TRANSFORMING HUMAN RESOURCES MANAGEMENT WITH ARTIFICIAL INTELLIGENCE : CHALLENGES AND STRATEGIES FOR SUCCESS

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ABSTRACT

In recent years, artificial intelligence (AI) and automation have been transforming various industries, and human resources (HR) is no exception. AI and automation are changing the way HR professionals manage employee recruitment, selection, onboarding, training, performance management, and more. As these technologies become more advanced, it is important for HR professionals to understand the opportunities and challenges associated with their implementation. By leveraging AI and automation in HR, organizations can improve their processes, increase efficiency, and save costs. However, there are also potential risks, including the possibility of bias and discrimination in algorithms, job loss, employee displacement, and threats to privacy and data security. In this article, we will explore the opportunities and challenges of AI and automation in HR, as well as strategies for leveraging these technologies while prioritizing employee well-being and ethical considerations in view of how AI and automation are transforming HR practices.

Keywords: Artificial intelligence, Structural equation modelling, Digitization, Agility, Human resource management, Industry 4.0

INTRODUCTION

Artificial intelligence (AI) is being rapidly incorporated into daily life and commercial processes. In 2016, Alpha-Go astonished the world by defeating the top human Go team, Isedol. The Chinese go player Kerzey, who in 2017 was widely regarded as the best in the world, was his opponent.

AlphaGo Zero was created by Google subsidiary Deep Mind as a response to AlphaGo, which had previously defeated all human opponents. In a head-to-head encounter, AlphaGo Zero, an AI computer that taught itself to play go using reinforcement learning, prevailed.

People from all walks of life were able to see the astonishing rise of AI firsthand, thanks to this landmark event. Research from the World Economic Forum published in 2016 predicted 510 million job losses from 2016 to 2020 as a result of the new technology revolution, which is mostly built of artificial intelligence and big data, making AI a key concern (World Economic Forum, 2016). The dangers of AI have been foreshadowed long before this. Frey and Osborne (2013) estimate that 47 percent of U.S. occupations are at "high danger" of being automated away within the next 10 to 20 years (Frey and Osborne, 2013).

The novel "The Rise of the Machines," written by Martin Ford, popularized dystopian depictions of a society ruled by artificial intelligence (Ford 2015). Not only do people worry about the massive loss of employment opportunities, but also about the terrifying possibility of AI computers seizing control of society and eradicating humans. It is an irrefutable conclusion that machines and AI will one day control the Planet, and several notable people, such as Stephen Hawking, Elon Musk, and Bill Gates, have gone on record in favor of this dystopian future. The study of this topic is no longer in the realm of science fiction (, 2017; 2018).

Everyone has their own unique perspective. The pessimism of many is unfounded, according to some experts, because it originates from an excessively negative view of technology. This viewpoint, held by other economists as well (Autour, 2015; 2016), counters the concern that automation will lead to a loss of jobs by pointing out that while jobs may be eliminated, the labor itself would not. The idea that robots would eventually conquer humans is controversial, even among the top AI researchers. Without free will or self-awareness, AI cannot be created at this time. At least, that's what they insist.

As for who is right about the profound impact AI and robots will have on society and the workplace that remains to be seen. Artificial intelligence's purpose is not to beat humans at go but to exceed us in domains where we currently excel or in domains we have yet to discover. Several contemporary writers detail the ways in which the advent of cutting-edge technologies has forced them to adapt to a new way of living. Personnel administration is not an outlier.

When AI and robotics begin to replace or drastically alter many existing job responsibilities, a new management approach will be required. So, the current methods of human resource management will eventually be phased out. Notwithstanding the gravity of the situation, there has been surprisingly little academic investigation into the connections between AI and HRM. This clarifies

why human resource studies departments at universities have been slow to adapt to the rapid pace of technological development. Although some literature exists, the vast majority of it does not make the case for HR to alter its current strategy. It is crucial to evaluate the impact of technological advancements like AI, big data, and robotics on the HR industry.

This technological revolution includes state-of-the-art tools including artificial intelligence (AI), the internet of things (IoT), cloud computing (3D printing), biotechnology (biotech), and gene editing (gene editing). Whatever the case may be, we'd prefer to focus on AI due to the central role it plays in integrating these many forms of technology. Hyper-connectivity is a defining feature of modern digital technology, and AI serves as the system's unifying principle. Machines and robots, for example, would be unable to perform their functions without AI analysis. The current digital revolution might be seen as an AI manifestation in this way.

This research aims to examine how recent advances in AI can open up novel opportunities for human resource management. The effects of new technology on the business and its workers will be carefully considered. The challenge is in developing a workable HR strategy to deal with the consequences of rapid technological development. As such, this paper's goal is to investigate the conceptual foundations of strategic human resource management in an effort to identify the categories of data that may be used for prognostic purposes.

Understanding Artificial Intelligence

Before determining how much of an impact AI and robots will have on an organization and its employees, it will be necessary to do a quick overview of artificial intelligence (AI) to better define what it is. Unfortunately, there is no universally accepted definition of AI; rather, there are several (, 2016: p.57). In an area where new findings are being discovered at a dizzying velocity, it's simple to understand how this problem may emerge. Yet, it is also true that it is difficult to study the effects of AI on people and companies since there is no agreed-upon definition.

Explain to me, then, what it is that we mean when we talk about artificial intelligence. There may be some disagreements, but I think we can all agree on a working definition. Artificial intelligence (AI) is a self-improving technology designed to simulate human intellect but ultimately surpass it. Although it's not an exact definition, it does capture some essential features of AI. One of the most essential characteristics of AI is that it is a highly sophisticated, preprogrammed algorithm whose main purpose is to do calculations and analyses. Nonetheless, it is now broadening its scope of use and transitioning into a more general AI, where divergent views among experts on AI's potential and approaches give rise to different understandings of the term.

Many different kinds of AI exist, as seen in the table below. First there are narrowly focused,

rational computers (weak AI), and then they advance to more general-purpose, human-like skills (strong AI). There are three main characteristics that differentiate weak AI from powerful AI. In the first place, it shares a capacity for learning with humans. Deep learning is a subfield of machine learning used to teach AI how to learn on its own, and is widely considered as the best method for training AI to date. While many remain skeptical about AI's ability to reason independently like humans and develop a conscious mind, it's evident that a number of researchers are attempting to answer this question.

[Table 1] Different Artificial Intelligence: Types and evolution

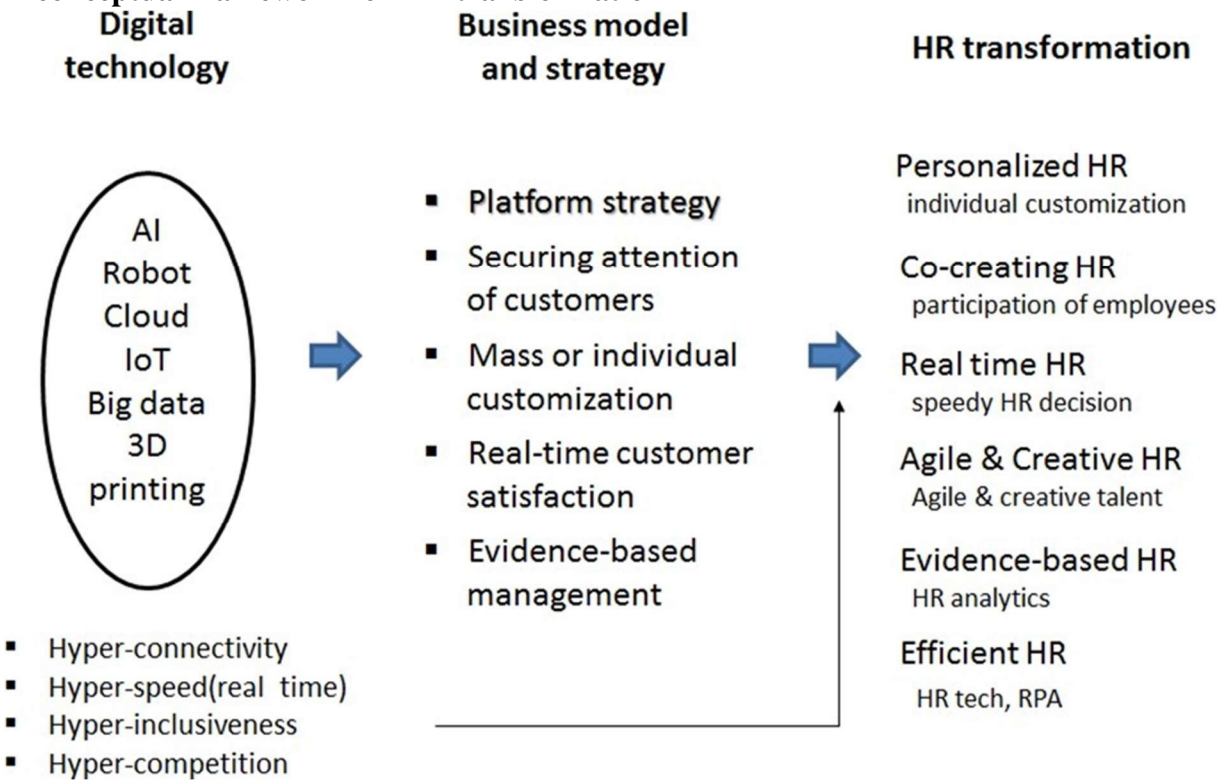
	Rational computing(weak AI)	**Similarity to human(strong AI)**
Thinking and inferring	Logic and reason (fixed algorithm) In Charniak & McDermott (1985) A.S. Winston, 1992	a cognitive process that is similar to that of a human being (the ability to learn on its own) (autonomous thinking) The Year of the Haugeland, 1985 Bellman (1978)
Acting **AI + hardware (robot, IoT)**	The use of one's rational faculties Pool et al., 1998 Reference: Nilsson (1998)	Kurzweil, R. J. 1990. Human-like behavior. By Rich Knight, 1991

Frame of understanding for Change in Human Resource Management

Business models and approaches are changing as a result of digital technology. Several of the largest and most successful companies in the IT sector have already adopted the planform strategy, and others are scrambling to find a way to get consumers' sensitive information. Not content with simply having the knowledge, they want to keep the reader engaged by appealing to their senses of taste and preference, which they do not yet possess. Companies use this data to provide individualized service and goods in near real-time. To make these judgements, they employ an AI system on the available data.Human resource management must undergo substantial adjustment to accommodate the new company model and strategic direction. It's important to treat employees like individuals and in real time, just as they do with consumers. As part of their new plan, they'll need to encourage employees to think creatively and quickly. On the other side, they should be more precise and efficient in their utilization of human resource. As a result, they need to priorities HR analytics and HT technology that makes use of robotic process automation. This

channel of transformationin IT, business strategy, and HRM is depicted in Figure 1.

A conceptual framework for HR transformation



Individually customized HRM

As I alluded to before, firms' core business models evolve from mass manufacturing to either mass or individualized production. In the same way that data banks and credit scoring may analyze individuals' credit scores, genomic medical systems may treat patients based on their unique genetic features. Mercedes-Benz has started making cars specifically for each buyer. Customer input such as favorite pastimes, restaurants, and other lifestyle factors are used to recommend a certain Mercedes model.

Businesses may use AI to improve human resource utilization on an individual basis as part of their customization initiatives. Human resource decisions in this setting must be based on individuals' present or anticipated abilities, requirements, or traits. This is the direction that promising HR practices are already heading. Japanese and Korean enterprises, such as NAVER, have abandoned traditional employee ranking systems in favor of a more fluid and individualized human resources framework. That's how learning develops, too. IBM no longer uses classroom instruction in favor of more personalized training plans.

HRM done on the real-time basis

Nowadays, rapid reactions are prized over deliberate thinking because of the ever-changing nature of the environment. Furthermore, it is crucial to provide outstanding service and stay ahead of the competition by understanding customers' demands and behaviors in real time via SNS and platform, and then advising relevant measures. YouTube, Facebook, and Amazon all use their own platforms to do this same thing. Via the IoT, other companies may instantaneously review collected data with AI and take preventative action based on that data. GE's goal with this plan is to shift its focus from engine production to maintenance solutions.

Quick thinking and action may improve human resource management. Reviews and comments are often given and received in the corporate world in near real time. Companies increasingly priorities instantaneous reactions to employee performance and utilize absolute rather than relative scales of evaluation. Adobe, IBM, General Electric, and Microsoft are just few of the well-known corporations that make use of such IT resources. For things like quick bonuses, job changes, and promotions, data may be analyzed and choices made in real time.

Evidence-based HRM

A corporation can no longer afford to rely on the gut feelings of its management or its employees, since there are just too many unknowns when making any kind of strategic choice in today's increasingly complicated business climate. More and more corporate leaders recognize the value of making decisions based on data or hard evidence (Pfeffer and Shutton, 2006). Evidence-based management is the term for this type of approach. HRM is another field where this is true; examples abound. The Google Oxygen Project is the best-known example of this (Bock, 2015). Google investigates the seemingly trivial but crucial subject of whether or not a competent leader makes a difference, and backs its findings with copious data analysis.

Companies like IBM and Hitachi use a similar evidence-based methodology. IBM's research shows emphatically that engaged workers account for a whopping 66 percent of happy customers. Hitachi presents a more intriguing scenario. It proves that productive companies are those where people are satisfied at work. To achieve this goal, Hitachi developed a wearable device that workers are required to have on their person at all times. This gadget monitors employees' bio-physiological data, some of which the workers may not even be aware of, and then analyses the data with artificial intelligence (, 2015).

Efficient HRM based on RPA

Although the future of HRM is explored, it is imperative that day-to-day HR tasks be carried out

effectively. Human resource technology can refer to a variety of different approaches involving artificial intelligence, the most common of which is known as robotic process automation (RPA). Nissay () has taken on an RPA worker, while UFJ() has gone much farther by employing a menagerie of RPAs (the "robot mansion"). Robotic process automation's (RPA) primary goal is to lessen the need for both time and manpower, freeing up workers to focus on higher-value tasks. As shown at Softbank, it is more common for robots to take over the role of the interviewer. Guests checking into the Weird Hotel () are greeted by a robot armed with artificial intelligence.

AI and business strategy

It is now more important than ever for companies to prepare for the future of their industry in light of the emergence of AI. Which business strategies does a company have access to? Exploration vs exploitation has been used to describe the genuine competitive pressure and the challenge many organizations are facing (March, 1991; Uotila, 2018; Wu, 2018). Exploration refers to the approach or objective of making the best use of current means of production. Yet, exploration is proactive in its search of future prospects, with a focus on the innovative but potentially hazardous product or service.

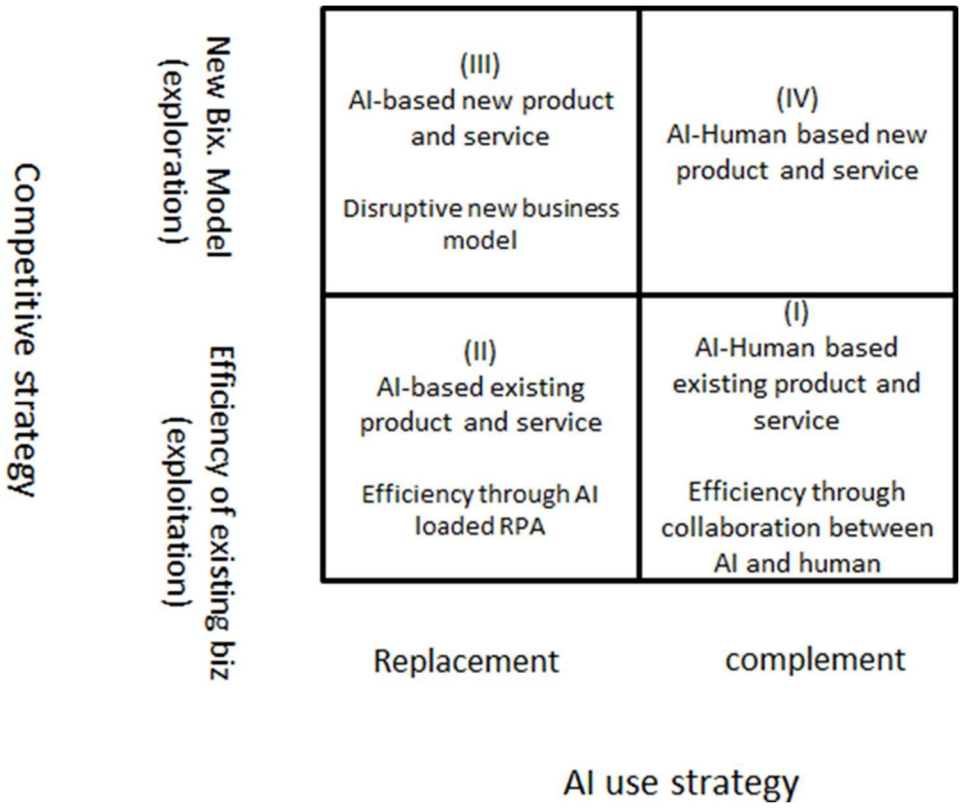
In order to acquire a complete view of the strategic emphasis in the AI era, it is vital to incorporate a strategic orientation of AI utilization in the enterprises. It's up to those that employ AI to determine whether or not to use it in place of people entirely, or in addition to them. The former tactic entails taking use of AI's benefits through proactive implementation. Foxconn's goal of creating a smart factory devoid of human workers stands in contrast to Mercedes' goal of creating a car plant where people and AI robots can operate side by side.

Useful characteristics along which to classify different strategic orientations are provided by the competitive strategy and the AI usage strategy. In the diagram below, we have a two-by-two matrix representing the four possible tactical movements. Option (I) is shown by Mercedes-"smart Benz's factory," which combines human and AI labor to achieve optimal production. As the German government, businesses, and labor unions all collaborate in promoting and advising on Industries 4.0, it is a powerful voice in favor of this plan.

One defining feature of the (II) strategic approach is its proactive implementation to boost productivity at the expense of human labor. As opposed to creating an entirely new business model or product, these organizations are using AI mostly to improve upon existing procedures. Robotic process automation is being adopted and used by a growing number of enterprises worldwide, Japan included (RPA). Consider the case of "UFJ," which has just adopted RPA, resulting in

considerable time savings, and which intends to increase the scope of AI's future applications (, 2016).

[Figure 2] 4 types of different strategic option



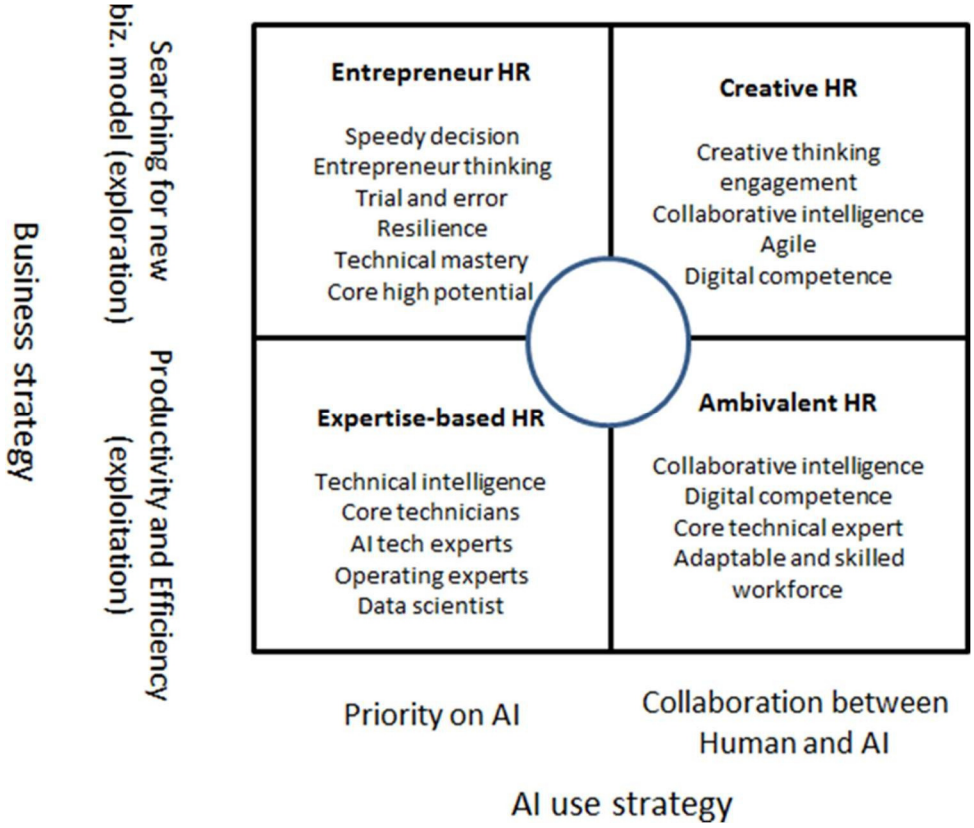
Model (III) describe the strategic orientation of the firms aiming to get the market and customers by destroying existing technology and changing the tastes of the customers. They do the best to capitalize on the capability of the new technology. They are mainly small start-ups and just want to make a breakthrough in the established market and technology. For them, the disruptive effect of their new business model or service is not their concern. The workforce are mostly experts or entrepreneurs and number is very small, which explains why the collaboration between human and AI do not take a meaningful consideration in the strategy. Among big firm, Google Alphabet can be considered as a firm choosing this strategy. Finally, strategic model (IV) is a strategic option consisting of the firms searching for a new business model by using actively AI but taking advantage of the collaboration between human and AI at the same time. The firm actually using this strategic option is rare. Maybe the firms tying to take new opportunity in the fast changing environment is so occupied to find technological solution, and do not feel the necessity to take advantage of the collaboration between human and AI.

HR strategy in the era of AI

Companies, in accordance with the strategic philosophy of human resources, should model their HR strategy after their overarching business goals (Baird and Meshoulam, 1988; Wright and Snell, 1998). There is a wealth of literature dedicated to the subject of the strategic business partner (Ulrich, 1996). With this theoretical discussion in mind, we may make some recommendations for HR strategies that work for each of the different types of strategies. The HR strategy of a startup is a good match for a company model that relies heavily on AI. Thisis the norm for startups and other recently established businesses. This presents a big human resources dilemma for these businesses: how to foster an environment where employees feel safetaking risks and contributing innovative ideas.

An alternative human resources strategy that places a priority on human and machine collaboration is available to companies who wish to be in the front of disruptive innovation. The team employs AI as well as human expertise. Also, they are interested in studying and benefiting from the synergistic intelligence of people and robots. There might be amazing outcomes from combining AI with human creativity.

[Figure 3] HR strategy based on business strategy



Meanwhile, businesses whose strategic priorities center on streamlining internal operations might

take one of two approaches to human resources. Human resource strategies based on the utilization of expert knowledge take use of the advantages offered by AI applications and strive for operational excellence, all the while lowering headcount in proportion to the increase in output.

Their most pressing need is for a select group of people who are very competent in both technical and digital fields to join their team. More effective AI systems and solutions need to be developed and introduced, and this requires engineers and data scientists. By melding human and AI resources, ambivalent HR aims to improve the adaptability and productivity of an organization's current offering. That's why they're on the lookout for and training humans who can decipher machine logic and work in tandem with AI. They hope that by incorporating human traits into AI technology, they may help people realize their full potential. As such, the capacity to quickly learn new things and master new technologies are seen as indispensable.

Collaborative intelligence: source of competitiveness

Human resource strategies and other parts of company management can take many forms, but one thing that all companies should do is learn about the advantages of human-machine collaboration. Businesses that focus on AI still require humans who can work with the technology to create something truly innovative and exciting for the market. That is the topic at hand: how far we should go in encouraging cooperation between humans and artificial intelligence. Sharing such information can be a huge advantage in the face of future rivals.

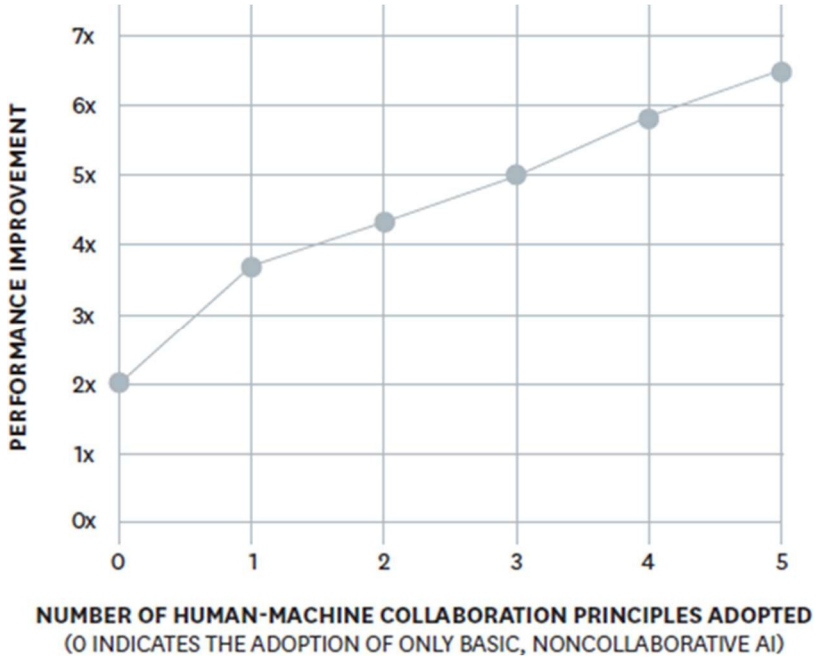
Consider the limitations of AI without human strategy, and it becomes clear why collaborative intelligence may be a source of survival and advancement. With more and more businesses embracing AI, the competitive edge it provides may soon vanish. There is a risk that this strategy may inspire a backlash against AI in the workplace like to that seen during the Luddite movement in the early days of the industrial revolution. Even said, AI will not be able to completely replace humans in the workplace anytime soon.

There are a variety of opportunities for AI and human teams to work together to accomplish goals. Artificial intelligence (AI) has the potential to automate robotic process automation (RPA) and other time-consuming chores, freeing up people to tackle more basic and new concerns. In order to improve AI's data analysis and problem-solving capabilities, it's feasible that people may contribute their expertise in areas such as leadership, teamwork, creativity, and social skills. This suggests that there is potential for mutual learning and assistance to occur when AI and humans work together, leading to improved results.

Some writers are stressing the need of working together with machines rather than against them in the modern era of rapid technological growth (McAfee, 2016). Scientific evidence backs up this

claim. The graph below shows that human-machine collaboration is advantageous for enterprises. Based on their research, Wilson and Daugherty came to that conclusion (2018).

[Figure 4] man-machine collaboration and performance



The proposed methods of collaboration sound interesting. Davenport and Ronanki (2018) present a financial services firm in which AI generates budgets, projections, and tax savings while a human advisor customizes an implementation approach and coaches the AI's behavior. Incorporating this type of collective wisdom into your work is effortless. Miso Bank is a great case study in this form of collaboration since it features prominent roles for both humans and AI. While AI is focused on gathering data and giving accurate information, human employees are committed to adding a personal touch that puts clients at ease and encourages productive conversation. In the manufacturing industry, tight cooperation between humans and machines is standard practice. At the Mercedes-"smart Benz's" factor, people and AI-operated robots work together and learn from one another. Within the context of the military. The synergy between humans and machines is generally acknowledged and sought for. The US Department of Defense is working to develop a hybrid soldier-robot whose features will allow for their weaknesses to be mitigated (2017). These examples show that it is possible to effectively merge human and AI resources, to the advantage of both the business and its employees.

Theoretical perspective on the collective intelligence

It's interesting to hear different ways of approaching collaboration. In the imaginary financial

services firm envisioned by Davenport and Ronanki (2018), AI generates budgets, forecasts, and tax savings while a human advisor crafts an implementation plan and trains the AI's behavior. Implementing such plain wisdom is a breeze. Mizho Bank is an outstanding case study of this cooperative paradigm because both humans and AI play such important roles there. Although AI is primarily concerned with collecting data and giving correct information, human workers are committed to adding a personal touch that puts clients at ease and inspires meaningful discourse. In the manufacturing industry, human and robotic workers frequently work together. Humans and AI-operated robots work together and learn from one another at the Mercedes-"smart Benz's" factor. The viewpoint of the military. The benefits of human-machine collaboration have been widely acknowledged. The U.S. Department of Defense is now developing a human-robot soldier whose advantages can make up for its weaknesses (2017). These examples highlight the possible gains from integrating human and AI efforts. Brieux Bay.

Challenge for HR

So, it is necessary to find the most effective method of enhancing group cognition. Concerns and skepticism regarding AI already exist within the organization, and the company must address these. This can only take place if the company's strategy is developed using collective wisdom. Avoid fancy language in favor of straightforward, consistent communication. Involvement of humans is essential at every stage in creating and releasing AI. The time it takes to execute speed enhancements might be reduced by collaborative efforts between people and machines. It's possible that their early achievement may strengthen their relationship.

On a second point, the business should do everything it can to provide its employees with the technological skills they need to succeed. In order to succeed, you'll need to have solid training in both computer science and statistics. The domains of artificial intelligence and interpersonal communication also make heavy use of it. This level of experience must be confirmed prior to hiring. Even so, existing staff members may be offered digital awareness training to boost their digital proficiency. Modern workplaces often allow workers to create customized training and education programs. You may want to consider enhancing your team with the help of artificial intelligence, a data scientist, and a functional expert (AI).

Last but not least, developing a thirst for knowledge is essential for adjusting well to employment shifts. Artificial intelligence is rapidly changing the nature of work, reducing the value of experience and increasing the uncertainty of the future. Technology is ever-evolving, posing new challenges to business procedures. Mental agility and a thirst for knowledge will be required. Management could consider a candidate's aptitude for learning new skills when making a hiring

choice. This tool may also be used to choose future leaders.

To conclude, effective leaders should encourage their teams to provide their own perspectives and suggestions for problem-solving. It is true that that is the pinnacle of human achievement. Humans are the only ones who can do work that machines can't. It is crucial to regularly prompt employees to ask "why?" after the value of doing so has been established. Maybe it's more fruitful to create issues for other people to solve than it is to look for solutions. Human-AI collaboration or the company's willingness to work with other parties are two possible approaches.

After all is said and done, it's up to management to ensure that employees like coming to work each day. Managers should not reward staff with extended tenures over those who bring new ideas and expertise to the table. It is especially crucial for hierarchical, team-oriented businesses to create a culture in which workers may express their opinions freely without fear of retribution. Nothing short of a miracle will ensure their survival through the technological assaults.

CONCLUSION

Artificial Intelligence (AI) has emerged as a game-changing technology in recent years, and its integration with Human Resources Management (HRM) is offering new perspectives and challenges. AI has the potential to revolutionize HRM practices, improving efficiency and accuracy while reducing bias and discrimination. However, its integration requires careful consideration of ethical, legal, and social implications. This paper has explored the new perspectives and challenges that AI brings to HRM, and has highlighted the need for HR professionals to be aware of these challenges and work towards a responsible and ethical implementation of AI in HRM. One of the main perspectives that AI brings to HRM is the ability to automate repetitive and time- consuming tasks. This can include tasks such as resume screening, scheduling interviews, and onboarding new employees. By automating these tasks, HR professionals can free up more time to focus on strategic tasks such as employee development, performance management, and succession planning. This not only improves the overall efficiency of HRM practices but also enhances the employee experience. Another perspective that AI brings to HRM is the ability to reduce bias and discrimination. Human biases can often creep into HRM practices, leading to unfair and discriminatory outcomes. AI can help overcome these biases by analyzing data objectively and making decisions based on data- driven insights rather than subjective opinions. For example, AI-powered recruiting software can analyze candidate resumes objectively and select the best candidates based on their skills and qualifications, rather than their race, gender, or other demographic factors.However, the integration of AI in HRM also brings challenges that need to be addressed. One of the main

challenges is the ethical implications of AI. As AI systems become more intelligent and autonomous, they raise questions about who is responsible for their decisions and actions. For example, if an AI-powered recruiting system rejects a candidate based on biased data, who is responsible for this decision? Is it the AI system itself, the HR professional who implemented the system, or the organization as a whole? These questions need to be answered to ensure that the integration of AI in HRM is ethical and responsible. Another challenge that AI brings to HRM is the legal implications. As AI systems make decisions that affect employees and job applicants, they need to comply with the relevant legal and regulatory frameworks. For example, if an AI-powered recruiting system collects and analyzes personal data of job applicants, it needs to comply with data privacy laws such as GDPR or CCPA. HR professionals need to be aware of these legal implications and ensure that their AI-powered systems are compliant with the relevant regulations. The integration of AI in HRM also raises social implications that need to be addressed. As AI systems automate more tasks, there is a risk of job displacement for HR professionals. This can have a negative impact on the workforce and the broader society. HR professionals need to be proactive in identifying the tasks that can be automated and reskilling themselves to perform higher-level tasks that cannot be automated. This can ensure that the integration of AI in HRM leads to a more productive and engaged workforce.

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