

IT Service Management: Implementation of ITIL Framework in Modern Organizations

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ABSTRACT

KEYWORDS

IT Service Management;
ITIL 4; Service Value
System; Incident
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Management.

Information Technology Service Management (ITSM) is a strategic approach in managing and providing quality IT services to users. In the era of digital transformation, organizations face complex challenges in managing IT services that are increasingly critical to business operations. The ITIL (Information Technology Infrastructure Library) framework has become the most widely adopted international standard for ITSM implementation. This study aims to comprehensively analyze the main components of ITIL 4, the implementation process, the challenges faced, and the impact of implementation on the effectiveness of IT services in the organization. The research method used is a systematic literature study with case analysis of ITIL implementation in various industrial sectors and higher education institutions. Data sources were obtained from 25 indexed scientific journals, official ITIL documentation, and case study reports from organizations that have implemented ITIL. The results show that proper ITIL implementation can improve the quality of IT services by up to 40%, reduce downtime by up to 35%, increase first-call resolution rate by up to 50%, and significantly increase user satisfaction. The study also identifies critical factors for the successful implementation of ITIL, including executive sponsorship, effective change management, human resource competence, and selection of the right tools. The findings of the research provide practical contributions to organizations planning to adopt ITIL and theoretical contributions in the development of the body of knowledge

INTRODUCTION

In the era of Industry 4.0 and the ongoing digital transformation, information technology has evolved from just a supporting function to a strategic enabler that determines the competitiveness and business continuity of the organization. Organizations' reliance on IT systems and services is increasing, creating higher expectations for the reliability, speed, and quality of IT services. According to Gartner (2023), an average IT system downtime can lead to financial losses of up to \$5,600 per minute for large companies, not including the impact of reputation and customer trust.

The complexity of modern IT infrastructure, including on-premise systems, cloud computing, hybrid environments, and integration with various digital platforms, demands a systematic and structured management approach (Chavan, 2023; Kodakandla, 2022; Oladosu et al., 2021). Organizations can no longer rely on an *ad hoc* or reactive approach to managing

IT services. It requires a framework that has been tested and proven to be effective in managing the complexity of modern IT services (Garcia & Gonzalez, 2025; Greenhalgh et al., 2018).

IT Service Management (ITSM) is present as a new paradigm in IT service management that focuses on creating business value and customer satisfaction, not just technology management (Niemi, 2025; Wibowo & Sunarmi, 2026; Yazici et al., 2015). ITSM shifts its focus from technology-centric to service-centric, where each IT activity is evaluated based on its contribution to the organization's business goals (Bon et al., 2020). This approach integrates people, processes, and technology in a holistic framework to create and deliver value to stakeholders (Ben Khudair & Abdalla, 2016).

ITIL (Information Technology Infrastructure Library) is the most widely adopted ITSM framework worldwide, with more than 90% of Fortune 500 companies implementing ITIL practices to varying degrees (Axelos, 2019). ITIL provides a comprehensive set of best practices, covering the entire IT service lifecycle from strategic planning to operational delivery and continuous improvement. The framework has evolved since it was first introduced by the UK government in the 1980s, with the latest version of ITIL 4 released in 2019, integrating Agile, DevOps, and Lean principles with traditional ITSM practices (Al-Ashmoery et al., 2024; Mándi, 2024).

Although ITIL has been shown to provide significant benefits, its implementation is not without its challenges. A study by Pollard and Cater-Steel (2019) shows that around 40–50% of ITIL implementation initiatives fail to achieve the expected goals, mainly due to factors such as the organization's resistance to change, lack of executive support, limited resources, and the complexity of the framework itself. A deep understanding of ITIL components, proper implementation processes, and anticipation of challenges that may arise are crucial to successful ITIL adoption (El Yamami et al., 2017; Shaw, 2020).

The urgency of this research is underscored by several converging factors. First, accelerating digital transformation across all sectors has made reliable IT services more critical than ever, with service disruptions carrying increasingly severe consequences. Second, the complexity of modern IT environments continues to increase with the adoption of cloud computing, hybrid infrastructures, and emerging technologies, demanding more sophisticated management approaches. Third, organizations continue to invest substantial resources in ITIL implementation, yet failure rates remain significant, with approximately 40–50% of initiatives failing to achieve expected goals (Pollard & Cater-Steel, 2019). Fourth, the relatively recent release of ITIL 4 means that many organizations are currently navigating implementation decisions without comprehensive guidance from academic literature. Fifth, pressure on IT organizations to demonstrate business value and return on investment continues to intensify, requiring evidence-based approaches to service management improvement (Burroughs & Berger, 2018; Connor et al., 2023; Mueller-Hanson & Pulakos, 2018; Secinaro et al., 2020).

The novelty of this research lies in several distinctive dimensions. First, this study provides a comprehensive analysis of ITIL 4 specifically, addressing the gap in literature that predominantly focuses on earlier versions. Second, the research integrates systematic literature review with case study analysis, combining breadth of coverage with depth of contextual understanding. Third, the study examines ITIL implementation across multiple sectors, enabling identification of common patterns and sector-specific variations. Fourth, the research synthesizes findings on components, implementation processes, challenges, and benefits within

a unified analytical framework, providing holistic understanding of ITIL adoption. Fifth, the study identifies critical success factors with practical applicability for organizations planning or currently undertaking ITIL implementation.

Previous studies have explored various aspects of ITIL, but there is still a gap in the comprehensive understanding of ITIL implementation in the context of modern organizations facing digital transformation challenges. In particular, an analysis is needed that integrates the theoretical perspective of the ITIL framework with the practical realities of implementation in the field, including how ITIL can adapt to emerging technologies and modern methodologies such as cloud computing, DevOps, and Agile development.

METHOD

This study uses a qualitative approach with the systematic literature review (SLR) method combined with case study analysis. The SLR approach was chosen because it allows for the identification, evaluation, and comprehensive synthesis of the existing body of knowledge about ITIL implementation. This method follows the guidelines recommended by Kitchenham and Charters for conducting systematic reviews in software engineering and information systems research.

The research design consists of five main stages: (1) Formulation of research questions, (2) Search and selection strategies of literature, (3) Quality assessment of selected literature, (4) Data extraction and synthesis, and (5) Analysis and interpretation of findings. Each stage is carried out systematically and well documented to ensure the reproducibility and reliability of the research.

Literature Search Strategy

Literature searches were conducted on several leading academic databases: IEEE Xplore, ACM Digital Library, ScienceDirect, SpringerLink, and Emerald Insight. The publication period covered is 2018-2024 to ensure relevance to the latest developments, specifically ITIL 4 which was released in 2019. However, some seminal works from the previous period are also included to provide historical perspective and foundational understanding.

The search string used is developed through iteration and includes a combination of keywords: ("ITIL" OR "IT Service Management" OR "ITSM") AND ("implementation" OR "adoption" OR "deployment") AND ("framework" OR "best practice" OR "methodology"). Boolean operators and wildcards are used to maximize recall without sacrificing precision.

The inclusion criteria set are: (1) Peer-reviewed publications (journals or conference proceedings), (2) Written in English or Indonesian, (3) Main focus on ITIL or ITSM, (4) Discussing implementation aspects, challenges, or benefits, (5) Providing empirical evidence or substantive analysis. Exclusion criteria include: (1) Grey literature without peer review, (2) Publications that are only abstracts or short papers, (3) Duplicate publications, (4) Publications that are not accessible full-text.

Selection and Quality Assessment Process

The selection process is carried out in three stages. The first stage is screening based on titles and abstracts to eliminate publications that are clearly irrelevant. The second stage is full-text reading for publications that pass the first stage, with an in-depth evaluation of relevance and quality. The third stage is backward and forward citation checking to identify additional relevant publications that may have been missed in the search database.

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Quality assessment was carried out using a checklist adapted from the Critical Appraisal Skills Programme (CASP). Each publication is evaluated based on several criteria: (1) Clarity of research aims and questions, (2) Appropriateness of methodology, (3) Rigor of data collection and analysis, (4) Credibility of findings, (5) Value and contribution to the knowledge base. Publications with quality scores below a certain threshold are excluded from the final analysis.

From the initial search which resulted in 178 publications, after going through the selection and quality assessment process, 25 publications were selected as primary studies for in-depth analysis. These publications were chosen because they have high quality scores and provide substantive insights on various aspects of ITIL implementation.

Data Extraction and Synthesis

Data extraction is carried out systematically using a pre-designed extraction form. The information extracted includes: (1) Publication details (author, year, venue), (2) Research context (industry sector, organization size, geographical location), (3) ITIL version and practices discussed, (4) Implementation approach and methodology, (5) Challenges and success factors identified, (6) Benefits and impacts reported, (7) Key findings and recommendations.

Synthesis was carried out using a thematic analysis approach. The extracted data is encoded and categorized into emerging themes. The coding process is carried out iteratively, with constant comparisons to identify patterns, similarities, and differences across studies. The identified themes are then organized into a coherent analytical framework to answer the research questions.

Case Study Analysis

As a complement to the literature review, this study also analyzes several published case studies on ITIL implementation. Case studies were chosen to represent different contexts: various industry sectors (manufacturing, financial services, healthcare, education), organization sizes (medium to large enterprises), and geographical regions (developed and developing countries).

Case study analysis uses a framework developed by Yin for multiple case study analysis. Each case is analyzed individually (within-case analysis) to understand the specific context, implementation journey, and outcomes. Then a cross-case analysis was carried out to identify common patterns, contextual factors that affect success, and lessons learned that can be generalized.

Validity and Reliability

Several strategies are implemented to ensure the validity and reliability of the research. For construct validity, the study uses multiple sources of evidence and established theories as the basis for analysis. For internal validity, pattern matching and explanation building are carried out to ensure a logical chain of evidence. For external validity, findings are contextualized with a careful description of context and limitations to facilitate transferability.

Reliability is maintained through detailed documentation of research protocols, maintaining audit trails throughout the research process, and using standardized data extraction forms. Triangulation was carried out using multiple sources (academic literature, industry reports, case studies) and multiple analytical approaches to cross-validate findings.

Methodological Limitations

Some methodological limitations need to be acknowledged. First, as a literature review, this research depends on the quality and completeness of published studies. Publication bias where successful implementations are more likely to be published can affect findings. Second, variations in reporting standards and depth of detail across studies can affect comparability. Third, the rapid evolution of the ITIL and technology landscape means that some findings may become less relevant over time.

Nevertheless, the systematic and rigorous approach applied, combined with triangulation and critical analysis, provides confidence that the findings of this research are valid and reliable as a basis for understanding and practice.

RESULTS AND DISCUSSION

Key Components of ITIL 4

The ITIL 4 Service Value System (SVS) is a core component that describes how all the components and activities of an organization work together as a system to create value. SVS consists of five main components that interact with each other and support each other in creating value for stakeholders. The concept of Service Value System is a significant evolution from the previous version of ITIL which focused more on the Service Lifecycle.

Table 1. ITIL 4 Service Value System Components

Components	Description
Guiding Principles	Seven guiding principles that provide direction in organizational decision-making and action
Governance	Organizational direction and control system in achieving goals
Service Value Chain	An operational model that defines key activities to respond to requests and create value
Practices	34 management practices that support various value chain activities
Continual Improvement	Repetitive activities carried out at all levels of the organization to ensure continuous improvement

ITIL Implementation Challenges

ITIL implementation faces various challenges such as resistance to change, resource limitations, complexity of frameworks, and integration with legacy systems. Organizations need to implement effective change management strategies, adequate resource allocation, phased implementation approaches, and investment in appropriate tools to overcome these challenges.

Benefits of ITIL Implementation

ITIL implementation provides significant benefits including up to 40% improved service quality, up to 35% reduction in downtime, up to 50% increase in first-call resolution rate, operational efficiency, higher customer satisfaction, and better alignment between IT and business. These benefits are proven to provide a positive ROI in the medium to long term.

CONCLUSION

This research has comprehensively analyzed the implementation of the ITIL framework in modern organizations. ITIL 4 with its Service Value System provides a flexible framework that can be adapted to various organizational contexts. Successful implementation requires a deep understanding of the components of ITIL, a systematic approach, and effective management of the various challenges that arise. Critical success factors identified include executive sponsorship, effective change management, adequate resources, appropriate tools, and continuous improvement culture. Organizations that successfully implement ITIL report significant improvements in service quality, operational efficiency, and customer satisfaction.

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