

# Evaluation of Helpdesk Performance at the IT Center of a Higher Education Institution Using COBIT 2019 DSS02 Domain

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## Abstract

The advancement of information technology in higher education demands effective, responsive, and accountable service systems. The Helpdesk service is a vital element supporting academic and administrative IT activities. This study aims to evaluate the performance of the Helpdesk services of the Information and Communication Technology Unit (UPT-TIK) at a higher education institution using the COBIT 2019 framework, specifically domain DSS02 (Manage Service Requests and Incidents). The research employs a descriptive qualitative approach through document and SOP analysis. The results show that the DSS02 process capability level is **Level 2 – Managed Process**, indicating that processes are implemented and controlled but not yet fully documented or measured. Recommendations focus on improving documentation, developing automated reporting systems, and implementing Service Level Agreements (SLA) to reach Level 3 capability.

**Keywords:** Helpdesk, COBIT 2019, DSS02, IT Governance, Evaluation.

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## Introduction

The advancement of information technology (IT) has transformed the way higher education institutions manage academic and administrative processes. IT services now serve as the backbone of modern campuses, integrating information systems, digital learning platforms, and administrative databases into one ecosystem [6]. As a result, ensuring the availability, reliability, and efficiency of IT services has become a strategic priority for universities.

In this context, the Helpdesk plays a crucial role as the first contact point between users and IT service providers. It ensures that incidents and service requests are handled quickly and effectively. However, in many institutions, Helpdesk operations are still managed manually using email, spreadsheets, or phone reports. Such practices make it difficult to monitor resolution times, trace incident causes, and maintain consistent service quality [3], [5].

A well-governed IT service should follow internationally recognized frameworks. One such framework is **COBIT 2019**, developed by ISACA, which provides comprehensive guidelines for IT governance and management [1]. COBIT 2019 introduces a performance-based approach emphasizing process capability, stakeholder alignment, and continual improvement [1], [4].

This study applies the **COBIT 2019 DSS02 domain**, which specifically addresses “Manage Service Requests and Incidents.” The domain is essential for measuring Helpdesk performance and identifying gaps between current and desired capability levels.

The objective of this study is to evaluate the Helpdesk service performance at the IT Center (UPT-TIK) of a higher education institution using the COBIT 2019 DSS02 domain, assess its process capability level, and propose recommendations for improvement toward Level 3 (Established Process).

## Literature Review

### 2.1 Helpdesk in Higher Education

A Helpdesk functions as a central point of contact between IT service providers and users. It aims to manage service requests, technical issues, and user complaints in a structured manner [3]. Within higher education, Helpdesk services are vital to maintaining operational continuity — ensuring that learning management systems, online assessments, and academic portals function without disruption [6].

Effective Helpdesk management requires not only technical competence but also strong organizational processes, clear communication channels, and measurable service standards. According to Kim et al. [7], the efficiency of IT support services directly impacts user satisfaction and the overall perception of institutional IT governance.

### 2.2 IT Governance and COBIT 2019

COBIT (Control Objectives for Information and Related Technologies) provides a set of best practices and control objectives that ensure IT processes support business goals [1]. The COBIT 2019 version introduces design factors, governance system components, and performance management principles to help organizations adapt governance to their unique context [4].

The framework evaluates processes using six capability levels ranging from Level 0 (Incomplete) to Level 5 (Optimizing). These levels measure how well an organization defines, manages, and continuously improves its IT-related processes [1].

- a. Level 0 – Incomplete Process - The process is not implemented or fails to achieve its purpose.

- b. Level 1 – Performed Process – The process achieves its purpose but is not well-controlled.
- c. Level 2 – Managed Process – The process is planned and executed with control.
- d. Level 3 – Established Process – The process is defined, documented, and standardized.
- e. Level 4 – Predictable Process – The process is measured and monitored quantitatively.
- f. Level 5 – Optimizing Process – The process is continuously improved and optimized.

### **2.3 DSS02 Domain: Manage Service Request and Incidents**

The DSS02 domain focuses on how organizations manage service requests and incidents to maintain IT service stability and reliability [1]. Key DSS02 activities include:

- 1. Receive and recording incidents
- 2. Classifying and prioritizing requests
- 3. Verifying and fulfilling requests
- 4. Investigating and diagnosis incidents
- 5. Resolving and recovering services
- 6. Closing requests
- 7. Tracking and reporting

According to Putra [2], applying DSS02 in higher education is beneficial due to the high frequency of service requests, which requires structured workflows and automated monitoring tools. Santoso [3] adds that integrating SLAs and dashboards allows institutions to measure response time and service performance objectively.

### **2.4 Previous Research**

Putra [2] conducted a study using COBIT 2019 to assess the Helpdesk service of University X and found a capability level of 2 for DSS02, recommending the implementation of an automated ticketing system. Similarly, Santoso [3] reported that implementing a Service Level Agreement (SLA) and automated reporting dashboard increased DSS02 capability from level 2 to level 3. These findings indicate that documentation and automation are critical success factors for improving Helpdesk governance maturity.

## **Research Methodology**

### **3.1 Research Approach**

This research applies a descriptive qualitative approach, aiming to describe the current condition of the Helpdesk service and compare it to COBIT 2019 DSS02 best practices [1].

### **3.2 Object and Scope**

The object of this research is the IT Center (UPT-TIK) of a higher education institution. The scope is limited to the Helpdesk service process and incident management activities.

### **3.3 Data Collection Techniques**

Data were collected through :

- 1. Analysis of Helpdesk SOP and Incident Handling SOP
- 2. Review of incident recording forms
- 3. Monthly Helpdesk activity reports
- 4. Reports on response time and service issues from IT staff

### **3.4 Data Analysis Procedures**

The analysis followed these steps:

- 1. Identify DSS02 processes based on COBIT 2019 [1].

2. Map Helpdesk activities to DSS02 sub-processes.
3. Evaluate compliance between existing SOPs and actual implementation.
4. Assess capability levels of each sub-process using COBIT's capability model.
5. Conduct gap analysis between the current and target levels [2], [3].

### 3.5 Problem Analysis

Document analysis and informal interviews with IT Center staff revealed that incident handling and service requests are still managed manually. Reports are recorded through email and spreadsheets without an automated ticketing system, resulting in delays in tracking and difficulties in monitoring resolution times.

Additionally, there is no formal Service Level Agreement (SLA) defining response times, priority categories, or escalation mechanisms. As a result, recurring incidents often lack root-cause documentation and proper follow-up evaluation.

Operationally, the IT Center has established SOPs for incident and service request management. However, these SOPs are not consistently followed by all Helpdesk personnel. Some critical steps—such as incident verification and closure—are conducted without user confirmation. This indicates that processes are still not standardized as required by COBIT 2019 [1].

Furthermore, Helpdesk performance reporting remains manual, relying on monthly summaries prepared by administrative staff. There is no automated reporting dashboard that visualizes metrics such as the number of incidents, resolution times, or user satisfaction. This situation highlights that although the Helpdesk operates consistently, the process is not yet fully documented or measured—characteristics of a **Level 2 – Managed Process** [1].

## Results and Discussion

This section presents the findings of the study objectively, followed by a scientific explanation and interpretation. It also provides comparisons with previous studies and proposes future development ideas related to Helpdesk service management in higher education.

### 4.1 DSS02 Sub-Process Evaluation

The assessment of Helpdesk service management at the IT Center (UPT-TIK) was conducted by mapping its processes to the seven sub-processes of the COBIT 2019 DSS02 domain.

**Table 1. Evaluation Results are Summarized**

No	DSS02 Sub-Process	SOP Availability	Implementation	Current Level
1	DSS02.01 Receive and Register	Available	Manual via email	2
2	DSS02.02 Classify	Available	No formal priority scheme	2
3	DSS02.03 Verify and Fulfill	Available	Manual execution	2
4	DSS02.04 Investigate and Diagnose	Available	Undocumented	1
5	DSS02.05 Resolve & Recover	Available	Without SLA	2
6	DSS02.06 Close Requests	Available	No validation	2

No	DSS02 Sub-Process	SOP Availability	Implementation	Current Level
7	DSS02.07 Track and Report	Available	Manual Monthly report	1

The overall **average capability level is 1.71**, corresponding to **Level 2 (Managed Process)**. This result indicates that most processes are being executed consistently but not yet standardized or systematically documented. Although the Helpdesk team follows SOPs, the lack of measurement indicators and automation tools limits the effectiveness of the process.

#### 4.2 Data Interpretation and Scientific Analysis

From a scientific standpoint, the current Helpdesk maturity reflects a transitional stage between reactive and proactive IT service management. The existence of SOPs shows a foundation of governance; however, without measurable performance indicators—such as average resolution time (MTTR) or user satisfaction scores—management cannot make data-driven improvements [1], [5].

The absence of an SLA has a direct impact on service predictability. As explained by ITIL [5], measurable targets are fundamental for continuous service improvement. Without formal SLAs, it becomes difficult to evaluate whether Helpdesk performance aligns with organizational goals.

Furthermore, the manual nature of the processes leads to human dependency. The analysis of monthly reports shows inconsistent data entry and incomplete records. These findings corroborate the conclusions of Putra [2], who stated that institutions at Level 2 typically rely on individual initiative rather than standardized control mechanisms.

In contrast, Santoso [3] demonstrated that introducing automated ticketing and SLA-based workflows improved service responsiveness by 30%. Therefore, by integrating digital solutions and documentation procedures, the Helpdesk in this study can achieve similar improvements.

#### 4.3 Comparative Discussion with Related Studies

When compared to previous studies, this research presents a similar pattern of results. In Putra's [2] case, the Helpdesk process was evaluated at Level 2, with automation identified as a key improvement factor. Santoso [3] and Yuliana et al. [8] showed that institutions that digitalized their Helpdesk systems achieved Level 3 within one year. The main differentiator in this study is the emphasis on SOP consistency and process measurement, which had not been fully addressed in those previous works. This indicates that maturity is not only determined by system tools but also by the organizational culture and staff compliance with defined procedures.

#### 4.4 Capability Visualization

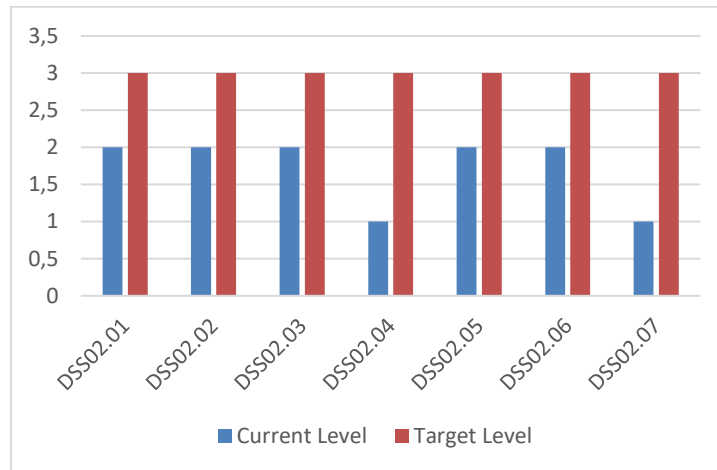


Figure 1. Comparison of current and target DSS02 capability levels. Most sub-processes remain at Level 2, while the expected target is Level 3 (Established Process) [1].

The bar chart visualization (Figure 1) clearly highlights that the most significant capability gaps occur in **DSS02.04 (Investigate & Diagnose)** and **DSS02.07 (Track & Report)**. These processes are the least mature, indicating the need for system-based solutions and staff training in structured incident reporting.

#### 4.5 Discussion of Solution and Future Development

To progress toward Level 3, the following strategies are proposed:

1. **Implementation of an Automated Ticketing System**  
The Helpdesk should adopt open-source platforms such as GLPI or OTRS to manage incidents systematically. Automation will improve tracking, reduce errors, and provide historical data for trend analysis [3].
2. **Development of Service Level Agreements (SLA)**  
The IT Center needs to formalize SLAs defining clear response and resolution time metrics. This will support performance monitoring and accountability, aligning with COBIT's governance principles [1].
3. **Integration of Performance Dashboards**  
A dashboard system can visualize real-time indicators such as request volume, response time, and closure rate. According to Yuliana et al. [8], visual monitoring tools contribute to a 25% reduction in response time.
4. **Continuous Training and Knowledge Management**  
Regular training sessions will ensure that all Helpdesk staff follow SOPs consistently and document each step properly. Building a knowledge base from past incidents can also reduce resolution time for recurring issues.
5. **Future Research and Development**  
Future studies could expand this evaluation to other COBIT domains, such as DSS01 (Manage Operations) or APO09 (Manage Service Agreements). Integrating Helpdesk data with organizational knowledge systems may also open opportunities for predictive analytics in IT governance [6], [7].

## Conclusion

The evaluation of the Helpdesk service at the IT Center (UPT-TIK) of a higher education institution using the COBIT 2019 DSS02 domain indicates that the overall capability level is at **Level 2 – Managed Process**. This shows that Helpdesk processes are already executed and controlled, yet documentation, standardization, and performance measurement are still limited. Sub-processes such as **DSS02.04 (Investigate & Diagnose)** and **DSS02.07 (Track & Report)** remain the weakest areas, highlighting the need for better incident documentation and real-time reporting systems. To achieve **Level 3 – Established Process**, it is necessary to implement automated ticketing, formal Service Level Agreements (SLAs), and digital dashboards to enhance traceability and accountability.

This study contributes to both theoretical and practical aspects of IT governance in higher education. Theoretically, it reinforces the usefulness of COBIT 2019 as a framework for evaluating operational IT processes. Practically, it offers a roadmap for improving Helpdesk governance through process automation, performance indicators, and staff training. Future studies are encouraged to expand this evaluation to other COBIT domains or institutions to obtain a more comprehensive understanding of IT service maturity and its impact on user satisfaction.

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