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ANALYSIS OF INFORMATION TECHNOLOGY INNOVATION GOVERNANCE USING COBIT: SYSTEMATIC LITERATURE REVIEW

Melinne Maldini Rosady*[1)], Alva Hendi Muhammad[2)], Asro Nasiri[3)]
1. Universitas AMIKOM Yogyakarta, Indonesia
2. Universitas AMIKOM Yogyakarta, Indonesia
3. Universitas AMIKOM Yogyakarta, Indonesia

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* Corresponding author.
Corresponding Author
E-mail address:
melinne@students.amikom.ac.id

ABSTRACT
Information Technology (IT) has become a critical element in all aspects of business, especially in the current digital era. To ensure continuity and operational effectiveness, companies must maintain their IT systems' security, availability and integrity. Success in managing IT innovation impacts operational efficiency and directly influences the company's overall performance and sustainability. Therefore, implementing effective IT innovation governance is crucial to reducing risks and maximizing benefits from IT investments. This research focuses on using the COBIT framework as the primary tool in managing IT innovation. COBIT, especially the COBIT 2019 version, is the dominant choice in innovation governance practices in the industrial and digital sectors. Through the Systematic Literature Review (SLR) method, this research identified and analyzed 30 related articles that provide in-depth insight into the application of COBIT in various industrial contexts. The research results highlight several challenges faced in implementing COBIT, including a need for a more in-depth understanding of this framework, a lack of proper documentation of work processes, and the need for clear operational standards to manage IT innovation effectively. Thus, this research not only provides practical guidance for practitioners in the field but also contributes a deeper understanding of the importance of integrated IT innovation governance with broader business strategy.

I. INTRODUCTION

IN today's fast-paced technological world, particularly in information technology, enhancing performance and productivity has become crucial for firms to thrive among technological advancements [1]. These technological advancements have also led to abundant data accessible to companies that can be transformed into precious data. By adopting and efficiently utilizing information technology, firms may enhance their operations, drive innovation in their products and services, and maintain competitiveness in a dynamic economy. Nevertheless, the growing influx of data also presents the difficulty of escalating data surges, complicating the search for specific information. Thus, the successful resolution of this issue can be achieved by instituting sound information governance [2], [3], [4]. Information technology management encompasses a set of activities involving leadership, structure, and procedures to ensure that the utilization of information technology within a firm effectively contributes to achieving company objectives [5].

This entails implementing organized systems and direction to attain increased worthwhile upholding an equilibrium between the hazards and advantages information technology presents. Consequently, the incorporation of information technology governance commences in the planning phase. It extends to the monitoring stage to guarantee the efficiency of information technology in facilitating the accomplishment of organizational objectives [6], [7]. Governance is a framework that assists firms in decision-making [8]. Effective governance significantly enhances corporate performance and product quality, increasing competitiveness and assuring long-term sustainability.

When assessing and creating information technology governance, various frameworks can be employed, including the COBIT framework [9], [10], [11]. COBIT is an information technology governance framework that encompasses the management and delivery of IT services to guarantee the security and integrity of data and information [12]. COBIT, a standard, is published by the IT Governance Institute, a division of ISACA. The primary goal of COBIT is to offer explicit policy advice and exemplary methods in IT management while also

assisting senior management in comprehending and managing IT-related risks. Good governance becomes paramount as information technology becomes more sophisticated and crucial in company operations [13]. Companies must establish explicit plans and procedures to ensure that their IT investments effectively contribute to the attainment of business objectives while simultaneously minimizing the accompanying risks. Frameworks such as COBIT are crucial in facilitating effective IT governance and ensuring that firms can effectively connect their IT initiatives with their business objectives.

The main challenge facing comprehensive and in-depth frameworks is that many organizations often consider their implementation complex. Deep understanding and extensive training are required to ensure all framework aspects are understood and implemented correctly. Each organization has a unique culture and structure and must comply with COBIT standards and guidelines. Adapting this framework to an organization's needs and culture requires effort and thoughtful strategy. The technology and best practices in IT continue to develop, so the COBIT framework must be updated and adjusted regularly. Organizations must be prepared to make these adjustments and updates to comply with the latest standards.

Efficient information technology governance enhances operational efficiency and risk management while cultivating stakeholder trust and confidence. This guarantees that investments in information technology align with the business goals and deliver quantifiable benefits to the organization. By implementing robust governance structures, organizations may effectively negotiate the intricate nature of the digital world with assurance and efficiency, preparing themselves for triumph in a progressively competitive business climate [11], [14].

Information technology governance is crucial for mitigating risks and enhancing data security. In an age of swift technological advancements, firms must prioritize the security and safeguarding of their data to prevent illegal access. Information technology governance encompasses organized protocols and directives to mitigate data security threats. This involves conducting ongoing audits and monitoring, installing robust security controls, and ensuring personnel adhere to proper security processes. By implementing efficient information technology governance, firms may guarantee the security and protection of their data against illegal access. This safeguards the company's information and helps maintain stakeholder trust and confidence [6].

Information technology governance plays a crucial role in effectively managing the risks and advantages presented by information technology. Amidst the swift advancement of technology, firms must guarantee that their investments in information technology yield advantages that surpass the hazards encountered. Information technology governance encompasses organized systems and principles for overseeing and managing potential risks and advantages. This involves thorough analyses of risks and benefits, identifying areas of high risk, and adopting efficient controls to mitigate hazards. By implementing efficient information technology governance, firms can guarantee that their investments in information technology provide more significant advantages than the risks involved. Additionally, this practice helps companies uphold trust and confidence among stakeholders.

Limitations of Empirical Studies on IT Governance and Innovation Most previous research has focused more on IT governance in general without specifically exploring how the COBIT framework can be applied in the context of information technology innovation. Systematic and Comprehensive Approach This research adopts a systematic literature review to collect, evaluate, and synthesize existing research, providing a clearer and more holistic picture of how COBIT can be applied in information technology innovation.

Lack of Practical Guidance Many studies that discuss the COBIT framework are theoretical and need to provide practical guidance or case studies that demonstrate the real application of COBIT in supporting technological innovation. By analyzing various existing studies and practices, this research has the potential to provide practical guidance that organizations can use to implement COBIT to support technological innovation.

In this context, this research aims to analyze existing literature on implementing information technology innovation using the COBIT framework. By comparing various studies conducted, this research aims to provide a comprehensive overview of the versions of the COBIT framework that are most commonly used in technological innovation and identify challenges and obstacles related to implementing the COBIT framework in IT innovation. Thus, an in-depth analysis will provide the insight needed to overcome obstacles and improve the effectiveness of implementing the COBIT framework in information technology innovation in making decisions.

II. Research Methods

The Systematic Literature Review (SLR) method provides a transparent and replicable approach to collecting and analyzing literature. This means that the research process and results can be relied upon and retested by other researchers, increasing the validity of the findings [15]. SLR allows researchers to collect all relevant evidence regarding the application of COBIT in information technology innovation governance. This includes studies

demonstrating the successes, challenges, and impacts of implementing COBIT. For this study, we employed a specific method of reviewing literature called Systematic Literature Review (SLR). Systematic literature reviews (SLRs) are a methodological approach to gathering and analyzing multiple prior studies. The identification and analysis process addresses issues about the subject matter under investigation [15]. SLRs involve multiple stages or activities, such as identifying the research topic, conducting a thorough literature search, establishing specific selection criteria, analyzing and synthesizing the findings, preparing reports and drawing conclusions [16]. The Systematic Literature Review (SLR) method was chosen for this research because it provides a structured, transparent and replicable approach to collecting and analyzing literature related to the application of COBIT in information technology innovation governance. This research involved several stages, from formulating research questions and developing the SLR protocol to literature searches using databases such as Google Scholar, ScienceDirect, and ACM with specific keywords. Literature selection was done manually and in detail, one by one, to ensure that all findings were presented systematically and comprehensively. The period 2019 to 2024 was chosen because it covers significant developments in the COBIT 2019 framework and the evolution of IT governance practices relevant to the modern context.

A. Research Question

The subsequent phase involves formulating research inquiries that are both precise and relevant to the subject of investigation. By creating pertinent inquiries related to the research subject, researchers can efficiently address queries regarding suitable keywords and the selection of an ideal database for gathering relevant literature sources. The research questions in this study focus on the analysis of governance for information technology innovation, utilizing the COBIT 2019 framework. The research questions or inquiries in this study are displayed in Table I.

TABLE I
RESEARCH QUESTION

Code	Research Question
RQ1	What version of the COBIT Framework is most commonly used in information technology innovation governance analysis using the COBIT 2019 framework?
RQ2	What challenges and obstacles are faced in implementing information technology innovation governance by utilizing the COBIT 2019 framework?
RQ3	What is the COBIT implementation strategy for information technology innovation governance?

B. Study Selection

Digital Transformation The period from 2019 to 2024 sees the acceleration of digital transformation in various industries. IT governance must evolve to manage the risks and opportunities emerging from these technologies. COBIT 2019 introduces a more flexible and modular framework better aligned with modern business needs and technological developments. This includes risk management, performance monitoring, and stronger strategic alignment with business objectives. Following discovery, articles are chosen based on several predetermined selection criteria. Articles published during the maximum time frame of 2024 are considered literary references. The evaluation process begins with reading the abstract and title and then determining whether there is any overlap with the research subject to be covered. At this point, Table II inclusion and exclusion criteria will be applied to the results of the previous search in order to screen and analyze them. International languages are widely used in academic publications. At the same time, Indonesian literature was chosen to ensure local relevance and capture literature important to the Indonesian context, ensuring that the literature is accessible and well understood. The Sprott Index ensures that the selected journals meet nationally recognized quality standards to ensure the validity and quality of the information used in research.

TABLE II
INCLUSION AND EXCLUSION CRITERIA

Inclusion Criteria	Exclusion Criteria
Articles published between 2019-2024	Articles published in inappropriate time frames
Literature articles published in languages Indonesian or English	Literary articles published in languages other than English or Indonesian
Discuss information technology innovation governance using the COBIT framework in Full Paper form	The literature topics discussed do not focus on the governance of information technology innovation using COBIT and are published other than in the form of scientific articles (journals)
Articles published by international journals or national journals indexed by Sinta	Articles published by non-indexed national journals Sinta

C. *Quality Assessment*

This research uses a systematic approach to evaluate articles that discuss the application of the COBIT Framework in the context of information technology innovation governance (QA1). This evaluation not only covers the extent to which COBIT is practically applied in IT innovation management but also analyzes the challenges and obstacles that arise during its implementation (QA2). Apart from that, the research also focuses on discussing specific strategies and approaches used in implementing COBIT to optimize IT innovation governance (QA3). The research team, consisting of experts in the field of IT governance from industry practitioners and academics, used checklists and evaluation forms specifically designed for each assessment criterion, ensuring a comprehensive and objective analysis of each article evaluated.

The quality assessment of each article is carried out by giving the symbol "P" if it meets the Quality requirements Assessment and has relevance to this research and the symbol "×" (if it does not comply with the requirements or does not have relevance to the discussion in this research). The articles found will be categorized as a "Study Select" at this stage. In the end, the literature that passes this stage will be analyzed further and become Literature sources in this SLR research in Table III.

TABLE III
QUALITY ASSESSMENT

Code	Quality Assessment
QA1	Does the article discuss the application of the COBIT Framework in the analysis of information technology innovation governance?
QA2	Does the article discuss and analyze the challenges and obstacles to using COBIT for information technology innovation governance?
QA3	Does the article discuss COBIT implementation strategies for information technology innovation governance?

D. *Data Extraction*

At this stage, essential information will be extracted from strictly selected articles. The data collected includes the article's title, the author's identity, the year of publication, and the research findings resulting from the article. Researchers or other readers can gain more profound and comprehensive insight into the explored research topic by analyzing information from these selected articles. This process enriches knowledge and allows the development of a more critical perspective on the subject under study. The extracted data are important because they provide deep insight into the practical and academic experience of applying COBIT to manage information technology innovation. This information not only describes theoretical applications of COBIT but also provides an overview of how this framework is used in the field, including challenges encountered and effective strategies.

E. *Data Analysis*

After the data extraction process, the next stage is to carry out an in-depth analysis of the data by identifying patterns and general findings that emerge from the evaluated articles. This analysis process will include comprehensive research of related data, involving an in-depth examination of various versions of the COBIT Framework in the analysis of information technology innovation governance. This analysis will also explore the challenges and obstacles faced in implementing information technology innovation governance. This approach involves synthesizing findings from several studies to build a deeper understanding of the application of COBIT in the context of IT innovation governance. To explore variations in findings from different studies and to identify common findings as well as differences between studies. A qualitative approach was chosen because of its focus on an in-depth understanding of the context, process, and practical experience of using COBIT. This research explores the complexity of COBIT implementation and provides richer insights into the factors that influence success or failure in the context of IT innovation governance. By using the right tools and techniques, this research will produce in-depth analysis and valuable insights for practitioners and academics in the field of information technology governance.

III. RESULTS AND DISCUSSION

In this chapter, there will be an in-depth discussion regarding four main crucial points. The first point includes the results of literature screening or studies that have been carefully selected. The second point focuses on analyzing the version of the COBIT Framework that is most commonly applied in information technology innovation governance. The third point will explore the challenges and obstacles faced in implementing information technology innovation governance. Finally, the fourth point will discuss strategies and best practices in

implementing the COBIT Framework to optimize information technology innovation governance. The studies selected for this research applied a variety of methodologies, including in-depth qualitative and mixed qualitative-quantitative approaches, to explore the use of COBIT in the governance of information technology innovation. This methodological evaluation allows for the comparison of results across studies and provides insight into the effectiveness of COBIT in various organizational contexts. The implication for IT innovation governance is to provide relevant recommendations to overcome challenges and improve COBIT implementation strategies, which are crucial in managing innovation and improving information technology performance effectively.

A. Study Selection

In the literature study stage, searching and collecting articles and literature is carried out through leading electronic databases, including Google Scholar, ScienceDirect, and Springer. These sources were used to ensure the completeness and accuracy of the information reviewed, as detailed in Table IV below. Articles sourced from the Google Scholar, ScienceDirect, and ACM Digital Library databases were selected for this research because they provide access to extensive and high-quality academic literature in the field of information technology. Google Scholar covers various types of publications from various scientific disciplines, while ScienceDirect focuses on indexed journals with a rigorous review process. The ACM Digital Library is particularly relevant because it offers access to scientific publications in the field of computers and information technology written by experts. By utilizing these three databases, research can obtain in-depth and valid information about the application of COBIT in IT innovation governance.

TABLE IV
FINAL STUDY SELECTION

Source Database	Final Study Selection
Google Scholar	24
ScienceDirect	4
ACM	2

B. Quality Assurance

Table V below presents the results of the research Quality Assurance, which were obtained through a previously established inclusion and exclusion screening process.

TABLE V
QUALITY ASSURANCE

Code	Title	QA1	QA2	QA3
A01	Information Technology Governance Using the COBIT 2019 Framework at PT. Bitung Branch Fisheries [17]	✓	✓	✓
A02	Tata Kelola Teknologi Informasi Dengan Kerangka Kerja COBIT 4.1 Pada PT.Dunia Saftindo [18]	✓	×	✓
A03	Desain Panduan Audit Tata Kelola Sistem Informasi Boost The Order (SIBORDER) di PT Telekomunikasi Indonesia Menggunakan COBIT 2019 [19]	✓	✓	✓
A04	Perancangan Tata Kelola Teknologi Informasi Pada Angkasa Vapor Menggunakan Framework COBIT 2019 [20]	✓	×	✓
A05	Evaluasi Tata Kelola Teknologi Informasi Di Dinas Pertanian Gianyar Menggunakan COBIT 2019 [21]	✓	×	✓
A06	Penggunaan COBIT 2019 GMO dalam Menyusun Pengelolaan Layanan TI Prioritas pada Transformasi Digital BankCo [22]	✓	✓	✓
A07	Capability Level Measurement Using COBIT 5 (Case Study: PT. Jasa Cendekia Indonesia) [23]	✓	×	×
A08	Penyusunan Manajemen Pengembangan TI Agile Memakai Cobit 2019 Devops Pada Transformasi Digital Reinsurco [24]	✓	×	×
A09	Penggunaan Framework COBIT 2019 dalam Evaluasi Tata Kelola Teknologi Informasi [25]	✓	×	✓
A10	Analisis Manajemen Risiko Menggunakan COBIT 5 Domain APO12 (Studi Kasus: Yayasan Bina Darma) [26]	✓	✓	✓
A11	Tata Kelola Teknologi Informasi JNE Cabang Bekasi Menggunakan Framework Cobit 4.1 [27]	✓	×	✓
A12	Evaluasi Tata Kelola Manajemen Risiko Teknologi Informasi pada PT XYZ menggunakan Kerangka Kerja COBIT 2019 [28]	✓	×	✓
A13	Manajemen Resiko Aplikasi Keuangan Pada Perusahaan Abc Melalui Kombinasi Nist Sp 800-30, Cobit, Pmbok, Dan Iso 31000 [29]	✓	✓	✓
A14	Pengendalian Digitalisasi FintechCo Melalui Perancangan Pengelolaan Keamanan Informasi Berbasis COBIT 2019 Information Security Focus Area [30]	✓	✓	✓
A15	Manajemen Keamanan Informasi Untuk Transformasi Digital Insurco Berbasis Cobit 2019 Focus Area Information Security [31]	✓	×	✓
A16	Penyusunan Manajemen Risiko TI Berdasarkan Cobit 2019 I&T Risk Focus Area Untuk Digitalisasi	✓	×	✓

	Fintechco [32]			
A17	Systematic Literature Review: Analisis Implementasi Manajemen Risiko TI Menggunakan Framework COBIT di Sektor Industri Jasa [33]	✓	✓	✓
A18	Audit Manajemen Masalah Teknologi Informasi Menggunakan Kerangka Kerja Cobit 2019 Domain DSS03 [34]	✓	✓	✓
A19	Identifikasi Tata Kelola Data Menggunakan Framework Cobit 2019 Domain APO14 [35]	✓	✓	✓
A20	Analisis Tingkat Kematangan Tata Kelola Teknologi Informasi Menggunakan Framework Cobit 2019 Pada PT Nusantara Turbin dan Propulsi [36]	✓	✓	✓
A21	Identifikasi Level Tata Kelola TI dan Penilaian Tingkat Capability Level Menggunakan Cobit 2019 [37]	✓	✓	✓
A22	Information Technology Governance Using the COBIT 2019 Framework in Manado Post Companies [38]	✓	✓	×
A23	Evaluating the performance of IT management under the implementation of the COBIT 2019 framework [39]	✓	×	×
A24	Penerapan Framework COBIT 2019 pada Audit Teknologi Informasi di Politeknik Sambas [40]	✓	✓	✓
A25	How can FLOSS Support COBIT 2019? Coverage Analysis and a Conceptual Framework [41]	✓	✓	✓
A26	Using agile methodologies for adopting COBIT [42]	✓	✓	✓
A27	Information security risk management models for cloud hosted systems: A comparative study [43]	✓	✓	✓
A28	Risk Assessment and Recommendation Strategy Based on COBIT 5 for Risk: Case Study SIKN JIKN Helpdesk Service [44]	✓	✓	×
A29	How to improve information technology strategic planning effectiveness using balanced scorecard, risk and maturity analysis, case study health information technology? A qualitative study [45]	✓	✓	✓
A30	Integrating COBIT with a hybrid group decision-making approach for a business-aligned IT roadmap formulation [46]	✓	×	×

After identifying and filtering literature through various electronic journal databases, 30 articles that met all the inclusion and quality assessment criteria were successfully selected.

C. *Most Commonly Used COBIT Frameworks*

To answer research questions regarding the version of the COBIT framework that is most often and most commonly applied in IT Risk Management, researchers analyzed the use of the COBIT framework in various scientific articles. This study aims to summarize the frequency and distribution of various COBIT versions in selected articles. Table VI below presents a summary of the use of the COBIT framework in articles selected as research samples.

TABLE VI
LITERARY SOURCE RESULTS

No	COBIT Framework Version	Reference Literature	Frequency
1.	COBIT 2019	[17], [19], [20], [21], [22], [24], [25], [28], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [41]	19 Article
2.	COBIT 5	[23], [26], [29], [42], [43], [44], [46]	7 Article
3.	COBIT 4.1	[18], [27], [43], [45]	4 Article

Table VI shows that of the 30 pieces of literature analyzed, the most dominant framework used in information technology innovation governance analysis is COBIT 2019, which was applied in 19 articles, followed by COBIT 4.1 in 4 articles and COBIT 5 in 7 articles. The significant preference for using COBIT 2019 in information technology innovation governance may indicate that this version offers certain advantages over other versions in the context of corporate innovation analysis. The COBIT 2019 framework is used more frequently than other versions because it integrates information technology innovation and adopts an approach that aligns with COBIT 5. In addition, COBIT 2019 provides risk-focus areas that are being developed, making it a comprehensive and robust framework for information system innovation governance analysis management.

First, COBIT 2019 has a better and easier-to-understand design, with 11 factors influencing a company's IT governance system. Second, COBIT 2019 uses a more robust performance management scheme, namely Capability Maturity Model Integration (CMMI), compared to the 0-5 scale used by COBIT 5. Third, the 11 design factors in COBIT 2019 function as crucial elements that influence governance system design. Manage IT within a company or business, designed to ensure practical IT information technology innovation and compliance with laws, regulations and contracts related to the company's IT operations. Furthermore, COBIT 2019 is also considered to have a higher level of IT maturity than the previous version, COBIT 5. COBIT 2019 is more frequently used

because it is designed to accommodate rapid changes in information technology with better integration of cloud computing, big data, and cyber security. Its enhanced focus on business value enables organizations to optimize investments and integrate IT innovation with business strategy. A simplified structure makes it easier to implement and adapt COBIT, while an emphasis on risk management and information security helps manage the risks associated with technological innovation. Internationally recognized as the IT governance standard, COBIT 2019 provides powerful guidance for organizations to advance research innovation and digital transformation.

D. Challenges and Obstacles to Using the COBIT Framework in Implementing Information Technology Innovation Governance

The COBIT Framework has been recognized as a valuable foundation for various organizations to implement information technology innovation governance. Although COBIT provides strong guidance for managing IT innovation, several studies note challenges that must be overcome in the implementation process. COBIT, with a reasonably comprehensive framework, often creates complexity, especially for organizations that have just adopted it or have no previous experience [17], [19], [20], [21], [22], [24], [25], [28], [30], [31], [32].

This complexity can result in a lack of in-depth understanding by the team or individual responsible for the implementation. In addition, implementing COBIT requires considerable human, time, and financial resources, so organizations with limited resources may face difficulties in fully adopting this framework [33], [34], [35], [36], [37], [38]. There is often a gap between an organization's business objectives and COBIT implementation, which poses an additional challenge in ensuring that the decisions and steps are taken to support the company's strategic objectives [39], [41]. Today's industries, which are highly dependent on dynamic and rapidly developing information technology, especially the service industry, face challenges in managing innovation associated with technological change using COBIT. The involvement of various stakeholders and third parties with diverse understandings of IT innovation governance also adds challenges in aligning views and goals [23], [26], [29], [42], [43], [44], [46]. In addition, the lack of complete documentation of all work processes can hinder the identification of innovations as a whole and make it challenging to develop innovation scenarios that can be used as a reference in preventing repeated innovations [18], [27], [43], [45].

For example, a case study shows how a company faced challenges in applying COBIT to manage information technology innovation. Key challenges include internal resistance to necessary COBIT process changes and difficulty in adapting the framework to applicable industry regulations. Implementation failure can be caused by a lack of strong executive support or limited resources to implement the necessary changes. This case study provides a concrete illustration of the complexity and relevance of the challenges faced in adopting COBIT in a real business context.

The absence of standard operating procedures to manage innovation control is also an obstacle because it can potentially cause failure in monitoring, evaluating, and managing innovation governance effectively. Some organizations also need help with problems resulting from heavy reliance on third parties for applications and IT infrastructure, which can result in integration issues, suboptimal performance after a certain period of use, and data storage issues.

E. COBIT Implementation Strategy for Information Technology Innovation Governance

This study found that essential steps are needed to implement the COBIT Framework in IT innovation management, including the creation of policies and strategies, documented IT service standards, and optimization of business objectives, operational efficiency, and risk management [17], [19], [20], [21], [22]. In addition, this research finds that IT innovation governance faces complex challenges related to IT innovation governance.

It is essential to create an IT innovation governance framework that suits the needs of the digital industry, including identifying threats and appropriate innovation strategies to reduce the negative impact of these threats [31], [32], [33]. In addition, to run COBIT, a regular monitoring and audit system is needed to evaluate the performance of the controls and procedures used and ensure compliance with the established framework.

In situations like these, gaining active support from top-level innovation governance management is critical in raising awareness about IT innovation throughout the enterprise [38]. Routine evaluation of IT governance, which includes risk management, third-party risk evaluation, and the role of employees in system management, also emphasizes the importance of reducing overall risk [39], [41].

Finally, to implement COBIT as IT innovation governance, careful planning, a deep understanding of business needs, and a commitment to implementing best practices in IT innovation management in digital industries are required [42], [43], [44]. These steps are essential to support the overall process of ensuring IT management is effective and responsive to existing risks [45], [46]. Based on these findings, practical strategies include an

intensive communication approach to gaining support from all levels of the organization, active involvement of senior executives in promoting COBIT policies, and intensive training for staff on the benefits and implementation of COBIT. Additionally, the use of external consultants with expertise in COBIT can fill internal competency gaps and facilitate a smoother transition. By adopting these steps, organizations can more effectively overcome challenges and optimize COBIT implementation to achieve their strategic goals in IT innovation.

These findings apply differently depending on the industry sector. Industries such as finance tend to have strict COBIT implementation due to regulatory compliance, such as PCI DSS or Basel II, with a focus on data security. In the technology or startup industry, COBIT may be applied more dynamically to support rapid innovation and adaptation to market changes. Each sector has unique challenges in managing information technology, which influences COBIT implementation approaches and strategies.

IV. CONCLUSION

Of the 30 articles that met the criteria in this research, COBIT 2019 was identified as the dominant framework and recognized by 19 journals as the leading solution in overcoming governance challenges in digital companies. COBIT stands out with comprehensive IT management principles to ensure information technology aligns with business goals and customer needs. However, its implementation faces several serious challenges, such as a lack of in-depth understanding, an incompatibility of IT strategy with company strategy, dependence on third parties, a lack of work process documentation, and problems with IT architecture and systems.

To overcome these challenges, the recommended strategic approach includes creating clear IT governance policies and standards, emphasizing innovation and business continuity planning (BCP), developing an appropriate innovation governance framework, regular system monitoring, developing team skills through ongoing training, active support from top-level management, improvements in overall IT governance, regular evaluation with recommendations for improvement, thorough COBIT implementation planning.

This research limits its focus to the digital industrial sector. However, for further research, alternative frameworks such as ITIL, IT Balanced Scorecard, ISO, and others can be explored to implement different IT innovation governance. Further studies can also take a case study approach in various sectors such as government, education, health, finance, or other sectors. It is hoped that further research in this literature will provide valuable insights and increase efficiency in implementing IT innovation governance for companies and related business actors.

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