Information Technology Governance Using the COBIT 2019 Framework at PT Bank Pembangunan Daerah Papua

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Abstract

Effective and efficient information technology (IT) management is crucial for the banking industry, especially for PT Bank Pembangunan Daerah Papua (BPDP), which seeks to reinforce its role within the Papua region. Leveraging the COBIT 2019 framework, BPDP aims to enhance IT governance, addressing operational efficiency, information security, and regulatory compliance. This study highlights BPDP's strategic priorities, such as revenue growth, fostering innovation, and customer service excellence, which are essential for sustaining competitive advantage amidst regional geopolitical challenges. By identifying these key priorities, the research uncovers critical areas of improvement, including IT investment optimization, mitigation of regulatory and security risks, and solidifying IT's strategic role in driving business growth. To evaluate BPDP's IT governance maturity, this study applies COBIT 2019's ten design factors, from enterprise goals and risk profiles to IT-related issues, compliance needs, and technology adoption strategies. The findings underscore gaps in risk management, project lifecycle oversight, and resource allocation, offering actionable insights for governance improvement. Enhanced IT integration can support BPDP's larger objectives of sustainable growth and economic development within the region. Furthermore, the study demonstrates that a well-structured governance framework strengthens BPDP's operational efficiency, builds customer trust, and ensures alignment with regulatory standards and evolving technology landscapes. By adopting these governance recommendations, BPDP can achieve long-term success and secure its position as a prominent financial institution in Papua, thus reinforcing its commitment to regional economic growth and compliance with national regulatory standards.

Keywords: *COBIT 2019, Compliance Regulation, IT Governance, Bank Papua.*

1. Introduction

In the digital era that continues to develop, setting up efficient and effective information technology (IT) is essential for organizations. The level of dependency organization on Technology Information, the more it increases, allowing effective and efficient integration between source IT power with organizational and managerial processes. The use of Technology Governance Information is widespread in Indonesia, both in scope organization government and also private [1], [2], [3]. One of the organization's finance that uses IT is banking. Technology information (IT) has become a vital part of banking. As an institution that provides products and facilities in the field of finance, banking must own good and managed IT systems that are sound, too.

IT governance is a framework used by banking organizations to manage and control source power technology information so they can produce maximum business. The goal is To ensure that IT supports objective organization banking optimally, with control of associated risks with the use of IT, and ensure that its use follows applicable laws and regulations [4]. For the matter mentioned, it is necessary to apply a framework, such as Work, to help manage IT effectively and efficiently. One of the frameworks that can used is Control Objectives for Information and related Technology [5], [6], [7].

COBIT 2019 is a framework for the latest IT work developed by the Information Systems Audit and Control Association (ISACA) and the Information Technology Governance Institute (ITGI). COBIT is a bunch of documentation and guides for directing IT governance. It helps auditors, management, and users bridge barriers between risk business, needs, and problems other moment implementation technology information [1], [8]. COBIT 2019 focuses on IT management based on value, identifying risk, and improving the IT performance of the organization. COBIT is a framework that provides structured and comprehensive IT management, including strategy,

control, source power, evaluation performance, and understanding of risk. COBIT helps optimize IT-based investment, ensure delivery services, and provide clear indicators of failure [1], [9].

PT. Bank Pembangunan Daerah Papua is a banking institution located in Jayapura, Papua, aiming to transform into a commercial bank focused on business development and economic growth in Papua [10]. PT. BPDP also faces challenges in optimizing its IT management. To ensure quality banking services [11], [12], PT. BPDP must adopt a suitable framework for managing their IT. Therefore, this study aims to implement COBIT 2019 as a framework to enhance IT governance at Bank Papua by implementing COBIT, PT. BPDP can improve IT management, operational efficiency, information security, and compliance with existing regulations and policies. This research aims to analyze and explain the implementation of IT Governance using the COBIT framework at PT. BPDP. By implementing COBIT, PT. BPDP can enhance IT management, operational efficiency, information security, and compliance with existing regulations and policies. This research aims to analyze and explain the implementation of IT Governance using the COBIT framework at PT. BPDP [8].

In this study, the level of IT governance maturity at PT. BPDP will be analyzed along with applicable recommendations for improvement. In the design process of the governance system, there are ten design factors to consider, including:

1. Design Factor 1- Enterprise Strategy. In Design Factor 1, applying principles such as Growth/Acquisition, Innovation/Differentiation, Cost Leadership, and Client Service/Stability is crucial in IT management. Implementing these principles can support the organization in enhancing banking services, increasing the efficiency and effectiveness of IT management, and ensuring corporate stability.
2. Design Factor 2 - Enterprise Goals. Design Factor 2 in COBIT 2019 relates to questions regarding the company's objectives or Enterprise Goals (EG). 13 questions in Design Factor 2 refer to corporate objectives, such as competitive product and service portfolios, business risk management and governance, compliance with regulations and external rules, the quality of financial information, customer service culture, business service sustainability, and availability, quality of information management, optimization of internal business processes, optimization of business process costs, staff skills, motivation, and productivity, compliance with internal policies, managed digital transformation programs, and product and business innovation.
3. Design Factor 3 - IT Risk Profile. COBIT 2019 provides 19 criteria for Risk Profile, such as IT investment decisions, program and project lifecycle management, IT cost oversight, IT expertise and behavior, compliance, and data and information management.
4. Design Factor 4 - IT Related Issues. In Design Factor 4, the identification and Analysis of existing IT-related issues are conducted. Identification is done by considering current IT issues being faced or risks that have occurred. IT-related matters must be identified in the context of the criteria outlined in the COBIT 2019 framework, allowing for more effective problem-solving in the future. The assessment of IT-related issues is adjusted according to their importance level: 1: No Issues, 2: Issues, 3: Serious Issues.
5. Design Factor 5 - Threat Landscape. Design Factor 5 is divided into two categories: standard, where the company operates under a threat level considered normal, and high threat levels.
6. Design Factor 6 - Compliance Requirement. Compliance requirements that the company must meet are a critical factor. There are three compliance requirements at this stage: low, regular, and high.
7. Design Factor 7 - Role of IT. The role of IT in the company is also an essential factor. An evaluation determines whether IT is positioned as Support, Factory, Improvement, or Strategic.
8. Design Factor 8 - Sourcing Model of IT. The IT outsourcing model applied in the company usually utilizes IT services with several models such as Outsourcing, Cloud, and outsourced.
9. Design Factor 9 - IT Implementation Methods. Several types of IT implementation methods exist, such as Agile, DevOps, Traditional, and Hybrid.
10. Design Factor 10 - Technology Adoption Strategy. The strategy for adopting new technology in the company includes several characteristics. For instance, first movers want to adopt new technology immediately. At the same time, followers wait for others to adopt the technology before following suit, and slow adopters are very slow in adopting new technology [9].

The results obtained from each design factor will then be analyzed to generate information and knowledge related to the governance system of PT Bank Pembangunan Daerah Papua [13], [14].

2. Research Method

The research method used in designing the IT governance system refers to a series of stages adapted as the workflow for governance design in COBIT 2019 [10]. This is illustrated in the image below:
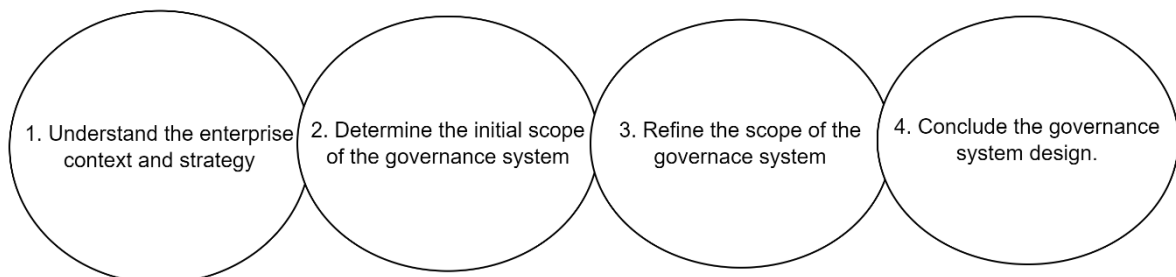

Fig 1. Governance System Design in COBIT 2019 [15].

The image above clearly shows four critical IT governance system design processes. The first process involves interviews with the IT department at PT. BPDP and observations at PT. BPDP to understand the initial steps in designing IT governance. This step is crucial for identifying strategies, objectives, risk profiles, and IT-related issues based on the design criteria established by COBIT 2019. The second process involves interviews with relevant stakeholders to determine the initial scope of the governance system, considering aspects from Design Factor 1 to Design Factor 4 [16], [17]. The third process involves identifying improvements to the initial scope of the governance

system, considering aspects from Design Factor 5 to Design Factor 11 in the COBIT 2019 design guide. Stakeholders provide information to fill in the values for these design factors [18], [19].

In the final process, all inputs from the previous stages are combined to produce the final Design of the governance system. The output of this stage is a summary of the values for each process, expressed on a scale from 0 to 100. In COBIT 2019, all processes are assessed, but not all have the same level of importance. The target capability level is set at level 4 for critical processes, while other processes require a lower capability level per the obtained values. By following these steps, the company will be able to implement a governance system that meets its needs and characteristics [1], [20], [21].

3. Results and Discussion

This section discusses the results of the Design Factors obtained from interviews conducted with the IT staff at PT Bank Pembangunan Daerah Papua. To derive results and priorities for IT governance at PT BPDP, ten factors need to be assessed, namely: corporate strategy, corporate objectives, corporate risks, IT-related issues, threat landscape, compliance, IT role, IT resource model, IT implementation methods, technology adoption strategy, and company size.

3.1. Design Factor 1 – Enterprise Strategy

BPDP's Enterprise Strategy was assessed through interviews with management and IT staff, focusing on core strategic priorities such as revenue growth, client service, and innovation. Specific questions aligned with COBIT 2019 principles—such as those related to Growth/Acquisition, Innovation/Differentiation, Cost Leadership, and Client Service/Stability—were used to gauge the strategic intent and measure alignment with BPDP's broader business objectives. Through thematic Analysis of these responses, priority levels for each principle were assigned, emphasizing revenue and client service over cost considerations. This approach allowed for precisely categorizing BPDP's strategic priorities within the COBIT framework. The results obtained from the interview we conducted during the Design Factor 1 assessment are shown in Table 1.

Table 1. DF 1 Results

Value	Importance (1-5)	Baseline
Growth/Acquisition	5	3
Innovation/Differentiation	1	3
Cost Leadership	1	3
Client Service/Stability	4	3

Based on the interview results regarding the company's focus on growth and acquisition, Bank Papua prioritizes revenue growth significantly. On a scale of 5, the company's development is considered the most important, and this bank is subject to two regulations each year: one from Bank Indonesia regarding finance and the second from OJK concerning SOP and internal and external company rules. Company development is a necessity that cannot be avoided each year. Furthermore, Bank Papua rated this on a scale of 1 regarding innovation and differentiation of products and services. They acknowledge that innovation is necessary for the company's growth. Innovation is seen as a vital supporting factor, both in terms of changes and company development. Therefore, innovation continuously focuses on various aspects, such as technology, services, and applications. On the cost savings side (cost leadership), Bank Papua rated this on a scale 1. They emphasize that cost savings are conditional and not always a primary priority. The decision to save costs will depend on the company's financial situation. For example, cost savings become more critical when profits decrease or revenues decline.

However, in safe banking situations and normal financial conditions, such as in Bank Papua, cost savings are not a primary priority, especially when it clashes with operational costs required for innovation, promotion, launching new applications, etc. Finally, regarding customer service and stability, Bank Papua rated this on a scale 4. They consider that stable and customer-focused service is as important as innovation. Although technological innovation and applications are important, customer service must remain a priority. Good customer service is critical to maintaining and expanding market share and ensuring customer loyalty. Thus, Bank Papua is committed to revenue growth, innovation, and stable customer service, with cost savings being a conditional consideration. This reflects the various aspects of the company's focus that serve as the foundation for its strategies and operations.

3.2. Design Factor 2 – Enterprise Goals

Enterprise goals were analyzed by cross-referencing BPDP's stated objectives with COBIT 2019's 13 enterprise goal categories. During interviews, stakeholders were asked to rate the relevance of each goal (such as managed business risk, customer service culture, and compliance with regulations) on a scale from 1–5. This scoring helped rank goals in alignment with organizational priorities, revealing that BPDP places high value on compliance, customer service, and operational continuity. By aggregating and analyzing these scores, the study identified vital goals central to BPDP's mission and helped pinpoint which goals needed additional focus within the IT governance framework. The results obtained from the interview we conducted during the Design Factor 2 assessment are in Table 2.

Table 2. Results of DF 2

Value	Importance (1-5)	Baseline
EG01—Portfolio of competitive products and services	5	3
EG02—Managed business risk	5	3
EG03—Compliance with external laws and regulations	5	3
EG04—Quality of financial information	4	3
EG05—Customer-oriented service culture	5	3
EG06—Business-service continuity and availability	5	3
EG07—Quality of management information	4	3
EG08—Optimization of internal business process functionality	4	3

EG09—Optimization of business process costs	5	3
EG10—Staff skills, motivation and productivity	4	3
EG11—Compliance with internal policies	5	3
EG12—Managed digital transformation programs	4	3
EG13—Product and business innovation	5	3

Based on the interview results, the primary priorities for Bank Papua include EG01, EG02, EG03, EG05, EG06, EG09, EG11, and EG13. EG01, or the portfolio of competitive products and services, is a high priority for the company as it relates to the SOP of applications and services, which are crucial for the organization. Next, EG02, or managed business risk, is also a priority as it is essential for managing risks, such as fraud mitigation, which are often not exposed as they can affect the bank's reputation. For EG03, compliance with external laws and regulations is also a priority as it is a legal reference based on the 1945 Constitution, which governs compliance laws and regulations. Furthermore, EG05, or a customer-oriented service culture, is a priority for the company since Bank Papua is a regional bank, making customer service a priority.

Clients include local government officials and communities in remote areas, which regional banks always prioritize. Next, EG06, or business service continuity and availability, is also a priority as the banking sector plays a crucial role in company revenues. EG09, or optimization of business process costs, is a priority as it helps the bank identify and reduce unnecessary costs in IT infrastructure, software, and network management. Following this, EG11, compliance with internal policies, is also a priority because compliance is essential for any company to maintain banking security and cybersecurity. Lastly, EG13, or product and business innovation, is also a priority due to the necessity for IT innovation to keep the company relevant in the long run. Companies that do not innovate tend to fall behind and face higher sustainability risks. For example, more advanced cybersecurity can enhance services and security.

3.3. Design Factor 3 – Risk Profile
The results of the interviews conducted by the researchers on the assessment of Design Factor 3 are shown in Table 3.

Table 3. DF 3 Results

Risk Scenario Category	Impact (1-5)	Likelihood (1-5)	Risk Rating	Baseline
IT investment decision-making, portfolio definition & maintenance	5	3	15	9
Program & project life cycle management	5	1	5	9
IT cost & oversight	3	1	3	9
IT expertise, skills & behavior	5	1	5	9
Enterprise/IT architecture	5	3	15	9
IT operational infrastructure incidents	4	3	12	9
Unauthorized actions	5	1	5	9
Software adoption/usage problems	4	1	4	9
Hardware incidents	3	5	15	9
Software failures	4	2	8	9
Logical attacks (hacking, malware, etc.)	5	2	10	9
Third-party/supplier incidents	3	1	3	9
Noncompliance	4	1	4	9
Geopolitical Issues	4	5	20	9
Industrial action	5	1	5	9
Acts of nature	4	1	4	9
Technology based innovation	3	2	6	9
Environmental	3	3	9	9
Data & information management	5	1	5	9

Risk Rating: 16 = Very High Risk, 12 = High Risk, 6 = Normal Risk, 0 = Low Risk

The IT Risk Profile was constructed by evaluating risk scenarios in terms of impact and likelihood based on stakeholder input. Interviewees rated risks such as IT investment decisions, operational incidents, and compliance issues on a scale of 1–5, for potential impact and likelihood of occurrence. These scores were combined to generate a risk rating for each scenario, with higher ratings signifying critical risks that required immediate attention. This process enabled the identification of key risk areas, particularly geopolitical risks and IT infrastructure vulnerabilities, and provided a quantified risk landscape to inform BPDP's governance decisions.

Based on interviews with IT staff at Bank Papua, geopolitical issues emerged as the highest impact risk, with a score of 20, indicating that geopolitical events significantly hinder the bank's ability to innovate due to government regulations that must adhere to existing procedures. It was also found that in areas such as IT investment decision-making, portfolio maintenance, enterprise/IT architecture, and hardware incidents, risks with a high impact score of 15 indicate that these areas can significantly affect the operational and IT infrastructure of Bank Papua. The high impact on IT investment decision-making, portfolio, and maintenance means that errors or inconsistencies in managing IT investments can significantly affect the organization's overall performance, including operational efficiency and competitive advantage. Meanwhile, the high impact in the "Enterprise/IT Architecture" area indicates that discrepancies, vulnerabilities, or problems in the organization's IT architecture can severely affect system integration, interoperability, and IT flexibility at Bank Papua. On the other hand, the high impact on hardware incidents indicates that hardware malfunctions or failures can disrupt daily operations and services. The high likelihood of hardware incidents (5) suggests that Bank Papua must also consider ongoing maintenance and replacement strategies for IT hardware to minimize disruptions.

Next, the IT risk that received a high score of 12 is operational infrastructure incidents, which indicates the need for Bank Papua to have a proper operational infrastructure management plan. The area of IT expertise, skills, and behavior also received a high score of 5,

indicating significant risks related to the availability and quality of IT staff. This can affect the effectiveness of IT project implementation and overall bank operations. To mitigate this risk, the organization must invest in training, retention, and continuous education programs.

3.4. Design Factor 4 – Related Issues

Interviews were conducted with both IT and business department representatives to assess IT-related issues. Participants rated the severity of problems like data security, service delivery challenges, and inter-departmental communication on a scale of 1–3, where 1 indicated no issue, 2 an existing issue, and three a severe issue. Data were coded and analyzed to identify recurring concerns and measure their impact on overall IT performance. This process highlighted critical outsourcing and service delivery issues, underscoring the need for more robust governance measures to address these weaknesses. The results of the interviews we conducted on the assessment of Design Factor 4 are shown in Table 4.

Table 4. DF 4 Results

IT-Related Issue	Importance (1-3)	Baseline
Frustration between different IT entities across the organization due to a perception of low contribution to business value	2	2
Frustration between business departments (i.e., the IT customer) and the IT department because of failed initiatives or a perception of low contribution to business value	1	2
Significant IT-related incidents, such as data loss, security breaches, project failure, and application errors, are linked to IT	2	2
Service delivery problems by the IT outsourcer(s)	3	2
Failures to meet IT-related regulatory or contractual requirements	1	2
Regular audit findings or other assessment reports about poor IT performance or reported IT quality or service problems	1	2
Substantial hidden and rogue IT spending, that is, IT spending by user departments outside the control of the standard IT investment decision mechanisms and approved budgets	1	2
Duplications or overlaps between various initiatives or other forms of wasted resources	2	2
Insufficient IT resources, staff with inadequate skills, or staff burnout/dissatisfaction	1	2
IT-enabled changes or projects frequently fail to meet business needs and are delivered late or over budget	1	2
Reluctance by board members, executives, or senior management to engage with IT or a lack of committed business sponsorship for IT	2	2
Complex IT operating model and unclear decision mechanisms for IT-related decisions	1	2
Excessively high cost of IT	2	2
Obstructed or failed implementation of new initiatives or innovations caused by the current IT architecture and systems	1	2
The gap between business and technical knowledge, which leads to business users and information and technology specialists speaking different languages	2	2
Regular issues with data quality and integration of data across various sources	1	2
High level of end-user computing, creating (among other problems) a lack of oversight and quality control over the applications that are being developed and put into operation	1	2
Business departments implement their information solutions with little or no involvement of the enterprise IT department (related to end-user computing, which often stems from dissatisfaction with IT solutions and services)	2	2
Ignorance of and/or noncompliance with privacy regulations	2	2
Inability to exploit new technologies or innovate using I&T	2	2

Description: 1 = No Issue, 2 = Issue, 3 = Serious Issue

Bank Papua faces several issues related to the IT department that affect its perceived contribution to business value. Despite some dissatisfaction within the IT department, the situation is not classified as severe. In this context, each application development request can be executed quickly and efficiently, meeting business needs. Additionally, there have been no reported complaints from business departments regarding IT performance. In some cases, dissatisfaction may arise due to failed IT projects or unmet expectations, but no reports have indicated severe issues to date.

Nevertheless, Bank Papua experiences significant IT-related incidents, such as data loss and security breaches, although the impact does not reach a severe level. This indicates the need for attention to security issues and project management. On the other hand, the bank faces severe issues in service delivery by IT outsourcing partners. This problem is likely related to IT governance and significantly impacts the bank's operations.

Furthermore, Bank Papua has not encountered issues with failures to meet IT-related regulatory or contractual requirements, indicating good compliance with applicable regulations. This is also reflected in the absence of audit reports highlighting poor IT performance. Bank Papua faces challenges in resource management and application development. While there are overlaps in application development projects, this issue is not classified as severe. Periodic recruitment in the IT field helps address problems related to insufficient resources and skills. Although this issue exists, the level of seriousness is low. To date, the bank has not experienced failures in IT-supported projects, and the IT team's performance is quite responsive to instructions from other divisions. The lack of involvement of IT executive members is an existing issue, but it is not considered severe. This indicates that the bank needs to engage senior management more closely with IT. Bank Papua does not experience severe issues regarding the complex IT operating model. Finally, while IT costs are present, they are not classified as severe problems.

3.5. Design Factor 5 – Threat Landscape

The assessment of the Threat Landscape involved categorizing threats as "normal" or "high" based on BPDP's operating environment. Stakeholders were asked to provide insights on potential threats, including natural disasters and cybersecurity incidents. A structured rating method calculated the percentage of normal versus high-threat conditions, helping BPDP prioritize threat monitoring and mitigation efforts. This classification process provided a contextual understanding of BPDP's threat exposure, guiding the focus on high-priority threats that could disrupt banking operations in Papua. The results of the interview we conducted on the Design Factor 5 assessment are found in Table 5.

Table 5. DF 5 Results

Value	Importance (100%)	Baseline
High	30%	33%
Normal	70%	67%

The company operates where most threats fall into the "Normal" category at 70%, while threats classified as "High" only reach 30%. The threats that must be monitored are limited to disaster risks such as earthquakes and fires.

3.6. Design Factor 6 – Compliance Requirements

BPDP's obligations under regional and national regulations were reviewed through stakeholder interviews for compliance. Participants assessed compliance levels in high, normal, and low categories. The results indicated 100% compliance due to BPDP's alignment with government and Financial Services Authority (OJK) regulations. This high compliance level reflects BPDP's commitment to meeting legal standards, further confirmed by reviewing audit and regulatory documents. This process allowed the study to validate BPDP's compliance as a strength in its governance model. The results of the interviews we conducted on the assessment of Design Factor 6 are shown in Table 6.

Table 6. DF 6 Results

Value	Importance (100%)	Baseline
High	100%	0%
Normal	0%	100%
Low	0%	0%

Bank Papua has a very high level of compliance with regulations issued by the Government (PEMDA), with a compliance percentage of 100%. This is due to Bank Papua's obligation to adhere to every PEMDA policy, and regulations from regional banks are also directly monitored by Bank Indonesia and OJK (Financial Services Authority), which supports high compliance with government regulations.

3.7. Design Factor 7 – Role of IT

The role of IT at BPDP was assessed by evaluating its strategic alignment with business processes. Interviews with IT leaders asked them to classify IT's role as Support, Factory, Turnaround, or Strategic, assigning importance levels on a scale from 1–5. Most responses highlighted IT as Strategic, signifying its role in driving innovation and supporting business objectives. This assessment underscored IT's importance as a strategic asset, influencing governance priorities and resource allocation at BPDP. The results of the interviews we conducted in the evaluation of Design Factor 7 are shown in Table 7.

Table 7. DF 7 Results

Value	Importance (1-5)	Baseline
Support	4	3
Factory	1	3
Turnaround	1	3
Strategic	5	3

In conclusion, based on the results of the interviews with the Papua Development Bank, the company prioritizes "Strategic" as the most critical role of IT and "Support" as the second because IT is considered essential in executing and innovating business processes and services. Subsequently, in terms of support, IT is seen as a supporter in running business operations and services.

3.8. Design Factor 8 – IT Sourcing Model

The results of the interviews we conducted on the assessment of Design Factor 8 are shown in Figure 2.
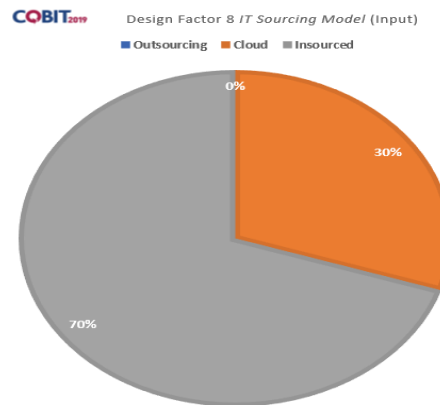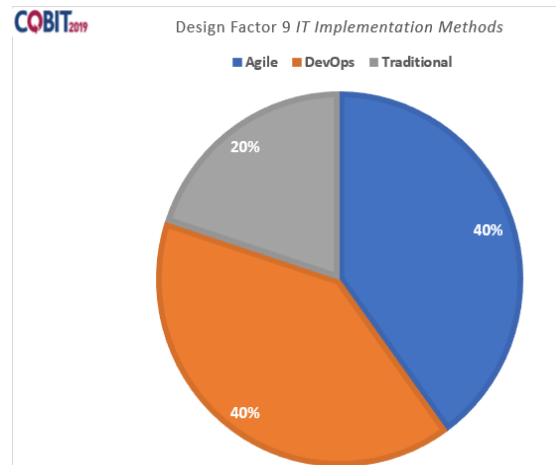
Fig 2. DF 8 Results

Based on the provided data, Bank Papua does not outsource its IT resources, with vendors or third parties occurring only for specialized IT training. Approximately 30% of IT resources are provided through cloud services, indicating that cloud technology is used to meet some IT needs. The majority of sourcing, about 70%, is provided directly by Bank Papua itself.

3.9. Design Factor 9 – Implementation Methods

The results of the interviews we conducted on the assessment of Design Factor 9 are shown in Figure 3.

Fig 3 . DF 9 Results

In DF 9, the methods of IT implementation in the company consist of Traditional (10-20%) used by branches without internet access, Agile (around 40%) from resource units noting that IT is divided into several parts and Hybrid (around 60%) where the bank's head office adopts Hybrid IT. This means that most IT processes in Bank Papua use the Hybrid method.

3.10. Design Factor 10 – Technology Adoption Strategy

The results of the interviews we conducted on the assessment of Design Factor 10 are shown in Figure 4.
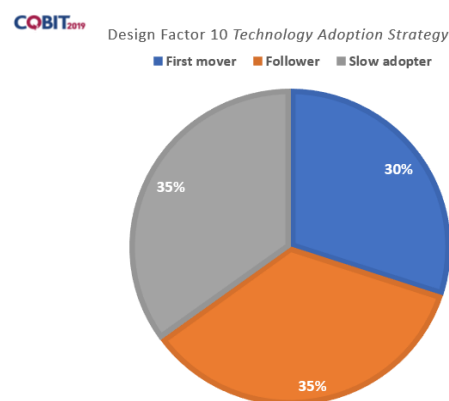

Fig 4 . DF 10 Results

Meanwhile, in DF 10, the company's technology adoption strategy includes First Mover (30%), which indicates the company's initiative in adopting new technologies; Follower (35%), which signifies the company's tendency to follow market trends, and Adapter (35%), which shows the company's flexibility in adopting technology according to its needs.
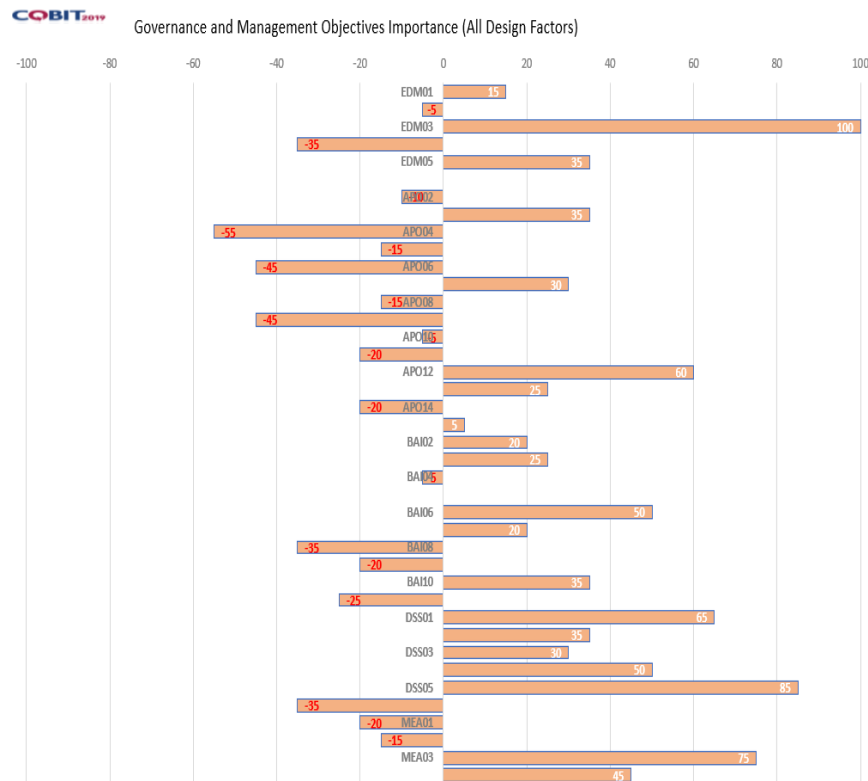
Fig 5 . Factor Design Conclusion

Bank Papua Indonesia has successfully implemented good governance and management of information technology (IT), as demonstrated by the high scores in several design factors. These factors include the ability to build and maintain an IT strategy that aligns with business strategy (EDM03), compliance with legal and regulatory IT requirements (APT602), monitoring and measuring IT performance (APO12), IT risk management (BAI02), implementation and management of information systems (DSS01), and measuring IT effectiveness and efficiency (MEA03). The high scores in these factors indicate that Bank Papua Indonesia has a clear IT strategy, is compliant with legal regulations, and can effectively measure IT performance.

However, there are several design factors with lower scores, namely the establishment of IT responsibilities and accountability (EDM01), allocation of IT resources (AP004), maintenance of IT infrastructure (AP006), asset management (AP008), IT security (BAI06), and quality of IT services (BAI10). The low scores in these areas indicate room for improvement in several aspects of IT management at Bank Papua Indonesia, such as accountability, resource management, infrastructure development, asset management, security, and service quality.

Overall, although the governance and management of IT at Bank Papua Indonesia are functioning well, there are still areas that require further improvement to achieve optimal standards. Some recommendations to enhance IT governance and management include strengthening the role of the IT Council in establishing responsibilities and accountability, increasing transparency, improving security management, and enhancing the quality of IT services. By following these recommendations, Bank Papua Indonesia is expected to improve the efficiency and effectiveness of IT management and enhance trust from customers and other stakeholders.

4. Conclusion

Based on the Analysis, it can be concluded that PT. Bank Pembangunan Daerah Papua (BPDP) is intensely focused on growth, innovation, and stable customer service. They have prioritized revenue growth, innovation in products and services, and customer-focused service while not neglecting compliance with applicable regulations and laws. Within the COBIT 2019 framework, BPDP emphasizes essential processes such as EDM03, APO12, DSS01, DSS05, DSS04, MEA03, and MEA04. This indicates the importance of addressing geopolitical issues and IT investment risks, hardware security, compliance with government regulations and rules, and enhancing the role of IT to support innovation growth and maintain information security.

In the context of banking development in Papua, BPDP must continue to efficiently and effectively integrate information technology to support the region's business growth and economic development. By applying the COBIT 2019 framework, BPDP can enhance IT management, operational efficiency, information security, and compliance with existing regulations while focusing on innovation to maintain its competitiveness in the market. A comprehensive approach is needed to manage risks and security while ensuring that the role of IT supports the company's growth and compliance strategy. Thus, implementing COBIT 2019 as a framework for IT governance at BPDP can help the company achieve long-term success in the banking industry in Papua. Bank Papua Indonesia has implemented good governance and IT management, with high scores in several design factors, such as a clear IT strategy, compliance with laws and regulations, and effective performance measurement of IT. This demonstrates Bank Papua's commitment to integrating IT with its business strategy.

Although Bank Papua has taken positive steps in IT governance, some aspects still need improvement. By implementing these recommendations, Bank Papua can improve operational efficiency, data security, and service quality, ultimately helping maintain

customer and stakeholder trust. Bank Papua Indonesia has a strong foundation in IT governance and management. However, they need to continue working towards more optimal IT governance by improving the aspects that still need enhancement. With commitment and appropriate implementation of recommendations, they can achieve more efficient and effective IT management in supporting their business vision and mission.

References

[1] ISACA, *Framework: Governance and Management Objectives*. ISACA, 2019.
[2] R. Apriliani, "Peran teknologi informasi dalam manajemen keuangan korporasi modern," in *Prosiding Seminar Nasional Indonesia*, vol. 2, no. 1, pp. 12-26, Feb. 2024.
[3] V. Paramarta, C. A. Effendy, and E. Purwanda, "The role of information technology, human resource management, and hospital information systems in improving hospital performance (literature review)," *Jurnal Review Pendidikan dan Pengajaran (JRPP)*, vol. 7, no. 4, pp. 13479-13489, Sep. 2024, doi: 10.31004/jrpp.v7i4.34703.
[4] N. G. Supriady, R. Ginasta, and R. Hanum, "Operational information system audit using COBIT 5 framework (case study: Bank XYZ)," *Jurnal Indonesia: Manajemen Informatika dan Komunikasi*, vol. 4, no. 1, Art. no. 1, Jan. 2023, doi: 10.35870/jimik.v4i1.147.
[5] M. A. Saputra and M. R. Redo, "Penerapan framework COBIT 2019 untuk perancangan tata kelola teknologi informasi pada perguruan tinggi," *Journal of Science and Social Research*, vol. 4, no. 3, pp. 352-364, 2021.
[6] A. G. Yuda, D. T. Savra, F. R. Halim, M. R. Pratama, N. S. Tama, and M. Megawati, "Audit of governance of Sultan Syarif Kasim State Islamic University, Riau, lecture work real system using COBIT 2019," *Journal of Testing and Implementation System Information*, vol. 2, no. 1, Art. no. 1, Jan. 2024.
[7] D. Darmawan and A. F. Wijaya, "Analysis and Design of technology governance information using the COBIT 2019 framework at PT. XYZ," *Journal of Computer and Information Systems Ampera*, vol. 3, no. 1, Art. no. 1, Jan. 2022, doi: 10.51519/journalcisa.v3i1.139.
[8] ISACA, *COBIT 5: A Business Framework for the Governance and Management of Enterprise IT*. ISACA, 2012
[9] AM. Syuhada, "Comparative study COBIT 5 with COBIT 2019 as a technology governance audit framework," *Literate Syntax: Journal Scientific Indonesia*, vol. 6, no. 1, pp. 30-39, Jan. 2021, doi: 10.36418/syntax-literate.v6i1.2082.
[10] *BANK PAPUA - Building the Land of Papua*, [Online]. Available: https://www.bankpapua.co.id/. Accessed: Oct. 06, 2024.
[11] F. Turak, "IT governance and digital transformation: assessing governance contingencies in large Finnish banks with COBIT 2019," Bachelor's thesis, 2024.
[12] K. Kurniawansyah, N. Marthiawati, H. Rohayani, and Novitasari, "Analysis of technology governance performance information on banks using the COBIT framework 2019," *Bulletin of Computer Science Research*, vol. 4, no. 1, Art. no. 1, Dec. 2023, doi: 10.47065/bulletincsr.v4i1.320.
[13] H. Shoaee, J. Bagherinejad, and J. R. Nour, "Towards the analysis of information technology governance and productivity based on COBIT framework: an empirical study in e-banking," *Tehnički vjesnik*, vol. 29, no. 6, pp. 1983-1990, Oct. 2022, doi: 10.17559/TV-20220115074214.
[14] A. W. Budiana, K. Y. E. Aryanto, and I. M. G. Sunarya, "Penilaian tata kelola dan manajemen infrastruktur TI Bank BPD XYZ menggunakan COBIT 2019: assessment of IT infrastructure governance and management Bank BPD XYZ using COBIT 2019," *MALCOM: Indonesian Journal of Machine Learning and Computer Science*, vol. 4, no. 1, pp. 149-161, 2024.
[15] J. Souza Neto, F. M. Cavalcante, and R. Almeida, "Lessons learned in designing a COBIT 2019 framework for a Brazilian financial organization," Universidade Católica de Brasília, 2019. doi: 10.13140/RG.2.2.36820.45440.
[16] G. M. W. Tangka and E. Lompoliu, "Information technology governance using the COBIT 2019 framework at PT. Pelindo TPK Bitung," *CogITo Smart Journal*, vol. 9, no. 2, pp. 355-367, 2023.
[17] A. Prabowo, R. Fauzi, and I. Santosa, "Analisis dan perancangan proses manajemen kinerja TI menggunakan kerangka kerja COBIT 2019 di PT Inti (Persero)," *eProceedings of Engineering*, vol. 8, no. 5, 2021.
[18] M. V. Lim and M. I. Fianty, "Enhancing information technology governance: a comprehensive evaluation of the 2019 COBIT framework in the retail industry," *International Journal of Science, Technology & Management*, vol. 4, no. 5, Art. no. 5, Sept. 2023, doi: 10.46729/ijstm.v4i5.955.
[19] L. H. Atrinawati, E. Ramadhani, T. P. Fiqar, Y. T. Wiranti, A. I. N. F. Abdullah, H. M. J. Saputra, and D. B. Tandirau, "Assessment of process capability level in university XYZ based on COBIT 2019," *Journal of Physics: Conference Series*, vol. 1803, no. 1, p. 012033, 2021, doi: 10.1088/1742-6596/1803/1/012033.
[20] N. W. Kesuma, I. Hermadi, and Y. Nurhadryani, "Evaluation of technology governance information at the Department of Agriculture Gianyar using COBIT 2019," *Journal Teknologi Informasi dan Ilmu Komputer*, vol. 10, no. 3, Art. no. 3, July 2023, doi: 10.25126/jtiik.20231026565.
[21] P. A. Adawiyah and L. H. Atrinawati, "Perancangan tata kelola teknologi informasi menggunakan framework COBIT 2019 pada PT. XYZ," *Jurnal Teknologi dan Sistem Informasi*, vol. 1, no. 2, pp. 1-9, 2020.