Jurnal CoreIT, Vol.X, No.X, Month Year
ISSN 2460-738X (Print)
ISSN 2599-3321 (Online)

AUDIT OF INFORMATION TECHNOLOGY GOVERNANCE IN THE BOSS PT. BAHTERA PESAT LINTASBUANA USING COBIT 2019

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Abstract. This research, starting from the frame of mind that Audit of Technology Information Governance on Enterprise information system using COBIT 2019 is an important thing to do now and the future to align information technology investment with Enterprise Goals. COBIT 2019 framework provides realization of the benefits of implementation information systems, optimizing risks and optimizing resources according to Enterprise needs. Design factor of COBIT 2019 can determine the domains that must be assessed for their maturity level, so that companies can find out what needs to be improved in implementing information systems. This research is focus to the EDM02 and APO04 with expected maturity level 5. The EDM02 domain focuses on the process of optimizing the business value contribution of business processes, IT Service and IT assets resulting from investments made by IT in accordance with acceptable cost for the Enterprise. APO04 domain, it aims to organize and manage innovation by increasing operational efficiency in companies with the latest technology.

Keywords: Audit Governance TI, COBIT 2019, Maturity Level

Received July 2021 / **Revised** October 2021 / **Accepted** May 2022

INTRODUCTION

Companies in controlling an Information Technology investment decision, require an Information Technology Governance so that the goals and needs of the company can be fulfilled [1]. Based on the increasing role of Information Technology in building and facilitating company performance, almost all companies implement Information Technology Governance [2]. Alignment of the implementation of the company's Information System with the company's goals, can be done with an Information System Governance Audit that evaluates the level of maturity of the application of information systems in the company [3][4] .

Information System Governance Audit can be carried out with several frameworks, including COBIT, ITIL, COSO, TOGAF, ISO and others[5][6]. This research was conducted using the 2019 COBIT framework which defines principles for building and maintaining a governance system in the form of processes, organizational structures, policies and procedures, information flow, culture and behavior, skills, and infrastructure [7] . The 2019 COBIT framework provides value in the form of realizing the benefits of implementing information systems, optimizing risks and optimizing resources according to the company's business needs [8] .

PT.Bahtera Pesat Lintasbuana in carrying out its business activities has implemented an information system. The information system implemented by the company is the Business Operation Support System (BOSS). With the implementation of the Business Operation Support System (BOSS), business activities can be carried out more easily, quickly and efficiently. In order to see how far the level of maturity is in the application of company information technology to the Business Operation Support System (BOSS), it is necessary to conduct an audit of information system governance.

The Business Operation Support System (BOSS) information system of PT. Bahtera Pesat Lintasbuana, is expected to be able to improve the management of the Business Operation Support System (BOSS) so that it can compete with current advances in information technology. The Business Operation Support System (BOSS) PT. Bahtera Pesat Lintasbuana has been running since 2016. In 2016 until now there has not been an audit of information system governance, so it is felt necessary to conduct research "Audit of

DOI: 10.24014/coreit.vxxx.xxxx

Information Technology Governance in the Business Operation Support System (BOSS) PT. Bahtera Pesat Lintasbuana Using COBIT 2019". The 2019 COBIT Framework applies a design factor that maps 40 COBIT 2019 domains in several recommendation domains that need to be audited for information system governance [9]. The 2019 COBIT Framework is the most widely used and excellent framework for planning information technology governance audit activities. This research will focus on helping PT. Bahtera Pesat Lintasbuana provides recommendations for domains that need to be audited, determines the maturity level value of each audited domain and gap analysis (GAP) to help optimize the performance of the Business Operation Support System (BOSS) Information System and serve as material for evaluating improvements company performance using COBIT 2019.

METHODS

1. Library Foundation

This study refers to several previous journals as material for consideration and insight. The related research journals are presented in Table 1.

Table 1. Literature review

No	Study	Problems	Conclusion and Results
1	Ihsan, Muhammad Nugraheni, Dinar Mutiara Kusumo (2022) Evaluation of Information Technology Governance in the Process of Managing Innovation and Management of Information Technology Change Using COBIT 2019 at PT. XYZ[10]	Technology Governance has not run optimally and problems related to information technology often occur, such as hardware problems with late handling, data duplication and network problems that often disrupt existing processes in the company	Processes within the company are assessed using COBIT 2019 with the aim of knowing service quality, company management performance, and risks to the company by aligning objectives that occur in applications and information technology with the vision and mission of PT.XYZ
2	Angga Wijaya Narwa Putra, Andi Sunyoto, Asro Nasir (2020) Information Technology Governance Audit Planning for Calibration Laboratory Using Cobit 2019 (Case Study: BSML Regional II Calibration Laboratory)[5]	IT problems often occur in BSML Regional II	This research resulted in a planning of information technology governance audit activities in calibration laboratories, in this case the BSML Regional II, using the 2019 COBIT framework.
3	Aldy Maulana Syuhada (2021) Comparative Study of Cobit 5 and Cobit 2019 as an Information Technology Governance Audit Framework[11]	find out the comparison between COBIT 5 and COBIT 2019 and find out the advantages and disadvantages of each of these COBIT	there are several differences in terms of the general description at COBIT 2019 has a design factor, in terms of domains, in COBIT 2019 there are three additional domains and are objective . Furthermore, in terms of principles, COBIT 2019 has 9 principles that have been developed from the previous COBIT. Furthermore, from the goal cascade and from performance calculations, COBIT 5 only uses a capability level but in COBIT 2019 there are additions to a capability level and a maturity level. In terms of the advantages, COBIT 5 is more widely used, while the disadvantages are not flexible, while COBIT 2019

2.2. Research Stages

Based on the research to be examined and the objectives to be achieved in this study, systematic steps or stages are needed. Steps or stages are made logically and can be used as a guide to solving problems. The steps or stages of this research are shown in Figure I.

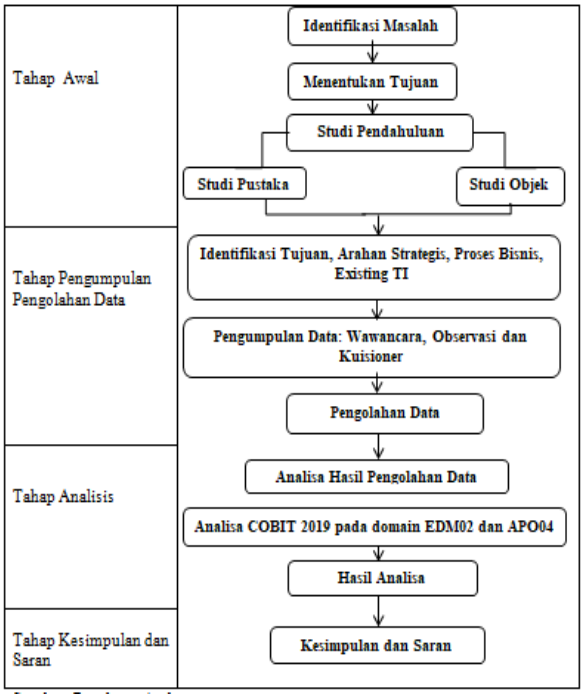

Figure 1. 2019 COBIT Research Stages

A. Initial Stage

The first stage is to identify the problems that occur in general in every company at this time, then specify the object of research, namely PT. Transbuana Rapid Ark. Furthermore, determining the goals to be achieved later, Preliminary studies in the form of literature studies, namely studying related research journals and object studies studying problems that occur in companies

B. Data Collection and Processing Stage

At this stage, the steps taken are identifying objectives, strategic directions, business processes, and *existing* IT. Data collection was in the form of interviews with the *Human Resource Business Division* and the IT division, direct observations in the company regarding the Information System *Business Operation Support System* (BOSS) and distributing questionnaires. Data Processing uses the COBIT 2019 *Design toolkit to determine the domains to* be audited.

C. Analysis Phase

"Analysis of the results of data processing, namely after obtaining the domains that need to be audited, the next step is distributing questionnaires related to these domains (EDM02 and APO04)" [12].

Then a questionnaire was distributed to measure the maturity level of *the Business Operation Support System (BOSS)* information system against the company's objectives. After being analyzed, we get the value of the maturity level *in* each domain.

D. Conclusion and Suggestion Stage

At this stage conclusions and suggestions are drawn based on the maturity level values of the EDM02 domain and APO04 domain.

RESULTS AND DISCUSSION

A. COBIT 2019 *Design Factors*

A1. Corporate Strategy *(Enterprise Strategy)*

The results of the assessment showing the value *of* design *factors* 1 *Enterprise Strategy* are shown in the following table:

Table 2. DF1 *Enterprise Strategy*

Value	***importance* (1-5)**	***baseline***
Growth/Acquisition	**4**	**3**
Innovation/Difference	**1**	**3**
Cost Leadership	**5**	**3**
Client Service/Stability	**2**	**3**

In Table 1 it is found that PT. Bahtera Pesat Lintasbuana focuses on *Cost Leadership* , which means the company is very good at managing costs.

A2. Company Goals *(Enterprise Goals)*

The company's target according to COBIT 2019 is divided into four perspectives, namely Financial *(Financial)* starting from EG01-EG04 , Customers *(Customer)* starting from EG05-EG06 , Internal *(Intern)* starting from EG07-EG11 , and Growth *(Growth)* starting from EG12-EG13. Assessment of company goals *(Enterprise Goals)* is as shown in the following table:

Table 3. DF2 *Enterprise Goals*

Value	**Importance (1-5)**	**baseline**
EG01— *Portfolio of competitive products and services*	**3**	**3**
EG02— *Managed business risk*	**3**	**3**
EG03— *Compliance with external laws and regulations*	**5**	**3**
EG04— *Quality of financial information*	**3**	**3**
EG05— *Customer-oriented service culture*	**4**	**3**
EG06— *Business-service continuity and availability*	**5**	**3**
EG07— *Quality of management information*	**3**	**3**
EG08— *Optimization of internal business process functionality*	**5**	**3**
EG09— *Optimization of business process costs*	**3**	**3**
EG10— *Staff skills, motivation and productivity*	**3**	**3**
EG11— *Compliance with internal policies*	**3**	**3**
EG12— *Managed digital transformation programs*	**5**	**3**
EG13— *Product and business innovation*	**3**	**3**

The value of the organizational goals of PT. Bahtera Pesat Lintasbuana from a financial perspective for EG03- Compliance with external laws and regulations is worth 5 because so far PT. Ark Pesat Lintasbuana always complies with existing rules and regulations, besides that PT. Bahtera Pesat Lintasbuana is in a heavily *regulated industry* which has a big risk if it does not comply with rules and regulations,

A3. Risk Profile

The results of the assessment showing the value *of* the Design Factors *3* Risk Profile *are* shown in the following table:

Table 4. DF3 *IT Risk Category*

Risk Scenario Categories	**Impacts (1-5)**	**Likelihood (1-5)**	**Risk Rating**	**baseline**
IT investment decision making, portfolio definition & maintenance	**5**	**1**	5	***9***
Programs & projects life cycle management	**4**	**1**	4	***9***
IT cost & oversight	**4**	**1**	4	***9***
IT expertise, skills & behavior	**5**	**1**	5	***9***
Enterprise/IT architecture	**5**	**1**	5	***9***
IT operational infrastructure incidents	**3**	**2**	6	***9***
Unauthorized actions	**3**	**2**	6	***9***
Software adoption/usage problems	**5**	**1**	5	***9***
Hardware incidents	**4**	**1**	4	***9***
Software failures	**5**	**1**	5	***9***
Logical attacks (hacking, malware, etc.)	**4**	**1**	4	***9***

Third-party/supplier incidents	**3**	**1**	3	***9***
Noncompliance	**3**	**1**	3	***9***
Geopolitical Issues	**3**	**2**	6	***9***
Industrial actions	**5**	**2**	10	***9***
Acts of nature	**5**	**2**	10	***9***
Technology-based innovation	**5**	**2**	10	***9***
Environmental	**4**	**2**	8	***9***
Data & information management	**5**	**2**	10	***9***

On the issue of risk for make IT investment decisions, portfolio definition and maintenance have a risk level of 5 because if PT. Ark Pesat Lintasbuana made a wrong IT investment, the risks involved were large and the investment value was lost, causing losses.

A4. I *&T Related Issues*

The results showing *the value* of *Design Factor* 4 *I&T Related Issues* are shown in the following table:

Table 5. DF4 *IT Related Issues*

IT-Related Issues	**Importance (1-3)**	***baseline***
Frustration between different IT entities across the organization because of a perception of low contribution to business value	1	***2***
Frustration between business departments (ie, the IT customer) and the IT department because of failed initiatives or a perception of low contribution to business value	2	***2***
Significant IT-related incidents, such as data loss, security breaches, project failures and application errors, linked to IT	2	***2***
Service delivery problems by the IT outsourcer(s)	3	***2***
Failures to meet IT-related regulatory or contractual requirements	3	***2***
Insufficient IT resources, staff with inadequate skills or staff burnout/dissatisfaction	2	***2***
IT-enabled changes or projects frequently failing to meet business needs and delivered late or over budget	3	***2***
Reluctance by board members, executives or senior management to engage with IT, or a lack of committed business sponsorship for IT	1	***2***
Complex IT operating models and/or unclear decision mechanisms for IT-related decisions	2	***2***
Excessively high cost of IT	1	***2***
Obstructed or failed implementation of new initiatives or innovations caused by the current IT architecture and systems	2	***2***
Gap between business and technical knowledge, which leads to business users and information and/or technology specialists speaking different languages	1	***2***
egular issues with data quality and integration of data across various sources	3	***2***

High level of end-user computing, creating (among other problems) a lack of oversight and quality control over the applications that are being developed and put in operation	1	***2***
Business departments implementing their own information solutions with little or no involvement of the enterprise IT department (related to end-user computing, which often stems from dissatisfaction with IT solutions and services)	1	***2***
Ignorance of and/or non-compliance with privacy regulations	1	***2***
Inability to exploit new technologies or innovate using I&T	3	***2***

A5. COBIT 2019 *Design Factor* Results

Based on the results obtained, it was decided which domains would be examined, namely, the EDM02 and APO04 domains. The EDM02 domain focuses on the process of analyzing requirements for IT-related corporate governance, maintaining effective structures, principles, processes and practices with clarity of responsibility and authority to achieve corporate goals and objectives. Domain APO04 aims to organize and manage innovation by increasing operational efficiency in companies with the latest technology.

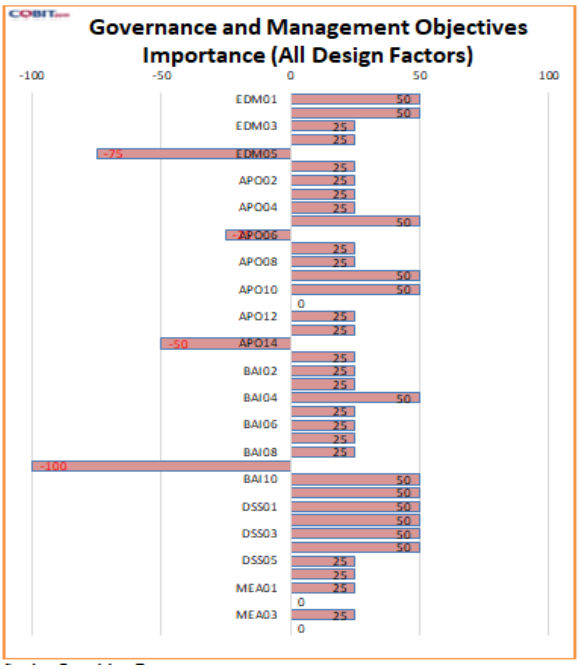

Figure 2. *Design Factor Summary*

B. Determination of Respondents

The next step is selecting respondents to fill out a questionnaire for each domain (Ikhsan & Nugraheni, 2022) . Obtained 10 respondents from PT. Bahtera Pesat Lintasbuana.

Table 6. Respondent Data

Code	Name	Position/Division
R1	Fadjar Oetomo	CEO
R2	Icha	HRB
R3	Dedy	IT
R4	Tantowi	CFO

R5	Diana	DH Business Unit 1
R6	Ety	DH Business Unit 2
R7	Lia	DH Business Unit 3
R8	Sulis	accounting
R9	Maya	collection
R10	Affifah	BOP

Each respondent is expected to be able to assess the level of activity in the EDM02 domain - Ensuring the provision of benefits and APO04 by giving a value of 0-5.

The details of these values are listed in the table below:

Table 7. *Index Maturity Level*

Maturity Index	**levels**	**information**
0 - 0.49	0	*0- Not Excellent*
0.50 - 1.49	1	*1- Initial/ Ad Hoc*
1.50 - 2.49	2	*2- Repeatable But Intuitive*
2.50 - 3.49	3	*3- Define Process*
3.50 - 4.49	4	*4- Managed and Measureable*
4.50 - 5.00	5	*5- Optimized*

C. EDM02 Maturity Level Assessment

Ensuring that the provision of benefits focuses on the process of optimizing the value contribution of business processes, IT functions and IT assets resulting from IT investments in accordance with costs acceptable to the company. The Maturity Level Assessment on EDM02 has 4 sub domains, namely EDM02.01, EDM02.02, EDM02.03, EDM02.04.

	EDM02.01 - Menetapkan Target Campuran Investasi													
No	**Pertanyaan**	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**Total**	**Current Maturity**	**average**
1	Sejauh mana perusahaan membuat dan memelihara portofolio program investasi yang mendukung I&T, layanan TI, dan aset TI yang menjadi dasar untuk anggaran TI saat ini dan mendukung rencana taktis dan strategis I&T.	5	4	5	5	5	4	5	5	5	5	48	4,8	4,5
2	Sejauh mana perusahaan mendapatkan pemahaman bersama antara Ti dan fungsi bisnis lainnya tentang peluang potensial bagi TI untuk mengaktifkan dan berkontribusi pada perusahaan?	5	5	5	5	4	4	4		4	4	40	4	
3	Sejauh mana perusahaan mengidentifikasi kategori luas Sistem informasi, aplikasi, data , layanan TI, infrastruktur, aset I&T, sumber daya, keterampilan, praktik, kontrol, dan hubungan yang diperlukan untuk mendukung strategi perusahaan?	5	4	5	4	4	3	4	4	4	5	42	4,2	
4	Sejauh mana perusahaan mensepakati tujuan I&T, dengan mempertimbangkan hubungan timbal balik antara strategi perusahaan dan layanan I &T?	5	5	5	5	5	5	5	5	5	5	50	5	
5	Sejauh mana perusahaan menentukan besaran investasi yang mencapai keseimbangan yang tepat diantara sejumlah dimensi, termasuk keseimbangan yang tepat penegembalian jangka pendek dan jangka panjang, keuntungan finansial dan non finansial serta investasi berisiko tinggi dan rendah?	5	5	5	5	5	5	5	5	5	5	50	5	5
	Average												4,6	4,75

Figure 3 *Maturity Level* EDM02.01

	EDM02.04 - Memantau Pengoptimalan Nilai													
No	**Pertanyaan**	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**	**R7**	**R8**	**R9**	**R10**	**Total**	**Current Maturity**	**average**
1	Sejauh mana perusahaan meninjau dan menyepakati tujuan kinerja dengan Ti dan fungsi bisnis lainnya?	5	5	5	5	5	5	5	5	5	5	50	5	4,55
2	Sejauh mana perusahaan mendapatkan tampilan portofolio. Program dan I&T (teknologi dan fungsional)?	5	4	5	4	4	4	4	4	4	4	42	4,2	
3	Sejauh mana perusahaan mendapatkan laporan kinerja portofolio, program dan I&T yang teratur dan relevan?	4	4	4	4	4	4	4	4	4	4	40	4	
4	Sejauh mana perusahaan memastikan bahwa tindakan korektif manajemen yang tepat dimulai dan dikendalikan?	5	5	5	5	5	5	5	5	5	5	50	5	
5	Sejauh mana perusahaan setelah meninjau laporan, mengambil tindakann manajemen yang sesuai?	5	5	5	5	5	5	5	5	5	5	50	5	5
													4,64	4,78

Figure 3. *Maturity Level* EDM02.02

	EDM02.03 - Optimalisasi Nilai Langsung														
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Total	Current Maturity	average
1	Sejauh mana perusahaan mendefinisikan dan mengkomunikasikan portofolio dan jenis investasi, kategori, kriteria dan bobot relatif ?	5	5	5	5	4	5	5	4	4	5	47	4,7	4,7
2	Sejauh mana perusahaan menetapkan persyaratn untuk tahap gerbang dan tinjauan lain untuk pentingnya investasi?	5	5	5	5	5	5	5	5	5	5	50	5	
3	Sejauh mana perusahaan mengarahkan manajemen untuk mempertimbangkan potensi penggunaan I&T yang innovatif?	5	5	5	5	5	5	5	5	5	5	50	5	
4	Sejauh mana perusahaan mengarahkan setiap perubahan yang diperlukan pada portofolio investasi dan layanan untuk menyesuaikan kembali dengan tujuan perusahaan?	4	3	4	3	3	4	4	4	4	4	37	3,7	4,68
5	Sejauh mana perusahaan mengarahkan setiap perubahan yang diperlukan dalam penugasan akuntabilitas dan tanggungjawab?	5	5	5	5	5	5	5	5	5	5	50	5	
6	Sejauh mana perusahaan merekomendasikan pertimbangan inovasi potensial terhadap peningkatan nilai dari inisiatif yang mendukung I&T?	5	4	5	4	5	5	4	5	5	5	47	4,7	
7	Sejauh mana perusahaan menentukan dan mengkomunikasikan tujuan penyampaian nilai tingkat perusahaan dan ukuran hasil untuk memungkinkan pemantauan yang efektif?	4	4	4	4	4	4	4	4	4	4	40	4	4
													4,59	4,46

Figure 4. *Maturity Level* EDM02.03

	EDM02.02 - Mengevaluasi Optimalisasi Nilai													
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Total	Current Maturity	average
1	Sejauh mana perusahaan memahami persyaratan pemangku kepentingan, isu strategis I&T, wawasan teknologi dan kapabilitas terkait signifikan i&T aktual dan potensial?	5	4	5	4	5	5	4	5	5	4	46	4,6	4,6
2	Sejauh mana perusahaan memahami elemen kunci tata kelola yang diperlukan untuk penyampaian nilai optimal yang andal, aman dan hemat biaya penggunaan layanan, aset dan sumberdaya I&T yang ada dan yang baru?	5	5	5	5	4	5	4	5	5	4	47	4,7	
3	Sejauh mana perusahaan mendiskusikan secara teratur tentang peluang yang dapat muncul bagi perusahaan?	5	5	4	4	4	5	5	5	5	5	47	4,7	4,8
4	Sejauh mana perusahaan memahami apa yang merupakan nilai bagi perusahaan, dan mempertimbangkan seberapa baik hal tersebut dikomunikasikan?	5	5	5	5	5	5	5	5	5	5	50	5	
5	Sejauh mana perusahaan mengevaluasi seberapa efektif perusahan dan strategi i&T yang telah terintegrasi dan diselaraskan dengan tujuan perusahaan?	5	5	5	5	5	5	5	5	5	5	50	5	
6	Sejauh mana perusahaan memahami dan mempertimbangkan seberapa efektif peran, tanggung jawab dan akuntabilitas saat ini untuk memastikan penciptaan nilai dari investasi berbasis I&T?	5	5	5	5	5	5	5	5	5	5	50	5	4,875
7	Sejauh mana perusahaan memepertimbangkan seberapa baik pengelolaan investasi, layanan dan aset yang dimungkinkan oleh I&T sejalan dengan praktik manajemen perusahaan dan manajemen keuangan?	5	5	5	5	5	5	5	5	5	5	50	5	
8	Sejauh mana perusahaan mengevaluasi portofolio investasi, layanan dan aset agar selaras dengan tujuan strategis perusahaan?	5	5	5		5	5	5	5	5	5	45	4,5	
													4,81	4,76

Figure 5. *Maturity Level* EDM02.04

C. Assessment Maturity Level APO04

Domain APO04 aims to organize and manage innovation by increasing operational efficiency in companies with the latest technology. This APO04 domain has 24 questions with 6 sub domains namely APO04.01, which has 4 questions regarding making innovations. APO04.02 , which has 3 questions regarding understanding the company's environment. APO04.03 , has 4 questions regarding environmental monitoring of technology. APO04.04, has 5 questions related to assessing the potential of technology and emerging innovation ideas. APO04.05, has 4 questions regarding further innovation recommendations. APO04.06 has 4 questions about monitoring and evaluating innovations that occur. The results of APO04 activity can be seen in the image below.

	APO04.02 maintan an understanding of the enterprise environment.												
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Current Maturity	Average
1	Sejauh mana usaha untuk mempertahankan pemahaman tentang penggerak industri dan bisnis, perusahaan dan strategi I&T, serta kelola perusahaan dan tantangan saat ini?	4	4	5	4	3	4	5	5	4	5	4,3	4,3
2	Sejauh mana perusahaan melakukan rapat rutin perusahaan untuk membahas tentang masalah yang dialami dan inovasi untuk menciptakan peluang?	5	4	5	4	5	5	4	5	4	5	4,6	3,8
3	Sejauh mana perusahaan mampu memahami parameter investasi perusahaan untuk inovasi dan teknologi baru?	4	3	2	3	2	3	4	3	3	3	3	
		Average										3,97	4,05

Figure 6. *Maturity Level* APO04.02

	APO04.03 Monitor and scan the technologi environment												
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Current Maturity	Average
1	Sejauh mana perusahaan memahami potensi inovasi teknologi yang tepat?	4	3	3	2	3	3	3	4	3	4	3,2	
2	Sejauh mana perusahaan memiliki proses pengawasan teknologi dan melakukan penelitian terhadap lingkungan eksternal untuk mengidentifikasi teknologi yang muncul dan potensial?	3	2	3	2	3	2	3	2	3	3	2,6	3,95
3	Sejauh mana perusahaan melakukan konsultasi ke pihak ketiga dalam melakukan penelitian tentang teknologi?	5	5	5	5	5	5	5	5	5	5	5	
4	Sejauh mana perusahaan menampung dan meninjau ide inovasi I&T dari staff untuk implementasinya?	5	5	5	5	5	5	5	5	5	5	5	
		Average										3,95	3,95

Figure 7. *Maturity Level* APO04.02

APO04.03 *Monitor and scan the technologi environment*														
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Current Maturity	Average
1	Sejauh mana perusahaan memahami potensi inovasi teknologi yang tepat?	4	3	3	2	3	3	3	4	3	4	3,2	3,95
2	Sejauh mana perusahaan memiliki proses pengawasan teknologi dan melakukan penelitian terhadap lingkungan eksternal untuk mengidentifikasi teknologi yang muncul dan potensial?	3	2	3	2	3	2	3	2	3	3	2,6	
3	Sejauh mana perusahaan melakukan konsultasi ke pihak ketiga dalam melakukan penelitian tentang teknologi?	5	5	5	5	5	5	5	5	5	5	5	
4	Sejauh mana perusahaan menampung dan meninjau ide inovasi I&T dari staff untuk implementasinya?	5	5	5	5	5	5	5	5	5	5	5	
		Average										3,95	3,95

Figure 8. *Maturity Level* APO04.03

APO04.04 *Assess the potential of emerging technologies and innovative ideas*													
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Current Maturity	Average
1	Sejauh mana perusahaan mengevaluasi teknologi dengan mempertimbangkan aspek waktu dan risiko?	4	3	4	4	3	4	3	4	3	3	3,5	3,5
2	Sejauh mana perusahaan melakukan identifikasi masalah yang perlu divalidasi melalui inisiatif pembuktian konsep?	3	3	2	3	2	3	4	3	4	2	2,9	0,725
3	Sejauh mana perusahaan mencakup inisiatif pembuktian konsep termasuk anggarann, hasil yang diinginkan dan kerangka waktu?	5	4	5	4	5	4	5	4	5	5	4,6	
4	Sejauh mana perusahaan mendapatkan persetujuan untuk melalukan pembuktian konsep?	5	4	3	4	5	4	5	4	4	4	4,2	
5	Sejauh mana perusahaan melakukan inisiatif pembuktian konsep untuk menguji teknologi yang muncul atau ide inovasi lain?	4	4	4	3	4	3	4	3	3	4	3,6	
		Average										3,76	2,1125

Figure 9. *Maturity Level* APO04.04

APO04.06 *Monitor the implementation and use of innovation*													
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Current Maturity	Average
1	Sejauh mana perusahaan menangkap pelajaran yang dipetik dan peluang untuk peningkatan?	4	3	4	3	4	4	4	4	4	5	3,9	4,45
2	Sejauh mana perusahaan memastikan dan memantau bahwa inisiatif selaras dengan perusahaan dan strategi I&T?	5	5	5	5	5	5	5	5	5	5	5	
3	Sejauh mana perusahaan menganalisis dan mengevaluasi teknologi baru atau inovasi I&T yang diimplementasikan?	4	5	4	5	4	5	4	5	5	4	4,5	4,45
4	Sejauh mana perusahaan mengidentifikasi dan mengevaluasi nilai dari inovasi yang potensial?	5	4	5	5	4	5	3	5	4	4	4,4	
		Average										4,45	4,45

Figure 10. *Maturity Level* APO04.05

APO04.05 *Recommend appropriate further initiatives*													
No	Pertanyaan	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Current Maturity	Average
1	Sejauh mana mendokumentasikan hasil pembuktian konsep termasuk panduan dan rekomendasi untuk tren dan program inovasi?	4	3	4	3	4	3	4	3	4	3	3,5	4,03
2	Sejauh mana mengkomunikasikan peluang inovasi yang layak ke dalam strategi I&T dan proses arsitektur perusahaan?	5	5	5	5	5	5	5	5	5	5	5	
3	Sejauh mana menganalisis dan mengkomunikasikan alasan penolakan inisiatif pembuktian konsep?	4	4	3	4	3	4	3	4	3	4	3,6	
4	Sejauh mana menindaklanjuti inisiatif bukti konsep untuk megukur investasi aktual	4	3	4	4	4	3	4	4	5	4	3,9	3,9
		Average										4,00	3,97

Figure 11. *Maturity Level* APO04.06

E. Maturity Level Summary

Based on the processed data, a summary of the maturity level results *for* the EDM02 and APO04 domains is obtained. Domain EDM02 Has a *Current Maturity* value of 4.66 with a maturity level of 5 - *Optimized* , which means that the implementation of information systems within the company has been running according to company goals, at this stage the company has started to focus on developing or innovating information systems to make it easier for employee performance. As for the APO04 domain, it has a current maturity value of 4.01 with a maturity level of *4- Managed and Measureable* which means Information systems within the company are running well, even data or information is already integrated between sections. But for innovation in information system development has not been realized, the company is required to focus on information system development innovation.

Table 8. *Maturity Level* Recapitulation

Domain	Current Maturity	Information
EDM02	4.66	*5- Optimized*
APO04	4.01	*4- Managed and Measureable*

F. GAP Gap Value

The value of the gap or gap is obtained from the difference between the *current maturity value* and the *expected maturity value* that has been determined at the beginning of the study. The *expected maturity* value determined in this study is 5.

Based on the processed data, an average gap value of 0.66 is obtained. For EDM02 domain gap value is 0.33 and for APO04 domain is 0.90 .

Table 9. *GAP Analysis*

Domain	Maturity Level		
	Current Maturity	Expected Maturity	Gap / Difference
EDM02	4.66	5	0.34
APO04	4.01	5	0.99
Average	**4,34**		**0.66**

To see the results of the level comparison graph between EDM02 and MEA03 which is formed from *current maturity* , *expected maturity* with GAP can be seen from the following radar graphic image:

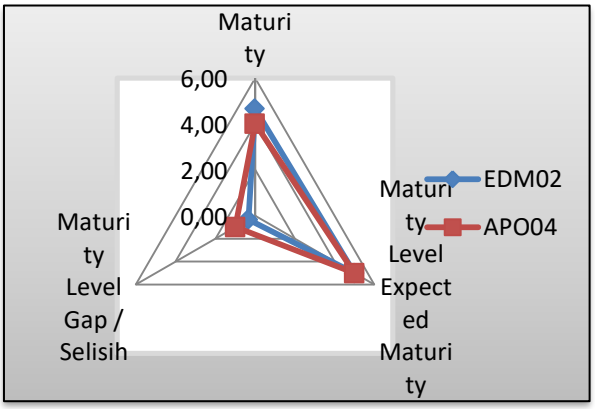

Figure 12. GAP Analysis Graph

CONCLUSION

Based on the results of research that has been carried out regarding Information Technology Governance Audit in the *Business Operation Support System* (BOSS) PT. Bahtera Pesat Lintasbuana Using COBIT 2019, it can be concluded that the recommended domains that need to be audited are EDM02 *(ensured benefits Delivery)* and APO04 *(managed Innovations)* . From the results of a survey with 10 respondents using the *Business Operation Support System* (BOSS) system, it can be concluded that the Maturity Level value *for* the EDM02 domain is 5- *Optimized* , which means that the application of information systems within the company has begun to focus on developing or innovating information systems to make it easier employee performance and this is in accordance with *the expected maturity* expected by the company. For APO04, it has a value of *4- Managed and Measureable*, which means that the application of information systems within the company has been running according to company goals, even data or information has been integrated between divisions but this is not in accordance with *the expected maturity* expected by the company.

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