

# Development of a Generative AI-Powered Application for Enhanced ICT Services Data Analysis and Interpretation

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## Abstract

In Higher Education Institutions, ICT HelpDesk systems play a critical role in maintaining seamless operations, yet most remain reactive, functioning only as ticketing platforms that record and respond to service requests. These conventional systems lack the ability to analyze patterns, forecast recurring problems, or provide prescriptive solutions, resulting in inefficiencies, delayed responses, and limited support for data-driven decision-making. This study addresses that gap by presenting the design, development, and evaluation of a Generative AI-powered Decision Support System (DSS) aimed at transforming ICT services at St. Paul University Philippines. The DSS shifts service management from reactive to proactive by utilizing Generative AI-enhanced descriptive, diagnostic, predictive, and prescriptive analytics. It specifically tackles challenges in equipment maintenance, service request management, and system performance monitoring, thereby optimizing decision-making and service efficiency. Employing a Descriptive and Developmental Research Design, the DSS was rigorously evaluated. IT experts assessed its technical quality and AI functionality using ISO/IEC 25010 standards, while SPUP administrators evaluated user acceptance through the Technology Acceptance Model, focusing on perceived ease of use and the utility of AI-driven insights. Developed using the SCRUM methodology to ensure iterative improvement and stakeholder feedback, the DSS integrates advanced Generative AI models for accurate forecasting, root-cause diagnostics, and actionable prescriptive recommendations. Findings confirm that the DSS significantly enhances decision-making, reduces service response times, and supports proactive maintenance. This research contributes a scalable Generative AI-driven

framework for ICT service optimization in higher education institutions.

**Keywords:** Generative AI-powered application, Decision Support System (DSS), ICT service management, Technology Acceptance Model (TAM), ISO/IEC 25010 software quality standards

## 1. Introduction

Globally, the role of information and communication technology (ICT) in educational institutions has expanded significantly, becoming an indispensable component of daily operations and academic activities. In a rapidly digitalizing world, universities must not only provide robust ICT services but also implement advanced systems that utilize data analytics, particularly Generative AI, to predict, prevent, and resolve technical issues efficiently (Kim, 2020). Generative AI offers unprecedented capabilities in pattern recognition, automated insight generation, and sophisticated data interpretation, moving beyond traditional statistical methods to provide deeper, actionable intelligence. Similar barriers are evident in higher education institutions, where organizational and technical constraints slow digital transformation and keep many processes reactive rather than data-driven (Singun, 2025).

In the Philippines, universities, especially in rural areas, face challenges such as unreliable and slow internet connectivity, limited access to ICT devices, and gaps in technical support, which impede system integration and timely issue resolution (Gocotano, Jerodiaz, Nasibog, & Go, 2021; Akmad & Abatayo, 2024). These issues hinder the ability of ICT departments to provide seamless, efficient services. St. Paul University Philippines is no exception. While the university has made strides in establishing an ICT HelpDesk System, several recurring issues have been

identified that require a more sophisticated, proactive approach.

The current HelpDesk System at SPUP is primarily used to log and manage tickets for technical support. It records information such as the department, issue category, ticket creation and resolution times, and remarks from the technician. However, the system is limited to reactive responses, providing only basic information without the capacity to utilize advanced analytics like Generative AI to predict or prevent recurring problems effectively. Analysis of reports from academic year 2023-2024 reveals a high volume of repetitive tasks, such as creating MS-Teams accounts and providing internet vouchers, which could be automated and managed more intelligently to increase efficiency. Additionally, overdue tickets, particularly related to network issues, highlight the critical need for faster response times and better prioritization of urgent problems.

Moreover, the existing HelpDesk System lacks the capability to provide detailed categorization and nuanced trend analysis of issues. This prevents the ICT department from identifying underlying root causes and developing strategically targeted solutions. As a result, the same types of problems continue to recur without a data-driven approach to resolving them at their core. This is precisely where Generative AI can transform operations, by interpreting complex data patterns, identifying subtle correlations, and even suggesting optimal resolutions or preventive measures based on historical data.

The proposed study, which introduces a Decision Support System (DSS) powered by Generative AI for Data Analytics to improve ICT Services at SPUP, aims to comprehensively address these critical gaps. By integrating generative AI and predictive analytics, the new system will not only track and respond to issues but also forecast potential failures, automate repetitive operations, and identify recurring patterns in data with higher accuracy. This strategic shift from reactive to proactive management is essential for enhancing the university's ICT services, reducing downtime, and improving operational efficiency (Zhu, Ran, Zhou, & Wen, 2019; Hector et al., 2024).

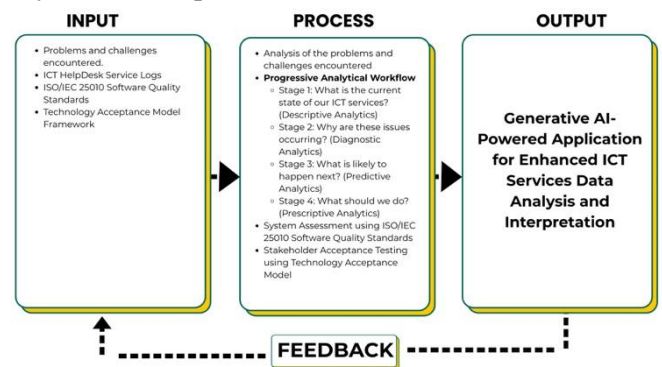
The need to conduct this study is evident from the glaring limitations of the current system, which has become increasingly insufficient to handle the growing demands of the university. Through the intelligent application of Generative AI-driven data analytics, the proposed system will streamline operations, automate repetitive tasks by predicting their occurrence, and allow for sophisticated predictive maintenance. This ensures that SPUP can proactively meet the evolving ICT needs of its academic community and maintain a future-ready

infrastructure.

My personal experience as the head of ICT at SPUP has made me acutely aware of the challenges posed by the current system. The repetitive nature of many tasks and the slow resolution of critical issues have inspired me to propose this Generative AI-powered system to fundamentally enhance service delivery and ensure that the university's ICT infrastructure is truly future-ready.

### 1.1 Conceptual Framework

This study's conceptual framework illustrates the systematic approach to developing the Generative AI-Powered Application for Enhanced ICT Services Data Analysis and Interpretation.



**Figure 1.** Conceptual Framework of the Study

It begins with essential INPUTS, which encompass identified problems and challenges within ICT services, raw data from ICT HelpDesk Service Logs, and guiding principles from ISO/IEC 25010 Software Quality Standards and the Technology Acceptance Model Framework. These inputs provide the foundational context and data for the system.

The PROCESS details a comprehensive and iterative analytical workflow. This core involves a Progressive Analytical Workflow moving through four stages: Descriptive Analytics (understanding the current state), Diagnostic Analytics (identifying causes of issues), Predictive Analytics (forecasting future occurrences), and Prescriptive Analytics (recommending actions). Simultaneously, the process includes rigorous System Assessment against ISO/IEC 25010 Software Quality Standards and Stakeholder Acceptance Testing using the Technology Acceptance Model, ensuring the system's quality and user adoption.

The ultimate OUTPUT of this structured process is the Generative AI-Powered Application itself, designed to deliver sophisticated data analysis and interpretation for ICT services. Critically, a FEEDBACK loop is integrated into the framework, indicating that the insights and outcomes generated by the application continuously inform and refine the initial inputs, thereby fostering a cycle of continuous

improvement and facilitating a proactive approach to ICT service management.

## 1.2 Statement of the Problem

This study aimed to design and develop a Generative AI-powered Application to assist St. Paul University Philippines in effectively transforming its ICT service management from a reactive to a proactive and intelligent approach. This system provides advanced data analysis, intelligent insights, and data-driven recommendations for enhanced decision-making, improved service quality, and optimized management of ICT operations.

Specifically, the study sought to answer the following questions:

1. What are the existing problems and challenges encountered in the current ICT HelpDesk System of St. Paul University Philippines?

2. What system can be developed to address the identified problems and challenges and facilitate proactive ICT service management?

3. To what extent does the developed system comply with the ISO/IEC 25010 Software Quality Standards in terms of: 3.1. Functional Suitability; 3.2. Performance Efficiency; 3.3. Compatibility; 3.4. Usability; 3.5. Reliability; 3.6. Security; 3.7. Maintainability; 3.8. Portability;

4. To what extent do the stakeholders accept the developed system based on the Technology Acceptance Model in terms of: 4.1. Perceived Ease of Use (PEOU); 4.2. Perceived Usefulness (PU); 4.3. Behavioral Intention to Use (BIU); 4.4. Overall System Satisfaction (OSS);

5. What enhancements can be done to improve the functionality and effectiveness of the developed system.

## 2. Methodology

### 2.1 Research Design

This study will employ a Descriptive and Developmental Research Design. The primary aim is to identify existing challenges and limitations in the ICT services at St. Paul University Philippines and evaluate the effectiveness of the newly developed DSS using quantitative data.

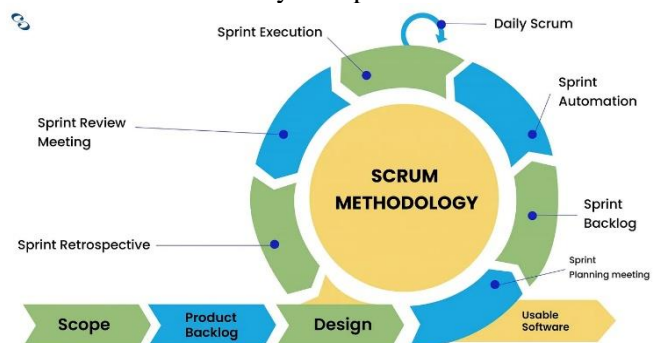
For the quantitative analysis, this study will employ the ISO/IEC 25010 standard to objectively evaluate the quality of the developed Decision Support System, focusing on functionality, usability, reliability, and performance. A structured survey questionnaire aligned with the ISO/IEC 25010 criteria will be administered to ICT experts to assess the DSS's effectiveness. The evaluation will generate

quantifiable insights into its performance, identifying both strengths and areas for improvement. These findings will serve as the basis for refining and optimizing the DSS to enhance decision-making, service efficiency, and overall ICT operations at St. Paul University Philippines.

In addition, the Technology Acceptance Model will be employed to assess user acceptance and attitudes toward the newly developed DSS. The survey will measure key factors such as perceived ease of use, perceived usefulness, user satisfaction, and intention to use the system. By applying TAM, the study will capture insights into how well the new system meets users' expectations and identify any potential barriers to its successful adoption. This will be instrumental in understanding the impact of the system from the user's perspective and ensuring its alignment with their needs.

For the qualitative aspect, a thematic analysis will be conducted to identify the problems and challenges encountered in the current ICT HelpDesk System. Since the ICT HelpDesk System is used by faculty members, administrators, staff from different units and departments, and ICT personnel, the study will gather insights from a diverse group of users to ensure a comprehensive evaluation. Through interviews, qualitative data will be collected on recurring service inefficiencies, system limitations, and potential areas for improvement.

For the developmental aspect, the study will adopt the SCRUM methodology, an agile framework commonly used in software development that emphasizes flexibility, collaboration, and incremental progress through iterative cycles known as "sprints." In this study, SCRUM will be used to guide the development of the application for St. Paul University Philippines' ICT services. The primary purpose of employing the SCRUM methodology is to ensure that the system evolves through continuous feedback, allowing for regular adjustments and improvements based on user needs and system performance metrics.



**Figure 2.** Scrum Methodology Diagram

The effectiveness of the developed DSS will be evaluated solely through expert evaluation. IT experts will assess the system based on the ISO/IEC 25010

criteria, focusing on functionality, usability, reliability, and performance efficiency, while SPUP administrators will evaluate the Technology Acceptance Model factors to determine stakeholder perceptions of the application's usability and adoption.

## 2.2 Participants of the Study

The selection of participants in this study employed a purposive sampling technique, ensuring the inclusion of individuals with specific expertise and direct involvement in ICT services, system evaluation, and university operations. This approach aimed to gather relevant insights necessary for a comprehensive analysis of the proposed Generative AI-powered Application. The study engaged three distinct groups of participants, each fulfilling a unique and critical role in the evaluation and analytical processes.

Participants	Frequency	Percentage
IT Experts	15	7.32%
SPUP Administrators	40	19.51%
Faculty Members & Staff	150	73.17%
<b>Total</b>	<b>205</b>	<b>100%</b>

**Table 1.** Participants of the Study

Additionally, 40 SPUP administrators, including unit heads, deans, directors, vice presidents, and the university president, participated as key stakeholders and primary users of the Generative AI-Powered application. Their role involved evaluating its user acceptance through the Technology Acceptance Model. Their assessment specifically focused on factors such as perceived ease of use (particularly in interacting with AI outputs), perceived usefulness (especially the value of AI-driven recommendations for strategic decision-making), behavioral intention to use, and actual system usage. This ensured the system's usability and its alignment with critical administrative decision-making needs.

Furthermore, 150 faculty members and staff from various units and departments contributed to a thematic analysis. Their valuable qualitative feedback was instrumental in identifying core challenges and limitations of the existing ICT HelpDesk System. Their insights, gathered through interviews, highlighted recurring service inefficiencies, critical system functionality gaps, and suggested areas where Generative AI capabilities could provide significant enhancements for the application. This diverse input ensured that the developed DSS effectively addresses real-world ICT challenges faced by the broader

academic community.

## 2.3 Instrumentation

To effectively collect and analyze data for this study, the researcher utilized three key research instruments, each serving a specific purpose in assessing the existing ICT HelpDesk System and the newly developed Generative AI-Powered Application. These instruments were designed to ensure a comprehensive evaluation, covering qualitative insights, system performance assessment, and user acceptance analysis.

- Interview Guide. The Interview Guide was developed to gather qualitative insights from SPUP employees, including faculty and staff, regarding the problems and challenges they encountered while using the ICT HelpDesk System.

- ISO/IEC 25010 Questionnaire. The ISO/IEC 25010 Questionnaire was used as an objective evaluation tool to assess the quality and effectiveness of the developed DSS.

- Technology Acceptance Model Questionnaire. The TAM Questionnaire was administered to SPUP Administrators, who are the primary users of the application, to assess user acceptance and adoption of the newly developed DSS.

## 2.4 Data Analysis

To interpret the data collected from various sources, this study employed two primary data analysis techniques: Thematic Analysis for qualitative data and Weighted Mean for quantitative data. These methods provided a structured approach to analyzing problems and challenges in ICT services, as well as evaluating system effectiveness and user acceptance of the developed application.

- Thematic Analysis. The thematic analysis was used to examine the qualitative responses from SPUP Employees (faculty and staff) regarding the problems and challenges they encountered with the ICT HelpDesk System.

- Weighted Mean. To evaluate system effectiveness and user acceptance, the study computed the Weighted Mean for responses from the ISO/IEC 25010 system evaluation and the TAM survey. This technique provided a numerical summary of how well the application aligned with software quality standards and user expectations.

To measure the compliance of the DSS with ISO/IEC 25010 software quality standards, a five-point Likert scale was utilized. Table 2 presents the evaluation scale used in the study:

Weight	Weighted Mean	Descriptive Rating
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5	4.20 - 5.00	Very Great Extent
4	3.40 - 4.19	Great Extent
3	2.60 - 3.39	Moderate Extent
2	1.80 - 2.59	Low Extent
1	1.00 - 1.79	Very Low Extent

**Table 2.** Likert Scale for Determining the Application's Compliance with ISO/IEC 25010 Software Quality Standards

For the Technology Acceptance Model evaluation, SPUP administrators assessed the application's usability and adoption using a similar five-point Likert scale. Table 3 presents the evaluation scale for TAM:

Weight	Weighted Mean	Descriptive Rating
5	4.20 - 5.00	Strongly Agree
4	3.40 - 4.19	Agree
3	2.60 - 3.39	Neutral
2	1.80 - 2.59	Disagree
1	1.00 - 1.79	Strongly Disagree

**Table3.** Likert Scale for Evaluating Acceptance of the Application Using the Technology Acceptance Model

By applying a combination of these data analysis methods, the researcher was able to thoroughly extract insights from the dataset, offering multifaceted answers to the research questions. The integration of quantitative system evaluations, qualitative feedback, and predictive analytics enabled a holistic understanding of the application's effectiveness. This comprehensive approach ensured that data-driven improvements were made to enhance the ICT service management at SPUP.

### 3. Results and Discussion

#### 3.1 Existing problems and challenges encountered in the current ICT HelpDesk System of St. Paul University Philippines

To gain deeper insights into the challenges and limitations of the ICT HelpDesk System, a thematic analysis was conducted based on qualitative feedback from SPUP employees (faculty and staff) who actively use the system.

Their responses were categorized into three key themes, highlighting existing inefficiencies in system functionality, data utilization, and service tracking:

1. **Difficulty in Tracking and Managing Service Requests** - One of the main concerns raised by respondents was the challenge of tracking ongoing and resolved service requests. Faculty and staff noted that while the ICT HelpDesk System allows them to report technical issues, it does not provide an easy way for users to follow up on the progress of their requests. Many suggested that a more structured system with clearer status updates and notifications could enhance communication between users and the ICT team.

2. **Lack of Insights on Common ICT Issues** - Another recurring theme in the responses was the lack of information on frequently occurring technical problems. Users indicated that they often encounter similar issues but are unaware if these problems have been previously reported or if solutions have already been provided. Some respondents suggested that having access to reports or summaries on common ICT concerns and their resolutions would help them understand and even troubleshoot minor issues without immediately needing ICT support.

3. **Need for a more organized approach to ICT Service Management** - Several respondents emphasized the need for a more systematic and data-driven approach to managing ICT services.

While the current system is functional, they expressed that it would be beneficial to have features that could help identify recurring issues and improve response efficiency. Some also pointed out that it would be useful for ICT administrators to have a better way of analyzing past service requests to anticipate future needs and allocate resources accordingly.

#### 3.2 Developed Generative AI-Powered Application for Enhanced ICT Services Data Analysis and Interpretation

1. **Service Operations Dashboard (Descriptive Analytics Module)**

The Service Operations Dashboard serves as the foundational module of the Generative AI-Powered Application, designed to answer the fundamental question: "What is the current state of our ICT services?" This module provides a comprehensive and multi-faceted overview of ICT service operations at St. Paul University Philippines by summarizing key performance indicators (KPIs), visualizing data to reveal patterns, and leveraging a Large Language Model (LLM) for dynamic interpretation. The integration of AI-powered insights and one-click PDF reporting transforms raw data into a powerful tool for

immediate, data-driven operational awareness.

#### 2. Problem Diagnostics (Diagnostic Analytics Module)

The Problem Diagnostics Module is the investigative core of application, designed to move beyond description and answer the critical question: "Why are these issues occurring?" By utilizing the foundational data from the ICT HelpDesk system, this module employs advanced analytical techniques to uncover the root causes of service inefficiencies, performance bottlenecks, and recurring problems. Its primary objective is to equip the ICT office with the specific insights needed to implement targeted, effective solutions. The module integrates AI-powered analysis for deeper interpretation and allows for the seamless export of findings into professional PDF reports.

#### 3. Future Readiness Forecast (Predictive Analytics Module)

The Future Readiness Forecast module serves as the strategic foresight component of the application, designed to answer the question: "What is likely to happen next?" This module uses historical data to forecast future service demands and potential equipment failures, enabling the ICT office to move from a reactive to a proactive operational posture. By utilizing time-series analysis and trend identification, the system provides actionable predictions that allow administrators to plan resource allocation, schedule preventive maintenance, and ensure service reliability. The integration of AI-powered insights and one-click PDF reporting further empowers the ICT office to anticipate future challenges and prepare accordingly.

#### 4. Strategic Action Advisor (Prescriptive Analytics Module)

The Strategic Action Advisor represents the culmination of the analytical process within the application. Its primary function is to answer the most critical question for management: "What should we do?" This module moves beyond description and diagnosis to provide concrete, data-driven recommendations aimed at optimizing ICT operations, improving system reliability, and managing resources effectively. By analyzing historical data through a prescriptive lens, the system generates actionable advice for preventive maintenance, resource allocation, and asset management. The integration of AI-powered insights and one-click PDF reporting transforms these prescriptions into clear, shareable strategies for the ICT office.

The integrated framework of the Service Operations Dashboard, Problem Diagnostics, Future Readiness Forecast, and Strategic Action Advisor modules collectively establishes the developed DSS as a comprehensive and transformative tool for ICT service management. By systematically guiding users

from understanding "what is" to diagnosing "why it's happening," predicting "what's next," and finally advising "what to do," the application leverages its AI capabilities to provide a seamless flow of intelligence. This holistic approach empowers the ICT office to move definitively from reactive problem-solving to a proactive, data-driven, and highly optimized operational posture, ensuring enhanced efficiency, reliability, and strategic decision-making in ICT services at St. Paul University Philippines.

### 3.3 Extent of Compliance of the Developed System with the ISO/IEC 25010 Software Quality Standards

The effectiveness of the developed Generative AI-powered application in enhancing ICT service operations was rigorously assessed through a dual approach, integrating technical quality evaluation by IT experts and user acceptance evaluation by SPUP administrators. This comprehensive assessment provides a holistic view of the system's performance and its readiness for real-world implementation, validating its potential to transform current ICT service management practices.

ISO/IEC 25010 Characteristics Criteria	Category Mean	Descriptive Rating
A. Functional Suitability	4.48	Very Great Extent
B. Performance Efficiency	4.28	Very Great Extent
C. Compatibility	4.56	Very Great Extent
D. Usability	4.35	Very Great Extent
E. Reliability	4.33	Very Great Extent
F. Security	4.62	Very Great Extent
G. Maintainability	4.34	Very Great Extent
H. Portability	4.71	Very Great Extent
Category Mean	4.46	Very Great Extent

Table 4. Summary of Evaluation of the Application's Compliance with the ISO /IEC 25010 Criteria

Table 4 revealed an exceptionally high level of software quality across all characteristics, with an overall category mean of 4.46, indicating "Very Great Extent." This consistently high rating across dimensions such as Functional Suitability, Performance Efficiency, Security, and Portability implies that the developed application not only effectively performs its intended functions, particularly those involving AI-driven insights, but also does so efficiently, securely, and with a high degree of adaptability for future use and integration. The strong scores in Security (4.62) and Portability (4.71) are particularly noteworthy, suggesting a robust and flexible system design. This comprehensive

adherence to international software quality standards is crucial for complex decision support systems, as it ensures reliability, maintainability, and stakeholder confidence in the system's ability to consistently deliver accurate and dependable results, especially when leveraging advanced AI capabilities (Jereb & Kajba, 2023; Iqbal & Babar, 2016).

### 3.4 Extent of Evaluation of the Stakeholders with the Technology Acceptance Model

TAM Constructs	Category Mean	Descriptive Rating
A. Perceived Ease of Use (PEOU)	4.58	Strongly Agree
B. Perceived Usefulness (PU)	4.72	Strongly Agree
C. Behavioral Intention to Use (BIU)	4.65	Strongly Agree
D. Overall System Satisfaction (OSS)	4.70	Strongly Agree
Category Mean	4.66	Strongly Agree

**Table 5.** Summary of Evaluation of the Application's Acceptance Using the Technology Acceptance Model

The stakeholders' evaluation of the Generative AI-powered DSS application, assessed using the Technology Acceptance Model (TAM), yielded consistently high scores, with an overall category mean of 4.66, signifying "Strongly Agree." This indicates a very strong acceptance of the application among its target users. The highest mean was observed for Perceived Usefulness (4.72), implying that administrators strongly believe the Generative AI-powered insights and features significantly enhance their work performance and decision-making capabilities. Similarly, the high scores for Perceived Ease of Use (4.58), Behavioral Intention to Use (4.65), and Overall System Satisfaction (4.70) collectively demonstrate that the application is intuitive, user-friendly, and highly satisfying, fostering a strong willingness among users to adopt and integrate it into their daily operations. Such high levels of perceived usefulness and ease of use are critical for the successful adoption of any new technology, particularly sophisticated AI systems designed for decision support, as they directly influence user behavior and system integration within an organizational context (Davis, 1989; Song, 2019).

The strong user acceptance validates the application's practical value and its potential for sustainable use in enhancing ICT services.

### 3.5 Recommendations for System Enhancement

Based on the comprehensive assessment by IT experts, several key enhancements were identified to further improve the functionality and effectiveness of the developed Generative AI-powered application. These suggestions primarily revolved around the continuous refinement of the AI's predictive and prescriptive capabilities, advocating for the integration of more diverse data sources to enrich insights and enable even more granular predictions for resource allocation and issue prevention. Experts also recommended optimizing the application's real-time processing capabilities to handle larger volumes of dynamic ICT service data more swiftly, ensuring instantaneous AI-driven recommendations. Furthermore, there was a consistent call for expanding the system's interoperability with other existing university IT infrastructures, which would allow for a more seamless data flow and a truly unified service management ecosystem, thereby maximizing the application's proactive potential and ensuring its long-term relevance and scalability.

## 4. Conclusion

Based on the comprehensive findings of the study, the researcher concludes that the developed DSS for ICT Services has effectively transformed and optimized ICT service management. This was achieved by leveraging advanced data analytics techniques, including descriptive, diagnostic, predictive, and prescriptive analytics, all significantly enhanced by Generative AI capabilities. The application was meticulously designed to intelligently analyze HelpDesk service requests, identify underlying root causes of recurring ICT issues, accurately forecast service demands, and provide AI-generated, actionable recommendations for ICT administrators and staff. Through systematic evaluation, the developed application has demonstrated exceptional technical quality, strong usability, and high acceptance among its primary users - the ICT staff and administrators of SPUP.

Each analytical module within the developed application proved highly effective. The Descriptive Analytics module successfully summarized complex ICT service requests, response times, and issue trends, enabling stakeholders to monitor ICT operations comprehensively through AI-powered summarization. The Diagnostic Analytics module effectively pinpointed root causes of recurring ICT problems

through Generative AI-driven root cause analysis, allowing administrators to understand inefficiencies and address service-related challenges proactively. Meanwhile, the Predictive Analytics module, which employed advanced forecasting models enhanced by Generative AI, provided accurate predictions of future service demands and potential equipment failures, allowing ICT personnel to take preventive measures before issues arise. Finally, the Prescriptive Analytics module generated data-driven, AI-formulated recommendations to optimize ICT resources, suggesting intelligent strategies such as optimized preventive maintenance schedules and improved technician deployment during peak service request periods.

The Technology Acceptance Model evaluation confirmed that the developed application is highly accepted by its users. The administrators and staff specifically highlighted the application's real-time, AI-driven insights, automated reporting, and Generative AI-powered predictive capabilities as its most valuable features, strongly reinforcing the developed application's crucial role as a sophisticated decision-making tool for modern ICT service management.

Despite its resounding success, several areas for continuous improvement were identified, aligning with the iterative nature of software development. These included the enhancement of real-time notifications, the introduction of customizable dashboards for tailored AI output visualization, dynamic security enhancements, and more intelligent automated data validation processes. Additionally, while the developed application is highly effective in analyzing past and present data, future advancements in integrating more sophisticated Generative AI models and advanced machine learning techniques could further strengthen its forecasting accuracy and the depth of its prescriptive recommendations.

## 5. Recommendation/s

Based on the abovementioned conclusions, the following recommendations are drawn to ensure the continuous enhancement, sustainability, and wider adoption of the developed Generative AI-powered application for ICT Services at SPUP:

1. For St. Paul University Philippines: The university should strongly consider the institutional integration of the developed DSS as a core tool for ICT service management. By formally adopting this Generative AI-powered solution, the university can further streamline ICT-related decision-making processes and significantly enhance overall service efficiency. Additionally, it is recommended that SPUP allocate a dedicated budget for the continuous maintenance, updates (including Generative AI model

retraining and refinement), and further development of the developed application to ensure its long-term sustainability.

2. For the ICT Department: The ICT Department should actively use, monitor, and maintain the developed application to maximize its capabilities in improving service management, issue resolution, and resource allocation. Regular performance evaluations, including the monitoring of AI model efficacy and insight accuracy, should be conducted to assess system effectiveness and identify potential areas for refinement.

3. For the ICT Staff: As the primary users of the developed application, ICT Staff should actively engage in continuous learning and consistent system usage to enhance ICT service operations. They should provide regular, detailed feedback to the ICT Department regarding the application's usability, the clarity of AI-generated insights, challenges encountered, and suggestions for improvement. Furthermore, ICT staff must adhere strictly to data accuracy protocols, ensuring that service request logs and maintenance records are updated properly.

4. For SPUP Administrators: SPUP Administrators, including unit heads, deans, directors, vice presidents, and the president, should recognize the developed application as an essential Generative AI-powered tool for strategic decision-making in ICT services. Administrators should actively review AI-generated reports to identify crucial trends in ICT service performance, forecast budget requirements, and assess operational efficiencies. They are highly encouraged to use the application's insights for data-driven policymaking, ensuring that technology investments and ICT resource allocations align precisely with actual service demand and institutional needs. Additionally, administrators should actively support continuous system improvement initiatives by encouraging interdepartmental collaboration and endorsing further research into advanced Generative AI applications within the university.

5. For the Researcher: The researcher should continue refining the developed application by exploring more advanced Generative AI models and machine learning techniques to further improve predictive accuracy and enhance the depth of decision support capabilities. Additional features, such as real-time AI-driven alert mechanisms, intelligent automation workflows, and robust cloud integration, should be considered for future development.

6. For Future Researchers: Future researchers interested in data analytics, Generative AI, decision support systems, and ICT service management should explore expanding the functionalities of the developed application by integrating more sophisticated Generative AI algorithms, deep learning models,

anomaly detection mechanisms, and advanced optimization models.

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