

SUSTAINABLE-DIGITAL-HAJJ ECOSYSTEM:



"Opportunities in Digitalization for Hajj and Umra Ecosystem"



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THE BIGGEST ECONOMY IN SOUTHEAST ASIA

Indonesia's **GDP** (Current Prices) US\$858,953 Billions. (IMF, April 2016)

MOST CONNECTED TO SOCIAL NETWORKS **79 M ACTIVE USERS**

#1 BBM User #1 Twitter User #1 Google+ User #6 Facebook User #10 Youtube User (Social Network, Global Web Index 2015)

CONSUMER MARKET FOR DIGITAL TECH



@KBRIWashDC

88.1 Million Active Internet Users 326.3 Million Mobile Connection (wearesocial, 2015)

DIGITAL ECONOMY IN indonesia



HOME TO 2.033 STARTUPS



Currently Indonesia counts 2,033 Internet-based startups exceeding Singapore's figure of 1,850.

RAPID GROWTH OF E-COMMERCE (39%)

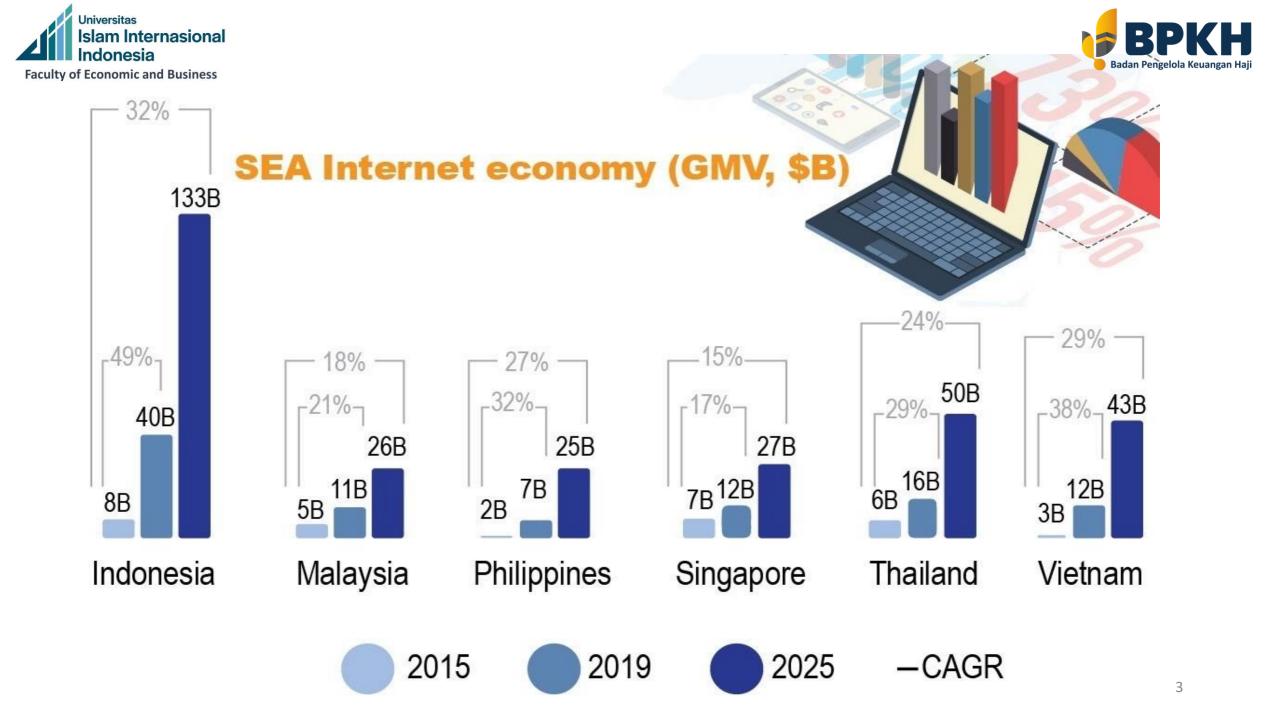


It is estimated to grow 39%/y. A valuation of US\$1.7b. in 2015 to a spectacular USD \$46 billion in 2025.

GROWING NUMBER OF MIDDLE CLASS (135 MILLIONS BY 2030)

A demographic bonus (280 millions by 2025) that can support digital economy's growth; contributing an annual 2.4% growth until 2030.

(E-Conomy, 2016, Google Inc. & Temasek)







Current Important Issue # 1: TRIPLE BOTTOM LINE



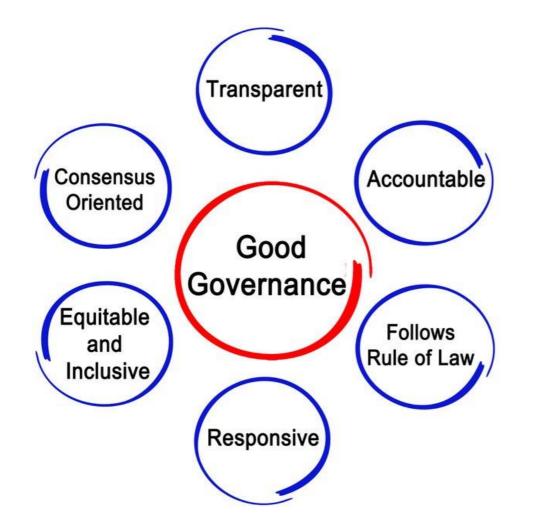


Maximizing profit or economic gain is not merely the goal of business or economic activities but it must also maintain the welfare and good condition of humans, as well as maintaining and developing the environment.





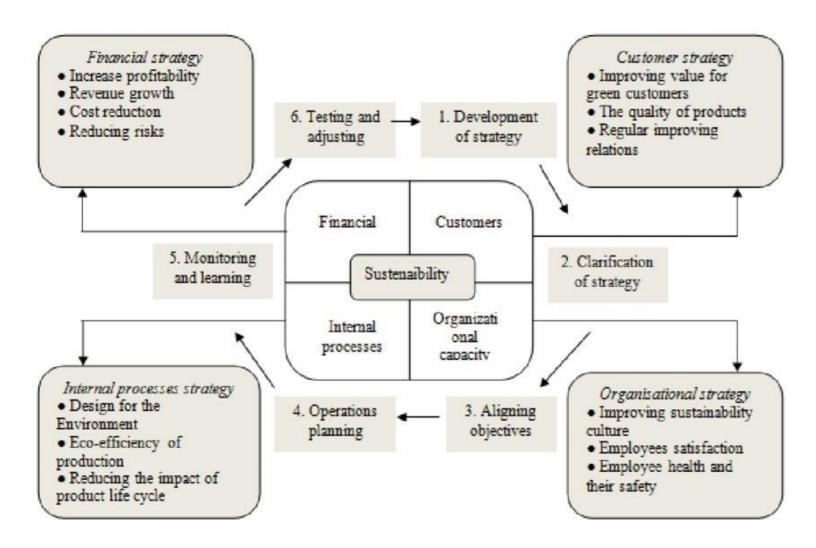
Current Important Issue # 2: GOOD GOVERNANCE



Sustainable development can only be realized if there is good governance at various organizational levels from the lowest to the highest, both private, social and government



Current Important Issue # 3: SUSTAINABILITY SCORECARD



Performance measurement in management at various levels must include balancing strategic issues in sustainable development as key performance indicators

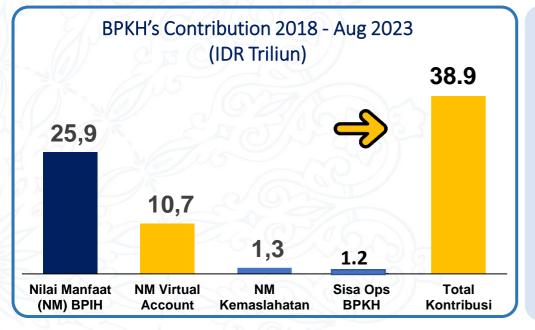


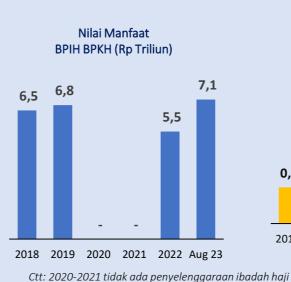


BPKH's Performance 2018- Aug 2023



Nilai Manfaat





Komponen Kontribusi:





Kalkulasi		IDR Triliun	Keterangan
[a]	Total Kontribusi BPKH	38,9	Total 2018 - 2023
[b]	Saldo BPKH Agus 2023	159,6	
[c]	Setoran Awal	132,5	Rp25juta x 5,3 juta jamaah
[d]	Liabilitas Total BPIH	530,0	Rp100juta x 5,3 juta jamaah
[e]	Gap+Tabungan	27,1	[b] - [c]
[f]	Kontribusi & Tabungan BPKH	66,0	[a] + [e]



Total Setoran

Awal

≈ Rerata per Tahun **9,8%**



Catatan: Data disajikan per Agustus 2023 (Mengacu pada materi KPKH BPKH)





Full Cost per Hajj IDR 92mio or US\$ 6.000 or TL 162.000;

BPKH manages Only Down Payment Rp.25 mio or US\$1.600 (DP30%) wait for 25yrs Full Board Facilities Chartered (4 flights/pilgrim), Hotels/tents in Makkah, Madinah, ArMuzNa, Meals, 24/7 Shuttle to Haraam, Visa, etc

Number of Days of Hajj: 42



Total waiting list: 5.3 million



Hajj quota: **221.000/year**



New subs/reg <u>+</u>500.000/year

BPKH Contribution per Hajj Cost <u>>50%</u>







Hajj & Umra Ecosystem Opportunities



Umrah from Indoneisa almost 2.5mio !

Managed by Private tour operators

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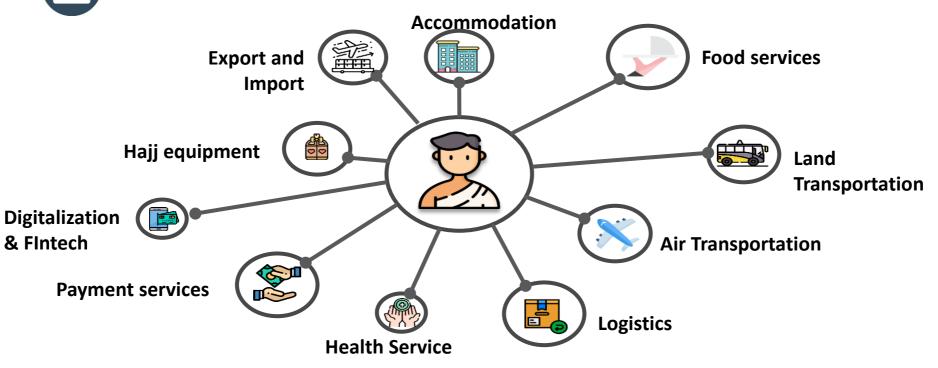
Umrah Package average price IDR 30 mio/US\$ 2000/55.000TL (Flights, hotels, meals, ziarah)

No official quota

X

Embark from 6 cities to Jeddah/Medina

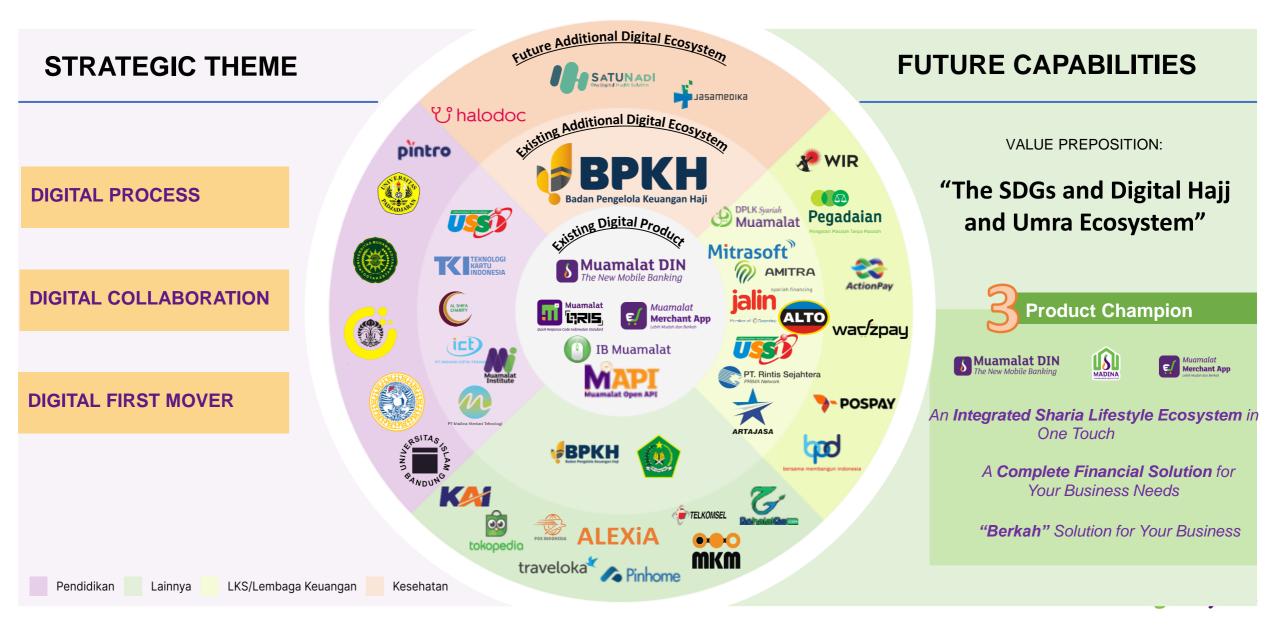
Number of days average 10 days (Medina-Mecca-Ziarah)





Digital Ecosystem

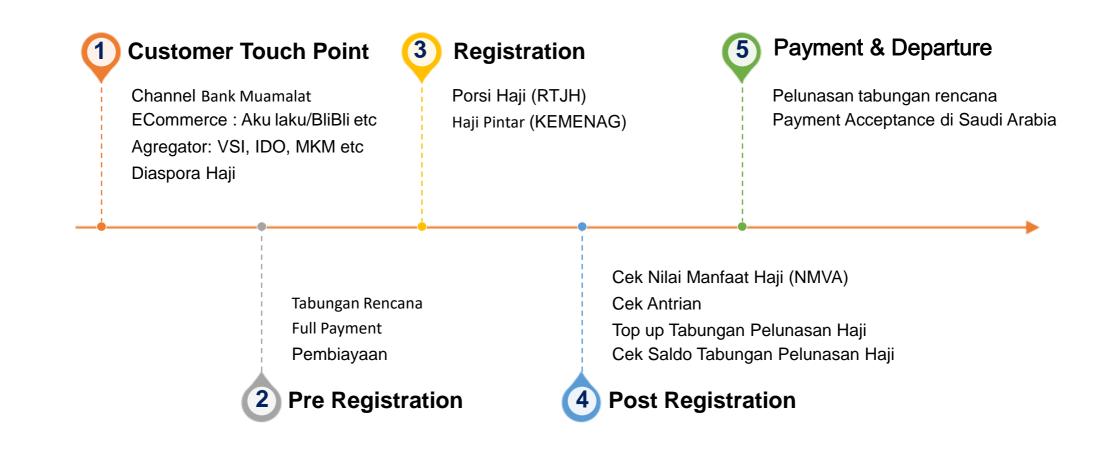




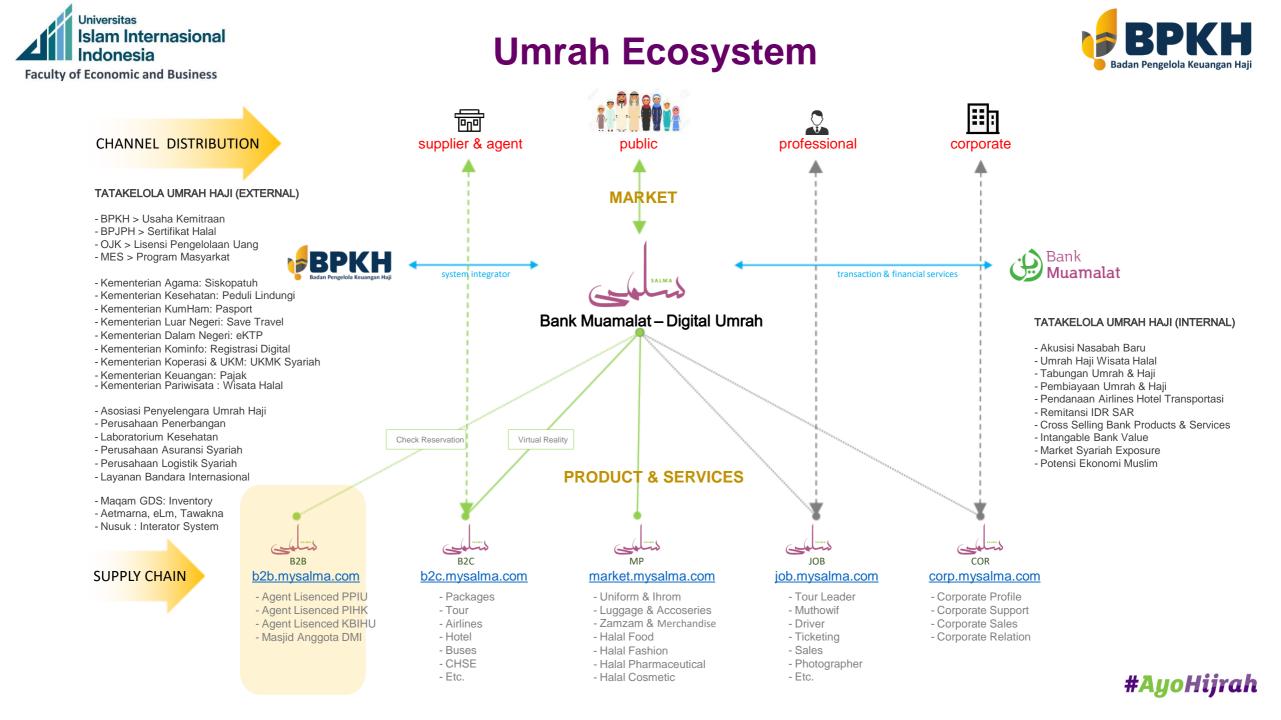


Hajj Ecosystem





#AyoHijrah





Transactions and Technology Services



Supply Side

Public Utility Payment Biller 1. Electricity provider, Telecommunication Provider,

PDAM, BPJS, eMoney/eWallet, Internet Provider, Education, Residential, Gas/Energy, Games

2. Collecting Agent Merchant

EDC based banking transaction, eMoney, Merchant Transaction, Remittance, Virtual Account

3. Insurance and Takaful On-boarding, policy payment

4. Investment

Commercial Crowd-funding, Productive Wagf, Pension Fund

5. Social Fund

Zakat, Infaq, Sadaqah, Waqf, Bansos, Social Crowd-funding, Disaster Relief

6. Hajj & Umrah Registration, Acquitance, Transaction History, NMVA

Bank Muamalat Pertama Murni Syariah **Switching Provider Technology Services**

Demand Side

1. Public Utility Payment Reseller

Company with vast number of multilevel network agent providing public utility payment services

2. Direct Agent

Individual or shop owner providing basic financial services for public utility payment and banking services (Fund Transfer, Balance Inquiry, Cash Withdrawal, eMoney, TopUp), Ajak Teman, Pension Fund

3. Community

Legal entity (Koperasi Umum, Koperasi Perusahaan, Kelompok Tani, Company, School, Islamic Boarding School, etc.) with minimum 100 active member, Ajak Teman

4. Strategic Partnership

PT POS, Pegadaian, Indomaret, Government etc.

Middleware **Payment Gateway** Licenses and Services Cash Recycling Machine(CRM), SmartTeller, EDC Android and **Classic, Other Payment Devices**

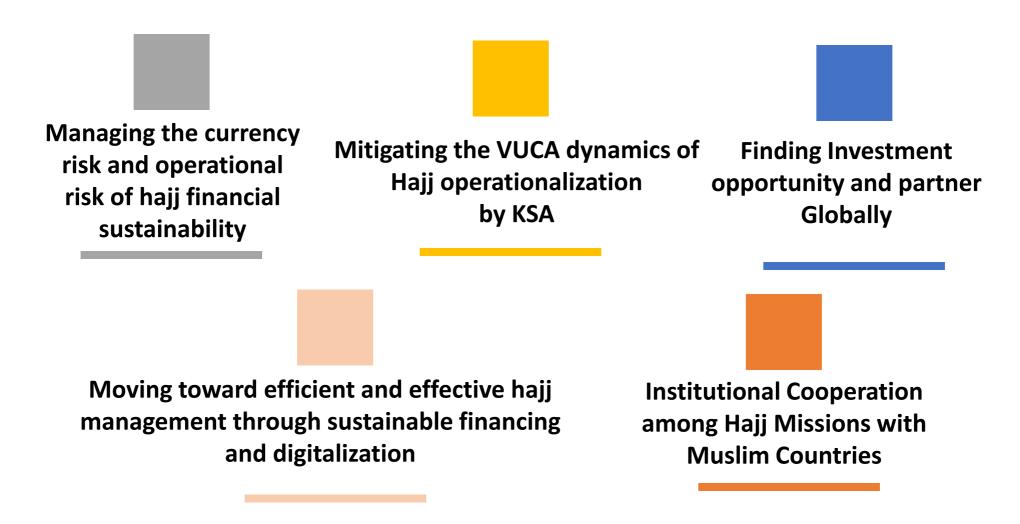
Payment and **Collection Systems** Development

#AyoHijrah



Challenges and Future of BPKH







Some examples of AI and ML Use Cases



Introduction to AI and ML

Artificial Intelligence (AI): the ability of computers or machines to perform tasks that require human intelligence, such as voice or image recognition, natural language understanding, problemsolving, and decisionmaking.

Machine Learning (ML): a subdomain of AI that teaches computers or machines to learn from data and make decisions based on patterns and trends.



Smart Booking and Recommendations: AI and ML can be employed to personalize travel packages, accommodation, and activity recommendations for hajj pilgrims.



Digital Wallets and Payment Solutions: Developing AI-powered digital wallet solutions for hajj pilgrims can streamline payment processes, making transactions more convenient and secure.



Predictive Maintenance for Transportation: Implement predictive maintenance for transportation services like buses, trains, and airlines to ensure reliability and minimize downtime.



Language Translation and Communication Services: Offering Aldriven language translation services for hajj pilgrims can enhance their communication experience.



Financial Forecasting and Investment Analysis: AI and ML can be used to provide advanced financial forecasting and investment analysis services.



Benefits of Digitalization, AI, and ML in Fund Management and Capital Markets





Efficiency and Accuracy: Digitalization and AI can significantly enhance the efficiency and accuracy of fund management.

By automating routine administrative processes, data analysis, and reporting, BPKH can operate more smoothly and make decisions based on accurate, up-todate information. This leads to more streamlined operations and a reduction in human errors, ultimately improving the overall quality of fund management.



Improved Risk Assessment: Al's real-time risk assessment capabilities are a game-changer for BPKH. With the ability to monitor and assess risks continuously, BPKH can identify potential issues early,

respond proactively, and make well-informed decisions. This realtime risk assessment can help safeguard the fund's investments and reduce the likelihood of significant losses..



Portfolio Diversification: Al algorithms can analyze a vast amount of data to identify diverse investment opportunities across different asset classes and geographical regions. This diversification not only helps in mitigating risks but also ensures that the fund's portfolio remains well-balanced, even in volatile market conditions.



Real-Time Data Analysis: Real-time data analysis is crucial in capital markets where decisions need to be made swiftly. AI can process and analyze vast datasets in real-time, allowing BPKH to make timely investment decisions based on the latest market information. This agility in decision-making can lead to more profitable outcomes.



Prospects for AI and ML in Investment Decisions: BPKH's interest in using AI and ML for investment decisions is promising. These technologies can provide valuable insights into Islamic Wealth Management and Sharia fintech, especially in risk assessment and market prediction. BPKH can harness AI's predictive abilities to make data-driven investment decisions aligned with Islamic finance principles.

Some of these benefits and investment potential are assumptions, they still need to be validated.

By leveraging digitalization, AI, and ML in fund management and capital markets, BPKH stands to gain in terms of operational efficiency, risk management, portfolio diversification, real-time decisionmaking, and the potential for data-driven investment strategies. These benefits have the potential to transform how BPKH manages its funds and navigates the complex world of Islamic finance.







Data Limitations: One of the key challenges in adopting AI is the quality and availability of data. While AI thrives on data, its effectiveness is highly dependent on the quality, volume, and relevance of the data it processes. Inaccurate, incomplete, or biased data can lead to erroneous predictions and decision-making. Therefore, BPKH must address data limitations by ensuring data accuracy, completeness, and relevance. Additionally, managing sensitive financial data and maintaining data privacy and security are essential considerations



Data Security: Risks related to data leaks or misuse of hajj pilgrims' personal information: With the use of AI, there's a heightened responsibility to ensure the security of sensitive data, including personal information of hajj pilgrims. The risks of data breaches or misuse can have severe consequences, both in terms of reputation and regulatory compliance. BPKH must implement robust data security measures, encryption, and access controls to protect this sensitive data. Ensuring strict compliance with data privacy regulations and regularly auditing data security practices is essential to maintain trust and safeguard personal information.



Algorithm Biases: AI algorithms can unintentionally inherit biases present in the data they are trained on. This can result in unfair or discriminatory outcomes. For BPKH, this means that investment decisions made by AI systems may inadvertently reflect biases. To mitigate algorithm biases, BPKH should implement strategies such as diverse and unbiased training data, algorithm transparency, and regular audits of AI systems to ensure fairness and ethical use of AI in investment decisions.



Ethical Concerns: Ethical considerations are a critical component of adopting AI. In the context of financial decision-making, ethical concerns may arise related to transparency, accountability, and the potential consequences of AI-driven decisions. BPKH should prioritize ethical use of AI and ML, taking steps to ensure that the technology aligns with ethical guidelines, principles, and regulatory standards. Ethical decision-making in AI adoption is essential to maintain trust among stakeholders and in the Islamic finance industry.

Navigating these technological risks and constraints, including data security concerns, is imperative for BPKH as it integrates AI into its investment decision-making processes. By addressing these challenges, BPKH can harness the benefits of AI while minimizing potential pitfalls and ensuring that the technology aligns with its values, regulatory requirements, and data privacy standards.



Key Considerations for AI and ML Integration















Accurate Data Collection: We must ensure that the data collected is accurate and of high quality. Quality data is a critical foundation for the development of effective Al and ML solutions. Privacy and Security Policies: It is crucial to establish robust privacy policies and security measures to safeguard hajj pilgrims' personal data. This ensures trust and maintains a positive reputation. Adoption of New Business Models: We need to be willing to adopt new business models that align with AI and ML technology. For example, transitioning from direct sales to subscription-based or data-driven services. Continuous Innovation: Investing in ongoing research and development in AI and ML is crucial. Continuous innovation will ensure sustainability and long-term competitiveness Regulatory Compliance: Understanding and adhering to regulations related to data privacy and the use of AI and ML technology is paramount. Entities should cooperate with regulatory authorities to ensure compliance. Collaboration and Partnerships: We within the ecosystem need to collaborate and form partnerships with technology players experienced in AI and ML. This can facilitate access to relevant technology and more efficient solution development.





BPKH Badan Pengelola Keuangan Haj



Emphasizing Proactive Adoption of Technology: To stay competitive and efficient in Islamic finance, BPKH should take the lead in integrating digitalization, AI, and ML into its fund management processes. Being proactive in embracing these technologies ensures that BPKH remains at the forefront of innovation in the industry.



Considering Emerging Trends: The significance of considering and adapting to emerging trends in technology and finance. BPKH should remain vigilant in monitoring and incorporating new developments and best practices in digitalization, AI, and ML to maintain its competitive edge.



BPKH's Role in Advancing Islamic Finance: BPKH's vital role in advancing the Islamic finance sector through the thoughtful integration of technology. As a prominent Islamic institutional investor, BPKH can set an example for the industry, fostering trust, innovation, and responsible technology adoption. BPKH's actions can contribute to the broader success of Islamic finance in the global market.



THANK YOU

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Teşekkür ederim