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Research Article

Establishing IT Governance Framework in Large Tertiary Hospital: Case Study, Challenges and Recommendations

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A B S T R A C T

The implementation of Information Technology (IT) governance is important for ensuring the efficient management and security of healthcare data and technology assets. This paper provides a detailed overview of IT governance in healthcare, discussing its key components, benefits, and the central role it plays in safeguarding patient information and enhancing clinical outcomes. Moreover, it integrates a detailed case study of Cleveland Clinic Abu Dhabi, demonstrating how developing a framework for referral and flow of ideas and projects can significantly enhance productivity and proper use of manpower in a world with rapidly expanding technological advances, as well as how transforming IT governance can lead to significant operational efficiencies and alignment with organizational goals. Drawing upon scholarly literature and industry standards, including references to regulatory mandates such as the Health Insurance Portability and Accountability Act (HIPAA) and the General Data Protection Regulation (GDPR), this paper highlights the significance of robust IT governance practices in mitigating risks, ensuring regulatory compliance, and promoting innovation in healthcare delivery.

Keywords: IT governance, Healthcare, Data governance, Cybersecurity, Regulatory compliance, Risk management, IT infrastructure, Patient care, Operational efficiency, Organizational alignment

1. Introduction

With the rapid technological advancements in healthcare, effective IT governance is indispensable for optimizing patient care, streamlining operations, and safeguarding sensitive health data. This comprehensive overview elucidates the fundamental components, benefits, and role IT governance plays in modern-day healthcare systems and showcases an example of a real-world case study.

2. Components of IT Governance in Healthcare

IT governance in healthcare covers a multifaceted approach to managing IT resources, ensuring compliance with regulatory standards, and mitigating risks associated with data security breaches. Key components of IT governance include:

1. Data Governance

Central to IT governance is the establishment of robust data governance frameworks, which delineate data ownership, define data quality standards, and ensure compliance with regulatory requirements such as the Health Insurance Portability and Accountability Act (HIPAA) and the General Data Protection Regulation (GDPR)[1].

2. Cybersecurity

Given the increasing frequency and sophistication of cyber threats targeting healthcare organizations, vigorous cybersecurity measures are necessary for protecting patient information and safeguarding against data breaches[2]. Effective cybersecurity practices include encryption, access controls, and employee training to mitigate the risk of unauthorized access to confidential health data.

3. Regulatory Compliance

Healthcare organizations must adhere to a myriad of regulatory mandates governing the use and disclosure of patient information, including HIPAA, GDPR, and industry-specific standards such as the Health Information Trust Alliance (HITRUST) framework[3]. Compliance with these regulations is crucial for maintaining patient trust and avoiding potential legal repercussions.

4. Risk Management

Identifying and mitigating IT risks is key for preserving operational continuity and protecting patient safety[4]. Healthcare organizations must conduct regular risk assessments, develop comprehensive risk management strategies, and implement contingency plans to address potential threats effectively.

5. IT Infrastructure Management

An efficient IT infrastructure is essential for supporting clinical workflows and facilitating the delivery of high-quality patient care. Effective IT governance ensures the availability, reliability, and scalability of IT systems, including electronic health records (EHRs), telemedicine platforms, and medical devices[5].

6. Manpower and Resources Management

Effective IT governance also involves the strategic management of manpower and resources. This includes ensuring that IT staff are adequately trained, roles and responsibilities are clearly defined, and resources are allocated efficiently to support IT initiatives. Proper management of manpower and resources is crucial for the successful implementation and maintenance of IT systems in healthcare settings[6].

3. Benefits of IT Governance in Healthcare

The adoption of robust IT governance practices offers numerous benefits for healthcare organizations, including:

- Enhanced patient care through streamlined clinical workflows and improved access to medical information[7].
- Heightened data security and privacy protections, safeguarding patient information against unauthorized access and cyber threats[8].
- Regulatory compliance, ensuring adherence to legal and ethical standards governing the use and disclosure of patient data[9].
- Operational efficiency and cost savings achieved through optimized resource allocation and streamlined administrative processes[10].
- Facilitated innovation and technology adoption, enabling healthcare organizations to leverage emerging technologies to improve healthcare delivery and patient outcomes[11].

To illustrate the practical application of these IT governance components, we discuss next a detailed case study of Cleveland Clinic Abu Dhabi (CCAD). This institution embarked on a significant transformation to improve efficiency and align with organizational goals through a comprehensive IT governance model.

4. Case Study: Cleveland Clinic Abu Dhabi

4.1. Overview

This case study explores the significant transformation and value driven by a fundamental shift in CCAD's IT governance model. The previous IT governance model was fragmented, contributing to inefficiencies, conflicts in prioritization, wasted efforts, and misalignment with the organization's broader objectives. This challenge was further exacerbated by an aggressive cost optimization drive within our organization, which resulted in a significant downsizing of the IT workforce by approximately 50%. The consequent streamlining of operations accentuated the need for a more effective and efficient governance model, capable of managing both the daily IT operational demands and the influx of innovative IT enhancement requests, despite the leaner team structure.

Against this backdrop of systemic challenges, our organization took decisive action towards the implementation of a more efficient governance model - one that offered transparency to the organization and requestors, streamlined operations with an emphasis on IT-Business collaboration, and effectively facilitates prioritization based on an understanding of benefit to the organization and available capacity. Crucially, this new model aimed to encourage self-service, separate strategic priorities from operational work to provide capacity for both and set clear expectations with Service Level Agreements (SLAs) and Key Performance Indicators (KPIs) reporting.

Our transition from a narrow, clinical application-focused model to a comprehensive, organization-wide governance process was a response to these challenges. The change brought about substantial improvements in efficiency, a marked reduction in backlogs, and an improved alignment with our overarching goals, even amidst the staff reduction. This case study showcases

this pivotal transition and the resulting benefits, emphasizing the critical role of robust IT governance in streamlining operations and achieving strategic alignment.

4.2. Analysis

4.2.1. Prior IT Governance Issues: At the establishment of our tertiary referral hospital, rightly, our organization's IT governance model was overly focused on clinical applications, leading to the marginalization of other essential verticals as some governance committees, like those overseeing business applications, had become redundant. This narrow focus led to a delay in prioritization and the absence of tools to balance demand with capacity. Consequently, a significant backlog of unattended requests arose, resulting in fragmentation, disorganization, and mounting frustration among business customers.

The rapid expansion of services at our hospital and the significant growth in patients' numbers, our governance model, despite supporting the clinical applications' IT demand, was proving inadequate for the broader needs of our complex organization. The restrictions of the model led to an accumulation of delayed requests and operational inefficiencies, intensifying pressure on our resources.

4.2.2. The Need for Transformation: Recognizing these issues, the need for a more inclusive, integrated governance model became apparent. Our goal was to institute a process that accounted for the entire organizational context rather than just focusing on the clinical services. In doing so, we sought to bolster operational efficiency, streamline the management of IT demand, and align these requests more effectively with our overarching organizational goals.

The initial hurdles stemmed primarily from the insular nature of our change operations. These operations, conducted in silos, created inefficiencies, such as the procurement of new medical equipment that ultimately proved incompatible with highly specialised healthcare systems. This lack of foresight and integration within our IT governance posed a significant threat to our operational efficiency.

Furthermore, redundancy marked our change advisory boards, with an overrepresentation of certain members across boards. This overlap led to unnecessary duplication of efforts and confusion, diminishing the boards' effectiveness. Adding to this complexity, several governance bodies struggled to maintain regular meeting schedules, resulting in delays in decision-making and IT changes execution.

Finally, a lack of transparency plagued our IT governance structure. The decision-making process was perceived as unclear, with critiques suggesting a lack of rigor. Collectively, these issues underscored the pressing need for a comprehensive overhaul of our IT governance model.

4.3. The New Model

In response to these challenges, we recognized the need for a shift to a new, more effective IT governance model. This model prioritized a holistic view of all requests, ensuring each decision was made with full understanding of its implications across the organization. This strategy aimed to mitigate previous issues of siloed operations and redundancies, fostering better coordination and efficiency.
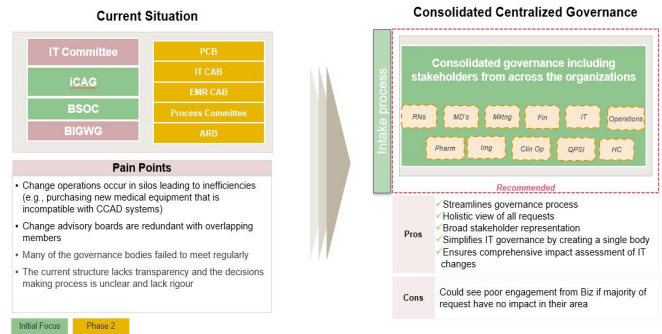
Figure 1: CCAD Transition to A New IT Governance Model.

The new model demonstrated in **(Figure 1)** emphasized broad stakeholder representation, striving to involve diverse perspectives in decision-making to ensure balanced, well-informed choices. We consolidated IT governance by placing responsibilities under a single governing body composed of a broad array of stakeholders representing critical areas of the business, reducing redundancies, clarifying roles, and enhancing decision-making efficiency. Lastly, the new model ensured comprehensive impact assessments for all IT changes. By fully understanding the potential consequences and benefits of each decision, we aimed to make more strategic choices for our organization, thus reinforcing our commitment to transparency and rigor in our governance process.
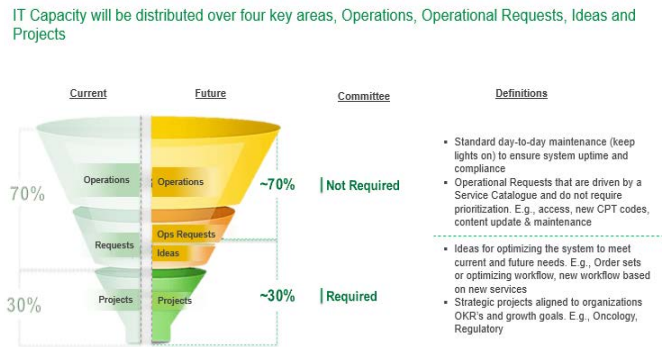
Figure 2: The distribution of IT capacity.

4.4. The Approach: transformation and innovation

Recognizing the inherent flaws and limitations of the previous model, the organization instigated an innovative shift and prioritized the distribution in IT capacity as defined in **(Figure 2)**. An organization-wide IT governance model was conceived, featuring a governance committee dedicated to evaluating all incoming requests (refer to **(Figure 3 and 4)** for detailed process). This shift ensured that non-viable or non-aligned projects were swiftly identified and rejected, thus preserving resources, and minimizing backlog accumulation.

4.5. Organizational Alignment

Effective IT governance fosters organizational alignment by ensuring that IT initiatives support the broader goals of the healthcare institution. At CCAD, the implementation of a new IT self-service portal **(Figure 5)** exemplifies this alignment. The portal interface empowers stakeholders across various departments to submit and track IT requests seamlessly, ensuring that IT services are accessible and transparent. This self-service model not only streamlines the submission process but also enhances the efficiency and responsiveness of IT support.

Figure 3: A robust process for request prioritization and capacity management.
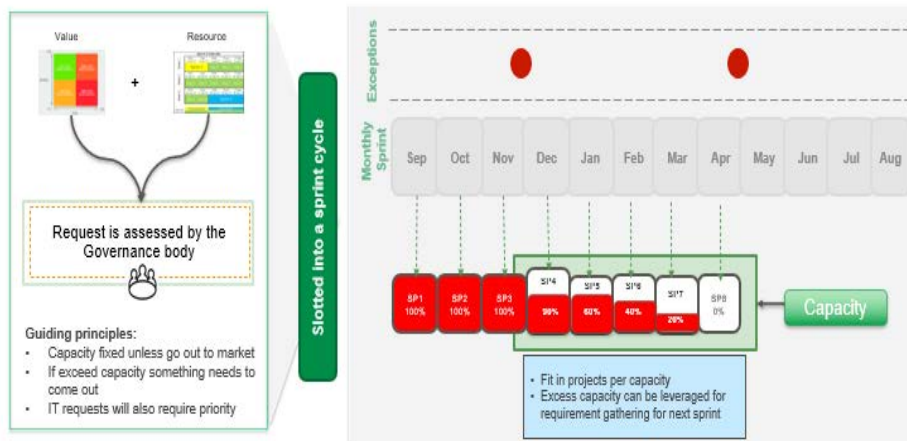

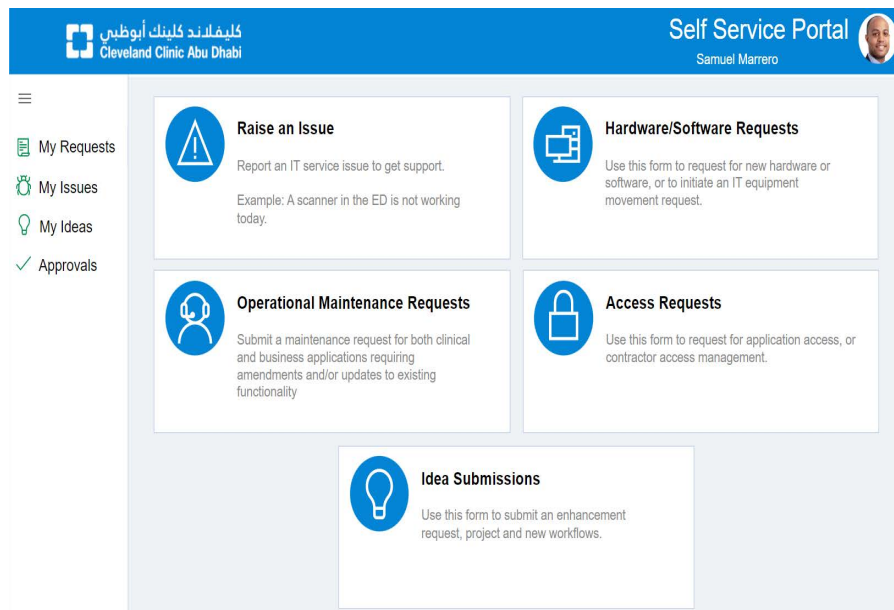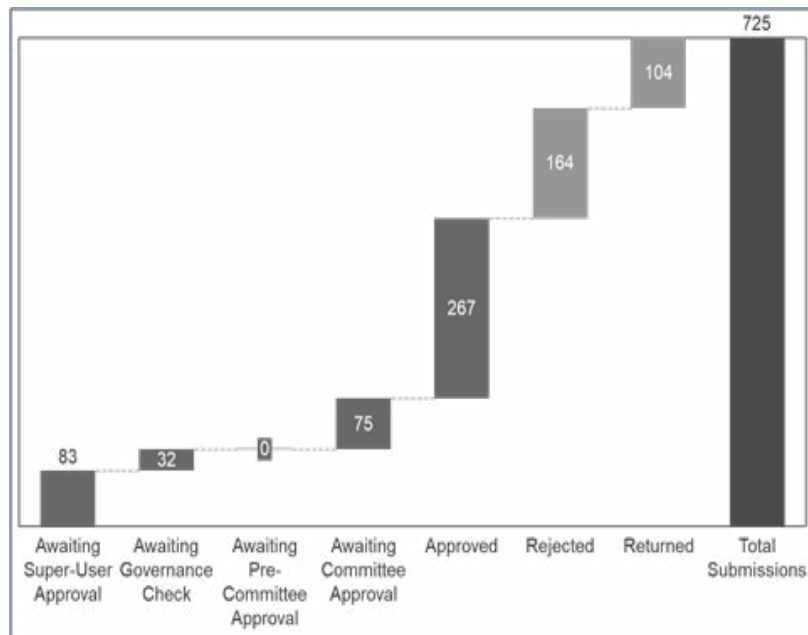**Figure 4**: The Sprint Cycle Process.

Figure 5: CCAD Self Service Portal.

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Figure 6: Results and categories of all submissions in the IT self service portal.

The data from the new portal, depicted in **(Figure 6)**, shows a comprehensive breakdown of all submissions categorized by status. This visibility allows for better prioritization of IT projects, aligning them more closely with organizational priorities. By categorizing requests and tracking their progress, the portal ensures that resources are allocated effectively, reducing backlogs, and enhancing the overall efficiency of IT operations. This alignment of IT services with organizational goals is critical for driving operational excellence and achieving strategic objectives.

5. Results: Tangible Benefits and Enhanced Operations

Post-implementation, the new governance process demonstrated significant improvements:

- **Alignment with Organizational Objectives:** Ensured all approved projects directly aligned with the organization's objectives, contributing to strategic success.
- **Efficiency and Resource Allocation:** Included a mechanism for appropriate resource allocation, resulting in a more efficient project delivery process.
- **Reduced Backlog and Increased Responsiveness:** The streamlined approval process and early rejection of unsuitable projects minimized backlogs, facilitating faster response times and project initiation.

6. Key Findings

- Transforming from a narrow, vertical-focused IT governance model to an organization-wide approach is pivotal for enhancing operational efficiency and better aligning with broader organizational goals.
- A comprehensive and transparent IT governance model is no longer an option but a cornerstone of efficient operations for modern healthcare providers.
- Streamlining the decision-making process, setting clear expectations, and implementing detailed Service Level Agreements (SLAs) are critical for facilitating the adoption and maximizing the positive impact of a restructured IT governance model.

- Even amidst significant workforce reduction, a well-structured governance model can effectively manage both daily operational demands and an influx of innovative enhancement requests, contributing significantly to organizational resilience.

7. Recommendations

Healthcare provider CIOs and IT leaders striving for operational efficiency and strategic alignment in healthcare organizations should:

- Build an IT governance model that delivers the capabilities required to realize the organization's operational and strategic goals. Adopt a holistic approach that enables efficient coordination of existing applications and custom-built capabilities across all departments.
- Accelerate the realization of benefits by working in partnership with the business and leverage continuous improvement methodologies for IT governance. Maintain a regular review cadence, balancing high-priority tasks with development time and effort.
- Foster adoption and a positive impact through a structured IT governance model. Provide clear expectations, service-level agreements (SLAs), and routinely report key performance indicators (KPIs). Ensure there is an internal escalation process to the appropriate functional area to facilitate timely resolution of issues.

8. A Glimpse into the Future

Beyond a simple rule revision, the new IT governance process represents a transformative change enhancing overall organizational effectiveness. An unfit model has been replaced with an improved system that enables the delivery of superior IT projects aligned with broader company goals. Given the positive trend, there is a promising outlook for further enhancements as the process continues to evolve, adapting to the organization's dynamic needs and the changing IT landscape.

9. Conclusion

IT governance plays an essential role in ensuring the

resilience, security, and effectiveness of healthcare systems. By employing robust governance frameworks and adhering to regulatory standards, healthcare organizations can mitigate risks, enhance patient care, and advance innovation in healthcare delivery. CCAD case study showcases the transformative power of a comprehensive IT governance model, highlighting the benefits of operational efficiency and strategic alignment. Organizations facing similar challenges should consider evaluating and revising their governance processes to cover all essential areas, align with overall objectives, and employ a robust review system. Such transformational changes can lead to improved efficiency, alignment, and overall organizational success.

10. Conflict of Interest

No potential conflict of interest relevant to this article was reported.

11. Funding

12. References

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