Analysis of Information System Governance Audits Based on CobIT 5.0 in Regional Financial Agency City of Salatiga

Gabriella Angeline Yoga Ruslie, Aprina Nugrahesthy Sulistya Hapsari

a Economic and Business Faculty, Satya Wacana Christian University
b Economic and Business Faculty, Satya Wacana Christian University

Abstract: Salatiga is a government that manages finances including taxes, spending and budgeting for Salatiga government. RFA has a Regional Financial Administration Information System (SIPKD) that manages all of the other accounting information systems as input, this system has never been audited before, because KOMINFO who has rights for audit just established in 2017. The method used is qualitative descriptive with primary data types using a case study approach at RFA. Based on the results of the audit that the researcher did with framework CobIT 5.0, produce on all five domains is at the level of capability 2 (Managed). In this condition the organization's governance towards SIPKD already able to support the overall organizational governance system especially in supporting making of the Salatiga regional financial report. Suggestions for further research can be done on other SKPD in Salatiga.

Keywords: Framework CobIT 5.0, IT Governance, Process Domain.

1. Introduction

In today's digital era, Information Systems/Information Technology (IS/IT) very closely with the community and added to the diversity IS/IT what has been made by the developer makes many people also want to benefit from the system that has been made, but not all of them take advantage in a good way.

Users of information systems with the sophistication of information technology sometimes do several things which then indicate fraud

As an example of cases of fraud related to information systems that are commonly used by society lately, namely

As an example of cases of fraud related to information systems that are commonly used by society lately about the 50 million leak scandal Facebook user data stolen to give Appropriate political advertising in the 2016 US presidential election was revealed by a whistleblower named Robert Mercer, a former employee of Cambridge Analytica (Cadwalladr, C and Emma G. H, 2018).

Digital development can also be used by irresponsible people, as in the case of virtual loan (Vloan), the debt collector from this Vloan can access personal data from borrowers such as KTP, borrower picture's and this apps can access almost all of borrower data's (Heriani, 2019).

Departing from the phenomenon of fraud that occurred, there needs to be improvement and prevention as well as vigilance related to the system so that there is no loss for the IS owner. One way that can be used to overcome fraud risk is to achieve good IT governance, information system audit needs to be done.

Like research conducted by Hartanto et al. (2012), Republic of Indonesia Supreme Audit Board (BPK RI) is a government agency that carries out checks on the management and responsibility of State finances, an information system audit is carried out in the data processing process in its operational activities. The results of this study state that IT governance from BPK RI in the process of data management in general is quite good at this time.

Whereas Atastina, Firdaus, and Candra (2014)
discuss about Telkom University who has implemented iGracia. Conclusion Based on the audit conducted on Directorate SISFO Telkom University in a case study iGracias with framework CobIT 5.0 Domain DSS (Deliver, Service, and Support) then the conclusion of this study is, there is a Pre-audit stage that has obtained 6 domain processes DSS CobIT 5 in accordance with the conditions of Directorate SISFO Telkom University governance and used as audit scope and standards.

Research conducted by Ciptaningrum, Nugroho, and Adhipta (2015) through an information system security audit in the Government of Yogyakarta want to know the level of information system security capabilities.

Based on previous studies that have been done, This study will also focus on looking at the level of information system capabilities using framework CobIT 5.0 at RFA Salatiga. Meanwhile the reason for choosing the research object at RFA Salatiga because output is generated from information systems SIPKD in the form of financial statements that present accounting information for organizational decision making and information systems used to produce quality information, then it is quite interesting for researchers to see the information system. In addition, from the results of the initial interview of the Regional Financial Administration Information System (SIPKD) In addition, from the results of the initial interview, the Regional Financial Administration Information System had never been subjected to an IS audit, Because DISKOMINFO those who have the authority to conduct audits were only formed in 2017 at Salatiga, so this study wants to see the level of capability of the implementation of IS using framework CobIT 5.0.

The results of this study are useful for RFA, can be an evaluation material from the information system currently in use, in order to be better in the future and reduce the risk of loss due to fraud. For the government it can be a material and a reminder of the importance of periodic checks in a government information system that has important and sensitive data for the government. For academics, it can be a supplementary literature related to information system audits.

2. Literature Review

2.1. Governance Enterprise of IT

According to Van Grembergen and De Haes (2009), Governance Enterprise of IT (GEIT) covers the whole governance management, including the elaboration of the definition and implementation of process, structure, and relational.

In order to attain the general aim of Good Governance, IT takes a definitive role in supporting the achievement of Good Governance through GEIT that manages TI. Good Governance can be associated with GEIT as the development of organization governance aspect is synchronized. Thus, GEIT supports the process of achieving Good Governance.

2.2. Framework CobIT5

CobIT (Control Objective of IT) is a set of good-practice framework that manages information technology which originally developed by the Information Systems Audit and Control Association (ISACA) and IT Governance Institute in 1996. ISACA (2013) highlights that Framework CobIT 5 is a comprehensive framework for enterprises to strike optimum values from IT through managing the balance between risk and advantage establishment and resources utilization. CobIT 5 enables related information and technology to be holistically arranged and managed for the whole enterprises. The framework also takes the whole business responsibility and functionality as well as considering the significance of internal and external stakeholders according to IT.

Figure 1 depicts the process of CobIT from the initial needs evaluated by BOD which are generated by the management and the possibility of receiving feedback with adjustments set by the previous BOD.

CobIT 5.0 consists of 5 major domains, namely (1) Evaluate, Direct, and Monitor (EDM), (2) Align, Plan, and Organize (APO), (3) Build, Acquire, and Implement (BAI), (4) Deliver, Service, and Support (DSS), and (5) Monitor, Evaluate, and Assess (MEA). In the Evaluate, Direct, and Monitor (EDM) domain, CobIT 5.0 evaluates and monitors the policy made by the stakeholders for IT Governance. Then, the process is followed with the Align, Plan, and Organize (APO) domain, in which the CobIT 5 framework identifies risks and thoroughly examines the contribution of IT according to the set requirements to achieve the business targets. The Build, Acquire, and Implement (BAI) domain covers the process of CobIT 5.0 in constructing guidelines to assist the operation of SI and ensuring the created solution is optimally examined and controlled throughout the implementation of TI business and environment operational. In the Deliver, Service, and Support (DSS) domain, CobIT 5.0 receives a solution which is going to be used by the end user for the required
service support. Lastly, the domain Monitor, Evaluate, and Assess (MEA) consists of monitoring internal management to secure its ability to meet the governance objectives.

Figure 2 (appendix) displays the 37 processes of each CobIT 5.0 domain as a whole with extended 5 processes compared to TI Governance in CobIT 4.1.

According to ISACA, CobIT 5.0 dwells 6 levels of capability processes for the assessment purpose. Level 0 (incomplete process) visualizes the absence and failure of the implementation process to achieve the process targets. In this level, the evidence of systematic target achievements is rarely present or even not at all. Level 1 (performed process) showcases how the enterprise implements the process to achieve the process targets. In Level 2 (managed process), the enterprise has fairly conducted the implementation of process targets. Level 3 (established process) indicates how the enterprise documents and communicates the implementation process results to the stakeholders in order to achieve the goals. In the Level 4 (predictable process), the enterprise conducts measuring, monitoring, and predicting the implemented processes. Lastly, Level 5 (optimizing process) attributes how the enterprise maintains the process to achieve the business objectives.

3. Research Methodology
3.1. Types of Research and Data Collection
The methodology employed for this research is the qualitative approach, generating primary data through a case study in Regional Financial Agency (RFA) Salatiga. Interviews and documentation were conducted to collect the data according to the research questions. The interview sessions involved the head of RFA, the head of Data and Information Sub Department, the head of Accounting Department, RFA secretary, Computer Staff Functional Position Group (IT department) and officers within the department who work with SIPKD. The interview sessions were recorded. After conducting the interview sessions, the researcher justified the findings and collected related excerpts from the interview sessions with the participants.

3.2. Data Analysis Techniques

4. Findings and Discussions
4.1. Stakeholder Needs with Enterprise Goals
Stakeholder Needs contained the reasons for RFA in constructing a system according to the needs and goals intended to be achieved by RFA through the system. After the lists of Stakeholder Needs were retrieved, the researchers aligned the Stakeholder Needs with Enterprise Goals in the CobIT 5.0 to identify the business needs of RFA. These needs then were categorized into dimensions of business objectives Balanced Score Card within the CobIT 5.0.

Table 1 (appendix) displays the relation of RFA strategic objective with Enterprise Goals in CobIT 5.0. The first Stakeholder Needs elaborated the need of RFA to adjust with the regulation of the Indonesian Ministry of Home Affairs Number 13 of 2006 chapter XI covering Local Financial Accounting in the first part, article 232, 233, and 234. Further, Chapter XIII encloses Local Financial Management Control in the first part, article 313, subsection 3, and point d. Henceforth, Chapter XVII manages the Transitional Provisions in article 332, subsection c. It enforced the same assertion of the Service, Data Management, and Information Sub Department Head, Mr. Fajar, as he elaborated “SIPKD began to be used in 2008 because of the PERMENDAGRI Number 13 of 2006.” Then, he
continued “the policy grounds the financial governance of the local government.” The articles cover the elaboration of the accounting information system utilization for any report and accounting entity. Thus, the regulation should be able to be associated with compliance with external laws and regulation value. With the enforcement of the regulation set by the Indonesian Ministry of Home Affairs, it grounded the major decision of RFA Salatiga to create and operate an accounting information system.

Data integrity among SKPD assisted the major target that RFA wanted to achieve, as Mr. Fajar asserted, “in 2013, the system was integrated and upgraded, which originally only desktop base into web base.” It can be inferred with managed business risk (safeguarding assets) as the integrated data among SKPD in Salatiga minimized the risks of data fraud and the gap between data input and output. The opportunity for data theft can also be diminished because the data transfer process does not involve any third party. If the system was not established, when SKPD need to submit the financial reports to RFA, they need to employ a courier to deliver the data. This enlarges the opportunity of data fraud, such as purposeful data manipulation, data leak, and data damage that benefits a specific individual, and even accidental events such as missing and damaged files.

Through the operation of SIPKD, the produced data signified more accountability and transparency, as Mr. Fajar explained, “it clearly provides more accountable, transparent, effective, and efficient data which benefit everyone”. This elaboration can be linked with the points of the first Enterprise Goals, in which stakeholder value of business investments. Accounting information system facilitated stakeholders to access the needed information easier, as it also maintains the quality of the data. On the other hand, the accountability of the data was maintained through managed business risk (safeguarding assets) in such manner that the data were secured from data fabrication which violated RFA integration. In compliance with external laws and regulation, the produced data could be accounted for according to the enforced regulation, such as PSAK, tax regulations, etc. It is also in line with the value of financial transparency, by reason of the transparency was managed through the guarded system which reduced data manipulation.

The efficient and effective use of time allocation and costs for data transmission is associated with the optimization of service delivery costs value. Before operating the system, SKPD allocated more time and costs for official travels to send the data to RFA. As the system begins to be implemented within the governance, the allocated time and costs were reduced. The efficiency and effectiveness can also be correlated to the optimization of business process cost value as it allows the efficient allocation of time and costs in the business process as a whole. In the past, SKPD and RFA manually submit the data which took up a lot of time as they need to input the data one by one for multiple times. The ineffective time consumption might have actually been allocated for business performance enhancement of RFA. Lastly, from the perspective of the operational staff productivity value, the staff and operational productivity could be improved as the system began to be utilized. Due to work efficiency, the workload of the staff was reduced and finished in a short amount of time, simultaneously providing more time to process the data needed by the stakeholders.

IS was deliberately developed in accordance with the regulation development as revealed by Mr. Fajar, “SIPKD gradually adjusts to the enforced regulation. For example, in 2018, a circular letter was distributed by the Indonesian Ministry of Home Affairs regarding the implementation of the non-cash transaction for local government in regency/city level by the 1st of January 2018. Thus, we eventually updated the system to adjust with the new regulation.” There are 3 points of Enterprise Goals which can be correlated with the case in RFA Salatiga. The first one is in compliance with external laws and regulation. The regulation of the Indonesian Ministry of Home Affairs could be unpredictably revised. It required to update and develop the existing system in order to adjust with the new law or regulation enforced by the central government. The second value that can be linked to this case is the compliance with internal policies. RFA implemented internal regulation which constructed with the intention to control the data management format sent by SKPD to RFA. After the data were processed, the data were handed over to stakeholders. The whole process could not be generalized with the RFA systems from other cities in specific terms. Thus, each RFA owned specified internal regulations and the system operated needed to be adjusted accordingly. The third value that can be connected with the RFA Salatiga case is the product and business innovation culture. In the modern era when every single aspect of human life began to be digitized, RFA also attempted to adapt to the current development in order to fit in. If RFA did not accustom according to the current trend, it might affect the convenience of any party related to RFA. Thus, the new innovations invented according to the digital era needs to be adopted by RFA.

4.2. Mapping Enterprise Goals and IT-Related Goals

The mapping process conducted in this stage is intended to figure which IT Related Goals (ITRG) related to the predetermined Enterprise Goals. This mapping process consists of its own framework which has been regulated in CobIT 5.0. It only selects Enterprise Goals with “primary” optimization
resource in IT Related Goals, which later on used as
the basis to create decisions for the following stage.
It can be inferred from Table 2 in the appendices list.

4.3. Mapping IT-Related Goals and CobIT 5.0
Process(Sub Domain)

This mapping process acted as the follow-up
stage of the mapping process in Enterprise Goals and
IT Related Goals. The process was quite similar to
the previous one as CobIT 5.0 had already
constructed its own framework to determine which
processes would be selected for the next stage. The
researcher grouped the “primary” resource
optimization only to determine which subdomains
were useful to construct questionnaire questions for
data collection in RFA.

After the ITRG sorting process through
resource optimization “primary”, 5 domains were
generated to be utilized for questionnaire distributed
in RFA, namely Evaluate Direct and Monitor (EDM), Align Plan and Organize (APO), Build Acquire and Implement (BAI), Deliver Service and Support (DSS), and Monitor Evaluate and Assess (MEA). Subdomains of each major domain were
used to construct questions for interview sessions
with respondents from RFA. Moreover, the data
collected from the interview sessions determined the
capability level of SIPKD based on the expert
judgment of the researcher to obtain data according
to CobIT 5.0 framework. In Table 3, the capability
levels of each subdomain are displayed:

<table>
<thead>
<tr>
<th>Process ID</th>
<th>To be assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDM01</td>
<td>1  2</td>
</tr>
<tr>
<td>EDM02</td>
<td>1</td>
</tr>
<tr>
<td>EDM03</td>
<td>1</td>
</tr>
<tr>
<td>EDM04</td>
<td>2</td>
</tr>
<tr>
<td>EDM05</td>
<td>1</td>
</tr>
<tr>
<td>APO01</td>
<td>0  2</td>
</tr>
<tr>
<td>APO02</td>
<td>1</td>
</tr>
<tr>
<td>APO03</td>
<td>0</td>
</tr>
<tr>
<td>APO04</td>
<td>2</td>
</tr>
<tr>
<td>APO05</td>
<td>1</td>
</tr>
<tr>
<td>APO06</td>
<td>1</td>
</tr>
<tr>
<td>APO07</td>
<td>1</td>
</tr>
<tr>
<td>APO08</td>
<td>1</td>
</tr>
<tr>
<td>APO09</td>
<td>2</td>
</tr>
<tr>
<td>APO10</td>
<td>2</td>
</tr>
<tr>
<td>APO11</td>
<td>2</td>
</tr>
<tr>
<td>APO12</td>
<td>1</td>
</tr>
<tr>
<td>APO13</td>
<td>1</td>
</tr>
<tr>
<td>BAI01</td>
<td>3  2</td>
</tr>
<tr>
<td>BAI02</td>
<td>2</td>
</tr>
<tr>
<td>BAI03</td>
<td>1</td>
</tr>
<tr>
<td>BAI04</td>
<td>1</td>
</tr>
</tbody>
</table>

4.4. GAP Analysis

From the results of the audit above and after
delivering the audit results. Researcher and RFA will agree to
maintain the level of capability that currently exists or increase
the level of capability to the target level in
accordance with the agreement. If the target level has
been determined, the researcher will make
recommendations for each domain so that the RFA
can reach its target level.

The audit results at the current RFA, the target
and optimal level of capability using the CobIT 5.0
framework can be seen from the Spider Chart above.
5. Conclusions, Limitations and Suggestions

Through the gap analysis, it can be concluded that the capability level of each domain reaches Level 2 (Managed), inferring that the implementation process had been conducted and managed. In this particular condition, the organization management of SIPKD was able to support the whole organization governance, specifically in facilitating efficient local financial reports in Salatiga. The researcher and RFA officers agreed to increase one level in each domain. Thus, RFA was advised to increase particular aspects of the system in order to achieve the intended goal. More human resources who were professionals in handling and managing unpredictable cases in TI need to be employed, specifically in managing the information system. Further, the enforcement of regulation requiring thorough documentation of all types and forms of activity involving the use, changes, and errors of the information system need to be done in order to secure the accountability of the system. The frail implementation of a comprehensive regulation that required documentation of any information system activity could be identified from the decreasing budgets for TI development. Supposedly, TI development should be continuously supported according to the current development of technology as the needs for system adjustments dynamically changing. Subsequently, to improve the performance of the system, a clear and accurate identification of security measurement criteria need to be set in order to ensure the RFA data security and confidentiality, specifically the accounting reports.

The limitation faced by researchers is, limitations of informants who understand information systems, so the information obtained cannot represent the overall results. Meanwhile, those who understand information systems are also other jobs, making it difficult to meet.

Suggestions for further research, can go to other SKPD, because in Salatiga all SKPDs have used information systems, but an information system governance audit has not been carried out because KOMINFO who has the authority to audit the information system has never conducted an audit since its establishment in the year 2017 at Salatiga.

6. References

7. References

Table 1. Relationship between Strategic Objectives of Regional Financial Agencies and Enterprise Goals within CobIT 5.0

<table>
<thead>
<tr>
<th>No.</th>
<th>Stakeholder Needs</th>
<th>BSC Dimension</th>
<th>No.</th>
<th>Enterprise Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Data integration between SKPD.</td>
<td>Financial</td>
<td>2.</td>
<td>Portfolio competitive products and services</td>
</tr>
<tr>
<td>3.</td>
<td>The resulting data is more accountable and transparent.</td>
<td>Financial</td>
<td>3.</td>
<td>Managed business risk (safeguarding assets)</td>
</tr>
<tr>
<td>5.</td>
<td>Periodic development of SI to keep abreast of regulations.</td>
<td>Financial</td>
<td>5.</td>
<td>Financial transparency</td>
</tr>
<tr>
<td>8.</td>
<td>Agile responses to a changing business environment</td>
<td>Customer</td>
<td>8.</td>
<td>Agile responses to a changing business environment</td>
</tr>
<tr>
<td>9.</td>
<td>Information based strategic decision making</td>
<td>Customer</td>
<td>9.</td>
<td>Information based strategic decision making</td>
</tr>
<tr>
<td>14.</td>
<td>Operational and staff productivity</td>
<td>Internal</td>
<td>14.</td>
<td>Operational and staff productivity</td>
</tr>
<tr>
<td>15.</td>
<td>Compliance with internal policies</td>
<td>Internal</td>
<td>15.</td>
<td>Compliance with internal policies</td>
</tr>
<tr>
<td>16.</td>
<td>Skilled and motivated people</td>
<td>Learn and Growth</td>
<td>16.</td>
<td>Skilled and motivated people</td>
</tr>
<tr>
<td>17.</td>
<td>Product and business innovation culture</td>
<td>Learn and Growth</td>
<td>17.</td>
<td>Product and business innovation culture</td>
</tr>
</tbody>
</table>

Table 1. Mapping Enterprise Goals and IT Related Goals

**Financial**

1. **Stakeholder value of business investments**
   - ITRG 01 Alignment of IT and business strategy
   - ITRG 03 Commitment of executive management for making IT-related decisions
   - ITRG 05 Realised benefits from IT-enabled investments and services portfolio
   - ITRG 07 Delivery of IT services in line with business requirements
   - ITRG 11 Optimisation of IT assets, resources and capabilities
   - ITRG 13 Delivery of programmers delivering benefits, on time, on budget, and meeting requirements and quality standards

3. **Managed business risk (safeguarding of assets)**
   - ITRG 04 Managed IT-related business risk
   - ITRG 10 Security of information, processing infrastructure and applications
   - ITRG 16 Competent and motivated business and IT personnel

4. **Compliance with external laws and regulations**
   - ITRG 02 IT compliance and support for business compliance with external laws and regulations
   - ITRG 10 Security of information, processing infrastructure and applications
   - ITRG 15 IT compliance with internal policies

5. **Financial transparency**
   - ITRG 06 Transparency of IT costs, benefits and risk

**Customer**

10. **Optimisation of service delivery costs**
    - ITRG 06 Transparency of IT costs, benefits and risk
    - ITRG 11 Optimisation of IT assets, resources and capabilities
12. Optimisation of business process costs

ITRG 05 Realised benefits from IT-enabled investments and services portfolio
ITRG 06 Transparency of IT costs, benefits and risk
ITRG 11 Optimisation of IT assets, resources and capabilities

14. Operational and staff productivity

ITRG 08 Adequate use of applications, information and technology solutions
ITRG 16 Competent and motivated business and IT personnel

15. Compliance with internal policies

ITRG 02 IT compliance and support for business compliance with external laws and regulations
ITRG 10 Security of information, processing infrastructure and applications
ITRG 15 IT compliance with internal policies

Learn & Growth

17. Product and business innovation culture

ITRG 09 IT agility
ITRG 17 Knowledge, expertise and initiatives for business innovation

Fig 2. Process on CobIT 5