Evolution of HRM to E-HRM towards Organizational Effectiveness and Sustainability

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Abstract— **This paper aims to study the evolution of HRM over the period of time and the challenging role of HRM in the 21st century. Paper will discuss about introduction of Information and Communication Technology (ICT) to HRM in terms of e-HRM. In the last, paper will discuss about contribution of HRM to Organizational Effectiveness (OE) and organizational Sustainability and how e-HRM can contribute towards them.**

Keywords— **e-HRM, HRM, Information and Communication Technology (ICT), Organizational Effectiveness (OE), Sustainability,**

I. INTRODUCTION

Human resource management (HRM) has always played a major role in improving the performance of an organization. There exists a strong relationship between Organizational effectiveness (OE) and HRM. For past two decades, many researchers have contributed to understand the growing relationship between OE and HRM. Although being topic of interest for many researchers and academician, many core questions related to HRM role and its evidence of effectiveness in the organization have remained unanswered. It has proven to be a major challenge for HR professionals to prove the effect of HR on OE and what forms the basis of their relationship. Many theories like talent management, change management and high performance work activities have been established to affirm the reflection of HRM on OE. HRM got its importance during late 1970s and early 1980s [18]. Now, HRM is gaining its importance as strategic partner in the organization [28]. Different models were developed to explain HRM evolution and management [1][11][27].

All models are based on complex relationships between organizational people, organizational performance and various organizational strategies in which they operate.Today model are more extensive and complex.

Young models over the traditional models consider external and internal organizational environment in allign to HRM systems and multiple stakehlders [18]. A new dimension of organization sustanibility has emerged in the scope of HRM [27]. Sustanibility of an organization will be element required by all corporates in the near future. Little researches have been done to estimate or describe the role of HRM in this process . Strategic HRM will not be enough to meet the changing global environment. A new concept was in need to be establish to support these changes . This took to emergence of sustainable HRM to cope with changes in the society [27]. These changes in economies, culture and socities is the result of rapid developments in digital technologies. Technology advancements have reshaped the way of practicing different HR functions. These technologies have brought immense changes in the organizational environment, employees and HRM in shape of 'e-HRM'.

E-HRM can be one of the most powerful driving force towards enhancing OE and the concept of sustainability.E-HRM can be considered as a multilevel phenomenon to perform HR activities. It can help the organizations to upgrade the HR functions to web based technology and speed up the flow and implementation of business strategies and proccesses. It will take the HRM functions to one level up in contributing to OE. In the last, the paper will describe certain e-HRM tools towards organizational sustainability.

II. EVOLUTION OF HRM

HR functions started nearly 90 years back when the first HR department was established in 1920. Since then, there have been constant improvements and development in this discipline. Functions of HR have enlarged over the past decades from record keeping to involvement as a strategic partner [9][28]. Evolution of HR started with the Industrial revolution .

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Industrial revolution had influence on the practices used to control the workers. It was during this time, HR theories started developing. Increase in production led to increase in work force and require more new policies to be adopted by managers to regulate the working environment. With increase in jobs, new job descriptions and specifications were developed [2][28].

At this moment in 1903, the first concept of HRM was established as Scientific managemnt by Federic W. Taylor which described workers as machines and the social aspect of human behavior was left unnoticed. According to [14], Scientific management concepts explained :

1. Workers have to match physically and mentally with the job.
2. Workers should be motivated to follow the procedures.

Social aspect which was left unnoticed, was realized in late 1920s and early 1930s during Hawthore studies. With more widening in research areas of HR, era of behavioral sciences emerged. During this era, the visualization towards the organization was changed. Employees and organizations were nt considered as separate entities but together as an organization.

Behavioal applied science forms the basis for today Human resource and organization behavior [2]. It was during 1920s, the concept of scientific management was shifted to personnel mngement. Experts were hired for keeping the records, maintaining payroll systems and look into other concerns related to employees. With development in technology, economies and workforce, the shifting of personnel management to HRM began between 1960 and 1970 [20] and since then, 'HRM' term is widely accepted, adopted and used all over the world [1].

Now, the organizations had a formal HR department with people expert in HR discipline. With time, businesses became more globalized. The changes in the business environment changed rapidly demanding more stronger, effective HR practices. More pressure fell on HR professionals from multiple stakeholders, competitors and customers. It was during 1980s, organizations realize that competative edge can be attained from their strength of internal factors particularly the human resource. This leads to emergence of totally new discipline named as ' Strategic HRM.'

Under strategic management, it was realised that human capital as internal resource can help the firms to create value which was rare and difficult to immitate whereas external factors like technology, natural resources and economies of scale can easily be replicate [5][28]. With this transformation of HRM to Strategic HRM, researchers and academicians began to descibe how HR can play a strategic role in contribution to OE and thus, explaining the relationship between HRM and OE through various models. The HR researchers identified and justified the role of HRM in the organization. The relationship between HRM practices and OE was recognized and acknowledged [18][11][25]. HRM was researchers' favorite topic for describing its alignment with the mission, vision and strategies of organization. It became a strategic player in its contribution towards OE [28].

Sustainability was new element added to the tasks of HRM. In today dynamic changing environment, sustainability is most desired element for all organizations [27]. To achieve sustainability, it needs to be out in center of organizational strategy. There is need to incorporate an environment within the organization which leads to sustainability. Senior management need to help HRM department in creating sustainable environment. All departments need to be integrated completely as it affects all in the organization. To make process flow faster and smoother, introduction of technology in the organization is important. Technology developments can play a major role towards contribution to OE and sustainability. With the advent of technology, HR functions will become more digitalized.. All processes were supported with technology. Now, HRM has became e-HRM E-HRM was developed with the objective to achieve high commitment, high competencies, cost effectiveness and higher congruence for an organisation towards sustainable society [17]. Information and communication technologies (ICT) help firms integrate, process, communiacte and access all information within organisations through intranet keeping intact the privacy and security of the confedential information. This new state of technology will empower and encourage HRM to step ahead towards sustainable society.

III. ORGANIZATION EFFECTIVENESS

Adding or creating a value or improving the performance of organization leads to Organizational effectiveness.

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The value can be created by "the people" of an organization. People being the most important resource should be properly managed in terms of attraction, recruitment, retention and development for organization growth. All researchers have agreed that HRM should add value to the organization. But the way HRM can contribute to OE has been evolved since 1987. There are many channels through which HRM contribute towards OE [18]. HRM has to consider both external and internal environment in which an organization operates. It has to plan out its strategies keeping in mind the desired outcomes for external and internal stakeholders [18]. OE can be measured in terms of internal stakeholders (whole staff in firm) and external stakeholders (owners/ investors, customers, external partner organizations and members of the society) [12][18][22][25].With inclusion of multiple stakeholders, HRM is recognizing wide range of challenges. Organizations are focusing on developing effective and flexible HRM systems which can easily adapt to dynamic changes occurring in external environment without going into state of mismanagement and confusion. Today, HRM requires assimilating with different facets of business to achieve OE as a strategic partner.

As a strategic partner, HRM can directly work towards improving the performance of organization [6]. To make HR as a strategic business partner, not only HR department but whole organization need to be redesigned. To make HRM department as backbone of organization, organization need to be restructured. Different people need to be involved from senior management levels. These experts usually are link between the HRM and different business departments. These professionals can help HRM deprtment in picking best HR policy in allignment with business goals and mission, developing change management strategies, suggesting correct training and development practices to produce highly effective human capital. HR needs to focus on talent management.By attracting the best labor , developing the strategies for their retainment, training and development can lead the organization towards OE.

An OE unit should be constructed which includes experts from different departments of different levels of management. Members of this department should have expertise in multiple disciplines related to business. HRM department should be in direct link with OE department. HRM in link with OE can play a major role in developing strategies.

It cannot be denied that HR plays a critical role regarding decisions related to recruitment, selection, development and organization of human capital. These factors play a major role in accessing OE for firms. HR need to expand and improve its functions, develop and implement new skills and competencies to sustain. HR needs to develop its relationship with OE in same terms as accounting is to finance and sales is to marketing [6]. HRM experts and professionals need to grab all opportunities towards OE and thus, moving the firms towards organizational sustainability. To meet the gobal business challenges, organizations need to attain a sustainable model in which they can operate.

IV. SUSTAINABILITY

'Sustainability' refers to firm ability of withstanding the unpredictable challenges of the social, environmental and economic factors with time. In other terms, we can define sustainability as firms capability to seek its goals in terms of stakeholders in long run by incorporating economic, environmental and social prospective with its business strategies.. It is the future concept of the organizations. Sustainability being the new concept for 21st century business, researcher and HR professionals are trying to ascertain the role of HRM in achieving sustainable organizations. Referring to the nature of unpredictable dynamic external environment, it is necessary for organizations to develop a sustainable model for the future. It can be considered as last stage in HRM evolution [27].

A multidimensional model was presented by [27] to achieve high performance by addressing external and internal environment multiple stakeholders and moving HRM to central organizational sustainability. In modern era, HRM competencies have been recognized for incorporating sustainability at different organizational levels [26] [27]. As in [27], development of HRM could be described in four periods namely:

    a. Conception,
    b. Personnel management,
    c. Strategic HRM and
    d. HRM as basis of organizational sustainability

Organizations need to develop HRM strategies consisting of core policies and practices developing a strong framework for sustainable HRM. Sustainability has to start from different levels starting from individual, departmental, organizational and at last reaching the sustainable society.

To be a predominant element of organizational sustainability, HRM need to be in parallel alignment with organizations mission, goals, formulation and development of strategies related to human resource. HRM needs to be in integration with top management to embed the changes in the corporate strategies related to change management, talent management, training and development, leadership developments, more employees' engagement by keeping them update with business process and new strategies and developing business ethics as new grounds to gain competitive edge.

With such practices, HRM can work to move towards a sustainable environment for firm by achieving balance between economic, social and environmental integrity [3][27]. As we are moving towards 21st century, companies need to develop and work towards achieving a sustainable model for the organizations by identifying the vital role to be played by HRM. Sustainability is a fresh topic in HRM area which still needs more empirical based studies to recognize and access the worth of HRM towards sustainable organizations. Sustainability of firm in competitive environment has forced the organizations to speedily develop unique competencies. For this, corporations need to shift from physical technology to information technology for effective and efficient HRM functions.

V. E-HRM

E-HRM refers to the application of (ICT) for implementing HR strategic policies and practices in the organizations [19] or in a broader terms it can be referred as "the (planning, implementation, and) application of information systems for both networking and supporting actors in their shared performing of HR activities" [24]. E-HRM can be used for all HRM functions from traditional activities to transformational activities that add to OE [8]. It can also be used to manage whole employee lifecycle from its recruitment to its exit from the organization. Self-service systems have been developed with help of dynamic software's to perform maximum transactional activities [10]. In 21st century, all HR departments are changing them to e- HRM around the world with rapid innovations in web-based technologies. Many researchers have discussed and explained various possible benefits and outcomes for the application of e-HRM which can be summarized as follows:

TABLE I
OUTCOMES OF E-HRM

	Possible Outcomes	Author(s)
1	Operational, relational and transformational impacts	Lepak and Snell, 1998
2	Cost reduction, improving strategic orientation and global orientation	Ruel , 2004
3	Improvement of efficiency and reduction of cost related to HRM	Buckley, Minette, Joy and Bartel, 2004
4	Facilitation of more strategic role for HRM	Gardner, Lepak and Bartel, 2003; Snell, Stueber and Lepak, 2002

Past researches have proved that e-HRM can be used to increase the value of the HR functions to achieve competitive advantage [8]. In any organization, the most strong, valuable, inimitable internal resource is the human capital [4]. With the growth of sustainable HRM, human resource is considered as most important asset or investment that can as strong tool to achieve OE in a sustainable business environment. HRM functions have the ability to train, develop and thus, produce human capital which can meet organizational critical challenges from unstable and continuously changing external environment [8]. E-HRM is advance ICT solution for the business to provide full IT support to all management processes, handling of information and managing the human resource in 21st century. It can help HRM to gain more strategic role towards OE [21]. Firms need to design their e-HRM model keeping in mind following three areas of HRM [15]:

1. Operational HRM related to administrative jobs through online facilities which can lead to reduction in cost in terms of paper, retrieving of data and IT infrastructure.
2. Relational HRM towards maintaining the relationship between organization and the employee through web based intranet and forming online communities. Giving a new looks to nature of relationship between HRM, line managers and employees.
3. Transformational HRM towards alignment of employees and organizational strategies by e-recruitment, e-training and development and online learning programs. Bringing new, flexible and responsive methods of HR functions to provide excellent services as employee and customer focused experts.

In lieu to above mentioned critical areas, role of e-HRM can be identified and explained in achieving OE in a sustainable e-HRM model. E-HRM is still a new topic for the academic interest and HR professionals. To achieve sustainable e-HRM, HRM departments need to continuously work on its virtual HRM with respect to computer hardware, software and networking services. E-HRM should be taken as implementation support system for HRM [21].

Networking communication within the organizations should be more active in terms of e-mails and intranet for transparent and ease flow of data-information across the organization for the management and the employees. 21st century workforce or Gen Y is already well versed with the knowledge and use of ICT. Web based technologies is part of their daily life. Gen-Y workforce is more knowledgeable, self- challenged and technology driven and highly unstable. Creating an effective, transparent and web based technologies based working environment can act as important competitive advantage for firm development and sustainability [19]. Organization ICT system should be able to provide speedily services to their employees, clients and customers globally anywhere on the earth to help the firms achieve sustainability with lowering the cost of using ICT.

By creating a sustainable e-HRM, HRM can add or create value to OE. E-hrm can enhance the functions of HRM by following ways:

1. Integration of organization data pertaining to human resource available all time at reasonable cost to support strategic policy planning and implementation.
2. Monitoring and maintain the human resource demand and supply equilibrium.
3. Automation of records pertaining to employees.
4. Maintaining accuracy, consistency, security and privacy of data.
5. Higher speed in generating information.
6. Quick adaptability to client management.
7. Broader access to HR force by means of e-recruitment.
8. Easy and transparent procedures of e-selection and assessments.
9. Automated appraisal systems by e-performance management systems where employees can update their information by themselves online through the intranet system.
10. Faster and paperless administration tasks leading to reduction in cost, time and labor.
11. Maintaining the records for personnel database without creating any chaos.
12. Quick and correct retrieving of data.
13. Acting as communication interface between employees and organizations at different levels of various departments.

These outcomes of e-HRM can be achieved only if organizations pay considerable attention to the following crucial factors or limitations of using ICT:

1. The technology needs to be updated and supported timely by new versions.
2. Providing confidence to employees about the security and confidentiality regarding personnel data.
3. Keeping organization crucial information and data under password secured IT department with access to only few top authorities.
4. Providing proper training courses to the staff and management for making effective use of technology.
5. Making sure data has been properly transformed from physical storage to organization systems.
6. Make sure duplicity of data is removed.
7. Choosing the software flexible and adaptable to changes in system environment and operating systems.
8. Keeping the backup of important files in case of crash of systems.

Though having limitations, e-HRM has been adopted and implied by number of organizations for moving towards a sustainable organization. The integration of ICT with HR processes can be beneficial in following areas of HR:

1. E-recruitment

The primary goal of recruitment process is to attract potential labor whose competencies match with the organization goals and objectives. With application of ICT in recruitment process, organizations have started posting their job vacancies online and attract the talent not only from one region but all over the world. Organizations can also post job description along with incentives to be provided to attract the talent. By online job opening, candidate can go through company profile to understand the organizations vision and goals better. Online recruitment widens the scope and area of talent research for firm's HR. Even with organization intranet, managers could go through existing employee's record for internal recruitment process. Even employees can go find out any job openings. Organizations are building up their own websites for the future prospective employees to leave resume online and update themselves according to requirement of company.

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E-recruitment is helping the organization to recognize unique talent among across world applicants. Again not to forget, e-recruitment should be used in line with other recruitment tools to have an effective recruitment process.

2. E-selection

It's very difficult to decide where recruitment ends and selection begins. E-selection can be used to ask the prospective employee to complete the assessment and other formalities via interactive forms and submit to the organization. Assessment results could be generated automated at same time. Interactive online interviews could be arranged via web based technologies. Organization need to critical analyze the e-selection software which is flexible, specialized and helps in reduction of cost of selection process.

3. E-Training & Development

To get ahead of competitors, a competitive edge is required for all firms. This competitive edge can be gained by training and development process within the firm. Training practices help the employees to improve and enhance their knowledge and skills for business growth and efficient customer service. It also helps the employees to get familiar with new technologies introduced in the organization, to improve their communication skills and relationships with in peer and management. It helps in increasing their job related skills. It is a continuous learning process. Organizations can develop their own online training material for their employees and upload on intranet for regular access to staff. Online training provides training to workers at any time and at any place. It helps in reduction of cost by providing training via online classrooms. Employees can get and share the knowledge across other departments and companies. But the blended learning is considered as best learning which includes online learning, classrooms and on- job training programs.

4. E- performance management

An effective e-performance management system can benefit organization, managers and its employees. It requires application of software's that can help in monitoring, recording, updating and retrieving of employee's information. Performance which was being managed on papers has shifted to memory databases of the company. E-performance management systems can help in automatic linking of performance with the compensation.

It can help the employees in knowing their competency level as result of updating of performance evaluation on intranet system with security. It will provide more transparency, speed and reduction in cost of performance management system.

5. E- compensation

In recent years, compensation has become the competitive factor for attracting and motivating the crucial labor force in an organization. E-compensation refers to using ICT in designing the compensation and benefit packages for the employee. It also helps in ensuring that the salaries are fairly distributed. It helps in tracking the records of an employee benefit package and crucial compensation information. It helps the managers to develop the budget, analyzing the impact of current incentive systems and ensuring the fairness of their compensation system.

As mentioned above, application of e-HRM can help the organization in enhancing its efficiency and effectiveness. Integration of ICT and HRM process can help organizations in moving towards OE and stepping to a sustainable organization.

Following figure can present the impact of E-HRM on HRM functions as mentioned above in moving towards OE and sustainability in the organization.
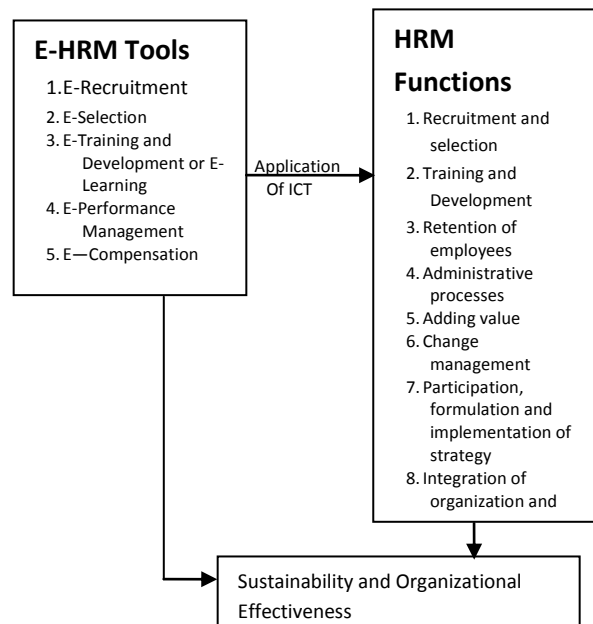

Fig 1: Impact of E-HRM on HRM to attain Sustainability and Organizational Effectiveness

VI. CONCLUSION

'Sustainability' refers to firm ability of withstanding the unpredictable challenges of the social, environmental and Evolution of HRM is a continuous process. It is the use of web based technologies for forming, implementing and integrating organization and HRM strategies, policies and practices. E-HRM is a high-tech way of performing HRM functions. With top management support and HRM at strategic position towards OE, e-HRM can enact as ICT tool to achieve sustainable management. E-HRM can help organizations to enhance their function pertaining to HR activities bringing benefits of cost savings, efficiency, flexible services, and employee's participation. Organizations are recognizing the importance of sustainability in terms of competition, selecting and retaining talented employees and reputation of the company. To stand with dynamic economic, social and environmental forces and keeping in mind both internal and external stake holders, organizations are trying to achieve sustainable environment for business long term growth.

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