

GAP ANALYSIS IN IT HUMAN RESOURCES STRATEGIC PLANNING: ADAPTATION OF SKILLS WITH UNIVERSITY TECHNOLOGY NEEDS

Muhammad Yusuf Sulfarano Barusman ¹,

Tina Miniawati Barusman ²,

Veronika Saptarini ³

Ayu Kartika Puspa ⁴

¹ Doctor Management , University of Bandar Lampung, Lampung, Indonesia

² Master of Management , University of Bandar Lampung, Lampung, Indonesia

³ Master of Management , Bandar Lampung University, Lampung, Indonesia

⁴ Systems Information , University of Bandar Lampung, Lampung, Indonesia

ABSTRACT

Digital transformation at universities requires competent and skilled Information Technology (IT) human resource (HR) management. This study aims to identify existing skills gaps within the university's IT team through Gap Analysis and plan the necessary development steps to align skills with future technological needs. This approach involves analyzing the skills of existing IT HR, determining the skills needed to support the university's strategic objectives, and developing a development plan to close these gaps. The study found that the university's IT team currently possesses basic skills in IT infrastructure and application management, but there are significant gaps in skills related to cloud computing, advanced cybersecurity, big data analytics, and artificial intelligence. Based on these findings, a development plan was formulated, including intensive training, certification, and recruitment of experts to support the university's digital transformation. This study provides insight into the importance of sustainable IT HR strategic planning to ensure the university's readiness to face future technological demands.

Keywords: Gap Analysis, Planning Strategic , IT HR, Digital Transformation , Skills Technology

Introduction

The rapid development of information technology (IT) is forcing many sectors, including higher education, to adopt advanced technologies to improve operational efficiency and quality. In universities, IT is used not only to support administration but also to become an integral part of teaching, research, and management. Therefore, IT human resources (HR) in universities must possess skills aligned with evolving technological needs. Strategic IT HR planning is crucial for universities to face the challenges of rapid digital transformation.

However , many universities face problem gap skills in their IT team , where the skills possessed by current IT HR do not fully meet the demands of new technology needed to support

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* Corresponding Author

Email address: ayu@ubl.ac.id

the University's vision and mission . One effective way to identify and address this gap is through gap analysis. Gap analysis is a method used to compare the skills possessed by IT human resources with the skills needed to support a university's strategic goals (Patel, 2021; Ng & Siow, 2020). By using gap analysis, universities can plan appropriate development steps to improve the competency of their IT human resources in line with technological developments (Tushman & O'Reilly, 2020).

Literature Review

1. Management IT HR Strategy .

Strategic management in the context of IT HR focuses on long-term planning to manage IT skills in line with the university's goals. This includes mapping IT skills needs to support the university's evolving strategic objectives (Bohorquez & Esteves, 2020). Consequently, IT human resource management should be viewed as an integral part of a university's strategy to address technological change and the demands of the educational market (Alavi et al., 2021).

2. Gap Analysis in IT HR

Gap analysis in IT HR planning aims to identify the gap between existing skills and required skills. This process is crucial to ensuring IT HR has skills that align with technological developments and university needs (Cummings & Worley, 2018). Gap analysis also helps universities plan training or recruitment to fill existing skills gaps, supporting their strategic goals in technology and digitalization (Lee, 2020).

3. IT Skills Needed at University

In the context of higher education, the IT skills required in universities are evolving. Many universities rely on advanced technologies to support teaching, research, and data management. Patel (2021) and Hariri (2021) state that required skills include cloud-based infrastructure management, big data analytics, artificial intelligence (AI), and cybersecurity. With universities' increasing reliance on technology, managing and utilizing big data and artificial intelligence has become crucial (Patel, 2021; Nguyen et al., 2020).

Methodology

This study uses a gap analysis approach to evaluate IT human resource skills gaps at universities. The methodology used includes:

1. Survey and Interview : Collecting data through surveys and interviews with IT team to assess skills possessed by current IT HR .

2. **Determination of Required Skills:** Based on the university's strategic plan and evolving technology trends, the skills needed in the future are identified.
3. **Preparation of Development Plan:** Based on the results of the Gap Analysis, an IT HR development plan is prepared to close the existing skills gap.

The following table show the approach used in Gap Analysis:

Table 1. Steps of Gap analysis

Step	Description
Step 1: Identification Existing IT HR Skills	Surveys and interviews with member IT team for known existing skills .
Step 2: Determination Required Skills	Identifying required skills based on plan university technology .
Step 3: Identify the Gap	Analyze difference between existing and required skills
Step 4: Compilation Plan Development	Plan training and development skills For close the existing gap .

Results and Discussion

1. Analysis Existing IT HR Skills

The survey results showed that most university IT teams possess basic network and hardware management skills, but limited skills in cloud computing, advanced cybersecurity, and big data analytics. While some IT team members have experience managing cloud-based applications, they lack sufficient expertise in managing the more complex cloud infrastructure required to support university development.

2. Required Skills for the future

In planning term length of university , skills required includes :

1. **Cloud Computing** : Managing cloud infrastructure for store data and support application cloud -based (Lee, 2021).
2. **Advanced Cyber Security** : Protecting university data and systems from increasing cyber threats complex (Zhang et al., 2021).

3. **Big Data Analytics** : Big data management and analysis that can support data-driven research and teaching (Tushman & O'Reilly, 2020).
4. **Intelligence Artificial Intelligence (AI)** : Application of AI in management education and systems learning based technology (Ng & Siow, 2020).

3. Identification

The gap analysis revealed a significant gap between the skills of the current IT team and those needed to support new technologies at the university. Cybersecurity and cloud computing are the areas most in need of attention. The current IT team lacks the skills to manage cloud technology or protect cloud-based data and applications.

4. Plan Development

Based on gap analysis findings , steps following recommended :

1. Training and Certification: IT teams will receive training on cloud computing, big data analytics, and cybersecurity. Certification from cloud providers like AWS or Google Cloud is also recommended (Nguyen et al., 2020).
2. Expert Recruitment: To address the skills shortage in AI and big data, universities can recruit experts in these fields or collaborate with industry partners (Lee, 2021).
3. Improvement of Managerial Skills: In addition to technical skills, development of managerial skills and team coordination is essential to ensure effective technology implementation (Cummings & Worley, 2018).

Discussion

The gap analysis shows that to support the university's vision of technology development and research, IT human resources must enhance their skills in cloud computing, big data, and cybersecurity. Therefore, continuous development of these skills is essential to ensure the university's readiness to face future technological challenges.

Conclusion

This research demonstrates that gap analysis is an effective tool for strategic IT human resource planning at universities. The analysis reveals significant skills gaps, particularly in cloud computing, cybersecurity, and big data analytics. Therefore, universities need to implement intensive training and recruit experts to close these gaps. With the right development plans, universities can ensure their IT teams are ready to support ongoing digital transformation, which in turn will improve the quality of education and research.

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