's evaluation method so that it can evaluate itself from level 0 (none) to level 5 (Optimistic).

2.2. Data Collection Technique

1. Organizational Document Study

This process is carried out by reviewing the history of the organization as the object to be studied. The review was carried out through extracting physical documents, as well as interviews with the Head of Center for Data and Information, and the Head of the IT Section who already had a long experience of being part of the organization.

2. Literature Study Method

The literature study process carried out here is by searching for theoretical foundations and findings from research that has been carried out previously. Theories related to research problems COBIT framework 4.1 and Research that uses other versions of the COBIT framework or research that combines several evaluation models is sought by the author and briefly summarized according to the needs of this study.

2.3. Data Analyst

After processing the data, the authors conducted data analysis. The data analysis carried out consists of an analysis of the current maturity level, expected maturity level and gap analysis.

2.3.1 Analysis of Current Maturity Level

Based on data from interviews and surveys of management and users of information technology at the Center for Data and Information obtained by the authors when conducting the analysis. The analysis carried out at this stage is an analysis to assess the maturity level of information technology governance for the current OD and ME processes (as-is).

2.3.2 Expected Maturity Level Analysis

The assessment of the expected maturity level (to-be) aims to provide a reference for the development of information technology governance in the company.

2.3.3 Gap Analysis

After the current maturity level of information technology governance (as-is) and the expected maturity level of information technology governance (to-be) are obtained, a gap analysis will be carried out on the maturity level.

2.3.4 Recommendation

Recommendations for improvement are obtained from the results of the analysis conducted on the current maturity level and the expected maturity level.

2.4. Research Framework

The type of research conducted at the Data and Information Center of the Ministry of PUPR is related to case studies, which means that conducting research directly on the object of research by collecting data, processing and analyzing data so that this research obtains results based on the application of IT processes from the object being studied. The data that is processed is primary data through interview and observation techniques. The stages of the research are described as shown in Figure 3.1

III. HASIL DAN PEMBAHASAN

An assessment related to ICT Governance has been carried out within the Ministry of Public Works and Public Housing. The assessment is carried out referring to COBIT 4.1 best practice and produces a maturity level of ICT management on a scale of 5. An explanation of the maturity level of ICT management in accordance with COBIT best practice. Existing ICT Governance Maturity Level

Maturity levels and gaps in each IT process are described in Table 4.1.

4 Maturity Level Calculation

The results of the calculation of the maturity level in the evaluation process carried out on information technology governance at PUSDATIN PUPR are as follows:

Tabel 1. PO DOMAIN CALCULATION RESULTS

Domain	Information	The Calculation Results
PO1	*Define a strategic ITplan*	*2.6*
PO2	*Define the Information Architecture*	*2.4*
PO3	*Determine TechnologicalDirection*	*2.5*

PO4	*Define the ITProcesses, Organizationand Relationships*	*2.1*
PO5	*Manage the ITInvestment*	*2.5*
PO6	*CommunicateManagement Aims and Direction*	*2.6*
PO7	*Manage ITHuman Resources*	*2.6*
PO8	*Manage Quality*	*2.4*
PO9	*Assess andManage ITRisks*	*2.4*
PO10	*ManageProjects*	*2.5*
Average		***2.6***

Tabel 1. 4.1.1 DOMAIN CALCULATION RESULTS

Domain	**Information**	**The Calculation Results**
ME1	Monitor and EvaluateIT Performance	*2.1*
ME2	*Monitor and EvaluateInternal Control*	*2.1*
ME3	*Ensure ComplianceWith External Requirements*	*2.4*
ME4	*Provide IT Governance*	*2.1*
Average		***2.1***

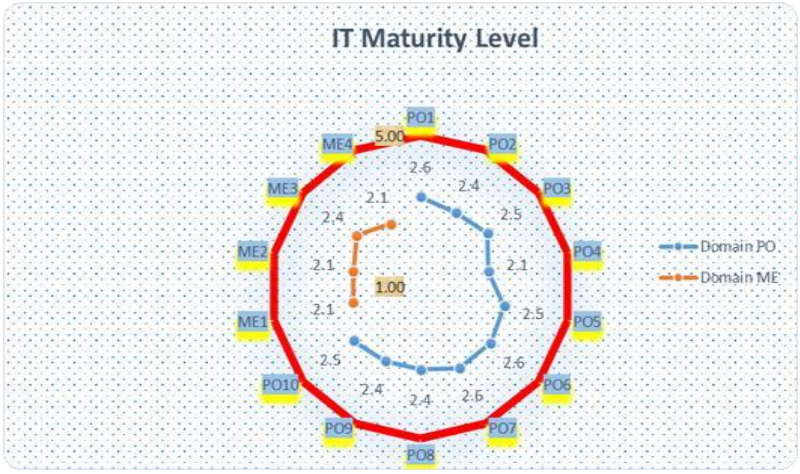

Figure 3.2 Maturity Condition of Existing ICTGovernance

IV. SIMPULAN

The results of the study found weaknesses in the PO and ME subdomains. These two domains were only able to obtain an average score of 2.6 and 2.1. This means that it is still at the Repeatable but Intuitive level. Some of the most fatal weaknesses are the high dependence of the company on one expert, the risk is not managed properly, the quality satisfaction has not been evaluated, the documentation has not been carried out in several fields of information technology, the procedures and policies have not been carried out in earnest. The results of the research are expected to be used by the Pusdatin of the Ministry of PUPR as a way to see what level of IT performance is, so that in the future the Pusdatin of the Ministry of PUPR can further improve the current IT performance at the expected level.

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