



Enhancing Digital Transformation: A Comprehensive Review of PT Hutama Karya's Information Technology Management in 2023

Martin Hutagalung¹, Eri Dwi Wibawa²

¹ Master of Business Administration, School of Business and Management, Institut Teknologi Bandung, Jl. Ganesha No. 10, Bandung 40132, Indonesia

² PT. Hutama Karya (Persero) HK Tower, MT Haryono St No. Kav. 8, East Jakarta City, Jakarta 13340, Indonesia

ABSTRACT: This paper provides an in-depth analysis of PT Hutama Karya's Information Technology (IT) Management Report for the year 2023. The study focuses on the company's strategic initiatives and achievements in aligning IT functions with its business objectives, particularly in the context of Industry 4.0 readiness. Key areas examined include the evolution of IT architecture, implementation of IT governance frameworks, cybersecurity enhancements, ERP integration, and the development of supporting applications. The findings highlight the significant progress made in digital transformation and the proactive steps taken to ensure the company's IT infrastructure supports its strategic goals.

KEYWORDS: Cybersecurity, Digital Transformation, IT Management, Industry 4.0, IT Architecture, IT Governance, ERP Integration, Supporting Applications.

INTRODUCTION

In the digital era, organizations recognize the need for robust IT frameworks to drive business success and maintain a competitive edge. PT Hutama Karya, a prominent Indonesian state-owned enterprise, has committed to this digital transformation through its IT Master Plan (MPTI) for 2021-2025. This plan serves as a blueprint for using IT to support strategic goals, improve operational efficiency, and ensure regulatory compliance.

The 2023 IT Management Report of PT Hutama Karya highlights the company's progress in implementing its IT Master Plan. The report demonstrates the company's commitment to Good Corporate Governance and its proactive approach to adapting to the evolving business and regulatory environment. It outlines the IT division's performance, initiatives, and outcomes, emphasizing the alignment of IT functions with the company's overall strategies.

The 2023 report focuses on the evolution of IT architecture, the implementation of industry-standard governance frameworks, advancements in cybersecurity, and the integration of ERP systems. Additionally, the report emphasizes the company's readiness for Industry 4.0 through the INDI 4.0 assessment, which evaluates the maturity of digital capabilities necessary for success in the era of technological convergence and automation.

The IT Master Plan positions IT as a strategic driver of business value, not just a support function. The company's approach aims to leverage innovative technologies like AI, IoT, and Big Data analytics to enhance operational capabilities and decision-making, ultimately driving business growth and efficiency.

PT Hutama Karya's focus on improving IT governance and security demonstrates its commitment to protecting information assets and enhancing resilience against cyber threats. The company's successful certification and surveillance of ISO 27001:2013, as well as the adoption of Zero Trust Network Access (ZTNA), reflect its proactive approach to cybersecurity.

The integration of ERP systems across the organization has streamlined financial reporting and operations, reflecting the company's commitment to a unified and efficient business environment. Additionally, the development of supporting applications, both ERP and non-ERP, demonstrates a comprehensive approach to addressing diverse business needs, facilitating smoother and more efficient operations.

This journal article analyzes PT Hutama Karya's IT management efforts in 2023, highlighting key achievements, challenges, and future directions. The paper examines the strategic importance of IT in driving organizational transformation and the proactive measures taken by the company to leverage technology for sustained business success.



RESEARCH METHODS

This study employs a mixed-method approach, incorporating both qualitative and quantitative elements, based on data obtained from the 2023 Information Technology Management Report of PT Hutama Karya. The research methodology is designed to provide a comprehensive overview of the implementation and evaluation of information technology initiatives at PT Hutama Karya during the year 2023. The study encompasses the following key steps:

DATA COLLECTION

The data for this research was collected through several primary sources:

1. The documentation provides information gathered from the 2023 Information Technology Management Report of PT Hutama Karya. This report contains detailed information regarding the achievements, evaluations, and initiatives undertaken by the company's information technology division throughout the year 2023.
2. INDI 4.0 assessment conducted by the Center for Standardization and Industrial Service of Materials and Technical Goods (B4T), Ministry of Industry of the Republic of Indonesia.
3. COBIT 2019-based IT governance maturity level assessment carried out by independent consultants and the company's internal team.
4. Surveillance ISO 27001:2013 from the internal and external audits conducted by PT BSI Group Indonesia, including the penetration testing report and other audit activities.

DATA ANALYSIS

Data analysis is carried out in the following stages:

1. Qualitative Description and Evaluation: A qualitative description is carried out on the implementation process of information technology initiatives, including INDI 4.0 assessment, IT governance implementation based on COBIT 2019, and ISO 27001:2013 surveillance. Each initiative is analysed in depth to evaluate its implementation, obstacles faced, and results achieved.
2. Quantitative Analysis: Quantitative analysis is conducted by calculating and comparing INDI 4.0 assessment scores from 2022 and 2023 as well as IT Maturity Assessment scores from 2021 and 2023. Graphs and tables are used to visualize such quantitative data.
3. Combination of Qualitative and Quantitative Methods: This method is used to gain a more comprehensive understanding of the results achieved and the factors that affect the success or failure of information technology initiatives at PT Hutama Karya.

DEVELOPMENT OF NON-ERP SUPPORTING APPLICATIONS

The development of non-ERP supporting applications is analyzed through the evaluation of various applications developed in 2023. Each application is analyzed based on functionality, development status, and impact on company operations.

PERSONNEL COMPETENCY IMPROVEMENT

The analysis of personnel competency improvement was carried out through the evaluation of various training courses attended by PT Hutama Karya IT personnel. The training data was analyzed to understand the extent to which the training has helped improve the capabilities of personnel in supporting the implementation of information technology.

DATA VALIDATION

To ensure the accuracy and validity of the data, several validation steps are carried out:

1. Cross-Check: Cross-check data obtained from the company's official report with external assessment data and independent audits.
2. Triangulation: Using triangulation of data from multiple sources to ensure consistency of information.
3. Expert Consultation: Involves consulting with IT and risk management experts to confirm findings and interpret data.

RESULT & DISCUSSION

This section discusses the results of the implementation and evaluation of various information technology initiatives at PT Hutama Karya during the year 2023. These results include the INDI 4.0 assessment, the implementation of IT governance based on COBIT



2019, the surveillance of ISO 27001:2013, the development of non-ERP supporting applications, and the enhancement of personnel competencies.

A. INDI 4.0 Assessment

In 2023, PT Hutama Karya carried out an INDI 4.0 assessment conducted by the Center for Standardization and Services of the Materials and Technical Goods Industry (B4T), Ministry of Industry of the Republic of Indonesia. This assessment aims to measure the company's readiness to face Industry 4.0.

Table 1. INDI 4.0 Assessment Score

Years	INDI 4.0 Assessment Score	Description
2022	2.88	-
2023	3.75	Temporary score

The assessment results indicate a significant increase from a score of 2.88 in 2022 to 3.75 in 2023. This improvement was achieved through a series of improvement activities, such as INDI 4.0 workshops and technical guidance, workshops for transformation engineers and supporting departments, as well as focus group discussions. This score increase demonstrates that PT Hutama Karya is becoming increasingly prepared to face the challenges of Industry 4.0.

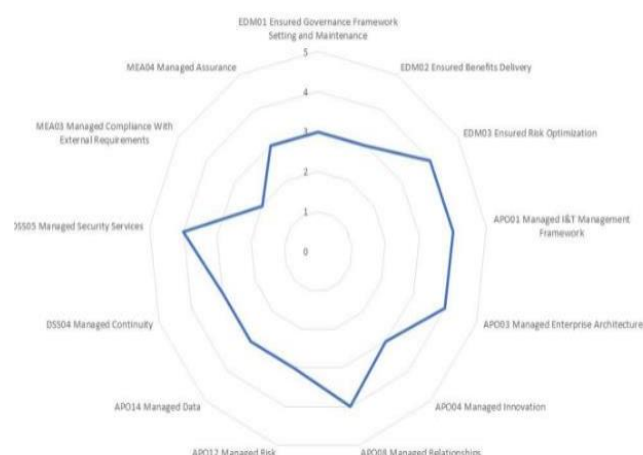
B. Implementation of COBIT 2019 Governance

PT Hutama Karya has implemented the COBIT 2019 framework to enhance its IT governance. In 2021, the company achieved a score of 3.31 from the IT Maturity Assessment. After conducting testing and tailoring the governance, this score has increased to 3.50 in 2023.

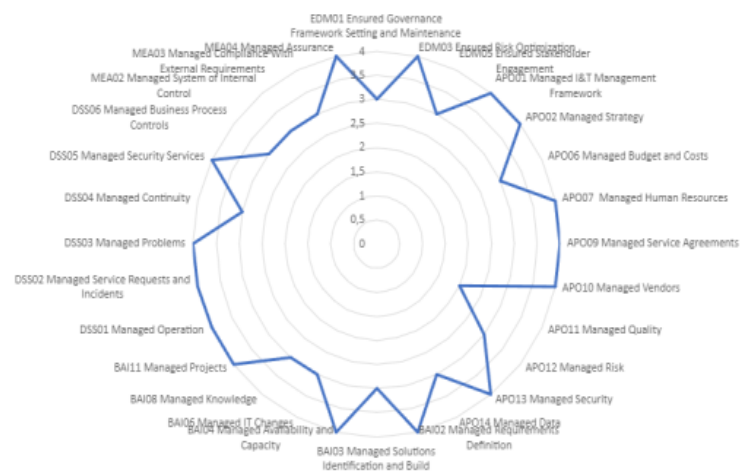
Table 2. IT Maturity Assessment COBIT 2019 score

Years	IT Maturity Assessment COBIT 2019 score
2021	3.31
2023	3.50

Picture 1. COBIT 2019 Spider Web in 2021 and 2023
COBIT 2019 – Year 2021



COBIT 2019 – Year 2023



The increase in the score indicates that PT Hutama Karya has successfully improved the maturity of its IT governance in accordance with the standards set by the Ministry of State-Owned Enterprises. This implementation covers 28 processes that were identified and evaluated by an independent consultant. The implementation of COBIT 2019 at PT Hutama Karya shows success in improving



IT governance, managing risk, and aligning IT initiatives with the company's business goals. The increase in the IT Maturity Assessment score from 3.31 to 3.50 indicates that the company is on the right track in achieving effective IT governance. The steps taken, including self-tailoring governance and audits by independent consultants, assist the company in identifying areas of improvement and implementing appropriate solutions.

C. Surveillance ISO 27001:2013

To enhance information security, PT Hutama Karya conducts surveillance and expands the scope of ISO 27001:2013. These activities include penetration testing, internal audits, and external audits by PT BSI Group Indonesia. The surveillance results indicate that PT Hutama Karya has successfully maintained its ISO 27001:2013 certification, which affirms the company's commitment to high information security standards. In 2023, PT Hutama Karya will also expand the scope of ISO 27001:2013 certification to cover more operational areas, including Data Center and Network Services at HK Tower, as well as risk management and access toll roads in Tanjung Priok. This expansion demonstrates the company's commitment to protecting critical information across various aspects of its operations.

Picture 2. ISO 27001:2013 Certificate Year 2023



D. Non-ERP Supporting Application Development

The development of non-ERP supporting applications is carried out to support various business activities of the company. Here is a list of new apps developed in 2023:

Table 3. Non-ERP Supporting Application Development

<i>Program</i>	<i>Result</i>
Human Capital Information System	Done
Customer Relationship Management	Done
Monitoring AKHLAK	Process



The development of this application covers various aspects of the company's operations, such as human resource management, customer relations, and monitoring of company values.

E. Personnel Competency Improvement

PT Hutama Karya provides various trainings to its personnel to support the effective implementation of information technology. Here are some of the trainings conducted:

Table 4. Personnel Competency Training

<i>Training</i>	<i>Certification</i>
ERP SAP	SAP ERP Certification
COBIT 2019 Foundation	COBIT 2019 Foundation Certification
ITIL V4 IT Service Management	ITIL V4 IT Service Management Certification
Certified Business Analytics Professional	CBAP Certification
CompTIA Network+	CompTIA Network+ Certification

This training aims to improve personnel capabilities in supporting the company's digital transformation. The results of the training showed a significant increase in competence in various fields of information technology.

CONCLUSION

During 2023, PT Hutama Karya has achieved various important achievements in the development of information technology. The results of the INDI 4.0 assessment showed a significant increase from 2.88 to 3.75, and the IT Maturity Assessment based on COBIT 2019 increased from 3.31 to 3.50. The development of non-ERP supporting applications and the improvement of personnel competencies through various training courses also contributed to this achievement. For 2024, the company will focus on fulfilling the recommendations of the assessment results, improving project management, and implementing better cybersecurity management.

REFERENCES

- Hutama Karya (Persero), PT. (2024). Laporan Manajemen Teknologi Informasi Tahun 2023. Jakarta: PT Hutama Karya (Persero).
- Kementerian Perindustrian Republik Indonesia. (2023). Asesmen INDI 4.0. Jakarta: Kementerian Perindustrian RI.
- BSI Group Indonesia, PT. (2023). Audit Surveillance ISO 27001:2013. Jakarta: PT BSI Group Indonesia.
- ISACA. (2019). COBIT 2019 Framework: Introduction and Methodology. Rolling Meadows, IL: ISACA.
- International Organization for Standardization. (2013). ISO/IEC 27001:2013 Information technology - Security techniques - Information security management systems - Requirements. Geneva: ISO.
- Sucofindo, PT. (2022). Asesmen INDI 4.0 Tahun 2022. Jakarta: PT. Sucofindo.
- Minister of State-Owned Enterprises of the Republic of Indonesia. (2023). Regulation No. PER-2/MBU/03/2023 on State-Owned Enterprises Governance. Jakarta: Kementerian BUMN.
- Gartner, Inc. (2022). Top Strategic Technology Trends for 2023. Stamford, CT: Gartner, Inc.
- IBM Corporation. (2023). IBM Security: Cybersecurity Threat Intelligence Index. Armonk, NY: IBM Corporation.
- SAP SE. (2022). SAP Business Planning and Consolidation (BPC): Implementation Guide. Walldorf, Germany: SAP SE.

Cite this Article: Martin Hutagalung, Eri Dwi Wibawa (2024). Enhancing Digital Transformation: A Comprehensive Review of PT Hutama Karya's Information Technology Management in 2023. International Journal of Current Science Research and Review, 7(6), 3898-3902