

Use of Technology in Human Resource Management in the Industrial Era 4.0

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Abstract

The Industrial Era 4.0 has brought disruptive technological innovation, crossing physical and digital boundaries completely, and changing the way people carry out daily life activities and at work. Technological breakthroughs create opportunities for economic, social and individual growth, but artificial intelligence (AI) will take over human jobs. Human resource development readiness is important to overcome every obstacle in the 4.0 era. The aim of this research is to describe human resource development strategies that face challenges in the industrial era 4.0. The type of research method is descriptive analysis. The results show that a successful HRD strategy involves more than education, coaching, training, institutions, opportunities and rewards. Human resource management must increase creativity, change a fixed mindset into a growth mindset, adapt to science and technology and make changes, create superior human resources and adapt to the influence of the new era entering the social era. 5.0.

Keywords: Era, industry 4.0, HR, society 5.0, AI.

INTRODUCTION

In the industrial era 4.0, companies have used technology that is integral to everyday life and in their work. The rapid use of technology also has an impact on almost all aspects of the business world. Technology makes work easier, can increase human productivity, and provide new opportunities for businesses to develop faster. Companies (organizations) that can respond to every change that occurs and obtain the benefits will have a more competitive advantage (Shaddiq et al., 2024).

The industrial era 4.0 is the latest development in the industrial sector, where the use of relevant information technology tools is closely monitored and synchronized between the real world and the virtual world. Using advanced information, connected devices will be able to operate effectively and efficiently. The Industrial Era 4.0 is a creative era where digital technology is able to do everything, continues to develop, and continues to be updated. Nowadays, sophisticated and automatic digital technology has emerged to accompany human

life, such as AI, robots, the Internet which can make every human work activity easier (Yolanda et al., 2023).

In the industrial era 4.0, every human resource needs to increase its capabilities by carrying out various training in the use of big data, the Internet, robotics and artificial intelligence. It is important to understand the skills improvement plan so that Human Resources can adapt to industry needs. So that the company goals that have been set can be realized well and effective (Surti et al., 2022).

Every employee must be able to adapt to the industrial revolution model 4.0 which uses Human Resources priorities to increase the ability to adapt to future challenges. With the ability to adapt and think well, flexibility, Human Resources can take advantage of various available technologies such as the Internet, robotics or Artificial Intelligence which is emerging in recent times (Haryono, 2020).

Technological changes can change the way people think, work and communicate, so Human Resources Management needs to ensure that these changes do not have an impact on employee work productivity. The role of HR management in managing human resources in the industrial era 4.0, the challenges that employees must face regarding technology, and the strategies used in recruiting and retaining human resources in the face of technological change. So that companies can improve the performance of their employees and increase their competitive advantage in the market (Shaddiq, 2023).

In the world of work, to face the industrial era 4.0, human resource management needs to improve their skills and abilities so they can adapt to current conditions. HR must improve its ability to excel in the industrial era 4.0, it is necessary to pay attention to the following things:

1. Digital competency improves digital capabilities
Management is expected to make efforts to provide employee training and skills activities to develop digital capabilities.
2. Carry out digital capacity development
The use of digital implementation marks the success of an organization in implementing technology.
3. Increase human values
HRD can develop empathy and compassion to be able to interact/communicate with any social group.

In the industrial era 4.0, it requires three levels of employee ability that must be improved, namely:

1. Interpersonal communication skills
Interpersonal communication skills are communication between one employee and another, either in writing or orally to obtain the desired information in common.
2. Intrinsic abilities
Intrinsic abilities include employee awareness of environmental problems and employee knowledge in taking policy steps or decisions.
3. Improve skills
Improve and expand employees' skills, knowledge and abilities so they can complete their work and tasks.

Facing the challenges of the industrial era 4.0, the use of technology in human resource management is not only limited to implementing training programs, but also requires effective and targeted strategies. In responding to obstacles or obstacles in the industrial era 4.0, a comprehensive, thorough and comprehensive assessment of company strategy is very important to develop human resources who are creative, innovative and have high resources in accordance with technological developments, so that they can respond to it.

RESEARCH METHODS

This research adheres to the type of library research or literature review, namely a series of studies or reviews related to literature that explore research subjects through library sources, including journals, articles, encyclopedias, magazines, newspapers and books. A literature review contains a conceptual framework or theoretical basis that serves as a guide when conducting research.

This research formulates the use of technology in HR management in the industrial era 4.0. The aim of this research is to obtain valid and reliable data information regarding the use of technology in human resource management. Library technology is a method for collecting information or data from various sources or materials in the library that are related to research.

RESULTS AND DISCUSSION

The concept of human resources includes various benefits, functions and uses. Organizations have the right people for various assigned roles, with their knowledge and experience to support the goals of an organization. Human Resources has a very important function in running any organization because it is responsible for managing employees who are the most important asset of the organization. HR is responsible for recruiting new employees, as well as assessing performance and developing the required employees. HR management has the responsibility to adopt policies and procedures that regulate the behavior of its employees.

The industrial era 4.0 is the latest development in the industrial sector, which uses relevant information technology devices that are closely monitored and synchronized between the real world and the virtual world. Using advanced information, connected devices will be able to operate effectively and efficiently.

The Industrial Era 4.0 is a creative era where digital technology is able to do everything, continues to develop, and continues to be updated. Nowadays, sophisticated and automatic digital technology has emerged to accompany human life, such as AI, robots, the Internet which can make every human work activity easier.

The industrial era 4.0 creates many opportunities for human resources to learn new skills that AI cannot do, explore hidden talents, and develop new generations who have skills or expertise in various fields in the company. The aim of the Industrial Revolution 4.0 is to make human activities easier which provides interesting opportunities, of course there are also obstacles that must be overcome. The challenge that must be faced in the industry 4.0 era in Indonesia is the lack of knowledge of Indonesian people to improve digital technology. If this technology develops too quickly, it will have a negative effect on all company

activities and government systems throughout the world if it is not managed properly good.

The use of technology in human resource management has its own obstacles or challenges in dealing with it. These obstacles or challenges include:

1. Business operations will experience many setbacks so that previously competent employees will become inactive.
2. Modify the organizational structure by modifying, merging and rearranging the composition, quality and number of workers determined.
3. There is a level of resistance to cultural changes occurring in the company or government.

The Era of Revolution 4.0 requires humans to do various things, namely as follows:

1. Solve complex problems
2. Think critically
3. Creativity
4. Personnel management
5. Coordinate
6. Have emotional intelligence
7. Policy or decision making
8. Service orientation
9. Able to negotiate
10. Has a high level of flexibility

In addition to building various regulated products, companies can also implement strategies to increase skills (upkilling) and update skills (reskilling) through education, training and development, starting from low/medium skill levels to high skill levels. This is consistent with the findings of Lolowang et al. (2016) Skills improvement and modernization strategies include:

1. Leadership change training.

The Directorate General of State Assets (DJKN) has launched a pioneering change training program aimed at developing quality DJKN human resources. Leading change industry training materials on improving human achievement, change management training, socialization and effective communication (National Asset, 2017).

2. Seminars.

In 2018, BPPK sent a number of administrators and employee representatives to attend the University of Auckland Executive Education Business School's Online Learning and Capacity Building Seminar to learn about microlearning, namely the use of learning resources to focus on asynchronous learning. It is easy to learn and done in a short time (Tula, 2019).

3. Open classrooms.

An open classroom is an activity or forum created for communication. Open courses, namely identifying topics that suit your needs stakeholder needs, implementation time, and availability of experts depend on the topic.

4. Modern electronic learning

From 2009 to 2016, the frequency of e-learning training held by BPPK was not significant.

5. Flexible workspace

Flexible workspace (FWS) is a work model for organizational employees that uses technology optimally to increase or increase employee productivity and provide work location flexibility during certain periods.

Performance assessment is an evaluation of organizational performance and employee performance in relation to actual performance compared to previously established goals. Job evaluation is a way of assessing the entire contribution of each employee to the organization (Handoko,1994).

Technology Used by HR Management

Technologies that can be used in human resource management are as follows:

1. HRIS

HRIS (HR Information Systems) is a software that can be used to assist the professionalism of human resources in managing information such as attendance, payroll, allowances and evaluation.

2. ATS

ATS (Applicant Tracking Systems) is a software that can be used to recruit and manage employees. Applicant Tracking Systems (ATS) are applications that are based on predetermined criteria.

3. LMS

Learning Management Systems(LMS) is a software that can be used to assist in managing employee training and development. Learning Management Systems (LMS) allow human resources to provide training online.

Technologies used for employee recruitment include:

1. Application Tracking System (ATS)
2. Automated Video Interview
3. Insider Recruitment / Crowdsourcing Recruitment
4. Social Recruitment
5. Virtual Assessment Center
6. Online Assessment
- 7.

CONCLUSION

The industrial era 4.0 creates many opportunities for human resources to learn new skills that AI cannot do, explore hidden talents, and develop new generations who have skills or expertise in various fields in the company. The aim of the Industrial Revolution 4.0 is to make human activities easier which provides interesting opportunities, of course there are also obstacles that must be overcome. The challenge that must be faced in the industry 4.0 era in Indonesia is the lack of knowledge of Indonesian people to improve digital technology.

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REFERENCES

- Akmal. (2019). *Lebih Dekat dengan Industri 4.0*. Yogyakarta: Deepublish.
- Foster. Tahar. (2015). *Meledakkan Kreativitas di Lingkungan Kerja*. Bandung: Kaifa.
- Handoko. (2014). *Manajemen Personalia dan Sumber Daya Manusia*. Yogyakarta: BPFE.
- Haryono, I. S. (2020). *Anteseden dan Konsekuensi Cyberloafing pada Industri Jasa*.
- Shaddiq, S. 2023. *The Function of E-HRM in Maintaining Business Performance in the Era of Industry 4.0*.
- Shaddiq, S., Sulastini, S., & Surya, A. (2024). *Ekonomi Syariah dan Pengentasan Kemiskinan (Perspektif Syekh Muhammad Arsyad Al Banjari*.
- Surti, S., Shaddiq, S., Suhaimi, A., & Abdillah, M. H. (2022). *The Potency of the Tumih Village Farmer Community's Participation in the Agricultural Development Planning Strategy*. Gorontalo Development Review, 5(2), 141-155.
- Yolanda, S., Shaddiq, S., Faisal, H., & Kurnianti, I. (2023). *Peran Manajemen Keuangan Digital dalam Pengelolaan Keuangan pada UMKM di Banjarmasin*. Indonesian Red Crescent Humanitarian Journal, 2(1), 23-32.