

Human Resource Management Practices in the Digital Era



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Abstract Digitalization of Human Resource Management (HRM) is revolutionizing the way of HR practices in line with the current Industry 4.0. Back to the history of the HRM, traditional approaches are still relevant to be used; however, it is better to move a step forward by using the digital HR platform in order to be applicable in the marketplace. In order to be in the Digital HRM platform, the organization should be invested as well for the technology, manpower and the strong strategies. Throughout the HRM revolutions, in this current, critical pandemic will force either small or large organizations in tuning their traditional HRM to the digitalization HRM. For instance, the organization came out with strong stages of the HRM Digitalization transformation, re-structuring the organization process and the new perspective of HRM practices. This chapter discusses on how the traditional HRM tunes to the digitalization of HRM and what are the implications behind this transformation. Furthermore, the organization also must be well prepared to jump into this new industrial 4.0 revolution with the digitalization HRM in the workplace.

Keywords HRM · HRM practices · Digital era · Digitalization HRM

1 Introduction

In the current world, the whole society has undergone accelerated technological development, which contributes to the impact and changes towards the way an organization function. It puts pressure on organizations and people to adapt with the rapid changing world, which focuses on the number of digital innovations. Thus, the current period known as “digital era” or digitalization has become a world buzzword

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in the aspect of organizational press and emphasis as something that all organizations need to embrace in order to stay in this competitive world. As part of technology adaptation, transformation is required on all stages to develop a modern organization that has the courage for consistent improvement. So, digitalization has become a part of transformation which has been defined by Stolterman and Fors (2004) as a business model determined by *the changes related with the implementation of digital technology in all parts of human civilization*.

Some scholars even reveal that digital transformation or known as digitalization has altered the system of organizations operate critically that it becomes a vital element of corporate strategies (Heavin & Power, 2018), and also this digitalization approach in organizations has been affected around the world, which leads to modifications in consumer behaviour, expectations and value of products and services. In the perspective of changing consumer behaviour, organizations have to reconsider their business model to be accomplished in order to maintain competitive advantage. Furthermore, this digital era also impacts organizations' management fashion especially computers will be taken place all the manual work responsibilities, introduction to Artificial Intelligent (AI), which also become a substitute to non-repetitive intellectual tasks, "Big Data" has been implemented in many organizations, which referred to accessing to huge amount of information processes. The increase of digital tools linked to the Internet or also referred to as "Internet of Things" has also contributed to traceability of information. These are just a common example of how the digitalization world is impacting society but the similar debate made by most practitioners and scholars that digitalization saturated everything that can be digitized (Andersson, 2017). This is not only changing how we develop interaction with humans but also the digital transformation affecting the way an organization functions, which indirectly implies huge changes for any human resource manager.

In today's business world, the new challenges of digitalization have also brought changes in traditional human resource management (HRM) models. It has been seen through the advancement of new technologies, the method of human resources communicating with data and information has been altered. Many human resource functions such as employee recruitment and selection process, performance management and human resource planning have been intensely improved through the utilization of digital technologies, revising the services provided to its stakeholders. In fact, previous HRM focuses more on paper related work, which brings many disadvantages to the function of the HR Department as it involves time, cost and energy in any organization. In this regard, Palmer et al. (2017) highlighted an essential example of how digitalization has affected HRM based on the Adobe company case. In 2011, Adobe stopped trading licensed products in physical packages and transformed into a cloud-based software provider. This fundamental change of the company has resulted in new methods of working and introduced a new role for the human resource management (HRM) function. Thus, HR has become more people-oriented, creating a diverse workforce, and designing challenging tasks to keep the new generation of employees engaged in their work and organization. Moreover, HRM practitioners had to improve the way performance appraisal conducts, with immediate and continuous feedback given through new systems and workshops (Palmer et al., 2017; Smedley, 2014).

This condition shows how HR practitioners can be impacted by digitization as the management of human resources has to be transformed into new work adaptation to support new advancement of technologies in companies.

Furthermore, digitalization also changes the way employees interact in the organization, expectation towards their employer and career development, as well as the venue and duration of the work performed. In this aspect, the advancement of digitalization affects internal organizations based on many levels as it needs the adaptation and development of new knowledge and work methods. The workplaces also need to be emphasized the essential of investing towards the required skills development of employees especially if the improvement involves the introduction of new technology and roles. With regards of this, digital transformation is consistently changing how organizations recruit, choose, manage and support people. As a key part of the core mission of HR Managers, it is important for the employers to attract, support and develop their employees aligned with the overall organizational strategy. Digital approaches to human resource management are critically express the important role and become part of defining strategies for human resources and the whole organization as well.

2 What is Digitalization?

We are gradually evolving into a civilization that is heavily reliant on technology. Digitalization is affecting every industry. It doesn't matter if you're in the agriculture, education or business ecosystems but the impact of digitalization on every business sector can be seen to be progressing well. Digitalization is becoming increasingly important in growing corporate ecosystems. Adapting to technology has proven to be a positive aspect in the business aspects. It simplifies work methods so that individuals can focus entirely on the task at hand and are less distracted by external elements that existed previously. Digital technologies have infiltrated every part of our life, drastically altering how we seek and receive information. For example, rather than using yellow pages directories or other offline media, we now use search engines to find items and services. Chats, email, blogs and social media posts are all ways we share our experiences with others. In other words, digitalization and digitized data enhance the media we use, the content we consume and exchange, and the customers we interact with.

The term "Digitalization" was originally revealed by Robert Wachal in 1971 with the introduction of "Digitalization of Society" and described its origin due to extensive use of technologies. There are many authors who come up with various definitions. Kagermann (2015) stated that digitalization known as networking created for people and things and also merging between real and virtual worlds that are allowed by Information and Communication Technology (ICT). ICT in the perspective of HRM roles is named differently such as web-based human resources, human resource information system (HRIS), virtual human resource management. Human resources intranet, computer based HRM systems and HR portals. However, the term e-HRM is

the most commonly used. Based on the e-HRM term itself, its basis has been related to the 1990s idea of the development of e-commerce (Lengnick-Hall & Moritz, 2003). It is crucial to understand the difference between “digitization” and “digitalization.” Digitization refers to the transition from analogue to digital (Gartner Inc, 2018a), while digitalization refers to using digital technology to improve existing business models, generate new revenue and create value-adding opportunities (Gartner Inc., 2018b).

The impact of digitization on the business environment is raising insecurities among executives around the world (Unruh & Kiron, 2017). Digitalization has changed the way people do business in a variety of industries. In retail, for instance, corporations such as Amazon and Alibaba have inflicted chaos on shopping malls and traditional trade. Unruh and Kiron (2017) revealed that the impact of digitization in retail will spread to other industries such as energy, hotels, transportation and manufacturing in the near future. Organizations are developing plans to cope with the issues and ramifications of digitalization in order to be prepared to deal with it. In order to have a better digital future, companies should play a huge role to implement digital technology. Considerations have to be taken on the risks and chances reflected by digital technology. Below is the framework (Fig. 1) developed by Unruh and Kiron (2017) for better reflection of digitalization.

Digitalization is the initial stage that refers to the transfer of products and services to a digital format, as well as the inventions that arise as a result of this conversion. For tangible assets and products, this conversion takes longer. The second stage is connected to the first since it makes use of the digitalized products generated in the first phase, but it also develops new business models and processes. The third stage is new digital models and processes to restructure economies, which have happened due to digital transformation. As a result, technology is combined by people in their life. Ross (2017) stated about digital transformation, which has been expressed that if companies fail to distinguish between digital, digitization and digital transformation, they may make costly mistakes. Organizations need to transform if digital discusses issues such as technology, cloud, internet of things, mobile, accessibility, and how businesses could shift to take advantage of these technologies’ benefits. Digitization,

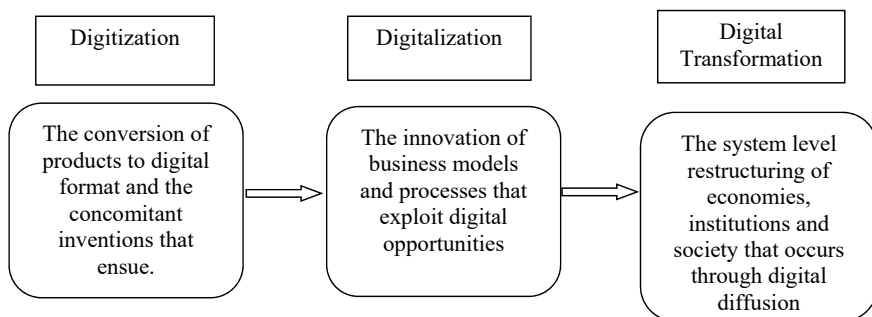


Fig. 1 Digitalization framework. *Source* Unruh and Kiron (2017)

on the other hand, makes it easier for an organization to go digital. While digital transformation strives to rethink the value proposition of a firm.

E-HRM has been stated by many scholars as any kind of HR activities either administrative or transformational which should be supported by information technology. However, E-HRM is known as a web-based technology solution to provide online and real-time HRM solutions through the utilization of current information and communication technology. According to Strohmeier (2007), E-HRM is defined as planning, execution and application of information technology for both networking and supporting of at least two individual or shared actors in their collaboration of performing HR activities. Besides that, E-HRM is also used as “Virtual HR” to comprehend a network-based structure developed based on collaboration and facilitated by information technologies to assist the organization obtain, progress and organize intellectual capital (Lepak & Snell, 1998). Moreover, e-HRM also has been viewed as a method of implementing HR strategies, procedures and practices in organizations through sensible and direct support of full web technology-based channels utilization. In fact, e-HRM includes all possible mechanisms and communications between HRM and IT through developing value for managers and employees in the organization, as well as outside entities.

A strategic HR function connects HRM activity to the strategic management process and business objectives. This brings to an integration set of policies and practices created to perform the organization’s implicit or explicit business strategy in order to manage the human capital of a firm. HR management digitalization focuses on integrating all aspects of personnel management with the competencies of quickly evolving digital technologies for transparency, reliability of orientation and measurement of human capital management processes, which is most likely as other company assets management (Fedorova et al., 2017; Kokovikhin, 2017). This has been revealed that in the twenty-first century, HR managed to transform the employees’ experience through alteration of HR processes with the utilization of new digital methods, applications and platforms of providing HR services, also digital communication.

3 Process of Digitalization

It becomes apparent that digital transformation can be seen in the HR function that brings the challenges of developing new concepts and values and spreading it through organization. Thus, every HR process of revolution has its own aim, which is to influence the cultural modification and with introducing consistent values to bring the effects towards process adoption. The position of HRM particularly in the digital transformation process is to manage changes in the workforce by converting to new business strategy and empower employees with digital approach while striving towards digitalize it and accountable for its own transformation.

There are few questions to be asked before the implementation of digitalization process:

- (a) Do you still haven't implemented digital workflows in your company?
- (b) Do you still use the phone, fax and mail to communicate?
- (c) Are you still doing your internal planning on a drawing board?
- (d) Would you wish to provide tablets to your employees or automate your weekly shop floor?

Every organization, from manufacturing to logistics and energy, is undergoing a digital transition. Every business faces new obstacles as a result of new technologies. Meanwhile, relationships with customers and suppliers are also evolving.

3.1 Three Main Pillars of the Digitalization Process

The digitalization strategy is the foundation of the Industrial Revolution 4.0 especially during this current world situation. Most organizations are switching from the traditional Human Resource Management (HRM) to the HRM Digitalization due to the advance catch up with other competitors in their industry. For instance, each organization has their own digitalization strategy to be competitive among them. Hence, there are approaches that take into consideration three main pillars of the digitalization process, which are **setting goals and doing a strategies analysis, operationalizing the digitalization strategy and putting the digitization strategy into action.**

3.1.1 Setting Goals and Doing a Strategic Analysis

To begin, management should work together to develop a digital vision and agenda. This includes investigating new technology and digital development trends to see how they can benefit the business. Digital development patterns show how to use digitalization to promote company strategies. They can range from using digital data to make real-time forecasts to branching out into entirely new industries. This step also involves a company to investigate that takes into account the industry and competitors. Then, depending on their own business and IT strategy, firms should define a target vision of the digital business model and prioritize digital concerns. The key component of this is determining the level of digital maturity.

Digital maturity demonstrates how far a company has progressed in dealing with the topic of digitalization and the areas where it may need to improve, as measured by the most recent technology. To this purpose, companies need to bring together IT and officials from several departments inside a firm. Then they need to look at various elements to determine their digital maturity level. These considerations apply to IT design, automation and process optimization across the board, including customer and supplier connections.

The results are divided into five categories, with scores ranging from “non-digital” to “digital leader.” After determining a company’s level of digital maturity, it can

develop goals based on that information. First and foremost, the prospects and goals should be a suitable fit for the company's future business strategy. As a result, becoming a digital leader in every field is not the primary priority.

3.1.2 Operationalizing the Digitalization Strategy

After a company has defined its digital vision, management needs to set an agenda and assess its digital maturity through moving on to identifying the know-how and skills which will be required, as well as using the information to identify innovations, such as new services. It is critical to bring together IT, expert departments and middle management to address the demands of all of a company's divisions and departments.

3.1.3 Putting the Digitization Strategy into Action

The final phase is to put the strategy that has been devised into action based on this knowledge. The business may now create its own digital plan and portfolio, as well as establish priorities. This stage of the process entails communicating with top management to align individual digital projects with the company's overall growth. The organization will be in the midst of digital transformation once this step is accomplished. In order to develop a linked platform and new industry revenue sources, CEOs and boards of directors have made digital transformation a key priority. Executives must approach strategy with an understanding of the distinctions between transformation and business optimization. Digital transformation typically requires calibration and continuous learning across a mid- to long-term planning horizon. Gartner's Strategic Planning Framework includes three planning horizons that determine the three steps to full transformation.

(a) Define strategy

The first stage is to think about the big picture goals and initiatives that drive your company, and how you can improve them with technology and information design patterns.

(b) Create strategic plans

Once you've figured out how to use information and technology to help your company reach its long-term objectives, start putting together a strategy plan to help you get there.

(c) Implement with operational plans

This element deals with the implementation of specific projects and adjustments, as well as other operational responsibilities, which are not covered by the strategic plan, such as regular software upgrades or hardware maintenance. The company needs to initiate, revise or refresh strategic plans in response to changing business conditions or directions (Fig. 2).

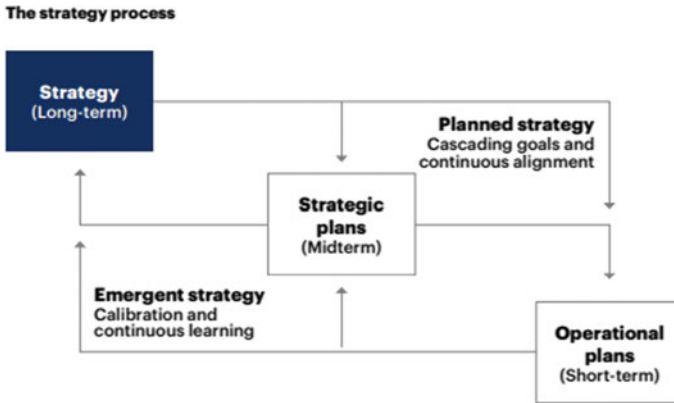


Fig. 2 Gartner's strategic planning framework. *Source* Gartner (2021)

4 Stages of Digital Transformation

Digital transformation is known as the integration of digital technology into all elements of a business, radically changing how you operate and provide value to clients. It is also a cultural shift that necessitates firms constantly challenging the status quo, experimenting and learning to accept failure. When it comes to digital change, it is difficult to keep up with the pace of change in the business world but companies that embrace a culture of change and transformation are well on their way to securing their company's future. There are various stages that an organization goes through on its path to digital transformation, as well as what it takes to achieve actual change. Steam power was the disruptive technology that revolutionized the globe during the first of the four Industrial Revolutions meanwhile the assembly line was in the second, and the computer was in the third. We are currently living in the fourth Industrial Revolution, which is digital. Intelligent digital technologies such as artificial intelligence (AI) and machine learning, Internet of Things (IoT) networks, advanced analytics, and robotics have the potential to revolutionise how we work and do business—as well as how businesses interact with their customers and the rest of the world.

Digital transformation is about the people and mindset of the technology savvy, which can empower the stakeholders of the organization. This approach has been used in the organization since the online platform has become rampant and widely used. Hence, there are some steps of digital transformation strategy that should be followed in order to get a better impact of this digital platform. There are three stages of the digital transformation strategy; digitalize the manual process, integrate intelligent technologies and manage cultural change.

4.1 Digitalize the Manual Processes

Intelligent technology must be integrated into existing business processes in order for digitalization to take place. The first step is to convert analogue documents and assets to digital data. Then search for methods to make the procedures more efficient. For instance, gateway devices and sensors are required to link current devices and machines into an IoT network. Other technology, including virtual reality (VR) wearables, can be used to help humans with tasks like customer service and inventory management. Part of this process is ensuring that the organization's Enterprise Resource Planning (ERP) and planning systems are adequate to the task at hand. The greatest ERP solutions are AI and machine learning-powered, which run on fast and scalable in-memory databases by making the next step seem aligned.

4.2 Integrate Intelligent Technologies

Technologies such as AI, machine learning and advanced analytics power made possible usage of data analysis, real-time automation and complicated learning algorithms. It is not just about the technology, however, businesses must have upskilled and reskilling initiatives in place to ensure that their staff can make the most of these intelligent technologies and add the most value to their jobs and workflows, so that it can be a way to use the insights and capabilities.

4.3 Manage Cultural Change

According to a recent Harvard Business Review survey, cultural problems are the largest hindrance to digital transformation which shows 63% of executives. The most successful transitions occur when companies accept that change is difficult. People who have been doing things and understanding things in a specific manner for a long time (perhaps decades) will want assistance in not only seeing the potential benefits of these changes but also in adapting their workflows and habits to make the most of them.

5 Human Resource Management (HRM) Evolution

Human Resource Management evolution across time is vital for understanding the philosophy, functions and practises of HRM that are used in various settings so that appropriate HRM practises can be evolved in the current situation. The HRM acts as part of management discipline, which has followed the pattern of management

Table 1 Industrial revolution era

Revolution stages	Year
Industrial revolution era	Nineteenth century
Trade union movement era	Close to the nineteenth century
Social responsibility era	Beginning of the twentieth century
Scientific management era	1900–1920s
Human relations era	1930s–1950s
Behavioural science era	1950s–1960s
Systems and contingency approach era	1960 onwards
Human resource management era	1980 onwards

development due to the connection of the difficulties in both domains. It is a relatively new word used to describe how an organization manages its human resources and still growing into a combination of organizational behaviour, personnel management, labour relations and labour law. Becker and Huselid (1998) state that the most substantial value is generated in the Human Resource function by focusing primarily on the delivery of professional and often research-based HR activities such as staffing, development, remuneration, labour relations, and so on. These procedures are crucial, and research shows that substantial value to the firm can be seen if carried out properly. Various stages in the development of human resource management practices can be classified based on the industrial revolution era to the present era as below (Table 1).

The beginning of that era can be seen in the classification of several stages of human resource management in terms of period. In each period, a different technique to managing people at work has been emphasized. A new period does not necessarily signal the end of the previous one, but there has been some overlap. The following are the main characteristics of these eras, as well as the types of practices linked to human resource management.

5.1 Industrial Revolution Era

The systematic development of HRM began with the industrial revolution in Western Europe and the United States in the 1850s. The Industrial Revolution reflected on the development of machinery, the application of mechanical energy in production processes and, as a result, the birth of the notion of a factory with a large number of workers working together. The old cottage system was changed by the industrial system. The Industrial Revolution introduced numerous changes, including consolidated workplaces with big groups of employees, mechanised production processes, employees migrating away from their homes and indirect communication between

factory owners and employees. Three HRM methods were established to manage people in the manufacturing system of the industrial revolution: recruiting, training and control.

5.2 Trade Union Movement Era

Shortly after the factory system was established, employees began to organize themselves based on their common interests to form workers' associations, which became known as trade unions. The primary goals of these organizations were to protect their members' interests and to solve their problems, which arose primarily as a result of the use of child labour, long hours of work, and poor working conditions. Other aspects of work, such as economic problems and wages, employee benefits and services, and so on, became issues later on. These trade unions began using weapons such as strikes, slowdowns, walkouts, boycotts, and so on in order to accept their demands. These trade union activities compelled owners and managers to implement employee grievance systems, arbitration as a means of resolving disputes between owners/managers and workers, disciplinary practises, expansion of employee benefit programmes, holiday and vacation time, clear definition of job duties, job rights through seniority and the implementation of rational and defensible wage stipulations.

5.3 Social Responsibility Era

Some factory owners began to take a more humanistic and paternalistic approach to employees in the first decade of the twentieth century. The paternalistic approach to labour management is based on the philosophy that labour is similar to a child, and the owner is similar to a father, and the owner should care for his labour as a father care for his children. Those industrialists who took a paternalistic approach provided several concessions and benefits to the labour force, such as reduced work hours, improved workplace facilities, model villages for employees and so on. All these practises contributed to the advancement of the social welfare aspect of labour management. Many critics of the paternalistic approach argued that it was used to address problems caused by the labour union movement, as there were numerous trade unions that frequently disrupted work performance. Employers noticed that workers were becoming uncontrollable, so they implemented a welfare scheme to address the issue. As a result, this was more of a compulsion than a philosophy.

5.4 Scientific Management Era

Taylor began to investigate the “one best way of doing things” around the twentieth century. He was able to significantly increase employee productivity using his experiments, and he wrote many papers and a book on scientific management based on these experiments. The main principles of scientific management are:

- (a) Science replacing rule of thumb.
- (b) Harmony over conflict.
- (c) Cooperation over individualism.
- (d) Development of each individual.

Scientific management techniques that related to worker management consisted of functional foremanship, standardization and simplification of work and a differential piece wage system.

5.5 Human Relations Era

Around the 1920s, management researchers focused on the human factor at work and the variables that influence people’s behaviour. Hugo Munsterberg had previously written a book titled “Psychology and Industrial Efficiency,” which advocated for the use of psychology in the areas of personnel testing, interviewing, attitude measurement, learning, and so on. This brief period was known as the “Industrial Psychology Era.” In 1924, a group of professors from Harvard Business School in the United States began an investigation into the human aspects of work and working conditions at Western Electric Company’s Hawthorne plant in Chicago. They came to the conclusion that, in order to improve productivity, management should focus on human relations as well as physical workplace conditions. As a result, concepts such as social system, informal organization, group influence and non-logical behaviour entered the field of personnel management.

5.6 Behavioural Science Era

In contrast to human relations, which assume that happy workers are productive employees, behavioural scientists have been goal-oriented and consider understanding of human behaviour to be the primary means to that end. They have used a variety of sophisticated research methods to better understand the nature of work and the people who work in it. The following are the major conclusions drawn from behaviouralists’ contributions:

- (a) People do not dislike their jobs. They will achieve their goals if they have been assisted in setting them. In fact, the job itself is a source of motivation and fulfilment for employees.
- (b) Most people can exercise greater self-direction and self-control, as well as generating more creativity than is required in their current job. As a result, their untapped potential remains untapped.
- (c) Managers' primary responsibility is to maximize the organization's untapped human potential.
- (d) Managers should foster a healthy environment in which all employees can contribute to the best of their abilities. The working environment should be healthy, safe, comfortable and convenient.
- (e) Managers should allow their subordinates to direct their own work and encourage them to participate fully in all important decisions.
- (f) Subordinate influence, self-direction and self-control can all be increased to improve operational efficiency.

5.7 Systems and Contingency Approach Era

In the current era, the systems and contingency approach have sparked the interest of management thinkers. It is an integrated approach based on empirical data that considers human resource management in its whole. The basic idea behind this approach is that any object must be analyzed using a method that involves simultaneous variations of mutually dependent variables. This occurs when a system approach is used to manage human resources.

5.8 Human Resource Management Era

When the factory system was implemented in production, many employees began to collaborate. It was felt that someone should be in charge of recruiting, developing and overseeing the welfare of these employees. In most large organizations, an industrial relation department was established for this purpose, which was primarily concerned with workers. However, as time passed and the complexity of managing human resources in large business organizations grew, the scope of the industrial relations department was expanded to include supervisory and, later, managerial personnel. The department of industrial relations was renamed as the personnel department. People were treated as socio-psychological beings rather than physiological beings due to increased competition for market share, competition for resources including human talents, and increased knowledge in the field of managing human resources and large organizations changed the name of their personnel department to human resource management.

6 Traditional Human Resource Management (HRM)

Human Resource Management has been ordinarily used for about the last 15 years known as “personnel administration”. This concern is based on the technical aspects of industrial welfare, recruitment and selection, acquisition of other personnel activities, industrial relations, and legislation. An organization’s Human Resource Management focuses on the practices that could help the organization to deal with an effective management process. However, the HRM has changed from time to time and become better onwards. Thus, every large or small organization employs a variety of capital to run its operations such as cash, valuables or goods used to generate income for a business. For instance, a retail store uses registers and inventory, whereas a consulting firm may have proprietary software or buildings. Whatever industry they are in, all businesses have one thing in common: they need employees to make their capital work for them.

Human resource management (HRM) is the process of hiring, training, compensating, developing policies and devising retention strategies. The HRM field has evolved significantly over the last two decades, making it an even more important role in today’s organizations. HRM used to focus on processing payroll, sending birthday gifts to employees, organising company outings and ensuring forms were correctly filled out—in other words, more of an administrative role than a strategic role critical to the organization’s success.

When the term “human resource management” first became popular, it was criticised for referring to people as resources, as if they were any other factor of production to be leveraged into economic value. Besides that, Boxall and Purcell (2016), see this as a misunderstanding of the term. They argue that “human resources” are not people, but rather their knowledge, skills, and energies that they use in their daily roles: employees are not human resources. Somehow employees are autonomous agents who hold human resources, which are the skills they can use and develop at work and which they take with them when they leave the organization.

The traditional Human Resource Management practices focus on the functional activities, which are more on solving employee problems, managing labour relations and keeping their employees feel ease and happy. In addition, the traditional approach does not educate employees about responsibilities or how their work will be done but the HR manager will be considered on this matter. Hence, in this traditional HRM, some practices would apply in the organization such as staffing, induction, training and development, compensation, employee welfare, organizational policies, performance appraisal and health and safety.

6.1 Staffing

Staffing is primarily concerned with the recruitment and selection of human resources (people). Prior to hiring, human resource planning and recruiting are carried out.

Recruiting is the personnel function of identifying and hiring the most qualified candidates to fill job openings. The selection function chooses the most qualified candidates based on the recruiting function to attract people to the organization. During the selection process, human resource personnel assist managers in deciding which applicants to choose for the available jobs and which to reject.

6.2 Induction

Induction is used to introduce a new employee to his or her new job and the employer. It allows new employees to become acquainted with more intimate aspects of their job, such as pay and benefits, working hours, and company policies and expectations.

6.3 Training and Development

Employees are given the skills and knowledge they need to do their jobs well through training and development. It must be made available to all employees. Organizations frequently provide training for experienced employees in addition to new or inexperienced employees. This could be because their jobs are changing, or the company requires them to work more efficiently. Employees are also prepared for higher-level responsibilities through development programmes. Training and development programmes ensure that employees can handle the stresses of their jobs while still performing well.

6.4 Compensation

The HR department uses an assessment system to determine how much employees should be paid for specific jobs. Compensation is expensive for businesses, so it requires careful consideration during the human resource planning stage. Compensation has an impact on staffing because people prefer to work for a company that offers a higher wage in exchange for the work they do. It serves as an important motivator for employees to do more in their jobs and advance to higher levels. As a result, it is linked to employee development.

6.5 Employee Welfare

In 1878, legislation was passed to establish a 60-h work week for children and women. During this time, trade unions began to emerge. The first trade union conference

was held in 1868. This marked the beginning of collective bargaining. The Welfare Workers Association was renamed the Chartered Institute of Personnel and Development after its formation. According to Arthur James Todd, “employee welfare” refers to “anything done for the comfort and improvement, intellectual or social, of the employees, which is beyond the wages paid that is not a necessity of the industry”. Employees are satisfied and committed to the organization if they are provided with such services. Though welfare services are merely maintenance factors and not motivators, they are necessary for the improvement of the organization because they are closely related to employee productivity.

6.6 Company Policies

Every organization has policies in place to ensure fairness and continuity. One of HRM’s responsibilities is to create the language that will accompany these policies. Policy development process included HRM, management and executives. For example, an HRM professional may recognize the need for a policy or a policy change, solicit input on the policy, write the policy and then communicate the policy to employees. It is critical to note that HR departments do not and cannot work in isolation. Everything they do must involve all of the organization’s departments.

6.7 Performance Appraisal

The HR department of any organization will evaluate the performance of its employees. This Human Resource Management function assists the organization in determining whether the employee they have hired is progressing toward the organization’s goals and objectives. On the other hand, it also assists the company in determining whether the employees need to improve in other areas. It also assists the HR team in developing specific development plans for employees who have not met the job’s minimum requirements.

6.8 Health and Safety

Human resources are critical in the development and implementation of occupational health and safety policies. Workplace health and safety encompasses a wide range of duties and initiatives aimed at providing employees with a safe working environment. It is widely accepted that a happy workforce is more likely to be a productive workforce. Coordination between HR and safety and health results in company policies being applied and followed more consistently, resulting in greater satisfaction of employees working at the site.

6.9 *Industrial Relations*

Management and labour consultations became more common during the war. This meant that HR departments were in charge of organising and administering it. The emphasis shifted to health and safety, as well as the need for specialists. The need for specialists to deal with industrial relations was recognised, so the personnel manager became the organization’s spokesman when discussions with trade unions/shop stewards were held. Industrial relations were very important in the 1970s. The tense atmosphere during this time period emphasized the importance of a specialised role in labour-management negotiations. The HR manager had the authority to negotiate pay and other collective bargaining agreements.

7 **Transition Process from Traditional to Digital HRM**

Digital transformation has transformed how businesses interact with their customers, how they run their operations, how they envision their business model, and how they organise themselves (Westerman & Bonnet, 2015). It is about integrating digital technologies such as social, mobile, analytics and cloud to transform how businesses operate (Kane et al., 2015). The incorporation of digital technology into business processes has become critical for modern organizations’ survival and competitive advantage (Bharadwaj, 2000). Palmer et al. (2017) assert that human resource management in the digital age is more varied, more people-oriented, and has the responsibility of designing diverse, challenging jobs to keep young employees more engaged in their work. The traditional ways in which HR functions are carried out in organizations are called into question by digital transformation.

A smooth transition from traditional to online HR necessitates an understanding of each organization’s unique requirements. It is critical to develop a digital platform that not only addresses the broad issues that businesses face—such as employee absence, engagement and retention—but is also adaptable enough to grow with the company. This may entail “picking and mixing” HR programmes to achieve the right balance, especially in smaller organizations. Essentially, we are in an experimental era in HR, with innovation playing a critical role. It’s easy to think of traditional and long-established systems as inherent in corporate structures but bringing the HR function online reflects the larger world of work—a shift in mindset and practical application that provides greater speed, agility, and flexibility to businesses across the board. Below is the transition of HR over time and how it has become possible for it to take on a more mature role.

7.1 The Fourth Industrial Revolution Has Begun

Professor Klaus Schwab defined the fourth industrial revolution as the fusion of the physical, biological and digital worlds, altering the way we live, work and interact with one another. The evolution of new technologies has an impact on all disciplines, including human resources. The fourth industrial revolution necessitates a significant amount of upskilling. In an age defined by artificial intelligence and data, there are not enough skilled workers to make sense of it all. Even HR professionals must think and act like data scientists, which is central to HR's digital transformation. While HR is expected to take responsibility for their own reskilling and upskilling, they are also expected to take charge of their organization's employees' learning needs.

7.2 HR Shifting to the Cloud

When the cloud arrives, HR's transition from manual processes to a centralized data centre is complete. Cloud computing in human resources simplifies recruitment, enables innovation, improves employee well-being by bridging communication gaps, and allows for a more global approach to human resources. This gives HR a more strategic role in the organization and earns it a seat at the table with the C-suite and transforms it into a business partner with the authority to contribute to key business decisions.

7.3 All Decisions Are Being Driven by Data

As the cloud centralizes all information and data, HR begins to derive insights from it. HR now uses these insights to recruit the ideal candidate, predict which employee has the potential to be a key leader in the organization, and which employee is at risk of leaving the organization by processing data using analytics, machine learning and artificial intelligence. "In the future workplace, products that can organize data in meaningful ways will be the norm," stated by Laura Butler, SVP People and Culture at Workfront. "Companies will need skilled data analysts and strategists who can help managers interpret data for better decision making." Though all HR professionals must now think like data scientists, a specific role is required to analyse, interpret and enable decision-making using data analytics. Data is the backbone of HR's digital transformation journey, and it will define the future workplace.

8 Digital Human Resource Management Transformation Stages

Human Resource Management (HRM) has become an important department in an organization in terms of recruitment and solution, training and development, performance appraisal, reward and recognition and others. According to Solis (2018), there are Six-Stage Models of digital transformation that can be applied to this HRM Digitalization in organization. This model is applicable to all initial transformation in organization, and it gradually discovered the complexity of the changes. The Six-Stage Model covered.

8.1 Business as Usual

The Human Resource Management (HRM) Digitalization is the transformation from the traditional HRM. According to Ahmed and Ogalo (2019), traditional HRM includes the recruitment and selection, induction, reward and recognition, performance appraisal, training and development and counselling which is conducted by using manually instead of digital platforms. Due to that, if the organization tunes the traditional HRM to digital HRM, the HR manager still must run the process as usual but in a different approach. This digital platform gives more benefit to the organization especially in productivity of the HRM process. Markedly, HR managers should spread the planning to all staff in the organization to ensure that all of them are ready for these changes (Cafferkey et al., 2019). To clarify, when the HR process transforms to digitalization method means that all staff also have to apply it in daily tasks such as online report duty, online leave application and online performance appraisal key. Hence, even though there is a transformation of the HRM process in the organization, the business is still running as usual.

8.2 Present and Active

When an organization decides to move from the traditional HRM phase to the digitalization method, the HR manager needs to do some research on that to ensure the transformation is worth it. According to Jin (2021), it is not easy to move from traditional to digital phase because it incurred financial and non-financial capital. The pre and post of the digital transformation should be conducted internally and the organization can have a look on the patterns of the transformation in detail (Marler & Parry, 2016). Furthermore, once the organization tunes to the digital HRM, the HRM department must be always present and active instead of just being as before. Significantly, the transformation supposedly brings an effective and efficient workflow in the organization compared to previous traditional ways. Thus, when the organization

decides to change to HRM Digitalization, it must be present and active instead of normal routine like before.

8.3 Formalized

The formalized refers to something official or decides to organize it according to a fixed structure. This happened when the organization agreed to change from traditional HRM to HRM Digitalization approach. When the top management has decided to accept the HRM digital platform in the organization, it should be formally announced to all the staff (Marler & Parry, 2016).

8.4 Strategic

Strategic management is an ongoing process in which organizations apply to analyze internal and external processes and resources. After the organization formally decides to change to a digital platform, it means that the HR manager should analyze both internal and external potential of applying this digital method (Marler & Parry, 2016). Markedly, the HR manager has to look at the strength, weakness, opportunity and threat for the organization to ensure that when the HRM Digitalization is applied, it can be effective to all staff internally. According to Ruel and Bondarouk (2014), the implementation is the execution of the necessary strategies to meet the objectives that have been set. In addition, it is to ensure success and bring the organization to the next better level onwards. Hence, strategy is a must because it is an appropriate step measure that provides necessary feedback with facts and strong justification.

8.5 Converged

The digital platform becomes a key priority across the business path especially for the large organization in order to make sure the organization still has competitive advantages in their industry (Ruël & Bondarouk, 2014). A formal transformation team is set up, and this digital platform is being driven across all entities. The HRM Digitalization would give the employees a new experience to the forefront. The HR manager will arrange everything, and it can be useful to the organization specially to ensure the HR process smoothly as well.

8.6 Innovative and Adaptive

The digital HRM is now a strength of organization because every process in HR must use this digital platform. The success of the Digitalization HRM affects the continuous improvement in a business. The development of different scenarios in the HRM process brings an innovative and adaptive environment and for future best management practices. According to Khashman and Al-Ryalat (2015), the HRM Digitalization prepared the staff on practices in a new environment and climate, new knowledge and skills and required an effort on that. Thus, in the way to make the organization compatible with industry by facilitating the HRM Digitalization as the trending platform in business operations.

9 Digital Human Resource Management (HRM)

In recent years, there has been an increase in the use of technology in Human Resource Management (HRM) practices across all types of organization to gain strategic advantages and achieve high performance (Van Den Heuvel & Bondarouk, 2016). Globalization business trends, online business, mobility, competitive market, high business speeds require organizations to transform from traditional to digital operations. In addition, organizations are entering a competitive market, ensuring high productivity, innovation, adaptability and flexibility. The fundamentals of this evolution lead to changes in HRM practices. The forthcoming digital revolution requires a modification of the business practices).

HRM is an essential function for every organization and business cannot function well without employees. Industry 4.0 has transformed the roles, responsibilities, skills and qualification requirements of employees in the workplace as business activities become increasingly digitized (Hecklau et al., 2016). Digitalization has an impact on all areas of employment such as manufacturing, marketing, finance, supply chain and Information and Communication Technologies (ICT). Changes in employee roles, responsibilities and skills requirements will lead to the changes in HRM practices including recruitment and selection, training and development, performance management and relocation of employees. Furthermore, industry 4.0 also creates challenges to HRM in regard to lack of skills and qualifications required and loss of jobs to automation, robotics and information technology applications (Sung, 2018).

Digitalization requires the adaptation and creation of new knowledge and operational procedures as well as introduction of new digital technologies that require changes in business models and alignment between the processes, practices and organizational culture. According to Bondarouk and Ruël (2009), digital technologies are designed for constantly changing methods practised by an organization of hiring, managing and supporting people. Besides that, the use of digital technology

will increase the productivity of the employees of the organization, increase the efficiency of the employee management system and the increasing competitiveness of the organization in a more sustainable position in the market. All in all, digital and automation are no longer new for organizations around the world and most of them are ready to invest in it further.

Digital transformation has made its way beyond the IT department across industries, sectors and geographies. The digital era is advancing at rapid speed that is fundamentally altering the way organizations function and requires the development of new ways of thinking about service delivery that influence the way business operates. Shah et al. (2017) also highlighted how digitalization of HRM processes enables to remove many routine tasks, to reduce the risk of human error and empower experts to solve important issues, enabling them to use their knowledge and skills more effectively in solving business problems. As a result, the HR departments are having a significant impact on their functions and their involvement in finding innovative methods to manage employees. Thus, the significant impact on the functions and roles of the HR departments in identifying innovative methods to manage people and execute daily operations. Generally, HRM functions or practices consist of development of HR strategies and policies, HR planning, recruitment and selection, training and development, rewards and recognition, management of employee information, retention and retirement. To ensure the effectiveness of execution of HRM practices, organizations have to go digitalize and transform all the practices in accordance with how business operations are carried out.

Ketolainen (2018) defines digital HR as “*the change process of moving to a digital HR to become automated and data-driven. It is the use of technologies that enables changing business.*” In digital HRM, social, mobile, analytics and cloud (SMAC) technologies are utilized to optimize processes and make human resources (HR) more effective, efficient and linked. In addition, many scholars stressed that execution of digital HRM is important for an organization to improve their performance and maintain relevance in the digital era. Therefore, to remain competitive, organizations must be prepared to accept the adoption of new technology. In this situation, digitization is viewed as a need, an unavoidable transformation from which no organization can escape. In this situation, digitization is seen as an imperative, and this transformation is inevitable by any organizations.

9.1 Purpose of Digital HRM

Digital HRM is a solution for an organization and its business performance. To keep up with digital trends, organizations need to innovate the main HR functions, including recruitment and selection, training and development, performance management, compensation and reward and career management. It is seen that most of the digital HRM activities are carried to the web and mobile applications to provide effective and productive HR practices for the employees and provide valuable information for the organization. Besides that, by using embedded technology in HRM

activities, indirectly reducing the stationery, saving time and reducing costs. In this case, it is in line with the sustainable development goal, which aims to achieve a better and more sustainable future for all people and the world by 2030. The purpose of digital HRM for organization is as follows:

- (a) Enhancing the quality of HRM-related services/functions.
- (b) Providing organizations with effective and efficient HR practices.
- (c) Providing the appropriate environment for employees to create and implement strategic HR practices.
- (d) Creating a conducive atmosphere for employee developing and implementing strategic HR practices.
- (e) Providing an appropriate career planning approach and development opportunities.
- (f) Designing training programs for employees based on their job descriptions and skill needs.
- (g) Reduce administrative procedures and operational cost.
- (h) Reduce the number of employees and HR department staff.
- (i) Using technology platforms such as e-mails or other social media by sending appreciation messages to motivate employees. Recognition through digital platforms will improve the employee-employer relationship within the organization.
- (j) Increasing the quality of communication and disseminating the information within the organization. Increase in the possibility of producing and implementing new ideas. Employees share their ideas and suggestions with their colleagues in the organization.
- (k) Establishing a flexible working environment that adapts to global challenges and changing workforce requirements to manage across geographical areas by using the same system universally. Organizations able to create solutions for problems across geographies and time zones, without interfering with the organization's regular work operations.

9.2 Digital Human Resources Management (HRM) Practices

All potential integration methods and contents between HRM and information technology aimed at generating value inside and across organizations will be explored in depth under the umbrella term of Digital HRM. Digital technologies are actively used by organizations around the world for HR functions. In the past century, HRM has changed dramatically. It has transferred from operational practices towards a more strategic and digitalization process. Application of ICTs in HRM functions is a prerequisite for any organization to successfully adopt and implement Fourth Industrial Revolution (Industry 4.0) (Evseeva et al., 2019). Nowadays, most of the organization functions and activities are transformed into automation.

Digital HRM is commonly discussed by academicians and HR practitioners as a widespread management topic worldwide. Digitalization of HRM can accelerate the HR process such as e-recruitment (online application for internal and external recruitment), online training and development (webinar and virtual learning) online selection process (easier for the interviewees to attend the interview session especially during pandemic Covid-19), reward and recognition and performance appraisal as well. When the digital platform is applied in the organization, the HR process becomes more efficient and fast responses intra-organization (Ruël & Bondarouk, 2014). This section discussed seven important HRM practices that have been digitized; human resource (HR) analytics, recruitment and selection, training and development, performance appraisal, compensation and benefit.

9.2.1 Human Resource (HR) Analytics

A proper digital HRM practice organization needs to gather all data and information related to human resources. According to Heuvel and Bondarouk (2016), HR analytics is the systematic identification and measurement of the human factors that influence business results. Marler and Boudreau (2017) defined HR analytics as HR practices enabled by information technology that employs descriptive, visual and statistical analyses of data pertaining to HR processes, human capital, organizational performance and external economic benchmarks in order to establish business impact and enable data-driven decision-making. HR analytics is about analyzing the data and information within organization to solve employee problem and to forecast future operation. It is an application of statistics, modelling and analysis of employee-related factors to improve business performance. Thus, HR analytics has become a standard tool for most HR managers as a data-driven method of improving decisions that has impact on HR functions. The data-driven approach that characterizes HR analytics is consistent with the development of organization.

HR analytics depends on the quality of the data and information collected from HR metrics, such as time to hire, time to fill vacancies, application dropout rate, turnover rate, retention rate, absenteeism rate, training expenses per each employee, employee relation and engagement and human capital risk. There are many benefits of HR analytics, namely, improve hiring process, reduce attrition, productive workforce. HR managers and executives are paying attention to collect and analyze data about their employees. Some organizations begin to use big data and data mining in the field of employee management and the transformation of HR data into successful business solutions and make use of factual information. It is a multidisciplinary strategy that combines methods to enhance decision quality and is accountable for finding and measuring important facts about employee and impact of organization performance. Hence, it is important for organizations to use HR analytics to analyze data, forecast and make accurate decisions. HR Analytics is not a new profession, but a technological advance enables organizations to enhance their efficacy and efficiency. Yet, organizations are looking for skilful HR analysts to play a role in collecting, structuring, analyzing and reporting on HR processes and data.

9.2.2 Digital Recruitment and Selection

Employees are the most valuable asset in any organization, which can influence key performance metrics as well as competitiveness. The ability of organizations to recruit and retain talented and skilled employees is the most crucial factor of organizational performance.

The recruitment and selection practice play important roles to enhance an organization's survival and success in the tremendously competitive and dynamic business environment (Kozlov & Teslya, 2017). Previously, organizations have used traditional methods to attract qualified applicants, including newspaper ads and employee referrals. Nowadays, the recruitment practice has been undergoing dramatic changes as a result of information technology development. The Internet, the information availability and ICTs have drastically changed the recruitment process; for example changing in the traditional process of job advertising, resume screening, short-listing and communication with applicants. The Internet is one of the most popular information communication technology (ICT) methods used in recruitment.

Most organizations have been hit as hard by the power of the web and digital applications as the recruiting industry. Although there are still more changes happening, it's clear that the web and digital applications have swiftly and drastically transformed the way the recruiting functions operate. Digital recruitment is already established in the task of recruiters, and it is the field of recruiting that is the most extensive for using digital technologies from attracting potential candidates to apply for jobs, selling and advertising vacancies, screening and evaluating candidates. Most large organizations use digital technologies in managing HR mainly in digital recruitment tools. Current practice indicates that digital recruitment attracts a higher number of job applications, significantly shortens the time required to fill a vacancy and is highly cost-efficient (Evseeva et al., 2019). Technology also has made recruiting more efficient and effective in terms of the distribution of information more attractively. For example, Unilever is the multinational consumer goods company accessing worldwide has now adapted a digital platform for recruiting new employees. Now the company is fully experimenting with digital platforms like web based, mobile applications, social media and artificial intelligence for the further recruitment process. Furthermore, job seekers increasingly search for jobs through online platforms rather than through traditional methods. Halid et al. (2020) highlighted the use of technological tools in implementing digital recruitment activities have a positive impact on employee performance and the time needed to carry out all activities.

Due to their cost, time and efficiency benefits, the majority of organizations adopt digital recruiting techniques over conventional methods. The advantages of integrated recruiting systems have been extensively recognized and used by organizations worldwide. Digital recruiting is the practice of using digital technologies to effectively fill vacant jobs inside a business. Organizations may establish an infinite number of job openings for prospective applicants at virtually with limited cost through different network platforms. In light of this, organizations that post job openings on their websites and social media platforms (e.g., LinkedIn, Twitter and

Facebook) incur little costs and get quicker access to prospective applicants. Organizations also utilize their website as a way of attracting and recruiting potential candidates.

The stages of the digital recruiting process include the following steps:

- (a) Identification of the jobs that must be filled.
- (b) Post the job opening on the internet.
- (c) Notification of open positions in the digital environment to prospective applicants.
- (d) Enabling jobseekers to view current job announcements.
- (e) Job seekers determine whether or not the job is a good fit for them.
- (f) The applicant applies for the job through the system.
- (g) The HR departments assess and filter the pool applicant in a virtual environment.
- (h) The HR department conducts job interviews with representatives from manager specific departments.
- (i) After selection process, HR design, a job offers (letter of appointment) and contracts.

In comparison to conventional recruiting methods, digital recruitment is an efficient practice in which the majority of tasks are completed on time. However, there are impact of the digital recruitment process includes (Table 2).

Table 2 Impact of the digital recruitment process

Impact	Descriptions
Cost	Organizations constantly strive to minimize the cost of filling job vacancies Cost differences prompt many organizations to replace traditional systems with online recruitment systems
Speed	In recruitment, the speed of filling the job opening is very important for organizations. Online recruitment can decrease cycle time and increase the efficiency of the process by allowing organizations to spend less time gathering and filtering data
Quantity	Online recruitment is extremely convenient for applicants and is available to them 24 h per day and seven days a week. Additionally, it enables users to quickly complete an online application or submit a CV for different jobs. This may be very helpful; it may encourage candidates to apply for jobs without evaluating their own credentials for each position, resulting in a high volume of applications for each job opportunity
Quality	The quality of the applicant pool is determined by the users of online recruitment. The majority of applicants who utilize digital platforms to apply for employment are computer proficient, well-educated, self-motivated people with a strong desire for success who are looking for relatively high-level positions
Diversity	The digital or online recruitment will indirectly influence the overall composition of the workforce and increase the level of diversity within the organization as well as encourage innovative and creative decision making

Source Kavanagh and Johnson (2017)

Digital Selection focuses on tests and assessments of individual applicants, which underlie the evaluation processes that enable organizations to manage their talent. These tools are used for selecting employees, as well as placement, training and development, promotions and evaluations. Tests and assessments are important for digital selection because they provide data that are used for making organizational decisions. Most organizations that seek digital expertise on selection will likely consider the term test to refer to traditional multiple-choice examinations that can be used to measure ability, personality or knowledge, as well as to skills tests, such as typing tests.

Organization-seeking assessments may be referring to these same tests, or, alternatively, they may be thinking of different types of selection procedures and tools, such as reference checks or work samples. Whatever the label, tests and assessments are job-related decision-making tools that provide information about candidates, information that organizations can use in selection. Therefore, digital selection plays an important role in selecting the best candidates for organizations.

9.2.3 Digital Human Resource Development (HRD)

Next is digital human resource development (HRD). HRD intervention is intended to encourage employee innovation and creativity, which will improve employee skills and contribute to overall organizational success. Digital HRD tools and instruments can be created in a variety of ways to enhance employee skill and abilities. Organizations must modernize core HR functions such as training and development to keep up with digital trends. The emergence of new training and development delivery methods in organizations confirms that employee performance has a significant relationship with training.

Web-based technologies have transformed the training and development function by providing a variety of delivery methods for employees to personalize their learning space, transforming learning content and delivery, enriching learning strategies, and enabling just-in-time learning as well as spatial divergence. Some organizations create their own methods with simple systems or customize the training to train their employees by using technology tools. As a result, technological literacy has developed as a fundamental competence in businesses that rely heavily on knowledge and technology. It is not just about skills, it is about bringing a genuine transformative shift in HR architecture and eco-systems, which resulted in “Human Resources 4.0” (Dehaze, 2017).

The current trends in employee digital training and development are:

- (a) Mobile learning.
- (b) Adaptive learning using artificial intelligence.
- (c) Personalized training is the use of individual training courses and development plans.
- (d) Creating a developing environment that does not interfere with creativity and provides high results.

- (e) Evaluation of training effectiveness: measuring the return on investment (ROI) of training.

Employees will understand the entire structure involved in the training process with digital training, and they will be able to attend the training program for any place by attending the training class via an online platform. Digital technology plays a key role in improving organizational performance through the cloud-based network and assisting in specific activities like HR analytics, talent management analysis and borderless teams. Digital HRM is extremely beneficial to the HR process and also plays an essential part in organizational growth.

In the digital era, onerous top-down HR practices are giving way to bottom-up digital systems or applications to assist individual employees in transferring the responsibility of managing growth from the organization to the employee. The strategic focus of organizational HRM is largely on transformational HR functions, such as training and development for digital applications. Torraco and Lundgren (2020) highlighted many HRD programs, notably in the field of training and development, that have the potential to change the twenty-first-century workplace. Digital training and development include:

- (a) Online learning technologies such as mobile learning apps, content archiving, and program and video delivery to users at any time and from any location are examples of learning technologies.
- (b) The importance of technology and virtual HRD in work settings that are available 24 h a day, 7 days a week.
- (c) The application of the entertainment and games movement to computer-based instruction.
- (d) Using social media to improve employee-employer engagement and knowledge/information sharing.
- (e) Using cost-effective virtual training settings.
- (f) Produced employee profiles using computers to plan for future employment and to propose training for employees.

Scully-Russ and Torraco (2020) pointed out that digital HRD should also pay attention to the following:

- (a) Technology impact on information security, privacy, ethics and socio-cultural context.
- (b) Exploring the dynamic interplay between people, process and technology to harness their synergy.
- (c) Collaborating with different disciplines such as knowledge management, information systems and data sciences to find cross-disciplinary connections.
- (d) Integrating various dimensions of digital diversity into the design of research, such as national and organizational culture, individual and team thinking, traditional and contemporary modes of work and the digital gap.

Digital HRD in the future will be a balance of challenges and organizational knowledge control. Digital HRD requires a willingness to take risks and push the

boundaries of technology in order to foster community, improve employee performance and foster creativity at all organizational levels. In the context of the COVID-19 pandemic, Bierema (2020) proposes that the time has come for HRD to create a new normal by setting new standards for fairness, inclusion and health in the global workplace, as well as providing knowledge and intellectual practices to the organization. Furthermore, digitalization has the potential to profoundly alter the objective and roles of HRD experts, who are responsible for supporting workplace learning, improving job performance and enabling organizational growth and transformation.

Training and development aspire to enhance present or future employee performance by improving an employee's ability to perform via learning, usually through modifying the individual's knowledge, skills, abilities and other qualities (KSAO). Digital training, also a subset of distant learning, is made up of procedures and applications that make use of digital and virtual learning environments. The capabilities of today's digital application such as learning management software that is usually bundled into a learning management system (LMS) range from training administration to training and talent management.

Learning material is created with the assistance of e-learning information and communication technologies by transferring online content to digital media through multimedia tools such as the internet, intranet and extranet, as well as audio, video, interactive television broadcast and mobile apps. As a result, it enhances the quality and effectiveness of training by tailoring it to job requirements. Besides that, compared to conventional training and development, digital training, development activities can be provided at a lower cost.

9.2.4 Digital Performance Management

Performance management is an official system for examining and evaluating of task performance individual or group in organization. Performance evaluation has been one of the main contributors to organizational success in recent years. Performance management data is linked to several other systems, including rewards, staffing, training and development, and career development. Digital performance management is a tool used by managers to motivate employees to perform well in their jobs. That instance, as a consequence of digital performance assessment systems, all data on performance goals, reconciliations, standards, performance issues and evaluation findings are stored in digital data centres, saving time and effort for HR experts. Digital performance management streamlines performance measures by recording data such as quantity of finished work, time spent on tasks and error rates. For example, in 360-degree assessments conducted through intranet networks in organization, all evaluators are requested to provide an online performance review of the individual being evaluated by email. Hence, the assessment data are integrated to give feedback to the assessed individual and to assist them in improving their performance.

The fundamental purpose of performance management is to define and communicate individual responsibilities, anticipated outcomes, necessary behaviours and

competencies, as well as to ensure that individual behaviour and goals are aligned with the organization's strategic goals (DeNisi & Murphy, 2017). In addition, performance evaluation may stand out among HRM functions that organizations attempting to address the strategic challenges of digitalization may use to assist leaders in encouraging workers to engage in creative and innovative work behaviour (Curzi et al., 2019). An interesting debate about performance management practices has erupted, with some questioning the effectiveness of traditional performance appraisal and others speculating about changes in performance management and performance appraisal as a result of work and organizational digital transformation. Performance management is a critical component of HRM because it establishes individual roles, objectives and expected behaviours with the ultimate aim of aligning employee' behaviour and goals with the company's strategy (DeNisi & Murphy, 2017).

Digitalization and HRM studies have focused on electronic performance management systems, specifically on how computerized and digital performance measurement and feedback may affect the efficiency of the performance management process in terms of cost and time, as well as employees' reactions to performance appraisal. At this moment, scholars suggest that performance management systems should exhibit a stronger output orientation (i.e., a greater emphasis on achieving objective goals rather than on predetermined behaviour, time spent at the office, and long working hours) and a greater concern for employee development in order to assist employees in meeting competency requirements.

9.2.5 Digital Reward and Recognition

The term digital reward and recognition refers to web-based software solutions that allow managers to create, run and communicate pay reward and recognition plans efficiently inside their organizations. When an organization makes the best use of its financial resources, it is more likely to improve its efficiency and push its performance to new heights. In contrast to conventional compensation systems, digital reward and recognition is a strategy that combines the most efficient and effective use of an organization's financial resources as well as its capacity to distribute pay to people in an equitable and fair way.

Recognition is an award to an employee who shows outstanding performance. Recognition practice is one of the employer initiatives to recognize employees' achievement, excellent behaviours, anniversaries and milestones. The employee will receive an award that is not financially but psychologically beneficial. The introduction of new technologies in recognition has encouraged employers to give meaningful appreciations, celebrate shared success and drive employee engagement. There are many different ways to recognize employees publicly by using digital platforms such as internal employee newsletter, internal communications platforms such WhatsApp, social media posts, press releases, shout out during online meetings, post at organization blogs or websites about employee's success. The motivating effect of recognition programs may be significantly enhanced by using websites where workers can go online and find out where they stand in relation to other qualified employees. Every

employee wants employers to recognize their contributions and achievements to stay motivated and stay longer with the organization. Employees will work harder if they feel their efforts were appreciated by their managers or supervisors. Additionally, employees felt that being acknowledged by employers will enhance their relationship and build trust.

9.2.6 Employee Engagement

Previous studies have analyzed the impact of digitalization on employees. Lager and Milojkovic (2018) examined how businesses might use digital solutions to manage employees worldwide and discovered that surveys on employee digital engagement boost employee involvement in corporate activities. Fedorova et al. (2019a, 2019b) have studied the relationship between digitalization and employee performance. They found that higher performance achievement resulted in a reduction in daily activities and human error, ensuring the active participation of employees in applications through digital HRM and thus increasing employee satisfaction. Traditionally, individuals were expected to work for the same company as a full-time employee for their entire careers. Loyalty and longevity were significant predictors of professional advancement. Managers determined everything about what, where and how work should be performed.

Businesses in the twenty-first century require the majority of their workforce to be engaged in order to compete and stay ahead in their industry. Employees who are engaged are motivated, passionate and invested in the company. Their objectives are in line with the company's objectives, and they want to see both themselves and the organization succeed. Those who are not engaged, on the other hand, are the opposite sides. They are merely passing the time and are uninterested in their work. This group may become actively disengaged, spreading negative energy among co-workers and contributing to an unhealthy company culture. Investing time in engaging the disengaged percentage is an effective strategy for improving performance and sustaining organizational growth. A motivated workforce is a company's most valuable asset. Adopting a digital workplace can increase engagement by:

- (a) Allowing employees to communicate and collaborate more easily.
- (b) Investing in training and development, and utilising technology to make it enjoyable for both employees and managers.
- (c) Making documents accessible from a single location and ensuring their ease of access, which improves user experience and increases use of digital platforms and engagement.
- (d) Providing organizations with the ability to measure engagement, conduct pulse surveys, and stay up to date on your employees' well-being and happiness at work.
- (e) Creating a virtual company culture by displaying company values where all employees can see them and incorporating values into daily tasks.

9.3 *The Roles of Human Resource Managers in Digital Human Resource*

Organizations' external environments are constantly and rapidly changing as a result of digital technologies, which has increased the importance of human resource management (HRM) as a means of effectively implementing business strategy, achieving goals, remaining competitive and remaining flexible. Therefore, HR managers are confronted with new difficulties in terms of successfully executing the traditional daily tasks (administrative task) as well as performing new strategic roles that are in line with the requirements of modern businesses. Ulrich (2012) defined six roles of HR managers to be adopted by HR managers in order to face the challenges in the new business and work environment. These six roles are as follows (Table 3).

One of the HR roles (technology advocator) above is specifically focused on technology in which HR managers need to adapt to every change related to HRM in order to manage employees, to perform daily operations and achieve organization performance. Furthermore, the requirements of modern digital organizations are really forming the new responsibilities of HRM, whose primary goals are as follows (Torrington et al., 2020) (Table 4).

In addition to the conventional roles, the role of advocating, managing and implementing the consequences of digital technologies, to carry out the operational tasks of HRM to lower cost, with more monitoring and greater accessibility for employees. At present, most HR functions such as HR planning, recruitment and selection, training and development, reward and compensation, performance management and career utilize technology on a regular basis.

Table 3 Roles of human resource manager

Position	Roles
Strategic positioner	Assists the development and implementation of business strategies
Credible activist	Creates business decisions and accomplish tasks
Capability builder	Contributes to the development and maintenance of skills that are consistent with organizational values
Change agent	Contributes to the development of organizational capability, overcomes employee resistance to change and ensures the required resources
Human resource integrator	Initiates and integrates HR practices according to organizational strategy
Technology advocate	Utilizes social networking technology and systems to assist employees and contribute to the effective management of information

Source Ulrich et al. (2012)

Table 4 Role and objectives of human resource manager in digital HRM

Role	Objectives
Strategic	<p>Staffing objectives One of the primary roles of HR managers is recruiting and keeping employees with the appropriate qualities and required abilities to perform in a labour market where rivals are also searching. They also must create an organizational structure and develop a strategy for market differentiation and positioning to achieve staffing goals and meet current trends. Nowadays, HR managers have to gain knowledge and learn various digital platforms in attracting and recruiting potential employees</p> <p>Performance objectives To achieve organization goals, every organization must train and develop, empower, dedicate, motivate and adequately reward their employees properly. HR managers have the difficult task of creating an atmosphere, in which employees are not only capable of meeting performance goals but also want to go the extra mile. The HR manager’s job also includes enforcing disciplinary rules and procedures to guarantee that underperformers get fair punishment</p> <p>Change-management objectives In a business environment, change is unavoidable, constant and deadly. For an organization to survive and remain competitive, it must be able to effectively deal with future difficulties and embrace transformation. HR manager has to make strategic decisions, develop and participate in transformational HR functions to successfully manage the change process, including employee response to the change, agents of change and implementation procedures</p> <p>Digital HRM objectives Organizations shape work via the use of information technology such as virtual teams, outsourcing and networking collaboration. Human Resource Information Systems (HRIS) is used to access, collect, retrieve and analyze data on individual and team performance. HRIS is an effective method for gathering, storing and analyzing data related to HRM data and information in order to implement systems and practices that improve productivity, retain talent, forecast staffing requirements, and most often activities are to attract, recruit and select new employees. Organizations gather data about employees and improve employee engagement by using networking and internet technologies through networking devices and websites. People analytics are being improved by artificial intelligence and machine learning</p>
Operational	<p>Administration objectives This role contributes to the smooth operation of an organization such maintaining records of employee performance, attendance/absence, developing and implementing training programs, and monitoring and executing reward/payment procedures, ensuring compliance with the law (maternity leave, sick pay, the safety system and working conditions) and enables organization to make logical and equitable decisions. Managing administrative tasks professionally and effectively can help an organization gain a competitive edge over other organizations that are less efficient in their administrative processes</p>

(continued)

Table 4 (continued)

Role	Objectives
	<p>Reputational objectives Information and communication technologies (ICT), in particular the internet and social media devices, enable networking and changing information about organizations extremely easy for individual employees, potential employees, consumers and suppliers. Organization information about rules, procedures, ethics in the workplace, compensation, interactions with employees and the integration of work and personal life. HR managers are responsible to help organizations, build and maintain a reputation for operating ethically, abiding by the law and promoting employee well-being</p>

Source Torrington et al. (2020)

9.4 Changing in Digital Human Resource Management

The year 2021 was full of unprecedented changes, volatility, environment uncertainty and complexity that affected most organizations in the world. The process of HRM in organizations needs to adjust from the traditional HRM to the digitalization HRM (Jin, 2021). Furthermore, the pandemic COVID-19 one of the unprecedented situations in the world that changes 360° of the HRM, proceeds in an organization. As before this pandemic situation, HR managers conveniently apply the traditional HRM. However, when this environment uncertainty hits the world, means HRM digitalization becomes the priority for organizations to ensure that the process of HRM is going well (Cafferkey et al., 2019). While this system transforms from traditional to digitalized, digital HR has become an important function for the people and organization. In this section, we will discuss the three major areas in which human resources need to acquire or enhance their function, and, which are directly linked to achieving success on the digital transformation path.

The recent vicissitudes brought by the worldwide pandemic COVID-19 have forced the organization to come out with the strategic planning to accelerate transformation from traditional Human Resource Management (HRM) to the digitalize approach. This extraordinary shift can give a mixed feeling for the organization especially when it incurred some financial and non-financial support. Moreover, strategic planning should be involved at individual, team and organization level even though it is a small or large based organization (Ruël & Bondarouk, 2014). For instance, the employees need to upgrade their knowledge, skills, and abilities to obtain this HRM Digitalize especially in recent unexpected crises in organization and business continuity. Hence, the strategic planning by the HR managers should consider the readiness of the organization instead of looking at the trend only. Markedly, the priority for HRM Digitalization is the strategic planning because it must be the “stepping stones” including the analysis part for pre-HRM Digitalization. Significantly, past research found that the HR manager should produce a strong and concrete planning on why the organization should tune to this digital platform (Cafferkey et al., 2019). Thus, employees will be happier to attempt the HRM Digitalization if there is a robust

strategic planning from the HR manager for all individual, team or organization levels.

9.4.1 Re-structuring the Organization to Enable the Digital Human Resource Management (HRM)

Prior to embarking on the transformation, every organization’s leadership team must agree on what digital means to the organization and how it will fit into the broader business strategy. This alignment will influence the organization’s digital operational model, which comprises digital capabilities such as processes, people and technologies. Human resources have the responsibility of identifying the organization’s future digital capabilities and determining where such capabilities should be implemented. There are five main areas of digital capabilities (Table 5).

After defining the capabilities required, HR needs to support its organization in linking those capabilities to specific roles and responsibilities

9.4.2 Digital Talent Management

The year 2021 was full of unprecedented changes, volatility, environment uncertainty and complexity that affected most organizations in the world. The process of HRM in organizations needs to adjust from the traditional HRM to the digitalization HRM (Jin, 2021). Furthermore, the pandemic COVID-19 one of the unprecedented situations in the world that changes 360° of the HRM, proceeds in an organization. As before this pandemic situation, HR managers conveniently apply the traditional

Table 5 Areas of digital capabilities

Digital capabilities	Descriptions
Strategy	Determine the role that an organization wants to play in the digital space Determine what will digital contribute to the organization’s value Determine the strategy for organization to succeed in the digital age
Planning and operations	Determine how will digital plan, operate, monitor and track value captured
Product or service development	Determine technical skills required for product or service development
Innovation	Determine skills are required to generate the innovation in order to achieve the digital operating model
User experience	Determine skills are required to comprehend the requirements of customers in a digital platform

Source Deloitte (2016)

HRM. However, when this environment uncertainty hits the world, means HRM digitalization becomes the priority for organizations to ensure that the process of HRM is going well (Cafferkey et al., 2019). While this system transforms from traditional to digitalized, digital HR has become an important function for the people and organization. The talent management plan should be directly linked to the digital strategy of the organization supporting HR in filling the gap between current and future digital competencies. HR plays an important role in managing the employee in a digital environment, from acquisition to development and retention.

(a) **Human resource planning and staffing**

Attracting the most qualified talent depends on developing an employee value proposition. Digital expertise is scarce and organizations often struggle to find the required skills in the labour market. Organizations promote and advertise digital positions in the labour market to get qualified employees. Besides that, the recruitment process should portray the organization as digital brand utilizing innovative solutions. In a competitive climate where supply is limited and demand is rising rapidly, HR's role is essential in developing recruiting channels and messaging to promote contemporary organizations. HR should prioritize recruiting people who are technologically smart and socially conscious, since they will be critical for businesses in the future.

(b) **Human Resource Development**

Organizations should foster a learning atmosphere and invest in their existing capabilities. HR functions are responsible for developing and delivering education programs via a variety of platforms, as well as empowering employees to be responsible for their development plans, not only for developing technical skills but also for adapting to and developing new ways of working that align with the organization's digital strategy. Furthermore, HR has a role in further up-skilling employees about the cultural change due to digital transformation. A digital culture welcomes knowledge and insight and values autonomy, entrepreneurship and innovation. As a result, it fosters an environment of openness, opportunity and trust, enabling the organization to be adaptable, flexible, and sensitive to change.

(c) **Agile Internal and External Workforce Engagement**

An organization that followed the trend was becoming the new organizational paradigm. The efficient work and task come from the agile workforce engagement, which becomes critically important in any organization. The readiness of the employees should be counted because it is basically for growing and development of the employees and organizations as well (Neumeyer et al., 2021). The agility includes both internal and external workforce engagement, and it is possible only when people feel empowered, willingness to change and readiness to adopt and adapt the new knowledge and skills. Hence, the HR manager should place the priority in this matter by having people who can move to the HRM Digitalization. Moreover, the HR manager must prepare the manpower by giving the training to those needed as well as continuous workforce reskilling (Jin, 2021). For instance, the organization should consider the better platform where employees can engage among them

quickly and be able to manage effectively which leads to business agility and efficiency. The process of moving from one phase to another is not easy and open to any risk as well. However, the HRM Digitalization continually growing and being the competitive advantage for the organization, which is applied to it. By having an agile workforce, the expanding of organizations becomes meaningful and creates a better experience and expectation for the organization to grow (Cafferkey et al., 2019).

(d) Employee engagement and retention

HR assists organizations in retaining talent by investing in employee engagement programs and making the workplace more attractive to the appropriate people at the right time. It is critical for organizations to embrace creative and collaborative methods and to promote the use of digital platforms, by providing employees with both rules and the freedom by allowing employees to work from wherever is convenient for them. However, HR managers should monitor the overall well-being of employees to avoid burdensome to employees as they are constantly connected. Additionally, organizations should provide opportunities for employees to perform well and create an impact throughout the digital transformation process and reward them for their achievements.

9.4.3 Empowering Digital Leadership

Digital leaders are essential in laying the groundwork for digital transformation and should actively interact and communicate with internal and external stakeholders throughout the design, delivery and decision-making phases of the digital organization. In order to steer their organizations through the digital transformation process, digital leaders must identify and prioritize the costs, risks, mitigations and benefits of the transition. As a result, leaders should be well prepared to lead and manage the transition process. HR is critical in empowering digital leaders inside the organization, providing them with necessary skills and enhancing their leadership qualities. The following are some of leader qualities that are suitable for leader in digital environment proposed by Ken Blanchard (2018) and other management gurus (Table 6).

9.5 Factors Necessary for Successful Digitalization of HRM

The Coronavirus COVID-19 was the major turning point for the organization to tune from the traditional HRM approach to the digitalization platform. This crisis brings a new working experience especially for the Human Resource department in order to make sure all employees are still on the track. This change had built a new HR operation model, and employees had experience to enhance the organization's ability of the company (Briken et al., 2017). So, the HR department must be innovated simultaneously to support the digital transformation of enterprises. This approach is

Table 6 Leader qualities in digital environment

Leader qualities	Descriptions
Adaptability	Flexible and adaptable—giving people freedom to innovate and allowing them to perform work based on their preferences and styles
Tolerance	Encourage innovation and the exploration of new concepts and ideas
Mobility	Promote the use of digital technologies and media and encourage the use of flexible and contingent work schedules
Communication	Maintain a high degree of visibility, accessibility and communication with peers across levels
Decision-making	Establish the appropriate teamwork to provide critical insights as needed Be able to make quick analytics-based decisions
Feedback	Provide real-time feedback and reward individual and team achievements

Source Deloitte (2016)

already in the marketplace and the HR practices must look at the successful factor on it.

The development of Human Resource Management (HRM) in digitalization is capable of quickly brings the HRM process to the advanced stages. According to Meske and Junglas (2020), the HRM digitalization also can propose reasonable solutions especially in the intra-organizational HR process. For instance, there are three main areas of influence of digital technologies on the sphere of HR management (Jin, 2021) such as digital workforce, digital workplace and digital HR management. Moreover, each of these elements brings successful digitalization of HRM in the workplace.

9.5.1 Digital Workforce

Firstly, the digital workforce refers to the team of software that works alongside human employees to undertake manual processes and allow humans to focus on value-added tasks (Briken, 2020). In order to get the process in an advanced stage, this digital workforce is the best approach to be applied in organization (Connelly et al., 2021). Moreover, this digital workforce could be applied either in the small or large company based on the capability of the organization in terms of resources. For instance, the organization can introduce the new management digital approach, the new culture digitalization, training sessions for the new transformation and create an opportunity for all employees to use that. Hence, the digital workforce will require a readiness from the employees to make it happen in the organization.

As an organization, the employee experience has become the main element to ensure that any new technology can be successful if it is implemented in the organization. The intelligent solutions among the staff are also a priority for organizations because it is related to the individual ability to think, ability to learn and understand

as well (Jin, 2021). Today, technology has gone beyond information and communication permeating different areas of life. Even though the digital HRM has been recognized worldwide, the prior should be the bunch of the experience of each organization (Cafferkey et al., 2019). Some of the manpower in the organization already have their experience in using the Digitalize HRM from the previous organization perhaps. However, not all the staff have been through the system before and that should be highlighted under the experience of the organization. The level of experience is different from one to another organization. It is not only based on the organizational experience only but the individual experience as well. Hence, the experience from both individuals and organizations had to be put as the prior because it can produce different outcomes for the organization later. That is why before the HR manager proceeds to the next step, this should be a look first to ensure that either the organization is compatible to get the new HRM Digitalization system or not (Luo, 2021). Therefore, the intelligent solutions are important to HR managers to have a look because it can be vice versa later on.

9.5.2 Digital Workplace

The digital workplace is known as a virtual and modern setup from the traditional approach. The application and task would be the same but in the advanced approach by using a digital platform in communication and working purpose (Jin, 2021). The digital workplace provides high security in order to maintain the information privacy and security. The security in HRM digitalization includes the databases, employee's personal information and privacy information of the organization (Mosca, 2020). Today, this approach is a must for organization and brings success instead. The digital workplace enforces the HRM department to tune it from the traditional HRM to the Digitalization HRM. This could have happened if the organization also applied the digital workplace for other operation parts. If the organization is not considered as the digital workplace, thus it is impossible for the HRM digitalization to be applied (Mosca, 2020). Hence, when the workplace already changes to a digital workplace, it gives benefit to the HR manager to conduct the HRM digitalization because the organization is considered as ready to get this new transformation. Thus, the digital workplace is one of the factors necessary for successful digitalization of an organization.

9.5.3 Digital Support Management

The digital Human Resource Management (HRM) is a process that optimizes the use of online platforms to leverage the HRM process in organization. This platform gives an efficient, effective and competent HR process as well as to sustain the performance of the HRM department in the organization (Hosain, 2017). In addition, the HRM digitalization can give a new experience to the employees for them to explore it in daily uses. However, it does not mean that all employees are ready and accept the

changes immediately. It takes time, however, slowly but surely, they will accept it without any arguments (Mosca, 2020). Hence, the digital HRM will build a new working experience for all employees in the organization, and it will help to build the business reputation as well.

9.5.4 Updated Digital Technology

Human Resource (HR) digital transformation distinguishes as one of the opportunities for the company to redefine people management in order to catch up with world-class performance (Fedorova et al., 2017). The digital transformation bits upon all aspects of organizational life and permeates organizational practices. For instance, HR executives have started using artificial intelligence in order to run the HR process using this digital platform (Van Esch & Black, 2019). Hence, the HR executive must apply the transformation in order to support the organization and shape the corporate culture in order to move the company to the next better level. Thus, strategic HR could be applied in order to support the company's digital transformation. Strategic Human Resources (SHR) included attracting the top talent, hiring the best employee for the company, on-going education, training and development program, career path and developing a better culture intra organization (Cooke et al., 2020).

9.5.5 Human Resource Tactical in Recruitment

Recruitment by using the digital transformation has stimulated from a tactical Human Resource (HR) activity to a strategic business priority. This situation drives the competitive advantages of the company in order to get the best workers for their organization especially for the large company. According to Kemp (2018), about 3.2 billion people from age 18 to 35 years old in the United States are active in social media. Based on that, the number of job candidates spending their time in digital space also increases. Therefore, the organization can recruit new employees in that digital space with digital technologies and tools. Moreover, the digitalization of job information from both organization and potential employee could reach easily and the matchmaking process becomes smoothly (Neumeyer et al., 2021). In addition, the HR manager can view the potential candidates' profile by using this digital platform. According to Hosain (2017), the recruiting technologies now go beyond just screening resume to conducting virtual interviews. The HR manager can easily run the recruitment process using this digital platform, and it is more convenience. Thus, this HRM digitalization is developing innovative and agile culture to the HR department specifically, and it can give a convenient working experience generally to all the employees in the organization as well.

9.6 Benefit of Human Resource Management Digitalization

The rapid growth of Human Resource Management (HRM) digitalization increased the digital performance in organization and gave impact directly and indirectly. Due to the pandemic COVID-19, the Human Resource (HR) can simplify the process of accessing to all employees' by using the digital platform. As in the crisis, most of the employees Work From Home (WFH) and the HR can be detected by the employees easily by using this approach as well (Luo, 2021). The digital revolution pressures the organization especially in the HR process because everything is speedy moving (Ahmed & Ogalo, 2019). In addition, just as employees like to be able to choose how and when they manage their professional workloads and tasks daily or weekly. Hence, this HRM digital platform gives more benefit to the users either for small or large organizations based on their preference.

9.6.1 Environmental Performance

Environmental performance is defined as an efficient environment eco-friendly for the organization regarding the environmental responsibility (Rao & Holt, 2005). Most of the organizations in this industry apply the environmental performance initiative in order to be in the competitive advantage. The online platform in Human Resource Management could help the organization in reducing the waste product especially in papers because the HR department can apply the online recruitment process. As we know, traditional recruitment involves the hardcopy of a resume which the applicant must send it by post. However, by using the Digital HRM approach, the applicant can send it through the email as well. At the same time, this approach would help to save the world by reducing waste products. Hence the digital platform will help the organization to keep the information in the proper e-filing and influence the employees to be better in the environmental performance.

9.6.2 Managing Information

The access to confidential information can be meticulous by employees making sure the right information is available to the right people at the right time and situation. For instance, a certain person can only access to certain confidential information. In addition, digital HR can also provide document management capabilities for which an organization can learn what an employee is reading, listening and can improve productivity by minimizing strenuous paperwork, access old documents or achieve training manuals (Khashman & Al-Ryalat, 2015). Thus, this gives the competitive advantages for those who applied the digital HR in the organization.

9.6.3 Intra-Organization Communication Platform

The digital HRM is a solution for establishing an effective communication channel because it enables the organization and its employees to connect and communicate with anyone at any time. HR experts can encourage departments to easily communicate via instant messaging platforms such as Microsoft Teams or Slack, and remote employees can easily communicate and stay up to date on business changes. While allowing your employees to choose their preferred modes of communication, the digital workplace also allows them to be creative, share ideas, and provide feedback. Furthermore, improved communication aids in the resolution of conflicts, the development of a strong company culture and employer brand, and the development of stronger employee and customer relationships.

The digital transformation changes the way the HR team works and interacts with the employees. The performance of employees becomes better because this platform could provide flexibility in working conditions (Ruël & Bondarouk, 2014). Moreover, this digitalization HRM is used as an intra-organizational HR communication among the employees and makes the communication process easier. Throughout the pandemic, this approach was better adapted to support employees on their career path and became evident and urgent (Khashman & Al-Ryalat, 2015). For instance, this system provides notification to ensure the instruction and activities are completed at the right time. Hence, this could be more efficient for employees to communicate intra-organization easily and productivity.

Digitalization processes have helped create effective internal communications, automating processes of information exchange and reporting, reducing operating expenses, teleconferencing, speed, ease of documentation, less paperwork, ease in collecting comparative data, improved performance, etc. The integration of digital technology into business processes is said to be crucial for the survival and competitive advantage of contemporary organizations (Fedorova et al., 2019a, 2019b; Fenech et al., 2019).

9.6.4 Strategic Management Capability

The digitalization of Human Resource Management (HRM) also gives benefit to the organization as well because this contribution could improve the HRM's strategic management capability as the whole organization. Under these circumstances, the effectiveness of HRM digitalization is more likely to be heightened. Moreover, when the HR manager plans a strategic management involvement for the organization, this can encourage employees to actively participate in the HRM digitalization "by hook or by crook". Thus, this HRM digitalization can amplify the positive impact to the organization in enhancing firm performance.

9.6.5 Sustainable in Business Performance

Other than that, the HRM digitalization contributes to sustain the business performance. This digital platform is widely used by leading firms all over the world and it is widening gradually. Moreover, the HR managers can link with the other HR managers, which share the same tasks as in the branches approach (Ruel & Bondarouk, 2014). For instance, if the company is an international organization, it basically has a HRM department for each branch in different countries. Hence, all the HR managers in each branch should discuss together and make the decision by guiding from the HR manager in the head of department. The employees just have to use the digital platform to ask or respond to others rather than make an appointment and have to wait for the specific time arrangement (Briken et al., 2017). Hence, this HRM Digitalization approach gives a better opportunity to all the employees in a better experience way.

9.6.6 Fair Treatment in Human Resource Management Practices

Next, the digital platform for HRM could reduce the human bias benefiting everyone through standardized operation. This applied to fair treatment from other people because everything via online application (Connelly et al., 2021). For example, the recruitment process could be fair when the candidates submit the application and the organization puts it in the pool platform. Thus, other respective people also can view it for the perusal actions. According to Ahmed and Ogalo (2019), the recruitment process will be better if the organization uses the HRM Digitalization, and the application also will increase due to that easy approach in applying for the job.

9.7 Digital Human Resource Management (HRM) Challenges

Today's digital environment, digital HRM takes a significant role as compared to traditional HRM, and this is because of the demands of businesses. Many organizations need high-performance digital HRM systems in order to function effectively as a whole. The HR department must embrace change in HR and update its policies to reflect the requirement for digital transformation. Furthermore, drastic changes in HR processes could be challenging for the company because digitalization needs some time to be stable enough to be applied (Meske & Junglas, 2020). Hence, it is not going smoothly for all the employees as well because the HR must consider many certain unpredicted causes or problems that might happen. Thus, exclusion may result from the unequal access to digital technologies (DiMaggio et al., 2004), technologies tools and the experiences in conducting that platform.

9.7.1 Information Security and Privacy

There are many advantages to using digital technology, but there are also many drawbacks. These include the issues and legislative limitations related to information security, privacy, as well as the negative consequences of being digitally linked 24 h a day and 7 days a week. While big data has the potential to be more objective and accurate, they are also extremely subjective and contextualized. There are inherent ethical issues related to privacy, use of data and employee relations that must be addressed. Other than that, the norms of the electronic media are vulnerable and may be attacked by viruses from anywhere on the internet. The virus can be disabling your HRM Digital platform and may disturb the system as well. The Digital HRM is subject to corruption, hacking, data losses or breakdown at any time. Hence, there must be a possibility to have continuous problems onwards (Ahmed & Ogalo, 2019). Thus, the digital platform needs to have a traditional HRM backup in order to ensure that the privacy and important HRM information are safe if any urgent matters happen.

9.7.2 Employee Safety and Health

Human Resource Management Digitalization involves such as paralysis due to information overload, increased employee stress levels and social isolation. Besides that, employees who are forced to answer business-related emails and phone calls during their personal time miss out on relaxing and spending quality time with their families. Excessive email usage has been linked to higher levels of stress and job overload.

9.7.3 Cyber-Loafing and Cyberslacking in the Workplace

Because technology is eroding the lines between work and non-work life, employees are increasingly utilizing technology at work for personal purposes and bringing their personal devices to work posing significant security concerns. Cyberloafing was first operationalized by Lim (2002) as personal emailing and surfing activities that employees freely engage in while on the clock at the office. Cyberloafing included both small activities such as browsing, e-mailing or online shopping and major behaviours such as gambling, online gaming, blogging and visiting adult websites (Henle & Blanchard, 2008). Researchers believe that cyberloafing may lead to decreased job satisfaction since it can be a kind of disengagement behaviour or even a form of procrastination in the workplace (Farivar & Richardson, 2021). While social media is often utilized in HR activities like as recruiting and selection, it raises a number of ethical, legal, fairness, privacy and cyber-loafing discrimination/issues that must be addressed by HR managers.

9.7.4 Shifting Work Process to Digital Platform

Digital HRM faces numerous difficulties and challenges in order to provide the highest level of work quality to organizations all over the world. To succeed in a competitive structure, organizations must increase their global trading. However, it is challenging for HRM to adapt to a digital transformation and cope with complexity while transferring work processes and their development on a digital platform. Organization has a tough time adapting to a digital revolution. In today's environment, digital employees have to play a critical role in the organization and other company operations by generating momentum and internal capacity.

Digital has been a driving force of change across industries; and the transformation is accelerating—it took 5 years for Apple to transform the music industry while Uber and Airbnb profoundly reshaped the transportation and hospitality sectors in less than 2 years. One can measure the pace of digital disruption in months while it takes years for an organization and its people to fully embrace such fundamental changes in the way they operate. Change management is by far the most enduring bottleneck to digital transformation. While technology adoption continues to be top of mind in all digital things, we advocate in this point of view that fundamental changes in leadership and talent attributes are far more critical to successfully embark in the digital journey.

9.7.5 Employees' Reactions to Change

Introducing new technology into your organization is an investment that will provide your employees with new resources to help them do their jobs more effectively and efficiently. New technology, on the other hand, means change for your workforce. People are afraid of the unknown, and implementing a new working environment may cause uncertainty within your organization, leading to employees becoming resistant to the change. The most common reasons for resistance to new technology adoption are job security, fear of failure, the unknown and organizational distrust. Baby boomers and Generation X, for example, may be more resistant to technological change than millennials. Millennials are accustomed to and use technology in their daily lives. It is uncommon that you will need to train them to use a laptop or a smartphone; however, later generations may find it difficult and require additional training. This may deter people from using new systems because they are less confident or feel embarrassed.

Technology that automates low-skill repetitive tasks frees up HR personnel to work on higher level, potentially more valuable tasks. This may come at a cost for some in the HR department, who may be resistant to change out of fear of losing their jobs. This fear is not unfounded; according to a 2019 report on job automation by the Office for National Statistics (ONS), “around 1.5 million jobs in England are at high risk of some of their duties and tasks being automated in the future.”

9.7.6 Maintenance of Human Resource Management in Organizations

The Human Resource Management (HRM) Digitalization involves a high cost to maintain and implement especially for the small company. As we know, to buy a certain software for an organization incurred by a large capital form organization does not matter if it is a small or large organization (Connelly et al., 2021). Furthermore, the organization needs to invest more on digitalization training and development before adopting this HRM Digitalization (Khashman & Al-Ryalat, 2015). This could be an additional cost for the organization to make sure the staff are capable of using it. Hence, the cost for the system and maintenance could be the disadvantages somehow to certain organizations.

9.7.7 Ageing Community in Conducting the Transformation

As we are aware that the digital HRM is a computer-based approach and still needs the human power to run the system. The computer and their associated program are only as effective if the user had an experience to conduct it. For instance, if the employees never experience applying online leave, then there might be any mistake in filling in an online form for the first time (Jin, 2021). Furthermore, for the ageing community, some of them are reluctant to try this new digital platform and it could hinder the organization to fully transform to the digital approach.

From the perspective of misunderstandings and dilemmas, the aging society would be difficult to adapt with this HRM Digitalization in organization. This society involved the older adults in organization, which continually being healthy and active participants in evolving digitalized situation. However, for them to change from traditional HRM to Digitalization HRM could be a difficult path especially for those who will be retired soon (Connelly et al., 2021). Hence, it could be disadvantages for them if they are not ready yet to follow the trend and make changes. Thus, the organization must deal with this issue in order to make sure all level age society could be used this HRM digitalization as well.

10 Conclusion

Digital Human Resource Management (HRM) is considered as an important aspect of business organization. Every business organization has a long way to go by adopting digitalization. Digital HRM helps in maintaining a strong relationship between management and its employees. By preparing a strategy for digital HRM will help in organizational performance. This chapter highlighted the importance of digital HRM in the aspect of the organization and by enhancing the HRM practices, recruitment and selection, training and development, performance appraisal, reward and recognition and career development. Every organization should develop its digital strategy to improve productivity. In the current scenario, digital HRM is considered a growing

research topic as well as an important topic for a business organization. With the use of digital HRM practices and through social media, the internet, artificial intelligence and other technology organizations can maintain their performance and employees' quality standard for the smooth running of the organization. Digital HRM enables the use of data analytics, improve the employee experience, offer self-service tools and be competitive in market. Therefore, to remain relevant and competitive in the global market, organizations have to alert and understand the dynamic of the business environment, follow the current trends and take action to ensure embrace digital HRM.

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