

Research Article

Bitcoin Adoption as a Financial Strategy to Maximize Market Capitalization for PT. Digi Nusa Indonesia

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Abstract. PT. Digi Nusa Indonesia, a pseudonym for a State-Owned Enterprise in Indonesia, faces challenges in increasing its market capitalization beyond IDR Rp250 trillion due to macroeconomic challenges like a strong US dollar and high interest rates. With mostly foreign investors, it faces currency risks and relies on conventional hedging instruments, highlighting the need for innovative strategies. Bitcoin adoption offers a promising alternative, as shown by companies like Strategy and Metaplanet that used it to protect against inflation and currency risk, boosting market capitalization. This research analyzes Bitcoin's potential for PT. Digi Nusa Indonesia, regulatory challenges, and recommends the Hybrid Approach combining Lump Sum and Dollar-Cost Averaging, identified via FAHP-TOPSIS analysis. Regulatory reviews cover OJK POJK No. 27/2024 and Ministry of Finance No. 68/PMK.03/2022. The study presents a practical, compliant framework for integrating Bitcoin into corporate strategy, offering a model for firms aiming to enhance valuation and navigate complex regulations through innovative digital asset use.

Keywords: Bitcoin adoption, Financial strategy, Market capitalization, Digital transformation, FAHP, TOPSIS.

1. Introduction

A State-Owned Enterprise in Indonesia, PT. Digi Nusa Indonesia, is undergoing a business transformation in order to improve its standing within its sector. For confidentiality's sake, PT. Digi Nusa Indonesia is a pseudonym in this study. The importance of evolution in the quickly evolving digital landscape is acknowledged by PT. Digi Nusa Indonesia, which plans to take advantage of this change to investigate new commercial prospects. Being a market leader, it is well-positioned to seize significant digitalization prospects and further advancements via digital innovation. Due to the commoditization of old services, new digital competitors, changing customer expectations, and technology breakthroughs, PT. Digi Nusa Indonesia is undergoing a transformation from traditional to digital service providers (Valdez-de-Leon, 2016). The goal is to create higher value, new revenue sources, and enhance competitiveness, aiming for market capitalization to exceed Rp250 trillion. However, PT. Digi Nusa Indonesia faced challenges in achieving this target due to declining business penetration and modest revenue growth of just over 1% in 2023. Macroeconomic headwinds like high Federal Reserve interest rates and a strong US dollar further impact valuation, especially since approximately 80% of investors are based overseas. This creates complexity and points to the need for innovative financial strategies. One alternative investment is Bitcoin, which offers portfolio diversification benefits. Since its launch in 2009 (Nakamoto, 2009), Bitcoin evolved from a decentralized payment system to a strategic corporate asset (Caviggioli et al., 2020). Its long-term price growth attracts investors, as shown by companies like

MicroStrategy and Metaplanet. MicroStrategy, rebranded as "Strategy," adopted Bitcoin as a treasury reserve, buying 70,469 Bitcoin in 2020 at about \$15,964 each. Their stock price rose more than 900% by early 2021 (MicroStrategy Incorporated, 2021). Metaplanet, a Japanese company, pursued a "Bitcoin-first, Bitcoin-only" strategy, increasing Bitcoin holdings from 141.073 to 1,761.987 coins in 2024, with stock price soaring over 2,800%. Both companies used Bitcoin as a store of value against currency challenges—US dollar inflation for MicroStrategy, yen weakening for Metaplanet. PT. Digi

Received: May 09, 2025

Revised: May 25, 2025

Accepted: June 06, 2025

Online Available: June 10, 2025

Curr. Ver.: June 10, 2025



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Nusa Indonesia, exposed to similar currency risks, can similarly use Bitcoin to hedge, potentially boosting market capitalization through stock price gains.

PT. Digi Nusa Indonesia, with a long history, transformed in the 1990s and went public. By the end of 2023, market capitalization reached Rp195.65 trillion on IDX. Revenue grew over 1% to Rp74.608 trillion, operating in various digital businesses. PT. Digi Nusa Indonesia has demonstrated strong operational performance, but there are still plenty of chances to optimize market capitalization. With Rp195.65 trillion market cap in 2023, challenges include decreased penetration and macroeconomic headwinds, especially currency-related issues. As approximately 80% of investors are foreign, maximizing market capitalization attracts global investors and strengthens PT. Digi Nusa Indonesia's corporate reputation, enhancing customer trust. The company's Rp14,503.5 billion cash reserves show prudent financial management, but hedging only 25% of foreign currency liabilities leaves exposure to volatility, causing an Rp18 billion forex loss in 2023. Traditional hedging with forward contracts introduces earnings volatility and costs. Bitcoin adoption offers a transparent, lower-cost alternative with upside potential, serving as a hedge, diversifying cash management, and attracting investors. However, challenges include regulatory transition to OJK, taxation under PMK No. 68/PMK.03/2022, accounting standards compliance, and Bitcoin's price volatility. Developing a comprehensive strategy addressing these challenges while aligning with PT. Digi Nusa Indonesia's financial objectives is essential.

This research analyzes Bitcoin adoption strategies at PT. Digi Nusa Indonesia, focusing on regulatory aspects in Indonesia. It uses FAHP and TOPSIS methods for Bitcoin acquisition, limits the scope to Bitcoin as the primary digital asset, and examines its impact on market capitalization within Indonesian regulations.

2. Literature Review

2.1 The Role of Market Capitalization in Corporate Growth

Outstanding market shares are a major factor in market capitalization, a company's overall assessment (Roosmawarni et al., 2023). It helps investors assess the feasibility of investing and the price they are willing to pay by acting as a crucial indicator of business success and company scale (Kumar & Kumara, 2020). Damodaran (2012) states, "The larger the market capitalization of a firm, the more likely it is to be followed by analysts," highlighting its role in attracting investor interest and market credibility. For PT. Digi Nusa Indonesia, optimizing market capitalization reflects financial health and growth potential, enhancing reputation and shareholder value. By employing varied asset strategies in treasury management to hedge against inflation and currency fluctuations, companies can boost their market capitalization through strategic investment. This is especially important for businesses with significant overseas exposure. Bitcoin and other new digital assets provide advantages for hedging and diversification (Shahzad et al., 2019). Innovative asset management attracts investors seeking financial returns and strategic impact, creating a cycle that sustains growth while reducing volatility (Halland et al., 2016).

2.2 Bitcoin as a Corporate Asset

Bitcoin is a special kind of asset that blends financial usefulness with technological innovation. The basis of Bitcoin's operation is the concept of scarcity, which is the state in which there are not enough material or immaterial resources to meet demands (Sun & Teichert, 2022). Bitcoin establishes scarcity and has a fixed supply of 21 million. Because of its decentralized structure, Bitcoin is not subject to governmental regulation or the conventional financial system. These essential features make Bitcoin a desirable company asset. Corporate adoption of Bitcoin is being driven by a number of variables, according to recent research. Bitcoin attitude is predicted by risk aversion, expected regret, expected profit, perceived ease of acquiring bitcoin, and social media influence (Choudhary et al., 2024). Bitcoin provides company assets with an advantage of diversification. Institutional investors who already own conventional assets can profit from investing in bitcoin (Hong, 2016). Additionally, Bitcoin can be used as a hedge against risks associated with the foreign currency market (Qarni & Gulzar, 2021). Real world cases include Strategy's acquisition of 70,469 Bitcoin in 2020 which increased its stock price by nearly 900%, and Metaplanet's "Bitcoin-first, Bitcoin-only" strategy which yielded stock price soaring 2,800% in 2024.

2.3 Return on Investment (ROI) and Stock Price Performance

One important measure of stock price success and investment efficiency is Return on Investment. By comparing net profits to invested capital, ROI calculates investment profitability and provides stakeholders with crucial operational data. The correlation between stock price fluctuations and return on investment is substantiated by empirical data. With their t-test results indicating a significance level of 0.030 (<0.05), it was discovered that there was a significant correlation between ROI and stock prices, proving ROI's considerable influence on stock price determination (Sunaryo, 2020). Muttalib & Pasigai (2023) found an inverse relationship between ROI and stock prices in Indonesian airline companies, showing complex dynamics between profitability and valuations. Investors may see Bitcoin as an instrument to ROI considerations. Ma et al. (2020) showed incorporating cryptocurrencies can enhance potential gains and provide risk diversification. Compared to traditional financial products, Bitcoin has ROI potential but higher risk. This suggests corporate investment strategies may benefit from balancing traditional and cryptocurrency investments.

2.4 Strategic Approaches to Bitcoin Adoption

Financial planning is crucial for increasing corporate value. Financial theory does not imply that shareholder value is static; nevertheless, organizations can increase value by implementing the most appropriate financial strategy customized to their needs (Bender and Ward, 2009). The most effective strategy focuses on value creation, sometimes requiring strategic investments rather than cost-cutting. For PT. Digi Nusa Indonesia, with a large cash balance, a good financial strategy is crucial to increase market capitalization, especially when exploring innovative investments like Bitcoin adoption strategies: Dollar-Cost Averaging (DCA), Lump sum investment, and Hybrid Approaches. DCA involves investing fixed sums regularly, encouraging disciplined saving and reducing emotional anxiety, helpful in Bitcoin's volatile market (Smith and Artigue, 2018; Hayes, 2024). However, DCA may increase transaction costs and yield lower returns in emerging markets. Lump sum investing buys Bitcoin in large amounts at once and can benefit those with sufficient funds but carries higher risks due to Bitcoin's volatility (Wohlner, 2024). Hybrid approaches combine both strategies to balance risk and market entry speed (VanEck, 2023; Colvert, 2025). Choosing a Bitcoin strategy depends on investor risk tolerance and objectives. Criteria like Financial Impact, Implementation Complexity, Reporting, and Strategic Flexibility guide decisions through FAHP-TOPSIS analysis, providing a structured approach for PT. Digi Nusa Indonesia to align Bitcoin adoption with its financial goals.

2.5 Risks of Bitcoin Adoption and Mitigation Strategies

Bitcoin has significant strategic implications for business finance planning, but a thorough analysis must evaluate the risks associated with adoption. The most apparent risk is price volatility, which has historically been far higher in Bitcoin than traditional investments (Shahzad et al., 2019). Bitcoin's extreme price fluctuations pose challenges to company balance sheets relying on stable assets (Field & Inci, 2023). Bitcoin's market volatility exceeds that of the foreign currency market (Qarni & Gulzar, 2021). Regulatory uncertainty is another important risk, with frameworks still in infancy in many jurisdictions (Choudhary et al., 2024). To gain benefits, companies must consider mitigation strategies. Robust governance measures are required, as enterprises involved in blockchain are more vulnerable to Bitcoin return dynamics (Frankovic et al., 2021). Using technology strategically can turn risks into possibilities. Maintaining strategic agility while adapting to regulatory changes is made possible by a thorough governance framework. The success of PT. Digi Nusa Indonesia will depend on its ability to control risk and use Bitcoin as a treasury asset.

2.6 Regulatory Considerations for Bitcoin Adoption

Regulations must be taken into consideration when adopting Bitcoin as a strategic financial asset. In Indonesia, POJK No. 27/2024 by OJK regulates cryptocurrency activities, replacing Bappebti supervision. This includes licensing, reporting, consumer protection, and data privacy. PT. Digi Nusa Indonesia, as a state-owned and public company, faces complex regulatory challenges under state-owned enterprises and capital

market rules, including disclosure obligations. PSAK provides guidelines for financial reporting of Bitcoin (Kimani et al., 2020). No public firms in Indonesia have yet integrated Bitcoin into their treasuries, making PT. Digi Nusa Indonesia a potential pioneer. However, challenges remain, such as regulatory uncertainty, AML compliance, volatility, and taxation issues. Regulatory monitoring, ongoing dialogue with OJK, and contingency plans are necessary. Comparatively, Japan’s clear regulations have increased trust and adoption. PT. Digi Nusa Indonesia should learn from Japan, leverage regulatory support like POJK No. 27/2024, and manage risks to benefit from Bitcoin as a diversification instrument and hedge in investment portfolios.

2.7 Conceptual Framework

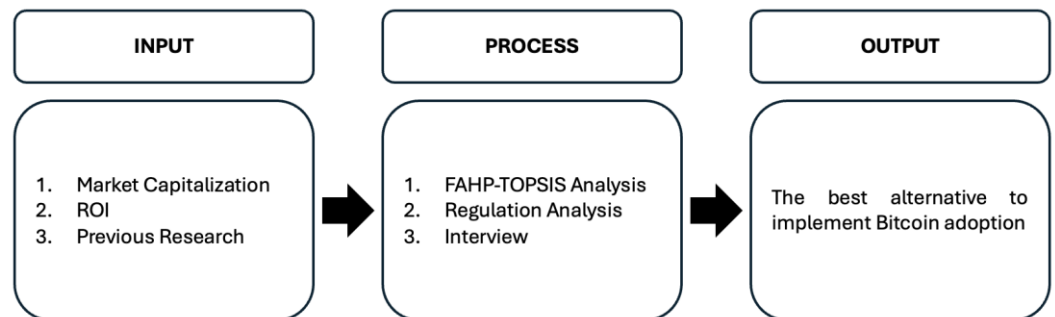


Figure 1. Conceptual Framework

3. Research Methodology

3.1 Research Design

This study employs a mixed method approach, integrating quantitative and qualitative analysis using case studies. The quantitative method includes a comparative analysis of Return on Investment (ROI) from PT. Digi Nusa Indonesia stock price, Bitcoin price, Strategy stock price, and Metaplanet stock price from 2019 to 2024, demonstrating why Bitcoin is an effective strategy for increasing stock prices and market capitalization. It also uses the Fuzzy Analytical Hierarchy Process (FAHP) in conjunction with the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) to distribute surveys to determine the optimum option for PT. Digi Nusa Indonesia to embrace Bitcoin. The alternatives evaluated include dollar-cost averaging, lump sum, and hybrid approaches with predetermined criteria. FAHP-TOPSIS better handles bias than AHP, using fuzzy set theory and triangular fuzzy numbers, making it suitable for strategic decision-making. TOPSIS complements FAHP by ranking alternatives based on closeness to ideal solutions (Julianto et al., 2020). Qualitative interviews explored regulations and Bitcoin accounting, and validated FAHP-TOPSIS results with PT. Digi Nusa Indonesia’s related parties. This design offers a comprehensive analysis of financial, strategic, and regulatory factors affecting Bitcoin adoption, providing actionable and feasible recommendations.

3.2 Data Collection Method

In order to demonstrate why Bitcoin is a viable substitute for raising market capitalization, this study examines Return on Investment (ROI). Using information from reliable websites and financial records, it examines the return on investment (ROI) of PT. Digi Nusa Indonesia stock prices, Bitcoin, Strategy, and Metaplanet from January 2019 to December 2024. This comparison provides a quantitative basis for Bitcoin’s potential benefits. Data collection includes secondary data—historical stock and Bitcoin prices from financial platforms, company reports, and cryptocurrency sites—and primary data from FAHP-TOPSIS questionnaires and interviews with specific respondents. FAHP-TOPSIS captures diverse views on investment strategies amid uncertainty. Purposive sampling selects four expert respondents from PT. Digi Nusa Indonesia and external finance experts, focusing on expertise over quantity. Bitcoin adoption implementation refers to existing regulations by OJK for transactions and financial reporting standards from the Financial Accounting Standards Board of the Indonesian Institute of

Accountants (DSAK IAI). Integrating these regulatory frameworks ensures compliance and strengthens research conclusions.

3.3 Data Analysis Method

In order to facilitate thorough decision-making, this study integrates the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) and the Fuzzy Analytical Hierarchy Process (FAHP) in an analytical framework that combines regulatory risk assessment with ROI comparative analysis.

3.4 ROI Comparative Analysis

The following formula is used in this ROI comparison to assess the performance trends of the stock prices of PT. Digi Nusa Indonesia, Bitcoin, Strategy, and Metaplanet:

$$ROI = (Last\ Price - Beginning\ Price) / Beginning\ Price$$

The higher the ROI, the better the performance, showing how Bitcoin's ROI affects Strategy and Metaplanet stock prices.

3.5 FAHP-TOPSIS Integrated Analysis

FAHP overcomes uncertainty in decision making using fuzzy set theory and triangular fuzzy numbers to compare four criteria: Financial Impact, Implementation Complexity, Reporting, and Strategic Flexibility. The pairwise comparison matrix is fuzzed to avoid bias, weights are calculated with a consistency ratio below 0.1. TOPSIS then ranks Bitcoin adoption options: Dollar-Cost Averaging, Lump Sum, and Hybrid Approach by measuring closeness to ideal solutions. This combined FAHP-TOPSIS approach systematically integrates multiple criteria and expert judgments, offering a robust and objective decision process (Julianto et al., 2020). Figure 2 illustrates the FAHP hierarchy for evaluation.

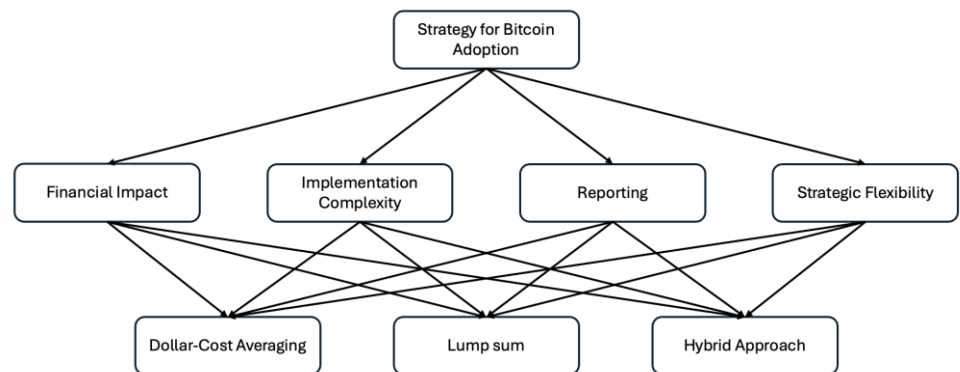


Figure 2. FAHP Hierarchy for Bitcoin Adoption

3.6 Regulatory Analysis

This examines Indonesia's legal framework for Bitcoin adoption, focusing on OJK regulations effective January 2025, financial reporting standards PSAK 238 and 113 by DSAK IAI, and crypto asset taxation including VAT and Income Tax, ensuring compliance and optimization.

3.7 Feasibility of Implementation Analysis

Interviews with PT. Digi Nusa Indonesia's employee validate FAHP-TOPSIS results, ensuring theoretical strategies are practical and aligned with regulatory and operational realities. Stakeholders provide insights on implementation challenges and opportunities.

4. Results and Discussion

4.1 Analysis

The findings of the analysis on PT. Digi Nusa Indonesia's use of Bitcoin as a financial strategy are presented in this chapter. To determine opportunities, difficulties, and strategic implications, both quantitative and qualitative data were analyzed.

4.2 ROI Comparative Analysis Results

This section compares Return on Investment (ROI) of PT. Digi Nusa Indonesia stock price, Bitcoin price, and stocks of two Bitcoin-adopting companies, Strategy and Metaplanet, from 2019 to 2024, to evaluate the potential value added by Bitcoin adoption.

4.3 ROI Trends from 2019 to 2024

The ROI performance across four entities, Bitcoin price, PT. Digi Nusa Indonesia stock, Strategy stock, and Metaplanet stock, were analyzed yearly and cumulatively with the formula:

Table 1. Comparison of ROI from 2019 - 2024

Price of	Price in		ROI*
	Beginning of 2019	End of 2024	
Bitcoin	\$ 3,809.40	\$ 93,557.20	2355.96%
PT. Digi Nusa Indonesia Stock	Rp 1,865.00	Rp 1,355.00	-27.35%
Strategy Stock	\$ 12.86	\$ 289.62	2152.10%
Metaplanet Stock	¥ 120.00	¥ 348.00	190.00%

Note: *Based on calculation

Bitcoin showed a strong long-term ROI of 2355.96%. PT. Digi Nusa Indonesia recorded a negative ROI (-27.35%) over the period. Strategy, adopting Bitcoin since 2020, achieved an ROI of 2152.10%, close to Bitcoin's performance. Metaplanet's ROI (190.00%) shows the timing and method of Bitcoin adoption critically impact success.

4.4 Comparative Analysis and Implications for PT. Digi Nusa Indonesia

A rigorous ROI analysis reveals numerous crucial factors concerning how Bitcoin adoption affects a company's market value:

1. Bitcoin's ROI of 2355.96% over six years demonstrates its potential as a long-term store of value, despite swings.
2. PT. Digi Nusa Indonesia's standard financial strategy without Bitcoin resulted in a cumulative ROI of -27.35%. This demonstrated the difficulty that corporations have in developing long-term shareholder value using traditional approaches.
3. The strategy's good return on investment (ROI) of 2152.10% is comparable to that of Bitcoin. These outcomes demonstrate how Bitcoin can boost shareholder returns over a number of years and validate the company's creative strategy to implementing the cryptocurrency.
4. Metaplanet's ROI of 190.00% was significantly higher than PT. Digi Nusa Indonesia's, but it was still lower than Bitcoin and Strategy's. According to Metaplanet's return on investment, the success of the Bitcoin adoption strategy is greatly influenced by when and how it is deployed.

4.5 FAHP-TOPSIS Analysis Results

This method was applied to evaluate optimal Bitcoin adoption strategies for PT. Digi Nusa Indonesia, combining expert evaluations considering multiple criteria.

4.6 Survey Respondent Profiles

Four respondents with expertise in finance, accounting, and investment were selected from internal divisions and an external professional accountant. They provided assessments on Bitcoin understanding, risk perception, market outlook, and regulatory impact.

4.7 FAHP-TOPSIS Analysis

This study employed the Fuzzy Analytic Hierarchy Process (FAHP) combined with the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) to evaluate and rank three Bitcoin investment strategies for PT. Digi Nusa Indonesia: Dollar-Cost Averaging, Lump Sum, and Hybrid Approach. The evaluation was based on four critical criteria: Financial Impact, Implementation Complexity, Reporting, and Strategic Flexibility. Expert judges conducted pairwise comparisons to determine the

relative importance of each criterion, which were then processed using FAHP to accommodate uncertainty and vagueness in subjective judgments. The computed weights revealed that Reporting held the greatest importance with a weight of 0.36, underscoring the requirement for accurate, transparent, and regulatory-compliant reporting in Bitcoin investment strategies. Financial Impact, Implementation Complexity, and Strategic Flexibility each received similar weights of approximately 0.21, indicating their significant and balanced roles in decision-making. The consistency ratio of 0.08 validated that the expert assessments were coherent and reliable.

Each Bitcoin investment strategy was scored against the four criteria by averaging the score of four respondents, reflecting their relative performance:

- Hybrid Approach: Financial Impact (4.25), Implementation Complexity (3.00), Reporting (3.25), Strategic Flexibility (4.25)
- Dollar-Cost Averaging: Financial Impact (3.00), Implementation Complexity (3.75), Reporting (3.50), Strategic Flexibility (2.50)
- Lump Sum: Financial Impact (2.25), Implementation Complexity (4.50), Reporting (3.75), Strategic Flexibility (2.25)

The Hybrid Approach excelled in Financial Impact and Strategic Flexibility, demonstrating a balance of potential returns and adaptability to market conditions. Although it had a moderate score for Implementation Complexity and Reporting, these were sufficiently manageable. The Dollar-Cost Averaging strategy showed advantages in Implementation Complexity and Reporting, reflecting its relative operational simplicity and transparency but lagged in Financial Impact and Strategic Flexibility. Conversely, the Lump Sum investment presented a high Implementation Complexity score, indicating operational challenges and risks, while it underperformed in Financial Impact and Strategic Flexibility.

After normalizing the data and applying the FAHP-derived weights, TOPSIS analysis calculated the closeness coefficients, which represent how close each alternative is to the ideal solution:

- Hybrid Approach: 0.66
- Lump Sum: 0.34
- Dollar-Cost Averaging: 0.32

The Hybrid Approach attained the highest closeness coefficient (0.66), signaling it as the optimal investment strategy. This outcome reflects the Hybrid Approach's effective trade-off among maximizing financial returns, maintaining flexibility, and keeping complexity and reporting demands at acceptable levels.

4.8 Regulatory and Risk Considerations

PT. Digi Nusa Indonesia must comply with evolving Indonesian crypto regulations under OJK POJK No. 27/2024, Ministry of Finance Regulation No. 68/PMK.03/2022 on taxation, and accounting standards PSAK 238 & PSAK 113 for reporting Bitcoin holdings. Main risks and compliance considerations include:

1. Legal Status: Only legal entities such as corporations and SOEs can invest in Bitcoin as non-individual consumers under Article 80 of POJK No. 27/2024.
2. KYC/AML Requirements: Comprehensive identity verification and monitoring are mandatory.
3. Tax Obligations: Crypto asset transactions are subject to VAT and Income Tax withholding with clear reporting duties.
4. Accounting Treatment: Bitcoin is recognized as an intangible asset (PSAK 238), measured at fair value (PSAK 113), with disclosure obligations on valuation methods, risks, and impairments.
5. Operational Feasibility: Internal regulations require strict approvals from subsidiaries with appropriate business classifications and oversight by company and government bodies to ensure alignment with legal frameworks.

4.9 Implications for PT. Digi Nusa Indonesia

Findings indicate:

1. Proper Bitcoin adoption can significantly increase market capitalization and attract global investors, especially given PT. Digi Nusa Indonesia's large foreign ownership.
2. The FAHP-TOPSIS analysis recommends the Hybrid Approach to manage volatility and strategic flexibility.
3. Strict compliance with regulatory and reporting frameworks is essential.
4. Success requires in-depth feasibility studies, strong governance, regulatory monitoring, and enhanced internal expertise in digital assets.

4.10 Business Solution

The recommended financial strategy is Bitcoin adoption using the Hybrid Approach, combining Lump Sum and Dollar-Cost Averaging investments to optimize capital gains while mitigating price volatility risks and maintaining cash flow stability. This approach also serves as a hedge against foreign exchange volatility. Implementation requires formation of a feasibility study team and adherence to applicable accounting, tax, and regulatory standards for transparency.

4.11 Implementation Plan & Justification

1. What: Hybrid Approach for Bitcoin acquisition.
2. Why: Historical ROI and FAHP-TOPSIS analysis show it optimizes return and risk.
3. Where: Initial implementation via subsidiaries with relevant business permits.
4. When: After approvals from parent company, government ministries, and General Meeting of Shareholders; staged implementation upon regulatory certainty.
5. Who: Parent company, regulators, shareholders, and appointed committees responsible for approval and oversight.
6. How: Feasibility study, communication with authorities, presentation at General Meeting of Shareholders for final decision-making.

5. Conclusion and Recommendation

Conclusion

This study analyzes Bitcoin adoption as a financial strategy to maximize PT. Digi Nusa Indonesia's market capitalization using comparative ROI analysis and FAHP-TOPSIS methods. From 2019–2024, companies like Strategy and Metaplanet adopting Bitcoin showed higher market cap growth, while PT. Digi Nusa Indonesia had a -27.35% ROI. FAHP-TOPSIS favored the Hybrid Approach combining Lump Sum and Dollar-Cost Averaging (score 0.66), balancing returns and volatility. Implementation must comply with OJK regulations (POJK No. 27/2024), PSAK 238 and 113, and Ministry of Finance Regulation No. 68/PMK.03/2022, emphasizing governance and human resources capacity for strategic digital asset use.

Recommendation

Based on the findings, recommendations for PT. Digi Nusa Indonesia and related parties include conducting thorough feasibility studies with key stakeholders to mitigate legal risks. Adopting a Hybrid Approach combining Lump Sum and Dollar-Cost Averaging optimizes returns and stability. Strengthening governance, risk, and compliance, plus conducting pilot projects in subsidiaries with official permits, reduces risks. Active communication with OJK and regulators is vital to adapt to regulatory changes. Future research should explore diverse crypto assets and include varied managerial and regulatory respondents for broader, more applicable insights on crypto investment risks and opportunities.

References

- [1.] Benayan, M., Obeidat, M., and Anglia Ruskin University, "Understanding the digital transformation on the telecom companies and covid19 effect on the employment," *Int. J. Eng. Technol.*, vol. 13, no. 1, pp. 60–67, 2024.
- [2.] Bender, R., and Ward, K., *Corporate Financial Strategy*, 3rd ed. Elsevier Butterworth-Heinemann, 2009.

- [3.] Brennan, M. J., Li, F., and Torous, W. N., "Dollar cost averaging," *Eur. Finance Rev.*, vol. 9, no. 4, pp. 509–535, 2005, doi: 10.1007/s10679-005-4999-x.
- [4.] Brigham, E. F., and Houston, J. F., *Fundamentals of Financial Management*. 2019.
- [5.] Cavaggioli, F., Lamberti, L., Landoni, P., and Meola, P., "Technology adoption news and corporate reputation: sentiment analysis about the introduction of Bitcoin," *J. Prod. Brand Manag.*, vol. 29, no. 7, pp. 877–897, 2020, doi: 10.1108/jpbm-03-2018-1774.
- [6.] Charles Schwab & Co., Inc., "What is Dollar-Cost Averaging?" *Schwab Brokerage*, Sep. 26, 2024. [Online]. Available: <https://www.schwab.com/learn/story/what-is-dollar-cost-averaging>
- [7.] Choudhary, S., Bondia, R., Srivastava, V., and Biswal, P. C., "Uncovering the Bitcoin investment behavior: An emerging market study," *Invest. Manag. Financ. Innov.*, vol. 21, no. 4, pp. 35–48, 2024, doi: 10.21511/imfi.21(4).2024.04.
- [8.] CoinMarketCap, "Historical Snapshot - 08 November 2021," [Online]. Available: <https://coinmarketcap.com/historical/20211108/>
- [9.] Colvert, B., "The Power of Dollar Cost Averaging: A Timeless Investment Strategy," *Financ. Plann. Wealth Manag.*, Jan. 19, 2025. [Online]. Available: <https://www.bonfirefinancial.com/dollar-cost-averaging/>
- [10.] Damodaran, A., *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*. John Wiley & Sons, Inc., 2012.
- [11.] Dewan Komisioner Otoritas Jasa Keuangan, *Peraturan Otoritas Jasa Keuangan Republik Indonesia Nomor 27 Tahun 2024 tentang Penyelenggaraan Perdagangan Aset Keuangan Digital Termasuk Aset Kripto*. 2024. [Online]. Available: <https://jdih.ojk.go.id/>
- [12.] Field, J., and Inci, A. C., "Risk translation: how cryptocurrency impacts company risk, beta and returns," *J. Cap. Mark. Stud.*, vol. 7, no. 1, pp. 5–21, 2023, doi: 10.1108/jcms-02-2023-0003.
- [13.] Frankovic, J., Liu, B., and Suardi, S., "On spillover effects between cryptocurrency-linked stocks and the cryptocurrency market: Evidence from Australia," *Glob. Finance J.*, vol. 54, p. 100642, 2021, doi: 10.1016/j.gfj.2021.100642.
- [14.] Goldbach, S., and Nitsch, V., "Cryptocurrencies and capital flows: evidence from El Salvador's adoption of Bitcoin," *Appl. Econ. Lett.*, pp. 1–6, 2024, doi: 10.1080/13504851.2024.2394201.
- [15.] Hacıoglu, U., Chlyeh, D., Yilmaz, M. K., Tatoglu, E., and Delen, D., "Crafting performance-based cryptocurrency mining strategies using a hybrid analytics approach," *Decis. Support Syst.*, vol. 142, p. 113473, 2020, doi: 10.1016/j.dss.2020.113473.
- [16.] Halland, H., Noël, M., Tordo, S., and Kloper-Owens, J. J., "Strategic Investment Funds: Opportunities and challenges," *World Bank Working Paper*, no. WPS7851, 2016.
- [17.] Hayes, A., "Dollar-Cost Averaging (DCA) explained with examples and considerations," Investopedia, May 23, 2024. [Online]. Available: <https://www.investopedia.com/terms/d/dollarcostaveraging.asp>
- [18.] Hinzen, F. J., John, K., and Saleh, F., "Bitcoin's limited adoption problem," *J. Financ. Econ.*, vol. 144, pp. 347–369, 2022, doi: 10.1016/j.jfineco.2022.01.003.
- [19.] Hong, K., "Bitcoin as an alternative investment vehicle," *Inf. Technol. Manag.*, vol. 18, no. 4, pp. 265–275, 2016, doi: 10.1007/s10799-016-0264-6.
- [20.] Investing.com, "Bitcoin historical data." [Online]. Available: <https://www.investing.com/crypto/bitcoin/historical-data>
- [21.] Investing.com, "MicroStrategy Inc historical data." [Online]. Available: <https://www.investing.com/equities/microstrategy-inc-historical-data>
- [22.] Investing.com, "Red Planet Japan Inc. historical data." [Online]. Available: <https://www.investing.com/equities/red-planet-japan-inc-historical-data>
- [23.] Julianto, V., Utomo, H. S., and Herpendi, H., "Analisis dan Penerapan Metode Fuzzy AHP-TOPSIS dalam Penentuan Mitra Industri Sebagai Tempat Praktek Kerja Lapangan," *J. Ilm. Informatika*, vol. 5, no. 2, pp. 108–121, 2020, doi: 10.35316/jimi.v5i2.942.

- [24.] Kementerian Keuangan RI, Peraturan Menteri Keuangan Nomor 68/PMK.03/2022. [Online]. Available: <https://www.kemenkeu.go.id>
- [25.] Kimani, D. et al., "Blockchain, business and the fourth industrial revolution: Whence, whither, wherefore and how?" *Technol. Forecast. Soc. Change*, vol. 161, p. 120254, 2020, doi: 10.1016/j.techfore.2020.120254.
- [26.] Kinkyō, T., "Hedging capabilities of Bitcoin for Asian currencies," *Grad. Sch. Econ. Kobe Univ.*, 2020, doi: 10.1002/ijfe.2241.
- [27.] Kumar, M. P., and Kumara, N. M., "Market capitalization: Pre and post COVID-19 analysis," *Mater. Today Proc.*, vol. 37, pp. 2553–2557, 2020, doi: 10.1016/j.matpr.2020.08.493.
- [28.] Ma, Y., Ahmad, F., Liu, M., and Wang, Z., "Portfolio optimization in the era of digital financialization using cryptocurrencies," *Technol. Forecast. Soc. Change*, vol. 161, p. 120265, 2020, doi: 10.1016/j.techfore.2020.120265.
- [29.] Metaplanet Inc., "Consolidated financial results for the fiscal year ended December 31, 2024," Feb. 10, 2025. [Online]. Available: <http://metaplanet.jp/>
- [30.] MicroStrategy Inc., "Annual report for the fiscal year ended December 31, 2020," U.S. SEC, Form 10-K, Feb. 12, 2021. [Online]. Available: https://www.sec.gov/Archives/edgar/data/1050446/000156459021005735/mstr-10k_20201231.htm
- [31.] Morozova, T. et al., "Crypto asset assessment models in financial reporting content typologies," *Entrepreneursh. Sustain. Issues*, vol. 7, no. 3, pp. 2196–2212, 2020.
- [32.] Mukhopadhyay, S. et al., "Enhancing B2B sales through digital transformation: Insights into effective sales enablement," *Ind. Mark. Manag.*, vol. 125, pp. 29–47, 2024, doi: 10.1016/j.indmarman.2024.12.009.
- [33.] Muttalib, A., and Pasigai, M. A., "Analysis of stock price performance based on return on investment for Indonesian airline companies," *J. Manaj. Bisnis*, vol. 10, no. 2, pp. 508–521, 2023, doi: 10.33096/jmb.v10i2.566.
- [34.] Nakamoto, S., "Bitcoin: A Peer-to-Peer Electronic Cash System," 2009. [Online]. Available: <https://bitcoin.org/bitcoin.pdf>
- [35.] Peterson, T. F., "Metcalf's Law as a Model for Bitcoin's Value," *Cane Island Alt. Advisors*, 2018. [Online]. Available: https://caia.org/sites/default/files/metcalfeslaw_websiteupload_7-5-18.pdf
- [36.] Procházka, D., "Accounting for Bitcoin and Other Cryptocurrencies under IFRS," *Int. J. Digit. Account. Res.*, pp. 161–188, 2018, doi: 10.4192/1577-8517-v18_7.
- [37.] Qarni, M. O., and Gulzar, S., "Portfolio diversification benefits of alternative currency investment in Bitcoin and foreign exchange markets," *Financ. Innov.*, vol. 7, p. 17, 2021, doi: 10.1186/s40854-021-00233-5.
- [38.] Rambo, R. G., Main, D., and Beaubien, L., "Reducing reporting risk: Designating foreign currency forward contracts as cash flow hedges," *J. Account. Educ.*, vol. 29, no. 4, pp. 284–294, 2011, doi: 10.1016/j.jaccedu.2012.03.003.
- [39.] Roosmawarni, A., Fatihudin, D., and Mauliddah, N., "Market Capitalisation and Financial Performance: Evidence from Banking Listed Company in Indonesia," *J. Anal. Bisnis Ekon.*, vol. 20, no. 2, pp. 124–136, 2023, doi: 10.31603/bisnisekonomi.v20i2.7835.
- [40.] Rudolf, K. O., Zein, S. A. E., and Lansdowne, N. J., "Bitcoin as an investment and hedge alternative," *Risks*, vol. 9, no. 9, p. 154, 2021, doi: 10.3390/risks9090154.
- [41.] Saaty, T. L., *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation*. 1980.
- [42.] Shahzad, S. J. H. et al., "Is Bitcoin a better safe-haven investment than gold and commodities?" *Int. Rev. Financ. Anal.*, vol. 63, pp. 322–330, 2019, doi: 10.1016/j.irfa.2019.01.002.
- [43.] Smith, G., and Artigue, H. M., "Another look at dollar cost averaging," *J. Invest.*, vol. 27, no. 2, pp. 66–75, 2018, doi: 10.3905/joi.2018.27.2.066.
- [44.] Su, C. et al., "Gold vs bitcoin: Who can resist panic in the U.S.?" *Resour. Policy*, vol. 85, p. 103880, 2023, doi: 10.1016/j.resourpol.2023.103880.
- [45.] Sun, H., and Teichert, T., "Scarcity in today's consumer markets: scoping the research landscape by author keywords," *Manag. Rev. Q.*, vol. 74, no. 1, pp. 93–120, 2022, doi: 10.1007/s11301-022-00295-4.
- [46.] Sunaryo, D., "The effect of profitability (Return on investment) and financial risk against stock price before Covid-19," *Int. J. Sci. Technol. Manag.*, vol. 1, no. 2, pp. 87–99, 2020, doi: 10.46729/ijstm.v1i2.19.

-
- [47.] Valdez-de-Leon, O., "A digital maturity model for telecommunications service providers," *Technol. Innov. Manag. Rev.*, vol. 6, no. 8, pp. 19–20, 2016.
- [48.] VanEck, "Mastering Dollar Cost Averaging: The Strategic Path to Investing Your Windfall," Nov. 29, 2023. [Online]. Available: <https://www.vaneck.com/us/en/advisor-education/practice-management/mastering-dollar-cost-averaging-the-strategic-path-to-investing-your-windfall/>
- [49.] Wohlner, R., "Pros and cons of lump-sum investing," *Bankrate*, Feb. 13, 2024. [Online]. Available: <https://www.bankrate.com/investing/pros-and-cons-lump-sum-investing/>
- [50.] Yudha, I. P., Rahadi, R. A., and Noveria, A., "Bitcoin Adoption Strategy as a Company Asset in Indonesia," *J. Econ. Bus.*, vol. 7, no. 3, 2024. doi: 10.31014/aior.1992.07.03.592.
- [51.] Zhang, S., and Mani, G., "Popular cryptoassets (Bitcoin, Ethereum, and Dogecoin), Gold, and their relationships: volatility and correlation modeling," *Data Sci. Manag.*, vol. 4, pp. 30–39, 2021, doi: 10.1016/j.dsm.2021.11.001.