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IT Service Management System Practices in Kenya

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Abstract: This research investigates ITSM adoption and adaptation, and the challenges faced by leading Kenyan companies. Using a case study approach and guided by ISO/IEC 20000 and ITIL frameworks, the study highlights how Kenyan organizations successfully leverage ITSM to improve operational efficiency, customer satisfaction, and innovation capabilities. Findings offer recommendations for businesses in Kenya seeking to optimize their IT service delivery for competitive advantage in a rapidly digitizing economy.

Keywords: ITSM, Information technology service management, ISO/IEC 20000, ITIL, Kenya, Case study

1. Introduction

In today's rapidly evolving digital landscape, businesses rely heavily on information technology (IT) to drive innovation, customer service, and competitive advantage (Shehata and Montash, 2020). Effective IT Service Management (ITSM) is crucial for ensuring that IT services are designed, delivered, and supported in a way that maximizes value for the organization. ITSM can significantly streamline IT operations, enhance service quality, and ensure strategic alignment between IT and overall business objectives (Sahid, Maleh and Belaissaoui, 2020).

This research explores ITSM practices in Kenya, using a case study approach to delve into the experiences of Kenyan leading organizations (Borura, 2015). Kenya presents a compelling context, with a growing emphasis on digitization and technology-driven development. The following research questions guide this study:

- To what extent do Kenyan organizations adopt ITSMS frameworks? While global standards exist, their uptake in the Kenyan context requires examination.
- What ITSMS implementation challenges exist in the Kenyan context? Factors such as skills availability, infrastructure, and regulatory considerations may pose unique challenges.
- How does the implementation of ITSMS frameworks impact Kenyan organizations? This research aims to quantify the benefits, such as improved efficiency, customer satisfaction, or competitive positioning.

The findings of this study offer valuable insights for Kenyan businesses looking to optimize their IT service delivery for strategic advantage (Tsou, Cheng and Hsu, 2015). Kenya's focus on technology-driven development makes effective ITSM crucial for streamlining business processes and delivering superior customer experiences. A case study methodology was chosen for its ability to provide in-depth insights into the complexities and nuances of ITSM implementation within a real-world Kenyan business context.

2. Literature Review

ISO/IEC 20000: International Standard for IT Service Management: ISO/IEC 20000 provides a comprehensive set of requirements for establishing, implementing, maintaining, and continually improving an IT Service Management System (SMS) (Van Der Haven, 2020).

ISO/IEC 20000 aims to ensure that IT services are delivered with consistent quality, meeting both customer needs and business objectives cost-effectively (Van Der Haven, 2020).

The latest version of the standard, ISO/IEC 20000-1:2018, consists of 10 clauses that outline the key components of an SMS:

Clauses of ISO/IEC 20000

- Context of the Organization (Clause 4):
  - Understanding Needs: ISO 20000 stresses identifying internal/external stakeholders and their requirements, along with legal and regulatory obligations affecting IT service delivery.
  - Scope of the SMS: Organizations must define the boundaries of their ITSMS – which services, locations, and business units are included (or excluded) and why (Gianni, 2020).
- Leadership (Clause 5):
  - Ownership and Accountability: Top management must champion ITSM, setting clear objectives, providing resources, and enforcing accountability across the organization (Selig, 2018).
  - Policy and Communication: Leadership defines the overall ITSM policy and ensures it's effectively communicated throughout the organization (Jäntti and Hotti, 2016).
- Planning (Clause 6):
  - Risk and Opportunity Management: ISO 20000 highlights proactive identification and mitigation of risks that could disrupt service delivery, along with seizing opportunities for improvement (International Organization for Standardization, 2024).

- Objectives and Plans: ITSM objectives should cascade from broader business goals, and there need to be actionable plans in place to achieve these objectives (Herring, C., Johnston, K., and Willows, G. (2014).

- Support (Clause 7):
  - Resources: This covers human resources, infrastructure, technology, and financial resources essential for the SMS.
  - Competence: Ensuring staff have necessary skills and training.
  - Awareness: Everyone involved in delivering IT services should understand the SMS requirements and their role within it.
  - Communication: Effective, two-way communication channels for sharing ITSM-related information.
  - Documented Information: Controlling creation, maintenance, and access to essential ITSM documents (policies, procedures, etc.). (Tanović and Marjanovic, 2019).
- Operation (Clause 8):
  - Service Delivery Planning: Designing and managing processes to deliver IT services meeting agreed requirements and service level agreements (SLAs).
  - Control and Change Management: Ensuring all changes are assessed, approved, and managed in a controlled way to minimize disruptions (Aurachman, Sudianto and Utomo, 2021).
- Performance Evaluation (Clause 9):
  - Monitoring and Measurement: Regularly tracking KPIs and metrics to gauge performance against ITSM objectives.
  - Internal Audits: Conducting scheduled audits to verify compliance with ISO 20000 requirements and internal policies.
  - Management Review: Top management formally reviewing the status and effectiveness of the SMS at planned intervals (Asrowardi, Putra, Subyantoro and Mohd Daud, 2018).
- Improvement (Clause 10):
  - Nonconformity and Corrective Action: Systematic approach to identifying nonconformities, root cause analysis, and taking corrective actions to prevent recurrence.
  - Continual Improvement: Proactive culture of identifying improvement opportunities at all levels of ITSM (Heikkinen, Jäntti and Saranto, 2020).

3. A Framework for Modern IT Service Management

ITIL 4 is the latest iteration of the ITIL (Information Technology Infrastructure Library) framework. It provides a holistic and flexible set of best practices and guidelines for IT service management (ITSM), designed to help organizations deliver value to customers through effective IT services (Reiter and Miklosik, 2020).

Key Concepts of ITIL 4:

- Service Value System (SVS): A comprehensive model emphasizing the co-creation of value between service providers, consumers, and other stakeholders (Serrano, Faustino, Adriano, Pereira and da Silva, 2021).
- Four Dimensions of Service Management: A framework for ensuring a balanced approach to ITSM:
  - Organizations and People
  - Information and Technology
  - Partners and Suppliers
  - Value Streams and Processes (Iden, Eikebrokk, and Marrone, 2020).

- Guiding Principles: Universal recommendations that guide organizations in all circumstances, promoting consistency and alignment with ITIL philosophy (Seddon, Calvert and Yang, 2010).
- 34 ITIL Practices: Sets of resources designed to perform specific work within service management including incident management, change enablement, service level management.

Emphasis of ITIL 4:

- Agility and Adaptability: ITIL 4 promotes a more flexible approach, encouraging organizations to adapt the framework to their specific needs and context.
- Customer-Centricity: Places a strong emphasis on understanding customer needs and co-creating value (Talla and Valverde, 2013).
- Holistic View: ITIL 4 integrates concepts from Agile, DevOps, Lean, and other frameworks to encourage a well-rounded approach to ITSM **(**Gómez Miranda and Salas Cruz, 2019).
- Practical and Outcome-Oriented: Designed to provide clear guidance and help organizations achieve tangible results (Mvelase, 2022).

ITIL: Continuous Service Improvement

- Continual Service Improvement: Data-driven approach to identifying improvement areas, using methodologies like the Deming Cycle (Plan-Do-Check-Act) (Fischbach, Puschmann and Alt, 2013).

The ITIL Service Value System has five Components, namely, Value Chain, Guiding Principles, Governance, Continual Improvement, and Practices. The five components are essential within the SVS:

- **Value Chain:** The central model outlining the steps to transform inputs like demand into value for stakeholders.
- **Guiding Principles:** Recommendations to guide IT decision-making regardless of specific circumstances.
- **Governance:** The oversight and decision-making mechanisms to ensure alignment with strategy and compliance.
- **Continual Improvement:** The embedded philosophy of consistently identifying and implementing service enhancements.

- **Practices:** Resources designed for performing work or achieving objectives (these were formerly called 'processes' in earlier ITIL versions) (Al-Ashmoery, Haider, Haider, Nasser, and Al-Sarem, 2021).

The service value chain is a flexible operating model for the creation, delivery, and continuous improvement of services. The service value chain defines six main activities: Plan; Improve; Engage; Design and Transition; Obtain/Build; Deliver, and Support; Products and Services as shown below.

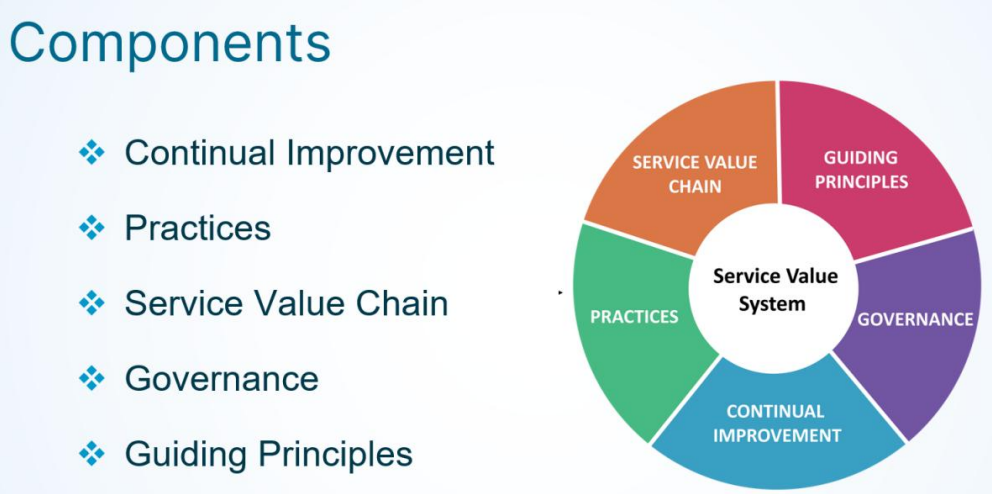

Figure 1: Service Value System

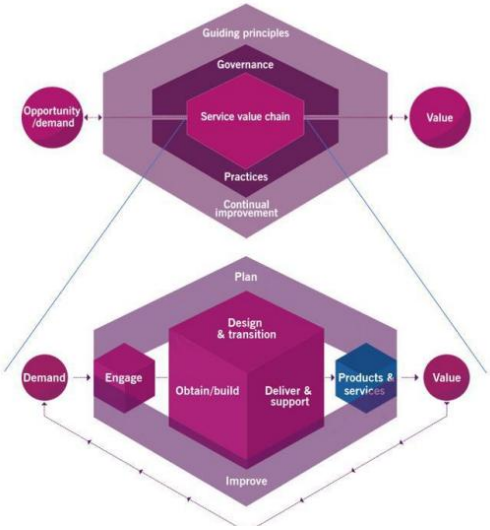

Figure 2: The ITIL 4 Service Value System

In ITIL 4 a holistic approach is presented, divided into four dimensions that have as its central objective the value that a given ICT service provides to customers and project stakeholders, as we can see in Fig. 2.

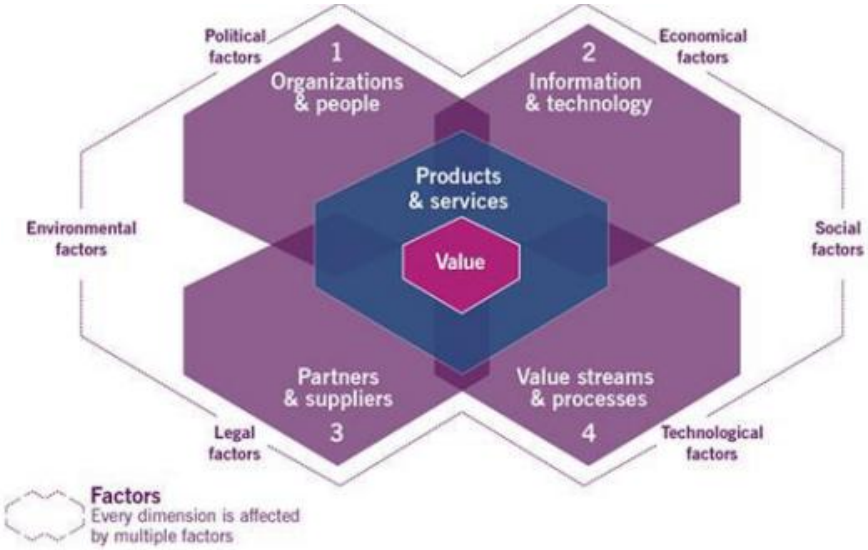

Figure 3: ITIL 4 dimensions of IT service management

The 7 ITIL guiding principles help organizations focus on the practices that enable an effective IT service management system.

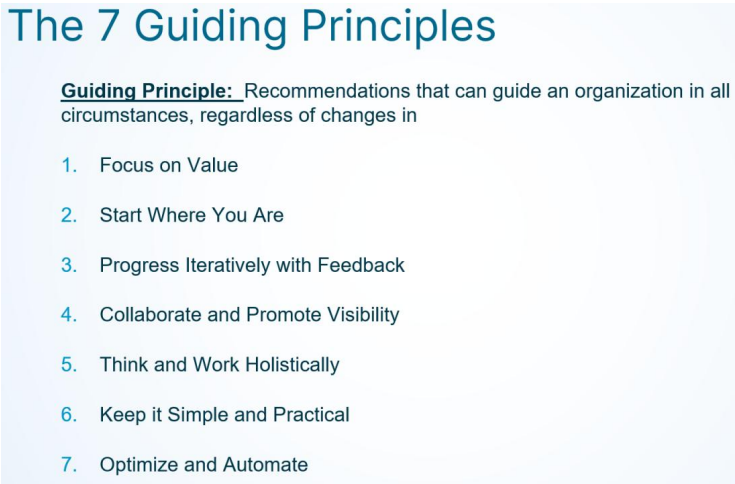

Figure 4: 7 ITIL Guiding Principles

The ITIL Governance component provides the oversight and decision-making mechanisms to ensure alignment with strategy and compliance.

Figure 5: Governance Component

The ITIL Continual Improvement component provides a structured 7-step model to guide improvement initiatives across the IT service management system, supporting the goal of value creation (Tuomisto, 2022).

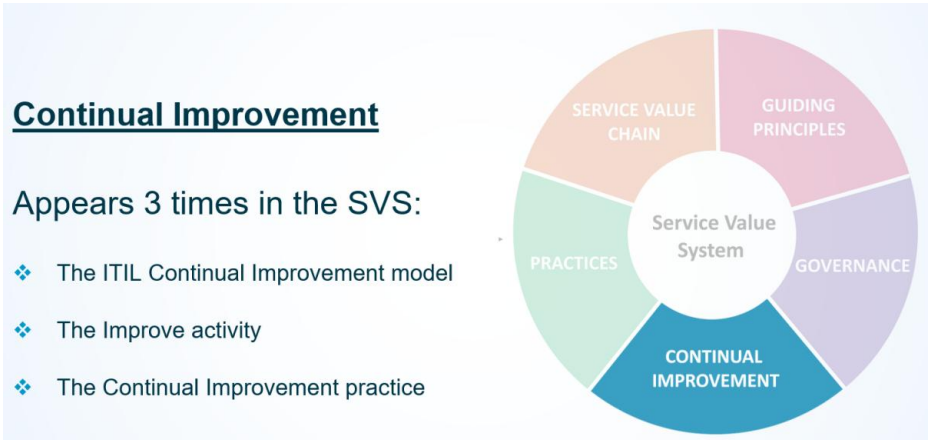

Figure 6: ITIL Continual Improvement

The ITIL Practices are the set of organizational resources designed for performing work to deliver value (Sjölund, 2021).

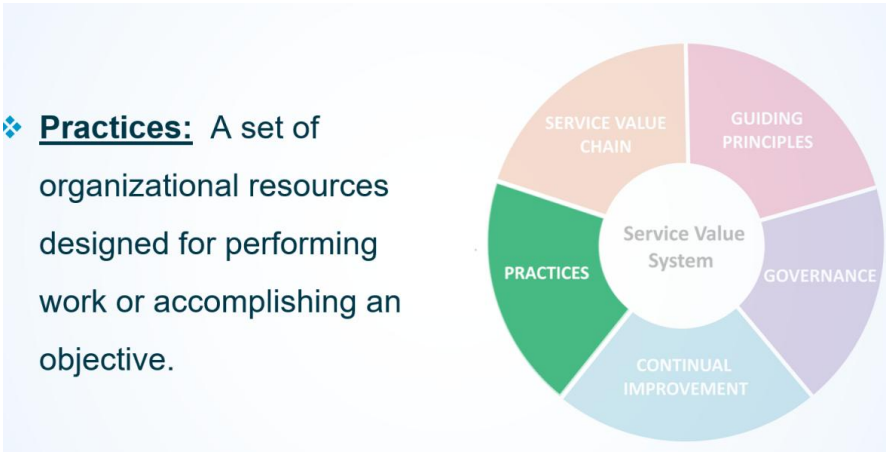

Figure 7: ITIL Practices

Table 1: Framework Comparison Table

Framework	Focus	Approach	Ideal For...	Kenyan Considerations
ISO 20000-1	Comprehensive ISMS	Prescriptive, detailed requirements	Organizations seeking formal certification, highly regulated industries	Kenyan companies may value its structure, but need flexibility to adapt
ITIL 4	Value-driven service delivery	Flexible best practices, customer focus	Organizations prioritizing adaptability and innovation	Kenyan businesses may benefit from the emphasis on customer experience in a rapidly changing market

The Impact of Emerging Technologies on ITSM Practices Globally

The landscape of Information Technology Service Management (ITSM) is constantly evolving due to the emergence of powerful new technologies. Here's an overview of how some key trends are impacting ITSM practices globally:

1. Social and Mobility:

- Social Collaboration: Platforms like Slack or Yammer enable real-time communication among IT staff, improving incident resolution and knowledge sharing.

- Mobile Device Management (MDM): Tools for managing and securing employee mobile devices create new challenges and considerations for ITSM, requiring inclusion in service catalogs and incident management processes (Maes, 2022).

2. Big Data and Analytics:

- Proactive Problem Solving: Analyzing large data sets from various IT sources helps identify service quality issues and predict potential problems before they occur.
- Data-Driven Decision Making: ITSM teams can leverage analytics to gain insights into user behavior, resource utilization, and service performance, enabling data-driven decisions for improvement (Kubiak and Rass, 2018).

3. Cloud Computing:

- Increased Agility: Cloud-based services offer greater flexibility and scalability for ITSM processes. Services like cloud ticketing systems enable faster deployment and easier management.
- Security Concerns: New security considerations arise as data and applications move to the cloud. ITSM needs to adapt by incorporating robust cloud security practices (Wang, Zhong and Li, 2022)..

4. Artificial Intelligence (AI):

- Automated Incident Resolution: AI-powered tools can automate routine tasks like incident diagnosis and categorization, freeing up human resources for more complex issues.
- Chatbots: AI-powered chatbots can provide 24/7 self-service support options for end-users, reducing pressure on traditional support channels (Rajagopal and Ramkumar, 2023).

5. Blockchain:

- Improved Data Security and Transparency: Blockchain's tamper-proof nature can enhance data security for ITSM processes, particularly for change management and audit trails.
- Limited Adoption: Blockchain technology is still evolving, and its integration with established ITSM practices requires further exploration (Bohrweg, 2017).

6. Internet of Things (IoT):

- Increased Complexity: The proliferation of connected devices adds new dimensions of complexity to ITSM. Discovery, onboarding, and management of these devices need to be integrated into ITSM processes.
- Real-time Service Monitoring: IoT sensors can provide real-time data on device health and performance, enabling proactive monitoring and preventive maintenance (Srivastava, Singh, Joseph, Rajkumar, Borole, and Singh, 2021).

7. Cybersecurity:

- Heightened Threats: The evolving threat landscape necessitates continuous improvement in ITSM practices to address emerging cyberattacks and vulnerabilities.
- Integrated Security: Security needs to be embedded throughout the ITSM lifecycle, from incident management to access control, for comprehensive protection (Sabillon, 2022).

8. Digital Transformation:

- ITSM as a Strategic Enabler: ITSM plays a crucial role in digital transformation initiatives by ensuring that IT services effectively support changing business needs and innovation.
- Focus on User Experience: Digital transformation emphasizes user-centricity. ITSM practices need to adapt to provide seamless, personalized experiences for users (MacLean and Titah, 2023).

Organizations need to continuously update their ITSM approaches to leverage these technologies effectively and achieve optimal service delivery in the digital age.

4. Methodology

A case study methodology was chosen for this research, as it is well-suited for in-depth investigations of complex phenomena within their real-life context (Yin, 2018). Focusing on Kenyan market leader in Kenyan telecommunication, banking and insurance industries allows for exploring the how and why behind their ITSM implementation choices. This case study approach has the potential to reveal unique insights into the adaptation of ITSM frameworks within the Kenyan business environment.

5. Results

Safaricom Kenya

Framework Adoption

- Primary Framework: Safaricom is ISO/IEC 20000-1:2018 certified across core IT Service Management processes.
- ITIL Integration: ITIL best practices are leveraged to guide the implementation of specific processes, particularly within the service operation lifecycle stage.
- Additional Frameworks: COBIT principles are utilized for governance and risk management aspects of their SMS (Safaricom, 2024).

Process Implementation (Clauses 4-10)

- Key Challenges:
  - Change Management: Resistance to change from some internal stakeholders, requiring ongoing awareness and communication initiatives.
  - Incident Management: Challenges in effectively classifying initial incidents, sometimes leading to delays in resolution.
  - Resource Constraints (Clause 7): Limited availability of trained personnel in specialized ITSM roles.
- Kenyan Context Differences:

- Emphasis on adaptability and responsiveness to rapid market shifts in the telecom sector.
- The need for robust knowledge management solutions to bridge gaps caused by occasional staff turnover.

Success Factors:

- Leadership Support: A dedicated governance committee oversees ITSM initiatives, ensuring alignment with strategic goals.
- Training and Development: Continuous ITIL and ISO 20000 training programs are in place to build staff competency.
- Stakeholder Collaboration: Strong partnerships with external vendors and service providers supporting elements of the SMS.

Impact on Organization:

- Quantitative:
  - A 15% reduction in major IT incidents (e.g., network outages) over the past two years, with the number decreasing from 20 per month to 17 per month.
  - 10% improvement in average service request resolution time.
- Qualitative:
  - Improved customer satisfaction scores linked to IT service delivery.
  - Increased responsiveness to market trends due to agile IT operations (Safaricom, 2024).

Britam

Framework Adoption

- Primary Framework: BRITAM has implemented an IT Service Management System aligned with the principles of ISO/IEC 20000-1:2018.
- ITIL Integration: ITIL processes are heavily referenced for incident management, problem management, and service desk operations.
- Industry Frameworks: ITIL is supplemented with frameworks specific to the insurance sector for managing claims processing and policy administration systems (Britam, 2024).

Process Implementation (Clauses 4-10)

- Key Challenges:
  - Legacy Systems (Clause 8): Integrating legacy insurance policy systems with modern ITSM tools presents complexities and delays during change implementations.
  - Data Management (Clause 7): Maintaining consistency and accuracy of customer data across multiple platforms is an ongoing requirement.

- Regulation (Clause 4): Strict compliance with evolving industry regulations impacts the speed of IT change implementation.

- Kenyan Context Differences:
  - Localized emphasis on fast resolution of customer inquiries and complaints to remain competitive and meet regulatory requirements.
  - Need for disaster recovery and business continuity plans with particular attention to the risks of cyberattacks in the financial sector.

Success Factors:

- Leadership Buy-in: Senior management sponsorship has been a driving force behind ITSM initiatives at BRITAM.
- Outsourcing Partnerships: Strategic outsourcing of specific IT service functions to specialized vendors for greater efficiency.
- Customer Focus: A strong focus on understanding customer needs has guided ITSM process design and improvement.

Impact on Organization:

- Quantitative:
  - 10 % decrease in the time to process new insurance policies due to ITSM streamlining.
  - 20 % reduction in cybersecurity incidents over one year attributed to improved vigilance and security processes.
- Qualitative:
  - Increased customer trust, reported in customer surveys, due to the reliability of IT services.
  - Faster time-to-market for new insurance products enabled by agile IT change management.

Equity Bank

Framework Adoption

- Primary Framework: Equity Bank has adopted a robust IT Service Management System (SMS) aligned with the latest ISO/IEC 20000-1:2018 standard.
- ITIL Integration: Core ITIL best practices form the foundation for Equity Bank's service operation lifecycle, encompassing incident management, problem management, and service request fulfillment.
- Industry Standards: Equity Bank may additionally leverage industry-specific frameworks like COBIT for IT governance and security best practices specific to the financial sector.

Process Implementation (Clauses 4-10)

- Key Challenges:

- Customer Onboarding (Clause 8): Balancing rapid customer onboarding with stringent KYC (Know Your Customer) compliance procedures requires efficient and secure ITSM processes.
- Branch Network Management (Clause 6): Ensuring consistent service delivery across a vast branch network necessitates robust infrastructure management and remote support capabilities.
- Cybersecurity (Clause 9): Maintaining robust cybersecurity measures across a large digital banking platform is paramount, requiring ongoing vigilance and threat detection capabilities.

- Kenyan Context Differences:
  - Financial Inclusion: Equity Bank prioritizes using ITSM to expand financial inclusion initiatives by streamlining mobile banking and digital payment services for unbanked populations.
  - Financial Regulation: Adapting ITSM processes to comply with rapidly evolving Central Bank of Kenya (CBK) regulations remains an ongoing challenge.

Success Factors:

- Management Commitment: Senior leadership at Equity Bank actively champions ITSM initiatives, ensuring alignment with strategic goals.
- Employee Training: The bank invests heavily in training programs to equip staff with ITSM knowledge and skills necessary for effective service delivery.
- Innovation Culture: Equity Bank fosters a culture of innovation, leveraging ITSM to support rapid development and deployment of new digital banking solutions.

Impact on Organization:

- Quantitative:
  - 20 % reduction in average customer onboarding time through streamlined ITSM processes.
  - 20 % improvement in customer satisfaction scores related to mobile banking service availability.
- Qualitative:
  - Enhanced reputation as a leader in financial technology due to reliable and secure digital banking services facilitated by ITSM.
  - Increased operational efficiency, allowing Equity Bank to better serve its growing customer base (Equity Group Holdings, 2024).

Co-operative Bank

Framework Adoption

- Primary Framework: Co-operative Bank aligns its IT Service Management System with ISO/IEC 20000-1:2018 principles.
- ITIL Integration: Key ITIL v4 processes are leveraged for change management, problem management, and knowledge management, guiding operational practices.

- Sector-Specific Alignment: Co-op Bank may reference banking-specific ITSM guidelines to address their unique core banking system requirements in alignment with the co-operative model (Co-operative Bank of Kenya, 2024).

Process Implementation (Clauses 4-10)

- Key Challenges:
    - Data Governance (Clause 7): Managing vast amounts of customer financial data across multiple systems necessitates strict data security and classification processes.
    - Rural Branch Support (Clause 8): Providing consistent IT support to less-technologically equipped branches in rural areas presents logistical complexities.
    - Financial Crime Prevention (Clause 9): Maintaining robust fraud detection and regulatory compliance mechanisms within the ITSM framework requires continuous vigilance.
- Kenyan Context Differences:
    - Emphasis on Financial Inclusion: Co-op Bank utilizes ITSM to streamline microfinance systems and mobile banking solutions aimed at reaching underserved populations.
    - Cooperative Model: Potentially unique IT needs due to their member-owned structure might influence change management and decision-making procedures within the SMS.

Success Factors:

- Customer Centricity: Strong focus on customer experience guides ITSM improvement initiatives, aligning with the bank's cooperative values.
- Internal Training Initiatives: Dedicated programs for developing staff competency in ITSM principles and tools.
- Process Automation: Strategic use of automation to streamline routine tasks, enabling focus on complex issues and customer support.

Impact on Organization:

- Quantitative:
    - 10 % decrease in average incident resolution time, improving customer experience.
    - 10 % reduction in IT operational costs due to streamlined ITSM processes.
- Qualitative:
    - Improved reputation for reliable and accessible banking services, supporting Co-op Bank's market position.
- Enhanced agility in adapting IT services to capitalize on new financial technology trends (Co-operative Bank of Kenya, 2024).

Table 2: Company Comparison table

Company	Key Challenges	Success Factors	Kenyan Context Impact
Safaricom	Change resistance, rapid incident classification	Leadership support, staff training, stakeholder collaboration	Emphasis on adaptability for the fast-moving telecom sector
Britam	Legacy systems integration, customer data management	Outsourcing expertise, customer focus	Strict regulatory environment for insurance
Equity Bank	Efficient customer onboarding, branch network support, cybersecurity	IT innovation culture, staff training, process automation	Push for financial inclusion through technology
Co-operative Bank	Data governance, rural branch support, fraud prevention	Customer-centricity, internal training	Emphasis on serving underserved populations, potential impact of cooperative model on ITSM decision-making

6. Discussion

This case study of Kenyan organizations sheds light on ITSM practices within Kenyan organizations. Key findings relating to the study's research questions include:

- Framework Adoption: Leading Kenyan organizations demonstrate a preference for internationally recognized frameworks like ISO/IEC 20000, often integrating ITIL for practical implementation guidance.
- Implementation Challenges: Challenges common within the Kenyan context include navigating legacy systems, ensuring regulatory compliance, and prioritizing cybersecurity while upholding customer service standards.
- Impact of ITSMS: Successful ITSM implementation leads to measurable improvements in operational efficiency, customer satisfaction, and the ability to drive innovation – key factors for Kenyan banks seeking to maintain their competitive edge (Equity Group Holdings, 2024)

This study underscores the unique challenges of ITSM in Kenya, such as navigating legacy systems while ensuring regulatory compliance and cybersecurity in a rapidly evolving market. Successful Kenyan organizations demonstrate a focus on proactive skills development, strategic IT planning, and leveraging the potential of ITSM for financial inclusion initiatives.

Recommendations for Kenyan businesses seeking ITSM success include:

- Proactive Skills Investment: Internal training programs in ISO/IEC 20000 and ITIL should be prioritized, as well as partnerships with specialized training providers.
- ITSM as Strategy, Not Reaction: Organizations must embed ITSM into long-term business goals for maximal benefit.
- Industry-Specific Communities: A Kenyan ITSM knowledge-sharing network would aid in identifying sector-specific best practices."

Limitations and Future Research

- Case Study: The focus on 3 organizations provides in-depth insights but might limit the generalizability of findings to smaller or less technologically advanced organizations.
- Future Directions: Comparative studies across multiple industries could further illuminate how ITSM practices vary based on bank size, target market, and regulatory changes. A longitudinal study could examine the long-term evolution of ITSM maturity in Kenya.

Through this research, it's evident that effective ITSM is key for Kenyan organizations seeking to optimize operations, enhance customer experiences, and drive innovation in an increasingly digital landscape.

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