

Integration of Digital Technology in Human Resource Management: Strategies to Increase Employee Engagement in The Industry 4.0 Era

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ABSTRACT

Delving into the intricate relationship between digital technology and employee engagement within the dynamic context of the industry 4.0 era, this study embarks on an exploration of innovative motivation strategies. Through a meticulous examination encompassing contemporary literature and relevant case studies, it sheds light on the myriad ways organizations can harness the potential of digital tools, such as immersive learning platforms, gamified training modules, and real-time feedback mechanisms. By leveraging these technologies, organizations can create a conducive workplace environment that not only fosters intrinsic motivation but also instills a sense of purpose and facilitates ongoing professional development among employees. With a focus on providing actionable insights and showcasing effective approaches, this paper endeavors to serve as a valuable resource for organizations seeking to optimize digital technology to elevate employee engagement levels. Ultimately, by aligning digital initiatives with strategic objectives, organizations can not only enhance employee engagement but also thrive amidst the ever-evolving landscape of Industry 4.0.

Keywords : *digital, employee, management, industrial revolution 4.0.*

INTRODUCTION

In the rapidly evolving landscape of Industry 4.0, characterized by the convergence of digital technologies and traditional industries, organizations are confronted with new challenges and opportunities. One of the pivotal aspects that organizations strive to enhance in this era is employee engagement. As digital technologies continue to permeate every facet of business operations, leveraging these tools to improve employee engagement has emerged as a critical imperative for sustaining competitiveness and fostering innovation. This paper delves into the realm of improving employee engagement through digital technology, focusing on the innovative motivation strategies employed in the industry 4.0 era. By harnessing the transformative power of digital tools, organizations can cultivate a work environment that not only nurtures the intrinsic motivation of employees but also fosters a sense of purpose and fulfillment in their roles. The significance of employee engagement cannot be overstated, as it is intricately linked to organizational performance, productivity, and ultimately, profitability. Engaged employees exhibit higher levels of commitment, creativity, and discretionary effort, contributing to a culture of continuous improvement and excellence. However, in the era of Industry 4.0, traditional approaches to employee engagement may prove inadequate in addressing the evolving needs and expectations of the workforce. In light of this, organizations are turning to digital technology as a catalyst for transforming the employee experience. From immersive learning platforms and gamified training modules to AI-driven performance management systems and real-time feedback tools, the array of digital solutions available today offers unprecedented opportunities to

enhance employee engagement across all levels of the organization. This paper aims to explore the multifaceted relationship between digital technology and employee engagement, examining the various motivation strategies that organizations can employ to empower their workforce in the industry 4.0 era. Through a comprehensive analysis of relevant literature, case studies, and empirical research, we seek to elucidate the mechanisms through which digital technology can be leveraged to cultivate a culture of engagement, motivation, and high performance in the modern workplace. By shedding light on best practices, emerging trends, and potential challenges, this paper aims to provide insights and actionable recommendations for organizations looking to optimize their use of digital technology to improve employee engagement and drive success in the dynamic landscape of Industry 4.0.

LITERATURE REVIEW

In the contemporary business landscape characterized by Industry 4.0, organizations are increasingly recognizing the importance of employee engagement as a critical factor for sustaining competitiveness and driving innovation. This section provides an overview of the existing literature pertaining to improving employee engagement through digital technology, focusing on motivation strategies tailored to the industry 4.0 era.

Digital technology plays an important role in shaping the employee experience and fostering engagement in the modern workplace. According to Ayu and Rahayu [1], work engagement as a motivational concept refers to a psychological state that describes a positive and satisfying attitude towards work, characterized by passion, commitment, and deep focus. In the context of Industry 4.0, digital tools such as deep learning platforms, game-like training modules, and real-time feedback mechanisms have emerged as powerful enablers to improve employee engagement.

Motivation strategies adapted to the Industry 4.0 era center on leveraging digital technologies to create a stimulating work environment that fosters intrinsic motivation and cultivates a sense of purpose among employees. Relevant training and development programs, opportunities to participate in challenging projects, and active support from management can accelerate the growth and development of skills necessary in achieving career goals, while deep learning platforms provide employees with opportunities for continuous skill development and growth, thereby increasing their engagement and job satisfaction [2]. Similarly, game-like training modules utilize game mechanics and competitive elements to make learning more engaging and interactive, resulting in higher levels of motivation and participation. Real-time feedback tools allow employees to receive timely recognition and appreciation for their contributions, which reinforces positive behaviors and encourages engagement [3].

Several theoretical frameworks and models underlie the relationship between digital technology and employee engagement. Self-determination theory (SDT) is an approach to human motivation and personality that highlights the importance of human inner resources for personality development self-regulatory behavior where individuals are motivated when their psychological needs for autonomy, competence, and relatedness are

met [4]. In the context of Industry 4.0, digital tools can facilitate the fulfillment of these needs by providing employees with autonomy in their work, skill development opportunities, and opportunities for collaboration and social interaction.

Despite the potential benefits of leveraging digital technologies to improve employee engagement, organizations face several challenges in their implementation. These include issues related to data privacy and security, the need to upskill employees to adapt to new technologies, and ensuring equitable access to digital tools and resources [5]. Overcoming these challenges requires a strategic approach that aligns digital initiatives with organizational goals and fosters a culture of continuous learning and innovation.

METHODOLOGY

The research methodology adopted in this study involved a comprehensive review of existing literature and online resources relevant to the topic, with a specific emphasis on motivation strategies and digital technology in the context of industry 4.0. The process commenced with systematically gathering information from diverse sources, including scholarly articles, industry reports, online databases, and case studies, among others. These sources underwent rigorous scrutiny to ascertain their pertinence and reliability in addressing the research objectives. Key insights and findings were extracted, synthesized, and structured to facilitate an in-depth analysis of motivation strategies leveraging digital technology within the industry 4.0 framework. This meticulous approach ensured the robustness of the research findings and provided valuable insights into how organizations can effectively utilize digital tools to enhance employee engagement in the contemporary digital era.

RESULTS AND DISCUSSION

The rapid development of technology in the current era of globalization has not only provided significant benefits in the advancement of various social aspects, but has also fundamentally changed the way we interact, work and live. In particular, advances in information and communication technology have been a key driver in accelerating the pace of social transformation. Through their ability to reduce barriers of distance and time, these technologies have facilitated faster and more efficient communication between different individuals and communities around the world. This phenomenon has led to the formation of what we know as the information society, where access to and exchange of information has become easier and more widespread.

Rapid changes in technology have also had a substantial impact in various fields, including industry, education, health, and culture. The adoption of information and communication technologies not only improves operational efficiency, but also opens the door to new innovations that change the paradigm of work and human interaction. Moreover, the impact of this technological evolution is not limited to the professional realm, but has also permeated people's personal and social lives. From the way we communicate to the way we access information and entertainment, technology has become an integral part of our daily lives.

Since the introduction of computers in the mid-20th century, humans have entered

a new era characterized by accelerated technological innovation [6]. This transformation has brought new challenges and opportunities that need to be faced and utilized by society as a whole. In the face of these changes, it is important to develop a deep understanding of the social, cultural and economic implications of this technological evolution. By doing so, we can take prudent steps in harnessing the potential of technology to realize sustainable and inclusive progress for the whole of society.

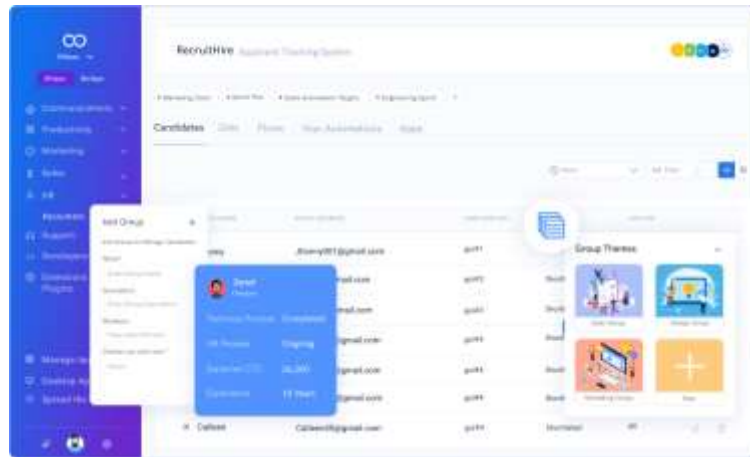


Figure 1. Display of the RecruitHire Interface (<https://www.recruithire.com>)

The use of technology in human resource management (HRM) has become common in various organizations, especially in the recruitment stage using systems such as HR Information Systems (HRIS) and Applicant Tracking Systems (ATS). Through HRIS, companies can automate various administrative processes, such as employee data archiving, attendance management, and performance tracking [7]. In the realm of recruitment, the Applicant Tracking System (ATS) has emerged as a pivotal tool, empowering companies to efficiently manage the influx of applications from potential candidates. By automating processes such as resume parsing, application tracking, and candidate communication, ATS significantly streamlines the hiring process, allowing recruiters to focus their efforts on evaluating candidates rather than administrative tasks. This technological integration not only expedites the identification of qualified talent but also enhances the overall efficiency of recruitment operations. However, amidst the myriad advantages brought forth by technology in recruitment, there exists a concomitant concern regarding the security of sensitive company information. The vast reservoir of data stored within recruitment systems, including personal information, employment histories, and confidential company records, poses a potential risk if not adequately protected. Instances of data breaches or unauthorized access can have severe repercussions, ranging from reputational damage to legal liabilities. Consequently, it becomes imperative for organizations to implement robust cybersecurity measures and stringent access controls to safeguard against potential threats. Furthermore, compliance with data privacy regulations such as GDPR or CCPA is essential to ensure the lawful handling and protection of candidate data. By prioritizing information security and data privacy, companies can mitigate risks,

uphold trust with candidates, and maintain the integrity of their recruitment processes in an increasingly digitized landscape. In addition to enhancing efficiency, the utilization of technology in recruitment enables companies to access a wider pool of candidates through online job boards, social media platforms, and professional networking sites. By leveraging these digital channels, organizations can effectively reach potential talent across geographical boundaries, fostering diversity and inclusivity in their hiring practices. However, this expanded reach also necessitates heightened vigilance in safeguarding candidate data and ensuring compliance with relevant privacy regulations to uphold ethical recruitment standards and build trust with applicants.

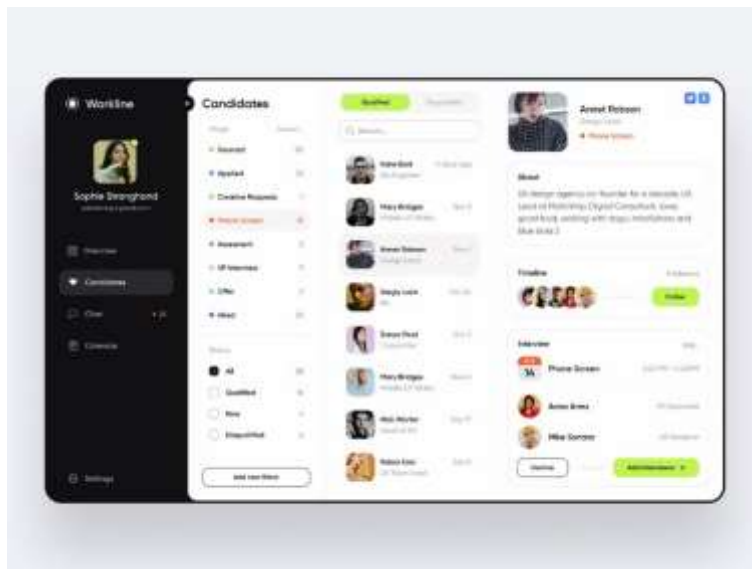


Figure 2. Display of the Dribbble Interface (<https://www.dribbble.com>)

In the current digital era, companies are grappling with profound transformations affecting their approaches to employee recruitment, training, and motivation strategies. Technology has fundamentally altered the landscape of hiring practices, with the integration of tools like Applicant Tracking Systems (ATS) streamlining the sourcing and evaluation of talent. Moreover, the advent of technology has ushered in a revolution in training methodologies, facilitating seamless access to a plethora of online training modules and learning resources. Beyond these advancements, technology plays a pivotal role in the ongoing monitoring of employee performance, enabling real-time feedback mechanisms and fostering a culture of collaboration within the workplace. Nevertheless, the adoption of technology in Human Resource Management (HRM) presents a set of formidable challenges. Foremost among these challenges is the imperative to recruit talented individuals while ensuring fairness and inclusivity throughout the selection process. Additionally, safeguarding the integrity of company information poses a significant concern, especially as HR departments often handle sensitive data susceptible to unauthorized access or potential breaches. Furthermore, the increasing automation of tasks driven by technology may have implications for employment dynamics, potentially reshaping the demand for certain roles. Consequently, companies are compelled to navigate these challenges adeptly, devising

strategies to harness the potential of technology in HRM while addressing concerns related to security, fairness, and workforce dynamics. Through strategic adaptation and proactive measures, organizations can harness the transformative power of technology to optimize their HRM practices and drive sustainable growth in the digital age.

To reduce the negative impact of technology in Human Resource Management (HRM), organizations can take the following steps:

1. To ensure employees remain adept in an evolving technological landscape, organizations should prioritize resource allocation towards tailored training programs. By investing in these initiatives, employees gain the necessary skills to navigate technological advancements effectively, ensuring they stay competitive amidst the dynamic job market.
2. Establishing a supportive work culture that fosters collaboration, teamwork, and inclusiveness throughout the organization is essential. By cultivating such a culture, organizations can effectively counteract the potential adverse effects of technology on individualism and morality. This entails implementing policies and initiatives that prioritize collective success, mutual respect, and diversity, thereby fostering a harmonious and cohesive work environment where employees feel valued and empowered to thrive.
3. Foster fairness and inclusivity through comprehensive policies and practices that champion diversity, gender equality, and equitable treatment. By nurturing an environment where every employee feels valued and respected, organizations can cultivate a culture of inclusivity that drives success and innovation.
4. Promote the ethical use of technology in HRM, by implementing strict data security systems and utilizing technology to improve human interactions without compromising human aspects. By prioritizing ethical values in the use of technology, organizations can minimize its negative impact in HRM while still paying attention to employee welfare and development.

By implementing these strategies, companies can reduce the negative impact of technology in Human Resource Management (HRM) and create a work environment that optimizes the use of technology, while still giving priority to employee well-being and development.

The application of technology in Human Resource Management (HRM) also provides a number of significant positive impacts, which can be described in detail as follows:

1. **Improved Recruitment Efficiency:** Technology revolutionizes the recruitment process by automating critical tasks like resume screening and candidate evaluation, streamlining the entire hiring journey. This innovation allows companies to swiftly and effectively identify the most suitable candidates for available positions, thereby enhancing the efficiency and effectiveness of their recruitment efforts.
2. **Better Training and Development Facilities:** Technology offers a myriad of enhanced facilities for employee training and development, ushering in an era of accessible and flexible learning. Through the implementation of online training programs, interactive e-learning modules, and immersive virtual classrooms, employees are provided with

unparalleled opportunities to engage with learning materials at their convenience. This comprehensive approach not only strengthens skill-building initiatives but also fosters a culture of continuous learning, ultimately contributing to heightened employee productivity and performance within the organization.

3. **Improving Employee Engagement:** The implementation of self-service portals and communication platforms represents a pivotal advancement in fostering employee engagement within the contemporary work landscape. By providing streamlined avenues for collaboration and interaction, these platforms effectively nurture a culture of inclusivity and connectivity within the organizational framework. Through the availability of open and accessible communication channels, employees are afforded greater opportunities to engage with both the company and their colleagues, thereby fostering a sense of belonging and camaraderie. Consequently, this heightened level of connectivity not only bolsters productivity levels but also enhances overall job satisfaction among employees, thereby contributing to a more conducive and fulfilling work environment.
4. **Better Access to Workforce Data and Analytics:** Technology in HRM provides better access to valuable workforce data and analytics. This allows HR professionals to make more informed decisions regarding talent management, performance evaluation, and strategic planning. With more detailed and accurate information, companies can optimize their human resource management.

Thus, the utilization of technology in HRM not only improves the company's operational efficiency, but also benefits employees by providing a more dynamic work environment and enabling better career development.

The use of digital technology exerts a significant influence on the mental well-being of employees. One notable consequence is the perpetual state of connectivity and the heightened expectations linked to digital usage, which can culminate in stress, diminished productivity, and challenges in maintaining focus [8]. The persistent pressure to stay connected online, combined with the constant influx of information and the expectation for immediate responses, all contribute to what is known as digital stress. This phenomenon not only hinders the achievement of a balanced work-life equilibrium but also intensifies levels of anxiety and stress.

Moreover, the pervasive integration of digital technology into various aspects of daily life has engendered a profound impact on individuals' mental health. Consequently, raising awareness and implementing effective technology management practices are essential to safeguard human mental well-being [9]. The ubiquitous presence of digital devices, coupled with the expectation of constant connectivity, often leads to a phenomenon known as "digital stress." This state of heightened tension arises from the relentless influx of information, the perpetual need to remain online, and the incessant pressure to promptly respond to messages and notifications. As individuals find themselves immersed in a digital environment that knows no boundaries of time or space, the delineation between professional responsibilities and personal life becomes increasingly blurred. This blurring of boundaries can have detrimental effects on mental well-being, as individuals struggle to disconnect from work-related tasks even during their supposed leisure time.

Moreover, the overreliance on digital tools for work-related activities beyond traditional office hours can exacerbate feelings of burnout. The ongoing development of technology continues to progress and significantly influence various aspects of human life, ranging from communication to the economy [10]. When individuals are constantly tethered to their devices, they may feel compelled to respond to emails, messages, and other work-related communications outside of designated work hours. Consequently, they find it challenging to disengage from work and recharge, leading to emotional exhaustion and diminished job satisfaction. The inability to establish clear boundaries between work and personal life can further intensify feelings of stress and fatigue, ultimately compromising mental health.

Additionally, the pervasive use of digital technology has resulted in a decline in face-to-face social interactions and leisure activities. As individuals spend increasing amounts of time engaged with screens, they may forego opportunities for in-person socializing and recreational pursuits. The relentless pursuit of digital connectivity often comes at the expense of meaningful human connections and leisurely pursuits, which are essential for maintaining psychological well-being. Consequently, individuals may experience feelings of loneliness, isolation, and disconnection from their social support networks, further exacerbating feelings of stress and anxiety.

In essence, while digital technology offers numerous benefits and conveniences, its excessive use can have detrimental effects on mental health. By blurring the boundaries between work and personal life, fostering a constant state of connectivity, and diminishing opportunities for social interaction and leisure, digital technology poses significant challenges to preserving mental equilibrium. As such, it is essential for individuals to cultivate mindful digital habits, establish boundaries, and prioritize self-care practices to safeguard their mental well-being in an increasingly digitized world.

Moreover, the detrimental effects of digital technology extend across various facets of individuals' mental well-being, encompassing a wide array of adverse consequences. One significant repercussion is the escalation of workplace stress experienced by employees. The constant connectivity facilitated by digital devices often blurs the boundaries between work and personal life, leading to a pervasive sense of being always "on" and perpetually accessible. As a result, individuals may find it increasingly challenging to disengage from work-related concerns, even during non-working hours, thereby heightening their overall levels of stress and anxiety.

Furthermore, the omnipresence of digital technology can significantly impede individuals' efficacy in task execution. The incessant stream of notifications, emails, and messages clamoring for attention can fragment individuals' focus and concentration, hindering their ability to complete tasks efficiently and effectively. Moreover, the constant switching between tasks in response to digital stimuli can contribute to a phenomenon known as "attention residue," where individuals struggle to fully disengage from previous tasks, leading to decreased productivity and suboptimal performance.

Additionally, the pervasive use of digital technology has been linked to disruptions in sleep patterns and the onset of sleep-related issues. The exposure to blue light emitted by electronic screens, particularly in the hours leading up to bedtime, can suppress the

production of melatonin, a hormone crucial for regulating sleep-wake cycles. Consequently, individuals may experience difficulties falling asleep or achieving restorative sleep, leading to fatigue, irritability, and diminished cognitive function during waking hours. Moreover, prolonged engagement with digital devices can give rise to cognitive fatigue, characterized by mental exhaustion and reduced cognitive functioning. The constant stimulation provided by digital media and the cognitive demands associated with processing vast amounts of information can overwhelm individuals' cognitive resources, leading to mental fatigue and decreased cognitive performance over time.

The pervasive use of digital technology has been associated with feelings of social isolation and disconnection from meaningful interpersonal relationships. Despite the apparent connectivity facilitated by digital platforms, studies have shown that excessive engagement with digital media can lead to a decline in face-to-face social interactions and a sense of detachment from one's social support network. Consequently, individuals may experience feelings of loneliness and isolation, further exacerbating their overall levels of stress and anxiety. In summation, the adverse effects of digital technology on employees' mental health are multifaceted and far-reaching, encompassing heightened workplace stress, diminished task efficacy, challenges in maintaining concentration, disruptions in sleep patterns, cognitive fatigue, and feelings of social isolation. As such, it is imperative for organizations to recognize the significance of these issues and implement measures to mitigate the negative impact of digital technology on their employees' mental well-being.

Companies have a pivotal role in assisting employees in navigating the challenges posed by the use of digital technology and promoting their mental health by implementing comprehensive policies aimed at fostering a harmonious work-life balance. Such initiatives encompass various aspects, including respecting predefined work hours, fostering transparent communication channels, and nurturing an environment conducive to open dialogue to alleviate the unnecessary strain arising from the expectation of responding to communications beyond official working hours. Moreover, companies can proactively organize training sessions focusing on equipping employees with essential skills in time management, optimizing productivity while utilizing digital tools, and mastering stress management techniques, thus empowering them to effectively cope with digital stressors. Additionally, offering access to psychological counseling services and establishing designated relaxation zones within the workplace environment can serve as invaluable resources in alleviating stress and fostering employee well-being.

Furthermore, adopting clearly delineated boundaries concerning the use of digital devices outside of official working hours and providing flexibility in terms of work schedules or remote work arrangements are crucial measures in allowing employees to tailor their technology usage to suit their individual needs and preferences. By acknowledging the importance of maintaining a healthy balance between digital engagement and mental wellness, companies can cultivate a culture that prioritizes employee well-being. Lastly, serving as advocates for mindfulness regarding digital usage and setting positive examples by demonstrating prudent technology usage practices and respecting established working hours collectively contribute to fostering a workplace environment that promotes mental health and overall employee satisfaction.

The evolution of communication and information technology has significantly altered the business landscape, ushering in a new era where human resources (HR) are required to possess not only a deep understanding but also adept skills in navigating the continuous advancements in technology and management practices. Consequently, it becomes imperative for organizations to recalibrate and redefine the role of HR within their structures. This involves delegating operational responsibilities to line managers, acknowledging HR as a strategic partner pivotal to the business's success, fostering the development of HR capabilities and competencies, and implementing reward mechanisms that underscore skill attainment.

Moreover, HR is tasked with broader responsibilities beyond traditional administrative functions. They are expected to actively engage in strategic planning initiatives, optimizing operational efficiency, streamlining administrative processes, curtailing operational expenditures, and assuming the mantle of change agents within the organization. Furthermore, the multifaceted nature of contemporary business challenges presents HR with a diverse array of obstacles to navigate, ranging from effectively managing workplace diversity to attaining and sustaining competitive advantages in a globalized market landscape.

In this dynamic environment, HR professionals are called upon to be agile and proactive in their approach, adeptly addressing the intricacies of an ever-evolving organizational ecosystem. They must cultivate a comprehensive understanding of the business landscape, anticipate future trends, and devise innovative strategies to propel the organization forward. By embracing these challenges as opportunities for growth and transformation, HR can emerge as a pivotal force driving organizational success in the industry 4.0 era and beyond.

Enhancing HR capabilities and skills necessitates HR managers to undertake multifaceted roles that are instrumental in driving organizational growth and development. Firstly, they are tasked with acting as strategic consultants, leveraging their expertise to align HR initiatives with broader business objectives and organizational goals. This involves formulating strategic plans and initiatives that effectively leverage human capital to enhance overall business performance and competitiveness. HR managers are expected to serve as change agents within the organization, spearheading the implementation of innovative practices and organizational transformations. They play a pivotal role in driving change management processes, fostering a culture of adaptability and resilience, and ensuring seamless transitions during periods of organizational change and upheaval.

Furthermore, HR managers assume the mantle of strategic decision-makers, actively involved in formulating HR development strategies and policies that foster employee growth and development. This entails identifying skill gaps, designing training and development programs, and implementing initiatives aimed at upskilling and reskilling the workforce to meet evolving business needs and industry demands. HR managers are entrusted with the critical responsibility of talent management, wherein they are tasked with attracting, retaining, and developing top talent within the organization. This involves implementing recruitment and retention strategies, identifying high-potential employees, and creating opportunities for career advancement and growth.

HR managers function as asset managers, responsible for optimizing the utilization of human resources to maximize organizational efficiency and productivity. This entails workforce planning, resource allocation, and performance management initiatives aimed at enhancing employee productivity, engagement, and job satisfaction. In assuming these diverse roles, HR managers play a pivotal role in driving organizational success and fostering a culture of continuous improvement and innovation. By effectively fulfilling these responsibilities, HR managers contribute to the overall growth, resilience, and competitiveness of the organization in the dynamic landscape of the Industry 4.0 era and beyond.

In contemporary organizational landscapes, technological skills have emerged as a cornerstone in the realm of Human Resources (HR), exerting a profound influence on various facets of operations. The adeptness in leveraging a diverse array of digital tools and platforms is pivotal in enhancing work productivity across diverse departments and divisions within an organization. Specifically, individuals equipped with proficiency in navigating complex computer programs demonstrate a heightened capacity to augment overall work output and streamline operational efficiency. This underscores the indispensable nature of technological competence as a driving force behind organizational success and efficacy in the ever-evolving and dynamic work environments of today.

Moreover, the utilization of technology skills, particularly within the realm of information technology, has been demonstrated to yield considerable advantages by streamlining access and enhancing efficiency in task completion. Mastery of technological tools and systems is instrumental in fostering effective and high-quality work performance. Consequently, it becomes imperative for individuals to consistently enhance their technological proficiencies to remain abreast of the evolving technological landscape within the workplace. This perpetual upskilling ensures adaptability to technological advancements, thereby fortifying their efficacy in navigating modern work environments.

Moreover, it is noteworthy to emphasize that individual traits exert a considerable influence on leveraging technology to enhance work productivity. Individuals characterized by high self-confidence, a robust sense of accountability, and adept adaptability are often more proficient in harnessing technological advancements to augment task efficiency. Consequently, fostering an organizational culture conducive to individual development in terms of technological acumen and innovative utilization in the workplace becomes paramount. By nurturing an environment that encourages continuous learning and experimentation with emerging technologies, organizations can cultivate a workforce better equipped to capitalize on digital tools for heightened productivity and effectiveness.

Technological developments have changed the landscape of Human Resource Management (HRM) with significant impacts on various aspects. Information and communication technology has improved efficiency and effectiveness in various processes, including recruitment, training, employee development, and daily operations through automation, utilization of big data, and online platforms. It enables companies to recruit a qualified workforce, provide more flexible and affordable training, and increase productivity through employee mastery of technology.

However, the impact of technology also brings a number of new challenges, such as

data security concerns, the need for digital upskilling of employees, and the negative impact on mental health that comes with overuse of technology. Mental health disorders such as stress, anxiety and depression are a key focus that require effective management strategies from employers, including policies that support work-life balance, stress management training and access to psychological support.

In the face of these challenges, companies need to take a holistic approach to integrating technology into their HRM strategy. This includes data protection and privacy, developing employees' digital skills, and creating a work environment that supports mental well-being. In addition, it is important for companies to adapt HR functions and roles to the changing work environment brought about by technology, and view HR as a strategic partner in achieving business goals. Overall, technology brings both opportunities and challenges to HRM. With the right strategy, companies can leverage technology to improve efficiency and effectiveness, while addressing the challenges that arise to ensure well-being and continuous development for employees.

CONCLUSION

The conclusion of this journal highlights the important role of digital technology in Human Resource Management (HRM) in optimizing employee engagement in the industry 4.0 era. The integration of digital technology has brought significant impact in various aspects of HRM, including recruitment, training, and employee development, as well as overall employee engagement. Strategies employed, such as the automation of recruitment processes, the provision of online learning platforms, and the use of self-service portals, have proven effective in improving employee engagement and productivity. However, challenges related to information security, skills gaps, and the need for a supportive work culture remain relevant in adopting digital technologies in HRM. Hence, the conclusion of this journal emphasizes the importance of developing a holistic and sustainable strategy to effectively leverage digital technology in HRM, with the ultimate goal of improving employee engagement and overall organizational well-being in the industry 4.0 era.

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