
A Conceptual Framework for Integrating SUS into ITIL: Enhancing IT Service Management Through Usability Evaluation

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Abstract

Effective IT service management must combine operational excellence with seamless user experience in today's digital era. This paper introduces the Deployment and Integration Framework for Assessment (DIFA), a conceptual model that integrates the System Usability Scale (SUS) within the IT Infrastructure Library (ITIL) framework. ITIL offers a structured approach to aligning IT services with business objectives, while SUS provides reliable usability measurements from the user's perspective. By embedding SUS assessments throughout ITIL's lifecycle—spanning service strategy, design, transition, operation, and continual improvement—DIFA enables organizations to evaluate and enhance IT services' usability systematically. This integration bridges the gap between process efficiency and user satisfaction, supporting informed decision-making, improved service adoption, and better alignment with user needs. The findings highlight the strategic value of combining usability evaluation with ITIL's best practices, offering a sustainable and scalable pathway for organizations to deliver IT services that are both technically robust and intuitively user-friendly.

A. Introduction

In the modern digital era, the efficiency and effectiveness of IT service management are critical to the operational success of any organization. ITIL is a globally recognized framework for managing IT services that provides structured practices to improve service delivery and align IT services with business needs. However, while ITIL excels in offering comprehensive guidelines for service management, it often lacks explicit focus on user experience (UX) and system usability, which are crucial to ensuring that services meet the end-users expectations [1]. In today's highly competitive environment, ensuring the usability of IT systems and services is paramount for improving service adoption, efficiency, and user satisfaction.

On the other hand, the SUS is a widely used tool for measuring systems' usability from the end users' perspective. This simple yet powerful tool provides a reliable metric for evaluating how easy or difficult a system is to use based on user feedback. With its 10-item questionnaire, SUS offers valuable insights into system effectiveness and user satisfaction. By integrating SUS into IT service management, organizations can gain a more holistic understanding of how their IT services perform, not just from an operational standpoint but also from the users' point of view. This user-centered approach helps ensure that services are efficient but also accessible and user-friendly.

Integrating SUS with ITIL could bridge this gap by allowing organizations to incorporate usability measurements directly into the service management processes. As ITIL emphasizes continual service improvement (CSI), adding SUS as a usability assessment tool can provide tangible data to guide enhancements. Organizations can identify pain points, streamline processes, and refine their service offerings by measuring system usability at different stages of the ITIL lifecycle—such as service strategy, design, transition, operation, and improvement. This approach not only ensures that services are aligned with business needs but also that they are optimized for the users who interact with them.

This paper explores the potential benefits of integrating SUS with ITIL in the context of IT service management. By evaluating the impact of usability on service delivery, the integration of these two frameworks promises to enhance service quality, improve user satisfaction, and provide actionable insights for continuous improvement. In the following sections, we will discuss how SUS can be applied to various ITIL processes and the potential advantages of this integration for IT organizations aiming to enhance their service management capabilities.

1. Overview of ITIL

The Information Technology Infrastructure Library (ITIL) is a globally recognized framework for managing and delivering IT services [2]. It provides a structured approach to IT Service Management (ITSM) by emphasizing the alignment of IT services with business needs. ITIL enables organizations to deliver high-quality IT services while improving efficiency, reducing costs, and ensuring that IT functions as a strategic asset for achieving business objectives [3]. The framework consists of a set of best practices designed to guide organizations in establishing a systematic approach to managing the lifecycle of IT services, from their initial design to their continuous improvement [4].

The ITIL framework is structured around the ITIL Service Lifecycle, as shown in Figure 1, which is divided into five key phases: Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement (CSI) [5]. Each phase addresses specific aspects of IT service management and includes processes, roles, and metrics to achieve defined outcomes. This lifecycle-based approach ensures that services are designed to meet business requirements, transition smoothly into production, and operate efficiently while continuously improving over time.

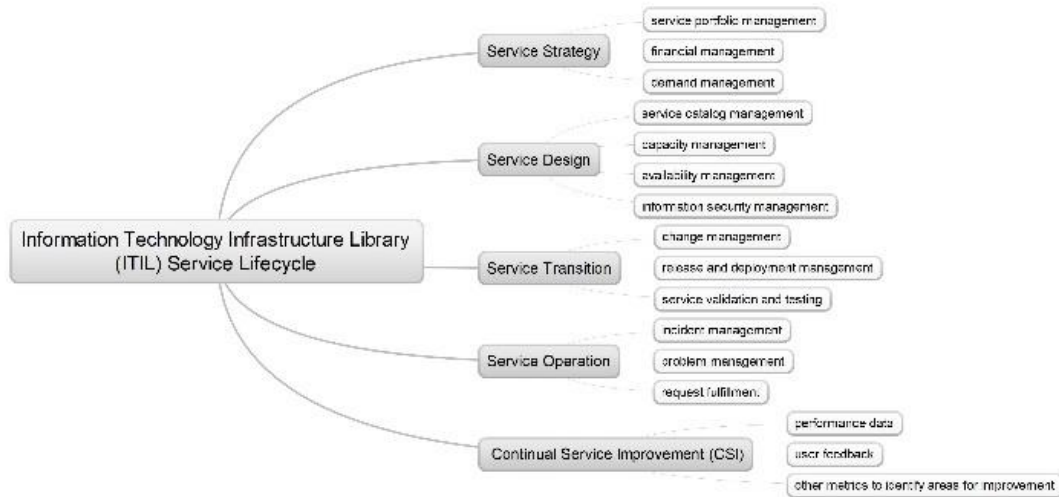


Figure 1. ITIL Service Lifecycle Framework

Service Strategy is the foundational phase of the ITIL lifecycle [6]. It focuses on defining the organization’s approach to managing IT services in alignment with its business goals. This phase includes service portfolio management, financial management, and demand management. By focusing on the strategic alignment of IT services, organizations can ensure that their IT investments deliver maximum value to the business. Service Strategy also emphasizes the importance of understanding customer needs and market dynamics, enabling IT to act as a value-generating partner.

In the Service Design phase, IT services are planned and designed to meet specific business needs and customer expectations. It includes service catalog management, capacity management, availability management, and information security management [7]. This phase ensures that IT services are functional and reliable and meet performance, security, and compliance requirements. Service Design establishes the blueprint for delivering services, ensuring they are scalable, cost-effective, and aligned with organizational goals [8].

Service Transition focuses on the implementation and deployment of IT services. This phase ensures services successfully transition from development to production environments with minimal disruption. Key processes in this phase include change management, release and deployment management, and service validation and testing. Service Transition is critical in managing risks associated with changes, ensuring that services are delivered on time, and maintaining service continuity [9].

Service Operation is when IT services are delivered to end users and customers. It focuses on the day-to-day management of services, including incident management, problem management, and request fulfillment. The primary goal of this phase is to ensure that IT services operate as expected, delivering value to users while minimizing service disruptions. By providing a stable and responsive operational environment, Service Operation ensures that IT services meet the agreed-upon service levels

The final phase, Continual Service Improvement (CSI), emphasizes optimizing IT services and processes. CSI relies on performance data, user feedback, and other metrics to identify areas for improvement and implement changes that enhance service quality and efficiency. This phase ensures that IT services evolve in response to changing business needs and technological advancements. By fostering a culture of continuous improvement, organizations can maintain the relevance and effectiveness of their IT services over time.

ITIL's structured approach to IT service management has made it one of the most widely adopted frameworks globally. Its flexibility allows organizations of all sizes and industries to tailor their practices to their unique needs [10]. By implementing ITIL, organizations can improve operational efficiency, enhance customer satisfaction, reduce risks, and drive business innovation. As the demands on IT services continue to grow, ITIL remains a vital tool for organizations seeking to deliver value-driven, high-quality IT services.

2. Overview of System Usability Scale (SUS)

The System Usability Scale (SUS) is a widely used and robust tool for assessing the usability of systems, interfaces, and products. Developed by John Brooke in 1986, SUS provides a quick and reliable method for evaluating user experiences through a simple, ten-item questionnaire [11]. Its versatility and ease of application make it a standard in usability testing across various domains, including software, hardware, websites, and even non-digital systems. SUS is particularly valued for its ability to produce a single usability score, which can be used to benchmark and compare systems.

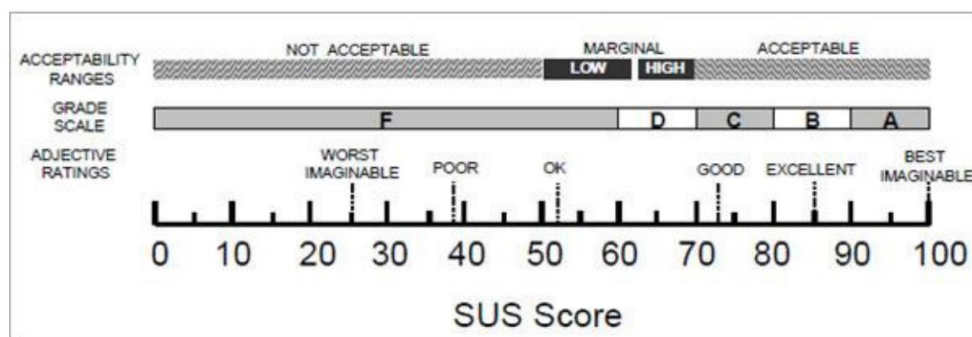


Figure 2. SUS Scoring Process and Interpretation

SUS measures users' subjective perceptions of a system's usability [12]. The ten questions alternate between positive and negative phrasing to minimize response bias and encourage balanced feedback. Participants rate each statement on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

These responses are then converted into a normalized score on a scale of 0 to 100, where higher scores indicate better usability, as shown in Figure 2. A SUS score above 70 is generally acceptable, though interpretations may vary depending on the context and system type.

Here are the 10 questions included in SUS.

- a. I find the system easy to use.
- b. I find the system complicated.
- c. I mastered the system quickly.
- d. The system is too technical or advanced.
- e. I feel comfortable using the system.
- f. I feel unsure or confused when using the system.
- g. I find the system very consistent.
- h. The system has many unnecessary features.
- i. I feel that I can quickly master the system
- j. The system needs additional instructions to be used.

One of SUS's key strengths is its simplicity and adaptability. The questionnaire requires minimal time, usually less than five minutes, making it highly accessible for users [13]. Despite its simplicity, SUS has proven to be highly reliable in a wide range of studies [14]. Its ability to deliver actionable insights with minimal overhead makes it an attractive choice for organizations seeking to improve their systems without extensive usability testing resources.

SUS is also valued for its applicability across industries [15]. From evaluating enterprise software to consumer products, SUS has been used to assess usability in diverse settings, including healthcare, education, government, and entertainment. Its universal applicability stems from its focus on general usability principles, such as ease of use, learnability, and user satisfaction. This makes SUS an effective tool for identifying usability issues that can affect user adoption and satisfaction.

While SUS is powerful, its limitations warrant consideration [16]. While applicable for benchmarking, the single score it produces may not provide detailed insights into specific areas of usability. For example, SUS does not inherently distinguish between navigation, aesthetics, or performance issues [17]. As a result, organizations often complement SUS with other usability evaluation methods, such as task analysis or user interviews, to gain a more comprehensive understanding of user experience.

In recent years, there has been growing interest in extending and adapting SUS to address evolving user needs and contexts [18]. Researchers and practitioners have explored ways to tailor the questionnaire for specific domains, such as mobile applications or accessibility-focused systems. Enhancements to the SUS framework, including integrating additional metrics, can provide deeper insights into accessibility, engagement, and technical performance [19]. These adaptations demonstrate the enduring relevance of SUS in the dynamic field of usability testing.

The System Usability Scale remains a cornerstone of usability evaluation [20]. Its simplicity, reliability, and broad applicability make it an indispensable tool for organizations seeking to design user-centric systems. As technology advances, SUS's flexibility ensures that it will remain relevant, providing valuable insights into the user experience and driving improvements in system usability.

3. The Need for Integrating SUS with ITIL

The increasing reliance on IT services to drive business operations and deliver value to customers has made usability a critical factor in the success of IT systems [21]. Usability directly influences employees' productivity, customer satisfaction, and the overall perception of IT service quality. While the System Usability Scale (SUS) provides a proven method for evaluating usability, it primarily focuses on user interaction without fully accounting for the broader context of IT service delivery. On the other hand, the Information Technology Infrastructure Library (ITIL) provides a comprehensive framework for IT Service Management (ITSM). Still, it lacks a specific emphasis on usability from the end-user perspective. Integrating SUS with ITIL addresses this gap, combining ITIL's structured service management approach with SUS's usability focus to enhance service quality holistically.

ITIL emphasizes key aspects of IT service management, including service strategy, design, transition, operation, and continual improvement [22]. These areas inherently involve user interactions with IT services and interfaces, such as service request portals, incident reporting systems, and self-service tools. However, ITIL's standard metrics and practices, while essential for operational efficiency, do not provide direct insights into how users perceive the usability of these systems. By integrating SUS into ITIL's framework, organizations can systematically measure and improve the usability of IT interfaces, aligning ITIL's service goals with user experience priorities [23].

One of the primary drivers for this integration is the growing need to enhance service desk interactions. Service desks are often the first point of contact for users seeking support, making their usability critical. A poorly designed service desk interface can lead to frustration, inefficiency, and increased operational costs due to higher call volumes and prolonged resolution times. Incorporating SUS evaluations into ITIL's Service Operation processes allows organizations to identify and address usability issues in service desk systems, ensuring smoother user interactions and faster issue resolution [24].

Integrating the System Usability Scale (SUS) with ITIL can significantly enhance IT service management by improving the usability of self-service tools and IT portals. While ITIL's Service Design phase focuses on efficiency, usability is crucial in ensuring that self-service tools, such as password resets and access requests, are intuitive and effective. Similarly, in the Continual Service Improvement (CSI) phase, incorporating SUS alongside traditional performance metrics enables organizations to capture user feedback on system usability. This user-centric approach enhances IT service adoption, satisfaction, and overall efficiency.

As organizations undergo digital transformation, IT systems become complex with technologies like cloud computing, AI, and automation. While ITIL ensures structured service management, SUS provides a reliable method to assess usability, ensuring these advanced systems remain user-friendly. Aligning SUS with ITIL strengthens the connection between IT services and business outcomes, ensuring that systems meet technical standards and deliver a seamless user experience. This integrated approach shifts IT service management towards a user-centered model, bridging the gap between technical performance and user satisfaction—an essential strategy in today's competitive IT landscape.

B. Research Method

This study adopts a qualitative, literature-based approach to explore the integration of the System Usability Scale (SUS) into the Information Technology Infrastructure Library (ITIL) framework for enhancing IT Service Management (ITSM). Rather than conducting empirical user studies, this research is grounded in an extensive review of scholarly literature, case studies, and technical reports on usability evaluation and ITIL practices. The objective is to construct a conceptual model that aligns usability metrics with ITIL's process-oriented service management lifecycle.

A customized SUS framework, DIFA (Deployment and Integration Framework for Assessment), was developed based on insights extracted from the literature to facilitate this integration. While the traditional SUS consists of 10 items, this study expands the scale to 30 items—15 positively phrased and 15 negatively phrased statements—contextualized for evaluating usability at various stages of the ITIL lifecycle. Each item is designed to be rated on a five-point Likert scale, per standard SUS methodology, providing a structured yet flexible assessment mechanism.

The study does not involve primary data collection from end-users. Instead, existing usability scoring methods and ITIL performance indicators were synthesized from previously published studies. These include usability evaluations of service portals, incident management tools, and self-service systems and key ITIL metrics such as incident resolution time, service request fulfillment rates, and change success ratios. By correlating these two bodies of knowledge, the study establishes a theoretical link between usability and IT service effectiveness.

The expanded SUS questionnaire scoring method follows conventional adjustment principles documented in usability literature. Positive and negative items are scored accordingly, and the cumulative score is normalized. This score reflects the perceived usability of IT services across different ITIL phases, enabling conceptual benchmarking and comparative analysis without relying on live user testing.

In addition to the quantitative synthesis, a thematic analysis was conducted to extract qualitative insights from the literature. Recurring usability challenges, design considerations, and service management bottlenecks were identified and mapped to ITIL lifecycle phases. This dual approach—quantitative modeling and qualitative insight—supports the development of a comprehensive framework that prioritizes user experience within a structured ITSM context.

C. Result and Discussion

Integrating the System Usability Scale (SUS) with ITIL processes provides a powerful synergy that enhances IT Service Management's (ITSM) user-centric focus. While ITIL defines a robust framework for designing, delivering, and improving IT services, it does not inherently address the usability of the tools and interfaces that users interact with. Incorporating SUS into ITIL processes allows organizations to systematically evaluate and improve the usability of these systems, ensuring that they not only meet technical and operational standards but also deliver an optimal user experience. This integration bridges the gap between technical efficiency and user satisfaction, creating a holistic approach to IT service delivery.

At its core, ITIL emphasizes aligning IT services with business goals through its five key lifecycle stages: Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement (CSI) [25]. By embedding SUS evaluations into these stages, organizations can capture actionable insights into user perceptions at every service lifecycle phase. For example, during the Service Design phase, SUS can help assess the usability of self-service portals, ensuring they are intuitive and effective before deployment. Similarly, during Service Operation, SUS can be used to measure the usability of incident reporting systems and service desk interfaces, identifying areas for improvement that directly impact user satisfaction and productivity.

The integration process involves tailoring SUS to align with ITIL's practices and processes. This includes expanding the standard 10-question SUS questionnaire to encompass additional questions that evaluate usability factors specific to ITIL's key metrics, such as incident resolution efficiency, service accessibility, and user empowerment. By combining ITIL's structured service management framework with the usability insights provided by SUS, organizations can deliver IT services that are operationally sound and highly user-friendly. This alignment enhances the overall value of IT services, improves user satisfaction, and supports the continuous improvement of IT systems.

1. Service Strategy

The Service Strategy phase in ITIL focuses on aligning IT services with organizational goals, making usability a key factor in effective service planning. Since service request portals and strategy tools are primary user touchpoints, their design directly impacts user engagement and service efficiency. Integrating the System Usability Scale (SUS) into this phase helps organizations assess interface intuitiveness and accessibility early in the service lifecycle, preventing usability issues that could hinder communication and misalign service offerings. A well-designed, user-friendly portal enhances interaction, enabling IT teams to develop services that genuinely meet user needs. Adapting SUS questionnaires with ITIL-specific considerations ensures usability remains a core element in service strategy, improving both stakeholder satisfaction and business alignment.

Positive Questions

- [1] "I find it easy to navigate the service request portal to submit my requirements."
- [2] "The interface provides clear and intuitive options for defining service expectations."
- [3] "The system allows me to communicate my needs without unnecessary steps efficiently."

Negative Questions

- [1] "I often feel confused when locating the right options in the service request portal."
- [2] "Submitting a service request feels overly complex and time-consuming."
- [3] "The interface lacks clarity, making it difficult to understand how to communicate my requirements effectively."

These questions assess user perceptions of ease of use, efficiency, and clarity in Service Strategy interfaces. Analyzing SUS responses helps identify usability

strengths and weaknesses, ensuring service management systems align with ITIL's strategic goals while remaining accessible and user-friendly. This approach enhances both the usability of the IT tool and the overall effectiveness of the service strategy phase.

2. Service Design

The Service Design phase in ITIL focuses on developing IT services that meet user needs and business objectives. Integrating the System Usability Scale (SUS) during this phase helps assess interface design, ensuring systems are intuitive, accessible, and user-friendly before full implementation. Early usability testing prevents costly redesigns and improves user satisfaction, particularly for self-service portals, ticketing systems, and knowledge bases. If these tools are poorly designed, users may face frustration and inefficiencies. Designers can use SUS evaluations to identify issues, refine interfaces, and create seamless, efficient service management systems that enhance IT operations.

Positive Questions

- [1] "The system's interface allows me to complete tasks efficiently without confusion."
- [2] "The prototype design makes it easy to find and use the features I need."
- [3] "The visual layout of the system helps me understand how to perform my tasks effectively."

Negative Questions

- [1] "I find the interface overwhelming due to unnecessary or unclear options."
- [2] "It is difficult to locate specific features or functions within the system."
- [3] "The system's design often causes me to make errors when performing tasks."

These questions assess task efficiency, feature accessibility, and error prevention in the Service Design phase. SUS feedback helps designers identify and refine usability issues, ensuring a user-centered, intuitive system that delivers value. Integrating SUS enhances IT service quality, minimizes user friction, and aligns with ITIL's service delivery goals.

3. Service Transition

The Service Transition phase in ITIL focuses on smoothly implementing new or updated IT services while minimizing disruptions. Usability is crucial in ensuring users can adapt effectively, and integrating the System Usability Scale (SUS) helps measure their experience. SUS evaluations identify potential challenges, such as difficulties with a new incident management system, allowing IT teams to address usability issues before they impact adoption. By refining interfaces and processes based on SUS feedback, organizations can ensure a seamless transition, maintaining user productivity and satisfaction.

Positive Questions

- [1] "The updated system allows me to perform my tasks more efficiently than the previous version."
- [2] "I find it easy to adapt to the changes introduced in the new system."

- [3] "The transition process provides clear guidance on how to use the updated features."

Negative Questions

- [1] "I often feel confused when using the updated system due to unclear instructions."
[2] "The changes in the system make it more difficult to complete my usual tasks."
[3] "The updated system has introduced unnecessary complexity into my workflow."

These SUS questions assess adaptability, efficiency, and clarity during Service Transition. Positive feedback indicates a smooth transition, while negative responses highlight usability challenges. Analyzing SUS results helps organizations make targeted improvements, support users, and enhance transition success. This approach ensures ITIL's goal of delivering effective, user-centered services.

4. Service Operation

The Service Operation phase in ITIL ensures IT services run smoothly and meet user needs. Usability is key in tools like incident management systems and service portals, impacting efficiency and satisfaction. SUS evaluations help assess these tools, identifying usability issues that may delay issue resolution and frustrate users. A well-designed system enables quick, accurate reporting, improving service quality. By tailoring SUS questions to this phase, organizations can enhance functionality, accessibility, and user experience, ensuring IT operations remain effective and user-friendly.

Positive Questions

- [1] "The incident reporting system allows me to report issues quickly and efficiently."
[2] "The service request portal provides clear instructions for submitting and tracking requests."
[3] "I find it easy to search and access relevant information in the knowledge base."

Negative Questions

- [1] "I often struggle to navigate the service portal due to unclear menus or options."
[2] "Reporting an incident feels unnecessarily complicated and time-consuming."
[3] "The system lacks intuitive features, making it difficult to track the progress of my requests."

These SUS questions assess task efficiency, clarity, and accessibility in service operation tools. Positive feedback confirms usability, while negative responses reveal productivity and satisfaction issues. Analyzing SUS results helps organizations enhance system usability, ensuring a seamless user experience and aligning with ITIL's goal of delivering reliable, high-quality IT services.

5. Continual Service Improvement (CSI)

The CSI phase in ITIL focuses on continuously evaluating and enhancing IT services to meet changing business and user needs. Integrating the System Usability Scale (SUS) into this phase allows organizations to assess the effectiveness of changes by focusing on their impact on user experience. Organizations can identify

trends, measure usability improvements, and refine IT systems by tracking SUS scores. This data-driven approach ensures that updates, such as improved interfaces, improve user satisfaction and system performance, creating a continuous improvement cycle centered on user experience.

Positive Questions

- [1] "The recent changes to the system have made it easier for me to complete my tasks."
- [2] "I find the updated interface more intuitive and user-friendly than the previous version."
- [3] "The improvements have significantly enhanced my overall experience with the system."

Negative Questions

- [1] "The recent updates have introduced new complexities that make the system harder to use."
- [2] "I still encounter challenges completing tasks despite the improvements made."
- [3] "The changes to the system have not addressed key usability issues I previously experienced."

These questions enable organizations to evaluate the impact of changes from both positive and negative perspectives, capturing a comprehensive view of the user experience. Positive responses validate the success of the improvements, while negative responses highlight areas that require further refinement. Incorporating SUS into the CSI phase ensures that usability remains a core focus in the ongoing development of IT services, aligning ITIL's continuous improvement objectives to deliver superior user experiences. This synergy drives sustainable progress and fosters greater satisfaction among users and stakeholders.

6. Benefits of Integrating SUS with ITIL

Integrating the SUS with ITIL processes offers organizations numerous benefits by providing deeper insights into user experience and service effectiveness. The integration helps ensure that IT service systems align with operational needs and user expectations, creating more efficient, user-centered IT services. The following sections detail the key benefits of this integration, focusing on enhanced user satisfaction, improved IT service effectiveness, and more targeted continual improvement.

6.1. Enhanced User Satisfaction

Integrating SUS with ITIL significantly enhances user satisfaction by addressing usability issues in IT service systems. Users' experiences directly affect the success of services, and problems with tools like incident reporting or service request portals can lead to frustration, reduced trust, and slower response times. Using SUS, organizations can gather valuable feedback on system navigation and usability, enabling them to make informed decisions on system improvements and prioritize user-friendly changes.

SUS offers a straightforward, standardized way to measure usability across different IT systems. This consistency allows IT teams to monitor user satisfaction over time, identify emerging issues, and proactively address them. By regularly

collecting feedback, organizations can foster positive user engagement, enhance service adoption, and ensure sustained satisfaction throughout the service lifecycle.

6.2. Improved IT Service Effectiveness

Integrating SUS with ITIL enhances IT service effectiveness by ensuring that systems are well-defined and user-friendly. ITIL focuses on efficient service delivery, but effectiveness also depends on optimizing tools for ease of use. SUS helps assess whether IT systems truly support users, enabling faster incident resolution, improved response times, and more efficient service delivery. Organizations can streamline operations and reduce downtime by identifying usability issues, such as complex incident submission processes.

Incorporating SUS into ITIL's Service Operation and Service Transition phases ensures that service systems perform optimally in real-world conditions. Continuous usability data collection helps organizations identify user behavior patterns, pinpoint bottlenecks, and make data-driven decisions to refine service processes. This approach leads to more user-friendly systems, improving service performance, operational efficiency, and organizational success.

6.3. Focused Continual Improvement

Continuous Service Improvement (CSI) in ITIL drives ongoing enhancements to IT services, and integrating SUS into this phase helps organizations focus on improving user experience. SUS provides a user-centered perspective, identifying specific usability concerns that internal metrics like uptime or response time may miss. By tracking SUS scores over time, organizations can assess the impact of changes and ensure they align with user needs. For example, comparing scores before and after a system update helps determine if the change improved user satisfaction or created new challenges.

Using SUS in the CSI phase promotes iterative, small-scale improvements rather than significant overhauls. Based on user feedback, organizations can refine specific features, such as incident reporting forms or search functionality. This approach ensures that usability is prioritized in the improvement process. Additionally, SUS helps prioritize changes by identifying user pain points, such as difficulties finding information on a service portal, enabling IT teams to address high-priority issues and make meaningful improvements.

7. Connecting SUS Assessment with ITIL Metrics

The key to maximizing the benefits of integrating SUS with ITIL lies in connecting the SUS assessment results with traditional ITIL performance metrics. While ITIL often focuses on efficiency, service levels, and operational metrics, SUS introduces a user experience perspective that complements these conventional measures. For example, SUS can be linked with incident resolution times in the Service Operation phase to determine whether improvements in system usability contribute to faster incident resolution. Organizations can achieve a more comprehensive view of service effectiveness by combining SUS feedback with operational data.

The methodology extends the original SUS scoring process while ensuring the final score is normalized to a 0–100 scale to calculate the integration metrics for SUS and ITIL with 30 questions (15 positive and 15 negative). Here's the step-by-step explanation.

1) Question Responses

Each participant responds to a Likert scale (1-5) for all 30 questions.

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

2) Adjust Scores

For positive questions (15 questions), Subtract 1 from each response.

$$\text{Adjusted Score (Positive)} = \text{Response} - 1$$

For negative questions (15 questions), Subtract the response from 5.

$$\text{Adjusted Score (Negative)} = 5 - \text{Response}$$

3) Sum Adjusted Scores

Add the adjusted scores for all 30 questions. Each question has a potential adjusted score between 0 and 4. The total adjusted score for all 30 questions ranges from 0 to 120

$$\text{Total Adjusted Score} = \sum (\text{Adjusted Score Positive} + \text{Negative Question})$$

4) Normalize the Total Score

Use the following formula to bring the score to a scale of 0 to 100.

$$\text{Final Score} = \frac{\text{Total Adjusted Score}}{n \times 120} \times 100$$

The maximum adjusted score for 30 SUS questions is 120, calculated by multiplying the highest adjusted score per question (4) by the total number of questions (30).

D. Conclusion

Integrating the SUS with ITIL advances IT service management by combining operational efficiency with user-centered usability insights. ITIL focuses on optimizing processes like incident management and continual improvement, while SUS ensures these processes are intuitive and user-friendly. This dual approach enhances both service quality and user satisfaction.

By incorporating SUS into ITIL, organizations gain a dual perspective on service delivery—measuring the effectiveness of IT processes and the usability of supporting systems. This ensures that IT services function effectively and are accessible, reducing user frustration and fostering positive engagement.

The Deployment and Integration Framework for Assessment (DIFA) unifies SUS and ITIL into a comprehensive evaluation system. While SUS emphasizes usability and user satisfaction, ITIL focuses on service efficiency and alignment with organizational goals. Together, DIFA ensures IT services meet both technical and user-centric standards.

The name "DIFA" reflects its purpose: enabling seamless deployment, optimizing integration, and ensuring unified assessment. By bridging technical performance with user satisfaction, DIFA supports IT systems that are operationally sound and intuitive, promoting better adoption and long-term service effectiveness.

The DIFA framework exemplifies a strategic integration of SUS and ITIL, fostering user-centric IT service management. This holistic approach improves service quality, boosts satisfaction, and aligns IT services with business objectives. DIFA will remain vital for achieving excellence and enhancing user engagement as organizations evolve.

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