

Analysis of Capability Levels And Gaps in Sales Information System Governance Using Cobit 2019 at Vehicle Dealerships in Batam

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Abstract

Digital transformation in the automotive industry has accelerated the adoption of Sales Information Systems (SIS) to support customer data management, sales transactions, reporting activities, and managerial decision-making. To ensure these systems deliver value, effective information technology governance must support their implementation. This study aims to evaluate the Capability Level and Capability Gap of Sales Information System governance at MG Motor Batam, DFSK Batam, and VinFast Batam using the COBIT 2019 framework. This study used a quantitative approach with an evaluative research design. Data were collected through observations, interviews, documentation reviews, and questionnaires administered to 30 respondents. The assessment focused on five COBIT 2019 processes: APO01 (Managed I&T Management Framework), APO13 (Managed Security), BAI03 (Managed Solutions Identification and Build), DSS01 (Managed Operations), and DSS05 (Managed Security Services). The findings indicate an overall average Current Capability Level of 2.75, placing the evaluated governance processes within Level 2 (Managed Process) and approaching Level 3 (Established Process). Among the three dealerships, VinFast Batam achieved the highest average capability score of 2.82, followed by DFSK Batam with 2.73 and MG Motor Batam with 2.71. The Capability Gap analysis revealed gaps ranging from 0.01 to 0.48, with the largest gaps identified in APO01 and APO13 at MG Motor Batam. Overall, the results suggest that Sales Information System governance across the three dealerships has reached a managed capability level and requires incremental improvements to achieve the targeted capability level.

Keywords: COBIT 2019, Information Technology Governance, Sales Information System, Capability Level, Capability Gap.

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Introduction

Digital transformation has become a key driver of business model changes across various industrial sectors, including the automotive industry. Using information technology enables organizations to improve operational efficiency, service quality, and data accuracy, and to accelerate decision-making. In the digital economy, information technology is no longer viewed merely as a support function; it has become a strategic asset that helps achieve business goals and boost organizational competitiveness [1].

Indonesia's automotive industry shows a positive trend, particularly in the electric vehicle segment. Data from the Association of Indonesian Automotive Industries (GAIKINDO) indicates that battery electric vehicle (BEV) sales from January to November 2025 reached 82,525 units, representing an 11.62% share of total national vehicle sales. This growth reflects increasing public acceptance of electric vehicles. This is driving automotive industry players to shift their business strategies toward leveraging digital technology to support operations and customer service [2].

The electric vehicle market is also growing as global automotive manufacturers enter Indonesia, including MG Motor, DFSK, and VinFast, which are continuously expanding their marketing and service networks across regions. Furthermore, rising demand for electric vehicles has contributed to growth in national vehicle sales after a slowdown in previous years. These conditions indicate that the automotive industry is transforming, requiring organizations to implement information systems that support business processes effectively and sustainably [3].

As one of Indonesia's major hubs for industry, trade, and investment, Batam City holds a strategic position in developing the automotive and electric vehicle sectors. Its status as a Free Trade Zone drives economic growth and increases public demand for vehicle sales services. Consequently, vehicle dealerships must manage sales information quickly, accurately, and in an integrated manner to support customer service and achieve business targets.

In their operations, vehicle dealerships utilize Sales Information Systems (SIS) to support various business activities, such as managing customer data, recording sales transactions, handling vehicle administrative documentation, monitoring sales targets, compiling reports, and providing information to management. An integrated information system enables business processes to operate more effectively and efficiently compared to manual methods. However, greater reliance on information systems also introduces risks such as data processing errors, service disruptions, data loss, customer information leaks, and misalignment between information technology use and the organization's business needs.

As vehicle dealerships increasingly use sales information systems, the need for effective information technology (IT) governance becomes increasingly critical. These systems are required not only to support business operations but also to ensure information security, service reliability, effective risk management, and alignment between IT and organizational goals. In practice, however, many organizations still face challenges such as suboptimal IT risk management, a lack of periodic system performance measurement, weak information security controls, and the absence of evaluation mechanisms that can comprehensively assess the effectiveness of IT processes. These conditions can hinder the achievement of business objectives and reduce the quality of service provided to customers.

Information technology governance is a mechanism organizations use to ensure that information technology delivers business value, optimizes resources, manages risks, and supports the sustainable achievement of organizational goals. Effective governance enables organizations to establish structured processes for planning, managing, controlling, and evaluating information technology use, enhancing operational effectiveness and efficiency [4].

One widely used framework for evaluating information technology governance is COBIT 2019, developed by ISACA. This framework provides a set of Governance and Management Objectives to assess the state of information technology governance within an organization. COBIT 2019 also offers a Capability Level measurement mechanism, enabling organizations

to determine their current process capability level and compare it with the desired capability level. This comparison yields a gap value that can serve as a basis for systematically formulating strategies to improve information technology governance [5].

Measuring the capability level is important because it provides an objective overview of the maturity of an organization's information technology processes. The higher the capability level achieved, the better the organization's ability to manage information technology processes in a structured, documented, measurable, and sustainable manner. Conversely, a gap between the current state and the target indicates areas that require attention and improvement to ensure organizational goals are achieved optimally [1].

Various studies have applied COBIT 2019 to evaluate information technology governance through capability level measurement and gap analysis. Research by Widasari and Oktadini (2025), Lumingkewas et al. (2023), Zaini et al. (2025), and Silaban and Fianty (2025) shows that COBIT 2019 can identify process capability levels, measure gaps relative to organizational targets, and generate relevant recommendations to improve information technology governance. These findings indicate that most organizations currently operate at Capability Levels 2 to 3, highlighting the need to improve risk management, information security, service management, and information technology performance monitoring [6]–[9].

However, most prior research has focused on the government, education, and public service sectors. Studies specifically evaluating the governance of sales information systems at electric vehicle and automotive dealerships remain very limited, particularly regarding dealerships operating in Batam City. Furthermore, few studies have examined the COBIT 2019 processes that directly support vehicle sales activities, such as risk management, information security, operations management, change management, and sales system performance monitoring. This situation indicates a research gap that warrants further investigation.

Based on the foregoing, this study aims to analyze the current capability level, determine the target capability level, and measure the governance gap regarding the Sales Information System at MG Motor Batam, DFSK Batam, and VinFast Batam using the COBIT 2019 framework. The processes evaluated include EDM01 (Ensured Governance Framework Setting and Maintenance), APO12 (Managed Risk), APO13 (Managed Security), BAI04 (Managed Availability and Capacity), BAI06 (Managed IT Changes), DSS01 (Managed Operations), DSS05 (Managed Security Services), and MEA01 (Managed Performance and Conformance Monitoring). The study results are expected to provide an overview of Sales Information System governance at these vehicle dealerships in Batam, identify areas for improvement, and serve as a basis for recommendations to enhance IT governance, making it more effective and aligned with the organizations' business objectives.

Literature Review

2.1 Information Technology Governance

Information Technology (IT) governance is an integral part of organizational governance, aiming to ensure that information technology supports the achievement of business objectives, optimizes resource utilization, and manages risks associated with IT usage [4]. IT governance focuses on value creation by balancing benefits realization, risk optimization, and resource optimization [5]. Effective IT governance enables organizations to align business and IT strategies, ensuring IT investments deliver maximum benefits. Furthermore, IT governance enhances service quality, strengthens information security, and supports accurate, timely, data-driven decision-making [10]. In vehicle dealerships, the Sales Information System (SIP) is a critical asset that supports marketing activities, customer management, sales transactions, reporting, and management decision-making. Therefore, robust IT governance is essential to ensure the SIP operates effectively and securely while remaining aligned with the organization's business objectives.

2.2 COBIT 2019

COBIT (Control Objectives for Information and Related Technologies) 2019 is an information technology governance and management framework developed by ISACA as an enhancement to COBIT 5. This framework helps organizations create value from information technology through an integrated, flexible governance system [5]. COBIT 2019 comprises six key principles: providing value to stakeholders, a holistic approach, a dynamic governance system, the separation of governance and management, tailoring to organizational needs, and end-to-end organizational coverage [5]. Governance and management objectives in COBIT 2019 are grouped into five main domains:

- EDM (Evaluate, Direct and Monitor)
- APO (Align, Plan and Organize)
- BAI (Build, Acquire and Implement)
- DSS (Deliver, Service and Support)
- MEA (Monitor, Evaluate and Assess)

In this study, the evaluation focuses on eight COBIT 2019 processes that support the operations of the Sales Information System: EDM01 (Ensured Governance Framework Setting and Maintenance), APO12 (Managed Risk), APO13 (Managed Security), BAI04 (Managed Availability and Capacity), BAI06 (Managed IT Changes), DSS01 (Managed Operations), DSS05 (Managed Security Services), and MEA01 (Managed Performance and Conformance Monitoring).

2.3 Capability Level

Capability level measures how well a process achieves established objectives. COBIT 2019 employs a Performance Management approach based on the Process Assessment Model (PAM) principles to evaluate process capability levels [1]. The capability levels in COBIT 2019 consist of:

- Level 0: Incomplete Process
- Level 1: Performed Process
- Level 2: Managed Process
- Level 3: Established Process
- Level 4: Predictable Process
- Level 5: Innovating Process

The higher the capability level achieved, the better the organization's ability to manage, control, and continuously improve its information technology processes [11].

2.4 Gap Analysis

Gap analysis identifies the disparity between the current state (Current Capability Level) and the desired state (Target Capability Level). This analysis helps organizations identify areas for improvement and set priorities for enhancing information technology governance (ISACA, 2018a).

The gap is calculated using the following equation:

$$[\text{Gap} = \text{Target} \setminus \text{Capability} \setminus \text{Level} - \text{Current} \setminus \text{Capability} \setminus \text{Level}]$$

A small gap value indicates that the organization's condition is close to the desired target. In contrast, a large gap value indicates a need for more intensive corrective action regarding the relevant processes

2.5 Previous Research

Various studies have demonstrated the effectiveness of COBIT 2019 in evaluating information technology governance across diverse organizational sectors. Elue (2020) stated that COBIT 2019 offers a more flexible approach to measuring process capabilities compared

to previous frameworks [11]. De Haes, Van Grembergen, Joshi, and Huygh (2020) explain that implementing effective information technology governance, including through the COBIT 2019 framework, can help organizations enhance alignment between business and information technology goals (business–IT alignment) [4].

Research by [6] showed that COBIT 2019 evaluations can identify capability levels and gaps within government information systems, yielding measurable recommendations for improvement. A study by Fachruddin et al. (2025) also found COBIT 2019 to be effective for measuring IT governance capability levels and supporting the formulation of continuous improvement strategies [12].

Based on these studies, COBIT 2019 is suitable for evaluating the governance of the Sales Information System at vehicle dealerships in Batam, as it can measure process capability levels, identify gaps relative to organizational targets, and provide a foundation for formulating recommendations to improve information technology governance.

Research Methodology

3.1 Research Design

This study uses a quantitative, evaluative approach to analyze the governance capability level and gaps of the Sales Information System (SIP) at vehicle dealerships in Batam City. The evaluation uses the COBIT 2019 framework, which provides guidelines for information technology governance and management that can be used to measure process capabilities and evaluate the alignment of information technology with organizational business objectives [5]. The evaluation results are used to determine the current governance state (Current Capability Level), compare it with the desired target (Target Capability Level), and identify gaps (Gap Analysis) requiring improvement.

3.2 Research Object

This research focuses on the Sales Information System (SIP) used by three vehicle dealerships in Batam City: MG Motor Batam, DFSK Batam, and VinFast Batam. The system supports activities such as customer data management, sales transaction recording, sales report generation, and providing information for management decision-making. Based on the Sales Information System's governance requirements, the research focuses on five COBIT 2019 processes relevant to vehicle sales operations, as shown in Table 1.

Table 1. Evaluated COBIT 2019 Processes

Domain	Process	Description
APO	APO01	Managed IT Management Framework
APO	APO13	Managed Security
BAI	BAI03	Managed Solutions Identification and Build
DSS	DSS01	Managed Operations
DSS	DSS05	Managed Security Services

3.3 Population and Sample

The research population includes all users and parties involved in managing the Sales Information System at MG Motor Batam, DFSK Batam, and VinFast Batam. Purposive sampling was employed as the sampling technique; this involves selecting respondents based on the criterion that they are directly involved in the use or management of the information system [13]. The study comprises 30 respondents: Branch Managers, Sales Supervisors, Sales Executives, and Sales Administrators from each dealership.

3.4 Data Collection Techniques

Data collection was conducted using the following techniques:

- Observation: direct observation of the Sales Information System's usage at the vehicle dealership.

- Interviews: gathering information from the parties responsible for managing and using the system.
- Questionnaires: the primary research instrument, developed based on COBIT 2019 practices and activities.
- Document Study: collecting documents related to the procedures, policies, and usage of the Sales Information System.

Using various data collection techniques aims to obtain more comprehensive information about the governance status of the information system under evaluation.

3.5 Capability Level Measurement

Capability level measurement is conducted based on the COBIT 2019 framework. The capability level indicates the extent to which a process can achieve established objectives [1]. Respondent data is processed to determine the Current Capability Level for each process evaluated. The COBIT 2019 capability levels consist of six tiers, as shown in Table 2.

Table 2. COBIT 2019 Capability Levels

Level	Category
0	Incomplete Process
1	Performed Process
2	Managed Process
3	Established Process
4	Predictable Process
5	Optimizing Process

In this study, the target capability is set at Level 3 (Established Process) because, at this level, processes are documented, standardized, and consistently implemented within the organization [1].

3.6 Gap Analysis

Gap analysis identifies the disparity between the current state (Current Capability Level) and the desired state (Target Capability Level). According to ISACA (2018), gap analysis can identify process areas requiring improvement and help organizations prioritize IT governance enhancements [5].

The gap is calculated using the equation:

$$[\text{Gap} = \text{Target} \setminus \text{Capability} \setminus \text{Level} - \text{Current} \setminus \text{Capability} \setminus \text{Level}]$$

The smaller the calculated gap value, the closer the organization is to the desired target. Conversely, a large gap value indicates a need to improve governance within the relevant process.

3.7 Data Analysis Techniques

The data analysis stages in this study were conducted as follows:

- Collecting data from observations, interviews, documentation, and questionnaires.
- Mapping COBIT 2019 processes relevant to the Sales Information System.
- Calculating the Current Capability Level for each process at each dealership.
- Setting the Target Capability Level at Level 3.
- Calculating the gap between the current state and the target.
- Comparing capability levels across dealerships.
- Identifying processes with the largest gaps as improvement priorities.
- Formulating recommendations for improving Sales Information System governance based on the evaluation results.

Results

4.1 Karakteristik Responden

Table 3. Distribution of Respondents by Gender

Dealer	Male	Female	Total
MG Motor Batam	8	2	10
DFSK Batam	7	3	10
VinFast Batam	3	7	10
Total	18	12	30

Table 4. Characteristics of Age, Length of Service, and Experience

Dealer	Rata-rata Usia	Masa Kerja	Pengalaman di Dealer Lain
MG Motor Batam	30,7 tahun	1–4 tahun	2 orang
DFSK Batam	31,1 tahun	1–4 tahun	2 orang
VinFast Batam	32,6 tahun	1–4 tahun	2 orang
Total/Rata-rata	31,5 tahun	1–4 tahun	6 orang

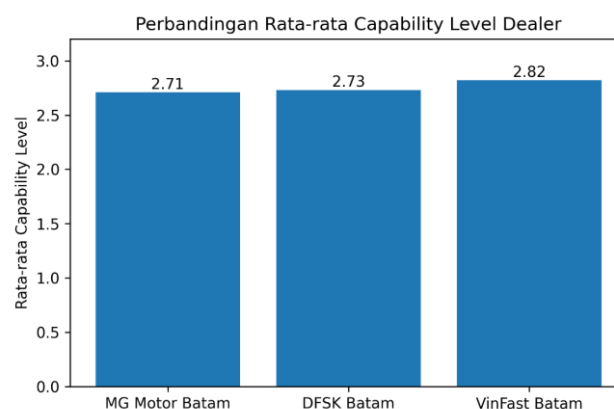
4.2 Current Capability Level

Table 4. Current Capability Level per Proses and Dealer

Proses	MG Motor	DFSK	VinFast	Average
APO01	2,52	2,80	2,79	2,70
APO13	2,52	2,76	2,77	2,68
BAI03	2,85	2,72	2,80	2,79
DSS01	2,75	2,74	3,01	2,83
DSS05	2,89	2,61	2,72	2,74
Average dealer	2,71	2,73	2,82	2,75

Based on these results, DSS01 achieved the highest average capability score (2.83), while APO13 had the lowest (2.68). The overall average was 2.75.

4.3 Perbandingan Capability Level Antar Dealer



Based on the graph, the average capability level is 2.71 for MG Motor Batam, 2.73 for DFSK Batam, and 2.82 for VinFast Batam. Thus, overall, the three dealerships fall within a relatively close capability range, approaching Level 3.

Gap Analysis

Table 5. Gap Analysis Results

Proces	Dealer	Current	Target	Gap	Prioritas
APO01	MG Motor	2,52	3,00	0,48	Low Priority
APO01	DFSK	2,80	3,00	0,20	Low Priority
APO01	VinFast	2,79	3,00	0,21	Low Priority
APO13	MG Motor	2,52	3,00	0,48	Low Priority
APO13	DFSK	2,76	3,00	0,24	Low Priority
APO13	VinFast	2,77	3,00	0,23	Low Priority
BAI03	MG Motor	2,85	3,00	0,15	Low Priority
BAI03	DFSK	2,72	3,00	0,28	Low Priority
BAI03	VinFast	2,80	3,00	0,20	Low Priority
DSS01	MG Motor	2,75	3,00	0,25	Low Priority
DSS01	DFSK	2,74	3,00	0,26	Low Priority
DSS01	VinFast	3,01	3,00	-0,01	Not a priority
DSS05	MG Motor	2,89	3,00	0,11	Low Priority
DSS05	DFSK	2,61	3,00	0,39	Low Priority
DSS05	VinFast	2,72	3,00	0,28	Low Priority

Research findings indicate that the governance of the Sales Information System (SIP) at MG Motor Batam, DFSK Batam, and VinFast Batam achieved an average Capability Level of 2.75. Based on the COBIT 2019 capability model, this score falls within Level 2 (Managed Process) and approaches Level 3 (Established Process). This indicates that the evaluated processes are well planned, monitored, and controlled, producing managed outputs. However, the processes are not yet fully documented or comprehensively standardized, resulting in inconsistent implementation across the organization. COBIT 2019 specifies that organizations reaching Level 3 should have processes that are documented, standardized, and uniformly implemented throughout all organizational activities.

Based on measurement results across all processes, DSS01 (Managed Operations) achieved the highest average capability score of 2.83. This finding indicates that the three dealerships have managed operational activities related to the Sales Information System effectively, including service provision, execution of operational procedures, and daily system support. This situation suggests that system operations are integrated with business activities, thereby effectively supporting the sales process. Performance in the DSS01 area was particularly notable at VinFast Batam, which achieved a capability score of 3.01, surpassing the established target.

Conversely, APO13 (Managed Security) recorded the lowest average Capability Level at 2.68. This result indicates that information security remains a key challenge in governing Sales Information Systems. As the use of digital customer data, electronic transactions, and technology-based reporting systems increases, information security has become critical to maintaining customer trust and ensuring the continuity of company operations. COBIT 2019 designates information security as a strategic governance objective to protect information assets, applications, and technology infrastructure. Therefore, the relatively low APO13 capability score highlights the need to improve security policies, access controls, risk monitoring, and user security awareness.

When comparing the organizations, VinFast Batam achieved the highest average Capability Level (2.82), followed by DFSK Batam (2.73) and MG Motor Batam (2.71). Although the differences are not particularly significant, the results indicate that VinFast Batam has a slightly higher level of governance maturity in managing its Sales Information System. This achievement may be attributed to factors such as more structured operational controls,

stronger management support, or greater consistency in executing information technology procedures. Nevertheless, all three dealerships fall into the same capability category; thus, the governance maturity level of Sales Information Systems among vehicle dealerships in Batam can generally be considered relatively comparable.

The gap analysis results further reinforce these findings. The calculated gap values range from -0.01 to 0.48, indicating that most processes are approaching the target Capability Level 3. The largest gaps were in APO01 (Managed IT Management Framework) and APO13 (Managed Security) at MG Motor Batam, both with a gap value of 0.48. These findings indicate that implementing IT governance and information security management frameworks must be a primary focus of future improvement efforts. A clear governance framework is crucial, as it provides the foundation for policies, responsibilities, oversight mechanisms, and effective IT management structures.

The findings of this study align with research by Elue (2020), which states that using COBIT 2019 enables organizations to identify governance areas requiring improvement while providing a systematic basis for recommendations on organizational development [11]. In this study, implementing COBIT 2019 also revealed capability gaps across several processes, allowing areas requiring management attention to be identified more clearly.

The findings also support Huygh and De Haes (2021), who argue that COBIT 2019 helps align business and information technology objectives through a structured governance evaluation process. In this study, the Sales Information System has generally supported the vehicle dealership's business operations. However, certain governance practices still require refinement to achieve the targeted capability levels.

Furthermore, the results of this study are consistent with research conducted by Widasari and Oktadini (2025), Fachruddin et al. (2023), Zaini et al. (2025), and Silaban and Fianty (2025) [6]–[8], [12]. These studies indicate that many organizations operate within the Level 2 to Level 3 capability range yet still face challenges regarding governance structures, information security, and process standardization. A similar situation was observed at the three dealerships studied, where most processes approached Level 3 but did not yet fully meet the characteristics of an "Established Process."

Overall, the research results demonstrate that COBIT 2019 is an effective framework for evaluating the governance of Sales Information Systems at electric vehicle and automotive dealerships in Batam. Capability Level measurement provides an overview of the current state of governance. At the same time, gap analysis helps identify priority areas for improvement. Based on the findings, future improvement efforts should focus on strengthening information security, refining the governance framework, enhancing process documentation, and implementing continuous monitoring mechanisms. By addressing these aspects, the organization is expected to elevate its governance maturity level, enhance operational effectiveness, and more optimally achieve its established capability targets.

Conclusion

This study evaluated the governance of the Sales Information System at MG Motor Batam, DFSK Batam, and VinFast Batam using the COBIT 2019 framework. The assessment results indicate an overall average Current Capability Level of 2.75, placing the evaluated processes within Level 2 (Managed Process) and approaching Level 3 (Established Process). Among the three dealerships, VinFast Batam achieved the highest average capability level (2.82), followed by DFSK Batam (2.73) and MG Motor Batam (2.71).

The gap analysis revealed that most evaluated processes were relatively close to the target capability level. The identified capability gaps ranged from 0.01 to 0.48, indicating that the governance processes have been implemented and managed. However, several areas still require improvement to achieve the desired capability level consistently. The largest gaps were identified in APO01 and APO13 at MG Motor Batam. At the same time, DSS01 at VinFast Batam exceeded the established target capability level.

Overall, the findings suggest that Sales Information System governance practices at the three dealerships have reached a managed capability level and are progressing toward a more established governance environment. Future improvement efforts should focus on strengthening IT management practices, governance procedures, and information security controls to support higher capability levels and improve the effectiveness of Sales Information System governance.

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